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ENVIRONMENT

Mary Vanderlaan
Supervisor, Lansing District
Michigan Department of Environmental Quality
Water Resources Division
525 W. Allegan (Constitution Hall, 4N)
P. O. Box 30242
Lansing, MI 48909-7742

Subject:
NPDES Permit No. MI0001597 – 2014 Yearly Stormwater Trend Monitoring Data
RACER – Buick City Site
Flint, Michigan

Date:
May 14, 2015

Contact:
Christopher S. Peters

Phone:
517.324.5052

Email:
Chris.Peters@arcadis-us.com

Our ref:
B0064410.2015

Dear Ms. Vanderlaan:

This report was prepared by ARCADIS on behalf of the Revitalizing Auto Communities Environmental Response (RACER) Trust, for the Buick City Site (formerly known as the GM - Powertrain Flint North). The Buick City Site (Site) is located near 902 East Leith Street in Flint, Michigan, in Genesee County and encompasses approximately 433 acres of land as shown on **Figure 1**. The portion of the Site located north of Leith Street (hereafter referred to as the Northend) was in part occupied by General Motors LLC (GM LLC) for manufacturing operations until December 6, 2010. Since December 6, 2010 there have been no manufacturing operations at the Site. Demolition of the Northend of the Site was completed in April 2012. Building demolition was completed in 2001 in the portion of the property located south of Leith Street, which is referred to as the Southend.

RACER is submitting annual stormwater monitoring data as required by Section 1.A.7.a.1 of the above referenced National Pollutant Discharge Elimination System (NPDES) permit for the Site. The current NPDES permit expired in 2010. RACER submitted a timely application to the Michigan Department of Environmental Quality (MDEQ) for a new permit in April 2010. Due to significant changes in Site conditions, a revised NPDES permit application for the Site was prepared and submitted to the MDEQ on May 15, 2012. This report covers the period of January 1, 2014 through December 31, 2014 and includes data collected from Outfalls 003, 010, 011, and 012 shown on **Figures 2** and **3**.

The yearly stormwater sampling program includes the following outfalls, analytes, and regulatory criteria:

Outfall	Analyte	Monthly Average	Daily Maximum
003	Total Polychlorinated Biphenyls	0.026 nanograms/Liter (ng/L)	Not Applicable
008	Total Mercury	1.3 nanograms/Liter (ng/L)	Not Applicable
010	Total Mercury	1.3 nanograms/Liter (ng/L)	Not Applicable
011	Total Copper	Not Applicable	100 micrograms/Liter (mg/L)
012	Total Copper	Not Applicable	100 micrograms/Liter (mg/L)

Background

Outfall 003

A Storm Water Diversion and Treatment System was installed to capture polychlorinated biphenyl (PCB) containing oil from the Outfall 003 and 004 storm sewers (Outfall 003/004 System). The Outfall 003/004 System has been designed to capture oil during dry weather and first-flush stormwater flow conditions though diversion structures, a BaySeparator, and an Oil-Water Separator. The system became fully operational on January 12, 2011.

The Outfall 003 storm sewer system collects flow from the Northend of the Site and upstream offsite drainage areas, and discharges to the Flint River. The majority of the stormwater flow to this system originates from offsite drainage areas, located upgradient of the Site. The total onsite (from RACER property) drainage area of the Outfall 003 system is approximately 137 acres. The NPDES permit identifies the water discharging from the Site to the Outfall 003 storm sewer system as regulated stormwater, treated groundwater and other miscellaneous waters, drinking fountain overflow, and potential groundwater infiltration. However, due to changes in Site conditions since the permit was issued, regulated stormwater and potential groundwater infiltration are the only remaining water discharged to Outfall 003.

NPDES Monitoring Point 003A (MP 003A) is the only remaining monitoring point along the Outfall 003 Sewer System. It is located downgradient of Oil Interceptor #2 and the Outfall 003/004 System. Note that during dry weather and first-flush stormwater flow water and oil are diverted through the Outfall 003/004 System from both the Outfall 003 and 004 storm sewers. As such, samples collected at MP 003A represent the combined flow of the Outfall 003 and 004 under these conditions. During stormwater flow conditions, however, flows are diverted around the Outfall 003/004 System and discharge through the individual outfalls. Therefore, water samples collected at MP003A during stormwater events are representative of flow only from the Outfall 003A storm sewer.

A weekly sample is collected from MP 003A as required in the NPDES permit. This sample is intended to be representative of dry weather/first-flush flow conditions. However, occasionally due to weather conditions it is not possible to collect a dry weather/first-flush flow sample. When those conditions are encountered, a sample is still collected, but noted as a wet weather sample on the eDMR form. The weekly monitoring data is reported in the monthly eDMR. In addition, a yearly wet weather sample is collected from MP 003A and submitted to the laboratory for PCB analysis.

Outfall 008

There is no data for Outfall 008 due to the installation of a permanent storm sewer bulkhead immediately downstream of Monitoring Point 008. The bulkhead was installed on May 10, 2007 because of a no flow condition in the collapsed or plugged storm sewer line for Outfall 008. Thus there is no longer a discharge to the Flint River from Outfall 008 and samples are no longer collected at this outfall.

Outfalls 010, 011, and 012

Outfalls 010, 011, and 012 are located in the Southend of the Site where all manufacturing facilities have been demolished, leaving the former building foundations or slabs at grade elevation. The water discharging from the Site through these outfalls has been identified as non-regulated stormwater and potential groundwater infiltration.

There is no data for Outfall 010 due to the installation of a permanent storm sewer bulkhead in the storm sewer line discharging into Manhole 10-5. In addition, the lateral line connecting Manhole MH 10-4 to the main was excavated, cut, and the void filled with concrete. As such, there is no longer a discharge to the Flint River from Outfall 010 and samples are no longer collected at this outfall.

Storm sewer discharge from Outfall 011 includes non-regulated stormwater and groundwater infiltration from the drainage area for Outfall 009. The storm sewer outlet for Outfall 009 is connected to manhole 11-8, which discharges through Outfall 011. A portion of the stormwater flow to Outfall 011 originates from offsite drainage areas, located upgradient of the Site. The total onsite drainage area of the Outfall 011 system (including the drainage area for Outfall 009) is approximately 25 acres.

Under the existing NPDES permit a yearly wet weather sample is collected from Outfall 011 and submitted for laboratory analysis of copper.

The Outfall 012 storm sewer system collects flow from the Southend of the Site and offsite drainage areas downstream, and discharges to the Flint River. The total onsite drainage area of the Outfall 012 system is approximately 8 acres.

Under the existing NPDES permit a yearly wet weather samples is collected from Outfall 012 and submitted for laboratory analysis of copper.

Data Collection and Analysis

ARCADIS personnel collected the yearly wet weather samples on October 3, 2014 (MP 003A) and November 20, 2014 (MP011). The samples, submitted for PCB and copper analysis, respectfully, were analyzed by Merit Laboratories, located in East Lansing, Michigan. **Table 1** provides sampling dates, and associated analytes for each of the samples collected from 2008 through 2014. **Attachment 1** provides the laboratory analytical reports for the 2014 samples.

Summary of Results

Sampling results for Yearly Trend Monitoring of Outfalls 003, 010, 011 and 012 are summarized in **Table 1**.

Outfall 003

PCBs were not detected in the 2014 wet weather sample collected from Outfall 003 at MP 003A.

Outfall 011

Copper was detected in the 2014 wet weather sample collected from Outfall 011 at a concentration of 26 µg/L. This is the highest concentration of copper detected during a wet weather sampling event since the permit effective date (July 1, 2006); however, this concentration is well below the daily maximum goal for copper of100 µg/L listed in the NPDES permit at this outfall.

Outfall 012

Outfall 012 was observed several times between October 3 and December 31, 2014. No flow was observed and therefore no sample was collected during the 2014 wet weather event. No sample was collected during the 2013 wet weather event due to similar circumstances. Copper was detected in the wet weather sample collected from Outfall 012 at a concentration of 4 µg/L during the 2012 wet weather sample collection event, at 5 µg/L during the 2011 wet weather sample collection event and at 6 µg/L during the 2010 wet weather sample collection event. The daily maximum goal for copper listed in the NPDES permit is 100 µg/L. Copper was not detected in samples collected at Outfall 012 in the three years prior to that.

Conclusions

Outfall 003

PCBs concentrations for the yearly wet-weather sampling event have remained at non-detectable levels since September 2010. The Outfall 003/004 System continues to operate and is functioning as intended.

Outfall 011

Copper was detected at a concentration of 26 µg/L during the 2014 wet weather sample collection event. Copper concentrations consistently remain well below the daily maximum goal for copper listed in the NPDES permit of 100 µg/L.

Outfall 012

Outfall 012 was observed several times between October 3 and December 31, 2014. No flow was observed and therefore no sample was collected during the 2014 wet weather event. Copper concentrations have historically been well below the daily maximum goal of 100 µg/L listed in the NPDES permit.

If you have any questions, please contact me at 517.324.5052.

Sincerely,

ARCADIS

Christopher S. Peters, P.G.
Vice President

Copies:
Grant Trigger, RACER Trust
Dave Favero, RACER Trust

Attachments:

Table 1	Stormwater Sampling Summary
Figure 1	Site Location Map
Figure 2	Site Diagram – Outfall Drainage Areas Northend
Figure 3	Site Diagram – Outfall Drainage Areas Southend
Attachment 1	Laboratory Analytical Reports

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Tables

Table 1
Storm Water Sampling Summary
NPDES Permit No. MI0001597
Yearly Trend Monitoring - Outfalls 003, 008, 010, 011, and 012

RACER
Buick City
Flint, Michigan

Outfall	Parameter	Units	9/3/2008	9/28/2009	9/28/2010	9/27/2011	10/18/2012	10/7/2013	10/3/2014
003	PCB-1016	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
003	PCB-1221	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
003	PCB-1232	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
003	PCB-1242	µg/L	0.16	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
003	PCB-1248	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
003	PCB-1254	µg/L	< 0.10	< 0.10	0.2	< 0.10	< 0.10	< 0.10	< 0.10
003	PCB-1260	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
003	Total PCB	µg/L	0.16	< 0.10	0.2	< 0.10	< 0.10	< 0.10	< 0.10

Outfall 008 A permanent storm sewer bulkhead was installed immediately downstream of Manhole 8-1 (Monitoring Point 008) on May 10, 2007 due to a collapsed or plugged storm sewer line. There is no longer a discharge from Outfall 008.

Outfall	Sample Type	Units	9/3/2008	9/28/2009	10/13/2010	9/30/2011	10/18/2012	10/7/2013	11/20/2014
010	Sample	ng/L	23.8	6.04	13.6	1.1	12	370	Not Sampled**
010	Duplicate	ng/L	25.9	5.73	NA	<0.500	11	160	Not Sampled**
010	Equipment Blank	ng/L	<0.500	2.84	NA	<0.500	4.8*	<0.500	Not Sampled**
010	Trip Blank	ng/L	<0.500	<0.500	NA	<0.500	4.9*	<0.500	Not Sampled**

Note:
* Merit Laboratories indicate equipment and trip blank detections were most likely caused by naturally occuring mercury in the sample environment as mercury was not detected in the laboratory blank.
** A permanent storm sewer bulkhead in the storm sewer line discharging into Manhole 10-5 was installed and the lateral line connecting Manhole MH10-4 to the main was excavated, cut, and the void filled with concrete. There is no longer a discharge from Outfall 010.

Outfall	Parameter	Units	9/3/2008	9/28/2009	9/28/2010	10/15/2011	10/18/2012	10/7/2013	11/20/2014
011	Copper	µg/L	<10	13	<4	<4	4	8	26

Outfall	Parameter	Units	9/3/2008	9/28/2009	11/22/2010	9/26/2011	10/18/2012	10/7/2013	11/20/2014
012	Copper	µg/L	<10	<10	6	5	4	No Flow***	No Flow***

Note:
*** Outfall 012 was checked various times during the 2013 and 2014 sampling events. No flow was observed and therefore no sample was collecte

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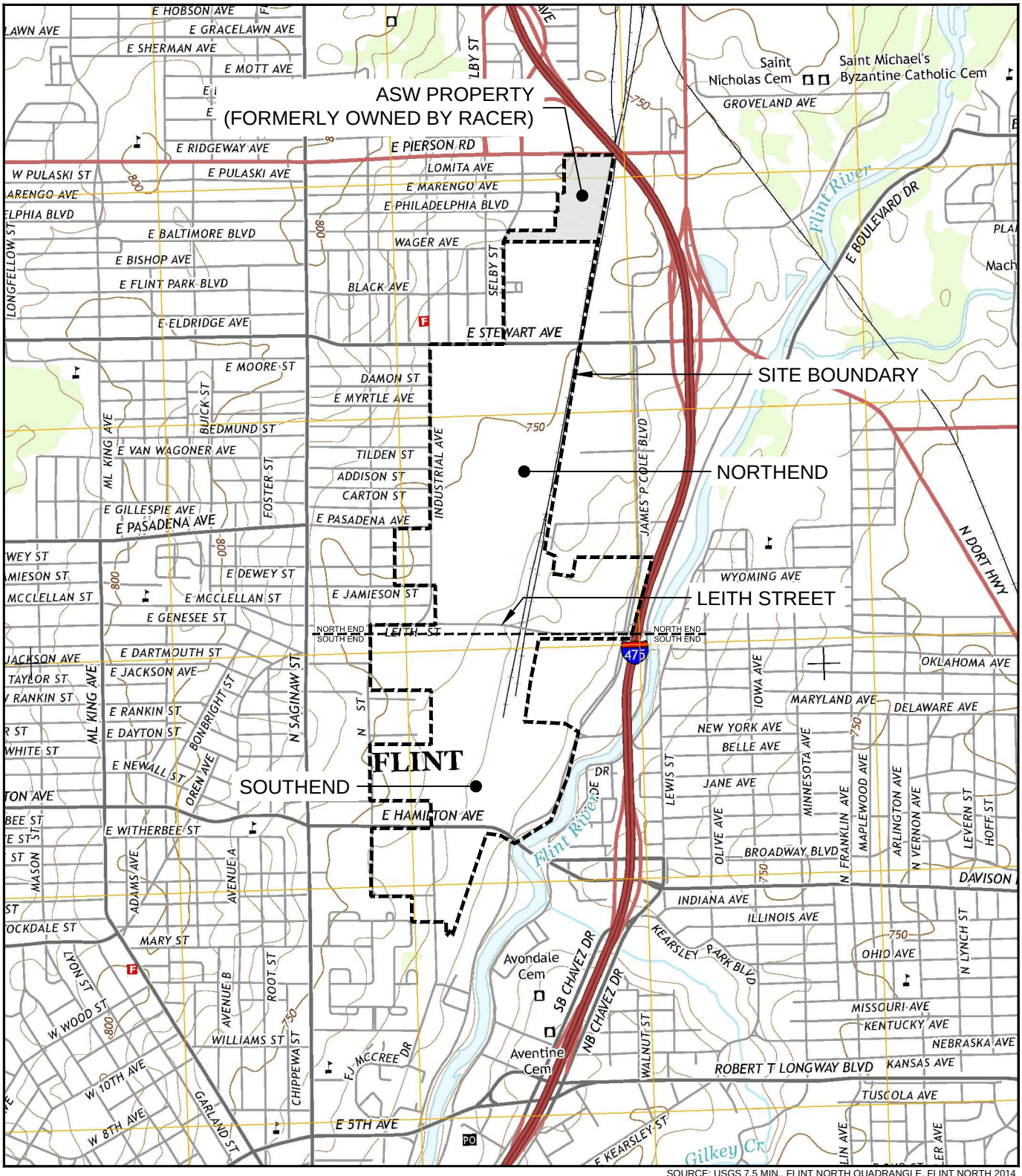
Figures



SOURCE: USGS 7.5 MIN., FLINT NORTH QUADRANGLE, FLINT NORTH 2014

0 2000' 4000'

APPROXIMATE SCALE IN FEET

RACER TRUST
BUICK CITY
FLINT, MICHIGAN

SITE LOCATION MAP

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FIGURE 1

CITY:SYRACUSE-NY DIV/GROUP:ENV DB:A.SANCHEZ LD:GMS PIC:C.S.PETERS PM:C.KIKER TM:C.KIKER LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIVE\B006441\0\2014\B6441A01.dwg LAYOUT: 1 SAVED: 2/6/2015 11:36 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 2/9/2015 8:11 PM BY: SANCHEZ, ADRIAN
XREFS: IMAGES: PROJECTNAME: ----
MI_Flint North.jpg

CITY: SYRACUSE DIV/GROUP: 141 DB: A.SANCHEZ LD: GMS PIC: C.S. PETERS PM: C. KIKER TM: C. KIKER LYR: ON=*OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIB\0064410\401\0010264410 F04.dwg LAYOUT: 4 SAVED: 9/24/2014 5:47 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 9/24/2014 5:52 PM BY: SANCHEZ, ADRIAN
IMAGES: PROJECTNAME: ----

Interceptor 2 Oil/Water Separator Weir

Monitoring Point 003A

RECOVERY TRENCHES

RECOVERY TRENCH

AOI 36-2

AOI 36-1 GP

AOI 36-1 MS

AOI 36-5

AOI 10-4

AOI 10-1

AOI 03-1

AOI 81-2

AOI 86-1

AOI 05-5

AOI 05-1

AOI 83/84-2

AOI 83/84-4

001

002

003

004

LEGEND:

- RACER PROPERTY BOUNDARY
- PREVIOUSLY OWNED PROPERTY BY RACER TRUST
- APPROXIMATE HISTORICAL EXTENT OF MEASURABLE LNAPL (>0.5 FEET)
- APPROXIMATE CURRENT EXTENT OF MEASURABLE LNAPL (>0.1 FEET)
- AREAS WITH NO DIRECT DRAINAGE TO THE STORM SEWER
- RECOVERY TRENCH
- STORM SEWER
- STORM SEWER BULKHEAD LOCATION
- 001 OUTFALL DRAINAGE AREA AND NUMBER

Outfall 003/004 Storm Sewer Diversion and Treatment System

0 250' 500'
APPROXIMATE SCALE IN FEET

NORTH END SOUTH END

NOTE:

1. BASE MAP INFORMATION FROM A SURVEY BY BMJ, INC. DATED APRIL 2001, AT A SCALE OF 1:100. AERIAL IMAGE FROM ARCGIS 10 ONLINE MAPPING, ACCESSED 6/12/2013.
2. BASED ON INFORMATION AVAILABLE AS OF 3/19/2014.

RACER TRUST
BUICK CITY
FLINT, MICHIGAN

NORTHEND - STORM SEWER, DRAINAGE AREA, AND BULKHEAD LOCATIONS

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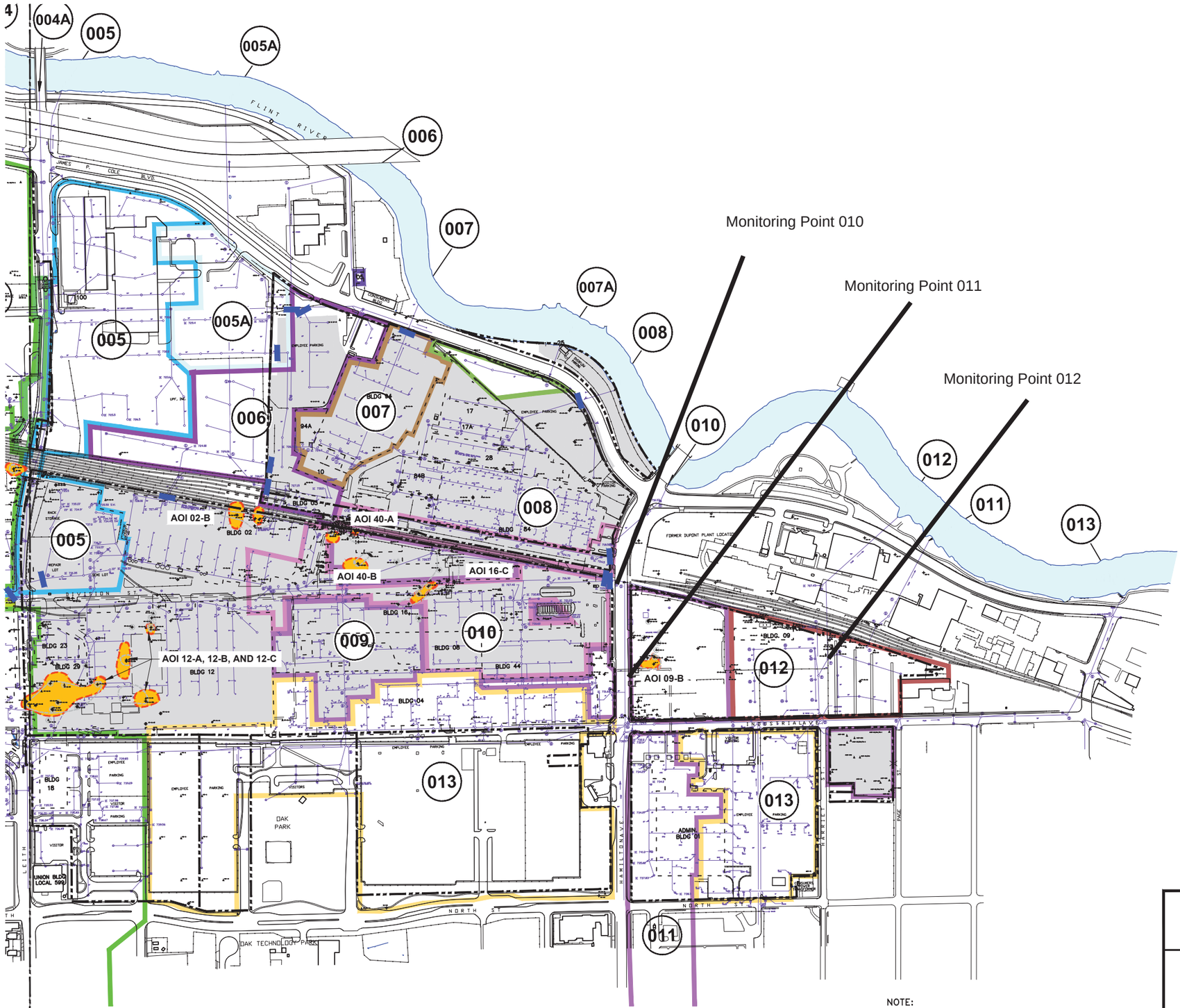
FIGURE 2



LEGEND:

- RACER PROPERTY BOUNDARY
- APPROXIMATE EXTENT OF HISTORICAL LNAPL (0.5 FEET)
- APPROXIMATE CURRENT LIMITS OF MEASURABLE LNAPL (0.1 FEET)
- AREAS WITH NO DIRECT DRAINAGE TO THE STORM SEWER
- STORM SEWER
- STORM SEWER BULKHEAD LOCATION
- 013 OUTFALL DRAINAGE AREA AND NUMBER

0 250' 500'
APPROXIMATE SCALE IN FEET

NOTE:

1. BASE MAP INFORMATION FROM A SURVEY BY BMJ, INC. DATED APRIL 2001, AT A SCALE OF 1:100. AERIAL IMAGE FROM ARCGIS 10 ONLINE MAPPING, ACCESSED 6/12/2013.
2. BASED ON INFORMATION AVAILABLE AS OF 3/19/2014.

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BUICK CITY
FLINT, MICHIGAN

DRAINAGE AREAS - SOUTHEND

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FIGURE
3

CITY: SYRACUSE DIV/GROUP: 141 DB: A.SANCHEZ LD: GMS PIC: C.S. PETERS PM: C. KIKER TM: C. KIKER LYR: ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIVE\B006441\0020\4\0020\B64410_RRR.dwg LAYOUT: 5 SAVED: 7/1/2014 1:26 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: ----
IMAGES: PROJECTNAME: ----
PLOTTED: 7/1/2014 1:29 PM BY: SANCHEZ, ADRIAN
PLOTSTYLETABLE: ---- PAGESETUP: ----

Attachment 1

Laboratory Analytical Reports

Analytical Laboratory Report

Report ID: S63047.01(01)
Generated on 10/08/2014

Report to

Attention: Beth Nanzer
Arcadis
28550 Cabot Drive
Suite 500
Novi, MI 48377

Phone: 248-994-2314 FAX: 248-994-2241
Email: bethany.nanzer@arcadis-us.com

Addtional Contacts: Deb Newcom, Erin Kozak

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:
Kevin George (kgeorge@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S63047.01
Project: B0064410.4014.00201 / Buick City RACER Flint, MI
Collected Date: 10/03/2014
Submitted Date/Time: 10/06/2014 11:00
Sampled by: D. Newcom
P.O. #: B0064410.4014.00201

Maya Murshak
Technical Director

General Report Notes

Results relate only to items tested as received by laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis were 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.
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.

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

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

Method Summary

Method	Version
E608	EPA Method 608
SW3510C	SW 846 Method 3510C Revision 3 December 1996

Sample Summary (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S63047.01	Outfall003A_100314_WW	Liquid	10/03/2014 17:00

Analytical Laboratory Report

Lab Sample ID: S63047.01
Sample Tag: Outfall003A_100314_WW
Collected Date/Time: 10/03/2014 17:00
Matrix: Liquid
COC Reference: BC100314.1

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Amber	None	Yes	13.3	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Extraction, PCB	Completed			SW3510C	10/08/14 10:00	RGS		
Organics - PCBs/Pesticides								
PCB								
PCB-1016	Not detected	ug/L	0.1	E608	10/08/14 13:07	JAN	12674-11-2	
PCB-1221	Not detected	ug/L	0.1	E608	10/08/14 13:07	JAN	11104-28-2	
PCB-1232	Not detected	ug/L	0.1	E608	10/08/14 13:07	JAN	11141-16-5	
PCB-1242	Not detected	ug/L	0.1	E608	10/08/14 13:07	JAN	53469-21-9	
PCB-1248	Not detected	ug/L	0.1	E608	10/08/14 13:07	JAN	12672-29-6	
PCB-1254	Not detected	ug/L	0.1	E608	10/08/14 13:07	JAN	11097-69-1	
PCB-1260	Not detected	ug/L	0.1	E608	10/08/14 13:07	JAN	11096-82-5	
PCB, Total	Not detected	ug/L	0.1	E608	10/08/14 13:07	JAN	1336-36-3	

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 C.O.C I.D.# BC100314.1

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Beth Nanzer, Erin Kozak, D.Newcom
COMPANY: ARCADIS U.S., Inc.
ADDRESS: 28550 Cabot Drive Ste 500
CITY: Novi | STATE: MI | ZIP CODE: 48377
PHONE NO.: 248.994.2314 | FAX NO.: 248.994.2241 | P.O. NO..:
EMAIL ADDRES: bethany.nanzer@arcadis-us.com; erin.kozak@arcadis-us.com; deborah.newcom@arcadis-us.com
QUOTE NO.: WA# 01

INVOICE TO

CONTACT NAME: Christi Kiker ☑ SAME
COMPANY:
ADDRESS:
CITY | STATE | ZIP CODE:
PHONE NO. | EMAIL ADDRESS: christi.kiker@arcadis-us.com

PROJECT NO./NAME: B0064410.4014.00201 / Buick City RACER Flint, MI
SAMPLER(S) - PLEASE PRINT/SIGN NAME: D.Newcom

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

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

Matrix Code: GW=Groundwater WW=Waste Water 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	# OF CONTAINERS & PRESERVATIVES: NONE	HCL	HNO3	H2SO4	NAOH	MEOH	OTHER	PCB
63047.01	10/3/2014	1700	Outfall003A_100314_WW	L	2	X							X

Relinquished By: Signature/Organization ☑ Sampler Date Time
Recieved By: Signature/Organization Date Time
Relinquished By: Signature/Organization Date Time
Recieved By: Signature/Organization Date Time

Relinquished By: Signature/Organization Date Time
Recieved By: Signature/Organization Date 10/6/14 Time 1100
Seal No. Seal Intact ☐ Yes ☐ No Initals
Seal No. Seal Intact ☐ Yes ☐ No Initals
Notes: Temp. on arrival 13.3

Analytical Laboratory Report

Report ID: S63700.01(01)
Generated on 11/26/2014

Report to

Attention: Erin Kozak
Arcadis
28550 Cabot Drive
Suite 500
Novi, MI 48377

Phone: 810-225-1901 FAX: 248-994-2241
Email: erin.kozak@arcadis-us.com

Addtional Contacts: Deb Newcom, Beth Nanzer

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:
Kevin George (kgeorge@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S63700.01-S63700.02
Project: B0064410.4014.00201 / Buick City RACER Flint, MI
Collected Date: 11/20/2014
Submitted Date/Time: 11/21/2014 13:45
Sampled by: D.Newcom
P.O. #: B0064410.4014.00201

Maya Murshak
Technical Director

General Report Notes

Results relate only to items tested as received by laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis were applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
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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.
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.

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

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

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
SW3015A	SW 846 Method 3015A Revision 1 February 2007

Analytical Laboratory Report

Sample Summary (2 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S63700.01	MP011_11202014_WW	Liquid	11/20/2014 13:00
S63700.02	Equip_Blank_11202014_WW	Liquid	11/20/2014 12:30

Analytical Laboratory Report

Lab Sample ID: S63700.01
Sample Tag: MP011_11202014_WW
Collected Date/Time: 11/20/2014 13:00
Matrix: Liquid
COC Reference: BC11202014

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	5.0	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	11/25/14 09:00	JRH		
Metals								
Copper	0.026	mg/L	0.001	E200.8	11/25/14 13:43	JRH	7440-50-8	

Analytical Laboratory Report

Lab Sample ID: S63700.02
Sample Tag: Equip_Blank_11202014_WW
Collected Date/Time: 11/20/2014 12:30
Matrix: Liquid
COC Reference: BC11202014

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	5.0	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	11/25/14 09:00	JRH		
Metals								
Copper	0.010	mg/L	0.001	E200.8	11/25/14 14:19	JRH	7440-50-8	

Merit

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C.O.C. Page # 1 of 1 C.O.C I.D.# BC112014.1

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Beth Nanzer, Erin Kozak, D.Newcom
COMPANY: ARCADIS U.S., Inc.
ADDRESS: 28550 Cabot Drive Ste 500
CITY: Novi | STATE: MI | ZIP CODE: 48377
PHONE NO.: 248.994.2314 | FAX NO.: 248.994.2241 | P.O. NO.:
EMAIL ADRES: bethany.nanzer@arcadis-us.com; erin.kozak@arcadis-us.com; deborah.newcom@arcadis-us.com | QUOTE NO.: WA# 01

INVOICE TO

CONTACT NAME: Christi Kiker ☑ SAME
COMPANY:
ADDRESS:
CITY: | STATE: | ZIP CODE:
PHONE NO.: | EMAIL ADDRESS: christi.kiker@arcadis-us.com

PROJECT NO./NAME: B0064410.4014.00201 / Buick City RACER Flint, MI
SAMPLER(S) - PLEASE PRINT/SIGN NAME: D.Newcom

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

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

Matrix Code: GW=Groundwater WW=Waste Water 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	# OF CONTAINERS & PRESERVATIVES: NONE	HCL	HNO3	H2SO4	NAOH	MEOH	OTHER	Total Copper
63700.01	11/20/2014	1300	MP011_112014_WW	L	1			X					X
.02	11/20/2014	1230	Equip_Blank_112014_WW	L	1			X					X

Relinquished By Signature/Organization: ☑ Sampler Date: 11-21-14 Time: 1300
Recieved By Signature/Organization: Date: 11-21-14 Time: 1345

Relinquished By Signature/Organization: Date: 11/21/14 Time: 1345
Recieved By Signature/Organization: Kevin George Date: 11/21/14 Time: 1345

Relinquished By Signature/Organization: Date: Time:
Recieved By Signature/Organization: Date: Time:

Seal No: Seal Intact ☐ Yes ☐ No Initals:
Seal No: Seal Intact ☐ Yes ☐ No Initals:

Notes: Temp. on arrival 5.0