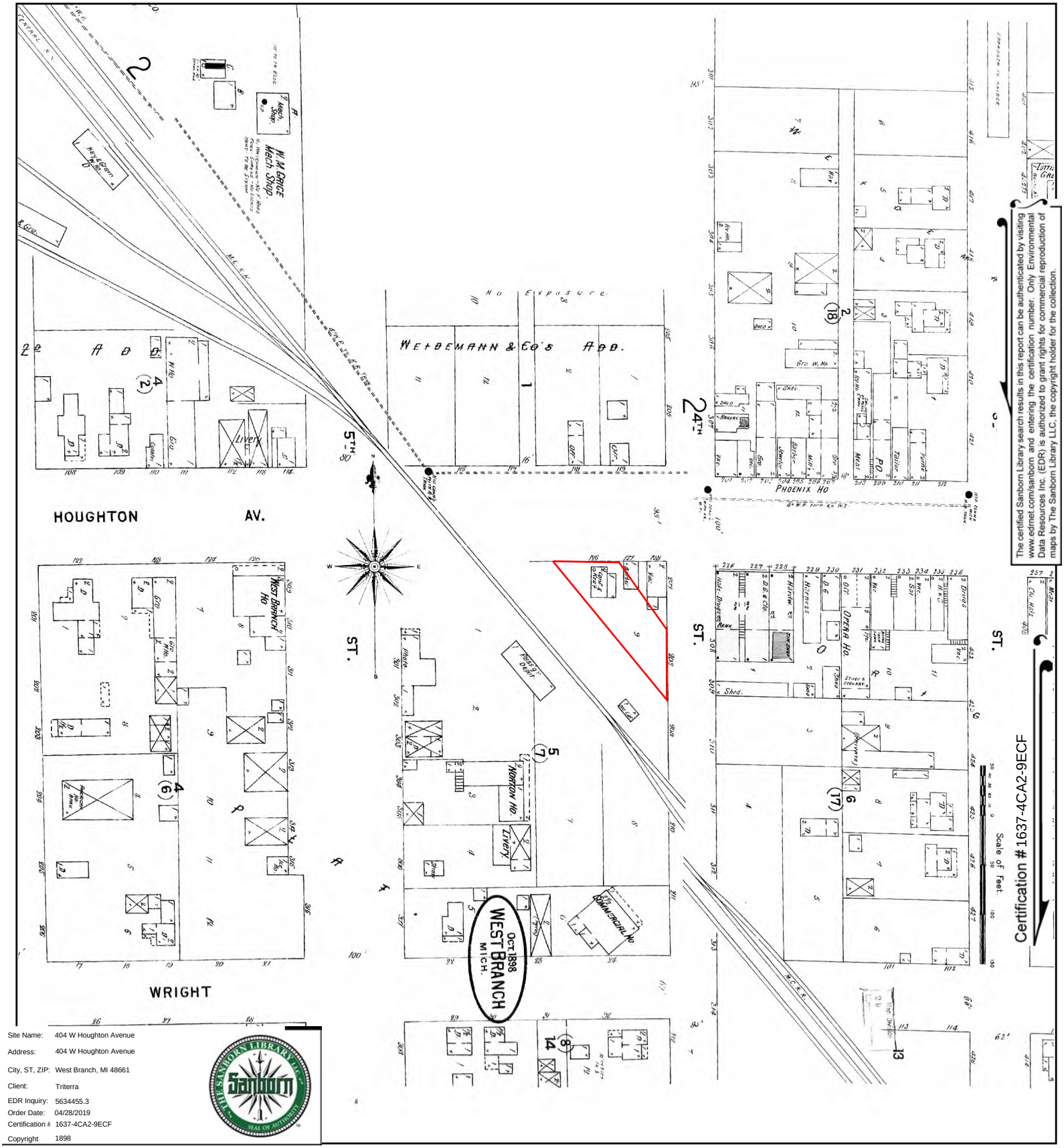

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Site Name:	404 W Houghton Avenue
Address:	404 W Houghton Avenue
City, ST, ZIP:	West Branch, MI 48661
Client:	Triterra
EDR Inquiry:	5634455.3
Order Date:	04/28/2019
Certification #:	1637-4CA2-9ECF
Copyright	1898

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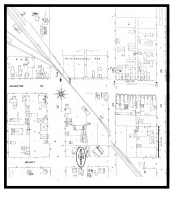
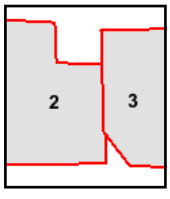
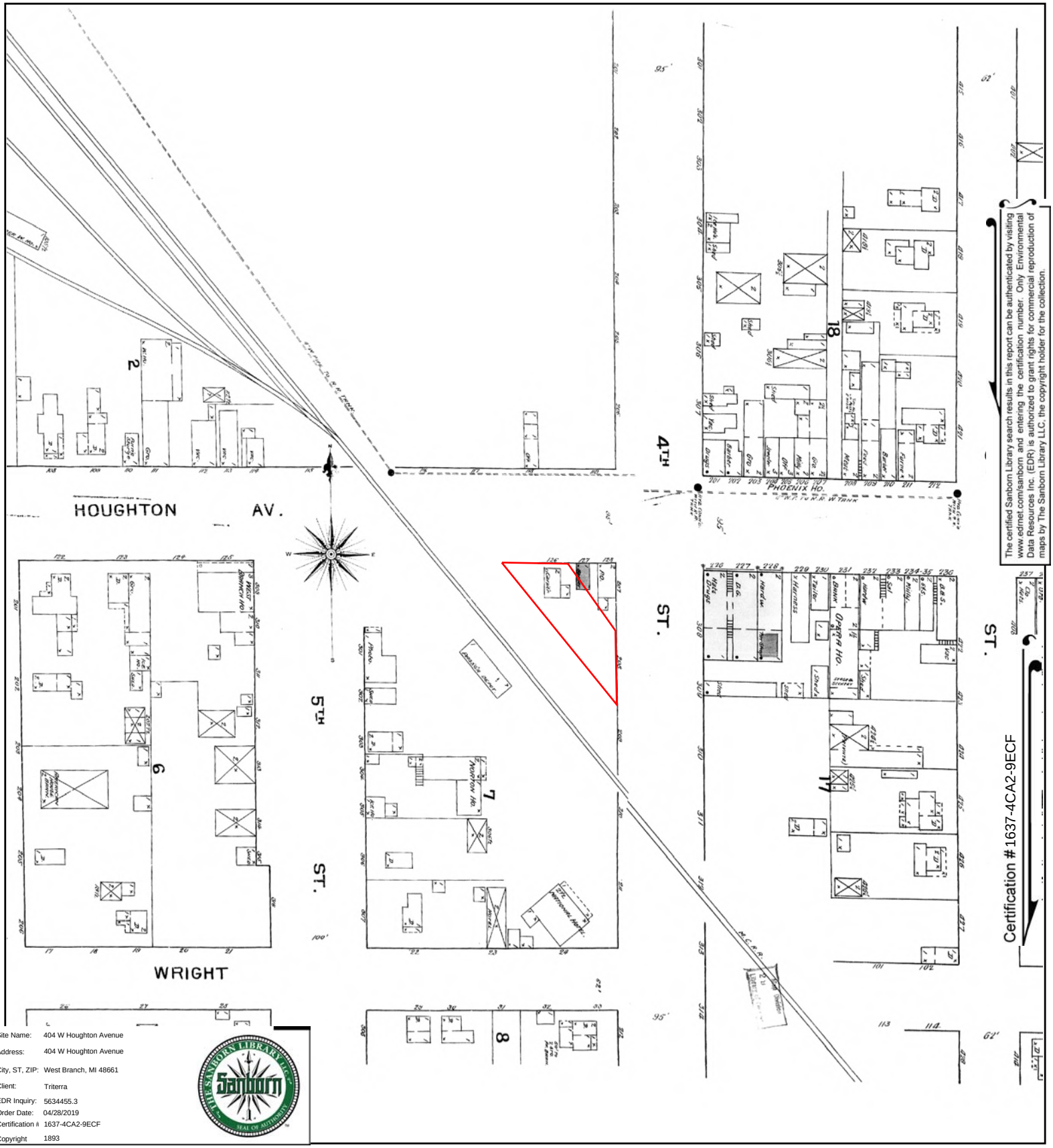




Volume 1, Sheet 3
Volume 1, Sheet 2

0 Feet 150 300 600

N



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Client:	Triterra
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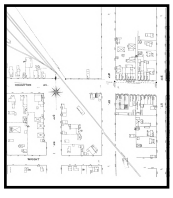
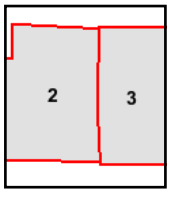
Order Date:	04/28/2019
Certification #:	1637-4CA2-9ECF
Copyright	1893

This Certified Sanborn Map combines the following sheets.
Outlined areas indicate map sheets within the collection.





Volume 1, Sheet 3
Volume 1, Sheet 2

0 Feet 150 300 600

N

404 W Houghton Avenue

404 W Houghton Avenue

West Branch, MI 48661

Inquiry Number: 5634455.5

April 29, 2019

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

04/29/19

Site Name:

404 W Houghton Avenue
404 W Houghton Avenue
West Branch, MI 48661
EDR Inquiry # 5634455.5

Client Name:

Triterra
1375 S. Washington Ave Suite 300
Lansing, MI 48910
Contact: Diana Major

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1998	1"=500'	Acquisition Date: April 27, 1998	USGS/DOQQ
1986	1"=500'	Flight Date: June 25, 1986	USDA
1978	1"=500'	Flight Date: August 05, 1978	USDA
1969	1"=500'	Flight Date: January 01, 1969	ASCS
1963	1"=500'	Flight Date: January 01, 1963	ASCS
1961	1"=500'	Flight Date: May 16, 1961	USGS
1952	1"=500'	Flight Date: January 01, 1952	ASCS
1938	1"=500'	Flight Date: January 01, 1938	ASCS

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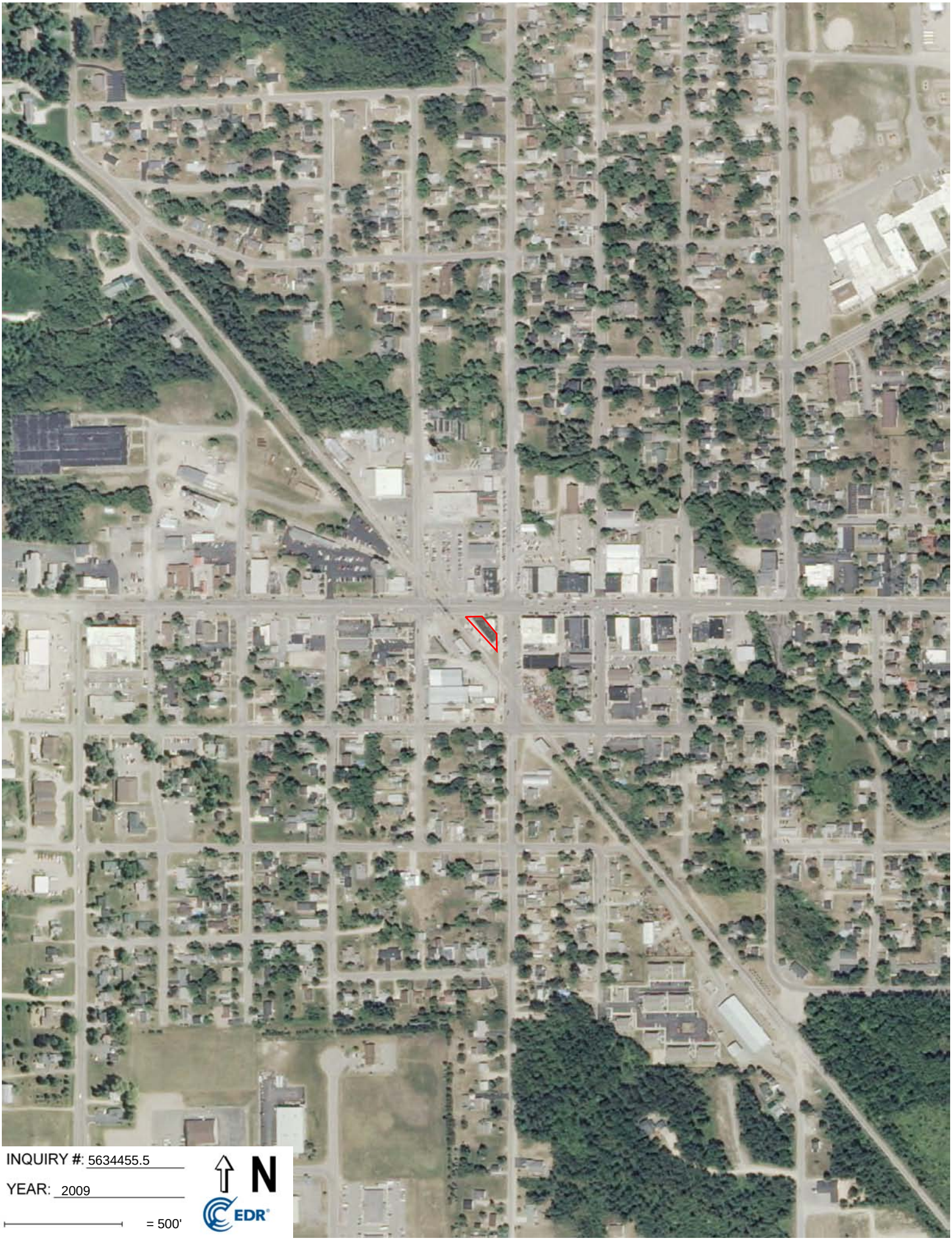
INQUIRY #: 5634455.5
YEAR: 2016
= 500'
N
EDR

INQUIRY #: 5634455.5
YEAR: 2012
= 500'
N
EDR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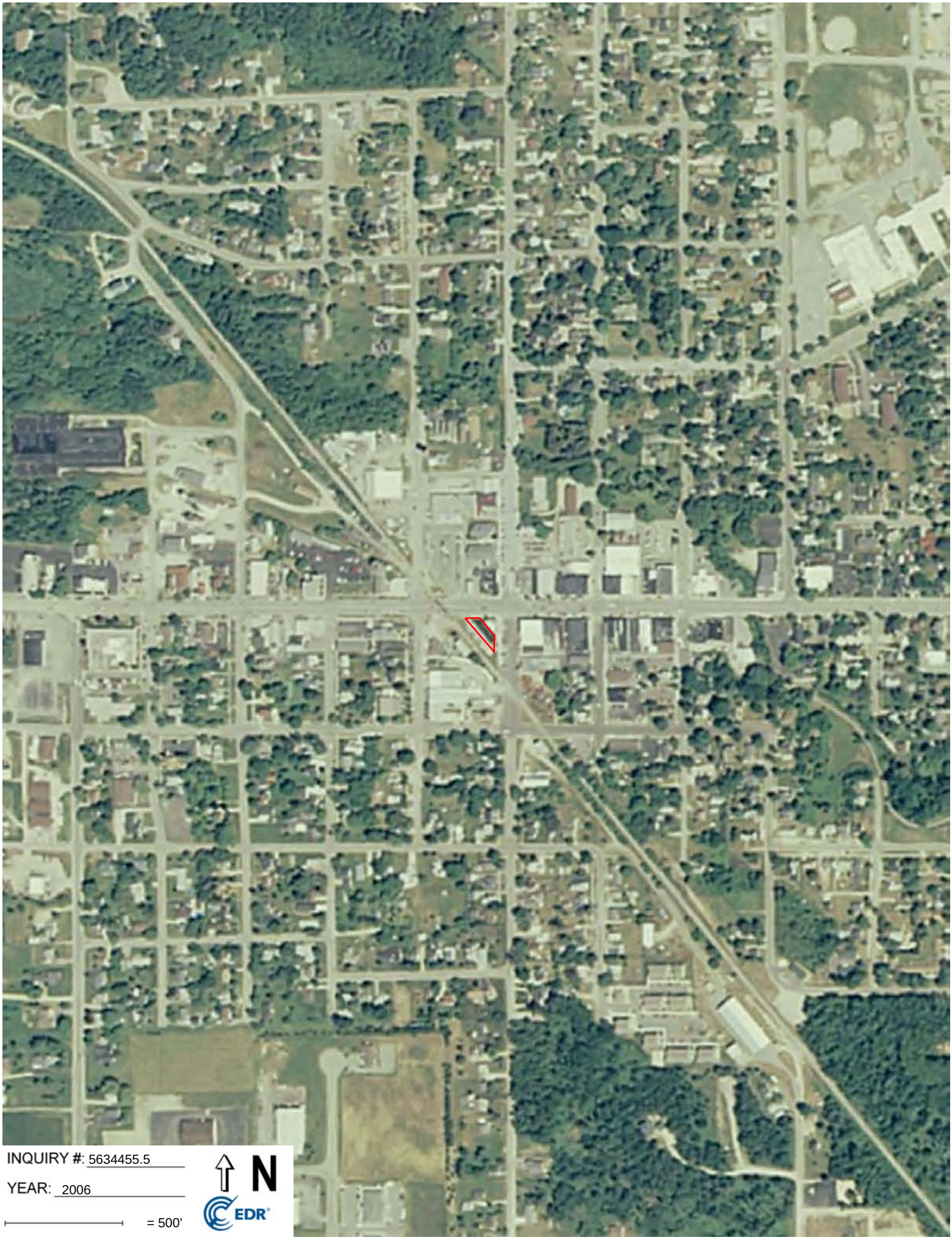
YEAR: 2009
= 500'
N
EDR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YEAR: 2006
= 500'
N
EDR

INQUIRY #: 5634455.5
YEAR: 1998
= 500'
N
EDR

INQUIRY #: 5634455.5
YEAR: 1986
= 500'
N
EDR

INQUIRY #: 5634455.5
YEAR: 1978
= 500'
N
EDR

INQUIRY #: 5634455.5
YEAR: 1969
= 500'
N
EDR

INQUIRY #: 5634455.5

YEAR: 1963

= 500'

N

EDR

INQUIRY #: 5634455.5

YEAR: 1961

= 500'

N

EDR

INQUIRY #: 5634455.5

YEAR: 1952

= 500'

N

EDR

INQUIRY #: 5634455.5

YEAR: 1938

= 500'

N

EDR

65-052-105-010-00
BRINDLEY JEFFREY/LAURIE
404 W HOUGHTON AVE
WEST BRANCH MI 48661

201 60

~~Mantoating Aaront~~
~~47 Court St.~~
~~West Branch 48661~~

Evelyn Smith

Map No.	Book No.	Page No.	Parcel Code No.

Property Address 404 W Houghton St. Ave.

Building or Alteration Permit	Date	Amount
		$

Revenue Stamp	Verified Sale Price
-663	80,000

LAND IMPROVEMENTS

	Dirt	X	Sidewalk	X	Gas
	Gravel	X	Water	X	Electric
X	Paved	X	Sewer		Fence
X	Curb				

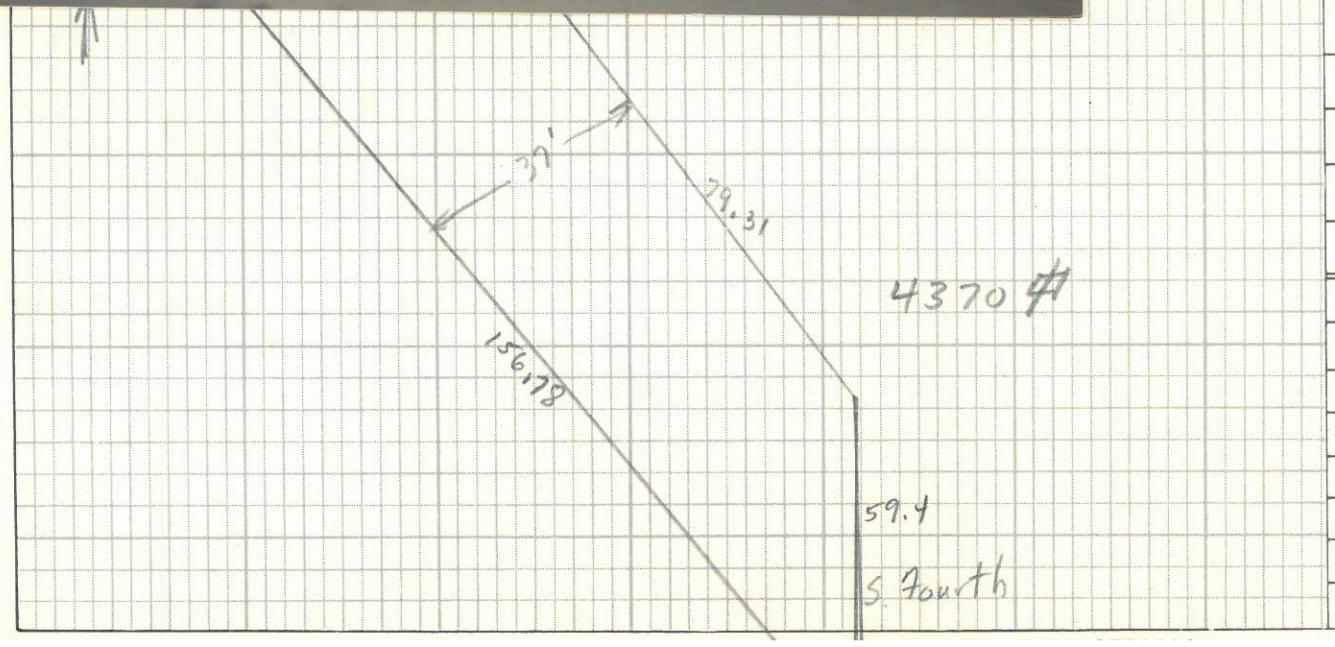
LAND VALUE COMPUTATIONS

Lot Size	Depth Factor	Equiv. Front	Rate	Base Value
48 x 118		46	~~$350~~	$ 16100

TOTAL LAND	$ 16100
TOTAL LAND IMPROVEMENTS	$ —
TOTAL BUILDING	$ 49600
TOTAL APPRAISED VALUE	$ 65700

Year	Assessed Valuation	Board of Review	Tax Commission
83	$ 32900	$	$
87	32,900		

Rx 41
10-3-16



Form L-4189

TYPE

Aggie's Cleaners

21. EXT. WALLS

X	CONC. BLOCK
	COMMON BRICK
	FACE BRICK
	BRICK/BLOCK
	SANDWICH PANEL
	REINF. CONC.
	PRECAST CONC. PANEL
	WINDOW CURTAIN
	SIDING

1950?

22. FOUNDATION WALL

	POST
X	CONCRETE
	BRICK
	CONC. BLOCK
	STONE
	PILING

23. PARAPET WALL

	REINF. CONC.
	COMMON BRICK
	FACE BRICK
	TRIM:

24. INT. FOUND

	PILING
	DRILLED CAISSONS
	REINF. CONC.

25. FRAMING

	WOOD FRAME
X	CONC. BLOCK
	BRICK
	STEEL/OPEN
	STEEL/FIREPROOF
	REINF. CONC.
	PRECAST CONC.
	PRE-ENGINEERED

26. SLAB ON GROUND

X	CONCRETE
	REINF. CONC.

27. STRUCTURAL FLOORS

X	WOOD
	STEEL AND CONC.
	METAL DECK
	CONC. BEAM & SLAB
	CONC. FLAT SLAB
	PRECAST CONC. SLAB

28. ROOF & DRAINAGE

	METAL DECK
	METAL DECK & CONC.
	REINF. CONC.
	CONC. PLANK
X	WOOD
	INSUL.
	ASPHALT SHINGLE
X	BUILT-UP T & G
	ASPHALT ROLL
	DOWNSPOUTS
	GUTTERS
	ROOF DRAINS
	BAR JOIST

29. FLOOR FINISH

	HARDWOOD
	SOFTWOOD
	LINOLEUM
	TERRAZZO
	CARPETING
	WOOD BLOCK
	CONC. HARDENER
X	TILE

30. CEILING FINISH

X	ACOUSTIC TILE
	GYPSUM BOARD
	PLASTER
	PAINT
	WOOD

31. PARTITIONS

	MASONRY
X	STUD FRAMING
	MOVABLE
	PLASTER
	DRYWALL
	FURRING
	MARBLE
	HARDBOARD
X	PAINT

32. PLUMBING

	NONE
	BATH
1	TILE FLOORS
	TILE WALLS
	SHOWER STALL
2	LAVATORY 2 PC.
	WATER CLOSET
	WASH BOWL
	URINALS
	WASHFOUNTAINS
	WATER HEATERS
	WATER SOFTENERS

33. HEATING & A.C.

	GAS
X	OIL
	ELECTRIC
1	STEAM-CENTRAL
✓	UNIT HEATERS
	FORCED WARM AIR
	WALL HEATERS
	AIR CONDITIONING

34. ELECTRICAL

	ROMEX
2	CONDUIT
X	FLUORESCENT
	INCANDESCENT
	MERCURY VAPOR
	BUS DUCT
	PANEL BOARDS
	DISTRIBUTION CEN.
	TRANSFORMERS

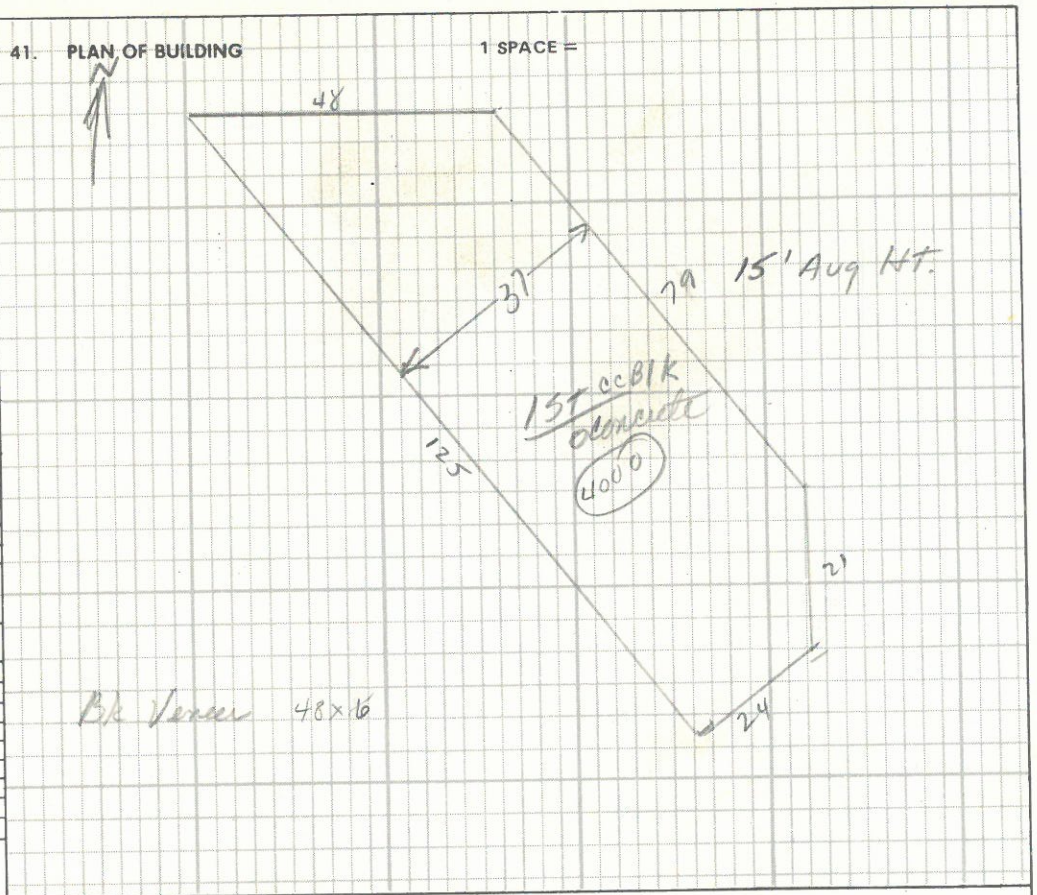
35. FIRE PROTECTION

	SPRINKLER SYSTEM
	CITY WATER SUPPLY
	PRIVATE SYSTEM

36. MISCELLANEOUS

	ELEVATORS
	ESCALATORS
	STAIRS
	LOADING DOCKS
	DOCK LEVELERS
	INCINERATORS
	CRANES

41. PLAN OF BUILDING 1 SPACE =

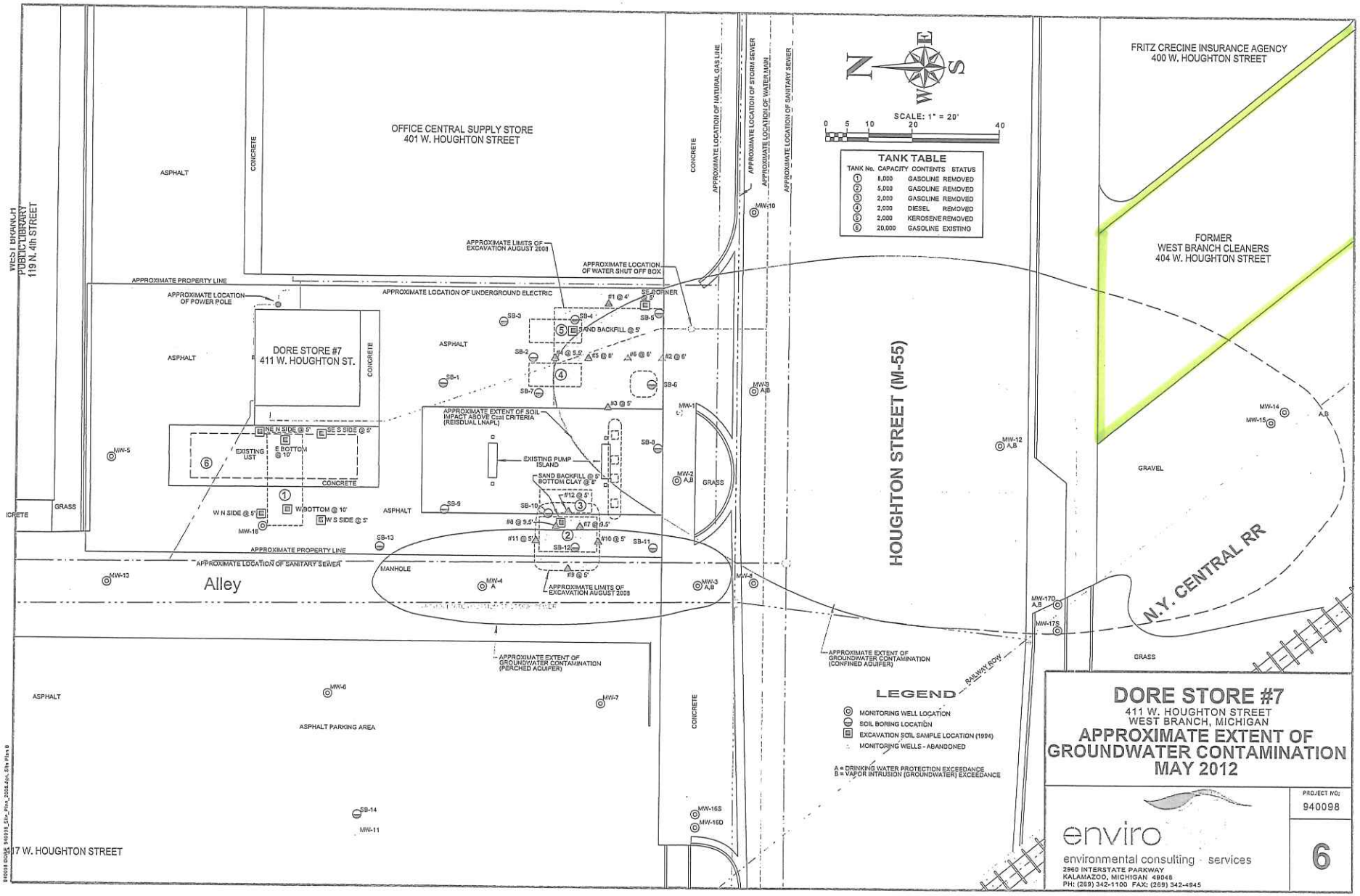


REMARKS: knotty pine panelling floors slightly unlevel

37. CONSTRUCTION			**40. PERCENT CONDITION**
	GOOD	X AVERAGE	PERSON INTERVIEWED
	POOR	CHEAP	
38. YEAR BUILT	old		EXAMINED BY RMG
39. YEAR REMODELED			DATE 10-26-82

BUILDING VALUE COMPUTATIONS

TYPE OF BUILDING	NO. STYS.	SQ. FT.	UNIT COST	BASE VALUE	ADDITIONS AND DEDUCTIONS ITEM	ADDITIONS AND DEDUCTIONS AMOUNT	REPRODUCTION COST NEW	PHYS. DEP. % COND.	REPRODUCTION COST DEP'D	ECONOMIC COND. %	COST MOD.	COMP. MULT.	TRUE CASH VALUE
	1	4000	$	$		$	$		$				$


OFFICE CENTRAL SUPPLY STORE
401 W. HOUGHTON STREET
FRITZ CRECINE INSURANCE AGENCY
400 W. HOUGHTON STREET
FORMER
WEST BRANCH CLEANERS
404 W. HOUGHTON STREET
DORE STORE #7
411 W. HOUGHTON ST.
WEST BRANCH PUBLIC LIBRARY
119 N. 4th STREET
HOUGHTON STREET (M-55)
N.Y. CENTRAL RR
Alley
ASPHALT
CONCRETE
GRASS
GRAVEL
ASPHALT PARKING AREA
MANHOLE
APPROXIMATE PROPERTY LINE
APPROXIMATE LOCATION OF POWER POLE
APPROXIMATE LOCATION OF UNDERGROUND ELECTRIC
APPROXIMATE LOCATION OF WATER SHUT OFF BOX
APPROXIMATE LOCATION OF NATURAL GAS LINE
APPROXIMATE LOCATION OF STORM SEWER
APPROXIMATE LOCATION OF WATER MAIN
APPROXIMATE LOCATION OF SANITARY SEWER
APPROXIMATE LOCATION OF SANITARY SEWER
APPROXIMATE LIMITS OF EXCAVATION AUGUST 2008
APPROXIMATE EXTENT OF SOIL IMPACT ABOVE Cssl CRITERIA (RESIDUAL LNAPL)
APPROXIMATE EXTENT OF GROUNDWATER CONTAMINATION (PERCHED AQUIFER)
APPROXIMATE EXTENT OF GROUNDWATER CONTAMINATION (CONFINED AQUIFER)
RAILWAY ROW
EXISTING UST
EXISTING PUMP ISLAND
SAND BACKFILL @ 5'
BOTTOM CLAY @ 5'
NE N SIDE @ 5'
SE S SIDE @ 5'
E BOTTOM @ 10'
W N SIDE @ 5'
W S SIDE @ 5'
W BOTTOM @ 10'
SE CORNER @ 5'
SB-1
SB-2
SB-3
SB-4
SB-5
SB-6
SB-7
SB-8
SB-9
SB-10
SB-11
SB-12
SB-13
SB-14
MW-1
MW-2 A,B
MW-3 A,B
MW-4 A
MW-5
MW-6
MW-7
MW-10
MW-11
MW-12 A,B
MW-13
MW-14 A,B
MW-15
MW-16S
MW-16D
MW-17D A,B
MW-17S
MW-18
#1 @ 4'
#2 @ 6'
#3 @ 5'
#4 @ 5.5'
#5 @ 5'
#6 @ 6'
#7 @ 6.5'
#8 @ 9.5'
#9 @ 6'
#10 @ 5'
#11 @ 5'
#12 @ 6'
0 5 10 20 40
SCALE: 1" = 20'
N E S W
TANK TABLE
TANK No. CAPACITY CONTENTS STATUS
1 8,000 GASOLINE REMOVED
2 5,000 GASOLINE REMOVED
3 2,000 GASOLINE REMOVED
4 2,000 DIESEL REMOVED
5 2,000 KEROSENE REMOVED
6 20,000 GASOLINE EXISTING
LEGEND
MONITORING WELL LOCATION
SOIL BORING LOCATION
EXCAVATION SOIL SAMPLE LOCATION (1994)
MONITORING WELLS - ABANDONED
A = DRINKING WATER PROTECTION EXCEEDANCE
B = VAPOR INTRUSION (GROUNDWATER) EXCEEDANCE
DORE STORE #7
411 W. HOUGHTON STREET
WEST BRANCH, MICHIGAN
APPROXIMATE EXTENT OF GROUNDWATER CONTAMINATION
MAY 2012
PROJECT NO: 940098
6
enviro
environmental consulting · services
2960 INTERSTATE PARKWAY
KALAMAZOO, MICHIGAN 49048
PH: (269) 342-1100 FAX: (269) 342-4945
940098 DORE 940098_Site_Plan_2012.dgn, Site Plan 6

TRI TERRA

ATTACHMENT 6

INTERVIEW DOCUMENTATION
(Not Available)

TRI TERRA

ATTACHMENT 7

PROFESSIONAL QUALIFICATIONS

RUTHIE DOERING
PROJECT GEOLOGIST

EDUCATION

BA Geology and English - 2013
Albion College, Albion, Michigan

AREAS OF EXPERTISE

- American Society for Testing Materials (ASTM) Phase I and Phase II Environmental Site Assessments (ESAs)
- Baseline Environmental Assessments (BEAs)
- Due Care Plans/Documentation of Due Care Compliance
- Soil, Groundwater, and Soil-Gas Data Evaluation for Due Care Obligations
- Response Activity Plans
- ASTM Vapor Encroachment Screening Standard, Soil-Gas and Vapor Sampling
- Borehole Logging, Soil Classification, and Soil & Groundwater Sampling
- Underground Storage Tank (UST) Removal and Site Assessment
- Part 201 & Part 213 Leaking Underground Storage Tank (LUST) Site Investigation & Remediation
- Hazardous Materials Assessments (Asbestos and Mold)

EXPERIENCE

Ms. Doering has more than 5 years of experience in environmental consulting with a primary focus on environmental due diligence services. She currently serves as a Project Geologist and oversees our Environmental Due Diligence Services. Her work focuses on accuracy in identifying, understanding, predicting, and reducing contamination that impacts the environment. Ms. Doering regularly conducts field assignments and data analysis as well as technical report preparation in support of due diligence processes associated with property transactions and Brownfield Projects. She maintains a good understanding of the regulatory requirements and considerations necessary for projects that include investigation, due care obligations and response activities, remediation, closure, and reporting.

Ms. Doering's responsibilities include preparing reports and conducting investigations at properties with existing or potential contamination present, managing and implementing field activities, and communicating with clients and subcontractors. Investigation activities involve site classification and soil, groundwater, and soil-gas sampling.

RUTHIE DOERING
PROJECT GEOLOGIST

NOTABLE PROJECT EXPERIENCE

- ASTM Phase I and Phase II ESAs including Michigan State Housing Development Authority (MSHDA) Review Requirements and Transaction Screens
- Management of Triterra's Environmental Due Diligence Services, which has included over 100 Phase I ESAs, 50 Phase II ESAs, 30 BEAs and Due Care Plans/DDCCs.
- Management and Preparation of Phase I & II ESAs, BEA, Due Care, and Soil-Gas/Vapor Assessments
- Management of UST Removal/Site Assessments
- Oversight/Completion of Investigation Activities at LUST Sites, including advancement of soil borings, installation of monitoring wells, collection of soil & groundwater samples, preparation of Initial Assessment and Final Assessment Reports, and implementation of an Oxygen-Releasing Compound Injection Remediation Plan
- Evaluation for Risk-Based Closures
- Geochemical Indicators of Natural Attenuation Processes
- Surveying and Groundwater Modeling

PROFESSIONAL REGISTRATIONS & CERTIFICATIONS

- Asbestos Building Inspector – Michigan A45110
- Hazardous Waste Operations & Emergency Response (HAZWOPER) Training

DIANA MAJOR
ENVIRONMENTAL SCIENTIST

EDUCATION

BS Fisheries and Wildlife/Conservation Biology– 2017
Michigan State University, East Lansing, Michigan

AS General Studies– 2010
Lansing Community College, Lansing, Michigan

AS Liberal Arts– 2011
Lansing Community College, Lansing, Michigan

AREAS OF EXPERTISE

- American Society for Testing Materials (ASTM) Phase I and Phase II Environmental Site Assessments (ESAs)
- ASTM Vapor Encroachment Screening Standard, Soil-Gas and Vapor Sampling
- Baseline Environmental Assessments (BEAs)
- Due Care Evaluations
- Borehole Logging, Soil Classification, and Soil & Groundwater Sampling

EXPERIENCE

Ms. Diana Major currently serves as an Environmental Scientist with Triterra. Her work focuses on Triterra's environmental due diligence and natural resources services. Ms. Major helps clients understand environmental risk associated with a property. Her responsibilities include conducting Phase I ESAs associated with property acquisitions and assisting in wetland and stormwater projects. Ms. Major also conducts field assignments, data analysis, and technical report preparation. She maintains a good understanding of regulatory requirements and considerations necessary for environmental due diligence projects.

NOTABLE PROJECT EXPERIENCE

- ASTM Phase I and Phase II ESAs
- Routine Assistance in Wetland Assessments
- Wetland Permit Application Consulting and Project Planning

TRI TERRA

ATTACHMENT 3

SOIL BORING LOGS

TRI TERRA
1375 S. Washington Avenue, Suite 300
Lansing, Michigan 48910
Telephone: 517.702.0470

BORING NUMBER B-1

CLIENT City of West Branch
PROJECT NAME Phase II ESA
PROJECT NUMBER 19-2122
PROJECT LOCATION 414 W. Houghton Avenue, West Branch, MI 48661
DATE STARTED 4/19/19 **COMPLETED** 4/19/19
GROUND ELEVATION _____ **HOLE SIZE** 4"
DRILLING CONTRACTOR Triterra
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
AT TIME OF DRILLING ---
LOGGED BY Greg Ross **CHECKED BY** Ruthie Doering
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE NUMBER	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	PID	WELL DIAGRAM
0				Concrete.		
1			SP	FILL: Fine sand with trace silt, damp, light brown.	<1	
2	GB 1-2'				2.3	
3					<1	
4			CL	CLAY: Sandy clay with trace silt,dark brown.	<1	
5					<1	
6						

Bottom of borehole at 6.0 feet.

TRITERRA BH WITH NO ELEVATION - PID.GDT - 5/15/19 10:35 - K:\1 - PROJECTS\19-2122 - MICHIGAN LAND BANK - 404 HOUGHTON, WEST BRANCH\FIELD NOTES - LOGS\BORING LOGS.GPJ

TRI TERRA
1375 S. Washington Avenue, Suite 300
Lansing, Michigan 48910
Telephone: 517.702.0470

BORING NUMBER B-2

CLIENT City of West Branch
PROJECT NAME Phase II ESA
PROJECT NUMBER 19-2122
PROJECT LOCATION 414 W. Houghton Avenue, West Branch, MI 48661
DATE STARTED 4/19/19 **COMPLETED** 4/19/19
GROUND ELEVATION _____ **HOLE SIZE** 4"
DRILLING CONTRACTOR Triterra
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
AT TIME OF DRILLING ---
LOGGED BY Greg Ross **CHECKED BY** Ruthie Doering
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE NUMBER	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	PID	WELL DIAGRAM
0				Concrete.		
			SP	FILL: Fine sand with trace silt, damp, light brown.		
1					<1	
2			CL	CLAY: Sandy clay with trace silt,dark brown.	2.7	
3					<1	
4					<1	
5					<1	
6						

Bottom of borehole at 6.0 feet.

TRITERRA BH WITH NO ELEVATION - PID.GDT - 5/15/19 10:35 - K:\1 - PROJECTS\19-2122 - MICHIGAN LAND BANK - 404 HOUGHTON, WEST BRANCH\FIELD NOTES - LOGS\BORING LOGS.GPJ

TRI TERRA
1375 S. Washington Avenue, Suite 300
Lansing, Michigan 48910
Telephone: 517.702.0470

BORING NUMBER B-3

CLIENT City of West Branch
PROJECT NAME Phase II ESA
PROJECT NUMBER 19-2122
PROJECT LOCATION 414 W. Houghton Avenue, West Branch, MI 48661
DATE STARTED 4/19/19 **COMPLETED** 4/19/19
GROUND ELEVATION _____ **HOLE SIZE** 4"
DRILLING CONTRACTOR Triterra
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
AT TIME OF DRILLING ---
LOGGED BY Greg Ross **CHECKED BY** Ruthie Doering
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE NUMBER	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	PID	WELL DIAGRAM
0				Concrete.		
1			SP	FILL: Fine sand with trace silt, damp, light brown.	2.0	
2						
3			CL	CLAY: Sandy clay with trace silt,dark brown. Refusal encountered at approximately 4'.		
4	GB 3.5-4'				3.2	
				Bottom of borehole at 4.0 feet.		

TRITERRA BH WITH NO ELEVATION - PID.GDT - 5/15/19 10:35 - K:\1 - PROJECTS\19-2122 - MICHIGAN LAND BANK - 404 HOUGHTON, WEST BRANCH\FIELD NOTES - LOGS\BORING LOGS.GPJ

TRI TERRA
1375 S. Washington Avenue, Suite 300
Lansing, Michigan 48910
Telephone: 517.702.0470

BORING NUMBER B-4

CLIENT City of West Branch
PROJECT NAME Phase II ESA
PROJECT NUMBER 19-2122
PROJECT LOCATION 414 W. Houghton Avenue, West Branch, MI 48661
DATE STARTED 4/19/19 **COMPLETED** 4/19/19
GROUND ELEVATION _____ **HOLE SIZE** 4"
DRILLING CONTRACTOR Triterra
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
AT TIME OF DRILLING ---
LOGGED BY Greg Ross **CHECKED BY** Ruthie Doering
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE NUMBER	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	PID	WELL DIAGRAM
0				Concrete.		
1			SP	FILL: Fine sand with trace silt, damp, light brown.		
2			CL	CLAY: Sandy clay with trace silt,dark brown.	<1	
3					5.1	
4						
5	GB 4-6'				17.6	
6						

Bottom of borehole at 6.0 feet.

TRITERRA BH WITH NO ELEVATION - PID.GDT - 5/15/19 10:35 - K:\1 - PROJECTS\19-2122 - MICHIGAN LAND BANK - 404 HOUGHTON, WEST BRANCH\FIELD NOTES - LOGS\BORING LOGS.GPJ

TRI TERRA
1375 S. Washington Avenue, Suite 300
Lansing, Michigan 48910
Telephone: 517.702.0470

BORING NUMBER B-5

CLIENT City of West Branch
PROJECT NAME Phase II ESA
PROJECT NUMBER 19-2122
PROJECT LOCATION 414 W. Houghton Avenue, West Branch, MI 48661
DATE STARTED 4/19/19 **COMPLETED** 4/19/19
GROUND ELEVATION _____ **HOLE SIZE** 4"
DRILLING CONTRACTOR Triterra
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
AT TIME OF DRILLING ---
LOGGED BY Greg Ross **CHECKED BY** Ruthie Doering
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE NUMBER	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	PID	WELL DIAGRAM
0				Concrete.		
1			SP	FILL: Fine sand with trace silt, damp, light brown.		
2			CL	CLAY: Sandy clay with trace silt,dark brown.	<1	
3					2.5	
4					<1	
5					<1	
6					<1	

Bottom of borehole at 6.0 feet.

TRITERRA BH WITH NO ELEVATION - PID.GDT - 5/15/19 10:35 - K:\1 - PROJECTS\19-2122 - MICHIGAN LAND BANK - 404 HOUGHTON, WEST BRANCH\FIELD NOTES - LOGS\BORING LOGS.GPJ

TRI TERRA
1375 S. Washington Avenue, Suite 300
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BORING NUMBER B-6

CLIENT City of West Branch
PROJECT NAME Phase II ESA
PROJECT NUMBER 19-2122
PROJECT LOCATION 414 W. Houghton Avenue, West Branch, MI 48661
DATE STARTED 4/19/19 **COMPLETED** 4/19/19
GROUND ELEVATION _____ **HOLE SIZE** 4"
DRILLING CONTRACTOR Triterra
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
AT TIME OF DRILLING ---
LOGGED BY Greg Ross **CHECKED BY** Ruthie Doering
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE NUMBER	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	PID	WELL DIAGRAM
0				Concrete.		
1			SP	FILL: Fine sand with trace silt, damp, light brown.	<1	
2						
3	GB 2-4'		CL	CLAY: Sandy clay with trace silt,dark brown.	16.8	
4						
				Bottom of borehole at 4.0 feet.		

TRITERRA BH WITH NO ELEVATION - PID.GDT - 5/15/19 10:35 - K:\1 - PROJECTS\19-2122 - MICHIGAN LAND BANK - 404 HOUGHTON, WEST BRANCH\FIELD NOTES - LOGS\BORING LOGS.GPJ

TRI TERRA

ATTACHMENT 4

LABORATORY ANALYTICAL REPORT

Analytical Laboratory Report

Report ID: S01171.01(01)
Generated on 04/30/2019

Report to

Attention: JP Buckingham
TriTerra
1375 S. Washington Ave
Suite 300
Lansing MI 48906

Phone: 517-853-2151 FAX: 517-702-0477
Email: jp.buckingham@triterra.us

Addtional Contacts: Brad Buswell

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S01171.01-S01171.06
Project: 19-2122 / 404 W. Houghton
Collected Date: 04/19/2019
Submitted Date/Time: 04/23/2019 15:00
Sampled by: Greg Ross
P.O. #:

Table of Contents

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Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.
Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

Report Narrative

There is no additional narrative for this analytical report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
N/A	Not Applicable
SM2540B	Standard Method 2540 B 2011
SW3015A	SW 846 Method 3015A Revision 1 February 2007
SW3050B	SW 846 Method 3050B Revision 2 December 1996
SW3510C	SW 846 Method 3510C Revision 3 December 1996
SW3546	SW 846 Method 3546 Revision 0 February 2007
SW5030C/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5030C Revision 3 May 2003
SW5035A/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5035A Revision 1 July 2002
SW6020A	SW 846 Method 6020A Revision 1 February 2007
SW7471B	SW 846 Method 7471B Revision 2 February 2007
SW8270D	SW 846 Method 8270D Revision 4 February 2007

Sample Summary (6 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S01171.01	B1 1'-2'	Soil	04/19/19 11:20
S01171.02	B3 3.5'-4'	Soil	04/19/19 12:30
S01171.03	B4 4'-6'	Soil	04/19/19 13:16
S01171.04	B6 2'-4'	Soil	04/19/19 13:57
S01171.05	MW14	Groundwater	04/19/19 14:22
S01171.06	MW15	Groundwater	04/19/19 14:50

Lab Sample ID: S01171.01
Sample Tag: B1 1'-2'
Collected Date/Time: 04/19/2019 11:20
Matrix: Soil
COC Reference: 117420

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.3	IR
1	40ml Glass	MeOH	Yes	4.3	IR

Inorganics

Method: SM2540B, Run Date: 04/24/19 09:30, Analyst: JBL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	93	1	1	%	1		

Organics - Volatiles

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 04/25/19 16:05, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	200		ug/kg	53.3	60-29-7	
Acetone	Not detected	1,000		ug/kg	53.3	67-64-1	
Methyl iodide	Not detected	100		ug/kg	53.3	74-88-4	
Carbon disulfide	Not detected	300		ug/kg	53.3	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	200		ug/kg	53.3	1634-04-4	
Acrylonitrile	Not detected	100		ug/kg	53.3	107-13-1	
2-Butanone (MEK)	Not detected	800		ug/kg	53.3	78-93-3	
Dichlorodifluoromethane	Not detected	300		ug/kg	53.3	75-71-8	
Chloromethane	Not detected	300		ug/kg	53.3	74-87-3	
Vinyl chloride	Not detected	50		ug/kg	53.3	75-01-4	
Bromomethane	Not detected	200		ug/kg	53.3	74-83-9	
Chloroethane	Not detected	300		ug/kg	53.3	75-00-3	
Trichlorofluoromethane	Not detected	100		ug/kg	53.3	75-69-4	
1,1-Dichloroethene	Not detected	50		ug/kg	53.3	75-35-4	
Methylene chloride	Not detected	100		ug/kg	53.3	75-09-2	
trans-1,2-Dichloroethene	Not detected	50		ug/kg	53.3	156-60-5	
1,1-Dichloroethane	Not detected	50		ug/kg	53.3	75-34-3	
cis-1,2-Dichloroethene	Not detected	50		ug/kg	53.3	156-59-2	
Tetrahydrofuran*	Not detected	1,000		ug/kg	53.3	109-99-9	
Chloroform	Not detected	50		ug/kg	53.3	67-66-3	
Bromochloromethane	Not detected	100		ug/kg	53.3	74-97-5	
1,1,1-Trichloroethane	Not detected	50		ug/kg	53.3	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	3,000		ug/kg	53.3	108-10-1	
2-Hexanone	Not detected	3,000		ug/kg	53.3	591-78-6	
Carbon tetrachloride	Not detected	50		ug/kg	53.3	56-23-5	
Benzene	Not detected	50		ug/kg	53.3	71-43-2	
1,2-Dichloroethane	Not detected	50		ug/kg	53.3	107-06-2	
Trichloroethene	Not detected	50		ug/kg	53.3	79-01-6	
1,2-Dichloropropane	Not detected	50		ug/kg	53.3	78-87-5	
Bromodichloromethane	Not detected	100		ug/kg	53.3	75-27-4	
Dibromomethane	Not detected	300		ug/kg	53.3	74-95-3	
cis-1,3-Dichloropropene	Not detected	50		ug/kg	53.3	10061-01-5	
Toluene	Not detected	50		ug/kg	53.3	108-88-3	
trans-1,3-Dichloropropene	Not detected	50		ug/kg	53.3	10061-02-6	
1,1,2-Trichloroethane	Not detected	50		ug/kg	53.3	79-00-5	

Lab Sample ID: S01171.01 (continued)
Sample Tag: B1 1'-2'

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 04/25/19 16:05, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Tetrachloroethene	Not detected	50		ug/kg	53.3	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	50		ug/kg	53.3	110-57-6	
Dibromochloromethane	Not detected	100		ug/kg	53.3	124-48-1	
1,2-Dibromoethane	Not detected	20		ug/kg	53.3	106-93-4	M
Chlorobenzene	Not detected	50		ug/kg	53.3	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	100		ug/kg	53.3	630-20-6	
Ethylbenzene	Not detected	50		ug/kg	53.3	100-41-4	
p,m-Xylene	Not detected	100		ug/kg	53.3		
o-Xylene	Not detected	50		ug/kg	53.3	95-47-6	
Styrene	Not detected	50		ug/kg	53.3	100-42-5	
Isopropylbenzene	Not detected	300		ug/kg	53.3	98-82-8	
Bromoform	Not detected	100		ug/kg	53.3	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	50		ug/kg	53.3	79-34-5	
1,2,3-Trichloropropane	Not detected	100		ug/kg	53.3	96-18-4	
n-Propylbenzene	Not detected	50		ug/kg	53.3	103-65-1	
Bromobenzene	Not detected	100		ug/kg	53.3	108-86-1	
1,3,5-Trimethylbenzene	Not detected	50		ug/kg	53.3	108-67-8	
tert-Butylbenzene	Not detected	50		ug/kg	53.3	98-06-6	
1,2,4-Trimethylbenzene	Not detected	50		ug/kg	53.3	95-63-6	
sec-Butylbenzene	Not detected	50		ug/kg	53.3	135-98-8	
p-Isopropyltoluene	Not detected	100		ug/kg	53.3	99-87-6	
1,3-Dichlorobenzene	Not detected	100		ug/kg	53.3	541-73-1	
1,4-Dichlorobenzene	Not detected	100		ug/kg	53.3	106-46-7	
1,2-Dichlorobenzene	Not detected	100		ug/kg	53.3	95-50-1	
1,2,3-Trimethylbenzene	Not detected	50		ug/kg	53.3	526-73-8	
n-Butylbenzene	Not detected	50		ug/kg	53.3	104-51-8	
Hexachloroethane	Not detected	300		ug/kg	53.3	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	300		ug/kg	53.3	96-12-8	
1,2,4-Trichlorobenzene	Not detected	350		ug/kg	53.3	120-82-1	
1,2,3-Trichlorobenzene	Not detected	350		ug/kg	53.3	87-61-6	
Naphthalene	Not detected	300		ug/kg	53.3	91-20-3	
2-Methylnaphthalene	Not detected	100		ug/kg	53.3	91-57-6	

M-Result reported to MDL not RDL

Lab Sample ID: S01171.02
Sample Tag: B3 3.5'-4'
Collected Date/Time: 04/19/2019 12:30
Matrix: Soil
COC Reference: 117420

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.3	IR
1	40ml Glass	MeOH	Yes	4.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	04/25/19 12:05	JRH	
Mercury Digestion	Completed	SW7471B	04/25/19 10:00	JRH	

Inorganics

Method: SM2540B, Run Date: 04/24/19 09:30, Analyst: JBL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	85	1	1	%	1		

Metals

Method: SW6020A, Run Date: 04/25/19 16:22, Analyst: JRH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	1,810	200		ug/kg	244	7440-38-2	
Barium	31,300	1,000		ug/kg	244	7440-39-3	
Cadmium	240	200		ug/kg	244	7440-43-9	
Chromium	2,860	500		ug/kg	244	7440-47-3	
Copper	9,320	500		ug/kg	244	7440-50-8	
Lead	12,000	300		ug/kg	244	7439-92-1	
Selenium	480	400		ug/kg	244	7782-49-2	
Silver	Not detected	200		ug/kg	244	7440-22-4	
Zinc	22,600	500		ug/kg	244	7440-66-6	

Method: SW7471B, Run Date: 04/25/19 14:22, Analyst: JRH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	71	50		ug/kg	65	7439-97-6	

Organics - Volatiles

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 04/25/19 16:23, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	300		ug/kg	65.2	60-29-7	
Acetone	Not detected	1,000		ug/kg	65.2	67-64-1	
Methyl iodide	Not detected	100		ug/kg	65.2	74-88-4	
Carbon disulfide	Not detected	300		ug/kg	65.2	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	300		ug/kg	65.2	1634-04-4	
Acrylonitrile	Not detected	100		ug/kg	65.2	107-13-1	
2-Butanone (MEK)	Not detected	980		ug/kg	65.2	78-93-3	
Dichlorodifluoromethane	Not detected	300		ug/kg	65.2	75-71-8	
Chloromethane	Not detected	300		ug/kg	65.2	74-87-3	
Vinyl chloride	Not detected	70		ug/kg	65.2	75-01-4	
Bromomethane	Not detected	300		ug/kg	65.2	74-83-9	
Chloroethane	Not detected	300		ug/kg	65.2	75-00-3	
Trichlorofluoromethane	Not detected	100		ug/kg	65.2	75-69-4	

Lab Sample ID: S01171.02 (continued)
Sample Tag: B3 3.5'-4'

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 04/25/19 16:23, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1-Dichloroethene	Not detected	70		ug/kg	65.2	75-35-4	
Methylene chloride	Not detected	100		ug/kg	65.2	75-09-2	
trans-1,2-Dichloroethene	Not detected	70		ug/kg	65.2	156-60-5	
1,1-Dichloroethane	Not detected	70		ug/kg	65.2	75-34-3	
cis-1,2-Dichloroethene	Not detected	70		ug/kg	65.2	156-59-2	
Tetrahydrofuran*	Not detected	1,000		ug/kg	65.2	109-99-9	
Chloroform	Not detected	70		ug/kg	65.2	67-66-3	
Bromochloromethane	Not detected	100		ug/kg	65.2	74-97-5	
1,1,1-Trichloroethane	Not detected	70		ug/kg	65.2	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	3,000		ug/kg	65.2	108-10-1	
2-Hexanone	Not detected	3,000		ug/kg	65.2	591-78-6	
Carbon tetrachloride	Not detected	70		ug/kg	65.2	56-23-5	
Benzene	Not detected	70		ug/kg	65.2	71-43-2	
1,2-Dichloroethane	Not detected	70		ug/kg	65.2	107-06-2	
Trichloroethene	Not detected	70		ug/kg	65.2	79-01-6	
1,2-Dichloropropane	Not detected	70		ug/kg	65.2	78-87-5	
Bromodichloromethane	Not detected	100		ug/kg	65.2	75-27-4	
Dibromomethane	Not detected	300		ug/kg	65.2	74-95-3	
cis-1,3-Dichloropropene	Not detected	70		ug/kg	65.2	10061-01-5	
Toluene	Not detected	70		ug/kg	65.2	108-88-3	
trans-1,3-Dichloropropene	Not detected	70		ug/kg	65.2	10061-02-6	
1,1,2-Trichloroethane	Not detected	70		ug/kg	65.2	79-00-5	
Tetrachloroethene	8,010	70		ug/kg	65.2	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	70		ug/kg	65.2	110-57-6	
Dibromochloromethane	Not detected	100		ug/kg	65.2	124-48-1	
1,2-Dibromoethane	Not detected	30		ug/kg	65.2	106-93-4	M
Chlorobenzene	Not detected	70		ug/kg	65.2	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	100		ug/kg	65.2	630-20-6	
Ethylbenzene	Not detected	70		ug/kg	65.2	100-41-4	
p,m-Xylene	Not detected	100		ug/kg	65.2		
o-Xylene	Not detected	70		ug/kg	65.2	95-47-6	
Styrene	Not detected	70		ug/kg	65.2	100-42-5	
Isopropylbenzene	Not detected	300		ug/kg	65.2	98-82-8	
Bromoform	Not detected	100		ug/kg	65.2	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	70		ug/kg	65.2	79-34-5	
1,2,3-Trichloropropane	Not detected	100		ug/kg	65.2	96-18-4	
n-Propylbenzene	Not detected	70		ug/kg	65.2	103-65-1	
Bromobenzene	Not detected	100		ug/kg	65.2	108-86-1	
1,3,5-Trimethylbenzene	Not detected	70		ug/kg	65.2	108-67-8	
tert-Butylbenzene	Not detected	70		ug/kg	65.2	98-06-6	
1,2,4-Trimethylbenzene	Not detected	70		ug/kg	65.2	95-63-6	
sec-Butylbenzene	Not detected	70		ug/kg	65.2	135-98-8	
p-Isopropyltoluene	Not detected	100		ug/kg	65.2	99-87-6	
1,3-Dichlorobenzene	Not detected	100		ug/kg	65.2	541-73-1	
1,4-Dichlorobenzene	Not detected	100		ug/kg	65.2	106-46-7	
1,2-Dichlorobenzene	Not detected	100		ug/kg	65.2	95-50-1	
1,2,3-Trimethylbenzene	Not detected	70		ug/kg	65.2	526-73-8	
n-Butylbenzene	Not detected	70		ug/kg	65.2	104-51-8	
Hexachloroethane	Not detected	400		ug/kg	65.2	67-72-1	

M-Result reported to MDL not RDL

Lab Sample ID: S01171.02 (continued)
Sample Tag: B3 3.5'-4'

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 04/25/19 16:23, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane	Not detected	300		ug/kg	65.2	96-12-8	
1,2,4-Trichlorobenzene	Not detected	430		ug/kg	65.2	120-82-1	
1,2,3-Trichlorobenzene	Not detected	430		ug/kg	65.2	87-61-6	
Naphthalene	Not detected	300		ug/kg	65.2	91-20-3	
2-Methylnaphthalene	Not detected	100		ug/kg	65.2	91-57-6	

Lab Sample ID: S01171.03
Sample Tag: B4 4'-6'
Collected Date/Time: 04/19/2019 13:16
Matrix: Soil
COC Reference: 117420

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.3	IR
1	40ml Glass	MeOH	Yes	4.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
PNA Extraction*	Completed	SW3546	04/25/19 16:46	ANW	

Inorganics

Method: SM2540B, Run Date: 04/24/19 09:30, Analyst: JBL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	86	1	1	%	1		

Organics - Semi-Volatiles

Polynuclear Aromatics, Method: SW8270D, Run Date: 04/27/19 02:39, Analyst: PL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acenaphthene	Not detected	300		ug/kg	10	83-32-9	
Acenaphthylene	Not detected	300		ug/kg	10	208-96-8	
Anthracene	Not detected	300		ug/kg	10	120-12-7	
Benzo(a)anthracene	Not detected	300		ug/kg	10	56-55-3	
Benzo(a)pyrene	Not detected	300		ug/kg	10	50-32-8	
Benzo(b)fluoranthene	Not detected	300		ug/kg	10	205-99-2	
Benzo(k)fluoranthene	Not detected	300		ug/kg	10	207-08-9	
Benzo(ghi)perylene	Not detected	300		ug/kg	10	191-24-2	
Chrysene	Not detected	300		ug/kg	10	218-01-9	
Dibenzo(ah)anthracene	Not detected	300		ug/kg	10	53-70-3	
Fluoranthene	Not detected	300		ug/kg	10	206-44-0	
Fluorene	Not detected	300		ug/kg	10	86-73-7	
Indeno(1,2,3-cd)pyrene	Not detected	300		ug/kg	10	193-39-5	
Naphthalene	Not detected	300		ug/kg	10	91-20-3	
Phenanthrene	Not detected	300		ug/kg	10	85-01-8	
Pyrene	Not detected	300		ug/kg	10	129-00-0	
2-Methylnaphthalene	Not detected	300		ug/kg	10	91-57-6	
1-Methylnaphthalene	Not detected	300		ug/kg	10	90-12-0	

Organics - Volatiles

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 04/30/19 14:16, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	2,000		ug/kg	612	60-29-7	Y
Acetone	Not detected	10,000		ug/kg	612	67-64-1	Y
Methyl iodide	Not detected	1,000		ug/kg	612	74-88-4	Y
Carbon disulfide	Not detected	3,000		ug/kg	612	75-15-0	Y
tert-Methyl butyl ether (MTBE)	Not detected	2,000		ug/kg	612	1634-04-4	Y
Acrylonitrile	Not detected	1,000		ug/kg	612	107-13-1	Y
2-Butanone (MEK)	Not detected	9,200		ug/kg	612	78-93-3	Y
Dichlorodifluoromethane	Not detected	3,000		ug/kg	612	75-71-8	Y

Y-Elevated reporting limit due to high target concentration

Lab Sample ID: S01171.03 (continued)
Sample Tag: B4 4'-6'

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 04/30/19 14:16, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloromethane	Not detected	3,000		ug/kg	612	74-87-3	Y
Vinyl chloride	Not detected	600		ug/kg	612	75-01-4	Y
Bromomethane	Not detected	2,000		ug/kg	612	74-83-9	Y
Chloroethane	Not detected	3,000		ug/kg	612	75-00-3	Y
Trichlorofluoromethane	Not detected	1,000		ug/kg	612	75-69-4	Y
1,1-Dichloroethene	Not detected	600		ug/kg	612	75-35-4	Y
Methylene chloride	Not detected	1,000		ug/kg	612	75-09-2	Y
trans-1,2-Dichloroethene	Not detected	600		ug/kg	612	156-60-5	Y
1,1-Dichloroethane	Not detected	600		ug/kg	612	75-34-3	Y
cis-1,2-Dichloroethene	Not detected	600		ug/kg	612	156-59-2	Y
Tetrahydrofuran*	Not detected	10,000		ug/kg	612	109-99-9	Y
Chloroform	Not detected	600		ug/kg	612	67-66-3	Y
Bromochloromethane	Not detected	1,000		ug/kg	612	74-97-5	Y
1,1,1-Trichloroethane	Not detected	600		ug/kg	612	71-55-6	Y
4-Methyl-2-pentanone (MIBK)	Not detected	30,000		ug/kg	612	108-10-1	Y
2-Hexanone	Not detected	30,000		ug/kg	612	591-78-6	Y
Carbon tetrachloride	Not detected	600		ug/kg	612	56-23-5	Y
Benzene	Not detected	600		ug/kg	612	71-43-2	Y
1,2-Dichloroethane	Not detected	600		ug/kg	612	107-06-2	Y
Trichloroethene	Not detected	600		ug/kg	612	79-01-6	Y
1,2-Dichloropropane	Not detected	600		ug/kg	612	78-87-5	Y
Bromodichloromethane	Not detected	1,000		ug/kg	612	75-27-4	Y
Dibromomethane	Not detected	3,000		ug/kg	612	74-95-3	Y
cis-1,3-Dichloropropene	Not detected	600		ug/kg	612	10061-01-5	Y
Toluene	Not detected	600		ug/kg	612	108-88-3	Y
trans-1,3-Dichloropropene	Not detected	600		ug/kg	612	10061-02-6	Y
1,1,2-Trichloroethane	Not detected	600		ug/kg	612	79-00-5	Y
Tetrachloroethene	31,800	600		ug/kg	612	127-18-4	Y
trans-1,4-Dichloro-2-butene	Not detected	600		ug/kg	612	110-57-6	Y
Dibromochloromethane	Not detected	1,000		ug/kg	612	124-48-1	Y
1,2-Dibromoethane	Not detected	200		ug/kg	612	106-93-4	YM
Chlorobenzene	Not detected	600		ug/kg	612	108-90-7	Y
1,1,1,2-Tetrachloroethane	Not detected	1,000		ug/kg	612	630-20-6	Y
Ethylbenzene	Not detected	600		ug/kg	612	100-41-4	Y
p,m-Xylene	Not detected	1,000		ug/kg	612		Y
o-Xylene	Not detected	600		ug/kg	612	95-47-6	Y
Styrene	Not detected	600		ug/kg	612	100-42-5	Y
Isopropylbenzene	Not detected	3,000		ug/kg	612	98-82-8	Y
Bromoform	Not detected	1,000		ug/kg	612	75-25-2	Y
1,1,2,2-Tetrachloroethane	Not detected	600		ug/kg	612	79-34-5	Y
1,2,3-Trichloropropane	Not detected	1,000		ug/kg	612	96-18-4	Y
n-Propylbenzene	Not detected	600		ug/kg	612	103-65-1	Y
Bromobenzene	Not detected	1,000		ug/kg	612	108-86-1	Y
1,3,5-Trimethylbenzene	Not detected	600		ug/kg	612	108-67-8	Y
tert-Butylbenzene	Not detected	600		ug/kg	612	98-06-6	Y
1,2,4-Trimethylbenzene	Not detected	600		ug/kg	612	95-63-6	Y
sec-Butylbenzene	Not detected	600		ug/kg	612	135-98-8	Y
p-Isopropyltoluene	Not detected	1,000		ug/kg	612	99-87-6	Y

Y-Elevated reporting limit due to high target concentration
M-Result reported to MDL not RDL

Lab Sample ID: S01171.03 (continued)
Sample Tag: B4 4'-6'

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 04/30/19 14:16, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,3-Dichlorobenzene	Not detected	1,000		ug/kg	612	541-73-1	Y
1,4-Dichlorobenzene	Not detected	1,000		ug/kg	612	106-46-7	Y
1,2-Dichlorobenzene	Not detected	1,000		ug/kg	612	95-50-1	Y
1,2,3-Trimethylbenzene	Not detected	600		ug/kg	612	526-73-8	Y
n-Butylbenzene	Not detected	600		ug/kg	612	104-51-8	Y
Hexachloroethane	Not detected	4,000		ug/kg	612	67-72-1	Y
1,2-Dibromo-3-chloropropane	Not detected	3,000		ug/kg	612	96-12-8	Y
1,2,4-Trichlorobenzene	Not detected	4,000		ug/kg	612	120-82-1	Y
1,2,3-Trichlorobenzene	Not detected	4,000		ug/kg	612	87-61-6	Y
Naphthalene	Not detected	3,000		ug/kg	612	91-20-3	Y
2-Methylnaphthalene	Not detected	1,000		ug/kg	612	91-57-6	Y

Y-Elevated reporting limit due to high target concentration

Lab Sample ID: S01171.04
Sample Tag: B6 2'-4'
Collected Date/Time: 04/19/2019 13:57
Matrix: Soil
COC Reference: 117420

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.3	IR
1	40ml Glass	MeOH	Yes	4.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	04/25/19 12:05	JRH	
PNA Extraction*	Completed	SW3546	04/25/19 16:46	ANW	
Mercury Digestion	Completed	SW7471B	04/25/19 10:00	JRH	

Inorganics

Method: SM2540B, Run Date: 04/24/19 09:30, Analyst: JBL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	86	1	1	%	1		

Metals

Method: SW6020A, Run Date: 04/25/19 16:23, Analyst: JRH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	2,630	200		ug/kg	241	7440-38-2	
Barium	26,300	1,000		ug/kg	241	7440-39-3	
Cadmium	Not detected	200		ug/kg	241	7440-43-9	
Chromium	3,210	500		ug/kg	241	7440-47-3	
Copper	9,280	500		ug/kg	241	7440-50-8	
Lead	6,590	300		ug/kg	241	7439-92-1	
Selenium	530	400		ug/kg	241	7782-49-2	
Silver	Not detected	200		ug/kg	241	7440-22-4	
Zinc	15,400	500		ug/kg	241	7440-66-6	

Method: SW7471B, Run Date: 04/25/19 14:24, Analyst: JRH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	50		ug/kg	64	7439-97-6	

Organics - Semi-Volatiles

Polynuclear Aromatics, Method: SW8270D, Run Date: 04/27/19 02:57, Analyst: PL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acenaphthene	Not detected	300		ug/kg	10	83-32-9	
Acenaphthylene	Not detected	300		ug/kg	10	208-96-8	
Anthracene	Not detected	300		ug/kg	10	120-12-7	
Benzo(a)anthracene	Not detected	300		ug/kg	10	56-55-3	
Benzo(a)pyrene	Not detected	300		ug/kg	10	50-32-8	
Benzo(b)fluoranthene	Not detected	300		ug/kg	10	205-99-2	
Benzo(k)fluoranthene	Not detected	300		ug/kg	10	207-08-9	
Benzo(ghi)perylene	Not detected	300		ug/kg	10	191-24-2	
Chrysene	Not detected	300		ug/kg	10	218-01-9	
Dibenzo(ah)anthracene	Not detected	300		ug/kg	10	53-70-3	
Fluoranthene	Not detected	300		ug/kg	10	206-44-0	
Fluorene	Not detected	300		ug/kg	10	86-73-7	

Lab Sample ID: S01171.04 (continued)
Sample Tag: B6 2'-4'

Polynuclear Aromatics, Method: SW8270D, Run Date: 04/27/19 02:57, Analyst: PL (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Indeno(1,2,3-cd)pyrene	Not detected	300		ug/kg	10	193-39-5	
Naphthalene	Not detected	300		ug/kg	10	91-20-3	
Phenanthrene	Not detected	300		ug/kg	10	85-01-8	
Pyrene	Not detected	300		ug/kg	10	129-00-0	
2-Methylnaphthalene	Not detected	300		ug/kg	10	91-57-6	
1-Methylnaphthalene	Not detected	300		ug/kg	10	90-12-0	

Organics - Volatiles

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 04/27/19 03:42, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	3,000		ug/kg	662	60-29-7	Y
Acetone	Not detected	10,000		ug/kg	662	67-64-1	Y
Methyl iodide	Not detected	1,000		ug/kg	662	74-88-4	Y
Carbon disulfide	Not detected	3,000		ug/kg	662	75-15-0	Y
tert-Methyl butyl ether (MTBE)	Not detected	3,000		ug/kg	662	1634-04-4	Y
Acrylonitrile	Not detected	1,000		ug/kg	662	107-13-1	Y
2-Butanone (MEK)	Not detected	9,900		ug/kg	662	78-93-3	Y
Dichlorodifluoromethane	Not detected	3,000		ug/kg	662	75-71-8	Y
Chloromethane	Not detected	3,000		ug/kg	662	74-87-3	Y
Vinyl chloride	Not detected	700		ug/kg	662	75-01-4	Y
Bromomethane	Not detected	3,000		ug/kg	662	74-83-9	Y
Chloroethane	Not detected	3,000		ug/kg	662	75-00-3	Y
Trichlorofluoromethane	Not detected	1,000		ug/kg	662	75-69-4	Y
1,1-Dichloroethene	Not detected	700		ug/kg	662	75-35-4	Y
Methylene chloride	Not detected	1,000		ug/kg	662	75-09-2	Y
trans-1,2-Dichloroethene	Not detected	700		ug/kg	662	156-60-5	Y
1,1-Dichloroethane	Not detected	700		ug/kg	662	75-34-3	Y
cis-1,2-Dichloroethene	Not detected	700		ug/kg	662	156-59-2	Y
Tetrahydrofuran*	Not detected	10,000		ug/kg	662	109-99-9	Y
Chloroform	Not detected	700		ug/kg	662	67-66-3	Y
Bromochloromethane	Not detected	1,000		ug/kg	662	74-97-5	Y
1,1,1-Trichloroethane	Not detected	700		ug/kg	662	71-55-6	Y
4-Methyl-2-pentanone (MIBK)	Not detected	30,000		ug/kg	662	108-10-1	Y
2-Hexanone	Not detected	30,000		ug/kg	662	591-78-6	Y
Carbon tetrachloride	Not detected	700		ug/kg	662	56-23-5	Y
Benzene	Not detected	700		ug/kg	662	71-43-2	Y
1,2-Dichloroethane	Not detected	700		ug/kg	662	107-06-2	Y
Trichloroethene	Not detected	700		ug/kg	662	79-01-6	Y
1,2-Dichloropropane	Not detected	700		ug/kg	662	78-87-5	Y
Bromodichloromethane	Not detected	1,000		ug/kg	662	75-27-4	Y
Dibromomethane	Not detected	3,000		ug/kg	662	74-95-3	Y
cis-1,3-Dichloropropene	Not detected	700		ug/kg	662	10061-01-5	Y
Toluene	Not detected	700		ug/kg	662	108-88-3	Y
trans-1,3-Dichloropropene	Not detected	700		ug/kg	662	10061-02-6	Y
1,1,2-Trichloroethane	Not detected	700		ug/kg	662	79-00-5	Y
Tetrachloroethene	30,800	700		ug/kg	662	127-18-4	Y
trans-1,4-Dichloro-2-butene	Not detected	700		ug/kg	662	110-57-6	Y
Dibromochloromethane	Not detected	1,000		ug/kg	662	124-48-1	Y
1,2-Dibromoethane	Not detected	300		ug/kg	662	106-93-4	YM

Y-Elevated reporting limit due to high target concentration
M-Result reported to MDL not RDL

Lab Sample ID: S01171.04 (continued)
Sample Tag: B6 2'-4'

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 04/27/19 03:42, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chlorobenzene	Not detected	700		ug/kg	662	108-90-7	Y
1,1,1,2-Tetrachloroethane	Not detected	1,000		ug/kg	662	630-20-6	Y
Ethylbenzene	Not detected	700		ug/kg	662	100-41-4	Y
p,m-Xylene	Not detected	1,000		ug/kg	662		Y
o-Xylene	Not detected	700		ug/kg	662	95-47-6	Y
Styrene	Not detected	700		ug/kg	662	100-42-5	Y
Isopropylbenzene	Not detected	3,000		ug/kg	662	98-82-8	Y
Bromoform	Not detected	1,000		ug/kg	662	75-25-2	Y
1,1,2,2-Tetrachloroethane	Not detected	700		ug/kg	662	79-34-5	Y
1,2,3-Trichloropropane	Not detected	1,000		ug/kg	662	96-18-4	Y
n-Propylbenzene	Not detected	700		ug/kg	662	103-65-1	Y
Bromobenzene	Not detected	1,000		ug/kg	662	108-86-1	Y
1,3,5-Trimethylbenzene	Not detected	700		ug/kg	662	108-67-8	Y
tert-Butylbenzene	Not detected	700		ug/kg	662	98-06-6	Y
1,2,4-Trimethylbenzene	Not detected	700		ug/kg	662	95-63-6	Y
sec-Butylbenzene	Not detected	700		ug/kg	662	135-98-8	Y
p-Isopropyltoluene	Not detected	1,000		ug/kg	662	99-87-6	Y
1,3-Dichlorobenzene	Not detected	1,000		ug/kg	662	541-73-1	Y
1,4-Dichlorobenzene	Not detected	1,000		ug/kg	662	106-46-7	Y
1,2-Dichlorobenzene	Not detected	1,000		ug/kg	662	95-50-1	Y
1,2,3-Trimethylbenzene	Not detected	700		ug/kg	662	526-73-8	Y
n-Butylbenzene	Not detected	700		ug/kg	662	104-51-8	Y
Hexachloroethane	Not detected	4,000		ug/kg	662	67-72-1	Y
1,2-Dibromo-3-chloropropane	Not detected	3,000		ug/kg	662	96-12-8	Y
1,2,4-Trichlorobenzene	Not detected	4,400		ug/kg	662	120-82-1	Y
1,2,3-Trichlorobenzene	Not detected	4,400		ug/kg	662	87-61-6	Y
Naphthalene	Not detected	3,000		ug/kg	662	91-20-3	Y
2-Methylnaphthalene	Not detected	1,000		ug/kg	662	91-57-6	Y

Y-Elevated reporting limit due to high target concentration

Lab Sample ID: S01171.05
Sample Tag: MW14
Collected Date/Time: 04/19/2019 14:22
Matrix: Groundwater
COC Reference: 117420

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	1L Amber	None	Yes	4.3	IR
2	40ml Glass	HCL	Yes	4.3	IR
1	125ml Plastic	HNO3	Yes	4.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	04/25/19 13:30	JML	
Metal Digestion	Completed	SW3015A	04/24/19 09:50	CCM	
PNA Extraction	Completed	SW3510C	04/25/19 16:49	ANW	

Metals

Method: E200.8, Run Date: 04/24/19 12:19, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	3		ug/L	5	7439-92-1	

Organics - Semi-Volatiles

Polynuclear Aromatic Hydrocarbon, Method: SW8270D, Run Date: 04/25/19 19:11, Analyst: PL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acenaphthene	Not detected	5		ug/L	2	83-32-9	
Acenaphthylene	Not detected	5		ug/L	2	208-96-8	
Anthracene	Not detected	5		ug/L	2	120-12-7	
Benzo(a)anthracene	Not detected	1		ug/L	2	56-55-3	
Benzo(a)pyrene	Not detected	1		ug/L	2	50-32-8	
Benzo(b)fluoranthene	Not detected	1		ug/L	2	205-99-2	
Benzo(k)fluoranthene	Not detected	1		ug/L	2	207-08-9	
Benzo(ghi)perylene	Not detected	1		ug/L	2	191-24-2	
Chrysene	Not detected	1		ug/L	2	218-01-9	
Dibenzo(ah)anthracene	Not detected	2		ug/L	2	53-70-3	
Fluoranthene	Not detected	1		ug/L	2	206-44-0	
Fluorene	Not detected	5		ug/L	2	86-73-7	
Indeno(1,2,3-cd)pyrene	Not detected	2		ug/L	2	193-39-5	
Naphthalene	Not detected	5		ug/L	2	91-20-3	
Phenanthrene	Not detected	2		ug/L	2	85-01-8	
Pyrene	Not detected	5		ug/L	2	129-00-0	
2-Methylnaphthalene	Not detected	5		ug/L	2	91-57-6	
1-Methylnaphthalene	Not detected	5		ug/L	2	90-12-0	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 04/24/19 19:17, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	

Lab Sample ID: S01171.05 (continued)
Sample Tag: MW14

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 04/24/19 19:17, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	119	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	4	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	3	1		ug/L	1	100-41-4	
p,m-Xylene*	8	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	

Lab Sample ID: S01171.05 (continued)
Sample Tag: MW14

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 04/24/19 19:17, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Lab Sample ID: S01171.06
Sample Tag: MW15
Collected Date/Time: 04/19/2019 14:50
Matrix: Groundwater
COC Reference: 117420

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	1L Amber	None	Yes	4.3	IR
2	40ml Glass	HCL	Yes	4.3	IR
1	125ml Plastic	HNO3	Yes	4.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	04/25/19 13:30	JML	
Metal Digestion	Completed	SW3015A	04/24/19 09:50	CCM	
PNA Extraction	Completed	SW3510C	04/25/19 16:49	ANW	

Metals

Method: E200.8, Run Date: 04/24/19 12:21, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	3		ug/L	5	7439-92-1	

Organics - Semi-Volatiles

Polynuclear Aromatic Hydrocarbon, Method: SW8270D, Run Date: 04/25/19 19:29, Analyst: PL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acenaphthene	Not detected	5		ug/L	2	83-32-9	
Acenaphthylene	Not detected	5		ug/L	2	208-96-8	
Anthracene	Not detected	5		ug/L	2	120-12-7	
Benzo(a)anthracene	Not detected	1		ug/L	2	56-55-3	
Benzo(a)pyrene	Not detected	1		ug/L	2	50-32-8	
Benzo(b)fluoranthene	Not detected	1		ug/L	2	205-99-2	
Benzo(k)fluoranthene	Not detected	1		ug/L	2	207-08-9	
Benzo(ghi)perylene	Not detected	1		ug/L	2	191-24-2	
Chrysene	Not detected	1		ug/L	2	218-01-9	
Dibenzo(ah)anthracene	Not detected	2		ug/L	2	53-70-3	
Fluoranthene	Not detected	1		ug/L	2	206-44-0	
Fluorene	Not detected	5		ug/L	2	86-73-7	
Indeno(1,2,3-cd)pyrene	Not detected	2		ug/L	2	193-39-5	
Naphthalene	Not detected	5		ug/L	2	91-20-3	
Phenanthrene	Not detected	2		ug/L	2	85-01-8	
Pyrene	Not detected	5		ug/L	2	129-00-0	
2-Methylnaphthalene	Not detected	5		ug/L	2	91-57-6	
1-Methylnaphthalene	Not detected	5		ug/L	2	90-12-0	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 04/24/19 19:37, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	

Lab Sample ID: S01171.06 (continued)
Sample Tag: MW15

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 04/24/19 19:37, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	

Lab Sample ID: S01171.06 (continued)
Sample Tag: MW15

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 04/24/19 19:37, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Merit Laboratories Login Checklist

Lab Set ID: S01171
Client: TRITERRA (TriTerra)
Project: 19-2122 / 404 W. Houghton
Submitted: 04/23/2019 15:00 Login User: SRS

Attention: JP Buckingham
Address: TriTerra
1375 S. Washington Ave
Suite 300
Lansing MI 48906

Phone: 517-853-2151 FAX: 517-702-0477
Email: jp.buckingham@triterra.us

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 4.3
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[ ] Yes	[X] No	[ ] N/A	Subcontracting needed? Subcontacted to:	
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[X] Yes	[ ] No	[ ] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[ ] Yes	[X] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[ ] Yes	[X] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[X] No	[ ] N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

Merit Laboratories Bottle Preservation Check

Lab Set ID: S01171 Initials: SRS

Client: TRITERRA (TriTerra)

Project: 19-2122 / 404 W. Houghton

Submitted: 04/23/2019 15:00 Login User:

Attention: JP Buckingham
Address: TriTerra
1375 S. Washington Ave
Suite 300
Lansing MI 48906

Phone: 517-853-2151 FAX: 517-702-0477
Email: jp.buckingham@triterra.us

Lab ID	125 ml Plastic HNO_3	250 ml Plastic HNO_3	1 L Plastic HNO_3	250 ml Plastic H_2SO_4	125 ml Amber H_2SO_4	32 oz Glass HCl	125 ml Plastic NaOH	125 ml Amber $PbCO_3$ NaOH	pH					Notes
									<2	>12	other	ml add	new pH	
S01171.05	X								X					
S01171.06	X								X					

Prepared by Merit Laboratories

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

117420

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: JP. Buckingham
COMPANY: Triterra
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: FAX NO.: P.O. NO.:
E-MAIL ADDRESS: jp.buckingham@triterra.us QUOTE NO.:

INVOICE TO

CONTACT NAME: ☐ SAME
COMPANY:
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: E-MAIL ADDRESS:

PROJECT NO./NAME: 19-2122 / 404 W. Houghton
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Greg Ross

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER 5 days

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	YEAR DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	VOCs	PAHs	10 MI Metals	Lead
01171.01	4/19/19	11:20	B1 1'-2'	S	2	X					X		X			
.02		12:30	B3 3.5'-4'	S	2	X					X		X		X	
.03		1:16	B4 4'-6'	S	2	X					X		X	X		
.04		1:57	B6 2'-4'	S	2	X					X		X	X	X	
.05		2:22	MW 14	GW	4	X	X	X					X	X		X
.06		2:50	MW 15	GW	4	X	X	X					X	X		X

RELINQUISHED BY: SIGNATURE/ORGANIZATION	☒ Sampler	DATE 4/19/19	TIME 7:00 pm
RECEIVED BY: SIGNATURE/ORGANIZATION	Triterra Storage	DATE 4/19/19	TIME 8:00 pm
RELINQUISHED BY: SIGNATURE/ORGANIZATION	Triterra storage	DATE 4/23/19	TIME 14:23
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 4/23/19	TIME 14:27

RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE 4/23/19	TIME 1500
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 4/23/19	TIME 1500
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	

NOTES: TEMP. ON ARRIVAL 4.3

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Analytical Laboratory Report

Report ID: S01174.01(01)
Generated on 05/01/2019

Report to

Attention: JP Buckingham
TriTerra
1375 S. Washington Avenue
Suite 300
Lansing, MI 48910

Phone: 517-853-2151 FAX: 517-702-0477
Email: jp.buckingham@triterra.us

Addtional Contacts: Brad Buswell, Greg Ross

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S01174.01-S01174.02
Project: 19-2122 / 404 W. Houghton
Collected Date: 04/19/2019
Submitted Date/Time: 04/23/2019 15:00
Sampled by: Greg Ross
P.O. #:

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Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.
Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

Report Narrative

There is no additional narrative for this analytical report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
TO-15	EPA TO-15 Second Edition January 1999

Analytical Laboratory Report

Sample Summary (2 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S01174.01	SG-1	Air	04/19/19 05:30 - 04/19/19 05:35
S01174.02	SG-2	Air	04/19/19 05:34 - 04/19/19 05:45

Lab Sample ID: S01174.01
Sample Tag: SG-1
Collected Date/Time: 04/19/2019 05:30 - 04/19/2019 05:35
Matrix: Air
COC Reference: A01770

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Organics - Volatiles

TO-15, Method: TO-15, Run Date: 04/25/19 16:21, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	20		ppbv	10	67-64-1	
1,3-Butadiene	Not detected	2		ppbv	10	106-99-0	
Benzene	Not detected	2		ppbv	10	71-43-2	
Bromodichloromethane	Not detected	2		ppbv	10	75-27-4	
Bromoform	Not detected	2		ppbv	10	75-25-2	
Bromomethane	Not detected	2		ppbv	10	74-83-9	
Vinyl bromide	Not detected	2		ppbv	10	593-60-2	
Benzyl chloride	Not detected	2		ppbv	10	100-44-7	
Carbon disulfide	Not detected	5		ppbv	10	75-15-0	
Chlorobenzene	Not detected	2		ppbv	10	108-90-7	
Chloroethane	Not detected	2		ppbv	10	75-00-3	
Chloroform	Not detected	2		ppbv	10	67-66-3	
Chloromethane	Not detected	2		ppbv	10	74-87-3	
3-Chloropropene	Not detected	2		ppbv	10	107-05-1	
2-Chlorotoluene	Not detected	2		ppbv	10	95-49-8	
Carbon tetrachloride	Not detected	2		ppbv	10	56-23-5	
Cyclohexane	Not detected	2		ppbv	10	110-82-7	
1,1-Dichloroethane	Not detected	2		ppbv	10	75-34-3	
1,1-Dichloroethene	Not detected	2		ppbv	10	75-35-4	
1,2-Dibromoethane	Not detected	2		ppbv	10	106-93-4	
1,2-Dichloroethane	Not detected	2		ppbv	10	107-06-2	
1,2-Dichloropropane	Not detected	2		ppbv	10	78-87-5	
1,4-Dioxane	Not detected	25		ppbv	10	123-91-1	
Dichlorodifluoromethane	Not detected	2		ppbv	10	75-71-8	
Dibromochloromethane	Not detected	2		ppbv	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	2		ppbv	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	2		ppbv	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	2		ppbv	10	541-73-1	
1,2-Dichlorobenzene	Not detected	2		ppbv	10	95-50-1	
1,4-Dichlorobenzene	Not detected	2		ppbv	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-02-6	
Ethanol*	Not detected	25		ppbv	10	64-17-5	
Ethylbenzene	Not detected	2		ppbv	10	100-41-4	
Ethyl Acetate*	Not detected	10		ppbv	10	141-78-6	
4-Ethyltoluene	Not detected	2		ppbv	10	622-96-8	
Freon 113	Not detected	2		ppbv	10	76-13-1	
Freon 114	Not detected	2		ppbv	10	76-14-2	
Heptane	Not detected	2		ppbv	10	142-82-5	
Hexachlorobutadiene	Not detected	2		ppbv	10	87-68-3	
Hexane	Not detected	2		ppbv	10	110-54-3	

Lab Sample ID: S01174.01 (continued)
Sample Tag: SG-1

TO-15, Method: TO-15, Run Date: 04/25/19 16:21, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
2-Hexanone*	Not detected	5		ppbv	10	591-78-6	
Isopropyl Alcohol*	Not detected	20		ppbv	10	67-63-0	
Methylene chloride	Not detected	5		ppbv	10	75-09-2	
2-Butanone (MEK)	Not detected	10		ppbv	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	5		ppbv	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	2		ppbv	10	1634-04-4	
Methyl methacrylate	Not detected	2		ppbv	10	80-62-6	
Naphthalene	Not detected	2		ppbv	10	91-20-3	
Propylene*	Not detected	2		ppbv	10	115-07-1	
Styrene	Not detected	2		ppbv	10	100-42-5	
1,1,1-Trichloroethane	Not detected	2		ppbv	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	2		ppbv	10	79-34-5	
1,1,2-Trichloroethane	Not detected	2		ppbv	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ppbv	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	2		ppbv	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	2		ppbv	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	2		ppbv	10	540-84-1	
Tert-butyl Alcohol	Not detected	10		ppbv	10	75-65-0	
Tetrachloroethene	3	2		ppbv	10	127-18-4	
Tetrahydrofuran*	Not detected	2		ppbv	10	109-99-9	
Toluene	Not detected	2		ppbv	10	108-88-3	
Trichloroethene	Not detected	2		ppbv	10	79-01-6	
Trichlorofluoromethane	Not detected	2		ppbv	10	75-69-4	
Vinyl chloride	Not detected	2		ppbv	10	75-01-4	
Vinyl acetate	Not detected	2		ppbv	10	108-05-4	
p,m-Xylene	Not detected	4		ppbv	10		
o-Xylene	Not detected	2		ppbv	10	95-47-6	
Total Xylenes	Not detected	6		ppbv	10	1330-20-7	

TO-15, Method: TO-15, Run Date: 04/25/19 16:21, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	48		ug/m3	10	67-64-1	
1,3-Butadiene	Not detected	4.4		ug/m3	10	106-99-0	
Benzene	Not detected	6.4		ug/m3	10	71-43-2	
Bromodichloromethane	Not detected	13		ug/m3	10	75-27-4	
Bromoform	Not detected	21		ug/m3	10	75-25-2	
Bromomethane	Not detected	7.8		ug/m3	10	74-83-9	
Vinyl bromide	Not detected	8.7		ug/m3	10	593-60-2	
Benzyl chloride	Not detected	10		ug/m3	10	100-44-7	
Carbon disulfide	Not detected	16		ug/m3	10	75-15-0	
Chlorobenzene	Not detected	9.2		ug/m3	10	108-90-7	
Chloroethane	Not detected	5.3		ug/m3	10	75-00-3	
Chloroform	Not detected	9.8		ug/m3	10	67-66-3	
Chloromethane	Not detected	4.1		ug/m3	10	74-87-3	
3-Chloropropene	Not detected	6.3		ug/m3	10	107-05-1	
2-Chlorotoluene	Not detected	10		ug/m3	10	95-49-8	
Carbon tetrachloride	Not detected	13		ug/m3	10	56-23-5	
Cyclohexane	Not detected	6.9		ug/m3	10	110-82-7	
1,1-Dichloroethane	Not detected	8.1		ug/m3	10	75-34-3	
1,1-Dichloroethene	Not detected	7.9		ug/m3	10	75-35-4	

Lab Sample ID: S01174.01 (continued)
Sample Tag: SG-1

TO-15, Method: TO-15, Run Date: 04/25/19 16:21, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromoethane	Not detected	15		ug/m3	10	106-93-4	
1,2-Dichloroethane	Not detected	8.1		ug/m3	10	107-06-2	
1,2-Dichloropropane	Not detected	9.2		ug/m3	10	78-87-5	
1,4-Dioxane	Not detected	90		ug/m3	10	123-91-1	
Dichlorodifluoromethane	Not detected	9.9		ug/m3	10	75-71-8	
Dibromochloromethane	Not detected	17		ug/m3	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	12		ug/m3	10	541-73-1	
1,2-Dichlorobenzene	Not detected	12		ug/m3	10	95-50-1	
1,4-Dichlorobenzene	Not detected	12		ug/m3	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-02-6	
Ethanol*	Not detected	47		ug/m3	10	64-17-5	
Ethylbenzene	Not detected	8.7		ug/m3	10	100-41-4	
Ethyl Acetate*	Not detected	36		ug/m3	10	141-78-6	
4-Ethyltoluene	Not detected	9.8		ug/m3	10	622-96-8	
Freon 113	Not detected	15		ug/m3	10	76-13-1	
Freon 114	Not detected	14		ug/m3	10	76-14-2	
Heptane	Not detected	8.2		ug/m3	10	142-82-5	
Hexachlorobutadiene	Not detected	21		ug/m3	10	87-68-3	
Hexane	Not detected	7.0		ug/m3	10	110-54-3	
2-Hexanone*	Not detected	20		ug/m3	10	591-78-6	
Isopropyl Alcohol*	Not detected	49		ug/m3	10	67-63-0	
Methylene chloride	Not detected	17		ug/m3	10	75-09-2	
2-Butanone (MEK)	Not detected	29		ug/m3	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	20		ug/m3	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	7.2		ug/m3	10	1634-04-4	
Methyl methacrylate	Not detected	8.2		ug/m3	10	80-62-6	
Naphthalene	Not detected	10		ug/m3	10	91-20-3	
Propylene*	Not detected	3.4		ug/m3	10	115-07-1	
Styrene	Not detected	8.5		ug/m3	10	100-42-5	
1,1,1-Trichloroethane	Not detected	11		ug/m3	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	14		ug/m3	10	79-34-5	
1,1,2-Trichloroethane	Not detected	11		ug/m3	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	37		ug/m3	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	9.8		ug/m3	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	9.8		ug/m3	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	9.3		ug/m3	10	540-84-1	
Tert-butyl Alcohol	Not detected	30		ug/m3	10	75-65-0	
Tetrachloroethene	20	14		ug/m3	10	127-18-4	
Tetrahydrofuran*	Not detected	5.9		ug/m3	10	109-99-9	
Toluene	Not detected	7.5		ug/m3	10	108-88-3	
Trichloroethene	Not detected	11		ug/m3	10	79-01-6	
Trichlorofluoromethane	Not detected	11		ug/m3	10	75-69-4	
Vinyl chloride	Not detected	5.1		ug/m3	10	75-01-4	
Vinyl acetate	Not detected	7.0		ug/m3	10	108-05-4	
p,m-Xylene	Not detected	17		ug/m3	10		
o-Xylene	Not detected	8.7		ug/m3	10	95-47-6	
Total Xylenes	Not detected	26		ug/m3	10	1330-20-7	

Lab Sample ID: S01174.02
Sample Tag: SG-2
Collected Date/Time: 04/19/2019 05:34 - 04/19/2019 05:45
Matrix: Air
COC Reference: A01770

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Organics - Volatiles

TO-15, Method: TO-15, Run Date: 04/25/19 16:52, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	50	20		ppbv	10	67-64-1	
1,3-Butadiene	Not detected	2		ppbv	10	106-99-0	
Benzene	Not detected	2		ppbv	10	71-43-2	
Bromodichloromethane	Not detected	2		ppbv	10	75-27-4	
Bromoform	Not detected	2		ppbv	10	75-25-2	
Bromomethane	Not detected	2		ppbv	10	74-83-9	
Vinyl bromide	Not detected	2		ppbv	10	593-60-2	
Benzyl chloride	Not detected	2		ppbv	10	100-44-7	
Carbon disulfide	Not detected	5		ppbv	10	75-15-0	
Chlorobenzene	Not detected	2		ppbv	10	108-90-7	
Chloroethane	Not detected	2		ppbv	10	75-00-3	
Chloroform	Not detected	2		ppbv	10	67-66-3	
Chloromethane	Not detected	2		ppbv	10	74-87-3	
3-Chloropropene	Not detected	2		ppbv	10	107-05-1	
2-Chlorotoluene	Not detected	2		ppbv	10	95-49-8	
Carbon tetrachloride	Not detected	2		ppbv	10	56-23-5	
Cyclohexane	Not detected	2		ppbv	10	110-82-7	
1,1-Dichloroethane	Not detected	2		ppbv	10	75-34-3	
1,1-Dichloroethene	Not detected	2		ppbv	10	75-35-4	
1,2-Dibromoethane	Not detected	2		ppbv	10	106-93-4	
1,2-Dichloroethane	Not detected	2		ppbv	10	107-06-2	
1,2-Dichloropropane	Not detected	2		ppbv	10	78-87-5	
1,4-Dioxane	Not detected	25		ppbv	10	123-91-1	
Dichlorodifluoromethane	Not detected	2		ppbv	10	75-71-8	
Dibromochloromethane	Not detected	2		ppbv	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	2		ppbv	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	2		ppbv	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	2		ppbv	10	541-73-1	
1,2-Dichlorobenzene	Not detected	2		ppbv	10	95-50-1	
1,4-Dichlorobenzene	Not detected	2		ppbv	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-02-6	
Ethanol*	Not detected	25		ppbv	10	64-17-5	
Ethylbenzene	Not detected	2		ppbv	10	100-41-4	
Ethyl Acetate*	Not detected	10		ppbv	10	141-78-6	
4-Ethyltoluene	Not detected	2		ppbv	10	622-96-8	
Freon 113	Not detected	2		ppbv	10	76-13-1	
Freon 114	Not detected	2		ppbv	10	76-14-2	
Heptane	Not detected	2		ppbv	10	142-82-5	
Hexachlorobutadiene	Not detected	2		ppbv	10	87-68-3	
Hexane	Not detected	2		ppbv	10	110-54-3	

Lab Sample ID: S01174.02 (continued)
Sample Tag: SG-2

TO-15, Method: TO-15, Run Date: 04/25/19 16:52, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
2-Hexanone*	Not detected	5		ppbv	10	591-78-6	
Isopropyl Alcohol*	Not detected	20		ppbv	10	67-63-0	
Methylene chloride	Not detected	5		ppbv	10	75-09-2	
2-Butanone (MEK)	Not detected	10		ppbv	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	5		ppbv	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	2		ppbv	10	1634-04-4	
Methyl methacrylate	Not detected	2		ppbv	10	80-62-6	
Naphthalene	Not detected	2		ppbv	10	91-20-3	
Propylene*	Not detected	3		ppbv	10	115-07-1	X
Styrene	Not detected	2		ppbv	10	100-42-5	
1,1,1-Trichloroethane	Not detected	2		ppbv	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	2		ppbv	10	79-34-5	
1,1,2-Trichloroethane	Not detected	2		ppbv	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ppbv	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	2		ppbv	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	2		ppbv	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	2		ppbv	10	540-84-1	
Tert-butyl Alcohol	Not detected	10		ppbv	10	75-65-0	
Tetrachloroethene	6	2		ppbv	10	127-18-4	
Tetrahydrofuran*	Not detected	2		ppbv	10	109-99-9	
Toluene	Not detected	2		ppbv	10	108-88-3	
Trichloroethene	Not detected	2		ppbv	10	79-01-6	
Trichlorofluoromethane	Not detected	2		ppbv	10	75-69-4	
Vinyl chloride	Not detected	2		ppbv	10	75-01-4	
Vinyl acetate	Not detected	2		ppbv	10	108-05-4	
p,m-Xylene	Not detected	4		ppbv	10		
o-Xylene	Not detected	2		ppbv	10	95-47-6	
Total Xylenes	Not detected	6		ppbv	10	1330-20-7	

TO-15, Method: TO-15, Run Date: 04/25/19 16:52, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	120	48		ug/m3	10	67-64-1	
1,3-Butadiene	Not detected	4.4		ug/m3	10	106-99-0	
Benzene	Not detected	6.4		ug/m3	10	71-43-2	
Bromodichloromethane	Not detected	13		ug/m3	10	75-27-4	
Bromoform	Not detected	21		ug/m3	10	75-25-2	
Bromomethane	Not detected	7.8		ug/m3	10	74-83-9	
Vinyl bromide	Not detected	8.7		ug/m3	10	593-60-2	
Benzyl chloride	Not detected	10		ug/m3	10	100-44-7	
Carbon disulfide	Not detected	16		ug/m3	10	75-15-0	
Chlorobenzene	Not detected	9.2		ug/m3	10	108-90-7	
Chloroethane	Not detected	5.3		ug/m3	10	75-00-3	
Chloroform	Not detected	9.8		ug/m3	10	67-66-3	
Chloromethane	Not detected	4.1		ug/m3	10	74-87-3	
3-Chloropropene	Not detected	6.3		ug/m3	10	107-05-1	
2-Chlorotoluene	Not detected	10		ug/m3	10	95-49-8	
Carbon tetrachloride	Not detected	13		ug/m3	10	56-23-5	
Cyclohexane	Not detected	6.9		ug/m3	10	110-82-7	
1,1-Dichloroethane	Not detected	8.1		ug/m3	10	75-34-3	

X-Elevated reporting limit due to matrix interference

Lab Sample ID: S01174.02 (continued)
Sample Tag: SG-2

TO-15, Method: TO-15, Run Date: 04/25/19 16:52, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1-Dichloroethene	Not detected	7.9		ug/m3	10	75-35-4	
1,2-Dibromoethane	Not detected	15		ug/m3	10	106-93-4	
1,2-Dichloroethane	Not detected	8.1		ug/m3	10	107-06-2	
1,2-Dichloropropane	Not detected	9.2		ug/m3	10	78-87-5	
1,4-Dioxane	Not detected	90		ug/m3	10	123-91-1	
Dichlorodifluoromethane	Not detected	9.9		ug/m3	10	75-71-8	
Dibromochloromethane	Not detected	17		ug/m3	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	12		ug/m3	10	541-73-1	
1,2-Dichlorobenzene	Not detected	12		ug/m3	10	95-50-1	
1,4-Dichlorobenzene	Not detected	12		ug/m3	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-02-6	
Ethanol*	Not detected	47		ug/m3	10	64-17-5	
Ethylbenzene	Not detected	8.7		ug/m3	10	100-41-4	
Ethyl Acetate*	Not detected	36		ug/m3	10	141-78-6	
4-Ethyltoluene	Not detected	9.8		ug/m3	10	622-96-8	
Freon 113	Not detected	15		ug/m3	10	76-13-1	
Freon 114	Not detected	14		ug/m3	10	76-14-2	
Heptane	Not detected	8.2		ug/m3	10	142-82-5	
Hexachlorobutadiene	Not detected	21		ug/m3	10	87-68-3	
Hexane	Not detected	7.0		ug/m3	10	110-54-3	
2-Hexanone*	Not detected	20		ug/m3	10	591-78-6	
Isopropyl Alcohol*	Not detected	49		ug/m3	10	67-63-0	
Methylene chloride	Not detected	17		ug/m3	10	75-09-2	
2-Butanone (MEK)	Not detected	29		ug/m3	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	20		ug/m3	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	7.2		ug/m3	10	1634-04-4	
Methyl methacrylate	Not detected	8.2		ug/m3	10	80-62-6	
Naphthalene	Not detected	10		ug/m3	10	91-20-3	
Propylene*	Not detected	5.2		ug/m3	10	115-07-1	X
Styrene	Not detected	8.5		ug/m3	10	100-42-5	
1,1,1-Trichloroethane	Not detected	11		ug/m3	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	14		ug/m3	10	79-34-5	
1,1,2-Trichloroethane	Not detected	11		ug/m3	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	37		ug/m3	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	9.8		ug/m3	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	9.8		ug/m3	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	9.3		ug/m3	10	540-84-1	
Tert-butyl Alcohol	Not detected	30		ug/m3	10	75-65-0	
Tetrachloroethene	41	14		ug/m3	10	127-18-4	
Tetrahydrofuran*	Not detected	5.9		ug/m3	10	109-99-9	
Toluene	Not detected	7.5		ug/m3	10	108-88-3	
Trichloroethene	Not detected	11		ug/m3	10	79-01-6	
Trichlorofluoromethane	Not detected	11		ug/m3	10	75-69-4	
Vinyl chloride	Not detected	5.1		ug/m3	10	75-01-4	
Vinyl acetate	Not detected	7.0		ug/m3	10	108-05-4	
p,m-Xylene	Not detected	17		ug/m3	10		

X-Elevated reporting limit due to matrix interference

Lab Sample ID: S01174.02 (continued)
Sample Tag: SG-2

TO-15, Method: TO-15, Run Date: 04/25/19 16:52, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	Not detected	8.7		ug/m3	10	95-47-6	
Total Xylenes	Not detected	26		ug/m3	10	1330-20-7	

Merit Laboratories Login Checklist

Lab Set ID: S01174
Client: TRITERRA (TriTerra)
Project: 19-2122 / 404 W. Houghton
Submitted: 04/23/2019 15:00 Login User: SRS

Attention: JP Buckingham
Address: TriTerra
1375 S. Washington Avenue
Suite 300
Lansing, MI 48910

Phone: 517-853-2151 FAX: 517-702-0477
Email: jp.buckingham@triterra.us

Selection				Description	Note
Sample Receiving					
01.	☐ Yes	☒ No	☐ N/A	Samples are received at 4C +/- 2C Thermometer #	RT
02.	☐ Yes	☐ No	☒ N/A	Received on ice/ cooling process begun	
03.	☐ Yes	☒ No	☐ N/A	Samples shipped	
04.	☐ Yes	☒ No	☐ N/A	Samples left in 24 hr. drop box	
05.	☐ Yes	☐ No	☒ N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	☒ Yes	☐ No	☐ N/A	COC adequately filled out	
07.	☒ Yes	☐ No	☐ N/A	COC signed and relinquished to the lab	
08.	☒ Yes	☐ No	☐ N/A	Sample tag on bottles match COC	
09.	☐ Yes	☒ No	☐ N/A	Subcontracting needed? Subcontacted to:	
Preservation					
10.	☐ Yes	☐ No	☒ N/A	Do sample have correct chemical preservation	
11.	☐ Yes	☐ No	☒ N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	☐ Yes	☒ No	☐ N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	☒ Yes	☐ No	☐ N/A	All bottles intact	
14.	☒ Yes	☐ No	☐ N/A	Appropriate analytical bottles are used	
15.	☒ Yes	☐ No	☐ N/A	Merit bottles used	
16.	☒ Yes	☐ No	☐ N/A	Sufficient sample volume received	
17.	☐ Yes	☒ No	☐ N/A	Samples require laboratory filtration	
18.	☒ Yes	☐ No	☐ N/A	Samples submitted within holding time	
19.	☐ Yes	☐ No	☒ N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

A 01770

AIR/GAS SAMPLES CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: JP Buckingham
COMPANY: Triterra
ADDRESS: 1325 S Washington Ave Suite 200
CITY: Lansing STATE: MI ZIP CODE: 48910
PHONE NO.: FAX NO.: P.O. NO.:
EMAIL ADDRESS: jp.buckingham@triterranus.us QUOTE NO.:

INVOICE TO

CONTACT NAME: ☐ SAME
COMPANY:
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: EMAIL ADDRESS:

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME: 19-2122/404 W. Houghton
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Greg Ross

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

Certifications
☐ OHIO VAP ☐ NELAP
☐ DoD ☐ NPDES

MERIT LAB NO. FOR LAB USE ONLY	SAMPLE TAG IDENTIFICATION-DESCRIPTION	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	Sample Type: Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (specify in notes)	Analyses: TO-15	Other (specify in notes)
01174.01	SG-1	4/19/19	5:30	5:35	27	5	154	18359			X			X	
.02	SG-2	"	5:34	5:45	30	5	13	18325			X			X	

Temperature (Fahrenheit)	Interior	Ambient	Notes
Start			
Stop			

Pressure (inches of Hg)	Interior	Ambient	Notes
Start			
Stop			

Notes

RELINQUISHED BY: SIGNATURE/ORGANIZATION: [signature] Sampler DATE: 4/19/19 TIME: 7:00 pm
RECEIVED BY: SIGNATURE/ORGANIZATION: Triterra Storage DATE: 4/19/19 TIME: 8:00pm
RELINQUISHED BY: SIGNATURE/ORGANIZATION: [signature] Triterra Storage DATE: 4/23/19 TIME:
RECEIVED BY: SIGNATURE/ORGANIZATION: [signature] DATE: 4/23/19 TIME: 1410

RELINQUISHED BY: SIGNATURE/ORGANIZATION: [signature] DATE: 4/23/19 TIME:
RECEIVED BY: SIGNATURE/ORGANIZATION: [signature] DATE: 4/23/19 TIME: 1500

SEAL NO.: SEAL INTACT YES ☐ NO ☐ INITIALS:
SEAL NO.: SEAL INTACT YES ☐ NO ☐ INITIALS:

NOTES: TEMP. ON ARRIVAL: RT

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev: 7/19/15

Analytical Laboratory Report

Preliminary Report

Report ID: S01395.01(01)
Generated on 05/02/2019

Report to

Attention: Garnet Johnson
TriTerra
1375 S. Washington Ave
Suite 300
Lansing MI 48906

Phone: 517-702-0470 FAX: 517-702-0477
Email: garnet.johnson@triterra.us

Addtional Contacts: Brad Buswell, Ruthie Doering

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S01395.01
Project: 19-2122
Collected Date: 04/29/2019
Submitted Date/Time: 04/30/2019 12:05
Sampled by: Garnet Johnson
P.O. #:

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Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.
Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

Report Narrative

Preliminary VOC results provided.

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
SM2540B	Standard Method 2540 B 2011
SW3050B	SW 846 Method 3050B Revision 2 December 1996
SW3546	SW 846 Method 3546 Revision 0 February 2007
SW5035A/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5035A Revision 1 July 2002
SW6020A	SW 846 Method 6020A Revision 1 February 2007
SW7471B	SW 846 Method 7471B Revision 2 February 2007
SW8270D	SW 846 Method 8270D Revision 4 February 2007

Sample Summary (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S01395.01	TB-1 6'	Soil	04/29/19 11:30

Lab Sample ID: S01395.01
Sample Tag: TB-1 6'
Collected Date/Time: 04/29/2019 11:30
Matrix: Soil
COC Reference: 121679

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	4oz Glass	None	Yes	3.6	IR
1	40ml Glass	MeOH	Yes	3.6	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	05/01/19 12:00	CCM	
PNA Extraction*	Completed	SW3546	04/30/19 16:43	ANW	
Mercury Digestion	Completed	SW7471B	05/01/19 10:30	JRH	

Inorganics

Method: SM2540B, Run Date: 05/01/19 10:45, Analyst: JBL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	84	1	1	%	1		

Metals

Method: SW6020A, Run Date: 05/01/19 14:13, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	1.98	0.20		mg/kg	228	7440-38-2	
Barium	33.1	1.0		mg/kg	228	7440-39-3	
Cadmium	0.78	0.20		mg/kg	228	7440-43-9	
Chromium	4.03	0.50		mg/kg	228	7440-47-3	
Copper	23.8	0.50		mg/kg	228	7440-50-8	
Lead	75.4	0.30		mg/kg	228	7439-92-1	
Selenium	Not detected	0.40		mg/kg	228	7782-49-2	
Silver	Not detected	0.20		mg/kg	228	7440-22-4	
Zinc	82.7	0.50		mg/kg	228	7440-66-6	

Method: SW7471B, Run Date: 05/01/19 14:03, Analyst: JRH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	0.059	0.050		mg/kg	57	7439-97-6	

Organics - Semi-Volatiles

Polynuclear Aromatics, Method: SW8270D, Run Date: 05/01/19 00:52, Analyst: PL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acenaphthene	2.7	0.3		mg/kg	10	83-32-9	
Acenaphthylene	Not detected	0.3		mg/kg	10	208-96-8	
Anthracene	0.8	0.3		mg/kg	10	120-12-7	
Benzo(a)anthracene	Not detected	0.3		mg/kg	10	56-55-3	
Benzo(a)pyrene	Not detected	0.3		mg/kg	10	50-32-8	
Benzo(b)fluoranthene	Not detected	0.3		mg/kg	10	205-99-2	
Benzo(k)fluoranthene	Not detected	0.3		mg/kg	10	207-08-9	
Benzo(ghi)perylene	Not detected	0.3		mg/kg	10	191-24-2	
Chrysene	Not detected	0.3		mg/kg	10	218-01-9	
Dibenzo(ah)anthracene	Not detected	0.3		mg/kg	10	53-70-3	
Fluoranthene	Not detected	0.3		mg/kg	10	206-44-0	
Fluorene	3.7	0.3		mg/kg	10	86-73-7	

Lab Sample ID: S01395.01 (continued)

Sample Tag: TB-1 6'

Polynuclear Aromatics, Method: SW8270D, Run Date: 05/01/19 00:52, Analyst: PL (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Indeno(1,2,3-cd)pyrene	Not detected	0.3		mg/kg	10	193-39-5	
Naphthalene	Not detected	0.3		mg/kg	10	91-20-3	
Phenanthrene	2.7	0.3		mg/kg	10	85-01-8	
Pyrene	Not detected	0.3		mg/kg	10	129-00-0	
2-Methylnaphthalene	Not detected	0.3		mg/kg	10	91-57-6	
1-Methylnaphthalene	5.7	0.3		mg/kg	10	90-12-0	

Organics - Volatiles

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 05/01/19 16:47, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	0.3		mg/kg	67.3	60-29-7	R
Acetone	Not detected	1		mg/kg	67.3	67-64-1	R
Methyl iodide	Not detected	0.1		mg/kg	67.3	74-88-4	R
Carbon disulfide	Not detected	0.3		mg/kg	67.3	75-15-0	R
tert-Methyl butyl ether (MTBE)	Not detected	0.3		mg/kg	67.3	1634-04-4	R
Acrylonitrile	Not detected	0.1		mg/kg	67.3	107-13-1	R
2-Butanone (MEK)	Not detected	1.0		mg/kg	67.3	78-93-3	R
Dichlorodifluoromethane	Not detected	0.3		mg/kg	67.3	75-71-8	R
Chloromethane	Not detected	0.3		mg/kg	67.3	74-87-3	R
Vinyl chloride	Not detected	0.07		mg/kg	67.3	75-01-4	R
Bromomethane	Not detected	0.3		mg/kg	67.3	74-83-9	R
Chloroethane	Not detected	0.3		mg/kg	67.3	75-00-3	R
Trichlorofluoromethane	Not detected	0.1		mg/kg	67.3	75-69-4	R
1,1-Dichloroethene	Not detected	0.07		mg/kg	67.3	75-35-4	R
Methylene chloride	Not detected	0.1		mg/kg	67.3	75-09-2	R
trans-1,2-Dichloroethene	Not detected	0.07		mg/kg	67.3	156-60-5	R
1,1-Dichloroethane	Not detected	0.07		mg/kg	67.3	75-34-3	R
cis-1,2-Dichloroethene	Not detected	0.07		mg/kg	67.3	156-59-2	R
Tetrahydrofuran*	Not detected	1		mg/kg	67.3	109-99-9	R
Chloroform	0.09	0.07		mg/kg	67.3	67-66-3	BR
Bromochloromethane	Not detected	0.1		mg/kg	67.3	74-97-5	R
1,1,1-Trichloroethane	Not detected	0.07		mg/kg	67.3	71-55-6	R
4-Methyl-2-pentanone (MIBK)	Not detected	3		mg/kg	67.3	108-10-1	R
2-Hexanone	Not detected	3		mg/kg	67.3	591-78-6	R
Carbon tetrachloride	Not detected	0.07		mg/kg	67.3	56-23-5	R
Benzene	Not detected	0.07		mg/kg	67.3	71-43-2	R
1,2-Dichloroethane	Not detected	0.07		mg/kg	67.3	107-06-2	R
Trichloroethene	Not detected	0.07		mg/kg	67.3	79-01-6	R
1,2-Dichloropropane	Not detected	0.07		mg/kg	67.3	78-87-5	R
Bromodichloromethane	Not detected	0.1		mg/kg	67.3	75-27-4	R
Dibromomethane	Not detected	0.3		mg/kg	67.3	74-95-3	R
cis-1,3-Dichloropropene	Not detected	0.07		mg/kg	67.3	10061-01-5	R
Toluene	Not detected	0.07		mg/kg	67.3	108-88-3	R
trans-1,3-Dichloropropene	Not detected	0.07		mg/kg	67.3	10061-02-6	R
1,1,2-Trichloroethane	Not detected	0.07		mg/kg	67.3	79-00-5	R
Tetrachloroethene	0.11	0.07		mg/kg	67.3	127-18-4	R
trans-1,4-Dichloro-2-butene	Not detected	0.07		mg/kg	67.3	110-57-6	R
Dibromochloromethane	Not detected	0.1		mg/kg	67.3	124-48-1	R

R-Preliminary result

B-Compound also found in associated method blank

Lab Sample ID: S01395.01 (continued)

Sample Tag: TB-1 6'

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 05/01/19 16:47, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromoethane	Not detected	0.03		mg/kg	67.3	106-93-4	R
Chlorobenzene	Not detected	0.07		mg/kg	67.3	108-90-7	R
1,1,1,2-Tetrachloroethane	Not detected	0.1		mg/kg	67.3	630-20-6	R
Ethylbenzene	Not detected	0.07		mg/kg	67.3	100-41-4	R
p,m-Xylene	Not detected	0.1		mg/kg	67.3		R
o-Xylene	Not detected	0.07		mg/kg	67.3	95-47-6	R
Styrene	Not detected	0.07		mg/kg	67.3	100-42-5	R
Isopropylbenzene	Not detected	0.3		mg/kg	67.3	98-82-8	R
Bromoform	Not detected	0.1		mg/kg	67.3	75-25-2	R
1,1,2,2-Tetrachloroethane	Not detected	0.07		mg/kg	67.3	79-34-5	R
1,2,3-Trichloropropane	Not detected	0.1		mg/kg	67.3	96-18-4	R
n-Propylbenzene	Not detected	0.07		mg/kg	67.3	103-65-1	R
Bromobenzene	Not detected	0.1		mg/kg	67.3	108-86-1	R
1,3,5-Trimethylbenzene	Not detected	0.07		mg/kg	67.3	108-67-8	R
tert-Butylbenzene	Not detected	0.07		mg/kg	67.3	98-06-6	R
1,2,4-Trimethylbenzene	Not detected	0.07		mg/kg	67.3	95-63-6	R
sec-Butylbenzene	Not detected	0.07		mg/kg	67.3	135-98-8	R
p-Isopropyltoluene	Not detected	0.1		mg/kg	67.3	99-87-6	R
1,3-Dichlorobenzene	Not detected	0.1		mg/kg	67.3	541-73-1	R
1,4-Dichlorobenzene	Not detected	0.1		mg/kg	67.3	106-46-7	R
1,2-Dichlorobenzene	Not detected	0.1		mg/kg	67.3	95-50-1	R
1,2,3-Trimethylbenzene	0.30	0.07		mg/kg	67.3	526-73-8	R
n-Butylbenzene	Not detected	0.07		mg/kg	67.3	104-51-8	R
Hexachloroethane	Not detected	0.4		mg/kg	67.3	67-72-1	R
1,2-Dibromo-3-chloropropane	Not detected	0.3		mg/kg	67.3	96-12-8	R
1,2,4-Trichlorobenzene	Not detected	0.44		mg/kg	67.3	120-82-1	R
1,2,3-Trichlorobenzene	Not detected	0.44		mg/kg	67.3	87-61-6	R
Naphthalene	Not detected	0.3		mg/kg	67.3	91-20-3	R
2-Methylnaphthalene	Not detected	0.1		mg/kg	67.3	91-57-6	R

R-Preliminary result

Merit Laboratories Login Checklist

Lab Set ID: S01395
Client: TRITERRA (TriTerra)
Project: 19-2122
Submitted: 04/30/2019 12:05 Login User: MMC

Attention: Garnet Johnson
Address: TriTerra
1375 S. Washington Ave
Suite 300
Lansing MI 48906

Phone: 517-702-0470 FAX: 517-702-0477
Email: garnet.johnson@triterra.us

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 3.6
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[ ] Yes	[X] No	[ ] N/A	Subcontracting needed? Subcontacted to:	
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[ ] Yes	[ ] No	[X] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[ ] Yes	[X] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[ ] Yes	[X] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

121679

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Garnet Johnson + Ruthie Doering
COMPANY: Triterra
ADDRESS: 1373 S Washington Ave Suite 300
CITY: Lansing STATE: MI ZIP CODE: 48910
PHONE NO.: FAX NO.: P.O. NO.:
E-MAIL ADDRESS: garnet.johnson@triterra.us + ruthie.doering@triterra.us QUOTE NO.:

INVOICE TO

CONTACT NAME: ☐ SAME
COMPANY: Accounting@triterra.us
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: E-MAIL ADDRESS:

PROJECT NO./NAME: 19-2122
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Garnet Johnson / Ruthie Doering

TURNAROUND TIME REQUIRED ☐ 1 DAY ☒ 2 DAYS ☐ 3 DAYS ☐ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	YEAR DATE	YEAR TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Full List VOCs	PNAs	MI 10 Metals
01395.01	4/29/19	11:30	TB-1 6'	S	3	X					X		X	X	X

RELINQUISHED BY: SIGNATURE/ORGANIZATION: Garnet Doh ☒ Sampler DATE: 4/30 TIME: 10:43
RECEIVED BY: SIGNATURE/ORGANIZATION: Triterra Storage DATE: 4/30/19 TIME: 10:45
RELINQUISHED BY: SIGNATURE/ORGANIZATION: Triterra Storage DATE: 4/30/19 TIME:
RECEIVED BY: SIGNATURE/ORGANIZATION: DATE: 4/30/19 TIME:

RELINQUISHED BY: SIGNATURE/ORGANIZATION: DATE: 4/30/19 TIME: 1200
RECEIVED BY: SIGNATURE/ORGANIZATION: DATE: 4/30/19 TIME: 1205

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL: 3.6

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

TRI TERRA

ATTACHMENT 5

ABANDONED CONTAINER FORM

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
REMEDIATION AND REDEVELOPMENT DIVISION

FOR DEQ USE ONLY
ITS#_____
Site ID#_____

NOTICE REGARDING DISCARDED OR ABANDONED CONTAINERS (FORM EQP4476 REV. 10/2015)
(Under the authority of Part 201, 1994 Act 451, as amended, and the Rules promulgated thereunder)

Use this form to disclose information related to any discarded or abandoned containers and any non-regulated above ground storage tank (AST) or non-regulated underground storage tank (UST) to satisfy the notification requirements of Rule 299.51015(1). Regulated underground storage tanks (USTs) and aboveground storage tanks (ASTs) are not considered abandoned or discarded. An owner of property on which regulated USTs or ASTs are located is considered to be the owner of the tanks therefore use of this form is not appropriate. The owner or operator should take the necessary actions to comply with the state and federal requirements applicable to USTs and ASTs, including registration of the tank(s), removal of the tanks, and confirmed release reporting. With respect to the discarded or abandoned containers and any regulated or non-regulated tanks, the submitter may also have responsibilities under other state and federal law, including, but not limited to, Part 201, Environmental Remediation; Part 111, Hazardous Waste Management; Part 211, Underground Storage Tank Regulations; Part 213, Leaking Underground Storage Tanks; Part 615, Supervisor of Wells, of the NREPA; and the Michigan Fire Prevention Code, 1941 PA 207, as amended.

All persons providing this notice must complete the following:

1. Name and Address of person subject to MCL 324.20107a:
City of West Branch
Ms. Kelli Collins
121 N. 4th Street
West Branch, Michigan 48661

2. Address/location of property where containers are located:
404 W. Houghton Avenue
West Branch, Michigan 48661

County: Ogemaw

3. What is your status relative to the property? Owner ☒ Operator ☐

4. Provide a scaled map or drawing of the property that identifies the property boundaries and surrounding property uses. Depict the approximate location(s) of all known discarded or abandoned containers and non-regulated AST(s) and UST(s), on the drawing. Refer to the locations when completing the attached table.

5. Provide photographs, if practical, that depict the location and general condition of the containers.

6. Complete the attached table and include a map.

7. Did you previously submit a BEA to the DEQ for this property? Yes ☐ No ☒ If yes, provide the following information:
   7a. Provide the date the BEA was submitted. _____
   7b. Provide the BEA Submittal Number (Disclosure or Petition Number if prior to 12/14/2010), if available. _____

8. Provide the date you became the owner or operator of this property: March 21, 2019

9. When did you first acquire knowledge of the discarded or abandoned container(s) or non-regulated USTs or ASTs? 4/19/19

With my signature below, I certify that the information provided herein is true and accurate to the best of my knowledge and belief. I understand that intentionally submitting false information to the DEQ is a felony and may result in fines of up to $25,000 for each violation.

Kelli Collins
Signature of owner or operator or person legally authorized by owner or operator

5/15/19
Date

Kelli Collins
Name (typed or printed)

GPSCR Coord.
Title (typed or printed)

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
REMEDIATION DIVISION

NOTICE REGARDING DISCARDED OR ABANDONED CONTAINERS

A LOCATION	B CONTAINER SIZE AND TYPE	C NUMBER OF CONTAINERS	D VOLUME OF HAZARDOUS SUBSTANCE(S)	E CONTENTS	F CONDITION OF CONTAINER	G PHOTOS PROVIDED
Southern portion of building next to dry cleaning machine	Approx. 20-gallon drum	One	20 gallons	The label on the drum indicated it was a detergent.	good	See Phase I ESA
Southern portion of building next to dry cleaning machine	Approx. 10-gallon container	One	10 gallons	The label on the drum indicated it was a multi-fabric supplement used for perchloroethylene .	Good	See Phase I ESA

TRI TERRA

ATTACHMENT 6

PROFESSIONAL QUALIFICATIONS

RUTHIE DOERING
PROJECT GEOLOGIST

EDUCATION

BA Geology and English - 2013
Albion College, Albion, Michigan

AREAS OF EXPERTISE

- American Society for Testing Materials (ASTM) Phase I and Phase II Environmental Site Assessments (ESAs)
- Baseline Environmental Assessments (BEAs)
- Due Care Plans/Documentation of Due Care Compliance
- Soil, Groundwater, and Soil-Gas Data Evaluation for Due Care Obligations
- Response Activity Plans
- ASTM Vapor Encroachment Screening Standard, Soil-Gas and Vapor Sampling
- Borehole Logging, Soil Classification, and Soil & Groundwater Sampling
- Underground Storage Tank (UST) Removal and Site Assessment
- Part 201 & Part 213 Leaking Underground Storage Tank (LUST) Site Investigation & Remediation
- Hazardous Materials Assessments (Asbestos and Mold)

EXPERIENCE

Ms. Doering has more than 5 years of experience in environmental consulting with a primary focus on environmental due diligence services. She currently serves as a Project Geologist and oversees our Environmental Due Diligence Services. Her work focuses on accuracy in identifying, understanding, predicting, and reducing contamination that impacts the environment. Ms. Doering regularly conducts field assignments and data analysis as well as technical report preparation in support of due diligence processes associated with property transactions and Brownfield Projects. She maintains a good understanding of the regulatory requirements and considerations necessary for projects that include investigation, due care obligations and response activities, remediation, closure, and reporting.

Ms. Doering's responsibilities include preparing reports and conducting investigations at properties with existing or potential contamination present, managing and implementing field activities, and communicating with clients and subcontractors. Investigation activities involve site classification and soil, groundwater, and soil-gas sampling.

NOTABLE PROJECT EXPERIENCE

- ASTM Phase I and Phase II ESAs including Michigan State Housing Development Authority (MSHDA) Review Requirements and Transaction Screens
- Management of Triterra's Environmental Due Diligence Services, which has included over 100 Phase I ESAs, 50 Phase II ESAs, 30 BEAs and Due Care Plans/DDCCs.
- Management and Preparation of Phase I & II ESAs, BEA, Due Care, and Soil-Gas/Vapor Assessments
- Management of UST Removal/Site Assessments
- Oversight/Completion of Investigation Activities at LUST Sites, including advancement of soil borings, installation of monitoring wells, collection of soil & groundwater samples, preparation of Initial Assessment and Final Assessment Reports, and implementation of an Oxygen-Releasing Compound Injection Remediation Plan
- Evaluation for Risk-Based Closures
- Geochemical Indicators of Natural Attenuation Processes
- Surveying and Groundwater Modeling

PROFESSIONAL REGISTRATIONS & CERTIFICATIONS

- Asbestos Building Inspector – Michigan A45110
- Hazardous Waste Operations & Emergency Response (HAZWOPER) Training

J.P. BUCKINGHAM, CPG
COO | PRINCIPAL GEOLOGIST

TRI TERRA

EDUCATION

BS Geology - 1999
Hope College, Holland, Michigan

Additional specialized training includes completing programs in Due Diligence, Risk-Based Corrective Action, and ASFE Fundamentals of Professional Practice.

AREAS OF EXPERTISE

- ASTM Phase I and II Environmental Site Assessments (ESAs)
- Baseline Environmental Assessments (BEAs) and Due Care Plans/ Documentation of Due Care Compliance
- Evaluating Soil and Groundwater Data for Due Care Obligations
- Brownfield Redevelopment Planning and Implementation
- Brownfield Tax Increment Financing Work Plans and Incentive Evaluations
- Brownfield Grant and Loan Application Preparation
- Hazardous Materials Assessments (Asbestos, Mold, and Lead)
- Underground Storage Tank Removal and Assessment
- Borehole Logging and Screening with Soil and Groundwater Sampling
- Monitoring Well Construction Oversight, Development, and Sampling
- Evaluating Soil and Groundwater Data for Risk-Based Closures
- Redevelopment & Demolition Oversight: Owner's Representation and Administration

EXPERIENCE

Mr. Buckingham has more than 19 years of experience in the manufacturing industry and environmental consulting. Fourteen of his 19 years has been spent working directly with property owners, banks, developers, construction companies, real estate agents, and communities deal with the challenges associated with acquiring and developing property. Mr. Buckingham currently serves as the Director of Due Diligence as well as a Principal Geologist. His responsibilities include overseeing work completed in the service group while managing and assisting staff with Phase I/II ESAs, Environmental Transaction Screens (ETS), BEAs, Due Care Evaluations/Plans, State and Local Brownfield Tax Increment Finance (TIF) Plans, Site Assessment and Brownfield Redevelopment Grant/Loan Applications, and building inspections associated with property transactions. Mr. Buckingham routinely assists developers, businesses, and communities integrate appropriate brownfield incentives and environmental due diligence solutions into a strategic approach to real estate acquisition and brownfield redevelopment.

Mr. Buckingham is focused on the strategic development of Brownfield properties, from dealing with the complex environmental challenges to creating a unique financial incentive package,

which drives value to our clients' bottom line. Additionally, he has conducted numerous Phase I ESAs, subsurface assessments, BEAs, and Due Care Plans for residential, commercial, and industrial sites. These sites included undeveloped parcels ranging in size from 5 to 300 acres, retail strip malls, gasoline filling stations, dry cleaners, automobile repair shops, high-rise commercial buildings, and manufacturing facilities.

PROFESSIONAL REGISTRATIONS & CERTIFICATIONS

- Certified Professional Geologist – Michigan (#11556)
- Asbestos Building Inspector – Michigan (#A33880)
- Hazardous Waste Operations & Emergency Response (HAZWOPER) Training

PROFESSIONAL ORGANIZATIONS & AFFILIATIONS

- American Institute of Professional Geologists (AIPG)
- Lansing Economic Area Partnership (LEAP)
- Michigan Economic Developers Association (MEDA)
- Lansing Chamber of Commerce
- Shiawassee Regional Chamber of Commerce
- Michigan Chamber of Commerce