SOIL INVESTIGATION REPORT
ELLENBORO STORE (BRRTS 03-22-002557)
3887 ELLENBORO ROAD
ELLENBORO, WISCONSIN 53813

PREPARED FOR:

JANET DIMAGGIO
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
3911 FISH HATCHERY ROAD
FITCHBURG, WISCONSIN 53711

GRANT COUNTY
111 SOUTH JEFFERSON STREET
LANCASTER, WISCONSIN 53813

MAY 2018

SEYMOUR ENVIRONMENTAL SERVICES, INC.

P.O. Box 398, 2531 Dyreson Road, McFarland, Wisconsin 53558

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1.0 INTRODUCTION

Seymour Environmental Services, Inc. (Seymour) recently completed post-closure soil sampling at the former Ellenboro Store. The objective of the work was to characterize the horizontal and vertical extent of the soil contamination which remains under the former building. The building was present during historic investigation and remedial activities so the extent of the contamination in this area was not well defined. The site was closed by WDNR with continuing obligations including a GIS registry for residual soil contamination. The site may be redeveloped and the current owner, Grant County, believes removal of the residual soil contamination would be constructive to facilitate redevelopment and prevent any future environmental issues, especially since the entire area is serviced by private water supply wells.

During the assessment soil contamination exceeding WDNR standards was identified in soils around the former UST. This contamination was present approximately 12 to 20 feet below grade. The recent sampling indicates that the soil contamination does not extend substantially beneath the former Ellenboro Store building. Under the current site conditions the residual soil contamination located on the subject site and the adjacent right-of-way soil is now accessible and could be excavated.

1.1 Site and Consultant Information

Site Location:	Former Ellenboro Store 3887 Ellenboro Road Ellenboro, Wisconsin Grant County NW ¼ NE ¼ Section 33 Township 04 North, Range 02 West WTM: X-469841, Y-256900
Owner:	Grant County 111 South Jefferson Lancaster, Wisconsin 53813 Contact: Robert Keeney (608) 723-2711
Consultant:	Seymour Environmental Services, Inc. 2531 Dyreson Road McFarland, Wisconsin 53558 Contact: Robyn Seymour (608) 838-9120
Geoprobe/Driller:	On-site Environmental Services, Inc. P.O. Box 280 Sun Prairie, Wisconsin 53590 Kim Kapugi (608) 837-8992
Laboratory:	Pace Analytical 1241 Bellevue Street, Suite 9 Green Bay, Wisconsin 54302 Contact: Dan Milewsky (920) 469-2436

2.0 BACKGROUND INFORMATION

2.1 Site Description

The site is located in the unincorporated village of Ellenboro (Figure 1). The site is at an elevation of approximately 750 feet above sea level. The ground surface in the area slopes to the south. The topography in the area is slight to steeply sloping. Surface water flow is to the south toward the Platte River located approximately 900 feet south of the site. Bedrock is dolomite (Galena-Platteville Formation) and is present at a depth of 14 to 25 feet.

The subject parcel (PN: 014-00712-000) is 0.15 acres in size. The site is the location of the former Ellenboro Store which sold fuel. Three underground storage tanks (USTs) were removed in 1995 and the release was noted at that time. A fourth UST, installed to replace the leaking tanks, was removed in June of 2013. The property has been owned by Grant County since May 2004 for non-payment of taxes. The Ellenboro Store building was razed in September of 2016. Properties in the area include a tavern to the north, residential properties to the east and west, and farmland is present to the south.

2.2 Summary Previous Environmental Activities

One of the USTs formerly present at the site failed tank tightness testing in March 1995. The tanks were removed/upgraded in December 1995 and contaminated soils were excavated at the tank basin to a depth of 18 feet. The excavation was approximately 9 feet by 25 feet and 18 feet deep. The soil removed (73 cubic yards) was disposed of off site. Soil samples collected at the base of the excavation indicated that contamination remained in sediments at the base of the excavation.

In the spring and summer 1995 private water-supply wells near the site were sampled. PVOCs were present in 7 of the 9 wells. Six of the water-supply wells were replaced.

In 1997 13 borings and 5 monitoring wells were installed at the site. Data from these locations indicated that soil contamination was present in the area around the tank bed and groundwater contamination also was present. Soil contamination was identified in a 100 by 60 foot area around the tank bed.

In early 2000 four additional monitoring wells were installed at the site to delimit the extent of impacted groundwater. Groundwater monitoring conducted from 2000-2009 show that the water table is present 10-20 feet below grade and shallow groundwater flow is south-westerly toward the Platte River. Although the water table elevation varies substantially the flow direction remains fairly consistent. The groundwater flow deeper in the bedrock aquifer appears to mimic the water-table. Groundwater contamination in the water table aquifer exceeding the ES extended over an area of approximately100 by~150 feet originating at the former tank basin and extending toward the south southwest.

A soil vapor extraction system was operated at the site from January 2006 through July 2008. Contaminant levels in the influent vapors declined steadily during system operation and the system was shut down in July 2008 because of the declining efficiency.

Post-remediation soil sampling was conducted by Seymour in September 2012. Five borings were installed and soil samples were collected to compare with historic information. Minimal soil contamination was identified.

A closure request was submitted in 2013 and the site was closed with residual soil and groundwater contamination. Contamination present at the time of site closure is shown on Figure 2.

3.0 RECENT SOIL INVESTIGATION ACTIVITIES

Seymour and On-site Environmental Services, Inc. (On-site) met at the site on November 15, 2017 to conduct the soil sampling. During the work two direct push borings were installed in the footprint of the former building. The borings were located in the basement of the former building. The borings were placed as far north as was possible but the northern wall of the basement which is still present limited access in that direction. The boring locations are shown on Figure 3.

During drilling soil samples were collected continuously through the sample column. Soil samples were described in the field and field screened for organic vapors using a photoionization detector equipped with a 10.6 eV lamp. No evidence of soil contamination was noted during the drilling. Boring logs with organic vapor screening results are included in the Appendix A.

Two soil samples from each of the borings were selected for laboratory analysis. Because no field evidence of contamination was noted soil samples from the contaminated horizon identified during the earlier work were analyzed. The soil samples were sent to Pace Analytical, a WDNR-certified laboratory, to be analyzed for PVOC+naphthalene.

Soil samples from depth ranging from 8 to 16 feet were analyzed during the work. Sampling depths are from the basement elevation and would be ~6 feet greater if measured relative to the tank bed surface elevation. No analytes were detected in any of the four soil samples. Based on the field observations and laboratory analyses it appears that the soil contamination originating from the former tank system did not migrate substantially toward the south and beneath the former building. Soil analytical data is compiled in Table 1 along with historic information. The laboratory report is included in Appendix B.

4.0 DISCUSSION OF RESULTS

Soil contamination exceeding groundwater pathway RCLs is present over an area of approximately 45 by 30 feet. The depth of the contamination generally is between 12 and 20 feet. It is unclear whether the soil contamination extends to the bedrock interface (Figure 4). Approximately 400 cubic yards (600 tons) of contaminated soil remain at the site. Excavation of the contaminated soil would require removal of ~600 cubic yards of clean overburden. The volume of soil contamination was estimated based on data collected during the 2012 post-remedial sampling and the recent sampling work.

5.0 RECOMMENDATIONS

Removal of the Ellenboro Store building has made the residual soil accessible. The county is planning road improvements for Ellenboro Road. We recommend removing the soil contamination to avoid any future exposure to workers and minimize the potential for future impacts to private wells. If we are successful in removing all of the contaminated soil we will likely request a modification to the closure conditions/GIS which reflects that no residual soil contamination remains.

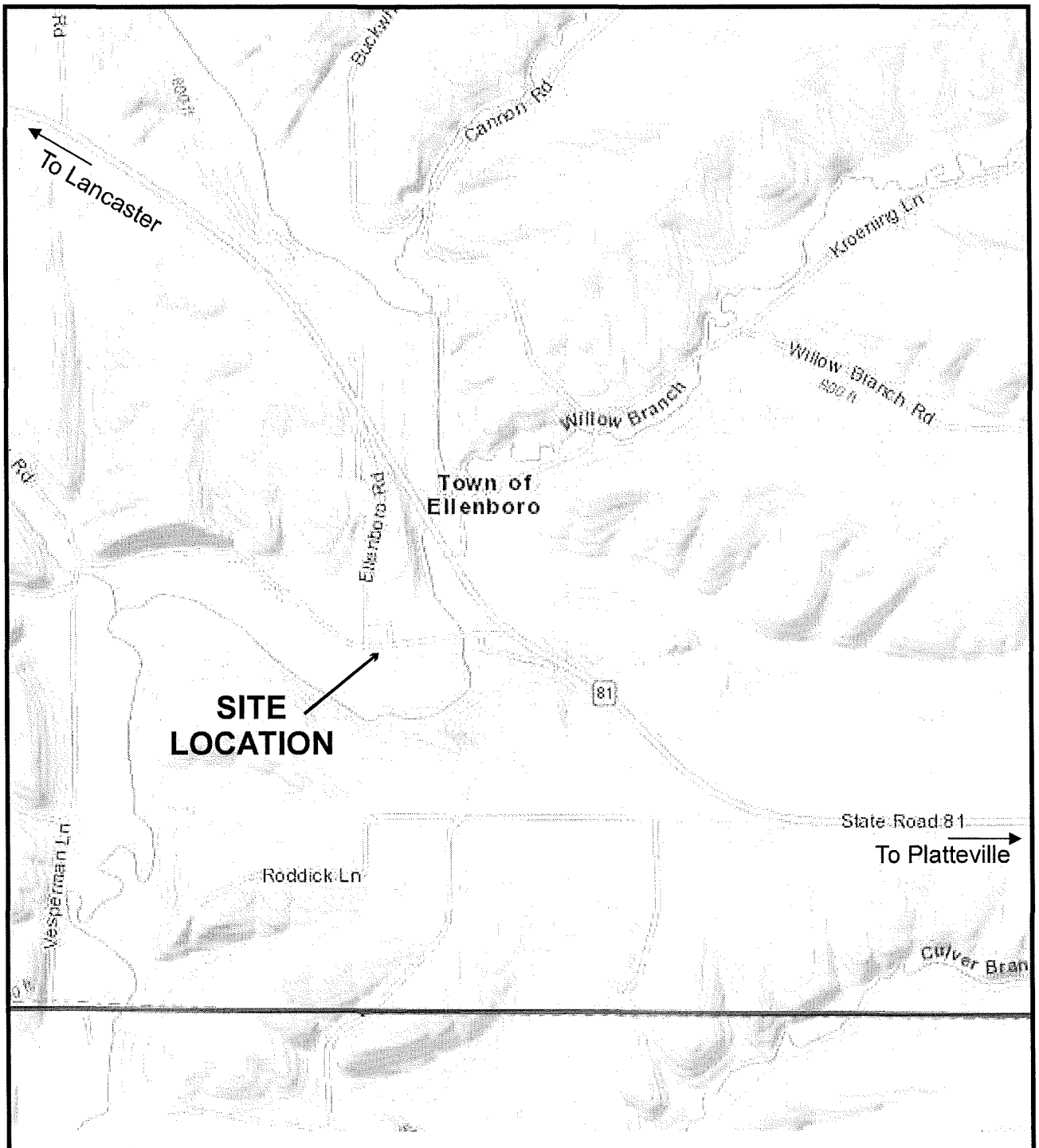
Questions should be directed to Robyn Seymour or Mark Fryman at (608) 838-9120.

Sincerely,
Seymour Environmental Services, Inc.

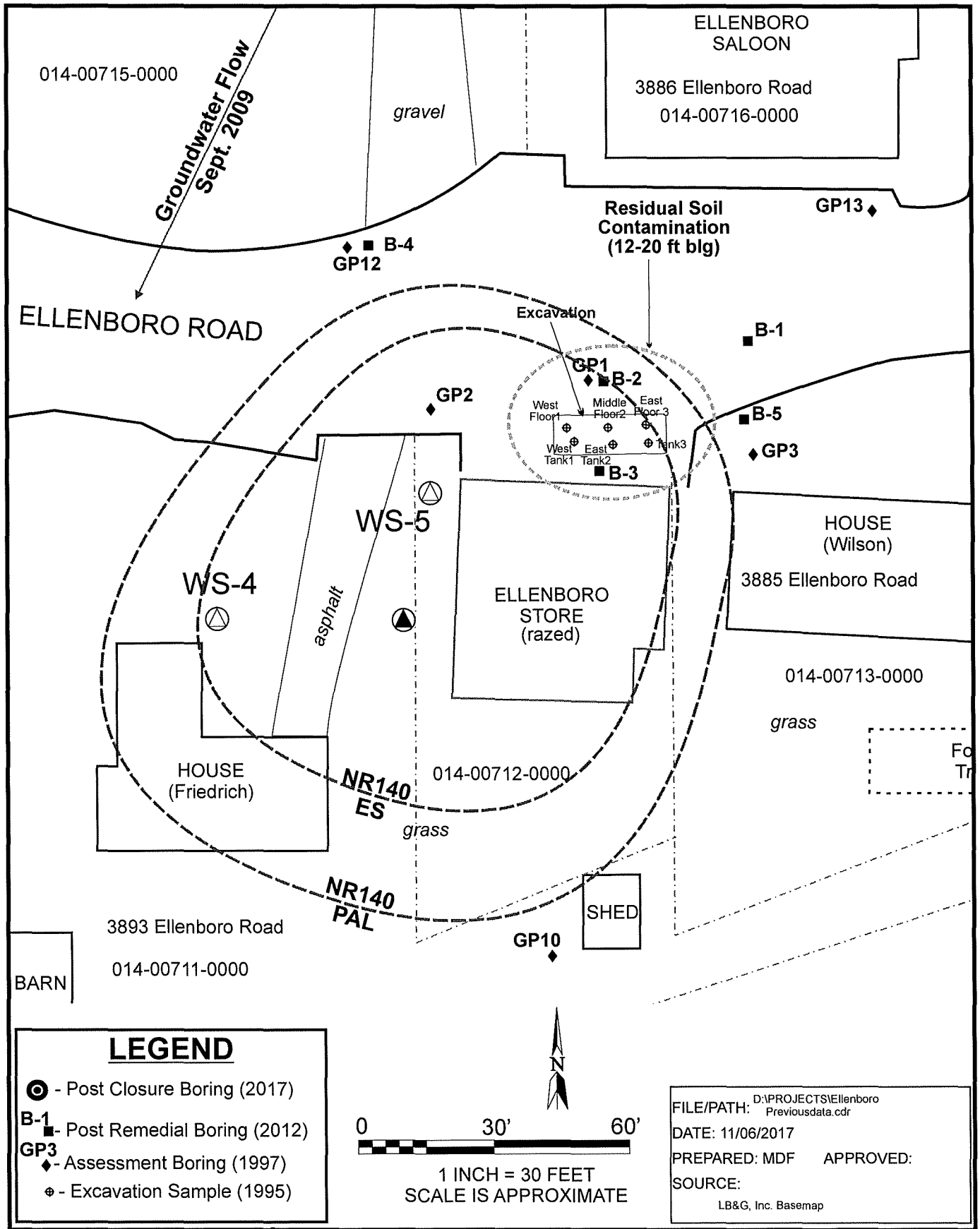
Robyn Seymour

Robyn Seymour

FIGURES



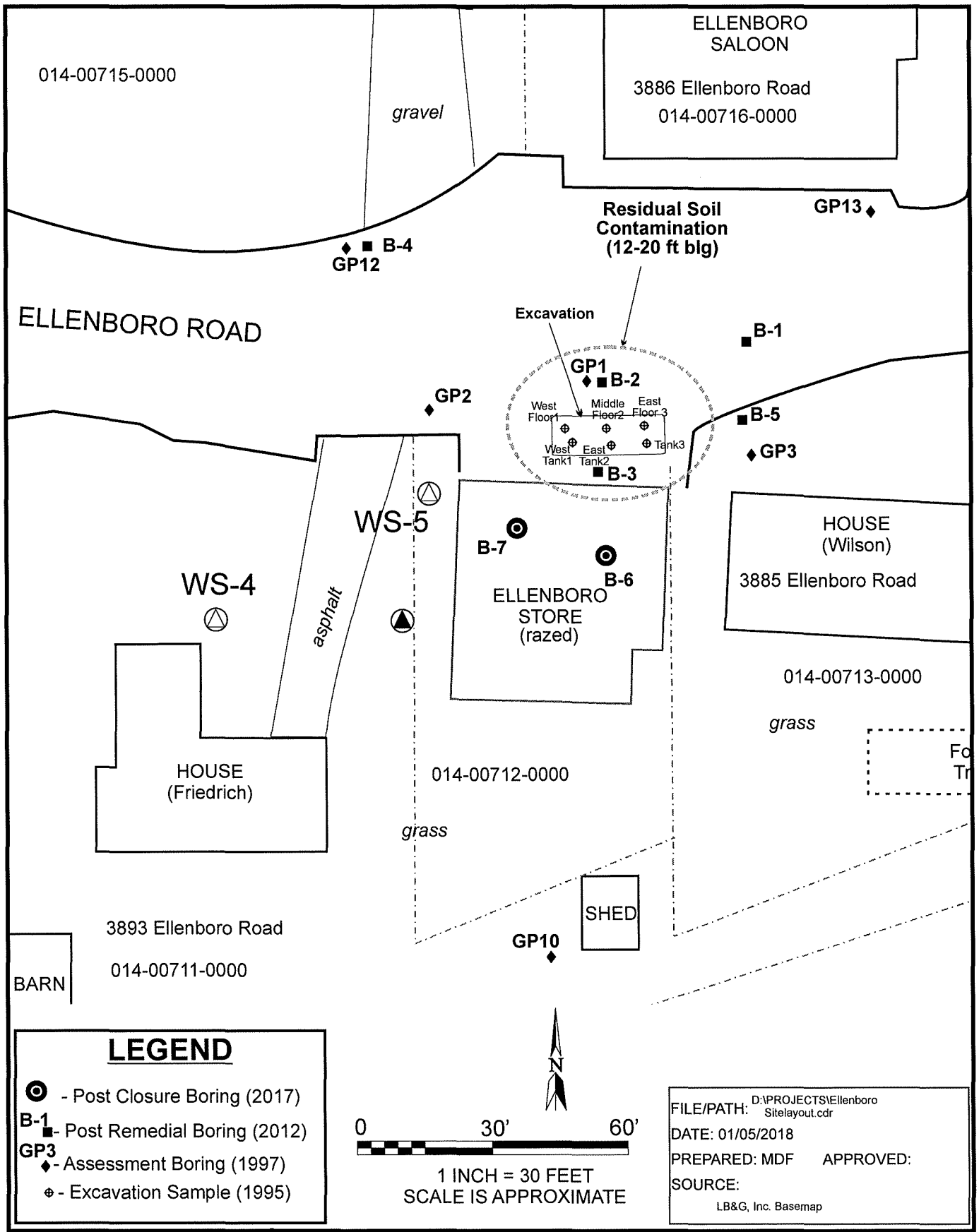
SEYMOUR ENVIRONMENTAL SERVICES, INC.	SITE LAYOUT ELLENBORO STORE 3887 Ellenboro Road Ellenboro, Wisconsin	FIGURE 1



SEYMOUR ENVIRONMENTAL SERVICES, INC.

CONTAMINATION AT CLOSURE (2013)
ELLENBORO STORE
3887 Ellenboro Road
Ellenboro, Wisconsin

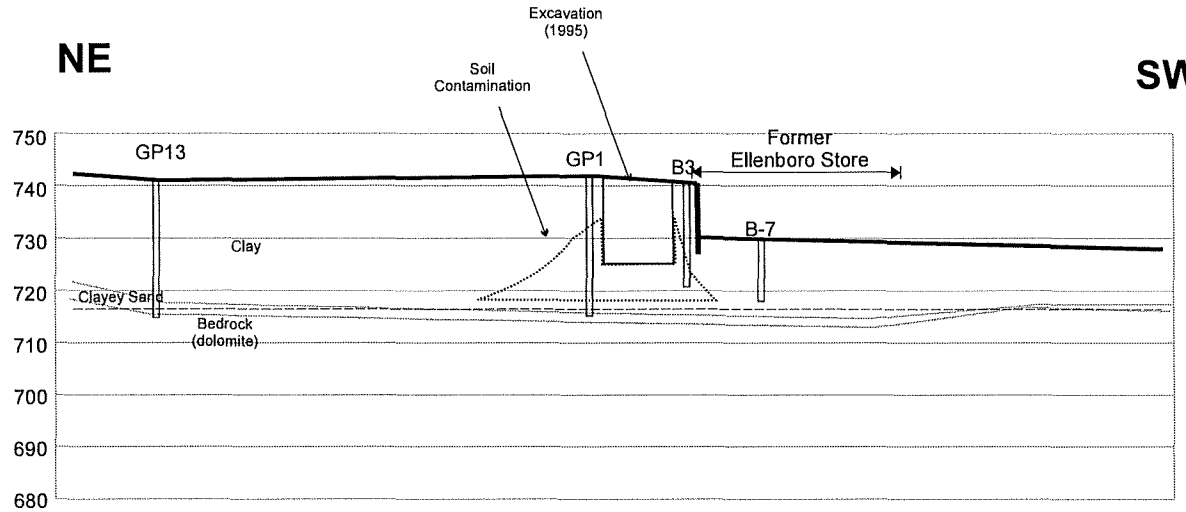
FIGURE
2

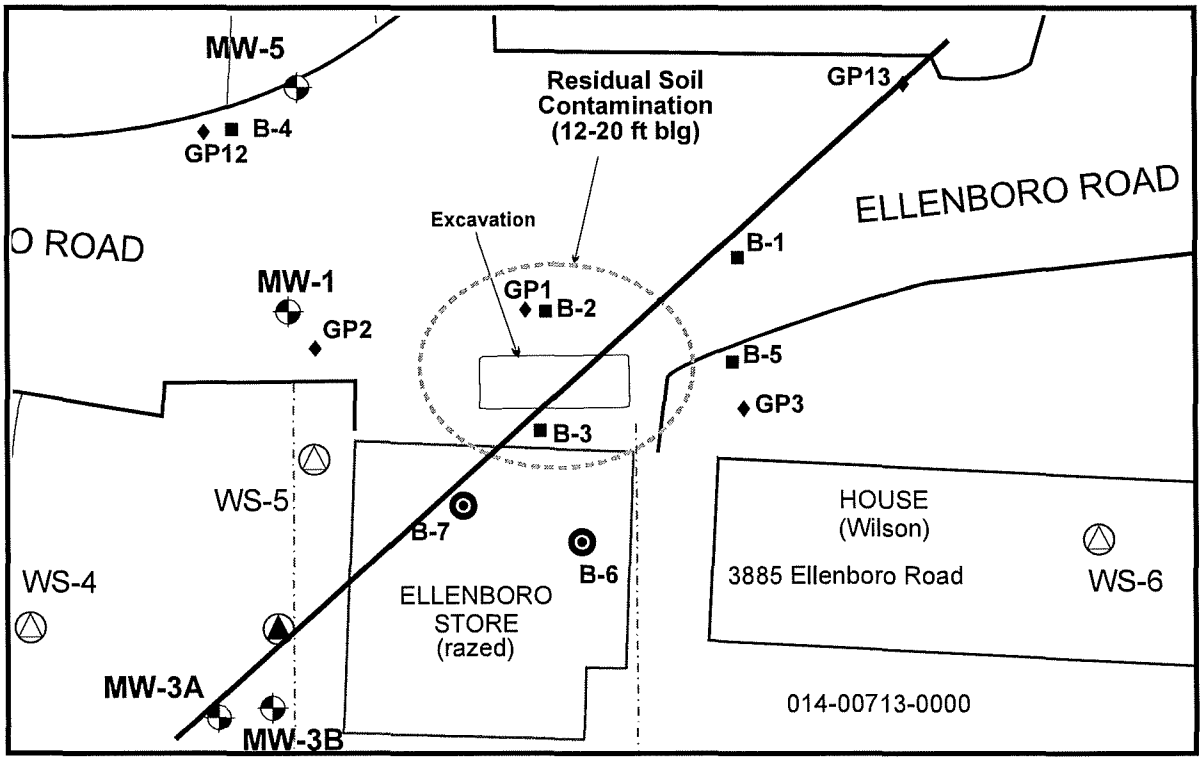


SEYMOUR ENVIRONMENTAL SERVICES, INC.

POST-CLOSURE BORING LOCATIONS
ELLENBORO STORE
3887 Ellenboro Road
Ellenboro, Wisconsin

FIGURE 3





LEGEND

- ⊙ - Post Closure Boring (2017)
- B-1 ■ - Post Remedial Boring (2012)
- GP3 ♦ - Assessment Boring (1997)
- ⊕ - Excavation Sample (1995)

N

0 30' 60'

1 INCH = 30 FEET
SCALE IS APPROXIMATE

FILE/PATH: D:\PROJECTS\Ellenboro Cross-section.cdr
DATE: 01/05/2018
PREPARED: MDF APPROVED:
SOURCE:
LB&G, Inc. Basemap

SEYMOUR ENVIRONMENTAL SERVICES, INC.

CROSS-SECTION SHOWING CONTAMINATION
ELLENBORO STORE
3887 Ellenboro Road
Ellenboro, Wisconsin

FIGURE
4

TABLE

TABLE 1 (page 1 of 2)
SUMMARY OF SOIL ANALYTICAL DATA
Ellenboro Store
3887 Ellenboro Road - Ellenboro, Wisconsin

Sample I.D.	Depth (ft)	PID	DRO	GRO	Benzene	1,2 Dichloroethane	Ethylbenzene	Methyl-tert-butyl ether	Toluene	1,3,5 Trimethylbenzene	1,2,4 Trimethylbenzene	Total Trimethylbenzene	Total Xylenes	Naphthalene	Isopropylbenzene	n-Butylbenzene	n-propylbenzene	p-Isopropyltoluene	s-Butylbenzene	Lead
TANK CLOSURE (12/12/95)																				
East Tank #2	6.5	na	na	19,000	***360,000***	na	***380,000***	<13,000	***1,500,000***	*770,000*	*900,000*	**1,670,000**	***2,000,000***	na	na	na	na	na	na	na
West Tank #1	6.5	na	na	19,000	***290,000***	na	***410,000***	<13,000	***1,400,000***	*920,000*	*1,000,000*	**1,920,000**	***2,300,000***	na	na	na	na	na	na	na
Tank #3	6.5	na	5900	20,000	***340,000***	na	***310,000***	<12,000	***1,300,000***	*690,000*	*800,000*	**1,490,000**	***1,600,000***	na	na	na	na	na	na	na
West Floor #1	18	na	860	9,100	***110,000***	na	***170,000***	<12,000	**600,000**	*340,000*	*380,000*	**720,000**	***870,000***	na	na	na	na	na	na	na
Middle Floor #2	18	na	180	1,700	***27,000***	na	***43,000***	<10,000	**78,000**	85,000	98,000	**183,000**	**170,000**	na	na	na	na	na	na	na
East Floor #3	18	na	1500	4,800	***59,000***	na	***82,000***	<620	**280,000**	170,000	190,000	**360,000**	***430,000***	na	na	na	na	na	na	na
SITE ASSESSMENT (Oct. 1997)																				
GP-1	17	452	5.3	86	**2500**	<25	**2600**	<25	**5200**	1900	5900	<50.0	**11000**	440	260	620	1100	81	130	7.5
GP-2	20*	53	na	na	<25	na	<25	<25	<25	<25	<25	<50.0	<50	na	na	na	na	na	na	na
GP-3	3	146	na	na	**1000**	na	130	<25	**1500**	57	160	217	690	na	na	na	na	na	na	na
GP-12	20	309	<4.2	32	**730**	**94**	240	<25	<25	530	1500	**2030**	1800	370	120	170	220	82	44	9.7
G-13	3.5	18	na	na	<25	na	<25	<25	<25	<25	<25	<50.0	<50	na	na	na	na	na	na	na
GW Pathway RCL			ns	ns	5.1	2.8	1570	27	1107	ns	ns	1379	3940	658.7	ns	ns	ns	ns	ns	27
Non-industrial DC RCL			ns	ns	1600	652	8020	63800	818000	182000	219000	ns	260000	5520	268000	108000	264000	162000	145000	400
Industrial DC RCL			ns	ns	7070	2870	35400	282000	818000	182000	219000	ns	260000	24100	268000	108000	264000	162000	145000	800

- GRO, DRO and lead values are listed in mg/kg; VOCs are in ug/kg
- na = not analyzed
- ns = no standard established
- Depth Values with * indicate sample collected within saturated soils
- GW Pathway RCL = Groundwater Pathway Residual Contaminant Level (exceedances bold)
- Non-industrial DC RCL = Direct contact RCL for non-industrial properties (exceedances underlined)
- Industrial DC RCL = Direct contact RCL for industrial properties (exceedances italicized)
- Soil standards are default values from WDNR R&R RCL calculator

TABLE 1 (page 2 of 2)
SUMMARY OF SOIL ANALYTICAL DATA
Ellenboro Store
3887 Ellenboro Road - Ellenboro, Wisconsin

Sample I.D.	Depth (ft)	PID	DRO	GRO	Benzene	1,2 Dichloroethane	Ethylbenzene	Methyl-tert-butyl ether	Toluene	1,3,5 Trimethylbenzene	1,2,4 Trimethylbenzene	Total Trimethylbenzene	Total Xylenes	Naphthalene	Isopropylbenzene	n-Butylbenzene	n-propylbenzene	p-Isopropyltoluene	s-Butylbenzene	Lead
POST-REMEDIATION (09/28/12)																				
B-1	17	na	na	na	<25.0	na	<25.0	<25.0	<25.0	<25.0	<25.0	<50.0	<75.0	<25.0	na	na	na	na	na	na
B-1	20	na	na	na	<25.0	na	142	<25.0	105	75.4	249	324.4	900	<25.0	na	na	na	na	na	na
B-2	3	na	na	na	<25.0	na	<25.0	<25.0	<25.0	<25.0	<25.0	<50.0	<75.0	<25.0	na	na	na	na	na	na
B-2	20	na	na	na	**428**	na	**8000**	<200	**12700**	13200	35000	**48200**	**49200**	**6780**	na	na	na	na	na	na
B-3	3.5	na	na	na	<25.0	na	<25.0	<25.0	<25.0	<25.0	<25.0	<50.0	<75.0	<25.0	na	na	na	na	na	na
B-3	18	na	na	na	<500	na	**12300**	**643**	**2150**	61000	127000	**188000**	**116500**	**24400**	na	na	na	na	na	na
B-4	20	na	na	na	<25.0	na	<25.0	<25.0	<25.0	<25.0	<25.0	<50.0	<75.0	<25.0	na	na	na	na	na	na
B-4	23.5*	na	na	na	<25.0	na	<25.0	<25.0	<25.0	<25.0	<25.0	<50.0	<75.0	<25.0	na	na	na	na	na	na
B-5	14	na	na	na	<25.0	na	<25.0	<25.0	<25.0	<25.0	<25.0	<50.0	<75.0	<25.0	na	na	na	na	na	na
B-5	20	na	na	na	<25.0	na	<25.0	<25.0	<25.0	<25.0	39.8	39.8	146.9	<25.0	na	na	na	na	na	na
POST CLOSURE (11/15/2017)																				
B-6	8	0	na	na	<25.0	na	<25.0	<25.0	<25.0	<25.0	<25.0	<50.0	<75.0	<25.0	na	na	na	na	na	na
B-6	16	0	na	na	<25.0	na	<25.0	<25.0	<25.0	<25.0	<25.0	<50.0	<75.0	<25.0	na	na	na	na	na	na
B-7	8	0	na	na	<25.0	na	<25.0	<25.0	<25.0	<25.0	<25.0	<50.0	<75.0	<25.0	na	na	na	na	na	na
B-7	12	0	na	na	<25.0	na	<25.0	<25.0	<25.0	<25.0	<25.0	<50.0	<75.0	<25.0	na	na	na	na	na	na
GW Pathway RCL			ns	ns	5.1	2.8	1570	27	1107	ns	ns	1379	3940	658.7	ns	ns	ns	ns	ns	27
Non-industrial DC RCL			ns	ns	1600	652	8020	63800	818000	182000	219000	ns	260000	5520	268000	108000	264000	162000	145000	400
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- Soil standards are default values from WDNR R&R RCL calculator

APPENDIX A

LABORATORY REPORT

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

November 27, 2017

Robyn Seymour
Seymour Environmental Services, INC.
2531 Dyreson Road
Mc Farland, WI 53558

RE: Project: ELLENBORO
Pace Project No.: 40161106

Dear Robyn Seymour:
Enclosed are the analytical results for sample(s) received by the laboratory on November 17, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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

CERTIFICATIONS

Project: ELLENBORO
Pace Project No.: 40161106

Green Bay Certification IDs

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

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

SAMPLE SUMMARY

Project: ELLENBORO
Pace Project No.: 40161106

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40161106001	**B-6, 8'**	Solid	11/15/17 14:00	11/17/17 07:15
40161106002	**B-6, 16'**	Solid	11/15/17 15:00	11/17/17 07:15
40161106003	**B-7, 8'**	Solid	11/15/17 15:15	11/17/17 07:15
40161106004	**B-7, 12'**	Solid	11/15/17 15:30	11/17/17 07:15

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

SAMPLE ANALYTE COUNT

Project: ELLENBORO
Pace Project No.: 40161106

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40161106001	**B-6, 8'**	WI MOD GRO	ALD	10
		ASTM D2974-87	KTS	1
40161106002	**B-6, 16'**	WI MOD GRO	ALD	10
		ASTM D2974-87	KTS	1
40161106003	**B-7, 8'**	WI MOD GRO	ALD	10
		ASTM D2974-87	KTS	1
40161106004	**B-7, 12'**	WI MOD GRO	ALD	10
		ASTM D2974-87	KTS	1

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

SUMMARY OF DETECTION

Project: ELLENBORO
Pace Project No.: 40161106

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40161106001	**B-6, 8'**					
ASTM D2974-87	Percent Moisture	12.0	%	0.10	11/20/17 14:18	
40161106002	**B-6, 16'**					
ASTM D2974-87	Percent Moisture	19.7	%	0.10	11/20/17 14:18	
40161106003	**B-7, 8'**					
ASTM D2974-87	Percent Moisture	20.1	%	0.10	11/20/17 15:40	
40161106004	**B-7, 12'**					
ASTM D2974-87	Percent Moisture	13.9	%	0.10	11/20/17 14:18	

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

ANALYTICAL RESULTS

Project: ELLENBORO
Pace Project No.: 40161106

Sample: B-6, 8' **Lab ID: 40161106001** Collected: 11/15/17 14:00 Received: 11/17/17 07:15 Matrix: Solid

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

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: TPH GRO/PVOC WI ext.								
Benzene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 21:49	71-43-2	W
Ethylbenzene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 21:49	100-41-4	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 21:49	1634-04-4	W
Naphthalene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 21:49	91-20-3	W
Toluene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 21:49	108-88-3	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 21:49	95-63-6	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 21:49	108-67-8	W
m&p-Xylene	**<50.0**	ug/kg	100	50.0	1	11/21/17 07:00	11/21/17 21:49	179601-23-1	W
o-Xylene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 21:49	95-47-6	W
Surrogates									
a,a,a-Trifluorotoluene (S)	99	%	80-120		1	11/21/17 07:00	11/21/17 21:49	98-08-8	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**12.0**	%	0.10	0.10	1		11/20/17 14:18		

Sample: B-6, 16' **Lab ID: 40161106002** Collected: 11/15/17 15:00 Received: 11/17/17 07:15 Matrix: Solid

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

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: TPH GRO/PVOC WI ext.								
Benzene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 22:15	71-43-2	W
Ethylbenzene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 22:15	100-41-4	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 22:15	1634-04-4	W
Naphthalene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 22:15	91-20-3	W
Toluene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 22:15	108-88-3	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 22:15	95-63-6	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 22:15	108-67-8	W
m&p-Xylene	**<50.0**	ug/kg	100	50.0	1	11/21/17 07:00	11/21/17 22:15	179601-23-1	W
o-Xylene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 22:15	95-47-6	W
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%	80-120		1	11/21/17 07:00	11/21/17 22:15	98-08-8	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**19.7**	%	0.10	0.10	1		11/20/17 14:18		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: ELLENBORO
Pace Project No.: 40161106

Sample: B-7, 8' **Lab ID: 40161106003** Collected: 11/15/17 15:15 Received: 11/17/17 07:15 Matrix: Solid

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

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: TPH GRO/PVOC WI ext.								
Benzene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 22:41	71-43-2	W
Ethylbenzene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 22:41	100-41-4	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 22:41	1634-04-4	W
Naphthalene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 22:41	91-20-3	W
Toluene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 22:41	108-88-3	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 22:41	95-63-6	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 22:41	108-67-8	W
m&p-Xylene	**<50.0**	ug/kg	100	50.0	1	11/21/17 07:00	11/21/17 22:41	179601-23-1	W
o-Xylene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 22:41	95-47-6	W
Surrogates									
a,a,a-Trifluorotoluene (S)	98	%	80-120		1	11/21/17 07:00	11/21/17 22:41	98-08-8	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**20.1**	%	0.10	0.10	1		11/20/17 15:40		

Sample: B-7, 12' **Lab ID: 40161106004** Collected: 11/15/17 15:30 Received: 11/17/17 07:15 Matrix: Solid

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

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: TPH GRO/PVOC WI ext.								
Benzene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 23:07	71-43-2	W
Ethylbenzene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 23:07	100-41-4	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 23:07	1634-04-4	W
Naphthalene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 23:07	91-20-3	W
Toluene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 23:07	108-88-3	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 23:07	95-63-6	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 23:07	108-67-8	W
m&p-Xylene	**<50.0**	ug/kg	100	50.0	1	11/21/17 07:00	11/21/17 23:07	179601-23-1	W
o-Xylene	**<25.0**	ug/kg	50.0	25.0	1	11/21/17 07:00	11/21/17 23:07	95-47-6	W
Surrogates									
a,a,a-Trifluorotoluene (S)	98	%	80-120		1	11/21/17 07:00	11/21/17 23:07	98-08-8	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**13.9**	%	0.10	0.10	1		11/20/17 14:18		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: ELLENBORO
Pace Project No.: 40161106

QC Batch: 274919 Analysis Method: WI MOD GRO
QC Batch Method: TPH GRO/PVOC WI ext. Analysis Description: WIGRO Solid GCV
Associated Lab Samples: 40161106001, 40161106002, 40161106003, 40161106004

METHOD BLANK: 1617391 Matrix: Solid
Associated Lab Samples: 40161106001, 40161106002, 40161106003, 40161106004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/kg	<25.0	50.0	11/21/17 17:57	
1,3,5-Trimethylbenzene	ug/kg	<25.0	50.0	11/21/17 17:57	
Benzene	ug/kg	<25.0	50.0	11/21/17 17:57	
Ethylbenzene	ug/kg	<25.0	50.0	11/21/17 17:57	
m&p-Xylene	ug/kg	<50.0	100	11/21/17 17:57	
Methyl-tert-butyl ether	ug/kg	<25.0	50.0	11/21/17 17:57	
Naphthalene	ug/kg	<25.0	50.0	11/21/17 17:57	
o-Xylene	ug/kg	<25.0	50.0	11/21/17 17:57	
Toluene	ug/kg	<25.0	50.0	11/21/17 17:57	
a,a,a-Trifluorotoluene (S)	%	98	80-120	11/21/17 17:57	

LABORATORY CONTROL SAMPLE & LCSD: 1617392 1617393

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/kg	1000	1050	1040	105	104	80-120	1	20	
1,3,5-Trimethylbenzene	ug/kg	1000	1030	1010	103	101	80-120	2	20	
Benzene	ug/kg	1000	1050	1020	105	102	80-120	2	20	
Ethylbenzene	ug/kg	1000	1040	1000	104	100	80-120	4	20	
m&p-Xylene	ug/kg	2000	2060	2010	103	100	80-120	3	20	
Methyl-tert-butyl ether	ug/kg	1000	1050	977	105	98	80-120	7	20	
Naphthalene	ug/kg	1000	1030	976	103	98	80-120	5	20	
o-Xylene	ug/kg	1000	1030	1000	103	100	80-120	3	20	
Toluene	ug/kg	1000	1030	980	103	98	80-120	4	20	
a,a,a-Trifluorotoluene (S)	%				99	97	80-120			

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: ELLENBORO
Pace Project No.: 40161106

QC Batch: 274867 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 40161106001, 40161106002, 40161106004

SAMPLE DUPLICATE: 1617180

Parameter	Units	40161106002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.7	19.3	2	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: ELLENBORO
Pace Project No.: 40161106

QC Batch: 274899
QC Batch Method: ASTM D2974-87
Associated Lab Samples: 40161106003

Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture

SAMPLE DUPLICATE: 1617329

Parameter	Units	40161106003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	20.1	20.2	1	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: ELLENBORO
Pace Project No.: 40161106

DEFINITIONS

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

ND - Not Detected at or above LOD.

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

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

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

W Non-detect results are reported on a wet weight basis.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: ELLENBORO
Pace Project No.: 40161106

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40161106001	**B-6, 8'**	TPH GRO/PVOC WI ext.	274919	WI MOD GRO	275007
40161106002	**B-6, 16'**	TPH GRO/PVOC WI ext.	274919	WI MOD GRO	275007
40161106003	**B-7, 8'**	TPH GRO/PVOC WI ext.	274919	WI MOD GRO	275007
40161106004	**B-7, 12'**	TPH GRO/PVOC WI ext.	274919	WI MOD GRO	275007
40161106001	**B-6, 8'**	ASTM D2974-87	274867		
40161106002	**B-6, 16'**	ASTM D2974-87	274867		
40161106003	**B-7, 8'**	ASTM D2974-87	274899		
40161106004	**B-7, 12'**	ASTM D2974-87	274867		

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

40161106

Pace Analytical®
www.pacelabs.com

CHAIN OF CUSTODY

RPM

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	Seymour Environmental
Branch/Location:	
Project Contact:	Robyn Seymour
Phone:	608 225 9407
Project Number:	
Project Name:	Ellenboro
Project State:	Wisconsin
Sampled By (Print):	Robyn Seymour
Sampled By (Sign):	Robyn Seymour
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	Robyn Seymour
Mail To Company:	Seymour Env
Mail To Address:	2531 Dyreson McFarland WI
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: PVOC + Naph.	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	B-6, 8'	11/15	1400	S	N	F	X		1-40zpA, 1-40mLoF	
002	B-6, 16'		1500				X			
003	B-7, 8'		1515				X			
004	B-7, 12'		1530				X			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
Robyn Seymour	11/16/17		
CS Logistics	11/17/17 0715	[signature]	11/17/17 0715

PACE Project No.: 40161106

Receipt Temp = R0T °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal: Present / Not Present; Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

APPENDIX B

BORING LOGS

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122
Page 1 of 1

Facility/Project Name	BRRTst Number	License/Permit/Monitoring Number
Ellenboro Store	03-22-000783	B-6
Boring Drilled by		**Date Installed**
On-site (Gage Kapugi) Seymour Environmental (Robyn Seymour)		November 15, 2017
Boring or Well Number / **WI Unique Well Number (assigned by DNR)**	**Borehole Diameter**	**Water Level** / **Surface Elevation**
	2-inch	na
NW ¼ of NE ¼ of Section 33 T 4 N R 2 W	Grid Location (if applicable)	
County Grant / County Code 22	Civil Town Lancaster	

SAMPLE	RECOVERY	DEPTH (ft)	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RQD	Stable OVM (vppm)	Soil Properties q	W	LL	PL	P200	Blow Count
1	48	4	Light brown clayey silt (about 6 ft former building foundation) Mottled gray and brown clayey silt dense, slight gravel		ML ML		0						
2	12	8	Same as above		ML		0						
3	24	12	Layer of reddish brown sand (6 in) Red brown silty sand with clay		SW		0						
4	48	16	Same as above End of boring		ML								

Signature	Robyn Seymour	Firm: Seymour Environmental Services, Inc.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122
Page 1 of 1

Facility/Project Name	BRRTst Number	License/Permit/Monitoring Number
Ellenboro Store	03-22-000783	B-7
Boring Drilled by		**Date Installed**
On-site (Gage Kapugi) Seymour Environmental (Robyn Seymour)		November 15, 2017
Boring or Well Number WI Unique Well Number (assigned by DNR)	**Borehole Diameter** 2-inch	**Water Level** na **Surface Elevation**
NW ¼ of NE ¼ of Section 33 T 4 N R 2 W	Grid Location (if applicable)	
County Grant	County Code 22	Civil Town Lancaster

SAMPLE	RECOVERY	DEPTH (ft)	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RQD	Stable OVM (vppm)	Soil Properties q	W	LL	PL	P200	Blow Count
1	48	4	Light brown clayey silt (about 6 ft former building foundation) Mottled gray and brown clayey silt dense, slight gravel		ML ML		0						
2	20	8	Same as above		ML		0						
3	24	12	Red brown silty sand with clay		ML		0						
			End of boring										

Signature	Robyn Seymour	Firm: Seymour Environmental Services, Inc.