Revitalizing Auto Communities
Environmental Response Trust

May 13, 2011

Mr. Jason Casteel
City of Saginaw Waste Water Treatment Division
Environmental Compliance
2406 Veterans Memorial Parkway
Saginaw, Michigan
U.S.A. 48601

Dear Mr. Casteel:

Re: Industrial User Discharge Monthly Compliance Monitoring Report
RACER Outfall 102 for April 2011
Former Nodular Facility, Saginaw, Michigan

This letter is submitted on behalf of Revitalizing Auto Communities Environmental Response (RACER). The City of Saginaw (City)/RACER Significant Industrial User (SIU) Discharge Permit #11-17313 (Permit) dated March 9, 2011 requires RACER to submit monthly reports containing applicable monitoring data. Discharge of water originating from the Former Nodular Facility Waste Water Treatment Plant (Nodular WWTP) secondary settling ponds to the City sanitary sewer was stopped on April 24, 2011. Accordingly no sampling has occurred since April 20. Should discharge to the City sanitary sewer be required again, RACER will provide notice of the intent to discharge to the City. Upon approval from the City, discharge will commence and sampling will be conducted in accordance with the Permit.

This letter presents the requested Permit monthly/weekly monitoring analytical results for representative composite samples collected from RACER Outfall 102. The analytical results represent sampling for the month of April 2011 and are representative of normal daily discharges. Samples were collected on the 6th, 14th, and the 20th of April. Samples were analyzed in accordance with the Permit. Table 1 presents the analytical data and the associated daily and monthly loadings for each of the parameters. Attachment A presents the analytical reports for the samples collected in April 2011. The laboratory has an active quality control and quality assurance (QC/QA) program in place to ensure reliable and accurate data.

There have been no changes in facility activity, production, or discharge practices not previously reported. Materials, if any, which could cause slug loading or detrimental effect on the sewer system are stored in a manner to minimize any possible discharge to the sewer system.

Flow at RACER Outfall 102 from February 24 to March 11, 2011 was 75,000 GPD consistent with the February 23, 2011 permit. A request was made to the City to increase the flow rate based on the analytical results on March 1, 2011. A revised permit was issued on March 9, 2011 approving an increase in flow to 300,000 GPD, which was initiated on March 12, 2011 and continued until discharge was ceased on April 24, 2011.

All samples at RACER Outfall 102 are in compliance or are deemed to be in compliance.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including possibility of fine and imprisonment for knowing violations.

If you have any questions or require clarification on the above information please feel free to contact me at 313-486-2908.

Yours truly,

for

Grant Trigger
Cleanup Manager - Michigan

Encl.

cc: Jeanette Best - City of Saginaw
Kimberly Mason - City of Saginaw
Dave Favero - RACER
Michael Tomka - CRA

TABLE 1

SUMMARY OF ANALYTICAL DATA COLLECTED FROM RACER OUTFALL 102
AND LOADING CALCULATIONS FOR DISCHARGE OF WATER TO THE SAGINAW WWTP
NODULAR FACILITY
SAGINAW, MICHIGAN

Date	*Parameters Sampled*	*Concentration (mg/L)*	*Maximum Daily Loading (lbs/day)*	*Monthly Average (lbs/day)*	*City of Saginaw Maximum Daily (lbs/day)*	*City of Saginaw Monthly Average (lbs/day)*	*Number of Exceedances*	*Rate of Discharge* (1) *(GPD)*	*Notes*
30-Mar-11	Zinc	0.0161	0.040	(2)	0.2627	0.0988	0	300,000	
6-Apr-11	Zinc	0.0228	0.057	(2)	0.2627	0.0988	0	300,000	
14-Apr-11	Zinc	0.0088	0.022	(2)	0.2627	0.0988	0	300,000	
20-Apr-11	Copper	ND	NA	NA	0.1770	0.0965	0	300,000	
	Lead	ND	NA	NA	0.1816	0.0896	0		
	Zinc	0.0088	0.022	0.038	0.2627	0.0988	0		
	Total Phenols	0.010	0.025	0.025	0.1830	0.0638	0		
	Total Toxic Organics (3)	0.00089	0.002	0.002	0.4440	0.1449	0		
24-Apr-11								0	dicharge ceased

Notes:

(1) Discharge intiated - February 24, 2011 - 75,000 GPD.
Discharge increased - March 12, 2011 - 300,000 GPD
Discharge ceased - April 24, 2011 - 0 GPD

(2) The daily average for the month (when there are multple samples collected in the month - zinc) is the sum of the daily loadings divided by the number of days in the month. The daily loading for a given day is calculated using the sample collected before the given day and the flow rate for that day (Example: April 15, 2011 daily zinc loading = Flow MGD x 8.34 lbs/gal x concentration mg/L (Apr. 14, 2011) = 0.3 x 8.34 x 0.0088 = 0.022 lbs/day). The monthly average for zinc is identified on the last sampling date of the month (March 30, 2011)

(3) Concentration of total toxic organics is the sum of the VOCs and SVOCs analyzed

ATTACHMENT A

ANALTYICAL REPORTS

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 58502-T02-002

NODULAR

Lot #: A1D070510

Paul Wiseman

Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170

TESTAMERICA LABORATORIES, INC.

Approved for release.
Denise D. Heckler
Project Manager
4/13/2011 10:31 AM

Denise D. Heckler
Project Manager
denise.heckler@testamericainc.com

April 12, 2011

CASE NARRATIVE

A1D070510

The following report contains the analytical results for one water sample submitted to TestAmerica North Canton by Conestoga-Rovers & Associates, Inc. from the NODULAR Site, project number 58502-T02-002. The sample was received April 07, 2011, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The sample presented in this report was analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Denise D. Heckler, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 13.8°C.

See TestAmerica's Cooler Receipt Form for additional information.

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analyte(s).

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called Quality Control Batches (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a Method Blank (MB), a Laboratory Control Sample (LCS) and, a Matrix Spike/Matrix Spike Duplicate (MS/MSD) pair or a Matrix Spike/Sample Duplicate (MS/DU) pair.
For 600 series/CWA methods, QC samples include a Method Blank (MB), a Laboratory Control Sample (LCS) and, where appropriate, a Matrix Spike (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch, with the exception of poor performing analytes. A list of these analytes is listed below. No corrective action is taken if these analytes do not meet criteria.Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

Poor performers

Method 8270 Water and Solid:	
4-Nitrophenol	3,3' – Dichlorobenzidine
Benzoic Acid	2,4,6 - Tribromophenol
Phenol	2,4-Dinitrophenol
Phenol-d5	Pentachlorophenol
4,6-Dinitro-2-methylphenol	Hexachlorocyclopentadiene (LCG only)
Benzyl Alcohol	4-Chloroaniline
Method 8151 Solid	
Dinoseb	
Method 8260 Water and Solid	
Dichlorodifluoromethane	Hexachlorobutadiene
Trichlorofluoromethane	Naphthalene
Chloroethane	1,2,3-Trichlorobenzene
Acetone	1,2,4-Trichlorobenzene
Bromomethane	2,2-Dichloropropane
Bromoform	Chloromethane

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be ten fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results do not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate or Matrix Spike/Sample Duplicate.

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater. For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available upon request.
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),

Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190), DoD ELAP (ADE-1437) USDA Soil Permit (P33-08-00123)

EXECUTIVE SUMMARY - Detection Highlights

A1D070510

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
W-58502-040611-SSH-WK23 04/06/11 16:00 001				
Zinc	22.8 J	20.0	ug/L	MCAWW 200.7

ANALYTICAL METHODS SUMMARY

A1D070510

PARAMETER	ANALYTICAL METHOD
Inductively Coupled Plasma (ICP) Metals	MCAWW 200.7

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SAMPLE SUMMARY

A1D070510

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MGN15	001	W-58502-040611-SSH-WK23	04/06/11	16:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Conestoga Rovers & Assoc., Inc

Client Sample ID: W-58502-040611-SSH-WK23

TOTAL Metals

Lot-Sample #...: A1D070510-001 **Matrix.....:** WG
Date Sampled...: 04/06/11 16:00 **Date Received..:** 04/07/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1098011						
Zinc	**22.8 J**	**20.0**	**ug/L**	**MCAWW 200.7**	**04/08-04/12/11**	**MGN151AA**
		Dilution Factor: 1		MDL.....: 5.0		

NOTE(S):

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

QUALITY CONTROL SECTION

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A1D070510 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A1D080000-011 **Prep Batch #...:** 1098011						
Zinc	**14.1 B**	**20.0**	**ug/L**	**MCAWW 200.7**	**04/08-04/11/11**	**MGPWA1A0**
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D070510 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A1D080000-011 **Prep Batch #...:** 1098011							
Zinc	500	479	ug/L	96	MCAWW 200.7	04/08-04/11/11	MGPWA1A3
		Dilution Factor: 1					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D070510 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A1D080000-011 **Prep Batch #...:** 1098011					
Zinc	96	(85 - 115)	MCAWW 200.7	04/08-04/11/11	MGPWA1A3
		Dilution Factor: 1			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D070510 **Matrix.....:** WATER
Date Sampled...: 04/06/11 10:19 **Date Received..:** 04/07/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A1D070505-010 **Prep Batch #...:** 1098011									
Zinc									
	ND	500	532	ug/L	106		MCAWW 200.7	04/08-04/12/11	MGN1Q1CX
	ND	500	525	ug/L	105	1.2	MCAWW 200.7	04/08-04/12/11	MGN1Q1C0

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D070510 **Matrix.....:** WATER
Date Sampled...: 04/06/11 10:19 **Date Received..:** 04/07/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A1D070505-010 **Prep Batch #...:** 1098011							
Zinc	106	(75 - 125)			MCAWW 200.7	04/08-04/12/11	MGN1Q1CX
	105	(75 - 125)	1.2	(0-20)	MCAWW 200.7	04/08-04/12/11	MGN1Q1C0
		Dilution Factor: 1					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

CONESTOGA-ROVERS & ASSOCIATES

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

PAGE 1 OF 1

ID # Nº D 8981

SSOW Ref. Code: 58502-T06-003

Required Client Information:

Company: CRA, Inc.	Report To: Paul Wiseman
Address: 14496 Sheldon Rd.	Copy To: Mike Tomka
Suite 200	Invoice To:
Plymouth, MI 48170	P.O.:
Phone: 734-453-5123	Project Name: MLC Nodular
Fax: 734-453-5201	Project Number: 58502-T02-002
Email:	

Laboratory:	Test America
Laboratory Location:	North Canton, OH
Laboratory Contact:	Denise Heckler
Requested Due Date:	TAT: 1 week
QA/QC Requirements:	

Valid Matrix Codes: WG Groundwater; WB Borehole Water; WS Surface Water; SO Soil; SE Sediment; See Back for Additional Codes

Analysis and Method

Sample Identification:	Matrix Code	Date Collected	Time Collected	# Containers	Preservative: Unpreserved	HCl	H2SO4	HNO3	NaOH	Other:	Zinc	Remarks/Lab ID
1. W-58502-040611-SSH-WK23	WG	4/6/11	1600	1				X			X	
2.												
3.												
4.												
5.												
6.												
7.												
8.												
9.												
10.												TAT- 1 week
11.												
12.												
13.												
14.												
15. BEH												
TOTAL NUMBER OF CONTAINERS				1								

SHIPMENT METHOD	NO. OF COOLERS	RELINQUISHED BY / AFFILIATION	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME
FedEx	1		4/6/11	1700		4-7-11	0930
AIRBILL NO. 8746 4283 6455							

Sample Condition

Temp in °C	
Received on Ice	Y / N
Sealed Cooler	Y / N
Samples Intact	Y / N

Additional Comments:

Sampler Name: Steven S. Heckmeyer

Sampler Signature: Date: 4/6/11

Distribution: WHITE - Fully Executed Copy; YELLOW -

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: AID070510

Client CRA Project MCC Nodular By: [signature]
Cooler Received on 4-7-11 Opened on 4-7-11 (Signature)
FedEx ☑ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other _____
TestAmerica Cooler # _____ Multiple Coolers ☐ Foam Box ☐ Client Cooler ☐ Other box

1. Were custody seals on the outside of the cooler(s)? Yes ☐ No ☑ Intact? Yes ☐ No ☐ NA ☑
   If YES, Quantity _____ Quantity Unsalvageable _____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☐ No ☐ NA ☑
   Were custody seals on the bottle(s)? Yes ☐ No ☑
   If YES, are there any exceptions? _____
2. Shippers' packing slip attached to the cooler(s)? Yes ☑ No ☐
3. Did custody papers accompany the sample(s)? Yes ☑ No ☐ Relinquished by client? Yes ☑ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☑ No ☐
5. Packing material used: Bubble Wrap ☑ Foam ☐ None ☐ Other air bags
6. Cooler temperature upon receipt 13.8 °C See back of form for multiple coolers/temps ☐
   METHOD: IR ☑ Other ☐ _____
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☑
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☑ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☑ No ☐ NA ☐
10. Were correct bottle(s) used for the test(s) indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☑
12. Sufficient quantity received to perform indicated analyses? Yes ☑ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☐ No ☑ Were VOAs on the COC? Yes ☐ No ☑

Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:
IR high temp ok metals

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot#* 100110-HNO_3; *Sulfuric Acid Lot#* 110410-H_2SO_4; *Sodium Hydroxide Lot#* 100108 -*NaOH; Hydrochloric Acid Lot#* 092006-*HCl; Sodium Hydroxide and Zinc Acetate Lot#* 100108-$(CH_3COO)_2ZN/NaOH$. What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials
WKZ3	<2	4-7-11	[initials]

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH		Date	Initials

Cooler #	Temp. °C		Method	Coolant

Discrepancies Cont'd:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

END OF REPORT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 58502-TO2-002

NODULAR

Lot #: A1D150509

Paul Wiseman

Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170

TESTAMERICA LABORATORIES, INC.

Approved for release.
Denise D. Heckler
Project Manager
4/25/2011 9:43 AM

Denise D. Heckler
Project Manager
denise.heckler@testamericainc.com

April 25, 2011

CASE NARRATIVE

A1D150509

The following report contains the analytical results for one water sample submitted to TestAmerica North Canton by Conestoga-Rovers & Associates, Inc. from the NODULAR Site, project number 58502-TO2-002. The sample was received April 15, 2011, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The sample presented in this report was analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

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All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Denise D. Heckler, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 12.9°C.

See TestAmerica's Cooler Receipt Form for additional information.

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analyte(s).

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called Quality Control Batches (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a Method Blank (MB), a Laboratory Control Sample (LCS) and, a Matrix Spike/Matrix Spike Duplicate (MS/MSD) pair or a Matrix Spike/Sample Duplicate (MS/DU) pair.
For 600 series/CWA methods, QC samples include a Method Blank (MB), a Laboratory Control Sample (LCS) and, where appropriate, a Matrix Spike (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch, with the exception of poor performing analytes. A list of these analytes is listed below. No corrective action is taken if these analytes do not meet criteria.Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

Poor performers

Method 8270 Water and Solid:	
4-Nitrophenol	3,3' – Dichlorobenzidine
Benzoic Acid	2,4,6 - Tribromophenol
Phenol	2,4-Dinitrophenol
Phenol-d5	Pentachlorophenol
4,6-Dinitro-2-methylphenol	Hexachlorocyclopentadiene (LCG only)
Benzyl Alcohol	4-Chloroaniline
Method 8151 Solid	
Dinoseb	
Method 8260 Water and Solid	
Dichlorodifluoromethane	Hexachlorobutadiene
Trichlorofluoromethane	Naphthalene
Chloroethane	1,2,3-Trichlorobenzene
Acetone	1,2,4-Trichlorobenzene
Bromomethane	2,2-Dichloropropane
Bromoform	Chloromethane

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be ten fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results do not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate or Matrix Spike/Sample Duplicate.

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater. For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available upon request.
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),

Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190), DoD ELAP (ADE-1437) USDA Soil Permit (P33-08-00123)

EXECUTIVE SUMMARY - Detection Highlights

A1D150509

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
W-58502-041411-SSH-WK24 04/14/11 16:00 001				
Zinc	8.8 B,J	20.0	ug/L	MCAWW 200.7

ANALYTICAL METHODS SUMMARY

A1D150509

PARAMETER	ANALYTICAL METHOD
Inductively Coupled Plasma (ICP) Metals	MCAWW 200.7

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SAMPLE SUMMARY

A1D150509

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MG3V6	001	W-58502-041411-SSH-WK24	04/14/11	16:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Conestoga Rovers & Assoc., Inc

Client Sample ID: W-58502-041411-SSH-WK24

TOTAL Metals

Lot-Sample #...: A1D150509-001 **Matrix.....:** WG
Date Sampled...: 04/14/11 16:00 **Date Received..:** 04/15/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1108017						
Zinc	**8.8 B,J**	**20.0**	**ug/L**	**MCAWW 200.7**	**04/18-04/19/11**	**MG3V61AA**
		Dilution Factor: 1		MDL.....: 5.0		

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

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QUALITY CONTROL SECTION

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A1D150509 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A1D180000-017 **Prep Batch #...:** 1108017						
Zinc	**5.4 B**	**20.0**	**ug/L**	**MCAWW 200.7**	**04/18-04/19/11**	**MG4841AL**
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D150509 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A1D180000-017 **Prep Batch #...:** 1108017							
Zinc	500	484	ug/L	97	MCAWW 200.7	04/18-04/19/11	MG4841A0
		Dilution Factor: 1					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D150509 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A1D180000-017 **Prep Batch #...:** 1108017					
Zinc	97	(85 - 115)	MCAWW 200.7	04/18-04/19/11	MG4841A0
		Dilution Factor: 1			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D150509 **Matrix.....:** WATER
Date Sampled...: 04/14/11 15:30 **Date Received..:** 04/15/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A1D150538-001 **Prep Batch #...:** 1108017									
Zinc									
	11.2	500	539	ug/L	105		MCAWW 200.7	04/18-04/19/11	MG3341CJ
	11.2	500	539	ug/L	106	0.12	MCAWW 200.7	04/18-04/19/11	MG3341CK
			Dilution Factor: 1						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D150509 **Matrix.....:** WATER
Date Sampled...: 04/14/11 15:30 **Date Received..:** 04/15/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A1D150538-001 **Prep Batch #...:** 1108017							
Zinc	105	(75 - 125)			MCAWW 200.7	04/18-04/19/11	MG3341CJ
	106	(75 - 125)	0.12	(0-20)	MCAWW 200.7	04/18-04/19/11	MG3341CK

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

CONESTOGA-ROVERS & ASSOCIATES

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

PAGE 1 OF 1

ID # Nº D 8982

SSOW Ref. Code: 58502-T06-003

Required Client Information:

Company: CRA, Inc.	Report To: Bud Wiseman
Address: 14496 Sheldon Rd.	Copy To: Mike Tomka
Suite 200	Invoice To:
Plymouth, MI 48170	P.O.:
Phone: 734-453-5123	Project Name: Nodular
Fax: 734-453-5201	Project Number: 58502-T02-002
Email:	

Laboratory:	Test America
Laboratory Location:	North Canton, OH
Laboratory Contact:	Denise Hechler
Requested Due Date:	TAT: 1 wk
QA/QC Requirements:	

Analysis and Method

Preservative

Sample Identification:	Matrix Code	Date Collected	Time Collected	# Containers	Unpreserved	HCl	H2SO4	HNO3	NaOH	Other:	Zinc	Remarks/Lab ID
1. W-58502-041411-SSH-WK24	WS	4/14/11	1600	1				X			X	
2.												
3.												
4.												
5.												
6.												1 week TAT
7.												
8.												
9.												
10.												
11.												
12.												
13.												
14.												
15.												
TOTAL NUMBER OF CONTAINERS				1								

Valid Matrix Codes:
WG Groundwater
WB Borehole Water
WS Surface Water
SO Soil
SE Sediment
See Back for Additional Codes

SHIPMENT METHOD	NO. OF COOLERS	RELINQUISHED BY / AFFILIATION	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME
FedEx	1	[signature] / CRA	4/14/11	1700	[signature]	4-15-11	0915
AIRBILL NO. 8746 4283 6477			4/14/11				

Sample Condition

Temp in °C	
Received on Ice	Y / N
Sealed Cooler	Y / N
Samples Intact	Y / N

Additional Comments:

Sampler Name: Steven S. Howemeyer

Sampler Signature: [signature] Date: 4/14/11

Distribution: WHITE - Fully Executed Copy YELLOW - Receiving Laboratory Copy PINK - Shipper GOLDENROD - Sampler Copy

REV. 0 (6/04)

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** 410150509
North Canton Facility

Client CRA Project Modular By: _____
Cooler Received on 4-15-11 Opened on 4-15-11 (Signature)
FedEx ☑ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other _____
TestAmerica Cooler # _____ Multiple Coolers ☐ Foam Box ☐ Client Cooler ☐ Other box

1. Were custody seals on the outside of the cooler(s)? Yes ☐ No ☑ Intact? Yes ☐ No ☐ NA ☑
   If YES, Quantity_____ Quantity Unsalvageable_____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☐ No ☐ NA ☑
   Were custody seals on the bottle(s)? Yes ☐ No ☑
   If YES, are there any exceptions? _____
2. Shippers' packing slip attached to the cooler(s)? Yes ☑ No ☐
3. Did custody papers accompany the sample(s)? Yes ☑ No ☐ Relinquished by client? Yes ☑ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☑ No ☐
5. Packing material used: Bubble Wrap ☑ Foam ☐ None ☐ Other _____
6. Cooler temperature upon receipt 1.2 °C See back of form for multiple coolers/temps ☐
   METHOD: IR ☑ Other ☐ _____
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☑
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☑ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☑ No ☐ NA ☐
10. Were correct bottle(s) used for the test(s) indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☑
12. Sufficient quantity received to perform indicated analyses? Yes ☑ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☐ No ☑ Were VOAs on the COC? Yes ☐ No ☑

Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

Nian temp OK metals

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot#* 100110-HNO_3; *Sulfuric Acid Lot#* 110410-H_2SO_4; *Sodium Hydroxide Lot#* 100108 -*NaOH; Hydrochloric Acid Lot#* 092006-*HCl; Sodium Hydroxide and Zinc Acetate Lot#* 100108-$(CH_3COO)_2ZN/NaOH$. What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials
wk24	≤2	4.15.11	AG

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler #	Temp. °C	Method	Coolant

Discrepancies Cont'd:

TestAmerica
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END OF REPORT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 58502-T02-002

NODULAR

Lot #: A1D210600

Paul Wiseman

Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170

TESTAMERICA LABORATORIES, INC.

Approved for release.
Denise D. Heckler
Project Manager
5/9/2011 2:44 PM

Denise D. Heckler
Project Manager
denise.heckler@testamericainc.com

May 09, 2011

CASE NARRATIVE

A1D210600

The following report contains the analytical results for one water sample submitted to TestAmerica North Canton by Conestoga-Rovers & Associates, Inc. from the NODULAR Site, project number 58502-T02-002. The sample was received April 21, 2011, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The sample presented in this report was analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Denise D. Heckler, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 0.7°C.

GC/MS VOLATILES

The analytical results met the requirements of the laboratory's QA/QC program.

GC/MS SEMIVOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

There were no client requested Matrix Spike (MS) samples in batch(es) 1117038.

Sample(s) W-58502-042011-SSH-MO.03 had up to one surrogate recovery per fraction outside acceptance limits. However, since the recovery was greater than 10% and all associated QC met criteria, no corrective action was taken.

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

GENERAL CHEMISTRY

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called Quality Control Batches (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a Method Blank (MB), a Laboratory Control Sample (LCS) and, a Matrix Spike/Matrix Spike Duplicate (MS/MSD) pair or a Matrix Spike/Sample Duplicate (MS/DU) pair.
For 600 series/CWA methods, QC samples include a Method Blank (MB), a Laboratory Control Sample (LCS) and, where appropriate, a Matrix Spike (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch, with the exception of poor performing analytes. A list of these analytes is listed below. No corrective action is taken if these analytes do not meet criteria.Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

Poor performers

Method 8270 Water and Solid:	
4-Nitrophenol	3,3' – Dichlorobenzidine
Benzoic Acid	2,4,6 - Tribromophenol
Phenol	2,4-Dinitrophenol
Phenol-d5	Pentachlorophenol
4,6-Dinitro-2-methylphenol	Hexachlorocyclopentadiene (LCG only)
Benzyl Alcohol	4-Chloroaniline
Method 8151 Solid	
Dinoseb	
Method 8260 Water and Solid	
Dichlorodifluoromethane	Hexachlorobutadiene
Trichlorofluoromethane	Naphthalene
Chloroethane	1,2,3-Trichlorobenzene
Acetone	1,2,4-Trichlorobenzene
Bromomethane	2,2-Dichloropropane
Bromoform	Chloromethane

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be ten fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results do not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate or Matrix Spike/Sample Duplicate.

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater. For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available upon request.
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),

Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190), DoD ELAP (ADE-1437) USDA Soil Permit (P33-08-00123)

EXECUTIVE SUMMARY - Detection Highlights

A1D210600

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
W-58502-042011-SSH-MO.03 04/20/11 16:00 001				
Zinc	8.8 B	20.0	ug/L	MCAWW 200.7
bis(2-Ethylhexyl) phthalate	0.89 J	5.0	ug/L	CFR136A 625
Total Phenols	0.010 B	0.040	mg/L	MCAWW 420.1

ANALYTICAL METHODS SUMMARY

A1D210600

PARAMETER	ANALYTICAL METHOD
Base/Neutrals and Acids	CFR136A 625
Inductively Coupled Plasma (ICP) Metals	MCAWW 200.7
Phenolics	MCAWW 420.1
Purgeables	CFR136A 624

References:

CFR136A "Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SAMPLE SUMMARY

A1D210600

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MHC57	001	W-58502-042011-SSH-MO.03	04/20/11	16:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Conestoga Rovers & Assoc., Inc

Client Sample ID: W-58502-042011-SSH-MO.03

GC/MS Volatiles

Lot-Sample #...: A1D210600-001 **Work Order #...:** MHC571AC **Matrix.....:** WG
Date Sampled...: 04/20/11 16:00 **Date Received..:** 04/21/11
Prep Date.....: 04/22/11 **Analysis Date..:** 04/22/11
Prep Batch #...: 1116412
Dilution Factor: 1 **Method.....:** CFR136A 624

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methylene chloride	ND	1.0	ug/L	0.33
Tetrachloroethene	ND	1.0	ug/L	0.29
Trichloroethene	ND	1.0	ug/L	0.17
Benzene	ND	1.0	ug/L	0.13
Chloroform	ND	1.0	ug/L	0.16

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	94	(80 - 125)
Toluene-d8	95	(84 - 110)
Bromofluorobenzene	83	(81 - 112)

Conestoga Rovers & Assoc., Inc

Client Sample ID: W-58502-042011-SSH-MO.03

GC/MS Semivolatiles

Lot-Sample #...: A1D210600-001 **Work Order #...:** MHC571AD **Matrix.....:** WG
Date Sampled...: 04/20/11 16:00 **Date Received..:** 04/21/11
Prep Date.....: 04/27/11 **Analysis Date..:** 05/04/11
Prep Batch #...: 1117038
Dilution Factor: 1 **Method.....:** CFR136A 625

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	5.0	ug/L	0.10
Benzo(a)pyrene	ND	5.0	ug/L	0.10
bis(2-Ethylhexyl) phthalate	**0.89 J**	**5.0**	**ug/L**	**0.80**
4-Chloro-3-methylphenol	ND	5.0	ug/L	0.80
Di-n-butyl phthalate	ND	5.0	ug/L	0.67
Diethyl phthalate	ND	5.0	ug/L	0.60
2,4-Dimethylphenol	ND	5.0	ug/L	0.80
Fluoranthene	ND	5.0	ug/L	0.10
Phenol	ND	5.0	ug/L	0.60
Pyrene	ND	5.0	ug/L	0.10
2,4,6-Trichloro-phenol	ND	4.0	ug/L	0.80
Butyl benzyl phthalate	ND	5.0	ug/L	0.80

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	29	(10 - 135)
Phenol-d5	20	(10 - 132)
2,4,6-Tribromophenol	60	(10 - 142)
2-Fluorobiphenyl	41	(38 - 110)
Terphenyl-d14	52	(24 - 135)
Nitrobenzene-d5	43 *	(44 - 110)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Conestoga Rovers & Assoc., Inc

Client Sample ID: W-58502-042011-SSH-MO.03

TOTAL Metals

Lot-Sample #...: A1D210600-001 **Matrix.....:** WG
Date Sampled...: 04/20/11 16:00 **Date Received..:** 04/21/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1112016						
Copper	ND	25.0	ug/L	MCAWW 200.7	04/22-04/25/11	MHC571AE
		Dilution Factor: 1		MDL.....: 4.5		
Lead	ND	100	ug/L	MCAWW 200.7	04/22-04/25/11	MHC571AF
		Dilution Factor: 1		MDL.....: 1.9		
Zinc	**8.8 B**	**20.0**	**ug/L**	**MCAWW 200.7**	**04/22-04/25/11**	**MHC571AG**
		Dilution Factor: 1		MDL.....: 5.0		

NOTE(S):

B Estimated result. Result is less than RL.

Conestoga Rovers & Assoc., Inc

Client Sample ID: W-58502-042011-SSH-MO.03

General Chemistry

Lot-Sample #...: A1D210600-001 **Work Order #...:** MHC57 **Matrix.....:** WG
Date Sampled...: 04/20/11 16:00 **Date Received..:** 04/21/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Phenols	**0.010 B**	**0.040**	**mg/L**	**MCAWW 420.1**	**04/26/11**	**1116199**

Dilution Factor: 1 MDL.....: 0.007

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

QUALITY CONTROL SECTION

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A1D210600 **Work Order #...:** MHJH51AA **Matrix.....:** WATER
MB Lot-Sample #: A1D260000-412
Prep Date.....: 04/21/11
Analysis Date..: 04/21/11 **Prep Batch #...:** 1116412
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	CFR136A 624
Chloroform	ND	1.0	ug/L	CFR136A 624
Methylene chloride	ND	1.0	ug/L	CFR136A 624
Tetrachloroethene	ND	1.0	ug/L	CFR136A 624
Trichloroethene	ND	1.0	ug/L	CFR136A 624

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	96	(80 - 125)
Toluene-d8	97	(84 - 110)
Bromofluorobenzene	84	(81 - 112)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D210600 **Work Order #...:** MHJH51AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D260000-412
Prep Date.....: 04/21/11 **Analysis Date..:** 04/21/11
Prep Batch #...: 1116412
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**20**	**19**	**ug/L**	**93**	**CFR136A 624**
Chloroform	**20**	**18**	**ug/L**	**92**	**CFR136A 624**
Methylene chloride	**20**	**21**	**ug/L**	**106**	**CFR136A 624**
Tetrachloroethene	**20**	**19**	**ug/L**	**97**	**CFR136A 624**
Trichloroethene	**20**	**19**	**ug/L**	**96**	**CFR136A 624**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	97	(80 - 125)
Toluene-d8	98	(84 - 110)
Bromofluorobenzene	92	(81 - 112)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D210600 **Work Order #...:** MHJH51AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D260000-412
Prep Date.....: 04/21/11 **Analysis Date..:** 04/21/11
Prep Batch #...: 1116412
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**93**	**(37 - 151)**	**CFR136A 624**
Chloroform	**92**	**(51 - 138)**	**CFR136A 624**
Methylene chloride	**106**	**(10 - 221)**	**CFR136A 624**
Tetrachloroethene	**97**	**(64 - 148)**	**CFR136A 624**
Trichloroethene	**96**	**(71 - 157)**	**CFR136A 624**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	97	(80 - 125)
Toluene-d8	98	(84 - 110)
Bromofluorobenzene	92	(81 - 112)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Lot-Sample #...: A1D210600 **Work Order #...:** MHC571AH **Matrix.....:** WG
MS Lot-Sample #: A1D210600-001
Date Sampled...: 04/20/11 16:00 **Date Received..:** 04/21/11
Prep Date.....: 04/22/11 **Analysis Date..:** 04/22/11
Prep Batch #...: 1116412
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**ND**	**20**	**19**	**ug/L**	**94**	**CFR136A 624**
Chloroform	**ND**	**20**	**18**	**ug/L**	**92**	**CFR136A 624**
Methylene chloride	**ND**	**20**	**20**	**ug/L**	**100**	**CFR136A 624**
Tetrachloroethene	**ND**	**20**	**19**	**ug/L**	**95**	**CFR136A 624**
Trichloroethene	**ND**	**20**	**19**	**ug/L**	**94**	**CFR136A 624**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	99	(80 - 125)
Toluene-d8	96	(84 - 110)
Bromofluorobenzene	93	(81 - 112)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Lot-Sample #...: A1D210600 **Work Order #...:** MHC571AH **Matrix.....:** WG
MS Lot-Sample #: A1D210600-001
Date Sampled...: 04/20/11 16:00 **Date Received..:** 04/21/11
Prep Date.....: 04/22/11 **Analysis Date..:** 04/22/11
Prep Batch #...: 1116412
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**94**	**(90 - 114)**	**CFR136A 624**
Chloroform	**92**	**(90 - 118)**	**CFR136A 624**
Methylene chloride	**100**	**(78 - 131)**	**CFR136A 624**
Tetrachloroethene	**95**	**(81 - 112)**	**CFR136A 624**
Trichloroethene	**94**	**(85 - 114)**	**CFR136A 624**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	99	(80 - 125)
Toluene-d8	96	(84 - 110)
Bromofluorobenzene	93	(81 - 112)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A1D210600 **Work Order #...:** MHJRP1AA **Matrix.....:** WATER
MB Lot-Sample #: A1D270000-038

Prep Date.....: 04/27/11
Analysis Date..: 05/04/11 **Prep Batch #...:** 1117038
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	5.0	ug/L	CFR136A 625
Benzo(a)pyrene	ND	5.0	ug/L	CFR136A 625
bis(2-Ethylhexyl) phthalate	ND	5.0	ug/L	CFR136A 625
Butyl benzyl phthalate	ND	5.0	ug/L	CFR136A 625
Di-n-butyl phthalate	ND	5.0	ug/L	CFR136A 625
2,4-Dimethylphenol	ND	5.0	ug/L	CFR136A 625
Fluoranthene	ND	5.0	ug/L	CFR136A 625
Phenol	ND	5.0	ug/L	CFR136A 625
Pyrene	ND	5.0	ug/L	CFR136A 625
4-Chloro-3-methylphenol	ND	5.0	ug/L	CFR136A 625
Diethyl phthalate	ND	5.0	ug/L	CFR136A 625
2,4,6-Trichloro-phenol	ND	4.0	ug/L	CFR136A 625

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	52	(10 - 135)
Phenol-d5	41	(10 - 132)
2,4,6-Tribromophenol	55	(10 - 142)
2-Fluorobiphenyl	53	(38 - 110)
Terphenyl-d14	72	(24 - 135)
Nitrobenzene-d5	59	(44 - 110)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D210600 **Work Order #...:** MHJRP1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D270000-038
Prep Date.....: 04/27/11 **Analysis Date..:** 05/06/11
Prep Batch #...: 1117038
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
bis(2-Ethylhexyl) phthalate	**20**	**19**	**ug/L**	**94**	**CFR136A 625**
Di-n-butyl phthalate	**20**	**18**	**ug/L**	**91**	**CFR136A 625**
Diethyl phthalate	**20**	**17**	**ug/L**	**87**	**CFR136A 625**
Fluoranthene	**20**	**18**	**ug/L**	**92**	**CFR136A 625**
Pyrene	**20**	**17**	**ug/L**	**85**	**CFR136A 625**
4-Chloro-3-methylphenol	**20**	**17**	**ug/L**	**87**	**CFR136A 625**
2,4-Dimethylphenol	**20**	**16**	**ug/L**	**80**	**CFR136A 625**
Phenol	**20**	**12**	**ug/L**	**58**	**CFR136A 625**
2,4,6-Trichloro-phenol	**20**	**16**	**ug/L**	**78**	**CFR136A 625**
Acenaphthene	**20**	**15**	**ug/L**	**76**	**CFR136A 625**
Benzo(a)pyrene	**20**	**16**	**ug/L**	**78**	**CFR136A 625**
Butyl benzyl phthalate	**20**	**18**	**ug/L**	**91**	**CFR136A 625**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	72	(10 - 135)
Phenol-d5	58	(10 - 132)
2,4,6-Tribromophenol	84	(10 - 142)
2-Fluorobiphenyl	74	(38 - 110)
Terphenyl-d14	102	(24 - 135)
Nitrobenzene-d5	86	(44 - 110)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D210600 **Work Order #...:** MHJRP1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D270000-038
Prep Date.....: 04/27/11 **Analysis Date..:** 05/06/11
Prep Batch #...: 1117038
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
bis(2-Ethylhexyl) phthalate	**94**	**(50 - 134)**	**CFR136A 625**
Di-n-butyl phthalate	**91**	**(49 - 110)**	**CFR136A 625**
Diethyl phthalate	**87**	**(10 - 117)**	**CFR136A 625**
Fluoranthene	**92**	**(55 - 112)**	**CFR136A 625**
Pyrene	**85**	**(48 - 122)**	**CFR136A 625**
4-Chloro-3-methylphenol	**87**	**(58 - 110)**	**CFR136A 625**
2,4-Dimethylphenol	**80**	**(10 - 115)**	**CFR136A 625**
Phenol	**58**	**(17 - 130)**	**CFR136A 625**
2,4,6-Trichloro-phenol	**78**	**(54 - 110)**	**CFR136A 625**
Acenaphthene	**76**	**(54 - 110)**	**CFR136A 625**
Benzo(a)pyrene	**78**	**(51 - 111)**	**CFR136A 625**
Butyl benzyl phthalate	**91**	**(44 - 129)**	**CFR136A 625**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	72	(10 - 135)
Phenol-d5	58	(10 - 132)
2,4,6-Tribromophenol	84	(10 - 142)
2-Fluorobiphenyl	74	(38 - 110)
Terphenyl-d14	102	(24 - 135)
Nitrobenzene-d5	86	(44 - 110)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A1D210600 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A1D220000-016 **Prep Batch #...:** 1112016						
Copper	ND	25.0	ug/L	MCAWW 200.7	04/22-04/25/11	MHDF11A3
		Dilution Factor: 1				
Lead	ND	100	ug/L	MCAWW 200.7	04/22-04/25/11	MHDF11A4
		Dilution Factor: 1				
Zinc	ND	20.0	ug/L	MCAWW 200.7	04/22-04/25/11	MHDF11AE
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D210600 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A1D220000-016 **Prep Batch #...:** 1112016							
Zinc	500	500	ug/L	100	MCAWW 200.7	04/22-04/25/11	MHDF11AK
			Dilution Factor: 1				
Copper	250	260	ug/L	104	MCAWW 200.7	04/22-04/25/11	MHDF11CL
			Dilution Factor: 1				
Lead	500	480	ug/L	96	MCAWW 200.7	04/22-04/25/11	MHDF11CM
			Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D210600 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A1D220000-016 **Prep Batch #...:** 1112016					
Zinc	100	(85 - 115)	MCAWW 200.7	04/22-04/25/11	MHDF11AK
		Dilution Factor: 1			
Copper	104	(85 - 115)	MCAWW 200.7	04/22-04/25/11	MHDF11CL
		Dilution Factor: 1			
Lead	96	(85 - 115)	MCAWW 200.7	04/22-04/25/11	MHDF11CM
		Dilution Factor: 1			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D210600 **Matrix.....:** WATER
Date Sampled...: 04/20/11 15:00 **Date Received..:** 04/21/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A1D210484-001 **Prep Batch #...:** 1112016									
Copper									
	ND	250	270	ug/L	106		MCAWW 200.7	04/22-04/25/11	MHA681C9
	ND	250	260	ug/L	103	3.1	MCAWW 200.7	04/22-04/25/11	MHA681DA
			Dilution Factor: 1						
Lead									
	ND	500	470	ug/L	94		MCAWW 200.7	04/22-04/25/11	MHA681DD
	ND	500	500	ug/L	99	5.0	MCAWW 200.7	04/22-04/25/11	MHA681DE
			Dilution Factor: 1						
Zinc									
	ND	500	500	ug/L	100		MCAWW 200.7	04/22-04/25/11	MHA681AT
	ND	500	510	ug/L	103	2.7	MCAWW 200.7	04/22-04/25/11	MHA681AU
			Dilution Factor: 1						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D210600 **Matrix.....:** WATER
Date Sampled...: 04/20/11 15:00 **Date Received..:** 04/21/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A1D210484-001 **Prep Batch #...:** 1112016							
Copper	106	(75 - 125)			MCAWW 200.7	04/22-04/25/11	MHA681C9
	103	(75 - 125)	3.1	(0-20)	MCAWW 200.7	04/22-04/25/11	MHA681DA
		Dilution Factor: 1					
Lead	94	(75 - 125)			MCAWW 200.7	04/22-04/25/11	MHA681DD
	99	(75 - 125)	5.0	(0-20)	MCAWW 200.7	04/22-04/25/11	MHA681DE
		Dilution Factor: 1					
Zinc	100	(75 - 125)			MCAWW 200.7	04/22-04/25/11	MHA681AT
	103	(75 - 125)	2.7	(0-20)	MCAWW 200.7	04/22-04/25/11	MHA681AU
		Dilution Factor: 1					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A1D210600 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Phenols		Work Order #: MHHJ81AA		MB Lot-Sample #:	A1D260000-199	
	ND	0.040	mg/L	MCAWW 420.1	04/26/11	1116199
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D210600 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Phenols	Work Order #: MHHJ81AC				LCS Lot-Sample#: A1D260000-199		
	1.0	1.0	mg/L	100	MCAWW 420.1	04/26/11	1116199
	Dilution Factor: 1						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D210600 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Phenols		Work Order #: MHHJ81AC	LCS Lot-Sample#: A1D260000-199		
	100	(54 - 137)	MCAWW 420.1	04/26/11	1116199
		Dilution Factor: 1			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D210600 **Matrix.....:** WATER
Date Sampled...: 04/19/11 13:30 **Date Received..:** 04/20/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Phenols			WO#: MG9V31AL-MS/MG9V31AM-MSD				MS Lot-Sample #: A1D200560-001		
	0.014	0.10	0.12	mg/L	109		MCAWW 420.1	04/26/11	1116199
	0.014	0.10	0.11	mg/L	98	8.7	MCAWW 420.1	04/26/11	1116199
			Dilution Factor: 1						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D210600 **Matrix.....:** WATER
Date Sampled...: 04/19/11 13:30 **Date Received..:** 04/20/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Phenols		WO#: MG9V31AL-MS/MG9V31AM-MSD				MS Lot-Sample #: A1D200560-001	
	109	(10 - 155)			MCAWW 420.1	04/26/11	1116199
	98	(10 - 155)	8.7	(0-41)	MCAWW 420.1	04/26/11	1116199

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

CONESTOGA-ROVERS & ASSOCIATES

PAGE 1 OF 1

ID # Nº D 8966

SSOW Ref. Code: 58502-T06-00B

Required Client Information:

Company: CRA, Inc.	Report To: Paul Wiseman
Address: 14496 Sheldon Rd.	Copy To: Mike Tomke
Suite 200	Invoice To:
Plymouth, MI 48170	P.O.:
Phone: 734-453-5123	Project Name: Nodular
Fax: 734-453-5201	Project Number: 58502-T02-002
Email:	

Laboratory:	TestAmerica
Laboratory Location:	North Canton, OH
Laboratory Contact:	Denise Hechler
Requested Due Date:	TAT: STD
QA/QC Requirements:	

Valid Matrix Codes: WG Groundwater; WB Borehole Water; WS Surface Water; SO Soil; SE Sediment; See Back for Additional Codes

Analysis and Method

Sample Identification:	Matrix Code	Date Collected	Time Collected	# Containers	Preservative: Unpreserved	HCl	H2SO4	HNO3	NaOH	Other:	Zinc	Copper	Lead	Phenol	TDS	VOLs	Remarks/Lab ID
1. W-58502-042011-SSH-MO.03	WS	4/20/11	1600	7	X	X	X	X			X	X	X	X	X	X	
2.																	
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	
11.																	
12.																	
13.																	
14. SSH																	
15. TOTAL NUMBER OF CONTAINERS				7													

SHIPMENT METHOD	NO. OF COOLERS	RELINQUISHED BY / AFFILIATION	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME
FedEx	1	[signature] / CRA	4/20/11	1800	[signature]	4/21/11	945
AIRBILL NO. 8746 4283 6488							

Sample Condition

Temp in °C	
Received on Ice	Y / N
Sealed Cooler	Y / N
Samples Intact	Y / N

Additional Comments:

Sampler Name: Steven S. Howeryer

Sampler Signature: [signature] Date: 4/20/11

WHITE - Fully Executed Copy YELLOW - Receiving Laboratory Copy PINK - Shipper GOLDENROD - Sampler Copy

REV. 0 (6/04)

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** 410210600

North Canton Facility

Client CRA Project _____ By: _____ (Signature)

Cooler Received on 4-21-11 Opened on 4-21-11

FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other _____

TestAmerica Cooler # No # Multiple Coolers ☐ Foam Box ☐ Client Cooler ☐ Other _____

1. Were custody seals on the outside of the cooler(s)? Yes ☐ No ☒ Intact? Yes ☐ No ☐ NA ☒
   If YES, Quantity _____ Quantity Unsalvageable _____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☐ No ☐ NA ☒
   Were custody seals on the bottle(s)? Yes ☐ No ☒
   If YES, are there any exceptions? _____
2. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐
3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐
5. Packing material used: Bubble Wrap ☒ Foam ☐ None ☐ Other _____
6. Cooler temperature upon receipt 0.7 °C See back of form for multiple coolers/temps ☐
   METHOD: IR ☒ Other ☐ _____
   COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☒ No ☐ NA ☐
10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☒ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☐ No ☒ Were VOAs on the COC? Yes ☒ No ☐

Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐

Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot#* 100110-HNO_3; *Sulfuric Acid Lot#* 110410-H_2SO_4; *Sodium Hydroxide Lot#* 100108 -*NaOH; Hydrochloric Acid Lot#* 092006-*HCl; Sodium Hydroxide and Zinc Acetate Lot#* 100108-$(CH_3COO)_2ZN/NaOH$. What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials
03	<2	4/21/11	CS

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler #	Temp. °C	Method	Coolant

Discrepancies Cont'd:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

END OF REPORT