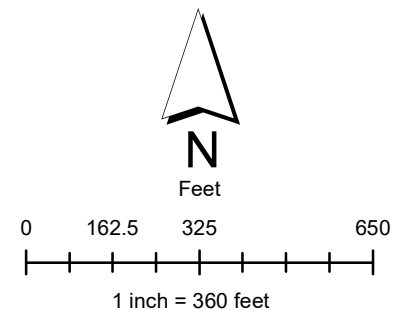


APPENDIX I: RAW DATA

**MAP OF WELLINGTON DITCH
WATER DISCOLARATIONS
AREA OF STUDY**



The City of Goshen's Digital Data is the property of the City of Goshen and Elkhart County, Indiana. All graphic data supplied by the city and county has been derived from public records that are constantly undergoing change and is not warranted for content or accuracy. The city and county do not guarantee the positional or thematic accuracy of the data. The cartographic digital files are not a legal representation of any of the features depicted, and the city and county disclaim any assumption of the legal status they represent. Any implied warranties, including warranties of merchantability or fitness for a particular purpose, shall be expressly excluded. The data represents an actual reproduction of data contained in the city's or county's computer files. This data may be incomplete or inaccurate, and is subject to modifications and changes. City of Goshen and Elkhart County cannot be held liable for errors or omissions in the data. The recipient's use and reliance upon such data is at the recipient's risk. By using this data, the recipient agrees to protect, hold harmless and indemnify the City of Goshen and Elkhart County and its employees and officers. This indemnity covers reasonable attorney fees and all court costs associated with the defense of the city and county arising out of this disclaimer.



Wellington Ditch Water Discoloration Area of Study

December 2016
2015 Aerial Photography

The City of Goshen
Department of Public Works & Safety
Office of Engineering
204 East Jefferson Street, Goshen, Indiana 46528
Phone: 574-534-2201 Fax: 574-533-8626

WELLINGTON WEEKLY DATA

Date	Time	Turbidity (NTU)	Flow Rate	Precipitation (inches in last 48 hours)	Photo #	Observations
3/23/2016	9:00 AM	1.42	-	0	-	Pre-outfall area much clearer
3/23/2016	9:00 AM	2.62	0in/sec	0	-	no noticeable movement, nothing on surface, clear water column, minnows present
3/30/2016	3:00 PM	2.42	-	0.16	-	Pre-outfall area much clearer
3/30/2016	3:00 PM	0.02	2in/sec	0.16	3-29-16.JPG	visible flow, small bubbles on surface, clear water column, minnows
4/6/2016	4:00 PM	0.72	-	0.02	-	Pre-outfall area much clearer
4/6/2016	4:00 PM	0.62	2in/sec	0.02	4-5-16.JPG	visible flow, small bubbles on surface, clear water column, minnows
4/13/2016	4:00 PM	0.57	-	0.41	-	Pre-outfall area much clearer
4/13/2016	4:00 PM	2.42	2in/sec	0.41	4-12-16(A,B).JPG	visible flow, larger bubbles on surface (very hydrophobic), clear water column, minnows
4/20/2016	6:00 PM	1.42	-	0	-	Pre-outfall area, high algal/plant growth
4/20/2016	6:00 PM	2.22	1in/sec	0	4-19-16.JPG	visible flow, cloudy bluish tinge, slightly lower water level than normal (2in), minnows
4/27/2016	2:30 PM	0.9	-	0.93		Pre-outfall area, clearer than last week
4/27/2016	2:30 PM	6.1	1.67 in/sec	0.93		cloudy, greenish blue, isolated hydrophobic bubbles, 3in below water mark, 2in below high algae line. No visible fish
5/4/2016	1:30 PM	2.4	-	0.42		Pre-outfall area, very clear & still
5/4/2016	1:30 PM	10	0.75 in/sec	0.42	5-3-16(A,B).JPG	cloudy, greenish/blue/yellowed in parts, isolates soapy residue, cannot see bottom sediments, normal water height
5/11/2016	1:30 PM	67	14in/sec	0.27	5-10-16(A-D).JPG	water level 6in higher than normal, coming out of pipe and flowing down stream and overflowing upstream (covering cement dividing ledge by 3in). High flow rate, grayish water more turbid inside of containment area than upstream, litter (grass clippings, cigarette butts, trash) carried within current, bubbles present on surface, widened stream width to 5-6 ft throughout downstream area.

Date	Time	Turbidity (NTU)	Flow Rate	Precipitation (inches in last 48 hours)	Photo #	Observations
5/11/2016	1:30 PM	33	-	0.27		water reverse flowing into "pre-outflow" area
9/21/2016	11:00 AM	1.59	-	0	-	very clear, still
9/21/2016	11:00 AM	5.73	1.3in/sec	0	9-20-16(A-C).JPG	normal water level, visible flow, no surface residue, gray-blue-turbid
9/28/2016	8:30 AM	1.64	-	0.33	-	very clear, still
9/28/2016	8:30 AM	6.03	-1in/sec (into pipe)	0.33	9-27-16(A,B).JPG	normal water level, green/blue turbid color like previous week, flowing INTO pipe, too turbid to see fish
10/6/2016	9:00 PM		-	0	-	clear, still
10/6/2016	9:00 PM	-	2in/sec	0	10-5-16A.JPG	normal height, bottom invisible, green/gray, bubbles. Samples sent to Element for library scan
10/29/2016	4:00 PM	-		0.81	-	clear, still
10/29/2016	4:00 PM	3.96	-	0.81	10-28-16(A,B).JPG	green/blue turbid color, bubbles on surface, floating white solids present (inside soapy patches). (Several solid samples collected)
11/1/2016	3:00 PM	-		0.23	-	greenish color, floral scent (smelled around 2:00PM by Goshen College professor emeritus of chemistry Lew Naylor), 3PM initially no flow upon arrival, within 10 minutes, flow increased to ~1in/sec
11/9/2016	5:00 PM	240 (when sample shaken)	-	0	11-8-16(A-H).JPG	normal height, turbid/muddy color, loose orange floating accumulations on the water surface collecting in corner of outflow containment area, dissipated when into bottle, later settled to bottom
11/19/2016	3:30 PM	2.13	1.5in/sec	0	-	bubbles, bottom visible with fish swimming, water mark 1-3 in higher than water level, no apparent discoloration except mild turbidity
11/24/2016	8:40 AM	3.76	3in/sec	0.03	-	increased flow, water blackish, 3in below water mark, oily film on surface, light rain
11/30/2016	8:40 AM	10.54	1in/sec	0.79	11-30-16(A-C).JPG	aqua, turbid color, bubbles on surface, cigarette butt floating, bottom not visible
12/6/2016	12:00 PM	11.4	2in/sec	0.28	12-6-16(A-H).JPG	blue-green, cloudy, most colored conditions witnessed by Cecilia Lapp Stoltzfus, coloration persisted north of Waverly Avenue.

STORM SEWER Ph
11.16.16 & 12.6.16

Site #	Site Name	Site Type	Time	pH	Temperature (°C)	Notes
#507-33138	10th and Burdick	Sanitary Sewer	8:51 AM	4.5	33.5°	white/green color initially, fast flow towards N, strong smell, at depth of ~15 ft below street
#507-33138	10th and Burdick	Sanitary Sewer	9:02 AM	2.76	38.1°	darker color (after a rapid shift), oily film on surface, fast flow towards N, at depth of ~15 ft below street
#507-3140	Burdick and alleyway 161 (N of T&M)	Storm Sewer, connected to Sanitary Sewer	9:16 AM	11.29	35.9°	met Buck, explained that pipe contains only boiler water effluent (as per communication with Goshen City in 2014 and changes in procedure), EPA said no permit needed
#507-3358	NY and alleyway 161 (S of T&M)	Storm Sewer	9:25 AM	8.39	14.6°	low flow height, no apparent color
#507-3326	10th street and NY	Storm Sewer	10:09 AM	8.65	16.4°	low flow height, no apparent color
#507-6181	NY Ave, DFA	Storm Sewer	10:26 AM	8.39	14.7°	foamy accumulation on surface, drains "cow water" from DFA (spoke with Greg Brown, DFA Quality Assurance Manager, mentioned concurrent release of cow water, and within 30 sec flow increased substantially

Site #	Site Name	Time	Temperature (°C)	pH	Turbidity (NTU)	Notes
#506-4990	Outfall	12:00 PM	13.7°	8.56	11.4	color persists in ditch north past waverly bridge
#606-2031	Backyard of 1633 S Main St	12:53 PM	13.5°	8.03		
#507-3821	10th street	1:04 PM	13.8°	7.98	13.6	
#507-3790	10th street & Iowa (from P-H West pipe)	1:13 PM	15.4°			
#507-3790	10th street (from North pipe)	1:14 PM	13.8°			
#507-3790	10th street (mixed)	1:15 PM	14.2°	8.05		
#507-3635	10th street & Illinois (P-H pipe)	1:22 PM	10.9°	8.04		
#507-3635	10th street & Illinois (N pipe)	1:23 PM	13.0°	7.87		
#507-3635	10th street & Illinois (mixed)	1:25 PM	12.8°	7.90		
#507-3542	10th street & S of Ohio, N of fence (Flair)	1:32 PM	7.3°	7.99		
#507-3542	10th street & S of Ohio, N of fence (mixed)	1:32 PM	10.6°	7.67		
#507-3418	10th street S of NY	1:40 PM	11.5°	7.50		
#507-3326	10th street and NY	12:37 PM	11.4°	8.15		
#507-3326	10th street and NY	1:46 PM	12.5°	7.60		
#507-6181	NY Ave, DFA	1:51 PM	11.4°	8.22	26.7	
#507-3358	NY and alleyway 161 (S of T&M)					insufficient flow to collect sample or submerge sensors
#507-3140	Burdick and alleyway 161, N of T&M	2:09 PM	25.5°	12		no apparent flow out of basin

**pH SAMPLING PICTURE
DISPLAY 11.15.2016**

November 15th pH Sampling Pictures

On the morning of November 15th, 2016, Cecilia Lapp Stoltzfus, Goshen College student, and Jason Kauffman, Stormwater Coordinator for the City of Goshen sampled one sanitary sewer structure and several storm sewer structures for pH and temperature.

The first structure sampled was sanitary structure #507-33138 at 8:51 am located to the north of Dairy Farmers of America. The YSI professional plus (YSI) probe had a pH reading of 4.50 and a temperature reading of 34.2°C.



Ten minutes later (9:02 am) a second reading was taken from structure #507-33138 and the YSI probe had a pH reading of 2.78 and a temperature reading of 38.1°C.



The second structure sampled was storm sewer structure #507-3140 at 9:16 am located to the north of T&M Rubber. The YSI profession plus (YSI) probe had a pH reading of 11.29 and a temperature reading of 35.8°C (steam was rising out of the structure).





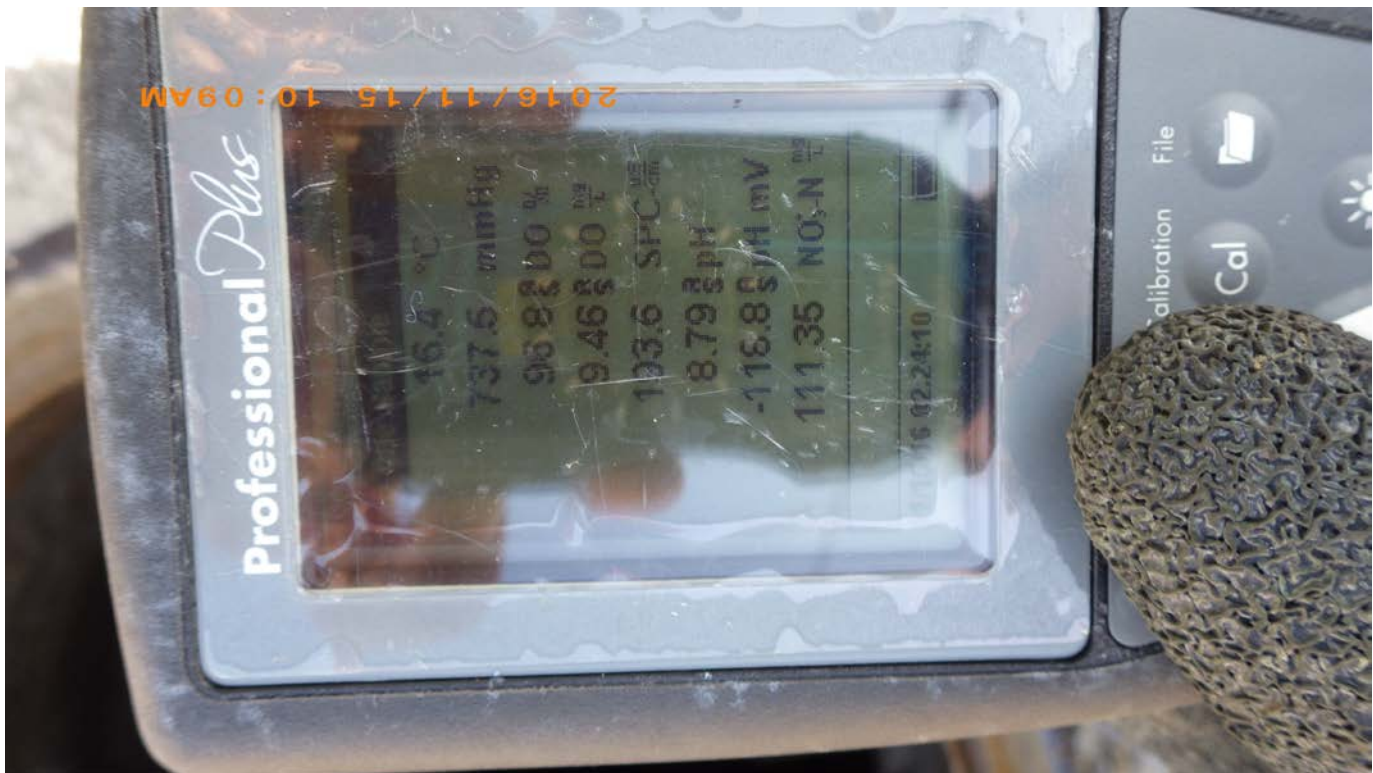
The third structure sampled was storm sewer structure #507-3358 at 9:25 am located south of T&M Rubber at the intersection of New York Street and Alley 161. The YSI profession plus (YSI) probe had a pH reading of 8.38 and a temperature reading of 14.6°C.





The fourth structure sampled was storm sewer structure #507-3326 at 10:09 am located in the middle of the intersection of New York Street and 10th Street. The YSI profession plus (YSI) probe had a pH reading of 8.79 and a temperature reading of 16.4°C.





The fifth structure sampled was storm sewer structure #507-3324 at 10:26 am located just to the east of the intersection of New York Street and 10th Street on the south side of DFA. The YSI profession plus (YSI) probe had a pH reading of 8.38 and a temperature reading of 14.7°C. Greg Brown of DFA came out and let us know cow water was being discharged currently. I believe the foam on the surface of the water is caused by the mixing of the water as it hits the weir in the pipe (visible at the top of the picture in front of the pipe).



Professional Plus

2016/11/15 10:26AM



System Probe Calibration File



**pH SAMPLING PICTURE
DISPLAY 12.06.2016**

December 6th pH Sampling Pictures

On the afternoon of December 6th, 2016, Cecilia Lapp Stoltzfus, Goshen College student, and Jason Kauffman, Stormwater Coordinator for the City of Goshen sampled 10 storm sewer structures and the outfall to Wellington Ditch for pH and temperature.

First, the water coming out of the College Avenue outfall (#506-4990) into Wellington Ditch was sampled at 12:17 pm. The YSI profession plus (YSI) probe had a pH reading of 8.56 and a temperature reading of 13.7°C. There were bubbles present on the surface of the water at this time.



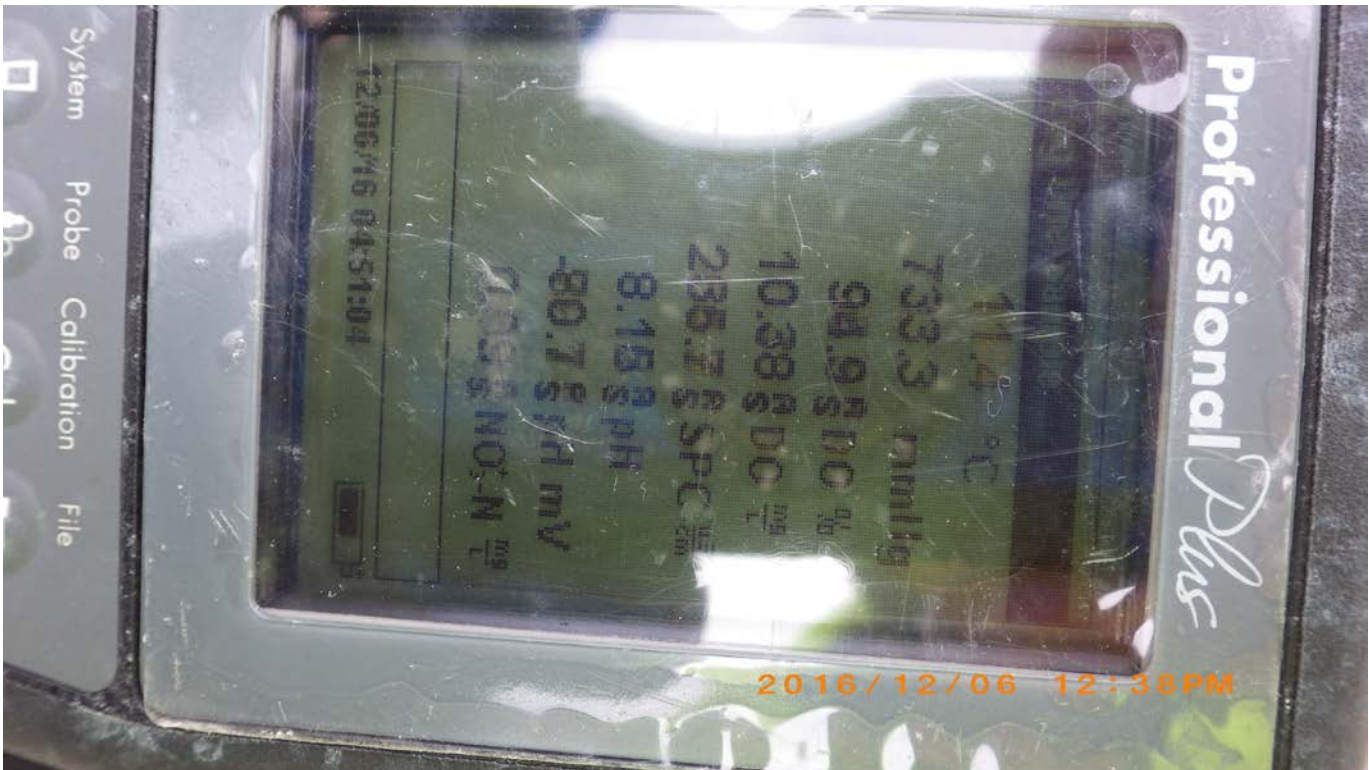


Here is a comparison between the water coming out of the College Avenue outfall and just upstream of the concrete structure.



Discolored water in Wellington Ditch extended north of Waverly Avenue. The extent of the discolored water was not explored beyond this point. (The culvert in the picture goes under Waverly Avenue.)

The next structure sampled was located at the intersection of New York Street and 10th Avenue in order to see if discoloration of the water could be identified. Structure #507-3326 was sampled at 12:37 pm and the YSI probe had a pH reading of 8.15 and a temperature reading of 11.4°C. (Below there will be another sample taken at 1:45 pm.)



The next structure sampled was storm sewer structure #606-2031 at 12:53 pm located in the backyard of 1633 S Main Street. The YSI probe had a pH reading of 8.03 and a temperature reading of 13.5°C.



The next structure sampled was storm sewer structure #507-3821 at 1:04 pm located on 10th Street across from 1606 S 10th Street. The YSI profession plus (YSI) probe had a pH reading of 7.98 and a temperature reading of 13.8°C.



The next structure sampled was storm sewer structure #507-3790 located at the intersection of 10th Street and Iowa Street and there are two sources of water flowing into this structure. One comes from Parker Hannifin and the other is the main storm sewer line. The water coming from Parker Hannifin was sampled with the YSI probe at 1:13 pm and was much warmer with a temperature reading of 15.4°C (obvious due to the steam), the pH reading

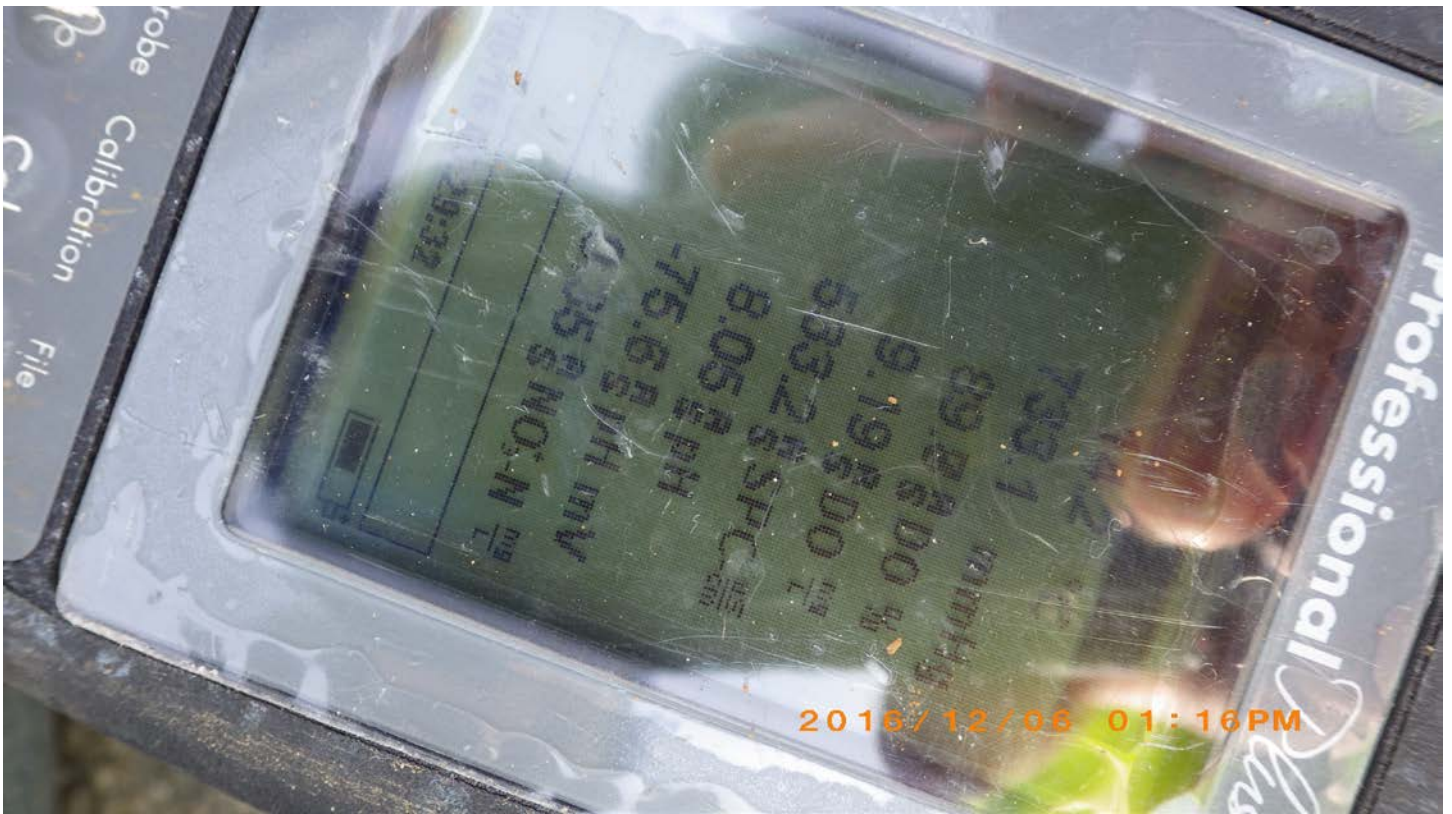
was not recorded. The main storm sewer pipe was sampled at 1:14 pm and with a temperature reading of 13.8°C, the pH reading was not recorded. At 1:16 pm the combined flow was sampled and the YSI probe had a pH reading of 8.05 and a temperature reading of 14.2°C.



Water coming from Parker Hannifin.



Combined flow.



The next structure sampled was storm sewer structure #507-3635 located at the intersection of 10th Street and Illinois Street and there are two sources of water flowing into this structure. One source comes from Parker Hannifin and the other is the main storm sewer line. The water coming from Parker Hannifin was sampled with the YSI probe at 1:22 pm with a temperature reading of 10.9°C and a pH reading of 8.04. The main storm sewer pipe was sampled at 1:23 pm and had a temperature reading of 13.0°C and a pH reading of 7.87. At 1:25 pm the combined flow was sampled and the YSI probe had a pH reading of 7.90 and a temperature reading of 12.8°C.





The next structure sampled was storm sewer structure #507-3542 located on 10th Street south of Ohio Street and again there were two sources of water flowing into the structure. One source comes from Flair and the other is the main storm sewer line. The water coming from Flair was sampled with the YSI probe at 1:32 pm with a temperature reading of 7.3°C and a pH reading of 7.99. The combination of flows were sampled at 1:32 pm with the YSI probe and had a temperature reading of 10.6°C and a pH reading of 7.67.





The next structure sampled was storm sewer structure #507-3418 located on 10th Street south of New York Street and again there were two sources of water flowing into the structure but the flow from Flair was not enough to sample. At 1:40 pm the YSI probe had a pH reading of 7.50 and a temperature reading of 11.5°C. (I did not get a picture of the YSI probe screen for this structure.)



The next structure sampled was located at the intersection of New York Street and 10th Avenue for the second time today. Structure #507-3326 was sampled at 1:46 pm and the YSI probe had a pH reading of 7.60 and a temperature reading of 12.5°C.



The next structure sampled was located just to the west on the south side of Dairy Farmers of America, structure #507-6181 (in the November 15, 2016, report it was mistakenly labeled as structure #507-3324). There was little flow at first and it appears the water was slightly discolored (see first picture). A water sample was taken for further analysis by Cecilia Lapp Stoltzfus. During this time Greg Brown with DFA came out and an explanation of what was going on was provided to him. The YSI probe was used at 1:51 pm and took a temperature reading of 11.4°C and a pH reading of 8.22. After the YSI probe was removed flow in the structure increased (see last picture).





The next structure sampled was located at the intersection of New York Street and Alleyway 161. The flow in this structure was not enough to obtain a reading with the YSI probe.



The final structure sampled was located on the north side of T&M Rubber on the south side of Burdick Street where it intersects with Alleyway 161. While the casting on structure #507-3140 was being removed running water could be heard but no water was observed flowing into the structure. Steam was coming out of the structure and the YSI probe was used at 2:09 pm to get a temperature reading of 25.5°C and a pH reading of 11.70. (Back

in the office Jason Kauffman realized this structure is connected to the primary storm sewer line but is not on the primary storm sewer line; that would be structure #507-3172.)



**FINAL ELEMENT LAB
WELLINGTON DITCH WATER
SAMPLE REPORT**



element[™]
materials technology

Element Materials Technology - Fort Wayne
2121 E. Washington Blvd.
Fort Wayne, IN 46803
TEL: (260) 424-1622 FAX: (260) 424-9124
Website: www.element.com

October 25, 2016

Jason Kauffman
CITY OF GOSHEN
Goshen Wastewater Treatment Plant - Attn: Accts Rec.
PO Box 238
GOSHEN, IN 46527
TEL: (574) 534-5802
FAX: Mary Bainter

RE: Wellington Ditch-Jason Kauffman Project

Order No.: 16100423

Dear Jason Kauffman:

Element Materials Technology - Fort Wayne received 4 sample(s) on 10/5/2016 for the analyses presented in the following report.

In accordance with your instructions, Element Materials Technology Indiana conducted the analysis shown on the following pages on samples submitted by your company. The results relate only to the items tested. Unless otherwise noted, all analysis was conducted using approved methodologies from EPA, SM, or other client-specified methods. All relevant sampling information is on the attached chain-of-custody form. The initials SUB as the analyst designate any testing sub-contracted by Element Materials Technology Indiana.

This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Serena Shane
Project Manager
2121 E. Washington Blvd.
Fort Wayne, IN 46803

CC:
Larry Keil



element[™]
materials technology

Element Materials Technology - Fort Wayne
2121 E. Washington Blvd.
Fort Wayne, IN 46803
TEL: (260) 424-1622 FAX: (260) 424-9124
Website: www.element.com

Case Narrative

WO#: **16100423**

Date: **10/25/2016**

CLIENT: CITY OF GOSHEN
Project: Wellington Ditch-Jason Kauffman Project

The TPH testing was subcontracted to Envision Labs. Their report is attached in its entirety.

Original



Element Materials Technology - Fort Wayne
 2121 E. Washington Blvd.
 Fort Wayne, IN 46803
 TEL: (260) 424-1622 FAX: (260) 424-9124
 Website: www.element.com

Analytical Report

(base report)

WO#: 16100423

Date Reported: 10/25/2016

CLIENT: CITY OF GOSHEN **Tag Number:**
Matrix: AQUEOUS **Collection Date:** 10/5/2016 9:00:00 AM
Lab ID: 16100423-001A
Project: Wellington Ditch-Jason Kauffman Project
Client Sample I Wellington Ditch VOC

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS IN WATER				SW8260B		Analyst: SF
1,1,1,2-Tetrachloroethane	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
1,1,1-Trichloroethane	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
1,1,2,2-Tetrachloroethane	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
1,1,2-Trichloroethane	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
1,1-Dichloroethane	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
1,1-Dichloroethene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
1,2,3-Trichloropropane	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
1,2-Dibromo-3-chloropropane	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
1,2-Dibromoethane	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
1,2-Dichlorobenzene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
1,2-Dichloroethane	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
1,2-Dichloropropane	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
1,3-Dichlorobenzene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
1,4-Dichlorobenzene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
2-Butanone	< 50	50		µg/L	1	10/6/2016 8:11:00 PM
2-Chloroethyl vinyl ether	< 10	10		µg/L	1	10/6/2016 8:11:00 PM
2-Hexanone	< 50	50		µg/L	1	10/6/2016 8:11:00 PM
4-Methyl-2-pentanone	< 50	50		µg/L	1	10/6/2016 8:11:00 PM
Acetone	< 50	50		µg/L	1	10/6/2016 8:11:00 PM
Acrolein	< 50	50		µg/L	1	10/6/2016 8:11:00 PM
Acrylonitrile	< 50	50		µg/L	1	10/6/2016 8:11:00 PM
Benzene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Bromodichloromethane	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Bromoform	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Bromomethane	< 10	10		µg/L	1	10/6/2016 8:11:00 PM
Carbon disulfide	< 50	50		µg/L	1	10/6/2016 8:11:00 PM
Carbon tetrachloride	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Chlorobenzene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Chloroethane	< 10	10		µg/L	1	10/6/2016 8:11:00 PM
Chloroform	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Chloromethane	< 10	10		µg/L	1	10/6/2016 8:11:00 PM
cis-1,2-Dichloroethene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
cis-1,3-Dichloropropene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
cis-1,4-dichloro-2-butene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Dibromochloromethane	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	PQL	Practical Quantitation Limit
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



Element Materials Technology - Fort Wayne
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Analytical Report

(base report)

WO#: 16100423

Date Reported: 10/25/2016

CLIENT: CITY OF GOSHEN **Tag Number:**
Matrix: AQUEOUS **Collection Date:** 10/5/2016 9:00:00 AM
Lab ID: 16100423-001A
Project: Wellington Ditch-Jason Kauffman Project
Client Sample I Wellington Ditch VOC

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILES BY GC/MS IN WATER **SW8260B** Analyst: SF

Dibromomethane	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Dichlorodifluoromethane	< 5.0	5.0		µg/L	1	10/7/2016 10:39:00 AM
Ethyl methacrylate	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Ethylbenzene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Iodomethane	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
m,p-Xylene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Methyl methacrylate	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Methyl tert-butyl ether	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Methylene chloride	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
o-Xylene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Styrene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Tetrachloroethene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Toluene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
trans-1,2-Dichloroethene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
trans-1,3-Dichloropropene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
trans-1,4-Dichloro-2-butene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Trichloroethene	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Trichlorofluoromethane	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Vinyl acetate	< 50	50		µg/L	1	10/6/2016 8:11:00 PM
Vinyl chloride	< 10	10		µg/L	1	10/6/2016 8:11:00 PM
Xylenes, Total	< 5.0	5.0		µg/L	1	10/6/2016 8:11:00 PM
Surr: 4-Bromofluorobenzene	96.3	86 - 115		%Rec	1	10/6/2016 8:11:00 PM
Surr: Dibromofluoromethane	93.2	86 - 118		%Rec	1	10/6/2016 8:11:00 PM
Surr: Toluene-d8	98.0	88 - 110		%Rec	1	10/6/2016 8:11:00 PM

Qualifiers: H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits
 M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit PQL Practical Quantitation Limit
 RL Reporting Detection Limit S Spike Recovery outside accepted recovery limits



Element Materials Technology - Fort Wayne
 2121 E. Washington Blvd.
 Fort Wayne, IN 46803
 TEL: (260) 424-1622 FAX: (260) 424-9124
 Website: www.element.com

Analytical Report

(base report)

WO#: 16100423

Date Reported: 10/25/2016

CLIENT: CITY OF GOSHEN **Tag Number:**
Matrix: AQUEOUS **Collection Date:** 10/5/2016 9:00:00 AM
Lab ID: 16100423-002A
Project: Wellington Ditch-Jason Kauffman Project
Client Sample I Wellington Ditch SVOC

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMI-VOLATILES IN WATER		SW8270D			Analyst: GB	
1,2,4,5-TETRACHLORO BENZENE	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
1,2,4-Trichlorobenzene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
1,2-Dichlorobenzene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
1,2-Diphenylhydrazine	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
1,3-Dichlorobenzene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
1,3-Dinitrobenzene	< 20	20		µg/L	1	10/11/2016 10:57:00 AM
1,4-Dichlorobenzene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
2,3,4,6-Tetrachlorophenol	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
2,4,5-Trichlorophenol	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
2,4,6-Trichlorophenol	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
2,4-Dichlorophenol	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
2,4-Dimethylphenol	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
2,4-Dinitrophenol	< 50	50		µg/L	1	10/11/2016 10:57:00 AM
2,4-Dinitrotoluene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
2,6-Dinitrotoluene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
2-Chloronaphthalene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
2-Chlorophenol	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
2-Methylnaphthalene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
2-Methylphenol	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
2-Nitroaniline	< 50	50		µg/L	1	10/11/2016 10:57:00 AM
2-Nitrophenol	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
2-Picoline	< 50	50		µg/L	1	10/11/2016 10:57:00 AM
3,3'-Dichlorobenzidine	< 20	20		µg/L	1	10/11/2016 10:57:00 AM
3-Nitroaniline	< 50	50		µg/L	1	10/11/2016 10:57:00 AM
4,6-Dinitro-2-methylphenol	< 50	50		µg/L	1	10/11/2016 10:57:00 AM
4-Bromophenyl phenyl ether	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
4-Chloro-3-methylphenol	< 20	20		µg/L	1	10/11/2016 10:57:00 AM
4-Chloroaniline	< 20	20		µg/L	1	10/11/2016 10:57:00 AM
4-Chlorophenyl phenyl ether	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
4-Methylphenol	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
4-Nitroaniline	< 20	20		µg/L	1	10/11/2016 10:57:00 AM
4-Nitrophenol	< 50	50		µg/L	1	10/11/2016 10:57:00 AM
Acenaphthene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Acenaphthylene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Aniline	< 20	20		µg/L	1	10/11/2016 10:57:00 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	PQL	Practical Quantitation Limit
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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Analytical Report

(base report)

WO#: 16100423

Date Reported: 10/25/2016

CLIENT: CITY OF GOSHEN **Tag Number:**
Matrix: AQUEOUS **Collection Date:** 10/5/2016 9:00:00 AM
Lab ID: 16100423-002A
Project: Wellington Ditch-Jason Kauffman Project
Client Sample I Wellington Ditch SVOC

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMI-VOLATILES IN WATER		SW8270D			Analyst: GB	
Anthracene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Benz(a)anthracene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Benzidine	< 50	50		µg/L	1	10/11/2016 10:57:00 AM
Benzo(a)pyrene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Benzo(b)fluoranthene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Benzo(g,h,i)perylene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Benzo(k)fluoranthene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Benzoic acid	< 50	50		µg/L	1	10/11/2016 10:57:00 AM
Benzyl alcohol	< 20	20		µg/L	1	10/11/2016 10:57:00 AM
Bis(2-chloroethoxy)methane	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Bis(2-chloroethyl)ether	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Bis(2-chloroisopropyl)ether	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Bis(2-ethylhexyl)phthalate	< 20	20		µg/L	1	10/11/2016 10:57:00 AM
Butyl benzyl phthalate	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Carbazole	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Chrysene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Dibenz(a,h)anthracene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Dibenzofuran	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Diethyl phthalate	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Dimethyl phthalate	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Di-n-butyl phthalate	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Di-n-octyl phthalate	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Fluoranthene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Fluorene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Hexachlorobenzene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Hexachlorobutadiene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Hexachlorocyclopentadiene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Hexachloroethane	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Indeno(1,2,3-cd)pyrene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Isophorone	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Naphthalene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Nitrobenzene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
N-Nitrosodimethylamine	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
N-Nitrosodi-n-propylamine	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
N-Nitrosodiphenylamine	< 20	20		µg/L	1	10/11/2016 10:57:00 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	PQL	Practical Quantitation Limit
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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Analytical Report

(base report)

WO#: **16100423**

Date Reported: **10/25/2016**

CLIENT: CITY OF GOSHEN **Tag Number:**
Matrix: AQUEOUS **Collection Date:** 10/5/2016 9:00:00 AM
Lab ID: 16100423-002A
Project: Wellington Ditch-Jason Kauffman Project
Client Sample I Wellington Ditch SVOC

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMI-VOLATILES IN WATER		SW8270D			Analyst: GB	
o-Toluidine	< 20	20		µg/L	1	10/11/2016 10:57:00 AM
Pentachlorophenol	< 50	50		µg/L	1	10/11/2016 10:57:00 AM
Phenanthrene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Phenol	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Pyrene	< 10	10		µg/L	1	10/11/2016 10:57:00 AM
Pyridine	< 50	50		µg/L	1	10/11/2016 10:57:00 AM
Surr: 2,4,6-Tribromophenol	73.6	10 - 123		%Rec	1	10/11/2016 10:57:00 AM
Surr: 2-Fluorobiphenyl	60.1	43 - 116		%Rec	1	10/11/2016 10:57:00 AM
Surr: 2-Fluorophenol	49.3	21 - 100		%Rec	1	10/11/2016 10:57:00 AM
Surr: 4-Terphenyl-d14	70.2	33 - 141		%Rec	1	10/11/2016 10:57:00 AM
Surr: Nitrobenzene-d5	61.2	35 - 114		%Rec	1	10/11/2016 10:57:00 AM
Surr: Phenol-d5	36.0	10 - 94		%Rec	1	10/11/2016 10:57:00 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	PQL	Practical Quantitation Limit
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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Analytical Report

(base report)

WO#: 16100423

Date Reported: 10/25/2016

CLIENT: CITY OF GOSHEN **Tag Number:**
Matrix: AQUEOUS **Collection Date:** 10/5/2016 9:00:00 AM
Lab ID: 16100423-004A
Project: Wellington Ditch-Jason Kauffman Project
Client Sample I Wellington Ditch Metals

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY				E245.1		Analyst: SF
Mercury	< 0.00010	0.00010		mg/L	1	10/21/2016
METALS IN WATER BY ICP-MS, TOTALS				E200.8		Analyst: FJR
Aluminum	0.00513	0.00200		mg/L	1	10/12/2016 1:46:06 PM
Antimony	< 0.00050	0.00050		mg/L	1	10/12/2016 1:46:06 PM
Arsenic	0.00181	0.00020		mg/L	1	10/12/2016 1:46:06 PM
Barium	0.0740	0.00400		mg/L	1	10/12/2016 1:46:06 PM
Beryllium	< 0.00020	0.00020		mg/L	1	10/12/2016 1:46:06 PM
Boron	< 0.0200	0.0200		mg/L	1	10/12/2016 1:46:06 PM
Cadmium	< 0.00020	0.00020		mg/L	1	10/12/2016 1:46:06 PM
Chromium	< 0.00040	0.00040		mg/L	1	10/12/2016 1:46:06 PM
Cobalt	0.00017	0.00010		mg/L	1	10/12/2016 1:46:06 PM
Copper	0.00123	0.00020		mg/L	1	10/12/2016 1:46:06 PM
Iron	1.07	0.200		mg/L	1	10/12/2016 1:46:06 PM
Lead	< 0.00020	0.00020		mg/L	1	10/12/2016 1:46:06 PM
Manganese	0.0605	0.00020		mg/L	1	10/12/2016 1:46:06 PM
Molybdenum	0.00058	0.00020		mg/L	1	10/12/2016 1:46:06 PM
Nickel	0.00108	0.00100		mg/L	1	10/12/2016 1:46:06 PM
Selenium	0.00021	0.00020		mg/L	1	10/12/2016 1:46:06 PM
Silicon	< 0.0200	0.0200		mg/L	1	10/12/2016 1:46:06 PM
Silver	< 0.00010	0.00010		mg/L	1	10/12/2016 1:46:06 PM
Thallium	< 0.00050	0.00050		mg/L	1	10/12/2016 1:46:06 PM
Tin	< 0.00500	0.00500		mg/L	1	10/12/2016 1:46:06 PM
Titanium	< 0.0200	0.0200		mg/L	1	10/12/2016 1:46:06 PM
Vanadium	<			mg/L	1	10/12/2016 1:46:06 PM
Zinc	0.00460	0.00040		mg/L	1	10/12/2016 1:46:06 PM
Zirconium	< 0.0200	0.0200		mg/L	1	10/12/2016 1:46:06 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	PQL	Practical Quantitation Limit
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

Library Search Compound Report

Data Path : C:\MSDCHEM\1\DATA\100616\
Data File : 10423V.D
Acq On : 6 Oct 2016 8:11 pm
Operator : SDF
Sample : 16100423-001A
Misc : 8260_W SAMP
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\8260_W100616.M
Quant Title :

TIC Library : C:\DATABASE\NBS75K.L
TIC Integration Parameters: lscint.p

No Library Search Compounds Detected

8260_W100616.M Fri Oct 07 12:51:52 2016

Library Search Compound Report

Data Path : C:\msdchem\1\DATA\101116\
Data File : 100423-2.D
Acq On : 11 Oct 2016 10:57 am
Operator : GB
Sample : 16100423-002A
Misc : 625_W SAMP
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\SV081116.M
Quant Title : SVTAB2

TIC Library : C:\DATABASE\NBS75K.L
TIC Integration Parameters: LSCINT.e

No Library Search Compounds Detected



ENVision Laboratories, Inc.
1439 Sadlier Circle West Drive
Indianapolis, IN 46239
Tel: 317.351.8632
Fax: 317.351.8639
www.envisionlaboratories.com

Ms. Serena Shane
Element Materials Technology
9301 Innovation Drive, Suite 115
Daleville, IN 47334-0569

October 14, 2016

ENVision Project Number: 2016-2913
Project Name: 16100423

Dear Ms. Shane,

Please find the attached analytical report for the samples received October 7, 2016. All test methods performed were fully compliant with local, state, and federal EPA methods unless otherwise noted. The project was analyzed as requested on the enclosed chain of custody record. Please review the comments section for additional information about your results or Quality Control data.

Feel free to contact me if you have any questions or comments regarding your analytical report or service.

Thank you for your business. ENVision Laboratories looks forward to working with you on your next project.

Yours Sincerely,

A handwritten signature in cursive script that reads "Cheryl A. Crum".

Cheryl A. Crum

Director of Project Management
ENVision Laboratories, Inc.

PA DEP Lab Code: 68-04846 NELAP Cert:006





Analytical Report

Client Name: ELEMENT MATERIALS TECHNOLOGY

Project ID: 16100423-003A

Client Project Manager: SERENA SHANE

ENVision Project Number: 2016-2913

Analytical Method: EPA 8015M TPH-Ext C8-C36

Prep Method: EPA 3520C

Analytical Batch: 100716DW1

Client Sample ID: 16100423-003A

Envision Sample Number: 16-20992

Sample Matrix: water

Sample Collection Date/Time: 10/5/16 9:00

Sample Received Date/Time: 10/7/16 10:00

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH--Extended C8-C36	20493	2000	N,1

o-Terphenyl (surrogate)
 Analysis Date/Time: 10-10-16/17:25
 Analyst Initials: ajg
 Date Extracted: 10/7/2016
 Initial Sample Volume: 1000ml
 Final Volume: 1.0 mL



EPA 8015 TPH-Extended Range Quality Control Data

ENVision Batch Number: 100716DW1

Method Blank (MB):	MB Results (ug/L)	Reporting Limit (ug/L)	Flag
TPH-Extended Range	< 100	100	
o-Terphenyl (surrogate)	95%		
Analysis Date/Time:	10-10-16/14:09		
Analyst Initials:	ajg		
Date Extracted:	10/7/2016		
Initial Sample Volume:	1000 mL		
Final Volume:	1.0 mL		

LCS/LCSD	LCS Results (ug/L)	LCS/LCSD Conc. (ug/L)	LCSD Results (ug/L)	LCS Rec.	LCSD Rec.	RPD	Flag
TPH-Extended Range	1071	1000	1097	107%	110%	2.4%	
o-Terphenyl (surrogate)	100%		105%				
Analysis Date/Time:	10-10-16/14:37		10-10-16/15:05				
Analyst Initials:	ajg		ajg				
Date Extracted:	10/7/2016		10/7/2016				
Initial Sample Volume:	1000 mL		1000 mL				
Final Volume:	1.0 mL		1.0 mL				



ENVision Laboratories, Inc.
1439 Sadlier Circle West Drive
Indianapolis, IN 46239
Tel: 317.351.8632
Fax: 317.351.8639
www.envisionlaboratories.com

Flag Number

Comments

N	Analyte is not included in our NELAC accreditation.
1	Reported value is from a 20x dilution. AJG 10-14-16

2016-2913

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Fort Wayne, IN 46803
TEL: (260) 424-1622
FAX: (260) 424-9124
Website: www.element.com

SUB CONTRACTOR: ENVision Laboratories		COMPANY: ENVision Laboratories		SPECIAL INSTRUCTIONS / COMMENTS:			
ADDRESS: 1439 Sadlier Circle West		CITY, STATE, ZIP: Indianapolis, IN 46239		PO# EFW0015039			
PHONE: (317) 351-8632		FAX:					
ACCOUNT #:		EMAIL:					
ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Method Preserved Weights HOT Sample Notation, Additional Sample Description.
1	16100423-003A	Wellington Ditch T	11AMGU	Aqueous	10/5/2016 9:00:00 AM	1	16-2099a

Cooler temp: 16 °C on Ice? No
 Samples Intact: Yes No
 Custody Seal: Yes No
 ENVision provided bottles: Yes No
 VOC vials free of headspace: Yes No
 pH checked: Yes No
 Method 5035 collection used: Yes No
 5035 Samples received within 48 hrs of collection: Yes No

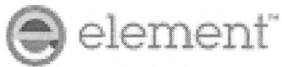
Shipping Method: (circle)
 1600 / 10/1/2016

Relinquished By: <i>John Jerry</i>	Date: <i>10/5/16</i>	Time: <i>10:51</i>	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: <i>Thompson</i>	Date: <i>10-7-16</i>	Time: <i>10:00</i>
TAT: Standard <input type="checkbox"/>	RUSH <input type="checkbox"/>	Next BD <input type="checkbox"/>	2nd BD <input type="checkbox"/>	3rd BD <input type="checkbox"/>	

Note: RUSH requests will incur surcharges!

REPORT TRANSMITTAL DESIRED: HARD COPY (extra cost) FAX EMAIL ONLINE

FOR LAB USE ONLY
 Temp of samples _____ °C Attempt to Cool? _____
 Comments: _____



Chain of Custody

Laboratory Number: 16100423

Company Name:	Client Information: City of Goshen	Billing Information: SAME	PO Number:	Project Name/Number:	Page <u>1</u> of <u>1</u>
Contact Name:	Jason Kauffman		Quote Number: 3075	Sampler's Signature 	Matrix Code DW = Drinking Water WW = Waste Water GW = Ground Water AQ = Aqueous OT = Other SL = Sludge SOL = Solid O = Oil SO = Soil F = Food SW = Swab NG = Natural Gas NGL = Natural Gas Liquid PW = Produced Water CF = Completion Fluid
Address:	204 E Jefferson St, Suite <u>29</u>		Required QC Level		
City, State Zip:	Goshen IN 46528		Bill Monthly <input type="checkbox"/> Yes <input type="checkbox"/> No	Shipping Method: UPS / FedEx / Airborne DHL / <u>Element</u> / Hand / Mail	
Phone Number:	574.533.3579 Ext:	Ext:			
Fax Number:	574.537.3832				
E-mail Address:	jason.kauffman@goshencity.com				

Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> POTW <input type="checkbox"/> NPDES <input type="checkbox"/> USDA/FDA <input type="checkbox"/> RECAP/RISC	Drinking Water <input type="checkbox"/> Distribution <input type="checkbox"/> Special <input type="checkbox"/> State <input type="checkbox"/> Other	Turn Time <input type="checkbox"/> Standard <u>RUSH</u> <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Collection Information Date Time Grab / Composite Matrix	Container Quantity Type P=Plastic, G=Glass, V=Vial	Pres. HCL, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	Requested Tests						Comments
						VOC	SVOC	LIBRARY VOC	LIBRARY SVOC	TPH-ERO	METALS*	
												*PLEASE LIST METALS - ALL, Please SAMPLES MEET ACCEPTANCE POLICY <u>Y</u> N
			Wellington Ditch VOC 10/5/16 9:00AM AQ	2 V	HCL	X		X				
			Wellington Ditch SVOC 10/5/16 9:00AM AQ	1 G	NONE		X	X				
			Wellington Ditch TPH-ERO 10/5/16 9:00AM AQ	1 G	NONE				X			
			Wellington Ditch Metals 10/5/16 9:00AM AQ	1 P	HNO ₃					X		

	Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
1		10/5/16 9:44		10-05-16 9:44A	
2		10/5/16 10:23		10/5/16	Received at lab on ice?
3		10/5/16 3:35		10-5-16 15:35	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: <u>2</u>

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

9301 Innovation Drive, Suite 125
PO Box 569
Daleville, IN 47334-0569
765-378-4103
Fax: 765-378-4109

629 Washington St.
Suite 300
Columbus, IN 47201
812-375-0531
Fax: 812-375-0731

2121 East Washington Boulevard
Fort Wayne, IN 46803-1328
260-471-7000
Fax: 260-471-7777

560 South Zimmer Road
Warsaw, IN 46580-2368
574-267-3305
Fax: 574-269-6569

Page 16 of 18
3371 Cleveland Road
Suite 100A
South Bend, IN 46628
574-277-0707
Fax: 574-273-5699

2417 W. Pinhook Rd
Lafayette, LA 70508
337-235-0483
Fax: 337-233-65401/06

Element Materials Technology - Fort Wayne
2121 E. Washington Blvd.
Fort Wayne, IN 46803
TEL: (260) 424-1622
FAX: (260) 424-9124
Website: www.element.com

SUB CONTRACTOR: ENVision_Laboratorie COMPANY: ENVision Laboratories		SPECIAL INSTRUCTIONS / COMMENTS: PO# EFW015039
ADDRESS: 1439 Sadlier Circle West		
CITY, STATE, ZIP: Indianapolis, IN 46239		
PHONE: (317) 351-8632 FAX: EMAIL:		
ACCOUNT #:		

ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
1	16100423-003A TPHERO_W	Wellington Ditch T	1LAMGU	Aqueous	10/5/2016 9:00:00 AM	1	

Shipping Method: (circle)

NOW / **UPS** / Fed Ex

123466540342553660

Relinquished By: Anne Seay	Date: 10-6-16	Time: 1451	Received By:	Date:	Time:	REPORT TRANSMITTAL DESIRED: <input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	
TAT: Standard <input type="checkbox"/> RUSH Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>						FOR LAB USE ONLY Temp of samples _____ °C Attempt to Cool? _____ Comments: 17 of 18
Note: RUSH requests will incur surcharges!						



CHAIN OF CUSTODY RECORD

Omega CODID 79115

PAGE: 1 OF: 1

ADDRESS

Element Materials Technology - Fort Wayne

2121 E. Washington Blvd.

Fort Wayne, IN 46803

TEL: (260) 424-1622

FAX: (260) 424-9124

Website: www.element.com

Lab ID	Dale01	Lab Name	Element Materials Technology	SPECIAL INSTRUCTIONS / COMMENTS:
ADDRESS:	9301 Innovation Drive			
CITY, STATE, ZIP:	Daleville, IN 47334			
PHONE:	(765) 378-4103	FAX:	(765) 378-4109	EMAIL:
ACCOUNT#:				

ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
1	16100423-001A	Wellington Ditch V	VOAHCL	Aqueous	10/5/2016 9:00:00 AM	2	
2	16100423-002A	Wellington Ditch S	1LAMGU	Aqueous	10/5/2016 9:00:00 AM	1	
3	16100423-003A PPHERO_W	Wellington Ditch T	1LAMGU	Aqueous	10/5/2016 9:00:00 AM	1	DATA 10-16-16
4	16100423-004A	Wellington Ditch M	250HDPE-HNO3	Aqueous	10/5/2016 9:00:00 AM	1	
	MET_W_ICPMS_T						

Relinquished By:	<i>Drew Jacob</i>	Date:	10/6/2016	Time:	10:46 AM	Received By:	<i>B. S. V. P.</i>	Date:	10/6/16	Time:	1:46
Relinquished By:		Date:		Time:		Received By:		Date:		Time:	
Relinquished By:		Date:		Time:		Received By:		Date:		Time:	

TAT: Standard RUSH

Next BD 2nd BD 3rd BD

Note: RUSH requests will incur surcharges!

REPORT TRANSMITTAL DESIRED:
 HARDCOPY (extra cost) FAX EMAIL ONLINE

Temp of samples: 3/19 °C Attempt to Cool? Y/N

Comments:

Shipping Method: (circle)
NOW / UPS / Fed Ex

**FINAL ELEMENT LAB
CALCIUM REPORT**



Element Materials Technology - Daleville
9301 Innovation Drive
Daleville, IN 47334
TEL: (765) 378-4103 FAX: (765) 378-4109
Website: www.element.com

December 06, 2016

Jason Kauffman
CITY OF GOSHEN
Goshen Wastewater Treatment Plant - Attn: Accts Rec.
PO Box 238
GOSHEN, IN 46527
TEL: (574) 534-5802
FAX: Mary Bainter

RE: Calcium in Soil & Water

Order No.: 16113162

Dear Jason Kauffman:

Element Materials Technology - Daleville received 3 sample(s) on 11/30/2016 for the analyses presented in the following report.

In accordance with your instructions, Element Materials Technology Indiana conducted the analysis shown on the following pages on samples submitted by your company. The results relate only to the items tested. Unless otherwise noted, all analysis was conducted using approved methodologies from EPA, SM, or other client-specified methods. All relevant sampling information is on the attached chain-of-custody form. The initials SUB as the analyst designate any testing sub-contracted by Element Materials Technology Indiana.

This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

A handwritten signature in black ink that reads "Serena Shane".

Serena Shane
Project Manager
9301 Innovation Drive
Daleville, IN 47334

CC:
Larry Keil



Element Materials Technology - Daleville
 9301 Innovation Drive
 Daleville, IN 47334
 TEL: (765) 378-4103 FAX: (765) 378-4109
 Website: www.element.com

Analytical Report

(base report)

WO#: **16113162**

Date Reported: **12/6/2016**

CLIENT: CITY OF GOSHEN
Matrix: AQUEOUS
Lab ID: 16113162-001A
Project: Calcium in Soil & Water
Client Sample I Wellington Calcium 1AQ

Tag Number:
Collection Date: 11/23/2016 8:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
METALS BY ICP FOR WATER, TOTAL				E200.7	E200.7	Analyst: FJR
Calcium	32.5	0.050		mg/L	1	12/5/2016 1:42:50 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected at the Reporting Limit	PL	Permit Limit
PQL	Practical Quantitation Limit	RL	Reporting Detection Limit



Element Materials Technology - Daleville
 9301 Innovation Drive
 Daleville, IN 47334
 TEL: (765) 378-4103 FAX: (765) 378-4109
 Website: www.element.com

Analytical Report

(base report)

WO#: 16113162

Date Reported: 12/6/2016

CLIENT: CITY OF GOSHEN
Matrix: AQUEOUS
Lab ID: 16113162-002A
Project: Calcium in Soil & Water
Client Sample I Wellington Calcium 2AQ

Tag Number:
Collection Date: 11/30/2016 8:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
METALS BY ICP FOR WATER, TOTAL					E200.7	Analyst: FJR
Calcium	80.7	0.050		mg/L	1	12/5/2016 1:46:13 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected at the Reporting Limit	PL	Permit Limit
PQL	Practical Quantitation Limit	RL	Reporting Detection Limit



Element Materials Technology - Daleville
 9301 Innovation Drive
 Daleville, IN 47334
 TEL: (765) 378-4103 FAX: (765) 378-4109
 Website: www.element.com

Analytical Report

(base report)

WO#: **16113162**

Date Reported: **12/6/2016**

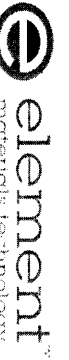
CLIENT: CITY OF GOSHEN
Matrix: SOIL
Lab ID: 16113162-003A
Project: Calcium in Soil & Water
Client Sample I Wellington Calcium 3SO

Tag Number:
Collection Date: 11/30/2016 8:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
METALS IN SOLID BY ICP, 3050B PREP				SW6010C		Analyst: CXC
Calcium	58,900	2,480		mg/Kg	25	12/6/2016 6:05:14 AM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected at the Reporting Limit	PL	Permit Limit
PQL	Practical Quantitation Limit	RL	Reporting Detection Limit



CHAIN OF CUSTODY RECORD

Omega COCID 82439

PAGE: 1 OF 1

ADDRESS

2121 E. Washington Blvd.
Fort Wayne, IN 46803

TEL: (260) 424-1622

FAX: (260) 424-9124

Website: www.element.com

Lab ID: Dale01 Lab Name: Element Materials Technology

ADDRESS: 9301 Innovation Drive

CITY, STATE, ZIP: Daleville, IN 47334

PHONE: (765) 378-4103 FAX: (765) 378-4109 EMAIL:

ACCOUNT #:

SPECIAL INSTRUCTIONS / COMMENTS:

ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description
1	16113162-001A MET_WW_ICPT	Wellington Calcium	250HDPE-HNO3	Aqueous	11/23/2016 8:40:00 AM	1	
2	16113162-002A MET_WW_ICPT	Wellington Calcium	250HDPE-HNO3	Aqueous	11/30/2016 8:35:00 AM	1	
3	16113162-003A MET_S_ICP	Wellington Calcium	40ZGU	Soil	11/30/2016 8:50:00 AM	1	

Requested By	Date	Time	Received By	Date	Time
<i>[Signature]</i>	11/23/16	11:45	<i>[Signature]</i>	11/30/16	1:33
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard

RUSH

Next BD

2nd BD

3rd BD

Note: RUSH requests will incur surcharges!

REPORT TRANSMITTAL DESIRED:
 HARDCOPY (extra cost) FAX EMAIL ONLINE

FOR LAB USE ONLY

Temp of samples 20 °C

Attempt to Cool? N

Comments:

[Handwritten notes]
NOV / UPS / Fed Ex



Chain of Custody

Laboratory Number: 16113162

Company Name: Contact Name: Address: City, State Zip: Phone Number: Fax Number: E-mail Address:	Client Information:		Billing Information:		PO Number:	Project Name/Number:	Page <u>1</u> of <u>1</u>
	City of Goshen		SAME				Matrix Code DW = Drinking Water WW = Waste Water GW = Ground Water AQ = Aqueous OT = Other SL = Sludge SOL = Solid O = Oil SO = Soil F = Food SW = Swab NG = Natural Gas NGL = Natural Gas Liquid PW = Produced Water CF = Completion Fluid
	Jason Kauffman				Quote Number:		
	204 E Jefferson St. Suite 1				3132		
	Goshen IN 46528				Required QC Level		Sampler's Signature <i>Client</i>
	574.537.3832		Ext:		Bill Monthly		
jasonkauffman@goshencity.com				<input type="checkbox"/> Yes			
				<input type="checkbox"/> No			
					Shipping Method: UPS / FedEx / Airborne DHL / Element Hand / Mail		

Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> Drinking Water <input type="checkbox"/> POTW <input type="checkbox"/> Distribution <input type="checkbox"/> NPDES <input type="checkbox"/> Special <input type="checkbox"/> USDA/FDA <input type="checkbox"/> State <input type="checkbox"/> RECAP/RISC <input type="checkbox"/> Other	Turn Time <input type="checkbox"/> Standard RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	(Rush turn times will incur a surcharge and must be pre-approved by lab.)	Container		Pres. HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	Requested Tests								Comments	
			Quantity	Type		METALS by ICP for Water, TOTAL	AGPREP TOTAL METALS: ICP	METALS in SOLID by ICP	SOPPREP TOTAL METALS: ICP						
Sample ID/Description		Collection Information													
		Date	Time	Grab / Composite	Matrix										
Wellington Calcium 1AQ		11/23/16	8:40		AQ	1	P	HNO ₃	X	X					SAMPLES MEET ACCEPTANCE POLICY Y N HNO3 added to 2AQ w/ 11-30-16 1537
Wellington Calcium 2AQ		11/30/16	8:35		AQ	1	P	NONE	X	X					
Wellington Calcium 3SO		11/30/16	8:50		SO	1	G	NONE			X	X			

	Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
1	<i>Jason Kauffman</i>	11/30/16 9:35	Tom Watten (Lab)	11-30-16 9:36 AM	
2	(Lab)	11/30/16 12:00	<i>Jason Kauffman</i>	11/30/16 12:00	Received at lab on ice?
3	<i>Jason Kauffman</i>	11/30/16 15:20	<i>Jason Kauffman</i>	11-30-16 1520	<input type="checkbox"/> Yes <input type="checkbox"/> No Temp: 3.5

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

9301 Innovation Drive, Suite 115 Daleville, IN 47334-0569 USA P 765-378-4103 F 765-378-4109	629 Washington St. Suite 300 Columbus, IN 47201-6231 USA P 812-375-0531 F 812-375-0731	2121 East Washington Boulevard Fort Wayne, IN 46803-1328 USA P 260-471-7000 F 260-471-7777	909 Executive Dr Warsaw, IN 46580-2368 USA P 574-267-3305 F 574-269-6569	3371 Cleveland Road, Suite 100A South Bend, IN 46628-9780 USA P 574-277-0707 F 574-273-5699	2417 W. Pinhook Rd Lafayette, LA 70508-3344 USA P 337-235-0483 F 337-233-6540
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**PHOTOS AT OUTFALL
STRUCTURE #506-4990**











