



**CONESTOGA-ROVERS  
& ASSOCIATES**

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January 25, 2012

Reference No. 058502

Mr. Keith Noble  
Michigan Department of Natural Resources and Environment  
401 Ketchum Street, Suite B  
Bay City, Michigan  
U.S.A. 48708

Dear Mr. Noble:

Re: Stormwater Permitting  
2100 Veterans Memorial Parkway  
RACER Saginaw Nodular Iron Property, Saginaw, Michigan

This letter has been prepared as a follow up to the meeting held on Thursday, January 27, 2011 regarding potential stormwater discharges from the Former Nodular Facility.

It is our understanding that Revitalizing Auto Communities Environmental Response (RACER) Trust has retained the existing National Pollutant Discharge Elimination System (NPDES) Wastewater discharge general permit (MIS110000 formerly MIS120000) previously held by General Motors Powertrain for the Saginaw Metal Casting Operations (SMCO). RACER requests that the existing general permit be modified to remove the following permitted outfalls currently identified on the certificate of coverage:

- The outfall to Koehler Drain in the SE ¼, NE ¼, Section 8, T12N, R5E, Saginaw County
- The outfall to Gage Number One Drain in the NW ¼, SE ¼, Section 5, T12N, R5E, Saginaw County
- The outfall to Koehler Drain in the NE ¼, SE ¼, Section 5, T12N, R5E, Saginaw County

RACER requests that the following proposed new outfalls (designated as 021, 022, and 023) be added to the permit. The exact outfall locations are yet to be determined.

The three outfalls being removed are now owned and operated by General Motors (GM) LLC and permitted by GM. In addition to removing the above outfalls, please also remove any



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references made to General Motors in the Certificate of Coverage and replace them with RACER.

Attachment 1 presents a draft of the Stormwater Pollution Prevention Plan (SWPPP) that has been prepared in accordance with the current General Permit (MIS110000). Please note that Outfall 020 (Diekman Drain, in the SE ¼, SE ¼, Section 5, T12N, R5E, Saginaw County) was not included in the SWPPP, consistent with the requests made by GM in correspondence to yourself on December 15, 2006 and February 20, 2007. The following reasons for not including Outfall 020 in the SWPPP are briefly summarized below:

- No sources of contamination could impact Diekman Drain, since there are no longer Industrial activities being conducted in the area
- Clean stockpiled clay within the area has been vegetated
- The area has been hydroseeded
- Routine inspections were previously completed to confirm vegetation growth
- A shallow trench was installed and vegetated at the southern end of the large clay pile to eliminate potential for stormwater runoff

As identified by the General Permit, a Short-term Monitoring Plan is required for the new outfalls (021, 022, and 023) since the permittee has never submitted a short term monitoring plan previously. At this time, the new outfall(s) have not been constructed. RACER will submit a Short-term Monitoring Plan prior to installation of the new outfalls (021, 022, and 023). However, RACER has completed some characterization sampling of the water in the secondary pond. The sample results are presented as part of Attachment 2.

Attachment 2 presents the NPDES application required for the proposed outfalls.

Attachment 3 presents the General Stormwater Permit (MIS110000).

Attachment 4 presents the Certificate of Coverage (MIS120003).

Attachment 5 presents the executed Notice of Intent (NOI).



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If you have any questions regarding the enclosed, or require any additional information, please contact the undersigned or Dave Favero at 217-741-6235.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Michael R. Tomka, P.E.

JP/ev/4  
Encl.

cc: Grant Trigger, RACER  
Dave Favero, RACER

ATTACHMENT 1

STORMWATER POLLUTION PREVENTION PLAN



**FACILITY NAME:**

**SAGINAW NODULAR INDUSTRIAL LAND**

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**STORM WATER POLLUTION PREVENTION PLAN (SWPPP)**

**DEQ SWPPP Template (Revised 6/15/2011)**

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## 1.0 GENERAL FACILITY INFORMATION

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Name of Facility: **Saginaw Nodular Industrial Land**

Facility Address: **2100 Veterans Memorial Parkway Saginaw, MI**

Standard Industrial Classification (SIC) Code: **none (NAICS Code: 525920)**

Owner or Authorized Representative: **Revitalizing Auto Communities Environmental Response (RACER) Trust (authorized representative Dave Favero)**

### Facility Contact

Name: **Dave Favero**

Title: **Deputy Cleanup Manager**

Telephone: **217-741-6235**

Mailing Address: **2930 Ecorse Road, Ypsilanti, MI 48198**

Name: **Tom Williams**

Title: **Site Manager**

Telephone: **989-245-1716**

Mailing Address: **780 Stoneham Road, Saginaw, MI 48638**

### Certified Storm Water Operator

Name & Certification Number: **Steve Hoevemeyer (CRA) Industrial site certification # I-10477 expires 7/1/15**

### Permit Information

Certificate of Coverage Number: **MIS120003**

Effective Date of Coverage: **issued August 16, 2006**

Receiving Waters: **Saginaw River**

### Brief Industrial Activity Description

The Nodular facility is located on an approximate 195-acre plot including an old wastewater treatment system and a clay soil stockpile area. The site is bounded by Veterans Memorial Parkway west, Hack Road to the north and North Outer Drive to the east.

The wastewater treatment plant stopped receiving waters in September 2011 and is expected to be decommissioned.

## 2.0 STORM WATER POLLUTION PREVENTION TEAM

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The storm water pollution prevention team is responsible for developing, implementing, maintaining, and revising this SWPPP. The members of the team and their primary responsibilities (i.e. implementing, maintaining, record keeping, submitting reports, conducting inspections, employee training, conducting the annual compliance evaluation, testing for non-storm water discharges, signing the required certifications) are as follows:

| NAME & TITLE                       | RESPONSIBILITY                                                                  |
|------------------------------------|---------------------------------------------------------------------------------|
| Dave Favero (RACER Trust PM)       | Director of works                                                               |
| Michael Tomka (CRA PM)             | Coordinating inspections, training, evaluations, and record keep and reporting. |
| Steve Hoevemeyer (CRA Field Staff) | Conduct inspections and record keeping                                          |
| Tom Williams (RACER)               | Site Manager                                                                    |
|                                    |                                                                                 |
|                                    |                                                                                 |

## 3.0 SITE MAP

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Preparing a site map or sketch is the first step in assessing the facility. (See the DEQ Industrial Certified Operator Training Manual for additional information)

The facility's site map includes all applicable items listed in the permit, which include:

- 1) Buildings and other permanent structures
- 2) Storage or disposal areas for significant materials
- 3) Secondary containment structures and descriptions of what they contain in the primary containment structures
- 4) Storm water discharge outfalls (numbered or other wise labeled for reference)
- 5) Location of storm water and non-storm water inlets contributing to each outfall (catch basins, roof drains, conduits, drain tiles, detention pond riser pipes, sump pumps, etc.) (numbered or other wise labeled for reference)
- 6) Location of NPDES permitted discharges other than storm water
- 7) Outlines of the drainage areas contributing to each outfall
- 8) Structural runoff controls or storm water treatment facilities
- 9) Areas of vegetation (with brief description such as lawn, old field, marsh, wooded, etc.)
- 10) Areas of exposed and/or erodible soils
- 11) Impervious surfaces (roofs, asphalt, concrete, etc.)
- 12) Name and location of receiving waters
- 13) Areas of known or suspected impacts on surface waters as designated under Par 201 (Environmental Response) of the Michigan Act.

See Figure 1 for the Site Map and Figure 2 for the 2009 aerial for the Site.

## 4.0 SIGNIFICANT MATERIALS

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Definition: Significant materials are any material which could degrade or impair water quality, including but not limited to:

- ✓ Raw Materials
- ✓ Fuels
- ✓ Solvents
- ✓ Detergents
- ✓ Plastic pellets
- ✓ Finished materials (i.e. metallic products)
- ✓ Hazardous Substances designated under section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), see 40 CFR 372.65
- ✓ Any chemical the facility is required to report pursuant to section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA)
- ✓ Polluting Materials – Oil and any material, in solid or liquid form, identified as polluting material under the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code)
- ✓ Hazardous Wastes as defined in Part 111 of the Michigan Act
- ✓ Fertilizers
- ✓ Pesticides
- ✓ Waste Products (i.e. ashes, slag, sludge, plant waste, animal waste)

During the significant materials identification phase, all sources of potential storm water contamination need to be identified. Both the inside and outside of the facility must be inventoried to determine the materials and practices that may be sources of contamination to storm water runoff. Note the identification phase must address residual contaminants which may be found on items stored outside.

### 4.1 Inventory of Exposed Significant Materials

The permit requires a general inventory of significant materials that could enter storm water. For each material listed the SWPPP shall include the ways in which each type of material has been or has reasonable potential to become exposed to storm water (e.g. spillage during handling; leaks from pipes, pumps, or vessels; contact with storage piles, contaminated materials or soils; waste handling and disposal; deposits from dust or overspray; etc.). In addition, the SWPPP must identify the inlet(s) spilled significant materials may enter and the outfall(s) through which the spilled significant material may be discharged.

See Table 1 for significant Material Inventory.

### 4.2 Description of Industrial Activities & Significant Material Storage Areas

The permit requires industrial facilities to evaluate the reasonable potential for contribution of significant materials to storm water runoff from at least the following areas or activities:

- 1) Loading, unloading, and other material handling operations
- 2) Outdoor storage including secondary containment structures
- 3) Outdoor manufacturing or processing activities

- 4) Significant dust or particulate generating processes
- 5) Discharge from vents, stacks, and air emission controls
- 6) On-site waste disposal practices
- 7) Maintenance and cleaning of vehicles, machines, and equipment
- 8) Areas of exposed and/or erodible soils
- 9) Sites of Environmental Contamination listed under Part 201 (Environmental Response) of the Michigan Act
- 10) Areas of significant material residues
- 11) Areas where animals congregate (wild or domestic) and deposit wastes
- 12) Other areas where storm water may contact significant materials

For each applicable item, the permit requires a written description of the specific activity or storage area. Along with the written description of the activities or storage areas, a description of the significant materials associated with those items must be included.

See Table 1 for industrial activity and significant material storage area descriptions.

#### **4.3 List of Significant Spills**

The permit requires a list of significant spills and significant leaks of polluting materials that occurred at areas that are exposed to precipitation or that otherwise discharge to a point source at the facility. The listing shall include spills that occurred over the three years prior to the effective date of a certificate of coverage authorizing discharge under the General Permit. The listing shall include the date, volume, exact location of release, and actions taken to clean up the material and/or prevent exposure to storm water runoff or contamination of surface waters of the state. Any release that occurs after the SWPPP has been developed shall be controlled in accordance with the SWPPP and is cause for the SWPPP to be updated as appropriate within 14 calendar days of obtaining knowledge of the spill or loss. (If there have been no spills of polluting materials, state that in this section.)

See Table 2 for the listing of significant spills. At this point no spills have been identified, however the table will be kept in the report as a placeholder for if and when a spill occurs.

#### **4.4 Summary of Sampling Data**

The permit requires a summary of existing storm water discharge sampling data (if available) describing pollutants in storm water discharges associated with industrial activity at the facility. The summary shall be accompanied by a description of the suspected sources of the pollutants detected. (If there is no storm water discharge sampling data, state that in this section.)

There is no storm water discharge sampling data to date, however, samples have been taken within the last year to characterize the water.

Initially, a Significant Industrial User (SIU) Discharge Permit was entered into with the City to discharge water from the secondary pond to the POTW. Appendix G presents the SIU Discharge permit along with the required reporting and analysis that were completed.

In June 2011 the secondary pond water and surrounding water features were characterized further. Appendix H includes the characterization results



## 5.0 NON-STRUCTURAL CONTROLS

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Non-structural controls are practices that are relatively simple, fairly inexpensive, and applicable to a wide variety of industries or activities. Non-structural controls are intended to reduce the amount of pollution getting into the surface waters of the state and are generally implemented to address the problem at the source. They do not require any structural changes to the facility. These are typically everyday types of activities undertaken by employees at the facility. Many facilities may already have nonstructural controls in place for other reasons. The permit requires that the SWPPP shall, at a minimum, include each of the following non-structural controls.

### 5.1 Preventative Maintenance Program (Routine Inspection Program)

The permit requires a description of a program for routine preventive maintenance which includes inspection and maintenance of storm water management and control devices (e.g. cleaning of oil/water separators and catch basins) as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters. A log of the inspection and corrective actions shall be maintained on file and shall be retained for three years. The Preventative Maintenance Inspection Form is in Appendix A. (See the DEQ Industrial Certified Operator Training Manual for additional information. If this requirement is addressed in other facility procedures, reference those procedures here.)

See Table 3 for the preventative maintenance/routine housekeeping inspection program. The treatment plant is no longer operational and all materials used for treatment have been removed. There are no significant sources that could affect the stormwater and therefore a preventative maintenance schedule has not been developed. The table will be kept in the report as a placeholder should industrial activities commence again.

### 5.2 Comprehensive Site Inspection

The permit requires a schedule for comprehensive site inspection to include but not be limited to, the areas and equipment identified in the preventive maintenance program and good housekeeping procedures. The inspection shall also include a review of the routine preventive maintenance reports, good housekeeping inspections reports, and any other paperwork associated with the SWPPP. The comprehensive site inspection shall be conducted by the Certified Storm Water Operator quarterly or semi annually, depending on specific permit language. The permittee may request Department approval of an alternate schedule for comprehensive site inspections. A report of the comprehensive site inspection results shall be prepared and retained for three years. The report shall identify any incidents of non-compliance with the SWPPP or this permit. If there are no reportable incidents of non-compliance, the report shall contain a certification that the facility is in compliance with this permit. The Comprehensive Site Inspection Form is in Appendix B.

|                                               |
|-----------------------------------------------|
| <b>COMPREHESIVE SITE INSPECTION SCHEDULE:</b> |
|-----------------------------------------------|

|        |
|--------|
| Annual |
|--------|

**COMPREHENSIVE SITE INSPECTION DESCRIPTION:**

- Inspect Site for erosion affects.
- WWTP
  - o Inspect basins/ponds for free board

**5.3 Housekeeping Procedures**

The permit requires that the SWPPP include a description of good housekeeping procedures to maintain a clean, orderly facility. Housekeeping procedures are intended to reduce the potential for significant materials to come in contact with storm water. The Housekeeping Inspection Form is in Appendix C. (See the DEQ Industrial Certified Operator Training Manual for additional information.)

**HOUSEKEEPING PROCEDURE DESCRIPTION:**

Not an operating facility, therefore not applicable

**5.4 Material Handling & Spill Prevention / Clean-Up Procedures**

The permit requires a description of material handling procedures and storage requirements for significant materials. Equipment and procedures for cleaning up spills shall be identified in the SWPPP and made available to the appropriate personnel. The procedures shall identify measures to prevent spilled materials or material residues on the outside of the containers from being discharged into storm water.

The SWPPP may include, by reference, requirements of either a Pollution Incident Prevention Plan (PIPP) prepared in accordance with the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code); a Hazardous Waste Contingency Plan (HWCP) prepared in accordance with 40 CFR 264 and 265 Subpart D, as required by Part 111 of the Michigan Act; or a Spill Prevention Control and Countermeasure (SPCC) plan prepared in accordance with 40 CFR 112.

**THE FOLLOWING PLANS ARE ON FILE AT THE FACILITY:**

SWPPP  
Due Care Plan

Spills and leaks together are the largest industrial source of storm water pollution. Thus, this SWPPP specifies material handling procedures and storage requirements for significant materials. Equipment and procedures necessary for cleaning up spills and preventing the spilled materials from being discharged have also been identified. All employees have been made aware of the proper procedures. (See the DEQ Industrial Certified Operator Training Manual for additional information.)

See Table 4 for the material handling & spill prevention clean-up procedures and Table 5 for the spill kit inventory. There are no significant sources that could affect the stormwater and therefore the material handling & spill prevention/clean-up procedures and the spill kit inventory

are not necessary. The tables will be kept in the report as a placeholder should industrial activities commence again.

### 5.5 Soil Erosion & Sedimentation Control Measures

The permit requires the identification of areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion. Areas commonly prone to soil erosion are: gravel lots, bare earth or gravel at material handling areas around storm water inlets, areas with concentrated storm water runoff into streams or ditches, and access roads over open streams or ditches. Control measures must be implemented in areas prone to soil erosion and sedimentation. (More information on soil erosion and sedimentation control may be obtained from the DEQ, Water Bureau District Office.)

| AREA OF CONCERN:                                                                                                                                                                                  | CONTROL MEASURE:                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Future work:</b><br>- Closure of the primary lagoons - Place 2-ft of clay over primary lagoons<br>- Closure of secondary ponds – alternatives currently being evaluated                        | <ul style="list-style-type: none"> <li>Silt fencing, dust suppression measures, straw bales would provide additional protection.</li> </ul> |
| <b>Future work:</b><br>- Install new outfall (overflow for secondary pond - location to be determined).<br>- Re-route existing railroad sump to discharge into Ditch North of the Secondary pond. | <ul style="list-style-type: none"> <li>Silt fencing, straw bales.</li> </ul>                                                                |

### 5.6 Employee Training Program

The permit requires a description of employee training programs have been implemented to inform appropriate personnel at all levels of responsibility of the components and goals of the SWPPP. The SWPPP shall identify periodic dates for such training. DEQ recommends that employees are trained at the time of hire, then annually. An employee training video is available at the DEQ website: [http://www.michigan.gov/deq/0,1607,7-135-3308\\_3333\\_4168---,00.html](http://www.michigan.gov/deq/0,1607,7-135-3308_3333_4168---,00.html)

Employee training will be a major component in ensuring the success of the facility's SWPPP. The more knowledgeable all employees are about the facility's SWPPP and what is expected of them, the greater the chance that the plan will be effective. The following is a description of the employee training programs to be implemented to inform appropriate personnel at all levels of responsibility of the components and goals of the SWPPP (i.e. good housekeeping practices, spill prevention and response procedures, waste minimization practices, informing customers of facility policies, etc.). The Employee Training Form is in Appendix D.

#### EMPLOYEE TRAINING DESCRIPTION & FREQUENCY:

Annual review of video on the MDEQ Website

## 5.7 TMDL Requirements

The permit requires that if there is a Total Maximum Daily Load (TMDL) established by the Department for the receiving water, which restricts the discharge of any of the identified significant materials or constituents of those materials, then the SWPPP shall identify the level of control for those materials necessary to comply with the TMDL, and an estimate of the current annual load of those materials via storm water discharges to the receiving stream.

The TMDL means the amount of pollutant load a water body, such as a lake or stream, can assimilate and still meet water quality standards. If a receiving water body does not meet the water quality standards for a specific pollutant, the DEQ will establish the appropriate daily maximum load for that pollutant to allow the water body to again meet water quality standards. If a permitted facility is expected to discharge that specific pollutant in its storm water to that water body, the General Permit requires the facility to list actions it will take to meet that TMDL requirement. For example, if the TMDL calls for storm water dischargers to reduce their phosphorus inputs by 50%, the permittee would need to identify phosphorus sources at their facility and estimate their current annual load. The permittee must list actions to reduce storm water phosphorus discharges from their facility by 50%.

See the DEQ website for additional TMDL information at:

[http://www.michigan.gov/deq/0,1607,7-135-3313\\_3686\\_3728-12464--,00.html](http://www.michigan.gov/deq/0,1607,7-135-3313_3686_3728-12464--,00.html)

Have contacted the MDEQ to discuss.

Below is the identification of actions to limit the discharge of significant materials in order to comply with TMDL requirements:

| TMDL POLLUTANT: | CURRENT ANNUAL LOADING: | BEST MANAGEMENT PRACTICES: |
|-----------------|-------------------------|----------------------------|
| None            |                         |                            |
|                 |                         |                            |

## 5.8 List of Significant Materials Still Present

The permit requires the identification of significant materials expected to be present in storm water discharges following implementation of non-structural preventative measures and source controls. Non-structural controls are used to reduce pollutants at the source before they can get into the storm water runoff. In some cases, these types of controls will not be enough. A list of significant materials expected to be present in storm water discharges after implementation of nonstructural controls must be included in the SWPPP. The materials listed below will be addressed through the use of structural controls. (If there will be no significant materials present after the implementation of non-structural controls, state that in this section.)

| SIGNIFICANT MATERIAL & LOCATION: | PLANNED CONTROL MEASURE: | IMPACTED OUTFALL: |
|----------------------------------|--------------------------|-------------------|
| Stockpiled clay                  | None.                    |                   |
| Classified sand piles (inert)    | None                     |                   |

## 6.0 STRUCTURAL CONTROLS

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The permit requires that where implementation of non-structural controls does not control storm water discharges in accordance with water quality standards, the SWPPP shall provide a description of the location, function, and design criteria of structural controls for prevention and treatment.

Structural controls may be necessary:

- 1) To prevent uncontaminated storm water from contacting or being contacted by significant materials; or
- 2) If preventive measures are not feasible or are inadequate to keep significant materials at the site from contaminating storm water. Structural controls shall be used to treat, divert, isolate, recycle, reuse, or otherwise manage storm water in a manner that reduces the level of significant materials in the storm water and provides compliance with the Water Quality Standards

Examples of structural controls:

- ✓ Signs and Labels
- ✓ Safety Posts
- ✓ Fences
- ✓ Security Systems
- ✓ Temporary and Permanent Coverings
- ✓ Storm Water Conveyances
- ✓ Diversion Dikes
- ✓ Grading
- ✓ Paving
- ✓ Curbing
- ✓ Drip Pans
- ✓ Secondary Containment
- ✓ Catch Basin Inserts
- ✓ Detention and Retention Ponds
- ✓ Vegetative Filters
- ✓ Sand Filters
- ✓ Oil/Water Separators

These types of controls are physical features that control and prevent storm water pollution. They can range from preventive measures to collection structures to treatment systems. Structural controls will typically require construction of a physical feature or barrier. Below is a description of the structural controls used at the facility. (See the DEQ Industrial Storm Water Operator Training Manual for additional details on structural controls. If no structural control measures are needed at the facility, state that in this section.)

See Table 6 for a list of structural controls used at the facility. There are no structural controls used at the Facility at this time, however, a new outfall is proposed for installation following the placement of the 2-ft of cover over the primary lagoons and secondary pond.

## 7.0 NON-STORM WATER DISCHARGES

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The permit requires that all discharge locations be evaluated for the presence of non-storm water discharges. Any unauthorized storm water discharges must be eliminated, or covered under another NPDES permit.

Storm water shall be defined to include all of the following non-storm water discharges provided pollution prevention controls for the non-storm water component are identified in the SWPPP:

- 1) Discharges from fire hydrant flushing
- 2) Potable water sources including water line flushing
- 3) Fire system test water
- 4) Irrigation drainage
- 5) Lawn watering
- 6) Routine building wash down which does not use detergents or other compounds
- 7) Pavement wash waters where contamination by toxic or hazardous materials have not occurred (unless all contamination by toxic or hazardous materials have been removed) and where detergents are not used
- 8) Air conditioning condensate
- 9) Springs
- 10) Uncontaminated ground water
- 11) Foundations or footing drains where flows are not contaminated with process materials such as solvents

Discharges from fire fighting activities are authorized by the permit, but are exempted from the requirement to be identified in the SWPPP.

The table below specifies what non-storm water discharges occur at the facility.

| NON-STORM WATER DISCHARGE: | POLLUTION PREVENTION CONTROLS: | IMPACTED OUTFALL: |
|----------------------------|--------------------------------|-------------------|
| None                       |                                |                   |
|                            |                                |                   |

## **8.0 ANNUAL REVIEW**

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The permit requires that the permittee shall review the SWPPP annually after it is developed and maintain written summaries of the reviews. Based on the review, the permittee shall amend the SWPPP as needed to ensure continued compliance with the terms and conditions of the permit. The annual review is to be retained on site. It does not need to be submitted to the DEQ. The Annual Review Form is in Appendix E.

## **9.0 CERTIFIED STORM WATER OPERATOR UPDATE**

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The permit requires that if the Certified Storm Water Operator is changed or an additional Certified Storm Water Operator is added, the permittee shall provide the name and certification number of the new Certified Storm Water Operator to the Department. If a facility has multiple Certified Storm Water Operators, the name and certification number of the Certified Storm Water Operators shall be included in the SWPPP.

## **10.0 RECORD KEEPING**

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The permit requires that the permittee shall maintain records of all SWPPP related inspection and maintenance activities. Records shall also be kept describing incidents such as spills or other discharges that can affect the quality of storm water runoff. All such records shall be retained for three years.

## 11.0 SWPPP CERTIFICATION

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The permit requires that the SWPPP shall be reviewed and signed by the Certified Storm Water Operator(s) and by either the permittee or an authorized representative in accordance with 40 CFR 122.22. The SWPPP shall be retained on-site at the facility which generates the storm water discharge.

*I certify under penalty of law that the storm water drainage system in this SWPPP has been tested or evaluated for the presence of non-storm water discharges either by me, or under my direction and supervision. I certify under penalty of law that this SWPPP has been developed in accordance with the General Permit and with good engineering practices. To the best of my knowledge and belief, the information submitted is true, accurate, and complete. At the time this plan was completed no unauthorized discharges were present. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations.*

|                                                                   |
|-------------------------------------------------------------------|
| <b>Permittee or Authorized Representative</b>                     |
| Printed Name & Title: <b>Dave Favero - Deputy Cleanup Manager</b> |
| Signature & Date:                                                 |

|                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------|
| <b>Certified Storm Water Operator</b>                                                                                 |
| Printed Name & Certification Number: <b>Steve Hoevemeyer - Industrial site certification # I-10477 expires 7/1/15</b> |
| Signature & Date:                                                                                                     |



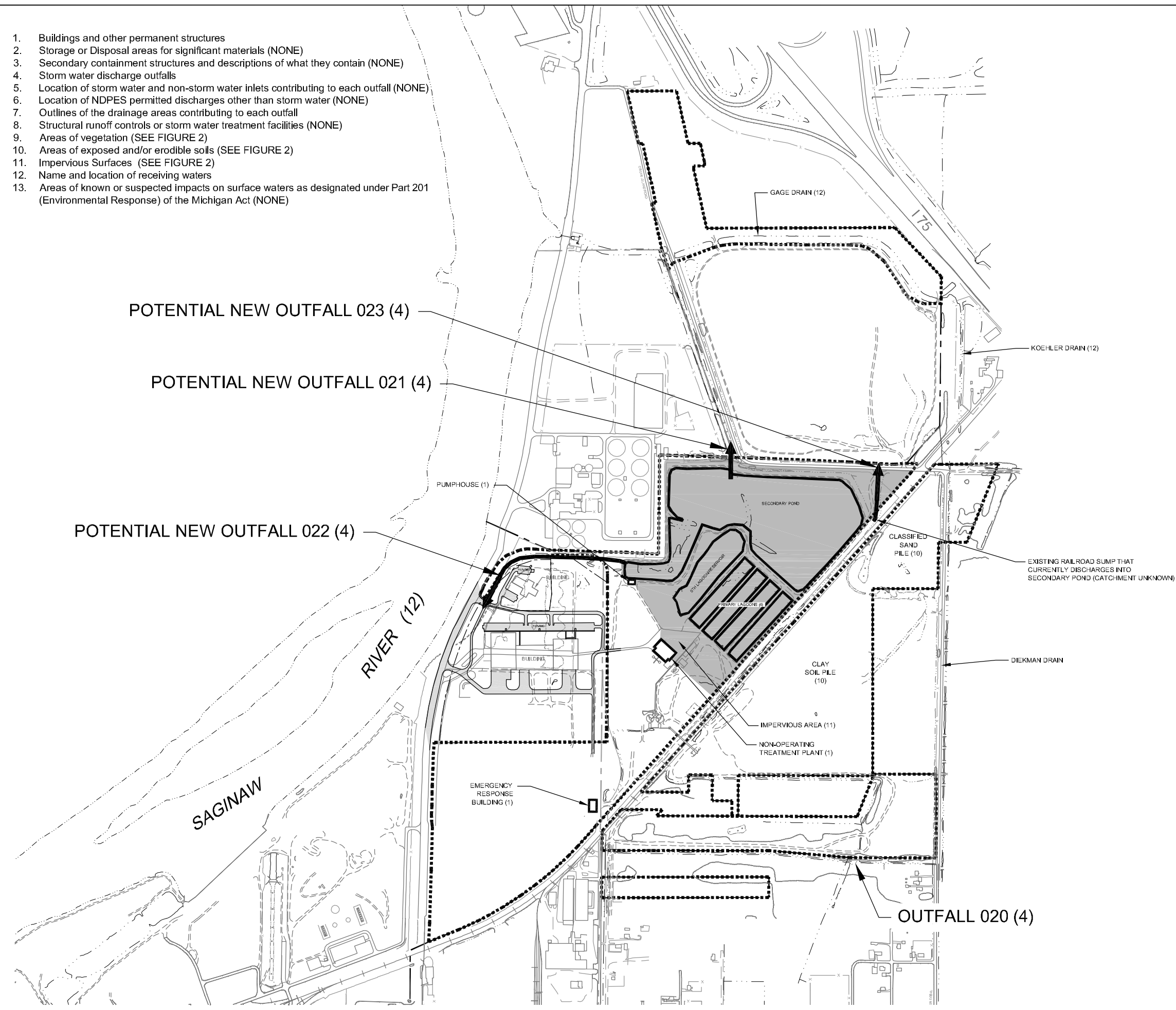
- 1. Buildings and other permanent structures
- 2. Storage or Disposal areas for significant materials (NONE)
- 3. Secondary containment structures and descriptions of what they contain (NONE)
- 4. Storm water discharge outfalls
- 5. Location of storm water and non-storm water inlets contributing to each outfall (NONE)
- 6. Location of NDPES permitted discharges other than storm water (NONE)
- 7. Outlines of the drainage areas contributing to each outfall
- 8. Structural runoff controls or storm water treatment facilities (NONE)
- 9. Areas of vegetation (SEE FIGURE 2)
- 10. Areas of exposed and/or erodible soils (SEE FIGURE 2)
- 11. Impervious Surfaces (SEE FIGURE 2)
- 12. Name and location of receiving waters
- 13. Areas of known or suspected impacts on surface waters as designated under Part 201 (Environmental Response) of the Michigan Act (NONE)

LEGEND

--- APPROXIMATE PROPERTY BOUNDARY

--- APPROXIMATE LIMITS OF RACER PROPERTY

■ APPROXIMATE AREA CONTRIBUTING TO NEW OUTFALLS 021/022



NOTE: TOPO - SANBORN 1998

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

REVITALIZING AUTO COMMUNITIES  
ENVIRONMENTAL RESPONSE (RACER)  
SAGINAW NODULAR INDUSTRIAL LAND

SAGINAW, MICHIGAN

SITE MAP  
FOR SWPPP

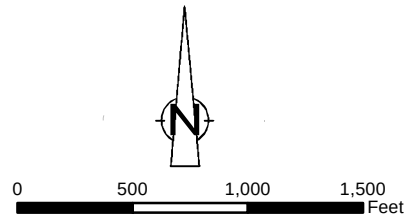
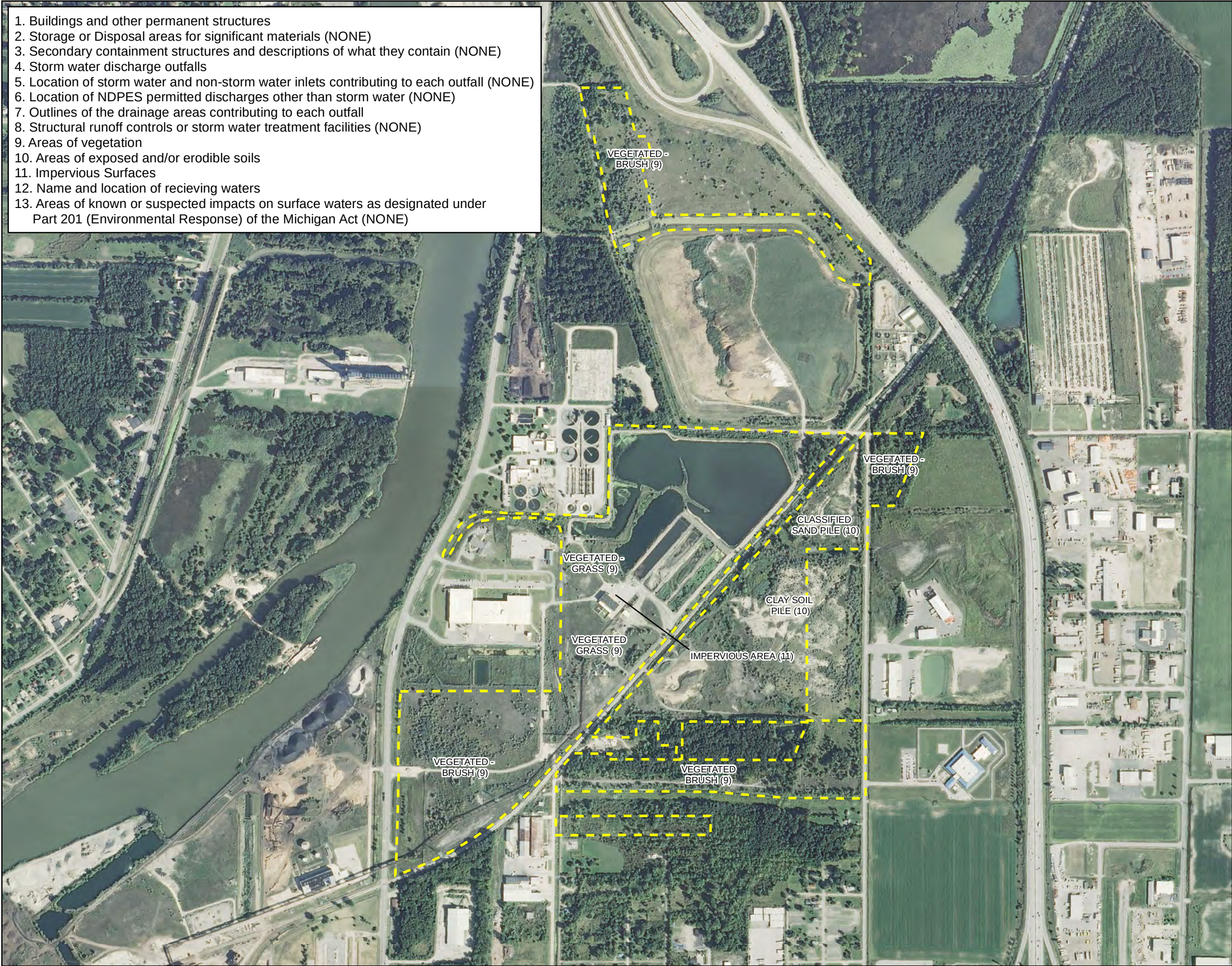
Source Reference:  
MICHIGAN STATE PLANE SOUTH, NAD 83 USING INTERNATIONAL FEET, NGVD 88

|                          |                          |                       |
|--------------------------|--------------------------|-----------------------|
| Project Manager:<br>M.T. | Reviewed By:<br>J.E.P.   | Date:<br>JANUARY 2012 |
| Scale:<br>1" = 500'      | Project N°:<br>58502-T02 | Report N°:<br>007     |
|                          |                          | Drawing N°:<br>1      |

58502-T02(007)GR-WA001 JAN 29/2012



- 1. Buildings and other permanent structures
- 2. Storage or Disposal areas for significant materials (NONE)
- 3. Secondary containment structures and descriptions of what they contain (NONE)
- 4. Storm water discharge outfalls
- 5. Location of storm water and non-storm water inlets contributing to each outfall (NONE)
- 6. Location of NDPES permitted discharges other than storm water (NONE)
- 7. Outlines of the drainage areas contributing to each outfall
- 8. Structural runoff controls or storm water treatment facilities (NONE)
- 9. Areas of vegetation
- 10. Areas of exposed and/or erodible soils
- 11. Impervious Surfaces
- 12. Name and location of recieving waters
- 13. Areas of known or suspected impacts on surface waters as designated under Part 201 (Environmental Response) of the Michigan Act (NONE)



**LEGEND**  
— APPROXIMATE LIMITS OF RACER PROPERTY

REVITALIZING AUTO COMMUNITIES  
ENVIRONMENTAL RESPONSE (RACER)  
SAGINAW NODULAR INDUSTRIAL LAND

SAGINAW, MICHIGAN

2009 AERIAL



|                                                                                                                                       |                          |                      |                  |
|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------|------------------|
| Source Reference<br>MICHIGAN STATE PLANE SOUTH, NAD 83 USING INTERNATIONAL FEET, NAVD 88<br>2009 SAGINAW COUNTY NAIP PROVIDED BY USDA |                          |                      |                  |
| Project Manager<br>M.T.                                                                                                               | Reviewed By<br>J.E.P.    | Date<br>JANUARY 2012 |                  |
| Scale<br>1:10,000                                                                                                                     | Project No.<br>58502-T02 | Report No.<br>007    | Drawing No.<br>2 |



**TABLE 1 – SIGNIFICANT MATERIAL INVENTORY AND DESCRIPTION OF INDUSTRIAL ACTIVITY OR SIGNIFICANT MATERIAL STORAGE AREAS**

| Section Listed in General Permit                                | Storage Areas / Activity Areas                    | Significant Materials                                       | Exposure Method           | Reasonable Potential Evaluation (high,medium,low) | Inlet(s) | Outfalls(s) |
|-----------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------|---------------------------|---------------------------------------------------|----------|-------------|
| 1) Loading, unloading, and other material handling operations   |                                                   |                                                             |                           |                                                   |          |             |
|                                                                 |                                                   |                                                             |                           |                                                   |          |             |
|                                                                 |                                                   |                                                             |                           |                                                   |          |             |
| 2) Outdoor storage including secondary containment structures   | Washed Classified Sands                           | Washed classified sand piles (east/west of railroad tracks) | Direct Contact            | Low                                               |          |             |
|                                                                 | Stockpiled clay                                   | Stockpiled clay                                             | Direct Contact            | Low                                               |          |             |
|                                                                 |                                                   |                                                             |                           |                                                   |          |             |
| 3) Outdoor manufacturing or processing activities               |                                                   |                                                             |                           |                                                   |          |             |
|                                                                 |                                                   |                                                             |                           |                                                   |          |             |
|                                                                 |                                                   |                                                             |                           |                                                   |          |             |
| 4) Significant dust or particulate generating processes         | <b>Temporary:</b> Cover Lagoons                   | Dust particulate                                            | Inhalation/direct contact | low                                               |          |             |
|                                                                 | <b>Temporary:</b> closure of secondary pond (TBD) |                                                             |                           |                                                   |          |             |
|                                                                 |                                                   |                                                             |                           |                                                   |          |             |
| 5) Discharge from vents, stacks, and air emission controls      |                                                   |                                                             |                           |                                                   |          |             |
|                                                                 |                                                   |                                                             |                           |                                                   |          |             |
|                                                                 |                                                   |                                                             |                           |                                                   |          |             |
| 6) On-site waste disposal practices                             |                                                   |                                                             |                           |                                                   |          |             |
|                                                                 |                                                   |                                                             |                           |                                                   |          |             |
|                                                                 |                                                   |                                                             |                           |                                                   |          |             |
| 7) Maintenance and cleaning of vehicles, machines and equipment |                                                   |                                                             |                           |                                                   |          |             |
|                                                                 |                                                   |                                                             |                           |                                                   |          |             |
|                                                                 |                                                   |                                                             |                           |                                                   |          |             |

**DRAFT**

| Section Listed in General Permit                                         | Storage Areas / Activity Areas | Significant Materials | Exposure Method | Reasonable Potential Evaluation (high,medium,low) | Inlet(s) | Outfalls(s) |
|--------------------------------------------------------------------------|--------------------------------|-----------------------|-----------------|---------------------------------------------------|----------|-------------|
| 8) Areas of exposed and/or erodible soils                                |                                |                       |                 |                                                   |          |             |
|                                                                          |                                |                       |                 |                                                   |          |             |
|                                                                          |                                |                       |                 |                                                   |          |             |
| 9) Sites of Environmental Contamination listed under Part 201            |                                |                       |                 |                                                   |          |             |
|                                                                          |                                |                       |                 |                                                   |          |             |
|                                                                          |                                |                       |                 |                                                   |          |             |
| 10) Areas of significant material residues                               | Primary and secondary ponds    | sediments             | Direct contact  | Low                                               |          |             |
|                                                                          |                                |                       |                 |                                                   |          |             |
|                                                                          |                                |                       |                 |                                                   |          |             |
| 11) Areas where animals congregate (wild or domestic) and deposit wastes |                                |                       |                 |                                                   |          |             |
|                                                                          |                                |                       |                 |                                                   |          |             |
|                                                                          |                                |                       |                 |                                                   |          |             |
| 12) Other areas where storm water may contact significant materials      |                                |                       |                 |                                                   |          |             |
|                                                                          |                                |                       |                 |                                                   |          |             |
|                                                                          |                                |                       |                 |                                                   |          |             |

**TABLE 2 – LIST OF SIGNIFICANT SPILLS**

| Location & Date | Material & Volume | Corrective Actions Taken |
|-----------------|-------------------|--------------------------|
| NA              |                   |                          |
|                 |                   |                          |
|                 |                   |                          |
|                 |                   |                          |
|                 |                   |                          |
|                 |                   |                          |
|                 |                   |                          |
|                 |                   |                          |

**TABLE 3 – DESCRIPTION OF PREVENTATIVE MAINTENANCE / ROUTINE HOUSEKEEPING INSPECTIONS**

| Description of Area or Equipment | Tasks | Frequency |
|----------------------------------|-------|-----------|
| NA                               |       |           |
|                                  |       |           |
|                                  |       |           |
|                                  |       |           |
|                                  |       |           |
|                                  |       |           |
|                                  |       |           |
|                                  |       |           |
|                                  |       |           |
|                                  |       |           |

**TABLE 4 – MATERIAL HANDLING & SPILL PREVENTION / CLEAN-UP PROCEDURES**

| Potential Spill Area | Material Handling & Storage Procedures | Spill Response Procedures & Equipment |
|----------------------|----------------------------------------|---------------------------------------|
| NA                   |                                        |                                       |
|                      |                                        |                                       |
|                      |                                        |                                       |
|                      |                                        |                                       |
|                      |                                        |                                       |
|                      |                                        |                                       |
|                      |                                        |                                       |

**TABLE 5 – SPILL KIT INVENTORY**

List the spill response equipment that will be maintained in each location or locker (refer to MSDSs to determine recommended clean-up methods and supplies):

Person responsible for maintaining this inventory: \_\_\_\_\_

| Locker number or location | Absorbents (pads, booms, kitty litter, etc.) | Tools (shovels, brooms, squeegees, etc.) | Personal Protective Equipment (rubber gloves, boots, masks, etc.) | Other Supplies (warning tape, labels, markers, MSDSs, etc.) |
|---------------------------|----------------------------------------------|------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------|
| NA                        |                                              |                                          |                                                                   |                                                             |
|                           |                                              |                                          |                                                                   |                                                             |
|                           |                                              |                                          |                                                                   |                                                             |
|                           |                                              |                                          |                                                                   |                                                             |

Label each spill kit with the words “SPILL KIT” and the necessary emergency telephone number(s) or pager number(s) of persons to be contacted in case of a spill or leak that is beyond the training and equipment available on or near each spill locker:

Facility Responsible Person/Phone Number: \_\_\_\_\_

Spill Response Contractor (if any)/Phone Number: \_\_\_\_\_

DEQ District Office Phone Number: \_\_\_\_\_

DEQ 24-Hour Emergency Spill Reporting Hot-Line: **1-800-292-4706**

Stencil the following warning on each spill kit:

**“WARNING: NEVER HOSE DOWN A SPILL!  
CLEAN IT UP PROMPTLY AND DISPOSE OF THE WASTE PROPERLY.”**



**TABLE 6 – STRUCTURAL CONTROLS USED AT THE FACILITY**

| Description of Structural Control                                    | Location of Structural Control | Significant Materials intended to be managed |
|----------------------------------------------------------------------|--------------------------------|----------------------------------------------|
| <b>Future:</b> New outfalls (021and 022) overflow for secondary pond | TBD                            |                                              |
| <b>Future:</b> New outfall (023) – railroad sump discharge to ditch  | <b>TBD</b>                     |                                              |
|                                                                      |                                |                                              |
|                                                                      |                                |                                              |
|                                                                      |                                |                                              |
|                                                                      |                                |                                              |
|                                                                      |                                |                                              |

## APPENDIX A

### PREVENTATIVE MAINTENANCE INSPECTION FORM

**Appendix A - PREVENTATIVE MAINTENANCE INSPECTION FORM**

---

|       |       |
|-------|-------|
| Date: | Time: |
|-------|-------|

|                  |            |
|------------------|------------|
| <b>Inspector</b> |            |
| Print:           | Signature: |

| Areas Inspected | Observation | Corrective Actions Taken |
|-----------------|-------------|--------------------------|
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |

APPENDIX B

COMPREHENSIVE SITE INSPECTION FORM

## Appendix B - COMPREHENSIVE SITE INSPECTION FORM

---

|       |       |
|-------|-------|
| Date: | Time: |
|-------|-------|

|                           |            |
|---------------------------|------------|
| <b>Certified Operator</b> |            |
| Print:                    | Signature: |

|                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Compliance Certification Statement</b>                                                                                   |
| Based on the results of this inspection the facility is in compliance with the general permit and the SWPPP: ____YES ____NO |

| Areas Inspected | Observation | Corrective Actions Taken |
|-----------------|-------------|--------------------------|
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
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|                 |             |                          |

APPENDIX C

HOUSEKEEPING INSPECTION FORM

**Appendix C - HOUSEKEEPING INSPECTION FORM**

---

|       |       |
|-------|-------|
| Date: | Time: |
|-------|-------|

|                  |            |
|------------------|------------|
| <b>Inspector</b> |            |
| Print:           | Signature: |

| Areas Inspected | Observation | Corrective Actions Taken |
|-----------------|-------------|--------------------------|
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |
|                 |             |                          |

APPENDIX D

EMPLOYEE TRAINING FORM



Appendix D - EMPLOYEE TRAINING FORM

|                  |
|------------------|
| Date of Session: |
|------------------|

|                |            |
|----------------|------------|
| <b>Trainer</b> |            |
| Print:         | Signature: |

|                 |
|-----------------|
| Topics Covered: |
|-----------------|

| Attendee Name | Attendee Signature |
|---------------|--------------------|
|               |                    |
|               |                    |
|               |                    |
|               |                    |
|               |                    |
|               |                    |
|               |                    |
|               |                    |
|               |                    |
|               |                    |

APPENDIX E

ANNUAL SWPPP REVIEW FORM

## Appendix E - ANNUAL SWPPP REVIEW FORM

|                                            |                              |  |
|--------------------------------------------|------------------------------|--|
| <b>Facility Information</b>                |                              |  |
| Designated Name:                           | Certificate of Coverage No.: |  |
| <b>Facility Contact Information</b>        |                              |  |
| Name:                                      | Telephone No.:               |  |
| Email Address:                             | Certification No:            |  |
| <b>Backup Facility Contact Information</b> |                              |  |
| Name:                                      | Telephone No.:               |  |
| Email Address:                             | Certification No:            |  |
| <b>Certified Operator Information</b>      |                              |  |
| Name:                                      | Telephone No.:               |  |
| Email Address:                             | Certification No:            |  |

### SWPPP Review Checklist

|                                                                                                                             |     |    |    |
|-----------------------------------------------------------------------------------------------------------------------------|-----|----|----|
| 1) Facility general information is current and accurate                                                                     | Yes | No |    |
| 2) Site map is current and accurate                                                                                         | Yes | No |    |
| 3) Significant material inventory is current and accurate                                                                   | Yes | No |    |
| 4) New exposures, processes and related controls have been documented appropriately in the SWPPP                            | Yes | No | NA |
| 5) Spills have been recorded and reported as appropriate                                                                    | Yes | No | NA |
| 6) Employee SWPPP training was conducted and documented                                                                     | Yes | No |    |
| 7) Records of routine preventative maintenance and housekeeping inspections are available in the SWPPP file                 | Yes | No |    |
| 8) Comprehensive site inspections have been completed, certified and filed in the SWPPP file                                | Yes | No |    |
| 9) Corrective actions noted in the inspection reports have been completed                                                   | Yes | No |    |
| 10) SWPPP has been reviewed and signed by the Certified Storm Water Operator and the Permittee or designated representative | Yes | No |    |

Additional Comments (use additional sheets if necessary):

|                                                        |                   |
|--------------------------------------------------------|-------------------|
| <b>I certify that the above information is correct</b> |                   |
| Name:                                                  | Signature / Date: |

SUBMIT THIS FORM TO THE DISTRICT OFFICE IDENTIFIED ON YOUR CERTIFICATE OF COVERAGE ON OR BEFORE **JANUARY 10<sup>TH</sup>** OF EACH YEAR

APPENDIX F  
DEQ SPILL OR RELEASE REPORT

## Appendix F - DEQ SPILL OR RELEASE REPORT



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

## SPILL OR RELEASE REPORT

**NOTE:** Some regulations require a specific form to use and procedures to follow when reporting a release. Those forms and procedures **MUST** be used and followed if reporting under those regulations. This report form is to aid persons reporting releases under regulations that do not require a specific form. This report form is not required to be used. **To report a release, some regulations require a facility to call the PEAS Hotline at 800-292-4706, or DEQ District Office that oversees the county where it occurred, and other regulating agencies and provide the following information. A follow-up written report may be required. Keep a copy of this report as documentation that the release was reported. If you prefer to submit this report electronically by FAX or e-mail, contact the regulating agency for the correct telephone number or e-mail address. See the DEQ website on [Spill/Release Reporting](#) for more reporting information.**

*Please print or type all information.*

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| NAME AND TITLE OF PERSON SUBMITTING WRITTEN REPORT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | TELEPHONE NUMBER (provide area code)                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |
| NAME OF BUSINESS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | RELEASE LOCATION (provide address if different than business, if known, and give directions to the spill location. Include nearest highway, town, road intersection, etc.)                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |
| STREET ADDRESS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |
| CITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | STATE                                                   | ZIP CODE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |
| BUSINESS TELEPHONE NUMBER (provide area code)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |
| SITE IDENTIFICATION NUMBER AND OTHER IDENTIFYING NUMBERS (if applicable)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | COUNTY                                                                                                                                                                                                                                                                                                                                  | TOWNSHIP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | TIER/RANGE/SECTION (if known) |
| <b>RELEASE DATA.</b> Complete all applicable categories. Check all the boxes that apply to the release. Provide the best available information regarding the release and its impacts. Attach additional pages if necessary.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |
| DATE & TIME OF RELEASE (if known)<br>____/____/____<br>____am/pm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | DATE & TIME OF DISCOVERY<br>____/____/____<br>____am/pm | DURATION OF RELEASE (if known)<br>____ days<br>____ hours<br>____ minutes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | TYPE OF INCIDENT<br><input type="checkbox"/> Explosion<br><input type="checkbox"/> Fire<br><input type="checkbox"/> Leaking container<br><input type="checkbox"/> Loading/unloading release<br><input type="checkbox"/> Pipe/valve leak or rupture<br><input type="checkbox"/> Vehicle accident<br><input type="checkbox"/> Other _____ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |
| MATERIAL RELEASED (Chemical or trade name)<br><input type="checkbox"/> CHECK HERE IF ADDITIONAL MATERIALS LISTED ON ATTACHED PAGE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                         | CAS NUMBER or HAZARDOUS WASTE CODE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ESTIMATED QUANTITY RELEASED (indicate unit e.g. lbs, gals, cu ft or yds)                                                                                                                                                                                                                                                                | PHYSICAL STATE RELEASED (indicate if solid, liquid, or gas)                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| FACTORS CONTRIBUTING TO RELEASE<br><input type="checkbox"/> Equipment failure<br><input type="checkbox"/> Operator error<br><input type="checkbox"/> Faulty process design<br><input type="checkbox"/> Training deficiencies<br><input type="checkbox"/> Unusual weather conditions<br><input type="checkbox"/> Other _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SOURCE OF LOSS<br><input type="checkbox"/> Container<br><input type="checkbox"/> Railroad car<br><input type="checkbox"/> Pipeline<br><input type="checkbox"/> Ship<br><input type="checkbox"/> Tank<br><input type="checkbox"/> Tanker<br><input type="checkbox"/> Truck<br><input type="checkbox"/> Other _____                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |
| TYPE OF MATERIAL RELEASED<br><input type="checkbox"/> Agricultural: manure, pesticide, fertilizer<br><input type="checkbox"/> Chemicals<br><input type="checkbox"/> Flammable or combustible liquid<br><input type="checkbox"/> Hazardous waste<br><input type="checkbox"/> Liquid industrial waste<br><input type="checkbox"/> Oil/petroleum products or waste<br><input type="checkbox"/> Salt<br><input type="checkbox"/> Sewage<br><input type="checkbox"/> Other _____<br><input type="checkbox"/> Unknown                                                                                                                                                                                                                                                                                                       |                                                         | MATERIAL LISTED ON or DEFINED BY<br><input type="checkbox"/> CAA Section 112(r) list (40 CFR Part 68)<br><input type="checkbox"/> CERCLA Table 302.4 (40 CFR Part 302)<br><input type="checkbox"/> EPCRA Extremely Hazardous Substance (40 CFR Part 355)<br><input type="checkbox"/> Michigan Critical Materials Register or permit<br><input type="checkbox"/> NREPA Part 31, Part 5 Rules polluting material<br><input type="checkbox"/> NREPA Part 111 or RCRA hazardous waste<br><input type="checkbox"/> NREPA Part 121 liquid industrial waste<br><input type="checkbox"/> Other list _____<br><input type="checkbox"/> Unknown |                                                                                                                                                                                                                                                                                                                                         | IMMEDIATE ACTIONS TAKEN<br><input type="checkbox"/> Containment<br><input type="checkbox"/> Dilution<br><input type="checkbox"/> Evacuation<br><input type="checkbox"/> Hazard removal<br><input type="checkbox"/> Neutralization<br><input type="checkbox"/> System shut down<br><input type="checkbox"/> Diversion of release to treatment<br><input type="checkbox"/> Decontamination of persons or equipment<br><input type="checkbox"/> Monitoring<br><input type="checkbox"/> Other _____ |                               |
| <b>RELEASE REACHED</b><br><input type="checkbox"/> Surface waters (include name of river, lake, drain involved) _____ Distance from spill location to surface water, in feet _____<br><input type="checkbox"/> Drain connected to sanitary sewer (include name of wastewater treatment plant and/or street drain, if known) _____<br><input type="checkbox"/> Drain connected to storm sewer (include name of drain or water body it discharges into, if known) _____<br><input type="checkbox"/> Groundwater (indicate if it is a known or suspected drinking water source and include name of aquifer, if known) _____<br><input type="checkbox"/> Soils (include type e.g. clay, sand, loam, etc.) _____<br><input type="checkbox"/> Ambient Air<br><input type="checkbox"/> Spill contained on impervious surface |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |

# DRAFT

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| EXTENT OF INJURIES, IF ANY<br><br><hr/> <hr/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | WAS ANYONE HOSPITALIZED?<br><input type="checkbox"/> Yes NUMBER _____<br>HOSPITALIZED: _____<br><input type="checkbox"/> No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | TOTAL NUMBER OF INJURIES TREATED ON-SITE: _____ |
| DESCRIBE THE INCIDENT, THE TYPE OF EQUIPMENT INVOLVED IN THE RELEASE, HOW THE VOLUME OF LOSS WAS DETERMINED, ALONG WITH ANY RESULTING ENVIRONMENTAL DAMAGE CAUSED BY THE RELEASE. IDENTIFY WHO IMMEDIATELY RESPONDED TO THE INCIDENT (own employees or contractor — include cleanup company name, contact person, and telephone number). ALSO IDENTIFY WHO DID FURTHER CLEANUP ACTIVITIES, IF PERFORMED OR KNOWN WHEN REPORT SUBMITTED<br><input type="checkbox"/> CHECK HERE IF DESCRIPTION OR ADDITIONAL COMMENTS ARE INCLUDED ON ATTACHED PAGE<br><br><hr/> <hr/> <hr/> <hr/> <hr/> <hr/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                 |
| ESTIMATED QUANTITY OF ANY RECOVERED MATERIALS AND A DESCRIPTION OF HOW THOSE MATERIALS WERE MANAGED (include disposal method if applicable)<br><input type="checkbox"/> CHECK HERE IF DESCRIPTION OR ADDITIONAL COMMENTS ARE INCLUDED ON ATTACHED PAGE<br><br><hr/> <hr/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                 |
| ASSESSMENT OF ACTUAL OR POTENTIAL HAZARDS TO HUMAN HEALTH (include known acute or immediate and chronic or delayed effects, and where appropriate, advice regarding medical attention necessary for exposed individuals.)<br><input type="checkbox"/> CHECK HERE IF DESCRIPTION OR ADDITIONAL COMMENTS ARE INCLUDED ON ATTACHED PAGE<br><br><hr/> <hr/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                 |
| MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY NOTIFIED:<br><br>INITIAL CONTACT BY: <input type="checkbox"/> Telephone <input type="checkbox"/> Fax <input type="checkbox"/> Email <input type="checkbox"/> Other<br>DATE/TIME INITIAL CONTACT: _____<br><br><input type="checkbox"/> PEAS: 800-292-4706 Log Number Assigned _____<br><input type="checkbox"/> DEQ District or Field Office Divisions or Offices Contacted:<br><div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;"> <input type="checkbox"/> Baraga <input type="checkbox"/> Gwinn <input type="checkbox"/> Air Quality<br/> <input type="checkbox"/> Bay City <input type="checkbox"/> Jackson <input type="checkbox"/> Land &amp; Water Management<br/> <input type="checkbox"/> Cadillac <input type="checkbox"/> Kalamazoo <input type="checkbox"/> Office Geological Survey<br/> <input type="checkbox"/> Crystal Falls <input type="checkbox"/> Lansing <input type="checkbox"/> Remediation and<br/> <input type="checkbox"/> Detroit <input type="checkbox"/> Newberry <input type="checkbox"/> Redevelopment<br/> <input type="checkbox"/> Gaylord <input type="checkbox"/> Warren <input type="checkbox"/> Waste and Hazardous<br/> <input type="checkbox"/> Grand Rapids <input type="checkbox"/> Wyoming <input type="checkbox"/> Materials<br/> <small>DEQ Office locations are subject to change</small> <input type="checkbox"/> Water Bureau         </div> </div><br>NAME AND TITLE OF PERSON MAKING INITIAL REPORT:<br><br><hr/><br>DEQ STAFF CONTACTED & PHONE NUMBER:<br><br><hr/> <hr/> | OTHER ENTITIES NOTIFIED:<br><br><div style="display: flex;"> <div style="flex: 1;"> <input type="checkbox"/> National Response Center (NRC): 800-424-8802<br/> <input type="checkbox"/> US Coast Guard Office:<br/> <div style="display: flex; margin-left: 20px;"> <input type="checkbox"/> Detroit <input type="checkbox"/> Grand Haven <input type="checkbox"/> Sault Ste. Marie           </div> <input type="checkbox"/> US Department of Transportation<br/> <input type="checkbox"/> US Environmental Protection Agency<br/> <input type="checkbox"/> 911 (or primary public safety answering point)<br/> <input type="checkbox"/> Local Fire Department<br/> <input type="checkbox"/> Local Police and/or State Police<br/> <input type="checkbox"/> Local Emergency Planning Committee<br/> <input type="checkbox"/> State Emergency Response Commission<br/>               via MI SARA Title III Program<br/> <input type="checkbox"/> Wastewater Treatment Plant Authority<br/> <input type="checkbox"/> Hazmat Team<br/> <input type="checkbox"/> Local Health Department<br/> <input type="checkbox"/> Department of Labor &amp; Economic Growth MIOSHA<br/> <input type="checkbox"/> Department of Labor &amp; Economic Growth Fire Safety<br/> <input type="checkbox"/> Michigan Department of Agriculture: 800-405-0101<br/> <input type="checkbox"/> Other _____         </div> <div style="flex: 0.2; text-align: center; padding-left: 10px;">           Date: _____<br/>           Time: _____         </div> </div><br>PERSON CONTACTED & PHONE NUMBER:<br><br><hr/> <hr/> |                                                 |
| DATE WRITTEN REPORT SUBMITTED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | SIGNATURE OF PERSON SUBMITTING WRITTEN REPORT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                 |

## APPENDIX G

### SIU PERMIT AND ASSOCIATED FILES

TABLE 1

**INITIAL CHARACTERIZATION SAMPLING OF THE WATER RECYCLE SYSTEM  
NODULAR FACILITY  
SAGINAW, MI**

Flow Rate (gpm) 300  
Flow Rate (gpd) 432000

**November 30 and December 10, 2010 Sample Results**

| Parameter                         | Rule 57 -<br>Drinking | Rule 57 - Non-<br>drinking | Secondary<br>Pond<br>(mg/L) | (lb/day) | Holding<br>Tank/Aeration<br>Basin<br>(mg/L) | (lb/day) | Lagoon<br>5/Reservoir<br>(mg/L) | (lb/day) | Primary<br>Lagoon 3<br>(mg/L) | (lb/day) |
|-----------------------------------|-----------------------|----------------------------|-----------------------------|----------|---------------------------------------------|----------|---------------------------------|----------|-------------------------------|----------|
| pH (su)                           |                       |                            | 7.29                        |          | 7.19                                        |          | 7.24                            |          | 7.58                          |          |
| Temperature (F)                   |                       |                            |                             |          |                                             |          |                                 |          |                               |          |
| Phosphorus, total (mg/L)          |                       |                            | 0.14                        |          | 0.28                                        |          | 0.32                            |          | 0.14                          |          |
| Bio-chemical Oxygen Demand (mg/L) |                       |                            | 20                          |          | 15                                          |          | 3                               |          | 23                            |          |
| Total Suspended Solids (mg/L)     |                       |                            | 7                           |          | 22                                          |          | 5                               |          | 8                             |          |
| Oil & Grease (mg/L)               |                       |                            | 2                           |          | ND                                          |          | ND                              |          |                               |          |
| Ammonia Nitrogen (mg/L)           |                       |                            | 7.31                        |          | 7.06                                        |          | 3.53                            |          | 8.68                          |          |
| Arsenic, total (mg/L)             | 0.01                  | 0.28                       | 0.005                       |          | 0.004                                       |          | 0.004                           |          | 0.004                         |          |
| Cadmium, total (mg/L)             | 0.0025                | 0.13                       | ND                          |          | ND                                          |          | ND                              |          | ND                            |          |
| Chromium, total (mg/L)            | 0.12                  | 9.4                        | ND                          |          | ND                                          |          | ND                              |          | ND                            |          |
| Copper, total (lbs/day)           | 0.47                  | 38                         | ND                          | 0        | ND                                          | 0        | ND                              | 0        | ND                            | 0        |
| Lead, total (lbs/day)             | 0.014                 | 0.19                       | ND                          | 0        | 0.004                                       |          | ND                              | 0        | ND                            | 0        |
| Mercury, total (mg/L)             | 0.0000018             | 0.0000018                  | ND                          |          | ND                                          |          | ND                              |          | ND                            |          |
| Nickel, total (mg/L)              | 2.6                   | 210                        | 0.005                       |          | ND                                          |          | ND                              |          | ND                            |          |
| Selenium, total (mg/L)            | 0.12                  | 2.7                        | 0.01                        |          | ND                                          |          | ND                              |          | ND                            |          |
| Zinc, total (lbs/day)             | 3.3                   | 16                         | 0.354                       | 1.28     | 0.014                                       | 0.05     | 0.028                           | 0.10     | 0.023                         | 0.08     |
| Cyanide, amenable (mg/L)          | 0.6 (free)            | 48 (free)                  | ND                          |          | ND                                          |          | ND                              |          | ND                            |          |
| Phenols, total (lbs/day)          |                       |                            | ND                          | 0        | ND                                          | 0        | ND                              | 0        | ND                            | 0        |
| Total Toxic Organics (lbs/day)    |                       |                            | ND                          | 0        | ND                                          | 0        | ND                              | 0        | ND                            | 0        |
| BTEX, total (mg/L)                |                       |                            | ND                          |          | ND                                          |          | ND                              |          | ND                            |          |
| Benzene (mg/L)                    |                       |                            | ND                          |          | ND                                          |          | ND                              |          | ND                            |          |
| PCB, total (µg/L)                 |                       |                            | ND                          |          | ND                                          |          | ND                              |          | ND                            |          |





February 23, 2011

Doug Wagner  
Motors Liquidation Company  
1805 E. Perkins Ave.  
Sandusky, OH 44870

RE: SIGNIFICANT INDUSTRIAL USER DISCHARGE PERMIT # 11-17313 MOTORS LIQUIDATION  
COMPANY (FORMER NODULAR TREATMENT SYSTEM)

Dear Mr. Doug Wagner:

In accordance with local, state and federal regulations, the City of Saginaw Wastewater Treatment Division has issued an industrial user discharge permit for Motors Liquidation Company, 2100 Veterans Memorial Parkway, Saginaw MI. This permit addresses many requirements that are necessary for compliance with wastewater discharges into the publicly owned treatment works.

Please read the permit thoroughly and pay special attention to the sections titled Monitoring Requirements and Reporting Requirements, as there are requirements that must be met throughout the permitting cycle. Please recognize that sampling is required monthly or more frequently as necessary. Significant changes occurring during the permitting cycle will warrant addendums to the permit.

If there are any questions regarding this permit, please contact the Environmental Compliance Office at (989) 759-1523.

Sincerely,

A handwritten signature in cursive script that reads "Jason Casteel".

Jason Casteel  
Environmental Compliance Administrator  
Saginaw Wastewater Treatment Facility

Enclosure (1)

INDUSTRIAL WASTEWATER DISCHARGE PERMIT  
FOR THE SAGINAW WASTEWATER TREATMENT SYSTEM

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## **Saginaw Wastewater Treatment Facility**

Public Services Department

Permit: # **11-17313**

Permit Type: Categorical Industrial User

### **INDUSTRIAL WASTEWATER DISCHARGE PERMIT FOR THE SAGINAW WASTEWATER TREATMENT SYSTEM**

Company Name: Motors Liquidation Company (Former Nodular Treatment System)

Address: 401 S. Old Woodward Avenue, Suite 370  
Birmingham, MI 48009

Contact: Doug Wagner, MLC Project Manager

Phone : 419-656-0701

Mailing Address: 1805 E. Perkins Ave.  
Sandusky, OH 44870

Facility Address: 2100 Veterans Memorial Parkway  
Saginaw, MI

This permit is granted in accordance with the application and related support data filed with the Wastewater Treatment Facility at 2406 Veterans Memorial Parkway, and in conformity with the City of Saginaw Code of Ordinances Title V, Chapter 51 and Northwest Utilities Authority Sewage Disposal Regulations No. 91-1, and all applicable state and federal rules and regulations.

This permit is designed to prevent the discharge of pollutants into the POTW that, singly or in combination with other pollutants, would not meet applicable pretreatment standards and requirements, would interfere with the operation of the POTW, would pass through the POTW into the receiving waters or the atmosphere, would inhibit or disrupt the POTW's processing, use or disposal of sludge, would cause health or safety problems for POTW workers, or would result in a violation of the City's NPDES permit or of other applicable laws and regulations.

The Control Authority issues this permit effective on 23 February 2011, and shall expire on 24 February 2016, unless terminated sooner by the Control Authority.

A permit shall be authorized for 5-year periods or less and an application must be completed and filed with the Environmental Compliance Office at 2406 Veterans Memorial Parkway, Saginaw, MI 48601-1268, no later than ninety (90) days prior to the expiration date of this permit.



Jeanette Best  
Superintendent  
Saginaw Wastewater Treatment Facility

## I. CATEGORIES AND CLASSIFICATION CODES

### A. 40 CFR Categorical Pretreatment Classification(s)

| 40 CFR Part                                 | Category Description                                                                    |
|---------------------------------------------|-----------------------------------------------------------------------------------------|
| (Formerly) 464<br>Metal Molding and Casting | Subpart A Aluminum Casting Subcategory<br>464.16 Pretreatment Standards for New Sources |

### B. Significant Industrial Classification Code(s)

| SIC Code        | SIC Code Description |
|-----------------|----------------------|
| (Formerly) 3365 | Aluminum Foundries   |

## II. STANDARD CONDITIONS

### A. General Conditions and Definitions

#### 1. **Severability**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

#### 2. **Duty to Comply**

The permittee must comply with all conditions of this permit. Failure to comply with the requirements of this permit may be grounds for administrative action, or enforcement proceedings including civil or criminal penalties, injunctive relief, and summary abatements.

#### 3. **Compliance with State and Federal Regulations**

Compliance with the Wastewater discharge permit does not relieve the permittee of responsibility for compliance with all applicable federal and state pretreatment standards, including those, which become effective during the term of the wastewater discharge permit.

#### 4. **Duty to Mitigate**

The permittee shall take all reasonable steps to minimize or correct any adverse impact to the public treatment plant or the environment resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

#### 5. **Permit Modification**

The Director may modify a wastewater discharge permit for good cause, including, but not limited to, the following reasons:

- To incorporate any new, revised or otherwise applicable federal, state, or local pretreatment standards or requirements affecting the POTW or the user;
- To address significant alterations or additions to the user's operation, processes, or wastewater volume or character since the time of wastewater discharge permit issuance;
- A change in the POTW or from any condition of the user's discharge, facility, production or operations that requires either a temporary or permanent reduction or elimination of the authorized discharge;
- Information indicating that the permitted discharge poses a threat to the City's POTW processing, use or disposal of sludge, City personnel, or the receiving waters;
- Violation of any terms or conditions of the POTW wastewater discharge permit;
- Misrepresentation or failure to fully disclose all relevant facts in the wastewater discharge permit application or in any required reporting;
- Revision of or a grant of variance from categorical pretreatment standards pursuant to 40 CFR 403.13;

- h. To correct typographical or other errors in the wastewater discharge permit;
- i. To reflect a transfer of the user facility ownership or operation to the new owner or operator;
- j. To add or revise a compliance schedule for the permittee;
- k. To reflect changes or revisions in the POTW's NPDES permit;
- l. To ensure POTW compliance with applicable sludge management requirements promulgated by EPA or MDEQ;
- m. To incorporate any new or revised requirements resulting from reevaluation of the POTW's local limits; or
- n. To incorporate a request for modification by the permittee as determined appropriate by the POTW and provided the request does not create a violation of any applicable requirement, standard, law, rule or regulation. The permittee shall be informed of any changes in the permit at least 30 days prior to the effective date of the change, unless a shorter time is determined necessary by the director to meet applicable laws or to protect human health or the environment.

#### **6. Permit Revocation**

The Director may revoke a wastewater discharge permit for good cause, including, but not limited to, the following reasons:

- a. Failure to notify the Director of significant changes to the wastewater properties before the changed discharge;
- b. Failure to notify the Director of any planned significant changes to the users' operations or system which might alter the nature, quality, or volume of its wastewater at least ninety (90) days prior to the change;
- c. Misrepresentation or failure to fully disclose all relevant facts in the wastewater discharge permit application;
- d. Falsifying self-monitoring reports;
- e. Tampering with monitoring equipment;
- f. Refusing to allow the Director timely access to the facility premises and records;
- g. Failure to meet effluent limitations;
- h. Failure to pay fines;
- i. Failure to pay sewer charges or surcharges;
- j. Failure to meet compliance schedule;
- k. Failure to complete a wastewater survey or the wastewater discharge permit application;
- l. Failure to provide advance notice of the transfer of business ownership of a permitted facility;
- m. Violation of any pretreatment standard or requirement, or any terms of the wastewater discharge permit;
- n. As determined by the Director, the discharge has a reasonable potential to endanger human health or the environment and the threat can be abated only by revocation of the permit.

#### **7. Permit Appeals**

The user may, in writing, petition the Director to reconsider the terms of a wastewater discharge permit within thirty (30) days of notice of its issuance.

- a. Failure to submit a timely petition for review shall be deemed a waiver of the administration appeal.
- b. In its petition, the appealing party must indicate the wastewater discharge permit provisions objected to, the reasons for the objection, and the alternative condition, if any, it seeks to place in the wastewater discharge permit.
- c. During an appeal, the effectiveness of a new wastewater discharge permit, if said new permit is not a renewal of a prior permit, shall not be stayed pending the appeal process.



If the wastewater discharge permit being appealed is a renewal of a prior discharge permit and the application for the renewed permit was made in a timely manner prior to the expiration of the then effective permit, then the prior discharge permit shall continue in effect until the final administrative decision on the appeal has been made.

- d. If the Director fails to act within thirty (30) days (or a longer period if agreed upon in writing by the Director and the user), a request for the reconsideration shall be denied. Decisions not to reconsider a wastewater discharge permit, or not to modify a wastewater discharge permit shall be considered final administrative actions for purpose of judicial review.
- e. Aggrieved parties seeking judicial review of the final administrative wastewater discharge permit decision must do so by filing a complaint with the Circuit Court for Saginaw County.

#### **8. Limitation on Permit Transfer**

- a. Wastewater discharge permits may be transferred to a new owner or operator provided the permittee gives at least thirty (30) days advance notice to the Director and the Director approves the wastewater discharge permit transfer. The notice to the Director must include a written certification by the new owner or operator which:
  - (1) States that the new owner and/or operator have no immediate intent to change the facility's operations and processes;
  - (2) Identifies the specific date on which the transfer is to occur; and
  - (3) Acknowledges full responsibility for complying with the existing wastewater discharge permit.
- b. Failure to provide advance notice of a transfer renders the wastewater discharge permit void as of the date of facility transfer.

#### **9. Continuation of Expired Permits**

A user with an expiring wastewater discharge permit shall apply for wastewater discharge permit reissuance by submitting a complete permit application, in accordance with the City of Saginaw, Code of Ordinances Title V, § 51.34, a minimum of ninety (90) days prior to the expiration of users existing wastewater discharge permit.

#### **10. Dilution**

No user shall ever increase the use of process water, or in any way attempt to dilute a discharge, as a partial or complete substitute for adequate treatment to achieve compliance with a pretreatment standard or requirement unless expressly authorized by an applicable pretreatment standard or requirement. The Director may impose mass limitations on users who are using dilution to meet applicable pretreatment standards or requirements, or other cases when the imposition of mass limitations is appropriate.

#### **11. Definitions**

- a. *Biosolids* – The settleable solids separated from liquids during municipal WWTP processing.
- b. *BOD<sub>5</sub>* – Biochemical Oxygen Demand, The quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure for five (5) days at 20°C, usually expressed as a concentration (e.g., mg/L).
- c. *Bypass* – The intentional diversion of waste streams from any proportion of a user's pretreatment facility for compliance with pretreatment standards.
- d. *CIU - Categorical Industrial User*, An industrial user subject to Federal Categorical Pretreatment Standards.
- e. *CMR- Compliance Monitoring Report*, A periodic report indicating the nature and concentration of pollutants discharged to the POTW.
- f. *Composite Sample* – A sample that is collected over a period greater than fifteen (15) minutes, formed either by continuous sampling or by mixing an appropriate amount of discrete samples which are:
  - (1) Collected at equal time intervals and combined in proportion to the wastewater flow; or

- (2) Equal volumes taken at varying time intervals in proportion to the wastewater flow; or
- (3) Equal volumes taken at equal time intervals.
- g. *Control Authority* – The City of Saginaw, administered by the Wastewater Treatment Division, Office of Environmental Compliance.
- h. *Daily Maximum* – The maximum allowable discharge of a pollutant during a calendar day. Where daily maximum limitations are expressed in units of mass, the daily discharge is the total mass discharged over the course of the day. Where daily maximum limitations are expressed in terms of a concentration, the daily discharge is the arithmetic average measurement of the pollutant concentration derived from all measurements taken that day.
- i. *Director* – The Director of Saginaw Public Services Department, or the authorized deputy, agent or representative of such person.
- j. *Environmental Compliance Office* – City of Saginaw Wastewater Treatment Facility Industrial Pretreatment Office, Control Authority.
- k. *EPA* – Environmental Protection Agency, the U.S. Environmental Protection Agency or, where appropriate, the Regional Water Division Director, or other duly authorized official.
- l. *Grab Sample* – A sample that is taken from a waste stream without regard to the flow in the waste stream and over a period of time not to exceed fifteen (15) minutes.
- m. *IU* – Industrial User, A source of indirect discharge.
- n. *Interference* – A discharge, which alone or in conjunction with a discharge or discharges from other sources, inhibits or disrupts the Saginaw Wastewater Treatment Facility, its treatment processes or operations or its sludge processes, use or disposal; and therefore, is a cause of violation of the Saginaw Wastewater Treatment Facility's NPDES permit or of the prevention of sewage sludge use or disposal in compliance with any of the following statutory/ regulatory provisions or permits issued hereunder, or any more stringent state or local regulations.
- o. *Medical Wastes* – Isolation wastes, infectious agents and associated biologicals, liquid human and animal wastes, human blood and blood byproducts, bedding, surgical wastes, sharps, body parts, contaminated bedding, potentially contaminated laboratory wastes, and dialysis wastes.
- p. *Monthly Average* – The arithmetic mean of the values for effluent samples collected during a calendar month or specified thirty (30) day period (as opposed to a rolling thirty (30) day window).
- q. *NA* – Not Applicable
- r. *NPDES Permit* – National Pollution Discharge Elimination System Permit, is the regulatory agency document issued by either a federal or state agency, which is designed to control all discharges from point sources into U.S. waterways.
- s. *Pollutant* – Without limitation, all of the following:
  - (1) Dredged soil, solid waste, incinerated residue, filter backwash, sewage, garbage, sewage sludge, munitions, medical wastes, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, municipal, agricultural and industrial wastes;
  - (2) Certain characteristics of wastewater (e.g., but not limited to, pH, temperature, total suspended solids, turbidity, color, biochemical oxygen demand, chemical oxygen demand, toxicity, or odor);
  - (3) Substances regulated by categorical pretreatment standards;
  - (4) Substances discharged to the POTW which are required to be monitored by the user, are limited in the POTW's NPDES permit, or required to be identified in the POTW's application for a NPDES permit or in the user's application for a wastewater discharge permit;

- (5) Substances for which control measures on users are necessary to avoid restricting the POTW's sludge use and disposal program, to avoid worker health and safety problems; and
- (6) Toxic Substances
- t. *POTW* – Public Owned Treatment Works, a wastewater treatment works that is owned by the city. This definition includes any devices or systems used in the collection, storage, treatment, recycling, and reclamation of sewage or industrial wastes of a liquid nature and any sewers, pipes or other conveyances that convey wastewater to a treatment plant, which is part of the POTW.
- u. *Sanitary Sewer* – A sewer that carries sewage and to which storm, surface, and subsurface, waters shall not intentionally be admitted.
- v. *SIU* – Significant Industrial User:
  - (1) A user subject to categorical pretreatment standards; or
  - (2) A user that:
    - (a) Discharges an average of twenty-five thousand (25,000) gpd or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler wastewater);
    - (b) Contributes a process wastewater which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW; or
  - (3) Is designated as such by the City on the basis that it has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirements.
  - (4) Upon a finding that a user meeting the criteria in subparagraph (2) has no Reasonable potential for adversely affecting the POTW's operations or for violating any pretreatment standard or requirement, the Control Authority may at any time, on its own initiative or in accordance with procedures in 40 CFR 403.8 (f) (6), determine that such a user should not be considered a Significant Industrial User.
- w. *Sludge* – Biosolids, the settleable solids separated from liquids during processing.
- x. *Surcharge* – The additional treatment charges by the City for the treatment of wastewater containing pollutants in excess of specified concentration, loading or other applicable limits.
- y. *Wastewater* – Liquid and water that carries industrial wastes and sewage from residential dwellings, commercial buildings, industrial and manufacturing facilities, and institutions, whether treated or untreated, which contribute to the POTW.
- z. *Wastewater Treatment Plant or Treatment Plant*- That portion of the POTW, designed to provide treatment of municipal sewage and industrial waste.

## **12. Prohibited Discharge Standards**

- a. Whenever deemed necessary, the Director may require users to restrict their discharge during peak flow periods, designate that certain wastewater be discharged only into specific sewers, relocate and /or consolidate points of discharge separate sewage wastestreams, from industrial wastestreams, and such other conditions as may be necessary to protect the POTW and determine the user's compliance with the requirements of this permit.
- b. *General Prohibitions* – No user shall introduce or cause to be introduced into the POTW any pollutant or wastewater that causes pass through, interference, or causes the City to violate its NPDES Permit or its biosolids management programs. These general prohibitions apply to all users of the POTW whether or not they are subject to categorical pretreatment standards or any other federal, state or local pretreatment standards or requirements.
- c. *Specific Prohibitions* – No user shall introduce or cause to be introduced into the POTW



the following pollutants, substances or wastewater:

- (1) Pollutants, which create a fire or explosion hazard in the POTW, including but not limited to, wastestreams with a closed cup flash point of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21.
- (2) Wastewater having a pH less than 6.0 or more than 10.5 or otherwise causing corrosive structural damage to the POTW or equipment. The City may enforce a maximum pH of 9.0 for individual users if the Director determines that a higher pH may be detrimental to the POTW;
- (3) Solid or viscous substances in amounts or of such size which will cause obstruction of the flow in POTW or resulting in interference of flow in POTW or resulting in interference including any substance detrimental to or determined by the Director to be detrimental to the POTW;
- (4) Pollutants, including oxygen-demanding pollutants (BOD, etc.), released in a discharge at a flow rate and /or pollutant concentration which, either singly or by interaction with other pollutants, will cause interference with the POTW;
- (5) Wastewater having a temperature greater than 120 degrees Fahrenheit, or which will inhibit biological activity in the treatment plant resulting in interference, but in no case wastewater that causes the temperature at the head end of the treatment plant to exceed 104 degrees Fahrenheit or (40) degrees Centigrade;
- (6) Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin, in amounts that will cause interference or pass through;
- (7) Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;
- (8) Trucked or hauled pollutants, except at discharge point designated by the Director in accordance with City of Saginaw, Code of Ordinances, Title V, § 51.33;
- (9) Noxious or malodorous liquids, gases, solids, or other wastewater which, either singly or by interaction with other wastes, are sufficient to create a public nuisance or hazard to life, or to prevent entry to the POTW for maintenance or repair;
- (10) Wastewater that imparts color and cannot be removed by the treatment process, such as, but not limited to, dye wastes and vegetable tanning solutions, which consequently imparts color to the treatment plant's effluent;
- (11) Wastewater containing any radioactive wastes or isotopes except in compliance with state or federal regulations;
- (12) Sludges, screenings, or other residues from the pretreatment of industrial wastes;
- (13) Medical wastes, except as specifically authorized by the director in a wastewater discharge permit;
- (14) Wastewater causing, alone or in conjunction with other sources, the treatment plant's effluent to fail toxicity test;
- (15) Detergents, surface-active agents, or other substances which may cause excessive foaming in the POTW;
- (16) Fats, oils, or greases of animal or vegetable origin in concentrations greater than one hundred (100) mg/L;
- (17) Collectable floating fats, oils, or greases;
- (18) Garbage that has not been properly shredded;
- (19) Pollutants, which cause a high concentration of inert, suspended solids, such as, but not limited to, lime slurries, diatomaceous earth and lime residues;
- (20) Pollutants, which cause high concentrations of, dissolved solids, such as, but not limited to, sodium chloride;
- (21) Pollutants, which exert a COD that would increase operational expense or cause

treatment problems;

- (22) Pollutants, which exert high chlorine demand, such as, but not limited to, nitrate, cyanide, thiocyanate, sulfite and thiosulfate;
  - (23) Pollutants, which result in water or waste materials containing toxic or poisonous substances that may damage or interfere with any sewage treatment process or that may be a hazard in the receiving waters of the state;
  - (24) Any substance which may cause the POTW effluent or any other product of the POTW such as biosolids, residue, sludge or scum, to be unsuitable for reclamation and reuse or to interfere with the biosolids management, reuse or reclamation process where the POTW is pursuing biosolids reuse or reclamation program. In no case shall a substance be discharged to the POTW and cause the disposal criteria guidelines or regulations under applicable federal, state or local law.
- d. Pollutants, substances, or wastewater prohibited by this section shall not be processed or stored in such a manner that they could be discharged to the POTW.
  - e. Compliance with this permit does not relieve the permittee from its obligations regarding compliance with all applicable local, state, and federal pretreatment standards and requirements including any such standards or requirements that may become effective during the term of this permit.

**B. Installation, Operation, and Maintenance of Pretreatment Technology and Pollution Controls**

**1. Required Pretreatment**

Users shall provide wastewater treatment as necessary to comply with this permit and shall achieve compliance with all pretreatment standards, local limits, and prohibitions set by the EPA, the state, or the Director whichever is more stringent. Any facility necessary for compliance shall be provided, operated, and maintained at the permittee's expense. Detailed plans describing such facilities and operating procedures shall be submitted to the Director for review, and shall be acceptable to the Director before such facilities are constructed. The review of such plans and operating procedures shall in no way relieve the user from the responsibility for modifying such facilities as necessary to produce a discharge acceptable to the Director under the provisions of this permit. Any subsequent changes in such facilities or operating procedures shall be reported to and be approved by the Director prior to the user's commencement of the changes.

**2. Proper Operation and Maintenance**

The permittee shall at all times properly operate and maintain all facilities and systems of pretreatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes without limitation: effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

**3. Duty to Halt or Reduce Activity**

Upon efficiency reduction of an operation or loss or failure of all or part of the pretreatment equipment, the permittee shall, to the extent necessary to maintain compliance with all local, state, and federal regulations, control its production and/or discharges until operation of the pretreatment facility is restored or an alternative method of treatment is provided. This requirement applies in situations, including without limitation, where the primary source of power for the pretreatment equipment or facility is reduced, lost, or fails. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or

reduce the permitted activity in order to maintain compliance with the conditions of this permit.

**4. Reporting Requirements Operational Bypasses (Reference, Section VIII. G.)**

**5. Removed Substances**

Solids, sludge, filter backwash, or other pollutants removed in the course of treatment or control of wastewater shall be disposed of in accordance with section 405 of the Clean Water Act and Subtitles C and D of the Resource Conservation and Recovery Act.

**C. Retention of Records**

**1. Monitoring Information**

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the Control Authority at any time.

**2. Special Enforcement**

All records that pertain to matters that are the subject of special orders or any other enforcement or litigation activities brought by the Control Authority shall be retained and preserved by the permittee until all enforcement activities have concluded and all periods of limitation with respect to any and all appeals have expired.

**3. Records of Sampling and Analysis Shall Include:**

- a. The date, exact place, time, methods of sampling or measurements, and sample preservation techniques or procedures;
- b. Who performed the sampling or measurements;
- c. The date(s) analysis was performed;
- d. Who performed the analysis;
- e. The analytical techniques or methods used; and
- f. The results of such analysis.

**D. Inspection and Entry**

The permittee shall allow the Control Authority, or and authorized representative, upon the presentation of credentials and other documents as may be required by law:

**1. Right to Enter**

Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;

**2. Access to Records**

Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

**3. Inspection of Equipment**

Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit;

**4. Sampling or Monitoring**

Sample or monitor, for the purpose of assuring permit compliance, any substances or parameters at any location; and

**5. Inspection of Systems**

Inspect any production, manufacturing, fabricating, or storage area where pollutants, regulated under the permit, could originate, be stored, or be discharged to the sewer system.

**E. Falsifying Information**

Knowingly making any false statement on any report or other document required by this permit or knowingly rendering any monitoring device or method inaccurate, is a crime and will result in the imposition of criminal sanctions and/or civil penalties.



**F. Annual Publication**

The Director shall publish annually, in the largest daily newspaper published in the municipality where the POTW is located, a list of the SIUs which, during the previous fifteen months, were in significant noncompliance with applicable pretreatment standards and requirements, in accordance with City of Saginaw Code of Ordinances Title V, § 51.40.

**G. Compliance Schedule**

Compliance Orders may also contain requirements to address noncompliance, including, without limitation, additional self monitoring and management practices designed to minimize the amount of pollutants discharged to the sewer, pretreatment facility design and plan preparation and implementation, and any other affirmative action considered necessary for compliance with this permit.

**H. Civil and Criminal Liability**

Nothing in this permit shall be construed to relieve the permittee from civil and/or criminal penalties for noncompliance under local, state or federal laws or regulations.

**I. Penalties for Violations of Permit Conditions**

A SIU that violates any provision of the City of Saginaw Code of Ordinances, Title V, this permit, or order issued hereunder, or any state or federal pretreatment standard or regulation is responsible for a municipal civil infraction, subject to payment of a civil fine of not less than \$1000 per day, plus costs and other sanctions, for each infraction. Fines shall be assessed for each day during the period of violation, as prescribed in the City of Saginaw Code of Ordinances, Title V § 51.41.

**J. Recovery of Costs Incurred**

In addition to civil and criminal liability, the permittee violating any of the provisions of this permit or City of Saginaw Code of Ordinances, Title V, or causing damage to or otherwise inhibiting the City of Saginaw Wastewater disposal system shall be liable to the City for any expense, loss, or damage caused by such violation or discharge. The City of Saginaw shall bill the permittee for the costs incurred by the City of Saginaw for any cleaning, repair, or replacement work caused by the violation.

**K. Pretreatment Charges and Fees**

Fees for monitoring, inspection and surveillance procedures including the cost and analyzing a user's discharge, and reviewing monitoring reports submitted by user;

**1. Permit Application**

Fees for wastewater discharge permit applications including the cost of processing such application;

**2. Monitoring, Inspection, and Surveillance**

Fees for monitoring, inspecting, surveillance, sampling and analyzing a user's discharge, and reviewing monitoring reports submitted by users;

**3. Accidental Discharge**

Fees for reviewing and responding to accidental discharge procedures and construction;

**4. Filing Appeals**

Fees for filing appeals; and

**5. Other Fees**

Other fees as the City may deem necessary to carry out the requirements set forth by this permit, state and federal regulations.

**III. MONITORING POINTS**

**A. Sample Locations**

All non-domestic sewage discharge connections to the City's sewerage system shall be a separate and distinct discharge location and numbered or otherwise identified by the permittee. Each

discharge point must have a monitoring manhole or arrangement acceptable to the Control Authority. Each discharge point must be identified and reported separately.

**B. Effective Permit Dates**

During 23 February 2011 to 24 February 2016, Motors Liquidation Company (Former Nodular Treatment System) is authorized to discharge process wastewater to City of Saginaw sewer system from the outfall(s) listed below.

**Waste Water Type:** Metal Molding and Casting Process Wastewater & Storm Water

| Monitoring Point              | Monitoring Point Description | Treatment System Type |
|-------------------------------|------------------------------|-----------------------|
| MLC, Outfall 102,<br>Figure 1 | MLC, Outfall 102             | none                  |

**IV. MONITORING REQUIREMENTS**

**A. Sampling Monitoring Point MLC, Outfall 102**

**Sampling Frequency**

**Semi-annual**

3 times within 2 weeks for flows less than 250,000 gpd (based on dry weather flow)

6 times within 2 weeks for flows greater than 250,000 gpd (based on dry weather flow)

**Monthly**

1 time per month for the federally regulated categorical discharge parameters; Copper, Lead, Zinc, Phenol Method 420.1 and Total Toxic Organics

**B. Sampling, Preservation and Laboratory Analysis**

All sampling, preservation and analysis of collected samples shall be performed in accordance with 40 CFR Part 136 unless specified otherwise in this permit. According to the City of Saginaw's Total PCB Minimization Program, the analytical method used for PCB analysis shall be 40 CFR Part 136, method 608. The sampling procedures, preservation and handling, and analytical protocol for mercury shall be in accordance with 40 CFR Part 136 method 245.1. The quantification level for mercury shall not exceed 0.0002 mg/L unless a higher level is appropriate due to sample matrix interference.

**C. Representative Sampling**

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water or substance. All equipment used for sampling and analysis must be routinely calibrated, inspected and maintained to ensure their accuracy. Monitoring points shall not be changed without notification to and the approval of the Control Authority.

**D. Flow Measurement**

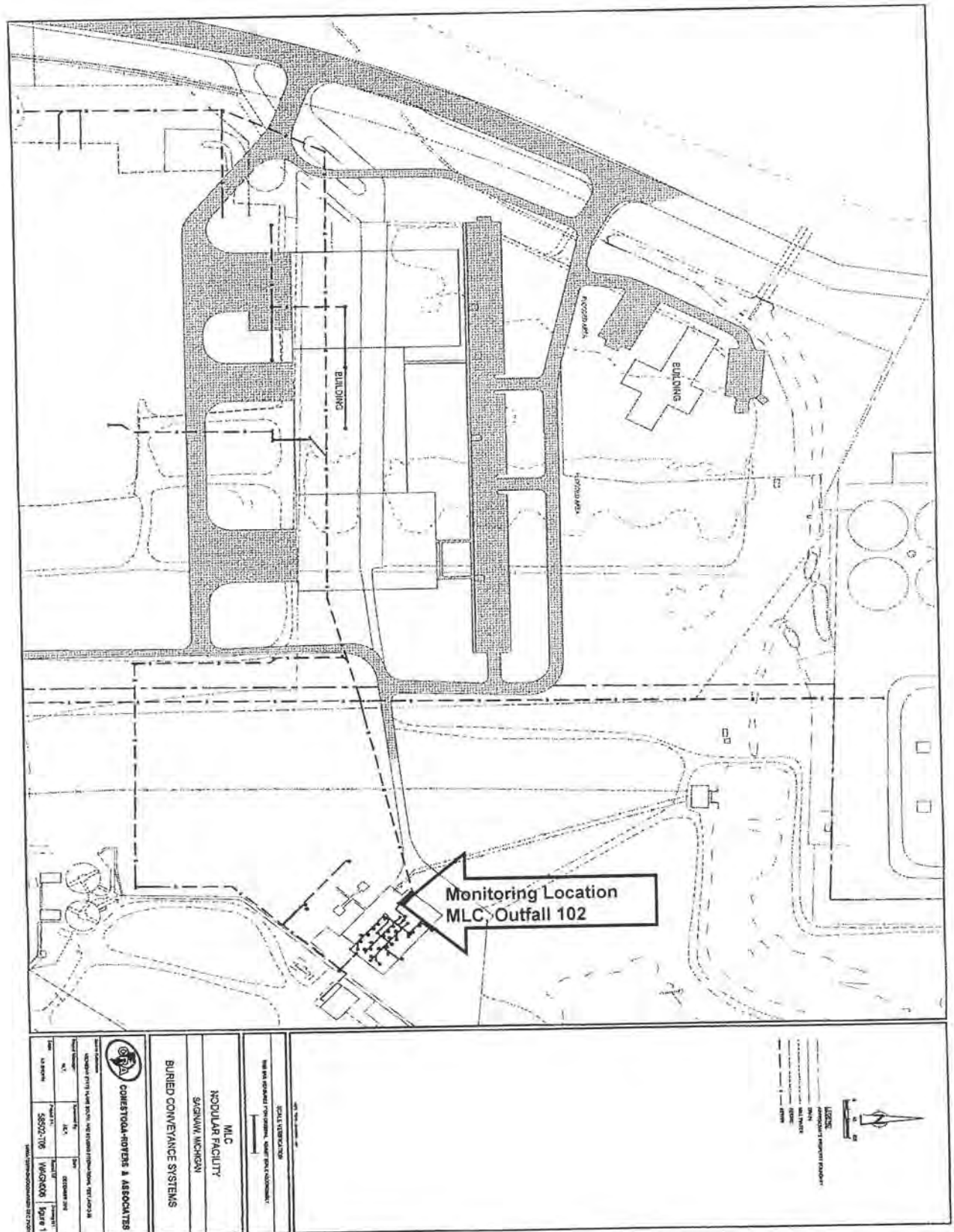
Flow measurements must be recorded for all discharges to the city's sewer system. Appropriate flow measurement devices and methods consistent with approved scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, inspected and maintained to ensure their accuracy of the measured flows with a maximum deviation of less than 10% from true discharge rates throughout the range of expected discharge volumes.

### E. Parameter and Sampling Requirements

Samples shall be collected from the City approved monitoring point, MLC 102 Map, Figure 1.

| Parameter                             | Monitoring Point | Semi-Annual Sampling Frequency        | Flow Monitoring        | Sampling Method                                        |
|---------------------------------------|------------------|---------------------------------------|------------------------|--------------------------------------------------------|
| Copper, total (mg/L)                  | MLC, Outfall 102 | 1 day monthly & 3 days semi- annually | Report Gallons per Day | Time Proportional Composite 15 minute intervals        |
| Lead, total (mg/L)                    | MLC, Outfall 102 | 1 day monthly & 3 days semi- annually | Report Gallons per Day | Time Proportional Composite 15 minute intervals        |
| Zinc, total (mg/L)                    | MLC, Outfall 102 | 1 day monthly & 3 days semi- annually | Report Gallons per Day | Time Proportional Composite 15 minute intervals        |
| Phenols, total (mg/L)<br>Method 420.1 | MLC, Outfall 102 | 1 day monthly & 3 days semi- annually | Report Gallons per Day | Grab Sample                                            |
| Total Toxic Organics (mg/L)           | MLC, Outfall 102 | 1 day monthly & 3 days semi- annually | Report Gallons per Day | Time Proportional Composite 15 minute intervals & Grab |
| pH (su)                               | MLC, Outfall 102 | 3 days semi- annually                 | Report Gallons per Day | Grab Sample                                            |
| Phosphorus, total (mg/L)              | MLC, Outfall 102 | 3 days semi- annually                 | Report Gallons per Day | Time Proportional Composite 15 minute intervals        |
| Bio-chemical Oxygen Demand (mg/L)     | MLC, Outfall 102 | 3 days semi- annually                 | Report Gallons per Day | Time Proportional Composite 15 minute intervals        |
| Total Suspended Solids (mg/L)         | MLC, Outfall 102 | 3 days semi- annually                 | Report Gallons per Day | Time Proportional Composite 15 minute intervals        |
| Oil & Grease (mg/L)                   | MLC, Outfall 102 | 3 days semi- annually                 | Report Gallons per Day | Grab Sample                                            |
| Ammonia Nitrogen (mg/L)               | MLC, Outfall 102 | 3 days semi- annually                 | Report Gallons per Day | Time Proportional Composite 15 minute intervals        |
| Arsenic, total (mg/L)                 | MLC, Outfall 102 | 3 days semi- annually                 | Report Gallons per Day | Time Proportional Composite 15 minute intervals        |
| Cadmium, total (mg/L)                 | MLC, Outfall 102 | 3 days semi- annually                 | Report Gallons per Day | Time Proportional Composite 15 minute intervals        |
| Chromium, total (mg/L)                | MLC, Outfall 102 | 3 days semi- annually                 | Report Gallons per Day | Time Proportional Composite 15 minute intervals        |
| Mercury, total (mg/L)                 | MLC, Outfall 102 | 3 days semi- annually                 | Report Gallons per Day | Time Proportional Composite 15 minute intervals        |
| Nickel, total (mg/L)                  | MLC, Outfall 102 | 3 days semi- annually                 | Report Gallons per Day | Time Proportional Composite 15 minute intervals        |
| Selenium, total (mg/L)                | MLC, Outfall 102 | 3 days semi- annually                 | Report Gallons per Day | Time Proportional Composite 15 minute intervals        |
| Cyanide, amenable (mg/L)              | MLC, Outfall 102 | 3 days semi- annually                 | Report Gallons per Day | Grab Sample                                            |
| BTEX, total (mg/L)                    | MLC, Outfall 102 | 3 days semi- annually                 | Report Gallons per Day | Grab Sample                                            |
| Benzene (mg/L)                        | MLC, Outfall 102 | 3 days semi- annually                 | Report Gallons per Day | Grab Sample                                            |
| PCB, total (µg/L)                     | MLC, Outfall 102 | 3 days semi- annually                 | Report Gallons per Day | Time Proportional Composite 15 minute intervals        |

Figure 1 Map





## V. MONITORING POINT LIMITS

### **Summary of all Monitoring Point Limits effective 30 November 2010 for MLC Outfall 102.**

Federal Regulated Production-based Categorical Pretreatment Standards (40 CFR Part 464- Metal Molding and Casting Point Source Category, Subpart A- Aluminum Casting Subcategory, 464.16- Pretreatment Standards for New Sources) and Local Limits (City of Saginaw Code of Ordinances Title V, Chapter 51§51.26 Local Limits) apply to MLC, Outfall 102.

#### **Federally Regulated Production-based Categorical Pretreatment Adjusted Standards**

| Parameter                             | Daily Maximum | Monthly Average |
|---------------------------------------|---------------|-----------------|
| Copper, total ( lbs/day)              | 0.1770        | 0.0965          |
| Lead, total (lbs/day)                 | 0.1816        | 0.0896          |
| Zinc, total (lbs/day)                 | 0.2627        | 0.0988          |
| Phenols, total (lbs/day) method 420.1 | 0.1830        | 0.0638          |
| Total Toxic Organics (lbs/day)        | 0.4440        | 0.1449          |

Results will be entered into the following formula to calculate the pounds per day.

Flow MGD X 8.34 lbs/gal X Concentration mg/L = lbs/day

#### **City of Saginaw Code of Ordinances Title V, Chapter 51 §51.26 Local Limits**

| Parameter                         | Daily Maximum |
|-----------------------------------|---------------|
| *Flow gallons per day             | 75,000        |
| pH (su)                           | 6.0-10.5      |
| Phosphorus, total (mg/L)          | 7             |
| Bio-chemical Oxygen Demand (mg/L) | 493           |
| Total Suspended Solids (mg/L)     | 1100          |
| Oil & Grease (mg/L)               | 100           |
| Ammonia Nitrogen (mg/L)           | 77            |
| Arsenic, total (mg/L)             | 0.473         |
| Cadmium, total (mg/L)             | 0.110         |
| Chromium, total (mg/L)            | 2.77          |
| **Mercury, total (mg/L)           | <0.0002       |
| Nickel, total (mg/L)              | 1.786         |
| Selenium, total (mg/L)            | 0.083         |
| Cyanide, amenable (mg/L)          | 0.473         |
| BTEX, total (mg/L)                | 5             |
| Benzene (mg/L)                    | 0.5           |
| ***PCB, total (µg/L)              | <0.2          |

\*Discharge Wastewater shall not exceed 75,000 gallons per day unless approved by the Control Authority.

\*\*The quantification level shall not exceed 0.0002 mg/L unless a higher level is appropriate due to matrix interference. Any discharge of mercury at or above the quantification level is a violation.

\*\*\*The quantification level shall be 0.2 µg/L unless a higher level is appropriate due to matrix interference. Any discharge of total PCBs at or above the quantification level is a specific violation.



## VI. SURCHARGE LIMITS

### A. Parameter surcharges

Any parameter over the surcharge limit will warrant application of the surcharge to the permittee. Surcharges, if any, will be based upon analytical data either provided by the permittee or sampling analytical data collected by the Control Authority.

### B. Flow Readings

Flow readings must be provided to determine applied surcharges. Daily flow measurements must be recorded at the time of sampling and provided with the analytical data. Should installation of a flow-metering device be impractical then flow measurements will be determined by using the water meter readings.

### C. City of Saginaw Wastewater Treatment Facility- Surcharge Limits

| Parameter                         | Limit (mg/L) | Surcharges per lb. |
|-----------------------------------|--------------|--------------------|
| Bio-chemical Oxygen Demand (mg/L) | 200          | \$0.14             |
| Ammonia Nitrogen (mg/L)           | 30           | \$0.41             |
| Phosphorus, total (mg/L)          | 4            | \$1.02             |
| Total Suspended Solids (mg/L)     | 350          | \$0.12             |

## VII. SPECIAL CONDITIONS

### Discharge Flows

#### A. Allocated Flow

Based on preliminary analytical data, a flow of 75,000 gpd has been allocated to meet categorical limits.

#### B. Request an Increase in Allocated Flow

The Control Authority may increase the flow allocation, providing MLC submits a request in writing with supporting analytical documentation of achieving compliance with discharge standards.

#### C. Sewage Disposal Billing Information

Scott Hamilton  
Motors Liquidation Company  
401 S. Old Woodward Ave. Suite 370  
Birmingham, MI 48009  
Phone: 313-486-2931

## VIII. REPORTING REQUIREMENTS

### A. Reporting Frequency

The SIU shall be required to submit Compliance Monitoring Reports semi-annually or more frequently if requested by the Control Authority.

| Report(s)                                | Due Dates                               |
|------------------------------------------|-----------------------------------------|
| Semi-annual Compliance Monitoring Report | June 30 <sup>th</sup>                   |
| Semi-annual Compliance Monitoring Report | December 31 <sup>st</sup>               |
| Monthly Compliance Monitoring Report     | 15 <sup>th</sup> of the following month |

## **B. Compliance Monitoring Report (CMR) Requirements**

### **1. MLC, Outfall 102 Monitoring Data**

Monthly monitoring analytical data shall be reported in hard copy to the Control Authority by the 15<sup>th</sup> of each month (example: January data due February 15). MLC monthly sampling may be done in conjunction with semi-annual sampling. Discharge permit violations shall be reported immediately.

### **2. SIU Compliance Monitoring Report Form**

A checklist that can be used with the CMRs is available for your convenience. Complete all the information on the checklist, sign, date and attach it to the analytical data. There are two ways it can be obtained:

- a. The appendix is located on the last page permit.
- b. An editable version of the CMR form is located at (<http://www.Saginaw-mi.com/Government/Departments/wastewater/ipp.php>). Once at the site select the SIU Compliance Monitoring Report Form.

### **4. Compliance Monitoring Report Information**

- a. The CMR must indicate the duration the sample was collected, whether the sample method for collection was flow proportional or time proportional, and if the sample was a grab or a composite sample.
- b. The report must indicate the nature and concentration of all pollutants in the effluent for the sampling and analyses required during each 6-month period.
- c. All parameters must be reported in mg/L with the exception of PCBs, which must be reported in µg/L.
- d. The analytical for Total PCBs shall be in accordance with EPA method 608. The quantification level shall be 0.2 µg/L unless a higher level is appropriate; justification shall be submitted with the report.
- e. A statement of certification that all sampling and analysis are representative of normal daily work cycles must be included.
- f. A statement notifying the Control Authority of any changes in facility activity, production, or discharge practices.
- g. The report must include a record of measured average and maximum daily flows for the reporting period.
- h. The CMR must indicate the time, date, and location and that all sampling and analysis were performed according to 40CFR Part 136.
- i. There must be a reliability statement ensuring laboratories providing test results have an active quality control and quality assurance (QC/QA) program in operation to provide reliable and accurate test data.
- j. A statement must be included notating any changes not previously reported when filing the permit application and baseline monitoring report or since the last compliance monitoring report.
- k. There must be a statement of certification, that any materials, which could cause slug loading or could have detrimental effect on the sewerage system are properly stored in a contained area to eliminate any possible discharge into the sewer system.

## **C. Slug Plan Reporting Requirements**

### **1. Frequency**

Each significant industrial user is required to submit an accidental discharge/slug control plan to the Control Authority.

### **2. Slug Plan Information**

Description of discharge practices, including non-routine batch discharges.

- a. Include a description of stored chemicals.

- b. Procedures for immediately notifying the Director of any accidental or slug discharge, including without limitation notifications required by City of Saginaw Code of Ordinances, Title V, § 51.36 (F)
- c. Include the procedures to prevent adverse impact from any accidental or slug discharge. Such procedures include, but are not limited to, inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site runoff, worker training, building of containment structures or equipment, measures for containing toxic substances and pollutants (including solvents) and measures and equipment for emergency response.

### **3. Slug Plan Evaluation**

If a permittee submits or has submitted to the Director plans or documents pursuant to other requirements of local, state or federal laws and regulations that meet all applicable requirements of this section, the Director may at his/her discretion determine if the user has satisfied the accidental discharge/slug control plan submission requirements.

## **D. Resource Conservation and Recovery Act ( RCRA)**

### **1. Notification of Discharge of Hazardous Wastes**

IUs discharging more than 15 kilograms per month of a waste, which if otherwise disposed of, would be a hazardous waste pursuant to the RCRA requirements under 40 CFR Part 261 are required to provide a onetime written notification of such discharge to the Control Authority, State, and EPA. IUs discharging any amount of waste, which if disposed of otherwise, would be an acutely hazardous waste pursuant to RCRA must also provide this notification. This written notification must contain the EPA hazardous waste number and the type of discharge (i.e., batch, continuous). If the IU discharges more than 100 kilograms per month of hazardous waste, the written notification must also include:

- a. An identification of the hazardous constituent in the IU's discharge;
- b. An estimate of the mass and concentration of the constituents in the IU's discharge; and
- c. An estimate of the mass and concentration of constituents in the IU's discharge in a year.

### **2. Certification**

IUs must also provide a certification accompanying this notification that a waste reduction program is in place to reduce the volume and toxicity of hazardous wastes to the greatest degree economically practical. Within ninety (90) days of the effective date of the listing of any additional hazardous wastes pursuant to RCRA, IU's must provide a notification of the discharge of such wastes.

## **E. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)**

The CERCLA was enacted and amended by the U.S. Congress to provide authority for response to actual or threatened release of hazardous substance into the environment. The Natural Contingency Plan (40 CFR Part 300) is the regulation promulgated to implement the Act. Section 302.4 contains a table listing the regulated substances. Sewer users must become familiar with the Act requirements and its effects on daily operations.

## **F. Reports of Potential Problem or Non-routine Discharges**

### **1. Notification**

In the case of any discharge, including, but not limited to, accidental discharges, discharges of a non-routine, episodic nature, a non-customary batch discharge, or a slug load, which may cause potential problems for the POTW, the user shall immediately telephone and notify the Director of the incident. During normal business hours the City of Saginaw, Wastewater Treatment, Environmental Compliance Office (ECO) must be notified immediately by telephone at (989) 759-1523. At all other times, the City of Saginaw Wastewater Treatment Department must be notified by telephone at (989) 759-1634. The notification must include location of discharge, date and time thereof, type of waste, including concentration, and volume, and corrective actions taken. The permittee's notification of

accidental releases in accordance with this section does not relieve it of other report requirements that arise under local, State, or Federal laws.

**2. Written Report**

- a. Within five days following an accidental discharge, the permittee must submit to the Control Authority a detailed written discharge report.
- b. The report must include the cause of the incident, the location of discharge, type, concentration and volume of waste, whether it was a slug load or an accidental discharge, and the impact on the permittee's compliance status.
- c. Include in the report the duration of the violation and the exact date(s) and time(s).
- d. Include all the steps taken or to be taken to reduce, eliminate and/or prevent reoccurrence of such an upset, slug load, accidental discharge, or other conditions of noncompliance.

**3. Expenses Incurred**

Such notification shall not relieve the permittee of any expense, loss, damage, or other liability, which may be incurred as a result of damage to the POTW, natural resources, or any other damage to person or property; nor shall such notification relieve the user of any fines, penalties, or other liability, which may be imposed pursuant to this permit.

**4. Notify Personnel**

A notice shall be permanently posted on the permittee's bulletin board or other prominent location advising employees who to call in the event of a discharge as described in this section E, 1. Employers must ensure that all employees who could cause such discharge to occur, are aware of the emergency notification procedures.

**G. Pretreatment Bypass Reporting Requirements**

**1. Prior Notification of Bypass**

If a permittee knows in advance of the need for a bypass, it shall submit prior notice to the Director, at least ten (10) days before the date of the bypass, if possible.

**2. Unanticipated Bypass Notification**

A permittee shall submit oral notice to the Director of an unanticipated bypass that exceeds applicable pretreatment standards within twenty-four (24) hours from the time it becomes aware of the bypass. A written submission shall also be provided within five (5) days of the time the user becomes aware of the bypass. The written submission shall contain: a description of the bypass and its cause; the duration of the bypass, including exact dates and times, and, if the bypass has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

**H. Violation Reporting, Repeat Sampling and Notices of Violation (NOV)**

**1. Notification by Permittee of Violation**

If sampling performed by a permittee indicates a violation, the permittee must notify the Director within twenty-four (24) hours of becoming aware of the violation.

**2. Repeat Sampling Report**

The permittee must also repeat the sampling and analysis and submit the results of the repeat analysis to the Director within thirty (30) days after becoming aware of the violation.

**3. Notice of Violation**

When the Director finds a permittee has violated, or continues to violate, any provision of the City of Saginaw Code of Ordinances Title V, this permit, or order issued hereunder, or any state or federal pretreatment requirements the Director may serve a written Notice of Violation.

**4. Reporting**

Within fourteen (14) days of the receipt of notice from the Control Authority, an explanation of the violation and a plan for satisfactory correction and prevention thereof, including required actions, shall be submitted by the permittee to the Director.



**I. Additional Monitoring**

If the permittee monitors any pollutant more frequently than required by this permit using testing prescribed in 40 CFR Part 136 or amendments thereto, or otherwise approved by the EPA or as specified in this permit, the results of such monitoring shall be included in the semi-annual report submitted to the City of Saginaw Environmental Compliance Office.

**J. Reports of Changed Conditions**

Each user must notify the Director of any planned significant changes to the user's operations or systems which might alter the nature, quality, or volume of its wastewater at least ninety (90) days before the change. For the purpose of this requirement, significant changes include, but are not limited to, flow increases of twenty percent (20%) or greater, and the discharge of any previously unreported pollutants.

**K. Information Requests**

The permittee shall furnish to the Director, within twenty-four (24) hours any information, which the Director may request, to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee upon request shall also, furnish to the Director within twenty-four (24) hours copies of any records required to be kept by this permit.

**L. Application, Notification and Report Signatories, and Certification**

All wastewater discharge permits, applications, user notifications and written reports must be signed by an authorized representative of the user and contain the following certification statement:

"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 the possibility of fine and imprisonment for knowing violations."

**M. Control Authority Mailing Address**

All reports required by this permit shall be submitted to the:  
City of Saginaw Wastewater Treatment Facility  
Environmental Compliance Office  
2406 Veterans Memorial Parkway  
Saginaw, MI 48601-1268

### APPEDIX-Significant Industrial User - Compliance Monitoring Report

This semi-annual compliance monitoring report covers all information required in accordance with the sewer user permit, local, state and federal regulations.

(Answer each question thoroughly, where necessary use the answer yes or no respectively)

1. Industry name and address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. ☐ Sampling and analysis are performed in accordance with techniques described in 40-CFR part 136 and amendments there to.
3. Sampling Dates/Times & Location: \_\_\_\_\_
4. Duration of sample collected \_\_\_\_\_ Flow proportional or  
Grab or Composite: \_\_\_\_\_ Time proportional: \_\_\_\_\_
5. ☐ The sampling done for this CMR is representative of normal work cycles and average daily flows.
6. ☐ The testing laboratory has a Quality Control and Quality Assurance (QA/QC) program.
7. Any changes that have not previously been reported when filling out the permit application, baseline monitoring report or previous CMR are:  
\_\_\_\_\_  
\_\_\_\_\_
8. ☐ Toxic Materials that could cause a slug loading or could have a detrimental effect on the sewer system are properly stored in a contained area to eliminate any possible discharge into the sewer system.
9. The explanation for the omission of required information is as follows: \_\_\_\_\_  
\_\_\_\_\_
10. Daily Average flows  
(each day of sampling): \_\_\_\_\_  
  
Maximum flows: \_\_\_\_\_
11. "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, 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 the possibility of fine and imprisonment for knowing violations."

Signature: \_\_\_\_\_ Date: \_\_\_\_\_



May 9, 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 March 2011  
Former Nodular Facility, Saginaw, Michigan

This letter is submitted on behalf of Revitalizing Auto Communities Environmental Response (RACER). The City of Saginaw/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 non-operating Waste Water Treatment Plant (secondary settling ponds) to the City sanitary sewer is ongoing.

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 February and March 2011 (discharge initiated on February 24, 2011) and are representative of normal daily discharges. Samples were collected on the 24<sup>th</sup> of February and the 16th, 23rd, and the 30th of March. 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 appropriate parameters. Attachment A presents the analytical reports for the samples collected in February and March 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 of Saginaw 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 to the end of the month.

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,

A handwritten signature in blue ink, appearing to read "Grant Trigger".

Grant Trigger  
Cleanup Manager - Michigan

JEP/ev/1  
Encl.

cc: Jeanette Best - City of Saginaw  
Tom Darnell - City of Saginaw, City Manager  
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**

| <i>Date</i> | <i>Parameters Sampled</i> | <i>Concentration<br/>(mg/L)</i> | <i>Maximum Daily<br/>Loading<br/>(lbs/day)</i> | <i>Monthly<br/>Average<br/>(lbs/day)</i> | <i>City of Saginaw<br/>Maximum Daily<br/>(lbs/day)</i> | <i>City of Saginaw<br/>Monthly Average<br/>(lbs/day)</i> | <i>Number of<br/>Exceedances</i> | <i>Rate of<br/>Discharge <sup>(1)</sup><br/>(GPD)</i> | <i>Notes</i>               |
|-------------|---------------------------|---------------------------------|------------------------------------------------|------------------------------------------|--------------------------------------------------------|----------------------------------------------------------|----------------------------------|-------------------------------------------------------|----------------------------|
| 24-Feb-11   | Copper                    | ND                              | NA                                             | NA                                       | 0.1770                                                 | 0.0965                                                   | 0                                | 75,000                                                |                            |
|             | Lead                      | ND                              | NA                                             | NA                                       | 0.1816                                                 | 0.0896                                                   | 0                                |                                                       |                            |
|             | Zinc                      | 0.0304                          | 0.019                                          | 0.019                                    | 0.2627                                                 | 0.0988                                                   | 0                                |                                                       |                            |
|             | Total Phenols             | ND                              | NA                                             | NA                                       | 0.1830                                                 | 0.0638                                                   | 0                                |                                                       |                            |
|             | Total Toxic Organics      | ND                              | NA                                             | NA                                       | 0.4440                                                 | 0.1449                                                   | 0                                |                                                       |                            |
| 12-Mar-11   |                           |                                 |                                                |                                          |                                                        |                                                          |                                  | 300,000                                               | Increase of discharge rate |
| 16-Mar-11   | Zinc                      | 0.0125                          | 0.031                                          | (2)                                      | 0.2627                                                 | 0.0988                                                   | 0                                | 300,000                                               |                            |
| 23-Mar-11   | Copper                    | ND                              | NA                                             | NA                                       | 0.1770                                                 | 0.0965                                                   | 0                                | 300,000                                               |                            |
|             | Lead                      | ND                              | NA                                             | NA                                       | 0.1816                                                 | 0.0896                                                   | 0                                |                                                       |                            |
|             | Zinc                      | 0.0152                          | 0.038                                          | (2)                                      | 0.2627                                                 | 0.0988                                                   | 0                                |                                                       |                            |
|             | Total Phenols             | 0.0015                          | 0.004                                          | 0.004                                    | 0.1830                                                 | 0.0638                                                   | 0                                |                                                       |                            |
|             | Total Toxic Organics      | 0.0014                          | 0.004                                          | 0.004                                    | 0.4440                                                 | 0.1449                                                   | 0                                |                                                       |                            |
| 30-Mar-11   | Zinc                      | 0.0161                          | 0.040                                          | 0.0360                                   | 0.2627                                                 | 0.0988                                                   | 0                                | 300,000                                               |                            |

## Notes:

(1) Discharge initiated - February 24, 2011 - 75,000 GPD.

Discharge increased - March 12, 2011 - 300,000 GPD

(2) The daily average for the month (when there are multiple 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: March 15, 2011 daily zinc loading = Flow MGD x 8.34 lbs/gal x concentration mg/L (Feb. 24, 2011) = 0.3 x 8.34 x 0.0304 = 0.076 lbs/day). The monthly average for zinc is identified on the last sampling date of the month (March 30, 2011)

ATTACHMENT A  
ANALYTICAL REPORTS

## **ANALYTICAL REPORT**

**PROJECT NO. 58502-T06-01**

**MLC NODULAR**

**Lot #: A1B260456**

**Paul Wiseman**

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

**TESTAMERICA LABORATORIES, INC.**



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

Approved for release.  
Denise D. Heckler  
Project Manager  
3/7/2011 9:29 AM

**March 07, 2011**

**TestAmerica Laboratories, Inc.**

TestAmerica North Canton 4101 Shuffel Street NW, North Canton, OH 44720

Tel (330)497-9396 Fax (330)497-0772 [www.testamericainc.com](http://www.testamericainc.com)



# **CASE NARRATIVE**

A1B260456

The following report contains the analytical results for one water sample submitted to TestAmerica North Canton by Conestoga-Rovers & Associates, Inc. from the MLC NODULAR Site, project number 58502-TO6-01. The sample was received February 26, 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 2.6°C.

#### **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, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

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. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the reparation and reanalysis of all samples in the QC batch. 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.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

### **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 twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

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

## QUALITY CONTROL ELEMENTS NARRATIVE (continued)

- 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 reparation 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 may 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 (MS/DU) 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 (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

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, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, 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), NAVY,  
ARMY, USDA Soil Permit



## EXECUTIVE SUMMARY - Detection Highlights

A1B260456

| PARAMETER                                   | RESULT    | REPORTING<br>LIMIT | UNITS | ANALYTICAL<br>METHOD |
|---------------------------------------------|-----------|--------------------|-------|----------------------|
| W-58502-022411-SSH-M0.01 02/24/11 12:43 001 |           |                    |       |                      |
| Zinc                                        | 30.4 B, J | 50.0               | ug/L  | MCAWW 200.7          |

# ANALYTICAL METHODS SUMMARY

A1B260456

| PARAMETER                               | ANALYTICAL<br>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

A1B260456

| WO #  | SAMPLE# | CLIENT SAMPLE ID         | SAMPLED<br>DATE | SAMP<br>TIME |
|-------|---------|--------------------------|-----------------|--------------|
| MEW7T | 001     | W-58502-022411-SSH-M0.01 | 02/24/11        | 12:43        |

### 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 & Associates, Inc.

Client Sample ID: W-58502-022411-SSH-M0.01

TOTAL Metals

Lot-Sample #...: A1B260456-001

Matrix.....: WG

Date Sampled...: 02/24/11 12:43 Date Received...: 02/26/11

| PARAMETER                       | RESULT    | REPORTING<br>LIMIT | UNITS | METHOD        | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|---------------------------------|-----------|--------------------|-------|---------------|-------------------------------|-----------------|
| <b>Prep Batch #...: 1059029</b> |           |                    |       |               |                               |                 |
| Copper                          | ND        | 25.0               | ug/L  | MCAWW 200.7   | 02/28-03/01/11                | MEW7T1AA        |
|                                 |           | Dilution Factor: 1 |       | MDL.....: 4.5 |                               |                 |
| Lead                            | ND        | 100                | ug/L  | MCAWW 200.7   | 02/28-03/01/11                | MEW7T1AC        |
|                                 |           | Dilution Factor: 1 |       | MDL.....: 1.9 |                               |                 |
| Zinc                            | 30.4 B, J | 50.0               | ug/L  | MCAWW 200.7   | 02/28-03/01/11                | MEW7T1AD        |
|                                 |           | 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.

# ***QUALITY CONTROL SECTION***

# METHOD BLANK REPORT

## TOTAL Metals

Client Lot #...: A1B260456

Matrix.....: WATER

| PARAMETER                                                      | RESULT | REPORTING<br>LIMIT | UNITS | METHOD      | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|----------------------------------------------------------------|--------|--------------------|-------|-------------|-------------------------------|-----------------|
| <b>MB Lot-Sample #: A1B280000-029 Prep Batch #...: 1059029</b> |        |                    |       |             |                               |                 |
| Copper                                                         | ND     | 25.0               | ug/L  | MCAWW 200.7 | 02/28-03/01/11                | MEXE81AG        |
|                                                                |        | Dilution Factor: 1 |       |             |                               |                 |
| Lead                                                           | ND     | 100                | ug/L  | MCAWW 200.7 | 02/28-03/01/11                | MEXE81CA        |
|                                                                |        | Dilution Factor: 1 |       |             |                               |                 |
| Zinc                                                           | 8.4 B  | 50.0               | ug/L  | MCAWW 200.7 | 02/28-03/01/11                | MEXE81AK        |
|                                                                |        | 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 #...: A1B260456

Matrix.....: WATER

| PARAMETER                                                             | SPIKE<br>AMOUNT | MEASURED<br>AMOUNT | UNITS              | PERCNT<br>RECVRY | METHOD      | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|-----------------------------------------------------------------------|-----------------|--------------------|--------------------|------------------|-------------|-------------------------------|-----------------|
| <b>LCS Lot-Sample#:</b> A1B280000-029 <b>Prep Batch #...:</b> 1059029 |                 |                    |                    |                  |             |                               |                 |
| Copper                                                                | 250             | 230                | ug/L               | 90               | MCAWW 200.7 | 02/28-03/01/11                | MEXE81AR        |
|                                                                       |                 |                    | Dilution Factor: 1 |                  |             |                               |                 |
| Zinc                                                                  | 500             | 520                | ug/L               | 104              | MCAWW 200.7 | 02/28-03/01/11                | MEXE81AV        |
|                                                                       |                 |                    | Dilution Factor: 1 |                  |             |                               |                 |
| Lead                                                                  | 500             | 490                | ug/L               | 98               | MCAWW 200.7 | 02/28-03/01/11                | MEXE81CC        |
|                                                                       |                 |                    | 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 #...: A1B260456

Matrix.....: WATER

| PARAMETER                                                             | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS | METHOD      | PREPARATION-<br>ANALYSIS DATE | WORK ORDER # |
|-----------------------------------------------------------------------|---------------------|--------------------|-------------|-------------------------------|--------------|
| <b>LCS Lot-Sample#:</b> A1B280000-029 <b>Prep Batch #...:</b> 1059029 |                     |                    |             |                               |              |
| Copper                                                                | 90                  | (85 - 115)         | MCAWW 200.7 | 02/28-03/01/11                | MEXE81AR     |
|                                                                       |                     | Dilution Factor: 1 |             |                               |              |
| Zinc                                                                  | 104                 | (85 - 115)         | MCAWW 200.7 | 02/28-03/01/11                | MEXE81AV     |
|                                                                       |                     | Dilution Factor: 1 |             |                               |              |
| Lead                                                                  | 98                  | (85 - 115)         | MCAWW 200.7 | 02/28-03/01/11                | MEXE81CC     |
|                                                                       |                     | 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 #...: A1B260456

Matrix.....: WATER

Date Sampled...: 02/24/11 08:45 Date Received...: 02/26/11

| PARAMETER | AMOUNT | SAMPLE SPIKE<br>AMT | MEASRD<br>AMOUNT | UNITS | PERCNT<br>RECVRY | RPD | METHOD | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|-----------|--------|---------------------|------------------|-------|------------------|-----|--------|-------------------------------|-----------------|
|-----------|--------|---------------------|------------------|-------|------------------|-----|--------|-------------------------------|-----------------|

MS Lot-Sample #: A1B260457-001 Prep Batch #...: 1059029

Copper

|      |     |     |      |    |      |  |             |                |          |
|------|-----|-----|------|----|------|--|-------------|----------------|----------|
| 12.0 | 250 | 240 | ug/L | 92 |      |  | MCAWW 200.7 | 02/28-03/01/11 | MEW7V1CA |
| 12.0 | 250 | 240 | ug/L | 92 | 0.06 |  | MCAWW 200.7 | 02/28-03/01/11 | MEW7V1CC |

Dilution Factor: 1

Lead

|      |     |     |      |    |      |  |             |                |          |
|------|-----|-----|------|----|------|--|-------------|----------------|----------|
| 14.0 | 500 | 500 | ug/L | 97 |      |  | MCAWW 200.7 | 02/28-03/01/11 | MEW7V1C7 |
| 14.0 | 500 | 500 | ug/L | 97 | 0.16 |  | MCAWW 200.7 | 02/28-03/01/11 | MEW7V1C8 |

Dilution Factor: 1

Zinc

|     |     |     |      |     |      |  |             |                |          |
|-----|-----|-----|------|-----|------|--|-------------|----------------|----------|
| 160 | 500 | 670 | ug/L | 102 |      |  | MCAWW 200.7 | 02/28-03/01/11 | MEW7V1CH |
| 160 | 500 | 670 | ug/L | 103 | 0.48 |  | MCAWW 200.7 | 02/28-03/01/11 | MEW7V1CJ |

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 #...: A1B260456

Matrix.....: WATER

Date Sampled...: 02/24/11 08:45 Date Received...: 02/26/11

| PARAMETER                                                      | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS | RPD<br>LIMITS | METHOD      | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|----------------------------------------------------------------|---------------------|--------------------|---------------|-------------|-------------------------------|-----------------|
| <b>MS Lot-Sample #: A1B260457-001 Prep Batch #...: 1059029</b> |                     |                    |               |             |                               |                 |
| Copper                                                         | 92                  | (75 - 125)         |               | MCAWW 200.7 | 02/28-03/01/11                | MEW7V1CA        |
|                                                                | 92                  | (75 - 125)         | 0.06 (0-20)   | MCAWW 200.7 | 02/28-03/01/11                | MEW7V1CC        |
|                                                                |                     | Dilution Factor: 1 |               |             |                               |                 |
| Lead                                                           | 97                  | (75 - 125)         |               | MCAWW 200.7 | 02/28-03/01/11                | MEW7V1C7        |
|                                                                | 97                  | (75 - 125)         | 0.16 (0-20)   | MCAWW 200.7 | 02/28-03/01/11                | MEW7V1C8        |
|                                                                |                     | Dilution Factor: 1 |               |             |                               |                 |
| Zinc                                                           | 102                 | (75 - 125)         |               | MCAWW 200.7 | 02/28-03/01/11                | MEW7V1CH        |
|                                                                | 103                 | (75 - 125)         | 0.48 (0-20)   | MCAWW 200.7 | 02/28-03/01/11                | MEW7V1CJ        |
|                                                                |                     | Dilution Factor: 1 |               |             |                               |                 |

### NOTE(S):

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

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

PAGE 1 OF 1

ID # N<sup>o</sup> 6846

SSOW Ref. Code:  
58502-003

| Required Client Information: |                               |
|------------------------------|-------------------------------|
| Company: CRA, Inc.           | Report To: Paul Wiseman       |
| Address: 14496 Sheldon Rd.   | Copy To: Mike Tenkha          |
| Suite 200                    | Invoice To:                   |
| Plymouth, MI 48170           | P.O.:                         |
| Phone: 734-453-5123          | Project Name: MLC Modular     |
| Fax: 734-453-5201            | Project Number: 58502-Top 001 |
| Email:                       |                               |

|                      |                  |
|----------------------|------------------|
| Laboratory:          | Test America     |
| Laboratory Location: | North Canton, OH |
| Laboratory Contact:  | Danise Heckler   |
| Requested Due Date:  | TAT: RVSH/STN    |
| QA/QC Requirements:  |                  |

|              |                                                                                                                                              |                |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| Preservative | Valid Matrix Codes:<br>WG Groundwater<br>WB Borehole Water<br>WS Surface Water<br>SO Soil<br>SE Sediment<br>See Back for<br>Additional Codes | Matrix Code    |
|              |                                                                                                                                              | Date Collected |
|              |                                                                                                                                              | Time Collected |
|              | # Containers                                                                                                                                 |                |
|              | Unpreserved                                                                                                                                  |                |
|              | HCl                                                                                                                                          |                |
|              | H2SO4                                                                                                                                        |                |
|              | HNO3                                                                                                                                         |                |
|              | NaOH                                                                                                                                         |                |
|              | Other:                                                                                                                                       |                |
|              | T. Copper                                                                                                                                    |                |
|              | T. Lead                                                                                                                                      |                |
|              | T. Zinc                                                                                                                                      |                |
|              | T. Phenols                                                                                                                                   |                |
|              | TTOs                                                                                                                                         |                |

|                |
|----------------|
| Remarks/Lab ID |
|----------------|

**Sample Identification:**

[illegible][illegible]

| SHIPMENT METHOD  | NO. OF COOLERS | RELINQUISHED BY / AFFILIATION | DATE    | TIME | RECEIVED BY / AFFILIATION | DATE    | TIME    |
|------------------|----------------|-------------------------------|---------|------|---------------------------|---------|---------|
| FIDE X           | 1              | SEA. Navy - LCRA              | 2/27/11 | 1600 | Gandy TAPC                | 2/28/11 | 10:00am |
| AIRBILL NO.      | 8750 2293 4972 |                               |         |      |                           |         |         |
| Sample Condition |                |                               |         |      |                           |         |         |

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

Additional Comments: RUSH T. Zinc, Cu ~~★~~  
24h. IAT + Pb

Sampler Name: Steven S. Horvath  
 Sampler Signature: [Signature] Date: 2/24/11

**Distribution:**

**WHITE - Fully Executed Copy**

YELLOW - Receiving Laboratory Copy

**PINK - Shipper**

GOLDENROD - Sampler Copy

25-1014 (2)

RFV 1314 (M)

**TestAmerica Cooler Receipt Form/Narrative**  
**North Canton Facility**

Lot Number: A1B26456

Client CER Project MLCA Modular By: [Signature]  
Cooler Received on 2/26/11 Opened on 2/26/11 (Signature)  
FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other ☐  
TestAmerica Cooler # 5897 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 2.6 °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<sub>3</sub>; Sulfuric Acid Lot# 110410-H<sub>2</sub>SO<sub>4</sub>; Sodium  
Hydroxide Lot# 100108-NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-  
(CH<sub>3</sub>COO)<sub>2</sub>ZN/NaOH What time was preservative added to sample(s)? \_\_\_\_\_

| Client ID | pH   | Date    | Initials |
|-----------|------|---------|----------|
| MO.01     | 2.22 | 2/26/11 | Am       |
|           |      |         |          |
|           |      |         |          |
|           |      |         |          |
|           |      |         |          |
|           |      |         |          |
|           |      |         |          |
|           |      |         |          |
|           |      |         |          |

# TestAmerica Cooler Receipt Form/Narrative

## North Canton Facility

[illegible]

Discrepancies Cont'd

[illegible]

***END OF REPORT***

## **ANALYTICAL REPORT**

**PROJECT NO. 58502-T06-01**

**MLC NODULAR**

**Lot #: A1B280508**

**Paul Wiseman**

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

**TESTAMERICA LABORATORIES, INC.**



---

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

Approved for release.  
Denise D. Heckler  
Project Manager  
3/8/2011 3:41 PM

**March 08, 2011**

**TestAmerica Laboratories, Inc.**

TestAmerica North Canton 4101 Shuffel Street NW, North Canton, OH 44720

Tel (330)497-9396 Fax (330)497-0772 [www.testamericainc.com](http://www.testamericainc.com)





# CASE NARRATIVE

A1B280508

The following report contains the analytical results for one water sample submitted to TestAmerica North Canton by Conestoga-Rovers & Associates, Inc. from the MLC NODULAR Site, project number 58502-TO6-01. The sample was received February 26, 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 2.6°C.

#### **GC/MS VOLATILES**

The matrix spike(s) for batch(es) 1063148 had recoveries outside acceptance limits. However, since the associated laboratory control sample(s) were in control, no corrective action was necessary.

#### **GC/MS SEMIVOLATILES**

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

#### **GENERAL CHEMISTRY**

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

## 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 reparation 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**

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| <b>Method 8270 Water and Solid:</b> |                                      |
| 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                      |
| <b>Method 8151 Solid</b>            |                                      |
| Dinoseb                             |                                      |
| <b>Method 8260 Water and Solid</b>  |                                      |
| 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.)

## QUALITY CONTROL ELEMENTS NARRATIVE (continued)

| <b><u>Volatile (GC or GC/MS)</u></b>       | <b><u>Semivolatile (GC/MS)</u></b> | <b><u>Metals ICP-MS</u></b>                                                                              | <b><u>Metals ICP Trace</u></b> |
|--------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------|
| Methylene Chloride,<br>Acetone, 2-Butanone | Phthalate Esters                   | Copper, Iron, Zinc,<br>Lead, Calcium,<br>Magnesium, Potassium,<br>Sodium, Barium,<br>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 reparation 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

A1B280508

| PARAMETER                | RESULT | REPORTING<br>LIMIT | UNITS | ANALYTICAL<br>METHOD |
|--------------------------|--------|--------------------|-------|----------------------|
| NO DETECTABLE PARAMETERS |        |                    |       |                      |

# ANALYTICAL METHODS SUMMARY

A1B280508

| PARAMETER               | ANALYTICAL<br>METHOD |
|-------------------------|----------------------|
| Base/Neutrals and Acids | CFR136A 625          |
| 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

A1B280508

| WO #  | SAMPLE# | CLIENT SAMPLE ID         | SAMPLED<br>DATE | SAMP<br>TIME |
|-------|---------|--------------------------|-----------------|--------------|
| ME025 | 001     | W-58502-022411-SSH-M0.01 | 02/24/11        | 12:43        |

### 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 & Associates, Inc.

Client Sample ID: W-58502-022411-SSH-M0.01

GC/MS Volatiles

Lot-Sample #....: A1B280508-001    Work Order #....: ME0251AC    Matrix.....: WG  
Date Sampled....: 02/24/11 12:43    Date Received...: 02/26/11  
Prep Date.....: 03/02/11    Analysis Date...: 03/02/11  
Prep Batch #....: 1063148  
Dilution Factor: 1    Method.....: CFR136A 624

| PARAMETER          | RESULT | REPORTING |       |      |
|--------------------|--------|-----------|-------|------|
|                    |        | LIMIT     | UNITS | MDL  |
| Benzene            | ND     | 1.0       | ug/L  | 0.13 |
| Chloroform         | ND     | 1.0       | ug/L  | 0.16 |
| 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 |

| SURROGATE             | PERCENT<br>RECOVERY | RECOVERY   |  |
|-----------------------|---------------------|------------|--|
|                       |                     | LIMITS     |  |
| 1,2-Dichloroethane-d4 | 100                 | (80 - 125) |  |
| Toluene-d8            | 104                 | (84 - 110) |  |
| Bromofluorobenzene    | 93                  | (81 - 112) |  |



**Conestoga-Rovers & Associates, Inc.**

**Client Sample ID: W-58502-022411-SSH-M0.01**

**GC/MS Semivolatiles**

**Lot-Sample #...** A1B280508-001    **Work Order #...** ME0251AD    **Matrix.....** WG  
**Date Sampled...** 02/24/11 12:43    **Date Received...** 02/26/11  
**Prep Date.....** 03/02/11    **Analysis Date...** 03/03/11  
**Prep Batch #...** 1061221  
**Dilution Factor:** 1    **Method.....** CFR136A 625

|                                |                             | REPORTING     |              |            |
|--------------------------------|-----------------------------|---------------|--------------|------------|
| <u>PARAMETER</u>               | <u>RESULT</u>               | <u>LIMIT</u>  | <u>UNITS</u> | <u>MDL</u> |
| Acenaphthene                   | ND                          | 5.0           | ug/L         | 0.10       |
| Benzo(a)pyrene                 | ND                          | 5.0           | ug/L         | 0.10       |
| bis(2-Ethylhexyl)<br>phthalate | ND                          | 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-<br>phenol     | ND                          | 4.0           | ug/L         | 0.80       |
| Butyl benzyl phthalate         | ND                          | 5.0           | ug/L         | 0.80       |
|                                |                             | RECOVERY      |              |            |
| <u>SURROGATE</u>               | <u>PERCENT<br/>RECOVERY</u> | <u>LIMITS</u> |              |            |
| 2-Fluorophenol                 | 39                          | (10 - 135)    |              |            |
| Phenol-d5                      | 23                          | (10 - 132)    |              |            |
| 2,4,6-Tribromophenol           | 86                          | (10 - 142)    |              |            |
| 2-Fluorobiphenyl               | 70                          | (38 - 110)    |              |            |
| Terphenyl-d14                  | 86                          | (24 - 135)    |              |            |
| Nitrobenzene-d5                | 67                          | (44 - 110)    |              |            |

Conestoga-Rovers & Associates, Inc.

Client Sample ID: W-58502-022411-SSH-M0.01

General Chemistry

Lot-Sample #...: A1B280508-001    Work Order #...: ME025    Matrix.....: WG  
Date Sampled...: 02/24/11 12:43    Date Received...: 02/26/11

| <u>PARAMETER</u> | <u>RESULT</u> | <u>RL</u>          | <u>UNITS</u> | <u>METHOD</u>   | <u>PREPARATION-<br/>ANALYSIS DATE</u> | <u>PREP<br/>BATCH #</u> |
|------------------|---------------|--------------------|--------------|-----------------|---------------------------------------|-------------------------|
| Total Phenols    | ND            | 0.040              | mg/L         | MCAWW 420.1     | 03/03/11                              | 1062303                 |
|                  |               | Dilution Factor: 1 |              | MDL.....: 0.007 |                                       |                         |

# ***QUALITY CONTROL SECTION***

# METHOD BLANK REPORT

## GC/MS Volatiles

Client Lot #...: A1B280508  
MB Lot-Sample #: A1C040000-148

Work Order #...: ME69N1AA

Matrix.....: WATER

Analysis Date...: 03/01/11

Prep Date.....: 03/01/11

Prep Batch #...: 1063148

Dilution Factor: 1

| PARAMETER                 | RESULT     | REPORTING<br>LIMIT | UNITS       | METHOD             |
|---------------------------|------------|--------------------|-------------|--------------------|
| Chloroform                | ND         | 1.0                | ug/L        | CFR136A 624        |
| <b>Methylene chloride</b> | <b>3.2</b> | <b>1.0</b>         | <b>ug/L</b> | <b>CFR136A 624</b> |
| Tetrachloroethene         | ND         | 1.0                | ug/L        | CFR136A 624        |
| Trichloroethene           | ND         | 1.0                | ug/L        | CFR136A 624        |
| Benzene                   | ND         | 1.0                | ug/L        | CFR136A 624        |

| SURROGATE             | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |
|-----------------------|---------------------|--------------------|
| 1,2-Dichloroethane-d4 | 102                 | (80 - 125)         |
| Toluene-d8            | 103                 | (84 - 110)         |
| Bromofluorobenzene    | 91                  | (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 #...**: A1B280508      **Work Order #...**: ME69N1AC      **Matrix.....**: WATER  
**LCS Lot-Sample#**: A1C040000-148  
**Prep Date.....**: 03/01/11      **Analysis Date...**: 03/01/11  
**Prep Batch #...**: 1063148  
**Dilution Factor**: 1

| <u>PARAMETER</u>          | <u>SPIKE<br/>AMOUNT</u> | <u>MEASURED<br/>AMOUNT</u> | <u>UNITS</u> | <u>PERCENT<br/>RECOVERY</u> | <u>METHOD</u>      |
|---------------------------|-------------------------|----------------------------|--------------|-----------------------------|--------------------|
| <b>Benzene</b>            | <b>20</b>               | <b>21</b>                  | <b>ug/L</b>  | <b>105</b>                  | <b>CFR136A 624</b> |
| <b>Chloroform</b>         | <b>20</b>               | <b>21</b>                  | <b>ug/L</b>  | <b>106</b>                  | <b>CFR136A 624</b> |
| <b>Methylene chloride</b> | <b>20</b>               | <b>24</b>                  | <b>ug/L</b>  | <b>121</b>                  | <b>CFR136A 624</b> |
| <b>Tetrachloroethene</b>  | <b>20</b>               | <b>24</b>                  | <b>ug/L</b>  | <b>122</b>                  | <b>CFR136A 624</b> |
| <b>Trichloroethene</b>    | <b>20</b>               | <b>22</b>                  | <b>ug/L</b>  | <b>108</b>                  | <b>CFR136A 624</b> |

| <u>SURROGATE</u>      | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> |
|-----------------------|-----------------------------|----------------------------|
| 1,2-Dichloroethane-d4 | 103                         | (80 - 125)                 |
| Toluene-d8            | 105                         | (84 - 110)                 |
| Bromofluorobenzene    | 98                          | (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 #...: A1B280508      Work Order #...: ME69N1AC      Matrix.....: WATER  
 LCS Lot-Sample#: A1C040000-148  
 Prep Date.....: 03/01/11      Analysis Date...: 03/01/11  
 Prep Batch #...: 1063148  
 Dilution Factor: 1

| <u>PARAMETER</u>   | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> | <u>METHOD</u> |
|--------------------|-----------------------------|----------------------------|---------------|
| Benzene            | 105                         | (37 - 151)                 | CFR136A 624   |
| Chloroform         | 106                         | (51 - 138)                 | CFR136A 624   |
| Methylene chloride | 121                         | (10 - 221)                 | CFR136A 624   |
| Tetrachloroethene  | 122                         | (64 - 148)                 | CFR136A 624   |
| Trichloroethene    | 108                         | (71 - 157)                 | CFR136A 624   |

| <u>SURROGATE</u>      | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> |
|-----------------------|-----------------------------|----------------------------|
| 1,2-Dichloroethane-d4 | 103                         | (80 - 125)                 |
| Toluene-d8            | 105                         | (84 - 110)                 |
| Bromofluorobenzene    | 98                          | (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 #...**: A1B280508      **Work Order #...**: ME0E91AC      **Matrix.....**: WATER  
**MS Lot-Sample #**: A1B280463-001  
**Date Sampled...**: 02/23/11 09:30      **Date Received...**: 02/26/11  
**Prep Date.....**: 03/02/11      **Analysis Date...**: 03/02/11  
**Prep Batch #...**: 1063148  
**Dilution Factor**: 1

| PARAMETER          | SAMPLE<br>AMOUNT | SPIKE<br>AMT | MEASRD<br>AMOUNT | UNITS | PERCENT<br>RECOVERY | METHOD      |
|--------------------|------------------|--------------|------------------|-------|---------------------|-------------|
| Benzene            | ND               | 100          | 110              | ug/L  | 109                 | CFR136A 624 |
| Chloroform         | ND               | 100          | 110              | ug/L  | 108                 | CFR136A 624 |
| Methylene chloride | 4.2              | 100          | 110              | ug/L  | 109                 | CFR136A 624 |
| Tetrachloroethene  | ND               | 100          | 130 a            | ug/L  | 126                 | CFR136A 624 |
| Trichloroethene    | ND               | 100          | 110              | ug/L  | 108                 | CFR136A 624 |

| SURROGATE             | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |
|-----------------------|---------------------|--------------------|
| 1,2-Dichloroethane-d4 | 104                 | (80 - 125)         |
| Toluene-d8            | 106                 | (84 - 110)         |
| Bromofluorobenzene    | 100                 | (81 - 112)         |

### NOTE(S):

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

Bold print denotes control parameters

a. Spiked analyte recovery is outside stated control limits.

# MATRIX SPIKE SAMPLE EVALUATION REPORT

## GC/MS Volatiles

**Lot-Sample #...**: A1B280508      **Work Order #...**: ME0E91AC      **Matrix.....**: WATER  
**MS Lot-Sample #**: A1B280463-001  
**Date Sampled...**: 02/23/11 09:30      **Date Received...**: 02/26/11  
**Prep Date.....**: 03/02/11      **Analysis Date...**: 03/02/11  
**Prep Batch #...**: 1063148  
**Dilution Factor**: 1

| <u>PARAMETER</u>          | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> | <u>METHOD</u>      |
|---------------------------|-----------------------------|----------------------------|--------------------|
| <b>Benzene</b>            | <b>109</b>                  | <b>(90 - 114)</b>          | <b>CFR136A 624</b> |
| <b>Chloroform</b>         | <b>108</b>                  | <b>(90 - 118)</b>          | <b>CFR136A 624</b> |
| <b>Methylene chloride</b> | <b>109</b>                  | <b>(78 - 131)</b>          | <b>CFR136A 624</b> |
| <b>Tetrachloroethene</b>  | <b>126 a</b>                | <b>(81 - 112)</b>          | <b>CFR136A 624</b> |
| <b>Trichloroethene</b>    | <b>108</b>                  | <b>(85 - 114)</b>          | <b>CFR136A 624</b> |

| <u>SURROGATE</u>      | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> |
|-----------------------|-----------------------------|----------------------------|
| 1,2-Dichloroethane-d4 | 104                         | (80 - 125)                 |
| Toluene-d8            | 106                         | (84 - 110)                 |
| Bromofluorobenzene    | 100                         | (81 - 112)                 |

### NOTE(S):

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

Bold print denotes control parameters

a. Spiked analyte recovery is outside stated control limits.



# METHOD BLANK REPORT

## GC/MS Semivolatiles

Client Lot #...: A1B280508  
MB Lot-Sample #: A1C020000-221

Work Order #...: ME3LN1AA

Matrix.....: WATER

Analysis Date...: 03/03/11

Prep Date.....: 03/02/11

Prep Batch #...: 1061221

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)<br>phthalate | ND     | 5.0       | ug/L  | CFR136A 625 |
| Butyl benzyl phthalate         | ND     | 5.0       | ug/L  | CFR136A 625 |
| 4-Chloro-3-methylphenol        | ND     | 5.0       | ug/L  | CFR136A 625 |
| Di-n-butyl phthalate           | ND     | 5.0       | ug/L  | CFR136A 625 |
| Diethyl 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 |
| 2,4,6-Trichloro-<br>phenol     | ND     | 4.0       | ug/L  | CFR136A 625 |

| SURROGATE            | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |
|----------------------|---------------------|--------------------|
| 2-Fluorophenol       | 58                  | (10 - 135)         |
| Phenol-d5            | 41                  | (10 - 132)         |
| 2,4,6-Tribromophenol | 65                  | (10 - 142)         |
| 2-Fluorobiphenyl     | 65                  | (38 - 110)         |
| Terphenyl-d14        | 83                  | (24 - 135)         |
| Nitrobenzene-d5      | 66                  | (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 #...: A1B280508      Work Order #...: ME3LN1AC      Matrix.....: WATER  
 LCS Lot-Sample#: A1C020000-221  
 Prep Date.....: 03/02/11      Analysis Date...: 03/03/11  
 Prep Batch #...: 1061221  
 Dilution Factor: 1

| PARAMETER                      | SPIKE<br>AMOUNT | MEASURED<br>AMOUNT  | UNITS              | PERCENT<br>RECOVERY | METHOD      |
|--------------------------------|-----------------|---------------------|--------------------|---------------------|-------------|
| Benzo(a)pyrene                 | 20              | 15                  | ug/L               | 73                  | CFR136A 625 |
| Butyl benzyl phthalate         | 20              | 16                  | ug/L               | 78                  | CFR136A 625 |
| bis(2-Ethylhexyl)<br>phthalate | 20              | 16                  | ug/L               | 79                  | CFR136A 625 |
| Di-n-butyl phthalate           | 20              | 16                  | ug/L               | 81                  | CFR136A 625 |
| Diethyl phthalate              | 20              | 16                  | ug/L               | 81                  | CFR136A 625 |
| Fluoranthene                   | 20              | 16                  | ug/L               | 81                  | CFR136A 625 |
| Pyrene                         | 20              | 16                  | ug/L               | 78                  | CFR136A 625 |
| 4-Chloro-3-methylphenol        | 20              | 16                  | ug/L               | 81                  | CFR136A 625 |
| 2,4-Dimethylphenol             | 20              | 15                  | ug/L               | 75                  | CFR136A 625 |
| Phenol                         | 20              | 7.9                 | ug/L               | 39                  | CFR136A 625 |
| 2,4,6-Trichloro-<br>phenol     | 20              | 16                  | ug/L               | 79                  | CFR136A 625 |
| Acenaphthene                   | 20              | 15                  | ug/L               | 74                  | CFR136A 625 |
| SURROGATE                      |                 | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |                     |             |
| 2-Fluorophenol                 |                 | 55                  | (10 - 135)         |                     |             |
| Phenol-d5                      |                 | 37                  | (10 - 132)         |                     |             |
| 2,4,6-Tribromophenol           |                 | 82                  | (10 - 142)         |                     |             |
| 2-Fluorobiphenyl               |                 | 75                  | (38 - 110)         |                     |             |
| Terphenyl-d14                  |                 | 92                  | (24 - 135)         |                     |             |
| Nitrobenzene-d5                |                 | 79                  | (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 #...: A1B280508      Work Order #...: ME3LN1AC      Matrix.....: WATER  
 LCS Lot-Sample#: A1C020000-221  
 Prep Date.....: 03/02/11      Analysis Date...: 03/03/11  
 Prep Batch #...: 1061221  
 Dilution Factor: 1

| PARAMETER                      | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS | METHOD      |
|--------------------------------|---------------------|--------------------|-------------|
| Benzo(a)pyrene                 | 73                  | (51 - 111)         | CFR136A 625 |
| Butyl benzyl phthalate         | 78                  | (44 - 129)         | CFR136A 625 |
| bis(2-Ethylhexyl)<br>phthalate | 79                  | (50 - 134)         | CFR136A 625 |
| Di-n-butyl phthalate           | 81                  | (49 - 110)         | CFR136A 625 |
| Diethyl phthalate              | 81                  | (10 - 117)         | CFR136A 625 |
| Fluoranthene                   | 81                  | (55 - 112)         | CFR136A 625 |
| Pyrene                         | 78                  | (48 - 122)         | CFR136A 625 |
| 4-Chloro-3-methylphenol        | 81                  | (58 - 110)         | CFR136A 625 |
| 2,4-Dimethylphenol             | 75                  | (10 - 115)         | CFR136A 625 |
| Phenol                         | 39                  | (17 - 130)         | CFR136A 625 |
| 2,4,6-Trichloro-<br>phenol     | 79                  | (54 - 110)         | CFR136A 625 |
| Acenaphthene                   | 74                  | (54 - 110)         | CFR136A 625 |
|                                |                     |                    |             |
| SURROGATE                      | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |             |
| 2-Fluorophenol                 | 55                  | (10 - 135)         |             |
| Phenol-d5                      | 37                  | (10 - 132)         |             |
| 2,4,6-Tribromophenol           | 82                  | (10 - 142)         |             |
| 2-Fluorobiphenyl               | 75                  | (38 - 110)         |             |
| Terphenyl-d14                  | 92                  | (24 - 135)         |             |
| Nitrobenzene-d5                | 79                  | (44 - 110)         |             |

### 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 Semivolatiles

**Lot-Sample #...**: A1B280508      **Work Order #...**: ME0251AF      **Matrix.....**: WG  
**MS Lot-Sample #:** A1B280508-001  
**Date Sampled...**: 02/24/11 12:43      **Date Received...**: 02/26/11  
**Prep Date.....**: 03/02/11      **Analysis Date...**: 03/03/11  
**Prep Batch #...**: 1061221  
**Dilution Factor:** 1

| PARAMETER                   | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCENT RECOVERY | METHOD      |
|-----------------------------|---------------|-----------|---------------|-------|------------------|-------------|
| Acenaphthene                | ND            | 19        | 13            | ug/L  | 69               | CFR136A 625 |
| Benzo(a)pyrene              | ND            | 19        | 14            | ug/L  | 72               | CFR136A 625 |
| Butyl benzyl phthalate      | ND            | 19        | 15            | ug/L  | 77               | CFR136A 625 |
| bis(2-Ethylhexyl) phthalate | ND            | 19        | 15            | ug/L  | 76               | CFR136A 625 |
| Di-n-butyl phthalate        | ND            | 19        | 16            | ug/L  | 83               | CFR136A 625 |
| Diethyl phthalate           | ND            | 19        | 15            | ug/L  | 80               | CFR136A 625 |
| Fluoranthene                | ND            | 19        | 15            | ug/L  | 79               | CFR136A 625 |
| Pyrene                      | ND            | 19        | 14            | ug/L  | 74               | CFR136A 625 |
| 4-Chloro-3-methylphenol     | ND            | 19        | 17            | ug/L  | 89               | CFR136A 625 |
| 2,4-Dimethylphenol          | ND            | 19        | 12            | ug/L  | 64               | CFR136A 625 |
| Phenol                      | ND            | 19        | 4.2           | ug/L  | 22               | CFR136A 625 |
| 2,4,6-Trichloro-phenol      | ND            | 19        | 15            | ug/L  | 77               | CFR136A 625 |

| SURROGATE            | PERCENT RECOVERY | RECOVERY LIMITS |
|----------------------|------------------|-----------------|
| 2-Fluorophenol       | 32               | (10 - 135)      |
| Phenol-d5            | 21               | (10 - 132)      |
| 2,4,6-Tribromophenol | 88               | (10 - 142)      |
| 2-Fluorobiphenyl     | 66               | (38 - 110)      |
| Terphenyl-d14        | 84               | (24 - 135)      |
| Nitrobenzene-d5      | 63               | (44 - 110)      |

### 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 Semivolatiles

**Lot-Sample #...**: A1B280508      **Work Order #...**: ME0251AF      **Matrix.....**: WG  
**MS Lot-Sample #:** A1B280508-001  
**Date Sampled...**: 02/24/11 12:43      **Date Received...**: 02/26/11  
**Prep Date.....**: 03/02/11      **Analysis Date...**: 03/03/11  
**Prep Batch #...**: 1061221  
**Dilution Factor:** 1

| <u>PARAMETER</u>               | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> | <u>METHOD</u> |
|--------------------------------|-----------------------------|----------------------------|---------------|
| Acenaphthene                   | 69                          | (35 - 122)                 | CFR136A 625   |
| Benzo(a)pyrene                 | 72                          | (15 - 128)                 | CFR136A 625   |
| Butyl benzyl phthalate         | 77                          | (18 - 132)                 | CFR136A 625   |
| bis(2-Ethylhexyl)<br>phthalate | 76                          | (10 - 169)                 | CFR136A 625   |
| Di-n-butyl phthalate           | 83                          | (12 - 130)                 | CFR136A 625   |
| Diethyl phthalate              | 80                          | (10 - 125)                 | CFR136A 625   |
| Fluoranthene                   | 79                          | (24 - 132)                 | CFR136A 625   |
| Pyrene                         | 74                          | (10 - 150)                 | CFR136A 625   |
| 4-Chloro-3-methylphenol        | 89                          | (40 - 118)                 | CFR136A 625   |
| 2,4-Dimethylphenol             | 64                          | (10 - 161)                 | CFR136A 625   |
| Phenol                         | 22                          | (10 - 150)                 | CFR136A 625   |
| 2,4,6-Trichloro-<br>phenol     | 77                          | (20 - 137)                 | CFR136A 625   |

| <u>SURROGATE</u>     | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> |
|----------------------|-----------------------------|----------------------------|
| 2-Fluorophenol       | 32                          | (10 - 135)                 |
| Phenol-d5            | 21                          | (10 - 132)                 |
| 2,4,6-Tribromophenol | 88                          | (10 - 142)                 |
| 2-Fluorobiphenyl     | 66                          | (38 - 110)                 |
| Terphenyl-d14        | 84                          | (24 - 135)                 |
| Nitrobenzene-d5      | 63                          | (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

## General Chemistry

Client Lot #...: A1B280508

Matrix.....: WATER

| PARAMETER     | RESULT | REPORTING<br>LIMIT              | UNITS | METHOD                          | PREPARATION-<br>ANALYSIS DATE | PREP<br>BATCH # |
|---------------|--------|---------------------------------|-------|---------------------------------|-------------------------------|-----------------|
| Total Phenols | ND     | Work Order #: ME58Q1AA<br>0.040 | mg/L  | MB Lot-Sample #:<br>MCAWW 420.1 | A1C030000-303<br>03/03/11     | 1062303         |
|               |        | 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 #...: A1B280508

Matrix.....: WATER

| <u>PARAMETER</u> | <u>SPIKE</u><br><u>AMOUNT</u> | <u>MEASURED</u><br><u>AMOUNT</u> | <u>UNITS</u> | <u>PERCNT</u><br><u>RECVRY</u>                        | <u>METHOD</u> | <u>PREPARATION-</u><br><u>ANALYSIS DATE</u> | <u>PREP</u><br><u>BATCH #</u> |
|------------------|-------------------------------|----------------------------------|--------------|-------------------------------------------------------|---------------|---------------------------------------------|-------------------------------|
| Total Phenols    | 0.80                          | 0.77                             | mg/L         | 96                                                    | MCAWW 420.1   | 03/03/11                                    | 1062303                       |
|                  |                               |                                  |              | Work Order #: ME58Q1AC LCS Lot-Sample#: A1C030000-303 |               |                                             |                               |
|                  |                               |                                  |              | 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 #...: A1B280508

Matrix.....: WATER

| <u>PARAMETER</u> | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u>           | <u>METHOD</u>                                 | <u>PREPARATION-<br/>ANALYSIS DATE</u> | <u>PREP<br/>BATCH #</u> |
|------------------|-----------------------------|--------------------------------------|-----------------------------------------------|---------------------------------------|-------------------------|
| Total Phenols    | 96                          | Work Order #: ME58Q1AC<br>(54 - 137) | LCS Lot-Sample#: A1C030000-303<br>MCAWW 420.1 | 03/03/11                              | 1062303                 |
|                  |                             | 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 #...: A1B280508

Matrix.....: WATER

Date Sampled...: 02/16/11 08:40 Date Received...: 02/17/11

| PARAMETER     | AMOUNT | SAMPLE SPIKE<br>AMT | MEASRD<br>AMOUNT              | UNITS | PERCNT<br>RECVRY | RPD           | METHOD        | PREPARATION-<br>ANALYSIS DATE | PREP<br>BATCH # |
|---------------|--------|---------------------|-------------------------------|-------|------------------|---------------|---------------|-------------------------------|-----------------|
| Total Phenols |        |                     | WO#: MEJJC1AR-MS/MEJJC1AT-MSD |       | MS               | Lot-Sample #: | A1B170465-001 |                               |                 |
| ND            | 0.10   | 0.088               | mg/L                          | 88    |                  | MCAWW         | 420.1         | 03/03/11                      | 1062303         |
| ND            | 0.10   | 0.088               | mg/L                          | 88    | 0.0              | MCAWW         | 420.1         | 03/03/11                      | 1062303         |

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 #...: A1B280508

Matrix.....: WATER

Date Sampled...: 02/16/11 08:40 Date Received...: 02/17/11

| PARAMETER     | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS | RPD<br>LIMITS                 | METHOD      | PREPARATION-<br>ANALYSIS DATE | PREP<br>BATCH # |
|---------------|---------------------|--------------------|-------------------------------|-------------|-------------------------------|-----------------|
| Total Phenols |                     |                    | WO#: MEJJC1AR-MS/MEJJC1AT-MSD | MS          | Lot-Sample #: A1B170465-001   |                 |
|               | 88                  | (10 - 155)         |                               | MCAWW 420.1 | 03/03/11                      | 1062303         |
|               | 88                  | (10 - 155)         | 0.0 (0-41)                    | MCAWW 420.1 | 03/03/11                      | 1062303         |
|               |                     |                    | 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.

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

**Required Client Information:**

|                            |                             |
|----------------------------|-----------------------------|
| Company: CRA, Inc.         | Report To: Paul W. Sisman   |
| Address: 14496 Sheldon Rd. | Copy To: Mike Teraha        |
| Suite 200                  | Invoice To:                 |
| Plymouth, MI 48170         | P.O.:                       |
| Phone: 734-453-5123        | Project Name: PLC Modular   |
| Fax: 734-453-5201          | Project Number: 58502-106-0 |
| Email:                     |                             |

|                      |                  |
|----------------------|------------------|
| Laboratory:          | TestAmerica      |
| Laboratory Location: | North Canton, OH |
| Laboratory Contact:  | Danise Heckler   |
| Requested Due Date:  | TAT: Rush/STD    |
| QA/QC Requirements:  |                  |

ID# N<sup>o</sup> D 6846

## Analysis and Method

**Sample Identification:**

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

|                                |
|--------------------------------|
| Matrix Code                    |
| Date Collected                 |
| Time Collected                 |
| # Containers                   |
| Unpreserved                    |
| HCl                            |
| H <sub>2</sub> SO <sub>4</sub> |
| HNO <sub>3</sub>               |
| NaOH                           |
| Other:                         |

- T. Copper
- T. Lead
- T. Zinc
- T. Phenols
- TTOs

Remarks/Lab ID

[illegible]

| SHIPMENT METHOD            | NO. OF COOLERS | RELINQUISHED BY / AFFILIATION | DATE    | TIME | RECEIVED BY / AFFILIATION | DATE    | TIME    |
|----------------------------|----------------|-------------------------------|---------|------|---------------------------|---------|---------|
| FedEx                      | 1              | <del>ATA</del> Mary / CCA     | 2/24/11 | 1600 | Spencer TAPC              | 2/24/11 | 10:00am |
| AIRBILL NO. 8250 2233 4972 |                |                               |         |      |                           |         |         |

| Sample Condition |       |
|------------------|-------|
| Temp in C        |       |
| Received on Ice  | Y / N |
| Sealed Cooler*   | Y / N |
| Samples Intact   | Y / N |

Additional Comments:

RUSH T. Zinc, Cu ✱

24hr IAT + Pb

| Sampler Name:      |                      |
|--------------------|----------------------|
| Sampler Signature: | Spencer S. Herremans |
| Date:              | 2/24/11              |

**TestAmerica Cooler Receipt Form/Narrative**  
**North Canton Facility**

Lot Number: A13260454  
A11B280508

Client CRF Project MLC Modular By: [Signature]  
Cooler Received on 2/26/11 Opened on 2/26/11 (Signature)

FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other ☐  
TestAmerica Cooler # 3897 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 2.6 °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<sub>3</sub>; Sulfuric Acid Lot# 110410-H<sub>2</sub>SO<sub>4</sub>; Sodium Hydroxide Lot# 100103-NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-(CH<sub>3</sub>COO)<sub>2</sub>ZN/NaOH. What time was preservative added to sample(s)? \_\_\_\_\_

| Client ID     | pH          | Date           | Initials  |
|---------------|-------------|----------------|-----------|
| <u>MR. D1</u> | <u>2.22</u> | <u>2/26/11</u> | <u>AM</u> |
|               |             |                |           |
|               |             |                |           |
|               |             |                |           |
|               |             |                |           |
|               |             |                |           |
|               |             |                |           |
|               |             |                |           |

[illegible]

***END OF REPORT***

## **ANALYTICAL REPORT**

**PROJECT NO. 58502-T06**

**MLC NODULAR FACILITY**

**Lot #: A1C180539**

**Paul Wiseman**

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

**TESTAMERICA LABORATORIES, INC.**



---

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

Approved for release.  
Denise D. Heckler  
Project Manager  
3/25/2011 4:43 PM

**March 25, 2011**

**TestAmerica Laboratories, Inc.**

TestAmerica North Canton 4101 Shuffel Street NW, North Canton, OH 44720

Tel (330)497-9396 Fax (330)497-0772 [www.testamericainc.com](http://www.testamericainc.com)



# **CASE NARRATIVE**

A1C180539

The following report contains the analytical results for one water sample submitted to TestAmerica North Canton by Conestoga-Rovers & Associates, Inc. from the MLC NODULAR FACILITY Site, project number 58502-T06. The sample was received March 18, 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 17.0°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 reparation 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**

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| <b>Method 8270 Water and Solid:</b> |                                      |
| 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                      |
| <b>Method 8151 Solid</b>            |                                      |
| Dinoseb                             |                                      |
| <b>Method 8260 Water and Solid</b>  |                                      |
| 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.)

## QUALITY CONTROL ELEMENTS NARRATIVE (continued)

| <b><u>Volatile (GC or GC/MS)</u></b>       | <b><u>Semivolatile (GC/MS)</u></b> | <b><u>Metals ICP-MS</u></b>                                                                              | <b><u>Metals ICP Trace</u></b> |
|--------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------|
| Methylene Chloride,<br>Acetone, 2-Butanone | Phthalate Esters                   | Copper, Iron, Zinc,<br>Lead, Calcium,<br>Magnesium, Potassium,<br>Sodium, Barium,<br>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 reparation 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

A1C180539

| PARAMETER                            | RESULT    | REPORTING<br>LIMIT | UNITS | ANALYTICAL<br>METHOD |
|--------------------------------------|-----------|--------------------|-------|----------------------|
| W-58502-031611-SSH-WKZ1 03/16/11 001 |           |                    |       |                      |
| Zinc                                 | 12.5 B, J | 20.0               | ug/L  | MCAWW 200.7          |

# ANALYTICAL METHODS SUMMARY

A1C180539

| <u>PARAMETER</u>                        | <u>ANALYTICAL<br/>METHOD</u> |
|-----------------------------------------|------------------------------|
| 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

A1C180539

| WO #  | SAMPLE# | CLIENT SAMPLE ID        | SAMPLED<br>DATE | SAMP<br>TIME |
|-------|---------|-------------------------|-----------------|--------------|
| MFV22 | 001     | W-58502-031611-SSH-WKZ1 | 03/16/11        |              |

### 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 & Associates, Inc.

Client Sample ID: W-58502-031611-SSH-WKZ1

TOTAL Metals

Lot-Sample #...: A1C180539-001

Matrix.....: WG

Date Sampled...: 03/16/11

Date Received...: 03/18/11

| PARAMETER                | RESULT    | REPORTING<br>LIMIT | UNITS | METHOD        | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|--------------------------|-----------|--------------------|-------|---------------|-------------------------------|-----------------|
| Prep Batch #...: 1080018 |           |                    |       |               |                               |                 |
| Zinc                     | 12.5 B, J | 20.0               | ug/L  | MCAWW 200.7   | 03/21-03/22/11                | MFV221AA        |
|                          |           | 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.

# ***QUALITY CONTROL SECTION***



# METHOD BLANK REPORT

## TOTAL Metals

Client Lot #...: A1C180539

Matrix.....: WATER

| PARAMETER | RESULT | REPORTING<br>LIMIT | UNITS | METHOD | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|-----------|--------|--------------------|-------|--------|-------------------------------|-----------------|
|-----------|--------|--------------------|-------|--------|-------------------------------|-----------------|

MB Lot-Sample #: A1C210000-018 Prep Batch #...: 1080018

|      |        |      |      |             |                |          |
|------|--------|------|------|-------------|----------------|----------|
| Zinc | 18.7 B | 20.0 | ug/L | MCAWW 200.7 | 03/21-03/22/11 | MFxdf1AF |
|------|--------|------|------|-------------|----------------|----------|

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 #...: A1C180539

Matrix.....: WATER

| PARAMETER | SPIKE<br>AMOUNT | MEASURED<br>AMOUNT | UNITS | PERCNT<br>RECVRY | METHOD | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|-----------|-----------------|--------------------|-------|------------------|--------|-------------------------------|-----------------|
|-----------|-----------------|--------------------|-------|------------------|--------|-------------------------------|-----------------|

LCS Lot-Sample#: A1C210000-018 Prep Batch #...: 1080018

|      |     |     |      |     |             |                |          |
|------|-----|-----|------|-----|-------------|----------------|----------|
| Zinc | 500 | 501 | ug/L | 100 | MCAWW 200.7 | 03/21-03/22/11 | MFxdf1AQ |
|------|-----|-----|------|-----|-------------|----------------|----------|

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 #...: A1C180539

Matrix.....: WATER

| <u>PARAMETER</u> | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> | <u>METHOD</u> | <u>PREPARATION-<br/>ANALYSIS DATE</u> | <u>WORK ORDER #</u> |
|------------------|-----------------------------|----------------------------|---------------|---------------------------------------|---------------------|
|------------------|-----------------------------|----------------------------|---------------|---------------------------------------|---------------------|

LCS Lot-Sample#: A1C210000-018 Prep Batch #...: 1080018

|      |     |            |             |                |          |
|------|-----|------------|-------------|----------------|----------|
| Zinc | 100 | (85 - 115) | MCAWW 200.7 | 03/21-03/22/11 | MFxdf1AQ |
|------|-----|------------|-------------|----------------|----------|

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 #...: A1C180539

Matrix.....: WATER

Date Sampled...: 03/17/11 09:50 Date Received...: 03/18/11

| PARAMETER | AMOUNT | SAMPLE SPIKE<br>AMT | MEASRD<br>AMOUNT | UNITS | PERCNT<br>RECVRY | RPD | METHOD | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|-----------|--------|---------------------|------------------|-------|------------------|-----|--------|-------------------------------|-----------------|
|-----------|--------|---------------------|------------------|-------|------------------|-----|--------|-------------------------------|-----------------|

MS Lot-Sample #: A1C180605-001 Prep Batch #...: 1080018

Zinc

|      |     |     |      |    |      |  |             |                |          |
|------|-----|-----|------|----|------|--|-------------|----------------|----------|
| 25.9 | 500 | 523 | ug/L | 99 |      |  | MCAWW 200.7 | 03/21-03/22/11 | MFWEG1A2 |
| 25.9 | 500 | 522 | ug/L | 99 | 0.06 |  | MCAWW 200.7 | 03/21-03/22/11 | MFWEG1A3 |

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 #...: A1C180539

Matrix.....: WATER

Date Sampled...: 03/17/11 09:50 Date Received...: 03/18/11

| <u>PARAMETER</u>                                               | <u>PERCENT</u><br><u>RECOVERY</u> | <u>RECOVERY</u><br><u>LIMITS</u> | <u>RPD</u><br><u>LIMITS</u> | <u>METHOD</u> | <u>PREPARATION-</u><br><u>ANALYSIS DATE</u> | <u>WORK</u><br><u>ORDER #</u> |
|----------------------------------------------------------------|-----------------------------------|----------------------------------|-----------------------------|---------------|---------------------------------------------|-------------------------------|
| <b>MS Lot-Sample #: A1C180605-001 Prep Batch #...: 1080018</b> |                                   |                                  |                             |               |                                             |                               |
| Zinc                                                           | 99                                | (75 - 125)                       |                             | MCAWW 200.7   | 03/21-03/22/11                              | MFWE1A2                       |
|                                                                | 99                                | (75 - 125) 0.06 (0-20)           |                             | MCAWW 200.7   | 03/21-03/22/11                              | MFWE1A3                       |
|                                                                |                                   | Dilution Factor: 1               |                             |               |                                             |                               |

### NOTE(S):

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



**TestAmerica Cooler Receipt Form/Narrative**  
**North Canton Facility**

Lot Number: AIC180539

Client CRA Project M.C. Nodules By: [Signature]  
Cooler Received on 3-18-11 Opened on 3-18-11 (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 17.0 °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:

High temp OK + H 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<sub>3</sub>; Sulfuric Acid Lot# 110410-H<sub>2</sub>SO<sub>4</sub>; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-(CH<sub>3</sub>COO)<sub>2</sub>ZN/NaOH. What time was preservative added to sample(s)? \_\_\_\_\_

| Client ID   | pH        | Date           | Initials           |
|-------------|-----------|----------------|--------------------|
| <u>WKE1</u> | <u>CZ</u> | <u>3-18-11</u> | <u>[Signature]</u> |
|             |           |                |                    |
|             |           |                |                    |
|             |           |                |                    |
|             |           |                |                    |
|             |           |                |                    |
|             |           |                |                    |
|             |           |                |                    |

**TestAmerica Cooler Receipt Form/Narrative**  
**North Canton Facility**

[illegible]

Discrepancies Cont'd:

[illegible]



***END OF REPORT***

## **ANALYTICAL REPORT**

**PROJECT NO. 58502-T06-001**

**MLC NODULAR FACILITY**

**SDG #: 1C24548**

**Lot(s): A1C240548, A1C240563**

**Paul Wiseman**

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

**TESTAMERICA LABORATORIES, INC.**



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**Denise D. Heckler**  
Project Manager

denise.heckler@testamericainc.com

Approved for release.  
Denise D. Heckler  
Project Manager  
4/5/2011 12:24 PM

**April 05, 2011**

**TestAmerica Laboratories, Inc.**

TestAmerica North Canton 4101 Shuffel Street NW, North Canton, OH 44720

Tel (330)497-9396 Fax (330)497-0772 [www.testamericainc.com](http://www.testamericainc.com)



## **CASE NARRATIVE**

1C24548

The following report contains the analytical results for two water samples submitted to TestAmerica North Canton by Conestoga-Rovers & Associates, Inc. from the MLC NODULAR FACILITY Site, project number 58502-T06-001. The samples were received March 24, 2011, according to documented sample acceptance procedures.

This SDG consists of (2) laboratory ID's: A1C240548 and A1C240563.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were 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 temperatures of the coolers upon sample receipt were 2.7 and 2.7°C.

#### **GC/MS VOLATILES**

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "B". All target analytes in the Method Blank must be below the reporting limit (RL) or the associated sample(s) must be ND with the exception of common laboratory contaminants.

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) 1084048.

Sample(s) W-58502-032311-SSH-MO.02 had elevated reporting limits due to foaming.

#### **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.

#### **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).

## **CASE NARRATIVE (continued)**

### **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 reparation 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**

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| <b>Method 8270 Water and Solid:</b> |                                      |
| 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                      |
| <b>Method 8151 Solid</b>            |                                      |
| Dinoseb                             |                                      |
| <b>Method 8260 Water and Solid</b>  |                                      |
| 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.)

## QUALITY CONTROL ELEMENTS NARRATIVE (continued)

| <b><u>Volatile (GC or GC/MS)</u></b>       | <b><u>Semivolatile (GC/MS)</u></b> | <b><u>Metals ICP-MS</u></b>                                                                              | <b><u>Metals ICP Trace</u></b> |
|--------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------|
| Methylene Chloride,<br>Acetone, 2-Butanone | Phthalate Esters                   | Copper, Iron, Zinc,<br>Lead, Calcium,<br>Magnesium, Potassium,<br>Sodium, Barium,<br>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 reparation 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

1C24548 : A1C240548

| PARAMETER                                          | RESULT  | REPORTING<br>LIMIT | UNITS | ANALYTICAL<br>METHOD |
|----------------------------------------------------|---------|--------------------|-------|----------------------|
| <b>W-58502-032311-SSH-M0.02 03/23/11 16:00 001</b> |         |                    |       |                      |
| bis(2-Ethylhexyl)<br>phthalate                     | 1.5 J   | 5.0                | ug/L  | CFR136A 625          |
| Methylene chloride                                 | 1.4 J,B | 2.0                | ug/L  | CFR136A 624          |
| Total Phenols                                      | 0.022 B | 0.040              | mg/L  | MCAWW 420.1          |

(Continued on next page)



## EXECUTIVE SUMMARY - Detection Highlights

1C24548 : A1C240563

| PARAMETER                                   | RESULT    | REPORTING<br>LIMIT | UNITS | ANALYTICAL<br>METHOD |
|---------------------------------------------|-----------|--------------------|-------|----------------------|
| W-58502-032311-SSH-M0.02 03/23/11 16:00 001 |           |                    |       |                      |
| Zinc                                        | 15.3 B, J | 20.0               | ug/L  | MCAWW 200.7          |

## ANALYTICAL METHODS SUMMARY

1C24548

| PARAMETER                               | ANALYTICAL<br>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

1C24548 : A1C240548

| WO #  | SAMPLE# | CLIENT SAMPLE ID         | SAMPLED<br>DATE | SAMP<br>TIME |
|-------|---------|--------------------------|-----------------|--------------|
| MF5KX | 001     | W-58502-032311-SSH-M0.02 | 03/23/11        | 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.

(Continued on next page)

## SAMPLE SUMMARY

1C24548 : A1C240563

| WO #  | SAMPLE# | CLIENT SAMPLE ID         | SAMPLED<br>DATE | SAMP<br>TIME |
|-------|---------|--------------------------|-----------------|--------------|
| MF5MD | 001     | W-58502-032311-SSH-M0.02 | 03/23/11        | 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-58502-032311-SSH-M0.02

GC/MS Volatiles

Lot-Sample #....: A1C240548-001 Work Order #....: MF5KX1AC Matrix.....: WG  
 Date Sampled...: 03/23/11 16:00 Date Received...: 03/24/11  
 Prep Date.....: 03/28/11 Analysis Date...: 03/28/11  
 Prep Batch #....: 1089192  
 Dilution Factor: 2 Method.....: CFR136A 624

| PARAMETER                 | RESULT         | REPORTING<br>LIMIT | UNITS       | MDL         |
|---------------------------|----------------|--------------------|-------------|-------------|
| Benzene                   | ND             | 2.0                | ug/L        | 0.26        |
| Chloroform                | ND             | 2.0                | ug/L        | 0.32        |
| <b>Methylene chloride</b> | <b>1.4 J,B</b> | <b>2.0</b>         | <b>ug/L</b> | <b>0.66</b> |
| Tetrachloroethene         | ND             | 2.0                | ug/L        | 0.58        |
| Trichloroethene           | ND             | 2.0                | ug/L        | 0.34        |

| SURROGATE             | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |
|-----------------------|---------------------|--------------------|
| 1,2-Dichloroethane-d4 | 90                  | (80 - 125)         |
| Toluene-d8            | 97                  | (84 - 110)         |
| Bromofluorobenzene    | 82                  | (81 - 112)         |

**NOTE(S):**

J Estimated result. Result is less than RL.

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

Conestoga Rovers & Assoc., Inc

Client Sample ID: W-58502-032311-SSH-M0.02

GC/MS Semivolatiles

Lot-Sample #....: A1C240548-001 Work Order #....: MF5KX1AD Matrix.....: WG  
 Date Sampled...: 03/23/11 16:00 Date Received...: 03/24/11  
 Prep Date.....: 03/25/11 Analysis Date...: 03/31/11  
 Prep Batch #....: 1084048  
 Dilution Factor: 1 Method.....: CFR136A 625

| PARAMETER                              | RESULT              | REPORTING<br>LIMIT | UNITS       | MDL         |
|----------------------------------------|---------------------|--------------------|-------------|-------------|
| Acenaphthene                           | ND                  | 5.0                | ug/L        | 0.10        |
| Benzo(a)pyrene                         | ND                  | 5.0                | ug/L        | 0.10        |
| <b>bis(2-Ethylhexyl)<br/>phthalate</b> | <b>1.5 J</b>        | <b>5.0</b>         | <b>ug/L</b> | <b>0.80</b> |
| 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-<br>phenol             | ND                  | 4.0                | ug/L        | 0.80        |
| Butyl benzyl phthalate                 | ND                  | 5.0                | ug/L        | 0.80        |
| SURROGATE                              | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |             |             |
| 2-Fluorophenol                         | 31                  | (10 - 135)         |             |             |
| Phenol-d5                              | 18                  | (10 - 132)         |             |             |
| 2,4,6-Tribromophenol                   | 82                  | (10 - 142)         |             |             |
| 2-Fluorobiphenyl                       | 57                  | (38 - 110)         |             |             |
| Terphenyl-d14                          | 52                  | (24 - 135)         |             |             |
| Nitrobenzene-d5                        | 53                  | (44 - 110)         |             |             |

**NOTE(S):**

J Estimated result. Result is less than RL.

Conestoga Rovers & Assoc., Inc

Client Sample ID: W-58502-032311-SSH-M0.02

TOTAL Metals

Lot-Sample #...: A1C240563-001

Matrix.....: WG

Date Sampled...: 03/23/11 16:00 Date Received...: 03/24/11

| PARAMETER                       | RESULT    | REPORTING<br>LIMIT | UNITS | METHOD        | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|---------------------------------|-----------|--------------------|-------|---------------|-------------------------------|-----------------|
| <b>Prep Batch #...: 1084014</b> |           |                    |       |               |                               |                 |
| Copper                          | ND        | 25.0               | ug/L  | MCAWW 200.7   | 03/25-03/28/11                | MF5MD1AA        |
|                                 |           | Dilution Factor: 1 |       | MDL.....: 4.5 |                               |                 |
| Lead                            | ND        | 100                | ug/L  | MCAWW 200.7   | 03/25-03/28/11                | MF5MD1AC        |
|                                 |           | Dilution Factor: 1 |       | MDL.....: 1.9 |                               |                 |
| Zinc                            | 15.3 B, J | 20.0               | ug/L  | MCAWW 200.7   | 03/25-03/28/11                | MF5MD1AD        |
|                                 |           | 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.

Conestoga Rovers & Assoc., Inc

Client Sample ID: W-58502-032311-SSH-M0.02

General Chemistry

Lot-Sample #...: A1C240548-001    Work Order #...: MF5KX    Matrix.....: WG  
Date Sampled...: 03/23/11 16:00    Date Received...: 03/24/11

| PARAMETER     | RESULT  | RL                 | UNITS | METHOD          | PREPARATION-<br>ANALYSIS DATE | PREP<br>BATCH # |
|---------------|---------|--------------------|-------|-----------------|-------------------------------|-----------------|
| Total Phenols | 0.022 B | 0.040              | mg/L  | MCAWW 420.1     | 04/04/11                      | 1094101         |
|               |         | Dilution Factor: 1 |       | MDL.....: 0.007 |                               |                 |

**NOTE(S):**

RL Reporting Limit

B Estimated result. Result is less than RL.



# ***QUALITY CONTROL SECTION***

# METHOD BLANK REPORT

## GC/MS Volatiles

Client Lot #...: 1C24548  
MB Lot-Sample #: A1C300000-192

Work Order #...: MGCRJ1AA

Matrix.....: WATER

Analysis Date...: 03/28/11

Prep Date.....: 03/28/11

Prep Batch #...: 1089192

Dilution Factor: 1

| PARAMETER                 | RESULT     | REPORTING<br>LIMIT | UNITS       | METHOD             |
|---------------------------|------------|--------------------|-------------|--------------------|
| Benzene                   | ND         | 1.0                | ug/L        | CFR136A 624        |
| Chloroform                | ND         | 1.0                | ug/L        | CFR136A 624        |
| <b>Methylene chloride</b> | <b>1.4</b> | <b>1.0</b>         | <b>ug/L</b> | <b>CFR136A 624</b> |
| Tetrachloroethene         | ND         | 1.0                | ug/L        | CFR136A 624        |
| Trichloroethene           | ND         | 1.0                | ug/L        | CFR136A 624        |

| SURROGATE             | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |
|-----------------------|---------------------|--------------------|
| 1,2-Dichloroethane-d4 | 86                  | (80 - 125)         |
| Toluene-d8            | 96                  | (84 - 110)         |
| Bromofluorobenzene    | 86                  | (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 #...**: 1C24548      **Work Order #...**: MGCRJ1AC      **Matrix.....**: WATER  
**LCS Lot-Sample#**: A1C300000-192  
**Prep Date.....**: 03/28/11      **Analysis Date...**: 03/28/11  
**Prep Batch #...**: 1089192  
**Dilution Factor**: 1

| <u>PARAMETER</u>          | <u>SPIKE<br/>AMOUNT</u> | <u>MEASURED<br/>AMOUNT</u> | <u>UNITS</u> | <u>PERCENT<br/>RECOVERY</u> | <u>METHOD</u>      |
|---------------------------|-------------------------|----------------------------|--------------|-----------------------------|--------------------|
| <b>Benzene</b>            | <b>20</b>               | <b>19</b>                  | <b>ug/L</b>  | <b>93</b>                   | <b>CFR136A 624</b> |
| <b>Chloroform</b>         | <b>20</b>               | <b>19</b>                  | <b>ug/L</b>  | <b>97</b>                   | <b>CFR136A 624</b> |
| <b>Methylene chloride</b> | <b>20</b>               | <b>21</b>                  | <b>ug/L</b>  | <b>103</b>                  | <b>CFR136A 624</b> |
| <b>Tetrachloroethene</b>  | <b>20</b>               | <b>22</b>                  | <b>ug/L</b>  | <b>108</b>                  | <b>CFR136A 624</b> |
| <b>Trichloroethene</b>    | <b>20</b>               | <b>20</b>                  | <b>ug/L</b>  | <b>100</b>                  | <b>CFR136A 624</b> |

| <u>SURROGATE</u>      | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> |
|-----------------------|-----------------------------|----------------------------|
| 1,2-Dichloroethane-d4 | 90                          | (80 - 125)                 |
| Toluene-d8            | 97                          | (84 - 110)                 |
| Bromofluorobenzene    | 87                          | (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 #...: 1C24548      Work Order #...: MGCRJ1AC      Matrix.....: WATER  
 LCS Lot-Sample#: A1C300000-192  
 Prep Date.....: 03/28/11      Analysis Date...: 03/28/11  
 Prep Batch #...: 1089192  
 Dilution Factor: 1

| <u>PARAMETER</u>          | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> | <u>METHOD</u>      |
|---------------------------|-----------------------------|----------------------------|--------------------|
| <b>Benzene</b>            | <b>93</b>                   | <b>(37 - 151)</b>          | <b>CFR136A 624</b> |
| <b>Chloroform</b>         | <b>97</b>                   | <b>(51 - 138)</b>          | <b>CFR136A 624</b> |
| <b>Methylene chloride</b> | <b>103</b>                  | <b>(10 - 221)</b>          | <b>CFR136A 624</b> |
| <b>Tetrachloroethene</b>  | <b>108</b>                  | <b>(64 - 148)</b>          | <b>CFR136A 624</b> |
| <b>Trichloroethene</b>    | <b>100</b>                  | <b>(71 - 157)</b>          | <b>CFR136A 624</b> |

| <u>SURROGATE</u>      | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> |
|-----------------------|-----------------------------|----------------------------|
| 1,2-Dichloroethane-d4 | 90                          | (80 - 125)                 |
| Toluene-d8            | 97                          | (84 - 110)                 |
| Bromofluorobenzene    | 87                          | (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 #...**: 1C24548      **Work Order #...**: MF5TM1A5      **Matrix.....**: WATER  
**MS Lot-Sample #:** A1C240580-003  
**Date Sampled...**: 03/23/11 14:15      **Date Received...**: 03/23/11  
**Prep Date.....**: 03/29/11      **Analysis Date...**: 03/29/11  
**Prep Batch #...**: 1089192  
**Dilution Factor:** 1

| PARAMETER          | SAMPLE<br>AMOUNT | SPIKE<br>AMT | MEASRD<br>AMOUNT | UNITS | PERCENT<br>RECOVERY | METHOD      |
|--------------------|------------------|--------------|------------------|-------|---------------------|-------------|
| Benzene            | ND               | 20           | 20               | ug/L  | 99                  | CFR136A 624 |
| Chloroform         | ND               | 20           | 20               | ug/L  | 101                 | CFR136A 624 |
| Methylene chloride | ND               | 20           | 22               | ug/L  | 108                 | CFR136A 624 |
| Tetrachloroethene  | ND               | 20           | 22               | ug/L  | 110                 | CFR136A 624 |
| Trichloroethene    | ND               | 20           | 21               | ug/L  | 105                 | CFR136A 624 |

| SURROGATE             | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |
|-----------------------|---------------------|--------------------|
| 1,2-Dichloroethane-d4 | 95                  | (80 - 125)         |
| Toluene-d8            | 99                  | (84 - 110)         |
| Bromofluorobenzene    | 95                  | (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 #...: 1C24548      Work Order #...: MF5TM1A5      Matrix.....: WATER  
MS Lot-Sample #: A1C240580-003  
Date Sampled...: 03/23/11 14:15      Date Received...: 03/23/11  
Prep Date.....: 03/29/11      Analysis Date...: 03/29/11  
Prep Batch #...: 1089192  
Dilution Factor: 1

| <u>PARAMETER</u>   | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> | <u>METHOD</u> |
|--------------------|-----------------------------|----------------------------|---------------|
| Benzene            | 99                          | (90 - 114)                 | CFR136A 624   |
| Chloroform         | 101                         | (90 - 118)                 | CFR136A 624   |
| Methylene chloride | 108                         | (78 - 131)                 | CFR136A 624   |
| Tetrachloroethene  | 110                         | (81 - 112)                 | CFR136A 624   |
| Trichloroethene    | 105                         | (85 - 114)                 | CFR136A 624   |

| <u>SURROGATE</u>      | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> |
|-----------------------|-----------------------------|----------------------------|
| 1,2-Dichloroethane-d4 | 95                          | (80 - 125)                 |
| Toluene-d8            | 99                          | (84 - 110)                 |
| Bromofluorobenzene    | 95                          | (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 #...: 1C24548  
MB Lot-Sample #: A1C250000-048

Work Order #...: MF6EX1AA

Matrix.....: WATER

Analysis Date...: 03/31/11

Prep Date.....: 03/25/11

Prep Batch #...: 1084048

Dilution Factor: 1

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

| SURROGATE            | PERCENT  | RECOVERY   |
|----------------------|----------|------------|
|                      | RECOVERY | LIMITS     |
| 2-Fluorophenol       | 55       | (10 - 135) |
| Phenol-d5            | 38       | (10 - 132) |
| 2,4,6-Tribromophenol | 65       | (10 - 142) |
| 2-Fluorobiphenyl     | 62       | (38 - 110) |
| Terphenyl-d14        | 84       | (24 - 135) |
| Nitrobenzene-d5      | 63       | (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 #....: 1C24548      Work Order #....: MF6EX1AC      Matrix.....: WATER  
 LCS Lot-Sample#: A1C250000-048  
 Prep Date.....: 03/25/11      Analysis Date...: 03/31/11  
 Prep Batch #....: 1084048  
 Dilution Factor: 1

| PARAMETER                      | SPIKE<br>AMOUNT | MEASURED<br>AMOUNT | UNITS | PERCENT<br>RECOVERY | METHOD      |
|--------------------------------|-----------------|--------------------|-------|---------------------|-------------|
| Acenaphthene                   | 20              | 16                 | ug/L  | 80                  | CFR136A 625 |
| Benzo(a)pyrene                 | 20              | 15                 | ug/L  | 74                  | CFR136A 625 |
| Butyl benzyl phthalate         | 20              | 17                 | ug/L  | 87                  | CFR136A 625 |
| bis(2-Ethylhexyl)<br>phthalate | 20              | 17                 | ug/L  | 84                  | CFR136A 625 |
| Di-n-butyl phthalate           | 20              | 19                 | ug/L  | 93                  | CFR136A 625 |
| Diethyl phthalate              | 20              | 17                 | ug/L  | 85                  | CFR136A 625 |
| Fluoranthene                   | 20              | 18                 | ug/L  | 89                  | CFR136A 625 |
| Pyrene                         | 20              | 16                 | ug/L  | 82                  | CFR136A 625 |
| 4-Chloro-3-methylphenol        | 20              | 17                 | ug/L  | 84                  | CFR136A 625 |
| 2,4-Dimethylphenol             | 20              | 15                 | ug/L  | 76                  | CFR136A 625 |
| Phenol                         | 20              | 9.7                | ug/L  | 49                  | CFR136A 625 |
| 2,4,6-Trichloro-<br>phenol     | 20              | 17                 | ug/L  | 85                  | CFR136A 625 |

| SURROGATE            | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |
|----------------------|---------------------|--------------------|
| 2-Fluorophenol       | 64                  | (10 - 135)         |
| Phenol-d5            | 47                  | (10 - 132)         |
| 2,4,6-Tribromophenol | 86                  | (10 - 142)         |
| 2-Fluorobiphenyl     | 78                  | (38 - 110)         |
| Terphenyl-d14        | 91                  | (24 - 135)         |
| Nitrobenzene-d5      | 70                  | (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 #....: 1C24548      Work Order #....: MF6EX1AC      Matrix.....: WATER  
 LCS Lot-Sample#: A1C250000-048  
 Prep Date.....: 03/25/11      Analysis Date...: 03/31/11  
 Prep Batch #....: 1084048  
 Dilution Factor: 1

| PARAMETER                      | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS | METHOD      |
|--------------------------------|---------------------|--------------------|-------------|
| Acenaphthene                   | 80                  | (54 - 110)         | CFR136A 625 |
| Benzo(a)pyrene                 | 74                  | (51 - 111)         | CFR136A 625 |
| Butyl benzyl phthalate         | 87                  | (44 - 129)         | CFR136A 625 |
| bis(2-Ethylhexyl)<br>phthalate | 84                  | (50 - 134)         | CFR136A 625 |
| Di-n-butyl phthalate           | 93                  | (49 - 110)         | CFR136A 625 |
| Diethyl phthalate              | 85                  | (10 - 117)         | CFR136A 625 |
| Fluoranthene                   | 89                  | (55 - 112)         | CFR136A 625 |
| Pyrene                         | 82                  | (48 - 122)         | CFR136A 625 |
| 4-Chloro-3-methylphenol        | 84                  | (58 - 110)         | CFR136A 625 |
| 2,4-Dimethylphenol             | 76                  | (10 - 115)         | CFR136A 625 |
| Phenol                         | 49                  | (17 - 130)         | CFR136A 625 |
| 2,4,6-Trichloro-<br>phenol     | 85                  | (54 - 110)         | CFR136A 625 |

| SURROGATE            | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |
|----------------------|---------------------|--------------------|
| 2-Fluorophenol       | 64                  | (10 - 135)         |
| Phenol-d5            | 47                  | (10 - 132)         |
| 2,4,6-Tribromophenol | 86                  | (10 - 142)         |
| 2-Fluorobiphenyl     | 78                  | (38 - 110)         |
| Terphenyl-d14        | 91                  | (24 - 135)         |
| Nitrobenzene-d5      | 70                  | (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 #...: 1C24548

Matrix.....: WATER

| PARAMETER                                                      | RESULT | REPORTING<br>LIMIT | UNITS | METHOD      | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|----------------------------------------------------------------|--------|--------------------|-------|-------------|-------------------------------|-----------------|
| <b>MB Lot-Sample #: A1C250000-014 Prep Batch #...: 1084014</b> |        |                    |       |             |                               |                 |
| Copper                                                         | ND     | 25.0               | ug/L  | MCAWW 200.7 | 03/25-03/28/11                | MF6C91A5        |
|                                                                |        | Dilution Factor: 1 |       |             |                               |                 |
| Lead                                                           | ND     | 100                | ug/L  | MCAWW 200.7 | 03/25-03/28/11                | MF6C91A6        |
|                                                                |        | Dilution Factor: 1 |       |             |                               |                 |
| Zinc                                                           | 18.9 B | 20.0               | ug/L  | MCAWW 200.7 | 03/25-03/28/11                | MF6C91A7        |
|                                                                |        | 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 #...: 1C24548

Matrix.....: WATER

| PARAMETER                                                             | SPIKE<br>AMOUNT | MEASURED<br>AMOUNT | UNITS              | PERCNT<br>RECVRY | METHOD      | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|-----------------------------------------------------------------------|-----------------|--------------------|--------------------|------------------|-------------|-------------------------------|-----------------|
| <b>LCS Lot-Sample#:</b> A1C250000-014 <b>Prep Batch #...:</b> 1084014 |                 |                    |                    |                  |             |                               |                 |
| Copper                                                                | 250             | 233                | ug/L               | 93               | MCAWW 200.7 | 03/25-03/28/11                | MF6C91AH        |
|                                                                       |                 |                    | Dilution Factor: 1 |                  |             |                               |                 |
| Zinc                                                                  | 500             | 489                | ug/L               | 98               | MCAWW 200.7 | 03/25-03/28/11                | MF6C91AJ        |
|                                                                       |                 |                    | Dilution Factor: 1 |                  |             |                               |                 |
| Lead                                                                  | 500             | 473                | ug/L               | 95               | MCAWW 200.7 | 03/25-03/28/11                | MF6C91CX        |
|                                                                       |                 |                    | 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 #...: 1C24548

Matrix.....: WATER

| <u>PARAMETER</u>                                                      | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> | <u>METHOD</u> | <u>PREPARATION-<br/>ANALYSIS DATE</u> | <u>WORK ORDER #</u> |
|-----------------------------------------------------------------------|-----------------------------|----------------------------|---------------|---------------------------------------|---------------------|
| <b>LCS Lot-Sample#:</b> A1C250000-014 <b>Prep Batch #...:</b> 1084014 |                             |                            |               |                                       |                     |
| Copper                                                                | 93                          | (85 - 115)                 | MCAWW 200.7   | 03/25-03/28/11                        | MF6C91AH            |
|                                                                       |                             | Dilution Factor: 1         |               |                                       |                     |
| Zinc                                                                  | 98                          | (85 - 115)                 | MCAWW 200.7   | 03/25-03/28/11                        | MF6C91AJ            |
|                                                                       |                             | Dilution Factor: 1         |               |                                       |                     |
| Lead                                                                  | 95                          | (85 - 115)                 | MCAWW 200.7   | 03/25-03/28/11                        | MF6C91CX            |
|                                                                       |                             | 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 #...: 1C24548

Matrix.....: WATER

Date Sampled...: 03/22/11 09:12 Date Received...: 03/23/11

| PARAMETER | AMOUNT | SAMPLE SPIKE<br>AMT | MEASRD<br>AMOUNT | UNITS | PERCNT<br>RECVRY | RPD | METHOD | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|-----------|--------|---------------------|------------------|-------|------------------|-----|--------|-------------------------------|-----------------|
|-----------|--------|---------------------|------------------|-------|------------------|-----|--------|-------------------------------|-----------------|

MS Lot-Sample #: A1C240622-002 Prep Batch #...: 1084014

Copper

|      |     |     |      |     |      |  |             |                |          |
|------|-----|-----|------|-----|------|--|-------------|----------------|----------|
| 26.6 | 250 | 300 | ug/L | 109 |      |  | MCAWW 200.7 | 03/25-03/28/11 | MF5421C2 |
| 26.6 | 250 | 298 | ug/L | 109 | 0.72 |  | MCAWW 200.7 | 03/25-03/28/11 | MF5421C3 |

Dilution Factor: 1

Lead

|    |     |     |      |     |      |  |             |                |          |
|----|-----|-----|------|-----|------|--|-------------|----------------|----------|
| ND | 500 | 522 | ug/L | 104 |      |  | MCAWW 200.7 | 03/25-03/28/11 | MF5421C5 |
| ND | 500 | 521 | ug/L | 104 | 0.17 |  | MCAWW 200.7 | 03/25-03/28/11 | MF5421C6 |

Dilution Factor: 1

Zinc

|     |     |     |      |     |     |  |             |                |          |
|-----|-----|-----|------|-----|-----|--|-------------|----------------|----------|
| 307 | 500 | 853 | ug/L | 109 |     |  | MCAWW 200.7 | 03/25-03/28/11 | MF5421C8 |
| 307 | 500 | 843 | ug/L | 107 | 1.2 |  | MCAWW 200.7 | 03/25-03/28/11 | MF5421C9 |

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 #...: 1C24548

Matrix.....: WATER

Date Sampled...: 03/22/11 09:12 Date Received...: 03/23/11

| PARAMETER                                                      | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS     | RPD<br>LIMITS | METHOD      | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|----------------------------------------------------------------|---------------------|------------------------|---------------|-------------|-------------------------------|-----------------|
| <b>MS Lot-Sample #: A1C240622-002 Prep Batch #...: 1084014</b> |                     |                        |               |             |                               |                 |
| Copper                                                         | 109                 | (75 - 125)             |               | MCAWW 200.7 | 03/25-03/28/11                | MF5421C2        |
|                                                                | 109                 | (75 - 125) 0.72 (0-20) |               | MCAWW 200.7 | 03/25-03/28/11                | MF5421C3        |
|                                                                |                     | Dilution Factor: 1     |               |             |                               |                 |
| Lead                                                           | 104                 | (75 - 125)             |               | MCAWW 200.7 | 03/25-03/28/11                | MF5421C5        |
|                                                                | 104                 | (75 - 125) 0.17 (0-20) |               | MCAWW 200.7 | 03/25-03/28/11                | MF5421C6        |
|                                                                |                     | Dilution Factor: 1     |               |             |                               |                 |
| Zinc                                                           | 109                 | (75 - 125)             |               | MCAWW 200.7 | 03/25-03/28/11                | MF5421C8        |
|                                                                | 107                 | (75 - 125) 1.2 (0-20)  |               | MCAWW 200.7 | 03/25-03/28/11                | MF5421C9        |
|                                                                |                     | 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 #...: 1C24548

Matrix.....: WATER

| PARAMETER     | RESULT | REPORTING<br>LIMIT              | UNITS | METHOD                          | PREPARATION-<br>ANALYSIS DATE | PREP<br>BATCH # |
|---------------|--------|---------------------------------|-------|---------------------------------|-------------------------------|-----------------|
| Total Phenols | ND     | Work Order #: MGJD41AA<br>0.040 | mg/L  | MB Lot-Sample #:<br>MCAWW 420.1 | A1D040000-101<br>04/04/11     | 1094101         |
|               |        | 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 #...: 1C24548

Matrix.....: WATER

| <u>PARAMETER</u> | <u>SPIKE</u><br><u>AMOUNT</u> | <u>MEASURED</u><br><u>AMOUNT</u> | <u>UNITS</u> | <u>PERCNT</u><br><u>RECVRY</u>                        | <u>METHOD</u> | <u>PREPARATION-</u><br><u>ANALYSIS DATE</u> | <u>PREP</u><br><u>BATCH #</u> |
|------------------|-------------------------------|----------------------------------|--------------|-------------------------------------------------------|---------------|---------------------------------------------|-------------------------------|
| Total Phenols    | 1.0                           | 0.87                             | mg/L         | 83                                                    | MCAWW 420.1   | 04/04/11                                    | 1094101                       |
|                  |                               |                                  |              | Work Order #: MGJD41AC LCS Lot-Sample#: A1D040000-101 |               |                                             |                               |
|                  |                               |                                  |              | 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 #...: 1C24548

Matrix.....: WATER

| <u>PARAMETER</u> | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u>           | <u>METHOD</u>                                 | <u>PREPARATION-<br/>ANALYSIS DATE</u> | <u>PREP<br/>BATCH #</u> |
|------------------|-----------------------------|--------------------------------------|-----------------------------------------------|---------------------------------------|-------------------------|
| Total Phenols    | 83                          | Work Order #: MGJD41AC<br>(54 - 137) | LCS Lot-Sample#: A1D040000-101<br>MCAWW 420.1 | 04/04/11                              | 1094101                 |
|                  |                             | 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 #...: 1C24548

Matrix.....: WATER

Date Sampled...: 03/22/11 12:15 Date Received...: 03/23/11

| PARAMETER     | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT                 | UNITS | PERCNT RECVRY    | RPD           | METHOD      | PREPARATION- ANALYSIS DATE | PREP BATCH # |
|---------------|---------------|-----------|-------------------------------|-------|------------------|---------------|-------------|----------------------------|--------------|
| Total Phenols |               |           | WO#: MF2D31CQ-MS/MF2D31CR-MSD |       | MS Lot-Sample #: | A1C230416-008 |             |                            |              |
|               | 0.033         | 0.10      | 0.10                          | mg/L  | 72               |               | MCAWW 420.1 | 04/04/11                   | 1094101      |
|               | 0.033         | 0.10      | 0.10                          | mg/L  | 70               | 1.8           | MCAWW 420.1 | 04/04/11                   | 1094101      |

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 #...: 1C24548

Matrix.....: WATER

Date Sampled...: 03/22/11 12:15 Date Received...: 03/23/11

| PARAMETER     | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS | RPD<br>LIMITS                 | METHOD      | PREPARATION-<br>ANALYSIS DATE | PREP<br>BATCH # |
|---------------|---------------------|--------------------|-------------------------------|-------------|-------------------------------|-----------------|
| Total Phenols |                     |                    | WO#: MF2D31CQ-MS/MF2D31CR-MSD | MS          | Lot-Sample #: A1C230416-008   |                 |
|               | 72                  | (10 - 155)         |                               | MCAWW 420.1 | 04/04/11                      | 1094101         |
|               | 70                  | (10 - 155)         | 1.8 (0-41)                    | MCAWW 420.1 | 04/04/11                      | 1094101         |
|               |                     |                    | Dilution Factor: 1            |             |                               |                 |

### NOTE(S):

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

**Required Client Information:**

|                            |                           |
|----------------------------|---------------------------|
| Company: CRA, Inc.         | Report To: Paul Wiseman   |
| Address: 14496 Sheldon Rd. | Copy To: Mike Tomko       |
| Suite 200                  | Invoice To:               |
| Plymouth, MI 48170         | P.O.:                     |
| Phone: 734-453-5123        | Project Name: MLC Modules |
| Fax: 734-453-5201          | Project Number: 58502-Tab |
| Email:                     | 001                       |

|                      |                  |      |         |
|----------------------|------------------|------|---------|
| Laboratory:          | Test America     |      |         |
| Laboratory Location: | North Canton, OH |      |         |
| Laboratory Contact:  | Venice Heclinger |      |         |
| Requested Due Date:  |                  | TAT: | wh + ST |
| QA/QC Requirements:  |                  |      |         |

|                 |                       |
|-----------------|-----------------------|
| ID #            | N <sup>o</sup> D 9208 |
| SSOW Ref. Code: | 58502-003-T06         |

SSOW Ref. Code: 08502-003-T06

## Analysis and Method

**Sample Identification:**

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

Matrix Code

Date Collected

Time Collected

## # Containers

Unpreserved

4C1

$$-12\text{SO}_4$$
 $\text{HNO}_3$ 

Other:

## Zinc

Copper

Lead

## T. Phenols

TTD.

Remarks/ Lab ID

[illegible]

| SHIPMENT METHOD | NO. OF COOLERS | RELINQUISHED BY / AFFILIATION | DATE    | TIME | RECEIVED BY / AFFILIATION | DATE    | TIME |
|-----------------|----------------|-------------------------------|---------|------|---------------------------|---------|------|
| Fidelix         | 1              | ATA / CAA                     | 3/23/11 | 1600 | Reed                      | 3/23/11 | 1610 |

| Sample Condition     |       |                                                                                   |  |  |  |  |  |  |  |  |  |
|----------------------|-------|-----------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| Temp in °C           |       |                                                                                   |  |  |  |  |  |  |  |  |  |
| Received on Ice      | Y / N |                                                                                   |  |  |  |  |  |  |  |  |  |
| Sealed Cooler        | Y / N |                                                                                   |  |  |  |  |  |  |  |  |  |
| Samples Intact       | Y / N |                                                                                   |  |  |  |  |  |  |  |  |  |
| Additional Comments: |       |                                                                                   |  |  |  |  |  |  |  |  |  |
| Sampler Name:        |       | Steven S. Horvath                                                                 |  |  |  |  |  |  |  |  |  |
| Sampler Signature:   |       |  |  |  |  |  |  |  |  |  |  |
| Date:                |       | 3/23/11                                                                           |  |  |  |  |  |  |  |  |  |

Lot Number: AIC2405-18  
63

Cooler Received on 7-24-11 Opened on 3-24-11 (Signature) \_\_\_\_\_

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

TestAmerica Cooler # 241.1046 Multiple Coolers ☐ Foam Box ☐ Client Cooler ☐ Other ☐

- Concerning \_\_\_\_\_

The following discrepancies occurred:

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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)

Sample(s) \_\_\_\_\_ were further preserved in Sample

Receiving to meet recommended pH level(s). Nitric Acid Lot# 100110-HNO<sub>3</sub>; Sulfuric Acid Lot# 110410-H<sub>2</sub>SO<sub>4</sub>; Sodium

*Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-  
Zn(CH3COO)2·2H2O*

(CH<sub>3</sub>COO)<sub>2</sub>NN/NaOH. What time was preservative added to sample(s): \_\_\_\_\_

| CH <sub>3</sub> COO <sub>2</sub> NN | all | Date | Initials |
|-------------------------------------|-----|------|----------|
|                                     |     |      |          |

[illegible]

[illegible]

***END OF REPORT***

## **ANALYTICAL REPORT**

**PROJECT NO. 58502-T02-002**

**MLC NODULAR**

**Lot #: A1C310512**

**Paul Wiseman**

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

**TESTAMERICA LABORATORIES, INC.**



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

Approved for release.  
Denise D. Heckler  
Project Manager  
4/8/2011 9:05 AM

**April 07, 2011**

**TestAmerica Laboratories, Inc.**

TestAmerica North Canton 4101 Shuffel Street NW, North Canton, OH 44720

Tel (330)497-9396 Fax (330)497-0772 [www.testamericainc.com](http://www.testamericainc.com)





# **CASE NARRATIVE**

A1C310512

The following report contains the analytical results for one water sample submitted to TestAmerica North Canton by Conestoga-Rovers & Associates, Inc. from the MLC NODULAR Site, project number 58502-T02-002. The sample was received March 31, 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 1.7°C.

#### **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 reparation 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**

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| <b>Method 8270 Water and Solid:</b> |                                      |
| 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                      |
| <b>Method 8151 Solid</b>            |                                      |
| Dinoseb                             |                                      |
| <b>Method 8260 Water and Solid</b>  |                                      |
| 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.)

## QUALITY CONTROL ELEMENTS NARRATIVE (continued)

| <b><u>Volatile (GC or GC/MS)</u></b>       | <b><u>Semivolatile (GC/MS)</u></b> | <b><u>Metals ICP-MS</u></b>                                                                              | <b><u>Metals ICP Trace</u></b> |
|--------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------|
| Methylene Chloride,<br>Acetone, 2-Butanone | Phthalate Esters                   | Copper, Iron, Zinc,<br>Lead, Calcium,<br>Magnesium, Potassium,<br>Sodium, Barium,<br>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 reparation 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

A1C310512

| PARAMETER                                  | RESULT    | REPORTING<br>LIMIT | UNITS | ANALYTICAL<br>METHOD |
|--------------------------------------------|-----------|--------------------|-------|----------------------|
| W-58502-033011-SSH-WKZ2 03/30/11 16:00 001 |           |                    |       |                      |
| Zinc                                       | 16.1 B, J | 20.0               | ug/L  | MCAWW 200.7          |

# ANALYTICAL METHODS SUMMARY

A1C310512

| PARAMETER                               | ANALYTICAL<br>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

A1C310512

| WO #  | SAMPLE# | CLIENT SAMPLE ID        | SAMPLED<br>DATE | SAMP<br>TIME |
|-------|---------|-------------------------|-----------------|--------------|
| MGE4L | 001     | W-58502-033011-SSH-WKZ2 | 03/30/11        | 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-58502-033011-SSH-WKZ2

TOTAL Metals

Lot-Sample #...: A1C310512-001

Matrix.....: WG

Date Sampled...: 03/30/11 16:00 Date Received...: 03/31/11

| PARAMETER       | RESULT    | REPORTING<br>LIMIT | UNITS | METHOD        | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|-----------------|-----------|--------------------|-------|---------------|-------------------------------|-----------------|
| Prep Batch #... | 1091018   |                    |       |               |                               |                 |
| Zinc            | 16.1 B, J | 20.0               | ug/L  | MCAWW 200.7   | 04/01-04/04/11                | MGE4L1AA        |
|                 |           | 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.



# ***QUALITY CONTROL SECTION***

# METHOD BLANK REPORT

## TOTAL Metals

Client Lot #...: A1C310512

Matrix.....: WATER

| PARAMETER                                                              | RESULT | REPORTING<br>LIMIT | UNITS | METHOD      | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|------------------------------------------------------------------------|--------|--------------------|-------|-------------|-------------------------------|-----------------|
| <b>MB Lot-Sample #:</b> A1D010000-018 <b>Prep Batch #...</b> : 1091018 |        |                    |       |             |                               |                 |
| Zinc                                                                   | 8.7 B  | 20.0               | ug/L  | MCAWW 200.7 | 04/01-04/04/11                | MGF0M1AD        |
| 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 #...: A1C310512

Matrix.....: WATER

| PARAMETER | SPIKE<br>AMOUNT | MEASURED<br>AMOUNT | UNITS | PERCNT<br>RECVRY | METHOD | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|-----------|-----------------|--------------------|-------|------------------|--------|-------------------------------|-----------------|
|-----------|-----------------|--------------------|-------|------------------|--------|-------------------------------|-----------------|

LCS Lot-Sample#: A1D010000-018 Prep Batch #...: 1091018

|      |     |     |      |     |             |                |          |
|------|-----|-----|------|-----|-------------|----------------|----------|
| Zinc | 500 | 510 | ug/L | 101 | MCAWW 200.7 | 04/01-04/04/11 | MGF0M1AL |
|------|-----|-----|------|-----|-------------|----------------|----------|

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 #...: A1C310512

Matrix.....: WATER

| <u>PARAMETER</u> | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> | <u>METHOD</u> | <u>PREPARATION-<br/>ANALYSIS DATE</u> | <u>WORK ORDER #</u> |
|------------------|-----------------------------|----------------------------|---------------|---------------------------------------|---------------------|
|------------------|-----------------------------|----------------------------|---------------|---------------------------------------|---------------------|

LCS Lot-Sample#: A1D010000-018 Prep Batch #...: 1091018

|      |     |                    |             |                |          |
|------|-----|--------------------|-------------|----------------|----------|
| Zinc | 101 | (85 - 115)         | MCAWW 200.7 | 04/01-04/04/11 | MGF0M1AL |
|      |     | 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 #...: A1C310512

Matrix.....: WATER

Date Sampled...: 03/30/11 10:07 Date Received...: 03/31/11

| PARAMETER | AMOUNT | SAMPLE SPIKE<br>AMT | MEASRD<br>AMOUNT | UNITS | PERCNT<br>RECVRY | RPD | METHOD | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|-----------|--------|---------------------|------------------|-------|------------------|-----|--------|-------------------------------|-----------------|
|-----------|--------|---------------------|------------------|-------|------------------|-----|--------|-------------------------------|-----------------|

MS Lot-Sample #: A1C310584-001 Prep Batch #...: 1091018

Zinc

|      |     |     |      |     |      |  |             |                |          |
|------|-----|-----|------|-----|------|--|-------------|----------------|----------|
| 12.0 | 500 | 540 | ug/L | 105 |      |  | MCAWW 200.7 | 04/01-04/04/11 | MGFMR1AU |
| 12.0 | 500 | 540 | ug/L | 106 | 0.86 |  | MCAWW 200.7 | 04/01-04/04/11 | MGFMR1AV |

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 #...: A1C310512

Matrix.....: WATER

Date Sampled...: 03/30/11 10:07 Date Received...: 03/31/11

| PARAMETER                                                              | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS | RPD                | RPD<br>LIMITS | METHOD      | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|------------------------------------------------------------------------|---------------------|--------------------|--------------------|---------------|-------------|-------------------------------|-----------------|
| <b>MS Lot-Sample #:</b> A1C310584-001 <b>Prep Batch #...</b> : 1091018 |                     |                    |                    |               |             |                               |                 |
| Zinc                                                                   | 105                 | (75 - 125)         |                    |               | MCAWW 200.7 | 04/01-04/04/11                | MGFMR1AU        |
|                                                                        | 106                 | (75 - 125)         | 0.86               | (0-20)        | MCAWW 200.7 | 04/01-04/04/11                | MGFMR1AV        |
|                                                                        |                     |                    | Dilution Factor: 1 |               |             |                               |                 |

### NOTE(S):

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



**TestAmerica Cooler Receipt Form/Narrative**  
**North Canton Facility**

**Lot Number:** A10310512

Client CRA Project MLE Nadolo By: [Signature]  
Cooler Received on 3-31-11 Opened on 3-31-11 (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 1.7 °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<sub>3</sub>; Sulfuric Acid Lot# 110410-H<sub>2</sub>SO<sub>4</sub>; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-(CH<sub>3</sub>COO)<sub>2</sub>ZN/NaOH. What time was preservative added to sample(s)? \_\_\_\_\_

| Client ID | pH  | Date    | Initials    |
|-----------|-----|---------|-------------|
| Wk22      | 2.2 | 3-31-11 | [Signature] |
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## TestAmerica Cooler Receipt Form/Narrative

### North Canton Facility

[illegible]

### Discrepancies Cont'd:

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

***END OF REPORT***

## **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.**



---

**Denise D. Heckler**  
Project Manager

denise.heckler@testamericainc.com

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

**April 12, 2011**

**TestAmerica Laboratories, Inc.**

TestAmerica North Canton 4101 Shuffel Street NW, North Canton, OH 44720

Tel (330)497-9396 Fax (330)497-0772 [www.testamericainc.com](http://www.testamericainc.com)



# 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 reparation 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**

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| <b>Method 8270 Water and Solid:</b> |                                      |
| 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                      |
| <b>Method 8151 Solid</b>            |                                      |
| Dinoseb                             |                                      |
| <b>Method 8260 Water and Solid</b>  |                                      |
| 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.)

## QUALITY CONTROL ELEMENTS NARRATIVE (continued)

| <b><u>Volatile (GC or GC/MS)</u></b>       | <b><u>Semivolatile (GC/MS)</u></b> | <b><u>Metals ICP-MS</u></b>                                                                              | <b><u>Metals ICP Trace</u></b> |
|--------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------|
| Methylene Chloride,<br>Acetone, 2-Butanone | Phthalate Esters                   | Copper, Iron, Zinc,<br>Lead, Calcium,<br>Magnesium, Potassium,<br>Sodium, Barium,<br>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 reparation 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<br>LIMIT | UNITS | ANALYTICAL<br>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<br>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<br>DATE | SAMP<br>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<br>LIMIT | UNITS | METHOD        | PREPARATION-<br>ANALYSIS DATE | WORK<br>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.

# ***QUALITY CONTROL SECTION***

# METHOD BLANK REPORT

## TOTAL Metals

Client Lot #...: A1D070510

Matrix.....: WATER

| PARAMETER                                                              | RESULT | REPORTING<br>LIMIT | UNITS | METHOD      | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|------------------------------------------------------------------------|--------|--------------------|-------|-------------|-------------------------------|-----------------|
| <b>MB Lot-Sample #:</b> A1D080000-011 <b>Prep Batch #...</b> : 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<br>AMOUNT | MEASURED<br>AMOUNT | UNITS | PERCNT<br>RECVRY | METHOD | PREPARATION-<br>ANALYSIS DATE | WORK<br>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

| <u>PARAMETER</u> | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> | <u>METHOD</u> | <u>PREPARATION-<br/>ANALYSIS DATE</u> | <u>WORK ORDER #</u> |
|------------------|-----------------------------|----------------------------|---------------|---------------------------------------|---------------------|
|------------------|-----------------------------|----------------------------|---------------|---------------------------------------|---------------------|

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 | AMOUNT | SAMPLE SPIKE<br>AMT | MEASRD<br>AMOUNT | UNITS | PERCNT<br>RECVRY | RPD | METHOD | PREPARATION-<br>ANALYSIS DATE | WORK<br>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<br>RECOVERY | RECOVERY<br>LIMITS | RPD | RPD<br>LIMITS | METHOD      | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|------------------------------------------------------------------------|---------------------|--------------------|-----|---------------|-------------|-------------------------------|-----------------|
| <b>MS Lot-Sample #:</b> A1D070505-010 <b>Prep Batch #...</b> : 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.



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

## PAGE 7 OF 10

ID # N<sup>o</sup> D 8981

SSOW Ref. Code:

58562-T06-003

## Remarks/Lab ID

TAT-  
1 week

~~16 of 19~~

| SHIPMENT METHOD                                                                                                                                                                                                                                                                                              |  | NO. OF COOLERS |  | RELINQUISHED BY / AFFILIATION |  | DATE   |  | TIME |  | RECEIVED BY / AFFILIATION |  | DATE   |  | TIME |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------|--|-------------------------------|--|--------|--|------|--|---------------------------|--|--------|--|------|--|
| Fidelity                                                                                                                                                                                                                                                                                                     |  | 1              |  | HSA Day - Let                 |  | 4/6/11 |  | 1700 |  | JLH                       |  | 4-7-11 |  | 0930 |  |
| AIRBILL NO. 87464283 6455                                                                                                                                                                                                                                                                                    |  |                |  |                               |  |        |  |      |  |                           |  |        |  |      |  |
| Sample Condition                                                                                                                                                                                                                                                                                             |  |                |  |                               |  |        |  |      |  |                           |  |        |  |      |  |
| Temp in C                                                                                                                                                                                                                                                                                                    |  |                |  |                               |  |        |  |      |  |                           |  |        |  |      |  |
| Received on Ice                                                                                                                                                                                                                                                                                              |  |                |  | Y / N                         |  |        |  |      |  |                           |  |        |  |      |  |
| Sealed Cooler                                                                                                                                                                                                                                                                                                |  |                |  | Y / N                         |  |        |  |      |  |                           |  |        |  |      |  |
| Samples Intact                                                                                                                                                                                                                                                                                               |  |                |  | Y / N                         |  |        |  |      |  |                           |  |        |  |      |  |
| Additional Comments:                                                                                                                                                                                                                                                                                         |  |                |  |                               |  |        |  |      |  |                           |  |        |  |      |  |
| <div style="display: flex; justify-content: space-between;"> <div> <p>Sampler Name: Steven S. Hecox</p> <p>Sampler Signature: <i>[Signature]</i></p> <p>Date: 4/7/11</p> </div> <div> <p>Sampler Name: <i>[Blank]</i></p> <p>Sampler Signature: <i>[Blank]</i></p> <p>Date: <i>[Blank]</i></p> </div> </div> |  |                |  |                               |  |        |  |      |  |                           |  |        |  |      |  |

Additional Comments:

|                    |                    |
|--------------------|--------------------|
| Sampler Name:      | Steven S. Hromager |
| Sampler Signature: | <i>[Signature]</i> |

Date: \_\_\_\_\_

Sampler Signature: AKA. Noy

4/6/11

**Distribution:**

# WHITE PAPER

■

**TestAmerica Cooler Receipt Form/Narrative**  
**North Canton Facility**

Lot Number: A1D070510

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<sub>3</sub>; Sulfuric Acid Lot# 110410-H<sub>2</sub>SO<sub>4</sub>; Sodium Hydroxide Lot# 100108-NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-(CH<sub>3</sub>COO)<sub>2</sub>ZN/NaOH. What time was preservative added to sample(s)? \_\_\_\_\_

| Client ID   | pH         | Date          | Initials           |
|-------------|------------|---------------|--------------------|
| <u>WKZ3</u> | <u>6.2</u> | <u>4-7-11</u> | <u>[Signature]</u> |
|             |            |               |                    |
|             |            |               |                    |
|             |            |               |                    |
|             |            |               |                    |
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|             |            |               |                    |
|             |            |               |                    |
|             |            |               |                    |
|             |            |               |                    |

**TestAmerica Cooler Receipt Form/Narrative**  
**North Canton Facility**

**Client ID**

**pH**

**Date** \_\_\_\_\_

**Initials**

Cooler #

Temp. °C

## Method

### Coolant

Discrepancies Cont'd:

***END OF REPORT***



**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,

A handwritten signature in black ink, appearing to read "Grant Trigger", followed by a small flourish.

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**

| <i>Date</i> | <i>Parameters Sampled</i>           | <i>Concentration<br/>(mg/L)</i> | <i>Maximum Daily<br/>Loading<br/>(lbs/day)</i> | <i>Monthly<br/>Average<br/>(lbs/day)</i> | <i>City of Saginaw<br/>Maximum Daily<br/>(lbs/day)</i> | <i>City of Saginaw<br/>Monthly Average<br/>(lbs/day)</i> | <i>Number of<br/>Exceedances</i> | <i>Rate of<br/>Discharge <sup>(1)</sup><br/>(GPD)</i> | <i>Notes</i>     |
|-------------|-------------------------------------|---------------------------------|------------------------------------------------|------------------------------------------|--------------------------------------------------------|----------------------------------------------------------|----------------------------------|-------------------------------------------------------|------------------|
| 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 <sup>(3)</sup> | 0.00089                         | 0.002                                          | 0.002                                    | 0.4440                                                 | 0.1449                                                   | 0                                |                                                       |                  |
| 24-Apr-11   |                                     |                                 |                                                |                                          |                                                        |                                                          |                                  | 0                                                     | discharge ceased |

## Notes:

- (1) Discharge initiated - 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 multiple 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  
ANALYTICAL REPORTS

## **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.**



---

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

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

**April 12, 2011**

**TestAmerica Laboratories, Inc.**

TestAmerica North Canton 4101 Shuffel Street NW, North Canton, OH 44720

Tel (330)497-9396 Fax (330)497-0772 [www.testamericainc.com](http://www.testamericainc.com)



# 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 reparation 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**

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| <b>Method 8270 Water and Solid:</b> |                                      |
| 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                      |
| <b>Method 8151 Solid</b>            |                                      |
| Dinoseb                             |                                      |
| <b>Method 8260 Water and Solid</b>  |                                      |
| 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.)

## QUALITY CONTROL ELEMENTS NARRATIVE (continued)

| <b><u>Volatile (GC or GC/MS)</u></b>       | <b><u>Semivolatile (GC/MS)</u></b> | <b><u>Metals ICP-MS</u></b>                                                                              | <b><u>Metals ICP Trace</u></b> |
|--------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------|
| Methylene Chloride,<br>Acetone, 2-Butanone | Phthalate Esters                   | Copper, Iron, Zinc,<br>Lead, Calcium,<br>Magnesium, Potassium,<br>Sodium, Barium,<br>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 reparation 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<br>LIMIT | UNITS | ANALYTICAL<br>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<br>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<br>DATE | SAMP<br>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<br>LIMIT | UNITS | METHOD        | PREPARATION-<br>ANALYSIS DATE | WORK<br>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.

# ***QUALITY CONTROL SECTION***

# METHOD BLANK REPORT

## TOTAL Metals

Client Lot #...: A1D070510

Matrix.....: WATER

| PARAMETER                                                              | RESULT | REPORTING<br>LIMIT | UNITS | METHOD      | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|------------------------------------------------------------------------|--------|--------------------|-------|-------------|-------------------------------|-----------------|
| <b>MB Lot-Sample #:</b> A1D080000-011 <b>Prep Batch #...</b> : 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<br>AMOUNT | MEASURED<br>AMOUNT | UNITS | PERCNT<br>RECVRY | METHOD | PREPARATION-<br>ANALYSIS DATE | WORK<br>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

| <u>PARAMETER</u> | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> | <u>METHOD</u> | <u>PREPARATION-<br/>ANALYSIS DATE</u> | <u>WORK ORDER #</u> |
|------------------|-----------------------------|----------------------------|---------------|---------------------------------------|---------------------|
|------------------|-----------------------------|----------------------------|---------------|---------------------------------------|---------------------|

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 | AMOUNT | SAMPLE SPIKE<br>AMT | MEASRD<br>AMOUNT | UNITS | PERCNT<br>RECVRY | RPD | METHOD | PREPARATION-<br>ANALYSIS DATE | WORK<br>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

| <u>PARAMETER</u>                                                       | <u>PERCENT</u><br><u>RECOVERY</u> | <u>RECOVERY</u><br><u>LIMITS</u> | <u>RPD</u><br><u>LIMITS</u> | <u>METHOD</u> | <u>PREPARATION-</u><br><u>ANALYSIS DATE</u> | <u>WORK</u><br><u>ORDER #</u> |
|------------------------------------------------------------------------|-----------------------------------|----------------------------------|-----------------------------|---------------|---------------------------------------------|-------------------------------|
| <b>MS Lot-Sample #:</b> A1D070505-010 <b>Prep Batch #...</b> : 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.





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

## PAGE 7 OF 10

ID # N<sup>o</sup> D 8981

SSOW Ref. Code:

58562-T06-003

## Remarks/Lab ID

TAT-  
1 week

~~16 of 19~~

| SHIPMENT METHOD                                                                                                                                                                                                                                                  |  | NO. OF COOLERS |  | RELINQUISHED BY / AFFILIATION |  | DATE   |  | TIME |  | RECEIVED BY / AFFILIATION |  | DATE   |  | TIME |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------|--|-------------------------------|--|--------|--|------|--|---------------------------|--|--------|--|------|--|
| Fidelity                                                                                                                                                                                                                                                         |  | 1              |  | HSA Day - Let                 |  | 4/6/11 |  | 1700 |  | HSA                       |  | 4-7-11 |  | 0930 |  |
| AIRBILL NO. 87464283 6455                                                                                                                                                                                                                                        |  |                |  |                               |  |        |  |      |  |                           |  |        |  |      |  |
| Sample Condition                                                                                                                                                                                                                                                 |  |                |  |                               |  |        |  |      |  |                           |  |        |  |      |  |
| Temp in C                                                                                                                                                                                                                                                        |  |                |  |                               |  |        |  |      |  |                           |  |        |  |      |  |
| Received on Ice                                                                                                                                                                                                                                                  |  |                |  | Y / N                         |  |        |  |      |  |                           |  |        |  |      |  |
| Sealed Cooler                                                                                                                                                                                                                                                    |  |                |  | Y / N                         |  |        |  |      |  |                           |  |        |  |      |  |
| Samples Intact                                                                                                                                                                                                                                                   |  |                |  | Y / N                         |  |        |  |      |  |                           |  |        |  |      |  |
| Additional Comments:                                                                                                                                                                                                                                             |  |                |  |                               |  |        |  |      |  |                           |  |        |  |      |  |
| <div style="display: flex; justify-content: space-between;"> <div> <p>Sampler Name: Steven S. Hoenes</p> <p>Sampler Signature: <i>[Signature]</i></p> <p>Date: 4/7/11</p> </div> <div> <p>Sampler Name:</p> <p>Sampler Signature:</p> <p>Date:</p> </div> </div> |  |                |  |                               |  |        |  |      |  |                           |  |        |  |      |  |

Additional Comments:

|                    |                    |
|--------------------|--------------------|
| Sampler Name:      | Steven S. Hromager |
| Sampler Signature: | <i>[Signature]</i> |

Date: \_\_\_\_\_

At. Noy

11/9/5

**Distribution:**

# WHITE PAPER

■

**TestAmerica Cooler Receipt Form/Narrative**  
**North Canton Facility**

Lot Number: A1D070510

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<sub>3</sub>; Sulfuric Acid Lot# 110410-H<sub>2</sub>SO<sub>4</sub>; Sodium Hydroxide Lot# 100108-NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-(CH<sub>3</sub>COO)<sub>2</sub>ZN/NaOH. What time was preservative added to sample(s)? \_\_\_\_\_

| Client ID   | pH         | Date          | Initials           |
|-------------|------------|---------------|--------------------|
| <u>WKZ3</u> | <u>6.2</u> | <u>4-7-11</u> | <u>[Signature]</u> |
|             |            |               |                    |
|             |            |               |                    |
|             |            |               |                    |
|             |            |               |                    |
|             |            |               |                    |
|             |            |               |                    |
|             |            |               |                    |
|             |            |               |                    |
|             |            |               |                    |

**TestAmerica Cooler Receipt Form/Narrative**  
**North Canton Facility**

**Client ID**

**pH**

**Date** \_\_\_\_\_

**Initials**

Cooler #

Temp. °C

## Method

### Coolant

Discrepancies Cont'd:

***END OF REPORT***

## **ANALYTICAL REPORT**

**PROJECT NO. 58502-T02-002**

**NODULAR**

**Lot #: A1D150509**

**Paul Wiseman**

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

**TESTAMERICA LABORATORIES, INC.**



---

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

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

**April 25, 2011**

**TestAmerica Laboratories, Inc.**

TestAmerica North Canton 4101 Shuffel Street NW, North Canton, OH 44720

Tel (330)497-9396 Fax (330)497-0772 [www.testamericainc.com](http://www.testamericainc.com)



## **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.

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 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 reparation 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**

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| <b>Method 8270 Water and Solid:</b> |                                      |
| 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                      |
| <b>Method 8151 Solid</b>            |                                      |
| Dinoseb                             |                                      |
| <b>Method 8260 Water and Solid</b>  |                                      |
| 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.)



## QUALITY CONTROL ELEMENTS NARRATIVE (continued)

| <b><u>Volatile (GC or GC/MS)</u></b>       | <b><u>Semivolatile (GC/MS)</u></b> | <b><u>Metals ICP-MS</u></b>                                                                              | <b><u>Metals ICP Trace</u></b> |
|--------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------|
| Methylene Chloride,<br>Acetone, 2-Butanone | Phthalate Esters                   | Copper, Iron, Zinc,<br>Lead, Calcium,<br>Magnesium, Potassium,<br>Sodium, Barium,<br>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 reparation 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<br>LIMIT | UNITS | ANALYTICAL<br>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<br>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<br>DATE | SAMP<br>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<br>LIMIT | UNITS | METHOD        | PREPARATION-<br>ANALYSIS DATE | WORK<br>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.

# ***QUALITY CONTROL SECTION***

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A1D150509

Matrix.....: WATER

| PARAMETER                                                              | RESULT | REPORTING<br>LIMIT | UNITS | METHOD      | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|------------------------------------------------------------------------|--------|--------------------|-------|-------------|-------------------------------|-----------------|
| <b>MB Lot-Sample #:</b> A1D180000-017 <b>Prep Batch #...</b> : 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

| <u>PARAMETER</u> | <u>SPIKE</u><br><u>AMOUNT</u> | <u>MEASURED</u><br><u>AMOUNT</u> | <u>UNITS</u> | <u>PERCNT</u><br><u>RECVRY</u> | <u>METHOD</u> | <u>PREPARATION-</u><br><u>ANALYSIS DATE</u> | <u>WORK</u><br><u>ORDER #</u> |
|------------------|-------------------------------|----------------------------------|--------------|--------------------------------|---------------|---------------------------------------------|-------------------------------|
|------------------|-------------------------------|----------------------------------|--------------|--------------------------------|---------------|---------------------------------------------|-------------------------------|

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

| <u>PARAMETER</u> | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> | <u>METHOD</u> | <u>PREPARATION-<br/>ANALYSIS DATE</u> | <u>WORK ORDER #</u> |
|------------------|-----------------------------|----------------------------|---------------|---------------------------------------|---------------------|
|------------------|-----------------------------|----------------------------|---------------|---------------------------------------|---------------------|

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 | AMOUNT | SAMPLE SPIKE<br>AMT | MEASRD<br>AMOUNT | UNITS | PERCNT<br>RECVRY | RPD | METHOD | PREPARATION-<br>ANALYSIS DATE | WORK<br>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

| <u>PARAMETER</u>                                                       | <u>PERCENT</u><br><u>RECOVERY</u> | <u>RECOVERY</u><br><u>LIMITS</u> | <u>RPD</u><br><u>LIMITS</u> | <u>METHOD</u> | <u>PREPARATION-</u><br><u>ANALYSIS DATE</u> | <u>WORK</u><br><u>ORDER #</u> |
|------------------------------------------------------------------------|-----------------------------------|----------------------------------|-----------------------------|---------------|---------------------------------------------|-------------------------------|
| <b>MS Lot-Sample #:</b> A1D150538-001 <b>Prep Batch #...</b> : 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.



**CHAIN-OF-CUSTODY / Analytical Request Document**  
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

|      |   |    |   |
|------|---|----|---|
| PAGE | 7 | OF | 7 |
|------|---|----|---|

SSOW Ref. Code:  
56502-706-003

16 of 19

RFK 1014 (M)

**TestAmerica Cooler Receipt Form/Narrative**  
**North Canton Facility**

Lot Number: AIDL50509

Client CRA Project Nuclear By: [Signature]  
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 12.9 °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:

maintaining 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<sub>3</sub>; Sulfuric Acid Lot# 110410-H<sub>2</sub>SO<sub>4</sub>; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-(CH<sub>3</sub>COO)<sub>2</sub>ZN/NaOH. What time was preservative added to sample(s)? \_\_\_\_\_

| Client ID   | pH        | Date           | Initials           |
|-------------|-----------|----------------|--------------------|
| <u>Wk24</u> | <u>cz</u> | <u>4.15.11</u> | <u>[Signature]</u> |
|             |           |                |                    |
|             |           |                |                    |
|             |           |                |                    |
|             |           |                |                    |
|             |           |                |                    |
|             |           |                |                    |
|             |           |                |                    |

## TestAmerica Cooler Receipt Form/Narrative North Canton Facility

[illegible]

Discrepancies Cont'd:

[illegible]

***END OF REPORT***

## **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.**



---

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

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

**May 09, 2011**

**TestAmerica Laboratories, Inc.**

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## **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 reparation 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**

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| <b>Method 8270 Water and Solid:</b> |                                      |
| 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                      |
| <b>Method 8151 Solid</b>            |                                      |
| Dinoseb                             |                                      |
| <b>Method 8260 Water and Solid</b>  |                                      |
| 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.)

## QUALITY CONTROL ELEMENTS NARRATIVE (continued)

| <b><u>Volatile (GC or GC/MS)</u></b>       | <b><u>Semivolatile (GC/MS)</u></b> | <b><u>Metals ICP-MS</u></b>                                                                              | <b><u>Metals ICP Trace</u></b> |
|--------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------|
| Methylene Chloride,<br>Acetone, 2-Butanone | Phthalate Esters                   | Copper, Iron, Zinc,<br>Lead, Calcium,<br>Magnesium, Potassium,<br>Sodium, Barium,<br>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 reparation 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<br>LIMIT | UNITS | ANALYTICAL<br>METHOD |
|---------------------------------------------|---------|--------------------|-------|----------------------|
| W-58502-042011-SSH-M0.03 04/20/11 16:00 001 |         |                    |       |                      |
| Zinc                                        | 8.8 B   | 20.0               | ug/L  | MCAWW 200.7          |
| bis(2-Ethylhexyl)<br>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<br>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<br>DATE | SAMP<br>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-M0.03

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<br>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-M0.03

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<br>LIMIT | UNITS       | MDL         |
|----------------------------------------|---------------------|--------------------|-------------|-------------|
| Acenaphthene                           | ND                  | 5.0                | ug/L        | 0.10        |
| Benzo(a)pyrene                         | ND                  | 5.0                | ug/L        | 0.10        |
| <b>bis(2-Ethylhexyl)<br/>phthalate</b> | <b>0.89 J</b>       | <b>5.0</b>         | <b>ug/L</b> | <b>0.80</b> |
| 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-<br>phenol             | ND                  | 4.0                | ug/L        | 0.80        |
| Butyl benzyl phthalate                 | ND                  | 5.0                | ug/L        | 0.80        |
| SURROGATE                              | PERCENT<br>RECOVERY | RECOVERY<br>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-M0.03

TOTAL Metals

Lot-Sample #...: A1D210600-001

Matrix.....: WG

Date Sampled...: 04/20/11 16:00 Date Received...: 04/21/11

| PARAMETER                       | RESULT | REPORTING<br>LIMIT | UNITS | METHOD        | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|---------------------------------|--------|--------------------|-------|---------------|-------------------------------|-----------------|
| <b>Prep Batch #...: 1112016</b> |        |                    |       |               |                               |                 |
| 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-M0.03

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-<br>ANALYSIS DATE | PREP<br>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.

# ***QUALITY CONTROL SECTION***

# METHOD BLANK REPORT

## GC/MS Volatiles

Client Lot #...: A1D210600  
MB Lot-Sample #: A1D260000-412

Work Order #...: MHJH51AA

Matrix.....: WATER

Analysis Date...: 04/21/11

Prep Date.....: 04/21/11

Prep Batch #...: 1116412

Dilution Factor: 1

| PARAMETER          | RESULT | REPORTING<br>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<br>RECOVERY | RECOVERY<br>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

| <u>PARAMETER</u>   | <u>SPIKE<br/>AMOUNT</u> | <u>MEASURED<br/>AMOUNT</u> | <u>UNITS</u> | <u>PERCENT<br/>RECOVERY</u> | <u>METHOD</u> |
|--------------------|-------------------------|----------------------------|--------------|-----------------------------|---------------|
| 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   |

| <u>SURROGATE</u>      | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> |
|-----------------------|-----------------------------|----------------------------|
| 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

| <u>PARAMETER</u>   | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> | <u>METHOD</u> |
|--------------------|-----------------------------|----------------------------|---------------|
| 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   |

| <u>SURROGATE</u>      | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> |
|-----------------------|-----------------------------|----------------------------|
| 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<br>AMOUNT | SPIKE<br>AMT | MEASRD<br>AMOUNT | UNITS | PERCENT<br>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<br>RECOVERY | RECOVERY<br>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

| <u>PARAMETER</u>          | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> | <u>METHOD</u>      |
|---------------------------|-----------------------------|----------------------------|--------------------|
| <b>Benzene</b>            | <b>94</b>                   | <b>(90 - 114)</b>          | <b>CFR136A 624</b> |
| <b>Chloroform</b>         | <b>92</b>                   | <b>(90 - 118)</b>          | <b>CFR136A 624</b> |
| <b>Methylene chloride</b> | <b>100</b>                  | <b>(78 - 131)</b>          | <b>CFR136A 624</b> |
| <b>Tetrachloroethene</b>  | <b>95</b>                   | <b>(81 - 112)</b>          | <b>CFR136A 624</b> |
| <b>Trichloroethene</b>    | <b>94</b>                   | <b>(85 - 114)</b>          | <b>CFR136A 624</b> |

| <u>SURROGATE</u>      | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> |
|-----------------------|-----------------------------|----------------------------|
| 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  
MB Lot-Sample #: A1D270000-038

Work Order #...: MHJRP1AA

Matrix.....: WATER

Analysis Date...: 05/04/11

Prep Date.....: 04/27/11

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)<br>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-<br>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

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

| <u>PARAMETER</u>                       | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> | <u>METHOD</u>      |
|----------------------------------------|-----------------------------|----------------------------|--------------------|
| <b>bis(2-Ethylhexyl)<br/>phthalate</b> | <b>94</b>                   | <b>(50 - 134)</b>          | <b>CFR136A 625</b> |
| <b>Di-n-butyl phthalate</b>            | <b>91</b>                   | <b>(49 - 110)</b>          | <b>CFR136A 625</b> |
| <b>Diethyl phthalate</b>               | <b>87</b>                   | <b>(10 - 117)</b>          | <b>CFR136A 625</b> |
| <b>Fluoranthene</b>                    | <b>92</b>                   | <b>(55 - 112)</b>          | <b>CFR136A 625</b> |
| <b>Pyrene</b>                          | <b>85</b>                   | <b>(48 - 122)</b>          | <b>CFR136A 625</b> |
| <b>4-Chloro-3-methylphenol</b>         | <b>87</b>                   | <b>(58 - 110)</b>          | <b>CFR136A 625</b> |
| <b>2,4-Dimethylphenol</b>              | <b>80</b>                   | <b>(10 - 115)</b>          | <b>CFR136A 625</b> |
| <b>Phenol</b>                          | <b>58</b>                   | <b>(17 - 130)</b>          | <b>CFR136A 625</b> |
| <b>2,4,6-Trichloro-<br/>phenol</b>     | <b>78</b>                   | <b>(54 - 110)</b>          | <b>CFR136A 625</b> |
| <b>Acenaphthene</b>                    | <b>76</b>                   | <b>(54 - 110)</b>          | <b>CFR136A 625</b> |
| <b>Benzo(a)pyrene</b>                  | <b>78</b>                   | <b>(51 - 111)</b>          | <b>CFR136A 625</b> |
| <b>Butyl benzyl phthalate</b>          | <b>91</b>                   | <b>(44 - 129)</b>          | <b>CFR136A 625</b> |
| <u>SURROGATE</u>                       | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> |                    |
| 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<br>LIMIT | UNITS | METHOD      | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|-----------------------------------------------------------------------|--------|--------------------|-------|-------------|-------------------------------|-----------------|
| <b>MB Lot-Sample #:</b> A1D220000-016 <b>Prep Batch #...:</b> 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<br>AMOUNT | MEASURED<br>AMOUNT | UNITS              | PERCNT<br>RECVRY | METHOD      | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|------------------------------------------------------------------------|-----------------|--------------------|--------------------|------------------|-------------|-------------------------------|-----------------|
| <b>LCS Lot-Sample#:</b> A1D220000-016 <b>Prep Batch #...</b> : 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

| <u>PARAMETER</u>                                                      | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> | <u>METHOD</u> | <u>PREPARATION-<br/>ANALYSIS DATE</u> | <u>WORK ORDER #</u> |
|-----------------------------------------------------------------------|-----------------------------|----------------------------|---------------|---------------------------------------|---------------------|
| <b>LCS Lot-Sample#:</b> A1D220000-016 <b>Prep Batch #...:</b> 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):**

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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 | AMOUNT | SAMPLE SPIKE<br>AMT | MEASRD<br>AMOUNT | UNITS | PERCNT<br>RECVRY | RPD | METHOD | PREPARATION-<br>ANALYSIS DATE | WORK<br>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<br>RECOVERY | RECOVERY<br>LIMITS | RPD<br>LIMITS | METHOD      | PREPARATION-<br>ANALYSIS DATE | WORK<br>ORDER # |
|----------------------------------------------------------------|---------------------|--------------------|---------------|-------------|-------------------------------|-----------------|
| <b>MS Lot-Sample #: A1D210484-001 Prep Batch #...: 1112016</b> |                     |                    |               |             |                               |                 |
| 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

| <u>PARAMETER</u> | <u>RESULT</u> | <u>REPORTING</u><br><u>LIMIT</u> | <u>UNITS</u> | <u>METHOD</u>    | <u>PREPARATION-</u><br><u>ANALYSIS DATE</u> | <u>PREP</u><br><u>BATCH #</u> |
|------------------|---------------|----------------------------------|--------------|------------------|---------------------------------------------|-------------------------------|
| Total Phenols    | ND            | Work Order #: MHHJ81AA           |              | MB Lot-Sample #: | A1D260000-199                               |                               |
|                  |               | 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

| <u>PARAMETER</u> | <u>SPIKE</u><br><u>AMOUNT</u> | <u>MEASURED</u><br><u>AMOUNT</u> | <u>UNITS</u> | <u>PERCNT</u><br><u>RECVRY</u> | <u>METHOD</u> | <u>PREPARATION-</u><br><u>ANALYSIS DATE</u> | <u>PREP</u><br><u>BATCH #</u> |
|------------------|-------------------------------|----------------------------------|--------------|--------------------------------|---------------|---------------------------------------------|-------------------------------|
| Total Phenols    | 1.0                           | 1.0                              | mg/L         | 100                            | MCAWW 420.1   | 04/26/11                                    | 1116199                       |

Work Order #: MHHJ81AC LCS Lot-Sample#: A1D260000-199  
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

| <u>PARAMETER</u> | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u>           | <u>METHOD</u>                                 | <u>PREPARATION-<br/>ANALYSIS DATE</u> | <u>PREP<br/>BATCH #</u> |
|------------------|-----------------------------|--------------------------------------|-----------------------------------------------|---------------------------------------|-------------------------|
| Total Phenols    | 100                         | Work Order #: MHHJ81AC<br>(54 - 137) | LCS Lot-Sample#: A1D260000-199<br>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

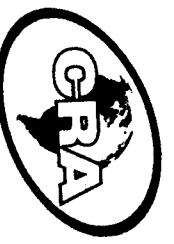
Matrix.....: WATER

Date Sampled...: 04/19/11 13:30 Date Received...: 04/20/11

| PARAMETER     | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS | RPD<br>LIMITS                 | METHOD      | PREPARATION-<br>ANALYSIS DATE | PREP<br>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.



# 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 8966

### Required Client Information:

|                            |                           |
|----------------------------|---------------------------|
| Company: CRA, Inc.         | Report To: Paul Wiseman   |
| Address: 14496 Sheldon Rd. | Copy To: Mike Tomlts      |
| Suite 200                  | Invoice To:               |
| Plymouth, MI 48170         | P.O.:                     |
| Phone: 734-453-5123        | Project Name: Modular     |
| Fax: 734-453-5201          | Project Number: 58502-702 |
| Email:                     |                           |

|                                       |
|---------------------------------------|
| Laboratory: Test America              |
| Laboratory Location: North Canton, OH |
| Laboratory Contact: Denise Heltzer    |
| Requested Due Date: TAT: STD          |
| QA/QC Requirements:                   |

SSOW Ref. Code: 58502-706-003

### Sample Identification:

| Valid Matrix Codes:                                                                                                | Matrix Code | Date Collected | Time Collected | # Containers | Unpreserved | HCl | H2SO4 | HNO3 | NaOH | Other: | Analysis and Method                              | Remarks/Lab ID |
|--------------------------------------------------------------------------------------------------------------------|-------------|----------------|----------------|--------------|-------------|-----|-------|------|------|--------|--------------------------------------------------|----------------|
| WG Groundwater<br>WB Borehole Water<br>WS Surface Water<br>SO Soil<br>SE Sediment<br>See Back for Additional Codes |             |                |                |              |             |     |       |      |      |        |                                                  |                |
| 1. W-58502-042011-SSH-MO.D3                                                                                        | WS          | 4/20/11        | 1600           | 7            | X           | X   | X     | X    | X    | X      | Zinc<br>Copper<br>Lead<br>phenol<br>TICs<br>VOLs |                |
| 2.                                                                                                                 |             |                |                |              |             |     |       |      |      |        |                                                  |                |
| 3.                                                                                                                 |             |                |                |              |             |     |       |      |      |        |                                                  |                |
| 4.                                                                                                                 |             |                |                |              |             |     |       |      |      |        |                                                  |                |
| 5.                                                                                                                 |             |                |                |              |             |     |       |      |      |        |                                                  |                |
| 6.                                                                                                                 |             |                |                |              |             |     |       |      |      |        |                                                  |                |
| 7.                                                                                                                 |             |                |                |              |             |     |       |      |      |        |                                                  |                |
| 8.                                                                                                                 |             |                |                |              |             |     |       |      |      |        |                                                  |                |
| 9.                                                                                                                 |             |                |                |              |             |     |       |      |      |        |                                                  |                |
| 10.                                                                                                                |             |                |                |              |             |     |       |      |      |        |                                                  |                |
| 11.                                                                                                                |             |                |                |              |             |     |       |      |      |        |                                                  |                |
| 12.                                                                                                                |             |                |                |              |             |     |       |      |      |        |                                                  |                |
| 13.                                                                                                                |             |                |                |              |             |     |       |      |      |        |                                                  |                |
| 14.                                                                                                                |             |                |                |              |             |     |       |      |      |        |                                                  |                |
| 15.                                                                                                                |             |                |                |              |             |     |       |      |      |        |                                                  |                |

TOTAL NUMBER OF CONTAINERS 7

| SHIPMENT METHOD            | NO. OF COOLERS | RELINQUISHED BY / AFFILIATION | DATE    | TIME | RECEIVED BY / AFFILIATION | DATE    | TIME |
|----------------------------|----------------|-------------------------------|---------|------|---------------------------|---------|------|
| Feeder                     | 1              | Paul Wiseman / CRA            | 4/20/11 | 1800 | Steve S. Howmeyer         | 4/21/11 | 945  |
| AIRBILL NO. 8746 4283 6488 |                |                               |         |      |                           |         |      |

|                                |     |
|--------------------------------|-----|
| Sample Condition               |     |
| Temp in C                      | Y/N |
| Received on Ice                | Y/N |
| Sealed Cooler                  | Y/N |
| Samples Intact                 | Y/N |
| Additional Comments:           |     |
| Sample Name: Steve S. Howmeyer |     |
| Date: 4/20/11                  |     |

# TestAmerica Cooler Receipt Form/Narrative

## North Canton Facility

Lot Number: A1D210600

Client CRA Project \_\_\_\_\_ By: [Signature] (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? \_\_\_\_\_ Yes ☒ No ☐  
 2. Shippers' packing slip attached to the cooler(s)? Relinquished by client? Yes ☒ No ☐  
 3. Did custody papers accompany the sample(s)? 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 ☐ NA ☐  
 11. Were air bubbles >6 mm in any VOA vials? Yes ☒ No ☐  
 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<sub>3</sub>; Sulfuric Acid Lot# 110410-H<sub>2</sub>SO<sub>4</sub>; Sodium  
 Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-  
 (CH<sub>3</sub>COO)<sub>2</sub>ZN/NaOH. What time was preservative added to sample(s)? \_\_\_\_\_

| Client ID | pH | Date    | Initials |
|-----------|----|---------|----------|
| 03        | 22 | 4/21/11 | CS       |
|           |    |         |          |
|           |    |         |          |
|           |    |         |          |
|           |    |         |          |
|           |    |         |          |
|           |    |         |          |
|           |    |         |          |
|           |    |         |          |
|           |    |         |          |

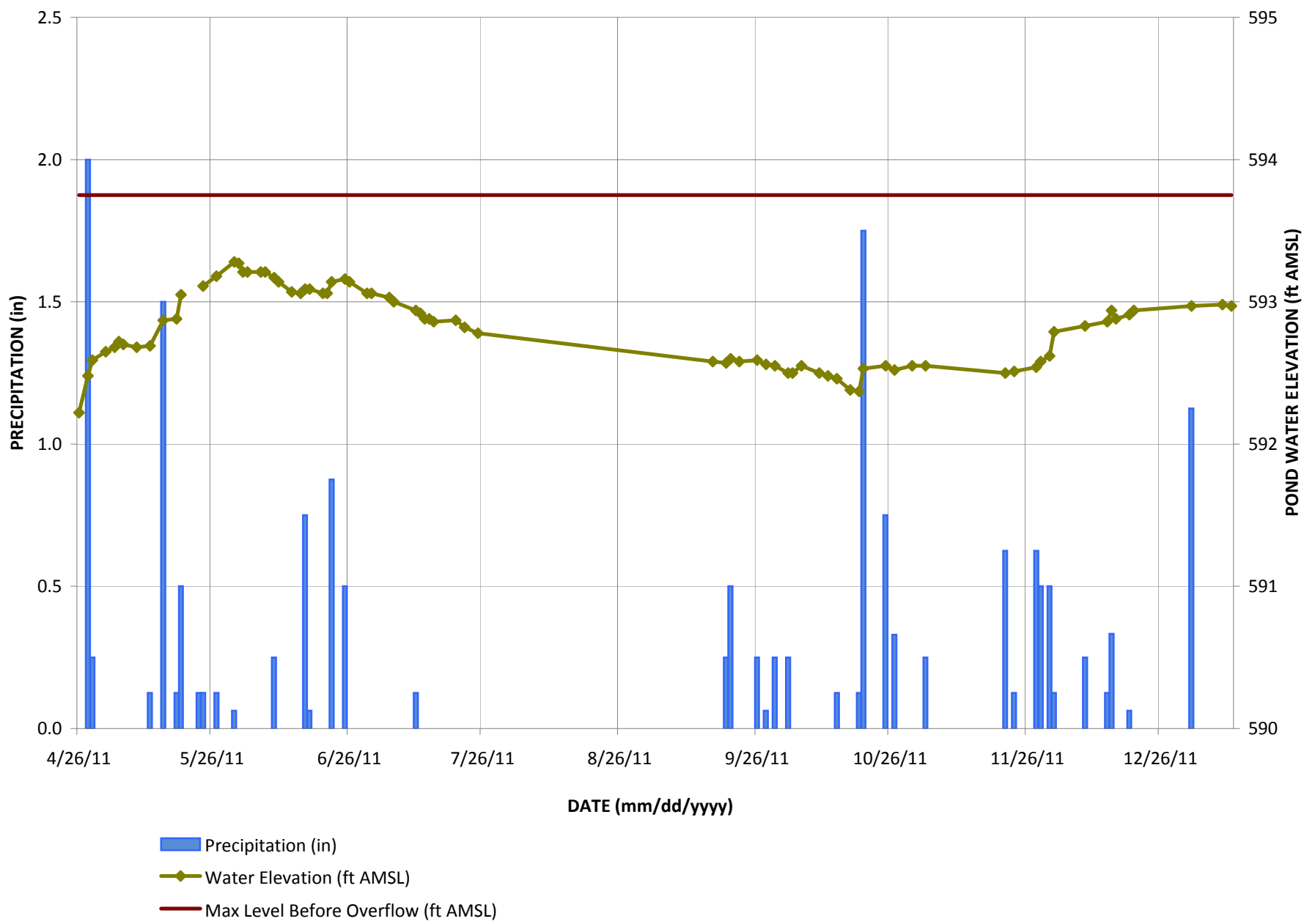


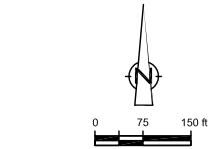
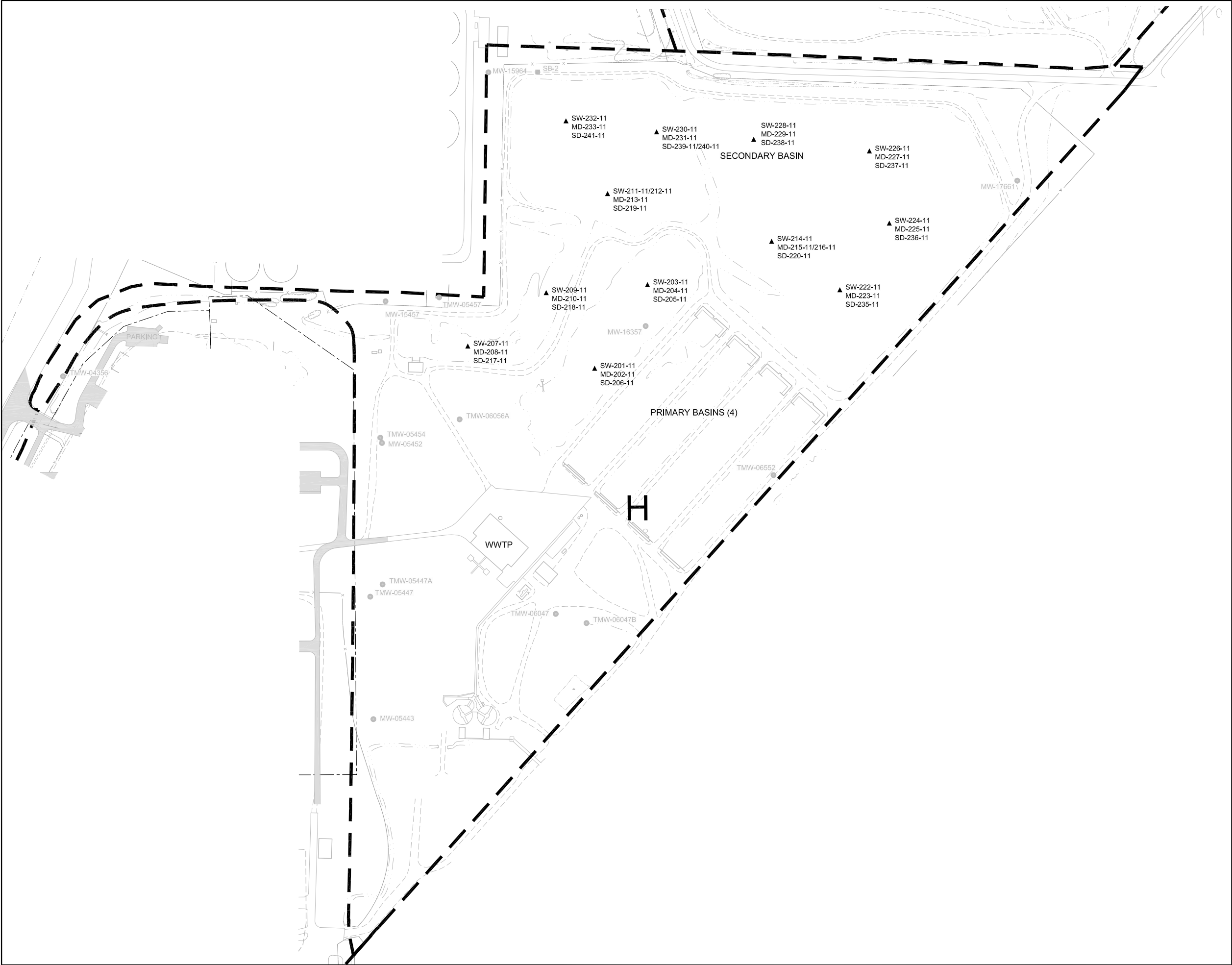
[illegible]

***END OF REPORT***

APPENDIX H

SECONDARY POND CHARACTERIZATION RESULTS





**LEGEND**

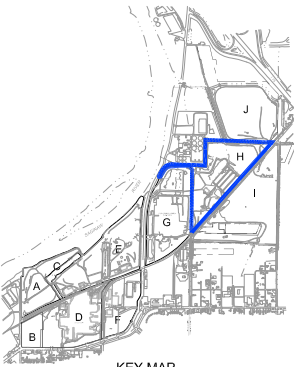
A-- INVESTIGATIVE UNIT BOUNDARY AND IDENTIFIER

● MONITORING WELL LOCATION

▲ POND WATER AND SEDIMENT SAMPLE LOCATION

**NOTES:**

- POND ELEVATION APPROX. 593.00 ft AMSL
- SW = SURFACE WATER
- MD = MID-DEPTH
- SD = SEDIMENT



KEY MAP

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.



REVITALIZING AUTOMOTIVE COMMUNITY  
ENVIRONMENTAL RESPONSE

SAGINAW, MICHIGAN

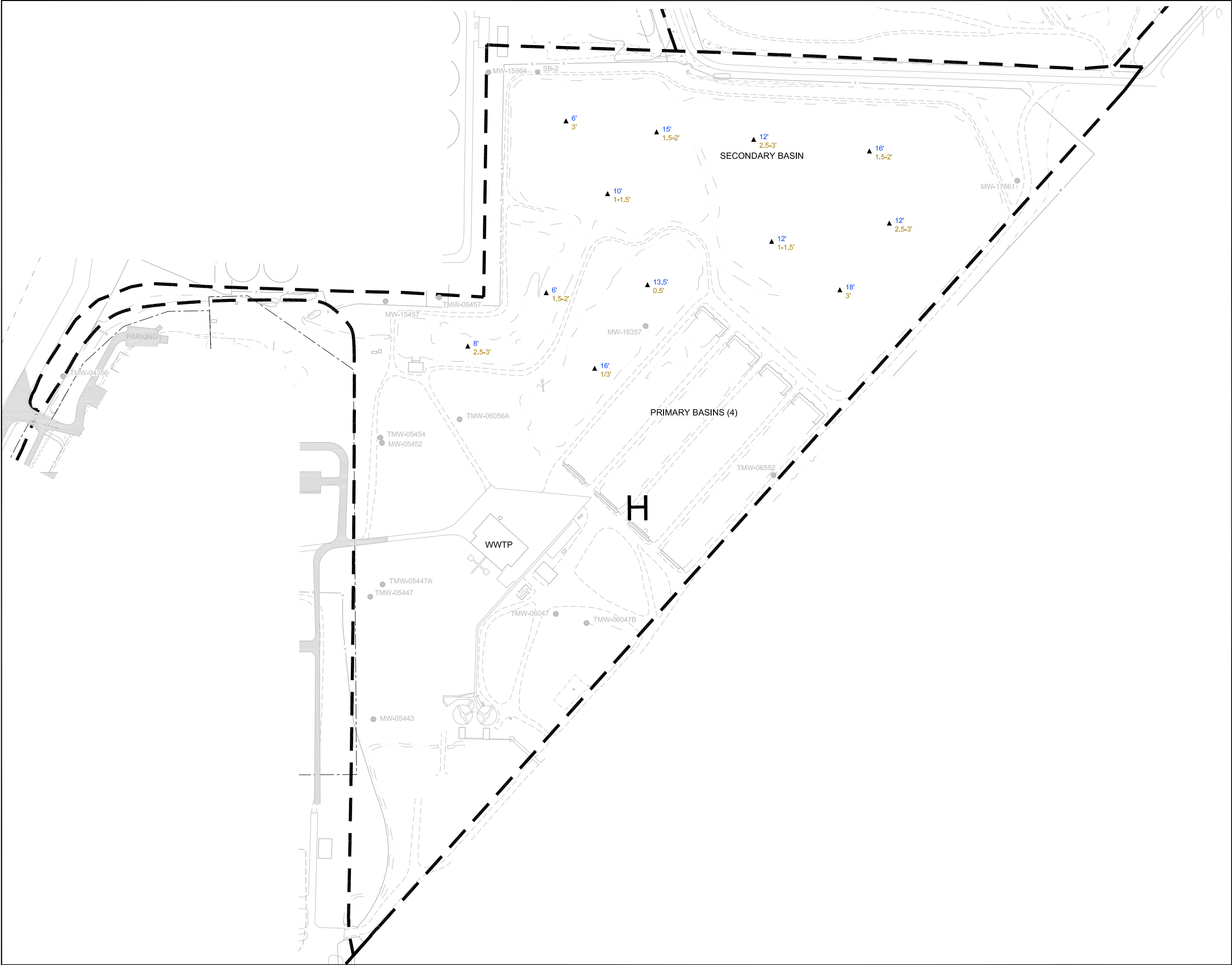
POND WATER AND SEDIMENT  
SAMPLE LOCATIONS



CONESTOGA-ROVERS & ASSOCIATES

Source Reference:  
MICHIGAN STATE PLANE SOUTH, NAD 83 USING INTERNATIONAL FEET, NGVD 88  
TOPO - SANBORN, 1996

|                          |                          |                    |                         |
|--------------------------|--------------------------|--------------------|-------------------------|
| Project Manager:<br>I.R. | Reviewed By:<br>M.T.     | Date:<br>JULY 2011 |                         |
| Scale:<br>1" = 200'      | Project N°:<br>58502-T02 | Report N°:<br>005  | Drawing N°:<br>figure 1 |



**LEGEND**

A-- INVESTIGATIVE UNIT BOUNDARY AND IDENTIFIER

● MONITORING WELL LOCATION

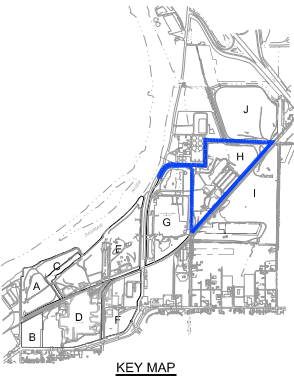
▲ POND WATER AND SEDIMENT SAMPLE LOCATION

16' WATER DEPTH

1.5-2' SEDIMENT THICKNESS

NOTE:

- POND ELEVATION APPROX. 593.00 R AMSL.



SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

REVITALIZING AUTOMOTIVE COMMUNITY  
ENVIRONMENTAL RESPONSE

SAGINAW, MICHIGAN

POND WATER DEPTH  
AND SEDIMENT THICKNESS

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:  
MICHIGAN STATE PLANE SOUTH, NAD 83 USING INTERNATIONAL FEET, NGVD 88  
TOPO - SANBORN, 1996

|                          |                          |                         |
|--------------------------|--------------------------|-------------------------|
| Project Manager:<br>I.R. | Reviewed By:<br>M.T.     | Date:<br>JULY 2011      |
| Scale:<br>1" = 200'      | Project N°:<br>58502-T02 | Report N°:<br>005       |
|                          |                          | Drawing N°:<br>figure 2 |

TABLE 1

**SURFACE WATER ANALYTICAL RESULTS OF THE SECONDARY POND  
NODULAR FACILITY  
SAGINAW, MICHIGAN**

Sample Location:

Sample ID:

Sample Date:

|                                          |       |           |          | Rule 57     |            | MD-202-11<br>SW-58502-062711-SH-202<br>6/27/2011 | MD-204-11<br>SW-58502-062711-SH-204<br>6/27/2011 | MD-208-11<br>SW-58502-062711-SH-208<br>6/27/2011 | MD-210-11<br>SW-58502-062811-SH-210<br>6/28/2011 | MD-213-11<br>SW-58502-062811-SH-213<br>6/28/2011 |
|------------------------------------------|-------|-----------|----------|-------------|------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| Parameters:                              | Units | a<br>GSI  | b<br>FCV | c<br>HCVd   | d<br>HNVd  | e<br>WV                                          |                                                  |                                                  |                                                  |                                                  |
| <b>Metals</b>                            |       |           |          |             |            |                                                  |                                                  |                                                  |                                                  |                                                  |
| Antimony, total recoverable              | mg/L  | 0.13      | 0.24     |             | 0.0017     | 0.00037 J                                        | 0.00034 J                                        | 0.00055 J                                        | 0.00053 J                                        | 0.00052 J                                        |
| Arsenic, total recoverable               | mg/L  | 0.01      | 0.15     | 0.01        | 0.01       | 0.0025 J                                         | 0.0026 J                                         | 0.0024 J                                         | 0.0024 J                                         | 0.0025 J                                         |
| Barium, total recoverable (1)            | mg/L  | 0.44      | 0.44     |             | 1.9        | 0.033 J                                          | 0.032 J                                          | 0.043 J                                          | 0.043 J B                                        | 0.044 J B                                        |
| Beryllium, total recoverable (1)         | mg/L  | 0.0024    | 0.002    |             | 0.16       | 0.001 U                                          | 0.001 U                                          | 0.001 U                                          | 0.001 U                                          | 0.001 U                                          |
| Cadmium, total recoverable (1)           | mg/L  | 0.0022    | 0.0025   |             | 0.0025     | 0.001 U                                          | 0.001 U                                          | 0.001 U                                          | 0.001 U                                          | 0.001 U                                          |
| Chromium, total recoverable              | mg/L  | 0.011     | 0.07     |             | 0.12       | 0.005 U                                          | 0.005 U                                          | 0.005 U                                          | 0.005 U                                          | 0.005 U                                          |
| Cobalt, total recoverable                | mg/L  | 0.1       | 0.10     |             |            | 0.00019 J                                        | 0.00015 J                                        | 0.00018 J                                        | 0.00023 J                                        | 0.00024 J                                        |
| Copper, total recoverable (1)            | mg/L  | 0.0090    | 0.009    |             | 0.47       | 0.00097 J                                        | 0.00095 J                                        | 0.00068 J                                        | 0.00054 J B                                      | 0.00059 J B                                      |
| Lead, total recoverable (1)              | mg/L  | 0.010     | 0.04     |             | 0.014      | 0.003 U                                          | 0.003 U                                          | 0.00027 J                                        | 0.00028 J                                        | 0.00019 J                                        |
| Manganese, total recoverable (1)         | mg/L  | 1.30      | 1.93     |             | 1.3        | 0.15                                             | 0.12                                             | 0.17                                             | 0.18                                             | 0.18                                             |
| Mercury                                  | mg/L  | 0.0000013 | 0.00077  |             | 0.0000018  | 0.0000013                                        | 0.0002 U                                         | 0.0002 U                                         | 0.0002 U                                         | 0.0002 U                                         |
| Mercury (convert from ng/L)              | mg/L  | 0.0000013 | 0.00077  |             | 0.0000018  | 0.0000037 J                                      | 0.0000014 J                                      | 0.0000014 J                                      | 0.0000024 J                                      | 0.0000003 J                                      |
| Nickel, total recoverable (1)            | mg/L  | 0.052     | 0.05     |             | 2.6        | 0.0011 J                                         | 0.00093 J                                        | 0.001 J                                          | 0.0012 J B                                       | 0.0013 J B                                       |
| Selenium, total recoverable              | mg/L  | 0.005     | 0.01     |             | 0.12       | 0.005 U                                          | 0.005 U                                          | 0.005 U                                          | 0.005 U                                          | 0.005 U                                          |
| Silver, total recoverable                | mg/L  | 0.0002    | 0.00006  |             | 0.13       | 0.0002 U                                         | 0.0002 U                                         | 0.0002 U                                         | 0.0002 U                                         | 0.0002 U                                         |
| Thallium, total recoverable              | mg/L  | 0.0037    | 0.01     |             | 0.0012     | 0.0003 J                                         | 0.001 U                                          | 0.001 U                                          | 0.001 U                                          | 0.00017 J B                                      |
| Vanadium, total recoverable              | mg/L  | 0.012     | 0.03     |             | 0.053      | 0.004 U                                          | 0.004 U                                          | 0.004 U                                          | 0.004 U                                          | 0.004 U                                          |
| Zinc, total recoverable (1)              | mg/L  | 0.12      | 0.12     |             | 3.3        | 0.0055 J B                                       | 0.02 U                                           | 0.0042 J B                                       | 0.02 U                                           | 0.0026 J B                                       |
| <b>Polychlorinated Biphenyls</b>         |       |           |          |             |            |                                                  |                                                  |                                                  |                                                  |                                                  |
| Aroclor-1016 (PCB-1016)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| Aroclor-1221 (PCB-1221)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| Aroclor-1232 (PCB-1232)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| Aroclor-1242 (PCB-1242)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| Aroclor-1248 (PCB-1248)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| Aroclor-1254 (PCB-1254)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| Aroclor-1260 (PCB-1260)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| Aroclor-1262 (PCB-1262)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| Aroclor-1268 (PCB-1268)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| <b>General Chemistry</b>                 |       |           |          |             |            |                                                  |                                                  |                                                  |                                                  |                                                  |
| Ammonia                                  | mg/L  |           |          |             |            | 0.83 J                                           | 0.83 J                                           | 3.6                                              | 3.6                                              | 3.9                                              |
| warmwater Unionized Ammonia (calculated) | mg/L  | 0.056     | 0.053    |             |            | 0.10                                             | 0.09                                             | 0.40                                             | 0.40                                             | 0.44                                             |
| Biochemical oxygen demand (BOD)          | mg/L  | -         |          |             |            | 2.0 U                                            | 2.0 U                                            | 2.3                                              | 10                                               | 9.0                                              |
| Chemical oxygen demand (COD)             | mg/L  | -         |          |             |            | 51                                               | 20 U                                             | 56                                               | 53                                               | 30                                               |
| Cyanide (amenable)                       | mg/L  | -         |          |             |            | 0.010 U                                          | 0.010 U                                          | 0.010 U                                          | 0.010 U                                          | 0.010 U                                          |
| Cyanide (total)                          | mg/L  | 0.0052    | 0.0052   |             | 0.6        | 0.010 U                                          | 0.010 U                                          | 0.010 U                                          | 0.010 U                                          | 0.010 U                                          |
| Formaldehyde                             | mg/L  | 0.12      | 0.12     |             | 5.0        | 0.025 J B                                        | 0.017 J B                                        | 0.022 J B                                        | 0.016 J B                                        | 0.016 J B                                        |
| Nitrate (as N)                           | mg/L  | -         |          |             | 10         | 0.27                                             | 0.27                                             | 0.41                                             | 0.53                                             | 0.43                                             |
| Oil and grease (HEM), polar              | mg/L  | -         |          |             |            | 4.8 U                                            | 0.86 J                                           | 0.96 J                                           | 1.2 J B                                          | 0.87 J B                                         |
| pH, lab                                  | s.u.  | -         |          |             |            | 8.18 H                                           | 8.50 H                                           | 8.55 H                                           | 8.43 H                                           | 8.40 H                                           |
| Phenolics (total)                        | mg/L  | -         |          |             |            | 0.040 U                                          | 0.040 U                                          | 0.040 U                                          | 0.040 U                                          | 0.040 U                                          |
| Total organic carbon (TOC)               | mg/L  | -         |          |             |            | 15                                               | 16                                               | 14                                               | 14                                               | 14                                               |

Notes:

B - For organics Method blank contamination / For Inorganics = Estimated Value

J - Estimated concentration.

U - Not present at or above the associated value.

0.01 calculated value assuming a hardness of: 100 mg/L

Assuming a temperature of 20 degrees C and an average pH of 8.5 the percentage of NH3 in ammonia is: 11.2%

HCVd = HCV-Human Cancer Value-Drink

HNVd = Human Noncancer Value-Drink

FCV = Final Chronic Value

WV = Wildlife Value

TABLE 1

SURFACE WATER ANALYTICAL RESULTS OF THE SECONDARY POND  
NODULAR FACILITY  
SAGINAW, MICHIGAN

Sample Location:  
Sample ID:  
Sample Date:

|  |  | MD-215-11              | MD-215-11              | MD-223-11              | MD-225-11              | MD-227-11              |
|--|--|------------------------|------------------------|------------------------|------------------------|------------------------|
|  |  | SW-58502-062811-SH-215 | SW-58502-062811-SH-216 | SW-58502-062911-SH-223 | SW-58502-062911-SH-225 | SW-58502-062911-SH-227 |
|  |  | 6/28/2011              | 6/28/2011              | 6/29/2011              | 6/29/2011              | 6/29/2011              |
|  |  |                        | (Duplicate)            |                        |                        |                        |

| Parameters: | Units | a   | b   | c    | d    | e  |
|-------------|-------|-----|-----|------|------|----|
|             |       | GSI | FCV | HCVd | HNVd | WV |

Metals

|                                  |      |           |         |      |           |             |              |              |              |              |
|----------------------------------|------|-----------|---------|------|-----------|-------------|--------------|--------------|--------------|--------------|
| Antimony, total recoverable      | mg/L | 0.13      | 0.24    |      | 0.0017    | 0.00053 J   | 0.00048 J    | 0.0005 J     | 0.00055 J    | 0.00046 J    |
| Arsenic, total recoverable       | mg/L | 0.01      | 0.15    | 0.01 | 0.01      | 0.0024 J    | 0.0023 J     | 0.0023 J     | 0.0024 J     | 0.0022 J     |
| Barium, total recoverable (1)    | mg/L | 0.44      | 0.44    |      | 1.9       | 0.044 J B   | 0.042 J B    | 0.043 J      | 0.043 J      | 0.043 J      |
| Beryllium, total recoverable (1) | mg/L | 0.0024    | 0.002   |      | 0.16      | 0.001 U     | 0.001 U      | 0.001 U      | 0.001 U      | 0.001 U      |
| Cadmium, total recoverable (1)   | mg/L | 0.0022    | 0.0025  |      | 0.0025    | 0.001 U     | 0.001 U      | 0.001 U      | 0.001 U      | 0.001 U      |
| Chromium, total recoverable      | mg/L | 0.011     | 0.07    |      | 0.12      | 0.005 U     | 0.005 U      | 0.005 U      | 0.005 U      | 0.005 U      |
| Cobalt, total recoverable        | mg/L | 0.1       | 0.10    |      |           | 0.00021 J   | 0.00022 J    | 0.0002 J     | 0.00019 J    | 0.00018 J    |
| Copper, total recoverable (1)    | mg/L | 0.0090    | 0.009   |      | 0.47      | 0.00058 J B | 0.00054 J B  | 0.0006 J     | 0.00058 J    | 0.00042 J    |
| Lead, total recoverable (1)      | mg/L | 0.010     | 0.04    |      | 0.014     | 0.003 U     | 0.003 U      | 0.003 U      | 0.003 U      | 0.003 U      |
| Manganese, total recoverable (1) | mg/L | 1.30      | 1.93    |      | 1.3       | 0.17        | 0.16         | 0.18         | 0.17         | 0.17         |
| Mercury                          | mg/L | 0.0000013 | 0.00077 |      | 0.0000018 | 0.0000013   | 0.0002 U     | 0.0002 U     | 0.0002 U     | 0.0002 U     |
| Mercury (convert from ng/L)      | mg/L | 0.0000013 | 0.00077 |      | 0.0000018 | 0.0000013   | 0.00000022 J | 0.00000033 J | 0.00000015 J | 0.00000019 J |
| Nickel, total recoverable (1)    | mg/L | 0.052     | 0.05    |      | 2.6       | 0.001 J B   | 0.0018 J B   | 0.0012 J     | 0.0012 J     | 0.0011 J     |
| Selenium, total recoverable      | mg/L | 0.005     | 0.01    |      | 0.12      | 0.005 U     | 0.005 U      | 0.005 U      | 0.005 U      | 0.005 U      |
| Silver, total recoverable        | mg/L | 0.0002    | 0.00006 |      | 0.13      | 0.0002 U    | 0.0002 U     | 0.0002 U     | 0.0002 U     | 0.0002 U     |
| Thallium, total recoverable      | mg/L | 0.0037    | 0.01    |      | 0.0012    | 0.001 U     | 0.001 U      | 0.001 U      | 0.0004 J     | 0.001 U      |
| Vanadium, total recoverable      | mg/L | 0.012     | 0.03    |      | 0.053     | 0.004 U     | 0.004 U      | 0.004 U      | 0.004 U      | 0.004 U      |
| Zinc, total recoverable (1)      | mg/L | 0.12      | 0.12    |      | 3.3       | 0.02 U      | 0.02 U       | 0.0042 J B   | 0.02 U       | 0.02 U       |

Polychlorinated Biphenyls

|                         |      |        |  |             |  |            |            |            |            |            |
|-------------------------|------|--------|--|-------------|--|------------|------------|------------|------------|------------|
| Aroclor-1016 (PCB-1016) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |
| Aroclor-1221 (PCB-1221) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |
| Aroclor-1232 (PCB-1232) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |
| Aroclor-1242 (PCB-1242) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |
| Aroclor-1248 (PCB-1248) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |
| Aroclor-1254 (PCB-1254) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |
| Aroclor-1260 (PCB-1260) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |
| Aroclor-1262 (PCB-1262) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |
| Aroclor-1268 (PCB-1268) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |

General Chemistry

|                                          |      |        |        |  |     |           |           |           |           |           |
|------------------------------------------|------|--------|--------|--|-----|-----------|-----------|-----------|-----------|-----------|
| Ammonia                                  | mg/L |        |        |  |     | 4.2       | 4.7       | 4.2       | 3.6       | 4.7       |
| warmwater Unionized Ammonia (calculated) | mg/L | 0.056  | 0.053  |  |     | 0.47      | 0.53      | 0.47      | 0.40      | 0.53      |
| Biochemical oxygen demand (BOD)          | mg/L | -      |        |  |     | 8.7       | 8.9       | 4.0 H     | 8.3       | 5.7       |
| Chemical oxygen demand (COD)             | mg/L | -      |        |  |     | 56        | 58        | 40        | 48        | 51        |
| Cyanide (amenable)                       | mg/L | -      |        |  |     | 0.010 U   | 0.010 U   | 0.010 U   | 0.010 U   | 0.010 U   |
| Cyanide (total)                          | mg/L | 0.0052 | 0.0052 |  | 0.6 | 0.010 U   | 0.010 U   | 0.010 U   | 0.010 U   | 0.010 U   |
| Formaldehyde                             | mg/L | 0.12   | 0.12   |  | 5.0 | 0.018 J B | 0.018 J B | 0.016 J B | 0.017 J B | 0.017 J B |
| Nitrate (as N)                           | mg/L | -      |        |  | 10  | 0.43      | 0.45      | 0.38      | 0.39      | 0.38      |
| Oil and grease (HEM), polar              | mg/L | -      |        |  |     | 1.0 J B   | 1.1 J B   | 1.3 J     | 1.4 J     | 1.6 J     |
| pH, lab                                  | s.u. | -      |        |  |     | 8.40 H    | 8.46 H    | 8.22 H    | 8.32 H    | 8.32 H    |
| Phenolics (total)                        | mg/L | -      |        |  |     | 0.040 U   | 0.014 J   | 0.040 U   | 0.0094 J  | 0.0094 J  |
| Total organic carbon (TOC)               | mg/L | -      |        |  |     | 14        | 14        | 14        | 14        | 14        |

Notes:

B - For organics Method blank contamination / For Inorganics = Estimated Value  
J - Estimated concentration.

U - Not present at or above the associated value.

0.01 calculated value assuming a hardness of: 100 mg/L

Assuming a temperature of 20 degrees C and an average pH of 8.5 the percentage of NH3 in ammonia is: 11.2%

HCVd = HCV-Human Cancer Value-Drink

HNVd = Human Noncancer Value-Drink

FCV = Final Chronic Value

WV = Wildlife Value



TABLE 1

SURFACE WATER ANALYTICAL RESULTS OF THE SECONDARY POND  
NODULAR FACILITY  
SAGINAW, MICHIGAN

Sample Location:  
Sample ID:  
Sample Date:

|                                          |       | MD-229-11              |         | MD-231-11              |           | MD-233-11              |           | SW-201-11              |              | SW-201-11              |             |
|------------------------------------------|-------|------------------------|---------|------------------------|-----------|------------------------|-----------|------------------------|--------------|------------------------|-------------|
|                                          |       | SW-58502-062911-SH-229 |         | SW-58502-062911-SH-231 |           | SW-58502-062911-SH-233 |           | SW-58502-062711-SH-201 |              | SW-58502-062711-SH-207 |             |
|                                          |       | 6/29/2011              |         | 6/29/2011              |           | 6/29/2011              |           | 6/27/2011              |              | 6/27/2011              |             |
|                                          |       | Rule 57                |         |                        |           |                        |           |                        |              |                        |             |
|                                          |       | a                      | b       | c                      | d         | e                      |           |                        |              |                        |             |
| Parameters:                              | Units | GSI                    | FCV     | HCVd                   | HNVd      | WV                     |           |                        |              |                        |             |
| <b>Metals</b>                            |       |                        |         |                        |           |                        |           |                        |              |                        |             |
| Antimony, total recoverable              | mg/L  | 0.13                   | 0.24    |                        | 0.0017    |                        | 0.00051 J | 0.00052 J              | 0.00049 J    | 0.00031 J              | 0.00052 J   |
| Arsenic, total recoverable               | mg/L  | 0.01                   | 0.15    | 0.01                   | 0.01      |                        | 0.0024 J  | 0.0025 J               | 0.0025 J     | 0.0023 J               | 0.0023 J    |
| Barium, total recoverable (1)            | mg/L  | 0.44                   | 0.44    |                        | 1.9       |                        | 0.043 J   | 0.044 J                | 0.042 J      | 0.032 J                | 0.041 J     |
| Beryllium, total recoverable (1)         | mg/L  | 0.0024                 | 0.002   |                        | 0.16      |                        | 0.001 U   | 0.001 U                | 0.001 U      | 0.001 U                | 0.001 U     |
| Cadmium, total recoverable (1)           | mg/L  | 0.0022                 | 0.0025  |                        | 0.0025    |                        | 0.001 U   | 0.001 U                | 0.001 U      | 0.001 U                | 0.001 U     |
| Chromium, total recoverable              | mg/L  | 0.011                  | 0.07    |                        | 0.12      |                        | 0.005 U   | 0.005 U                | 0.005 U      | 0.005 U                | 0.005 U     |
| Cobalt, total recoverable                | mg/L  | 0.1                    | 0.10    |                        |           |                        | 0.00019 J | 0.00019 J              | 0.00019 J    | 0.00016 J              | 0.00017 J   |
| Copper, total recoverable (1)            | mg/L  | 0.0090                 | 0.009   |                        | 0.47      |                        | 0.00062 J | 0.00056 J              | 0.00057 J    | 0.0011 J               | 0.00045 J   |
| Lead, total recoverable (1)              | mg/L  | 0.010                  | 0.04    |                        | 0.014     |                        | 0.003 U   | 0.003 U                | 0.003 U      | 0.003 U                | 0.003 U     |
| Manganese, total recoverable (1)         | mg/L  | 1.30                   | 1.93    |                        | 1.3       |                        | 0.17      | 0.2                    | 0.17         | 0.13                   | 0.098       |
| Mercury                                  | mg/L  | 0.0000013              | 0.00077 |                        | 0.0000018 | 0.0000013              | 0.0002 U  | 0.0002 U               | 0.0002 U     | 0.0002 U               | 0.0002 U    |
| Mercury (convert from ng/L)              | mg/L  | 0.0000013              | 0.00077 |                        | 0.0000018 | 0.0000013              | 0.000001  | 0.00000023 J           | 0.00000032 J | 0.0000004 J            | 0.0000005 U |
| Nickel, total recoverable (1)            | mg/L  | 0.052                  | 0.05    |                        | 2.6       |                        | 0.0013 J  | 0.00095 J              | 0.0011 J     | 0.0011 J               | 0.001 J     |
| Selenium, total recoverable              | mg/L  | 0.005                  | 0.01    |                        | 0.12      |                        | 0.005 U   | 0.005 U                | 0.005 U      | 0.005 U                | 0.005 U     |
| Silver, total recoverable                | mg/L  | 0.0002                 | 0.00006 |                        | 0.13      |                        | 0.0002 U  | 0.0002 U               | 0.0002 U     | 0.0002 U               | 0.0002 U    |
| Thallium, total recoverable              | mg/L  | 0.0037                 | 0.01    |                        | 0.0012    |                        | 0.001 U   | 0.001 U                | 0.001 U      | 0.00037 J              | 0.001 U     |
| Vanadium, total recoverable              | mg/L  | 0.012                  | 0.03    |                        | 0.053     |                        | 0.004 U   | 0.004 U                | 0.004 U      | 0.004 U                | 0.004 U     |
| Zinc, total recoverable (1)              | mg/L  | 0.12                   | 0.12    |                        | 3.3       |                        | 0.02 U    | 0.02 U                 | 0.0025 J B   | 0.0052 J B             | 0.0024 J B  |
| <b>Polychlorinated Biphenyls</b>         |       |                        |         |                        |           |                        |           |                        |              |                        |             |
| Aroclor-1016 (PCB-1016)                  | mg/L  | 0.0002                 |         | 0.000000026            |           | 0.00000012             | 0.00011 U | 0.000096 U             | 0.000095 U   | 0.000095 U             | 0.000095 U  |
| Aroclor-1221 (PCB-1221)                  | mg/L  | 0.0002                 |         | 0.000000026            |           | 0.00000012             | 0.00011 U | 0.000096 U             | 0.000095 U   | 0.000095 U             | 0.000095 U  |
| Aroclor-1232 (PCB-1232)                  | mg/L  | 0.0002                 |         | 0.000000026            |           | 0.00000012             | 0.00011 U | 0.000096 U             | 0.000095 U   | 0.000095 U             | 0.000095 U  |
| Aroclor-1242 (PCB-1242)                  | mg/L  | 0.0002                 |         | 0.000000026            |           | 0.00000012             | 0.00011 U | 0.000096 U             | 0.000095 U   | 0.000095 U             | 0.000095 U  |
| Aroclor-1248 (PCB-1248)                  | mg/L  | 0.0002                 |         | 0.000000026            |           | 0.00000012             | 0.00011 U | 0.000096 U             | 0.000095 U   | 0.000095 U             | 0.000095 U  |
| Aroclor-1254 (PCB-1254)                  | mg/L  | 0.0002                 |         | 0.000000026            |           | 0.00000012             | 0.00011 U | 0.000096 U             | 0.000095 U   | 0.000095 U             | 0.000095 U  |
| Aroclor-1260 (PCB-1260)                  | mg/L  | 0.0002                 |         | 0.000000026            |           | 0.00000012             | 0.00011 U | 0.000096 U             | 0.000095 U   | 0.000095 U             | 0.000095 U  |
| Aroclor-1262 (PCB-1262)                  | mg/L  | 0.0002                 |         | 0.000000026            |           | 0.00000012             | 0.00011 U | 0.000096 U             | 0.000095 U   | 0.000095 U             | 0.000095 U  |
| Aroclor-1268 (PCB-1268)                  | mg/L  | 0.0002                 |         | 0.000000026            |           | 0.00000012             | 0.00011 U | 0.000096 U             | 0.000095 U   | 0.000095 U             | 0.000095 U  |
| <b>General Chemistry</b>                 |       |                        |         |                        |           |                        |           |                        |              |                        |             |
| Ammonia                                  | mg/L  |                        |         |                        |           |                        | 3.9       | 3.3                    | 3.6          | 0.83 J                 | 3.9         |
| warmwater Unionized Ammonia (calculated) | mg/L  | 0.056                  | 0.053   |                        |           |                        | 0.44      | 0.37                   | 0.40         | 0.09                   | 0.44        |
| Biochemical oxygen demand (BOD)          | mg/L  | -                      |         |                        |           |                        | 4.8       | 4.3                    | 4.7          | 2.0 U                  | 4.2         |
| Chemical oxygen demand (COD)             | mg/L  | -                      |         |                        |           |                        | 56        | 40                     | 45           | 53                     | 53          |
| Cyanide (amenable)                       | mg/L  | -                      |         |                        |           |                        | 0.010 U   | 0.010 U                | 0.010 U      | 0.010 U                | 0.010 U     |
| Cyanide (total)                          | mg/L  | 0.0052                 | 0.0052  |                        | 0.6       |                        | 0.010 U   | 0.010 U                | 0.0060 J     | 0.010 U                | 0.010 U     |
| Formaldehyde                             | mg/L  | 0.12                   | 0.12    |                        | 5.0       |                        | 0.017 J B | 0.019 J B              | 0.016 J B    | 0.019 J B              | 0.019 J B   |
| Nitrate (as N)                           | mg/L  | -                      |         |                        | 10        |                        | 0.38      | 0.39                   | 0.39         | 0.27                   | 0.51        |
| Oil and grease (HEM), polar              | mg/L  | -                      |         |                        |           |                        | 0.77 J    | 4.8 U                  | 1.0 J        | 1.1 J                  | 1.3 J       |
| pH, lab                                  | s.u.  | -                      |         |                        |           |                        | 8.32 H    | 8.24 H                 | 8.45 H       | 8.35 H                 | 8.40 H      |
| Phenolics (total)                        | mg/L  | -                      |         |                        |           |                        | 0.040 U   | 0.0094 J               | 0.040 U      | 0.040 U                | 0.0073 J    |
| Total organic carbon (TOC)               | mg/L  | -                      |         |                        |           |                        | 14        | 14                     | 14           | 16                     | 14          |

Notes:  
B - For organics Method blank contamination / For Inorganics = Estimated Value  
J - Estimated concentration.  
U - Not present at or above the associated value.  
0.01 calculated value assuming a hardness of: 100 mg/L.  
Assuming a temperature of 20 degrees C and an average pH of 8.5 the percentage of NH3 in ammonia is: 11.2%

HCVd = HCV-Human Cancer Value-Drink  
HNVd = Human Noncancer Value-Drink  
FCV = Final Chronic Value  
WV = Wildlife Value

TABLE 1

SURFACE WATER ANALYTICAL RESULTS OF THE SECONDARY POND  
NODULAR FACILITY  
SAGINAW, MICHIGAN

Sample Location:  
Sample ID:  
Sample Date:

|                                          |       | Rule 57   |         |             |           |            | SW-203-11              | SW-209-11              | SW-211-11              | SW-211-11              | SW-214-11              |
|------------------------------------------|-------|-----------|---------|-------------|-----------|------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                                          |       |           |         |             |           |            | SW-58502-062711-SH-203 | SW-58502-062811-SH-209 | SW-58502-062811-SH-211 | SW-58502-062811-SH-212 | SW-58502-062811-SH-214 |
|                                          |       |           |         |             |           |            | 6/27/2011              | 6/28/2011              | 6/28/2011              | 6/28/2011              | 6/28/2011              |
|                                          |       |           |         |             |           |            |                        |                        |                        |                        |                        |
|                                          |       |           |         |             |           |            |                        |                        |                        |                        |                        |
| Parameters:                              | Units | a         | b       | c           | d         | e          |                        |                        |                        | (Duplicate)            |                        |
|                                          | GSI   | FCV       | HCVd    | HNVd        | WV        |            |                        |                        |                        |                        |                        |
| <b>Metals</b>                            |       |           |         |             |           |            |                        |                        |                        |                        |                        |
| Antimony, total recoverable              | mg/L  | 0.13      | 0.24    |             | 0.0017    |            | 0.00031 J              | 0.00055 J              | 0.00055 J              | 0.00054 J              | 0.00053 J              |
| Arsenic, total recoverable               | mg/L  | 0.01      | 0.15    | 0.01        | 0.01      |            | 0.0026 J               | 0.0025 J               | 0.0024 J               | 0.0023 J               | 0.0024 J               |
| Barium, total recoverable (1)            | mg/L  | 0.44      | 0.44    |             | 1.9       |            | 0.033 J                | 0.043 J B              | 0.044 J B              | 0.042 J B              | 0.043 J B              |
| Beryllium, total recoverable (1)         | mg/L  | 0.0024    | 0.002   |             | 0.16      |            | 0.001 U                | 0.001 U                | 0.001 U                | 0.001 U                | 0.001 U                |
| Cadmium, total recoverable (1)           | mg/L  | 0.0022    | 0.0025  |             | 0.0025    |            | 0.001 U                | 0.001 U                | 0.001 U                | 0.001 U                | 0.001 U                |
| Chromium, total recoverable              | mg/L  | 0.011     | 0.07    |             | 0.12      |            | 0.005 U                | 0.005 U                | 0.005 U                | 0.005 U                | 0.005 U                |
| Cobalt, total recoverable                | mg/L  | 0.1       | 0.10    |             |           |            | 0.00016 J              | 0.00021 J              | 0.00022 J              | 0.00021 J              | 0.00023 J              |
| Copper, total recoverable (1)            | mg/L  | 0.0090    | 0.009   |             | 0.47      |            | 0.00099 J              | 0.00058 J B            | 0.00072 J B            | 0.0006 J B             | 0.00055 J B            |
| Lead, total recoverable (1)              | mg/L  | 0.010     | 0.04    |             | 0.014     |            | 0.003 U                | 0.00027 J              | 0.00018 J              | 0.00018 J              | 0.003 U                |
| Manganese, total recoverable (1)         | mg/L  | 1.30      | 1.93    |             | 1.3       |            | 0.12                   | 0.18                   | 0.17                   | 0.15                   | 0.16                   |
| Mercury                                  | mg/L  | 0.0000013 | 0.00077 |             | 0.0000018 | 0.0000013  | 0.0002 U               | 0.0002 U               | 0.0002 U               | 0.0002 U               | 0.0002 U               |
| Mercury (convert from ng/L)              | mg/L  | 0.0000013 | 0.00077 |             | 0.0000018 | 0.0000013  | 0.00000018 J           | 0.00000047 J           | 0.00000005 U           | 0.00000014 J           | 0.00000015 J           |
| Nickel, total recoverable (1)            | mg/L  | 0.052     | 0.05    |             | 2.6       |            | 0.0014 J               | 0.0011 J B             | 0.0013 J B             | 0.0011 J B             | 0.0012 J B             |
| Selenium, total recoverable              | mg/L  | 0.005     | 0.01    |             | 0.12      |            | 0.005 U                | 0.005 U                | 0.005 U                | 0.005 U                | 0.005 U                |
| Silver, total recoverable                | mg/L  | 0.0002    | 0.00006 |             | 0.13      |            | 0.0002 U               | 0.0002 U               | 0.0002 U               | 0.0002 U               | 0.0002 U               |
| Thallium, total recoverable              | mg/L  | 0.0037    | 0.01    |             | 0.0012    |            | 0.00018 J              | 0.001 U                | 0.001 U                | 0.00021 J B            | 0.001 U                |
| Vanadium, total recoverable              | mg/L  | 0.012     | 0.03    |             | 0.053     |            | 0.004 U                | 0.004 U                | 0.004 U                | 0.004 U                | 0.004 U                |
| Zinc, total recoverable (1)              | mg/L  | 0.12      | 0.12    |             | 3.3       |            | 0.02 U                 | 0.02 U                 | 0.0027 J B             | 0.0035 J B             | 0.02 U                 |
| <b>Polychlorinated Biphenyls</b>         |       |           |         |             |           |            |                        |                        |                        |                        |                        |
| Aroclor-1016 (PCB-1016)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| Aroclor-1221 (PCB-1221)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| Aroclor-1232 (PCB-1232)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| Aroclor-1242 (PCB-1242)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| Aroclor-1248 (PCB-1248)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| Aroclor-1254 (PCB-1254)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| Aroclor-1260 (PCB-1260)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| Aroclor-1262 (PCB-1262)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| Aroclor-1268 (PCB-1268)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| <b>General Chemistry</b>                 |       |           |         |             |           |            |                        |                        |                        |                        |                        |
| Ammonia                                  | mg/L  |           |         |             |           |            | 1.1 J                  | 4.2                    | 4.2                    | 3.9                    | 4.2                    |
| warmwater Unionized Ammonia (calculated) | mg/L  | 0.056     | 0.053   |             |           |            | 0.12                   | 0.47                   | 0.47                   | 0.44                   | 0.47                   |
| Biochemical oxygen demand (BOD)          | mg/L  | -         |         |             |           |            | 2.0 U                  | 12                     | 7.6                    | 8.0                    | 7.4                    |
| Chemical oxygen demand (COD)             | mg/L  | -         |         |             |           |            | 51                     | 48                     | 33                     | 30                     | 38                     |
| Cyanide (amenable)                       | mg/L  | -         |         |             |           |            | 0.010 U                | 0.010 U                |                        | 0.010 U                | 0.010 U                |
| Cyanide (total)                          | mg/L  | 0.0052    | 0.0052  |             | 0.6       |            | 0.010 U                | 0.010 U                | 0.0071 J               | 0.010 U                | 0.010 U                |
| Formaldehyde                             | mg/L  | 0.12      | 0.12    |             | 5.0       |            | 0.022 J B              | 0.018 J B              | 0.018 J B              | 0.016 J B              | 0.018 J B              |
| Nitrate (as N)                           | mg/L  | -         |         |             | 10        |            | 0.27                   | 0.48                   | 0.46                   |                        | 0.45                   |
| Oil and grease (HEM), polar              | mg/L  | -         |         |             |           |            | 4.9 U                  | 1.2 J B                | 0.82 J B               | 1.4 J B                | 5.2 U                  |
| pH, lab                                  | s.u.  | -         |         |             |           |            | 8.55 H                 | 8.27 H                 | 8.40 H                 | 8.23 H                 | 8.23 H                 |
| Phenolics (total)                        | mg/L  | -         |         |             |           |            | 0.040 U                | 0.23                   | 0.040 U                | 0.040 U                | 0.011 J                |
| Total organic carbon (TOC)               | mg/L  | -         |         |             |           |            | 15                     | 15                     | 14                     | 14                     | 14                     |

Notes:  
B - For organics Method blank contamination / For Inorganics = Estimated Value  
J - Estimated concentration.  
U - Not present at or above the associated value.  
0.01 calculated value assuming a hardness of: 100 mg/L.  
Assuming a temperature of 20 degrees C and an average pH of 8.5 the percentage of NH3 in ammonia is: 11.2%

HCVd = HCV-Human Cancer Value-Drink  
HNVd = Human Noncancer Value-Drink  
FCV = Final Chronic Value  
WV = Wildlife Value

TABLE 1

**SURFACE WATER ANALYTICAL RESULTS OF THE SECONDARY POND  
NODULAR FACILITY  
SAGINAW, MICHIGAN**

Sample Location:

Sample ID:

Sample Date:

|  |  | SW-222-11              | SW-224-11              | SW-226-11              | SW-228-11              | SW-230-11              |
|--|--|------------------------|------------------------|------------------------|------------------------|------------------------|
|  |  | SW-58502-062911-SH-222 | SW-58502-062911-SH-224 | SW-58502-062911-SH-226 | SW-58502-062911-SH-228 | SW-58502-062911-SH-230 |
|  |  | 6/29/2011              | 6/29/2011              | 6/29/2011              | 6/29/2011              | 6/29/2011              |

Sample Date:

Parameters:

Metals

|                                  |      |           |         |      |           |           |             |              |             |              |             |
|----------------------------------|------|-----------|---------|------|-----------|-----------|-------------|--------------|-------------|--------------|-------------|
| Antimony, total recoverable      | mg/L | 0.13      | 0.24    |      | 0.0017    |           | 0.0005 J    | 0.00049 J    | 0.00052 J   | 0.00055 J    | 0.00076 J   |
| Arsenic, total recoverable       | mg/L | 0.01      | 0.15    | 0.01 | 0.01      |           | 0.0025 J    | 0.0024 J     | 0.0023 J    | 0.0024 J     | 0.0027 J    |
| Barium, total recoverable (1)    | mg/L | 0.44      | 0.44    |      | 1.9       |           | 0.045 J     | 0.043 J      | 0.043 J     | 0.043 J      | 0.046 J     |
| Beryllium, total recoverable (1) | mg/L | 0.0024    | 0.002   |      | 0.16      |           | 0.001 U     | 0.001 U      | 0.001 U     | 0.001 U      | 0.001 U     |
| Cadmium, total recoverable (1)   | mg/L | 0.0022    | 0.0025  |      | 0.0025    |           | 0.001 U     | 0.001 U      | 0.001 U     | 0.001 U      | 0.001 U     |
| Chromium, total recoverable      | mg/L | 0.011     | 0.07    |      | 0.12      |           | 0.005 U     | 0.005 U      | 0.005 U     | 0.005 U      | 0.005 U     |
| Cobalt, total recoverable        | mg/L | 0.1       | 0.10    |      |           |           | 0.00021 J   | 0.00019 J    | 0.00018 J   | 0.0002 J     | 0.00023 J   |
| Copper, total recoverable (1)    | mg/L | 0.0090    | 0.009   |      | 0.47      |           | 0.00053 J   | 0.0007 J     | 0.00058 J   | 0.0005 J     | 0.00068 J   |
| Lead, total recoverable (1)      | mg/L | 0.010     | 0.04    |      | 0.014     |           | 0.003 U     | 0.003 U      | 0.003 U     | 0.003 U      | 0.00019 J   |
| Manganese, total recoverable (1) | mg/L | 1.30      | 1.93    |      | 1.3       |           | 0.19        | 0.17         | 0.16        | 0.17         | 0.19 B      |
| Mercury                          | mg/L | 0.0000013 | 0.00077 |      | 0.0000018 | 0.0000013 | 0.0002 U    | 0.0002 U     | 0.0002 U    | 0.0002 U     | 0.0002 U    |
| Mercury (convert from ng/L)      | mg/L | 0.0000013 | 0.00077 |      | 0.0000018 | 0.0000013 | 0.0000003 J | 0.00000026 J | 0.0000002 J | 0.00000024 J | 0.0000005 U |
| Nickel, total recoverable (1)    | mg/L | 0.052     | 0.05    |      | 2.6       |           | 0.0013 J    | 0.001 J      | 0.00097 J   | 0.0011 J     | 0.0013 J    |
| Selenium, total recoverable      | mg/L | 0.005     | 0.01    |      | 0.12      |           | 0.005 U     | 0.005 U      | 0.005 U     | 0.005 U      | 0.005 U     |
| Silver, total recoverable        | mg/L | 0.0002    | 0.00006 |      | 0.13      |           | 0.0002 U    | 0.0002 U     | 0.0002 U    | 0.0002 U     | 0.0002 U    |
| Thallium, total recoverable      | mg/L | 0.0037    | 0.01    |      | 0.0012    |           | 0.001 U     | 0.001 U      | 0.001 U     | 0.001 U      | 0.0011      |
| Vanadium, total recoverable      | mg/L | 0.012     | 0.03    |      | 0.053     |           | 0.00066 J   | 0.004 U      | 0.004 U     | 0.004 U      | 0.004 U     |
| Zinc, total recoverable (1)      | mg/L | 0.12      | 0.12    |      | 3.3       |           | 0.0041 J B  | 0.0035 J B   | 0.0031 J B  | 0.0029 J B   | 0.0024 J    |

Polychlorinated Biphenyls

|                         |      |        |  |             |  |            |          |            |            |            |            |
|-------------------------|------|--------|--|-------------|--|------------|----------|------------|------------|------------|------------|
| Aroclor-1016 (PCB-1016) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |
| Aroclor-1221 (PCB-1221) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |
| Aroclor-1232 (PCB-1232) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |
| Aroclor-1242 (PCB-1242) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |
| Aroclor-1248 (PCB-1248) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |
| Aroclor-1254 (PCB-1254) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |
| Aroclor-1260 (PCB-1260) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |
| Aroclor-1262 (PCB-1262) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |
| Aroclor-1268 (PCB-1268) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |

General Chemistry

|                                          |      |        |        |  |     |           |           |           |           |           |
|------------------------------------------|------|--------|--------|--|-----|-----------|-----------|-----------|-----------|-----------|
| Ammonia                                  | mg/L |        |        |  |     | 3.6       | 3.9       | 3.6       | 4.7       | 4.2       |
| warmwater Unionized Ammonia (calculated) | mg/L | 0.056  | 0.053  |  |     | 0.40      | 0.44      | 0.40      | 0.53      | 0.47      |
| Biochemical oxygen demand (BOD)          | mg/L | -      |        |  |     | 8.5       | 7.8       | 8.0       | 4.3       | 6.5       |
| Chemical oxygen demand (COD)             | mg/L | -      |        |  |     | 40        | 43        | 51        | 51        | 48        |
| Cyanide (amenable)                       | mg/L | -      |        |  |     | 0.010 U   | 0.010 U   | 0.010 U   | 0.010 U   | 0.010 U   |
| Cyanide (total)                          | mg/L | 0.0052 | 0.0052 |  | 0.6 | 0.010 U   | 0.010 U   | 0.010 U   | 0.010 U   | 0.010 U   |
| Formaldehyde                             | mg/L | 0.12   | 0.12   |  | 5.0 | 0.017 J B | 0.020 J B | 0.017 J B | 0.018 J B | 0.016 J B |
| Nitrate (as N)                           | mg/L | -      |        |  | 10  | 0.38      | 0.39      | 0.38      | 0.37      | 0.39      |
| Oil and grease (HEM), polar              | mg/L | -      |        |  |     | 1.0 J     | 1.1 J     | 1.2 J     | 1.2 J     | 0.91 J    |
| pH, lab                                  | s.u. | -      |        |  |     | 8.27 H    | 8.28 H    | 8.35 H    | 8.26 H    | 8.30 H    |
| Phenolics (total)                        | mg/L | -      |        |  |     | 0.040 U   | 0.0094 J  | 0.040 U   | 0.040 U   | 0.040 U   |
| Total organic carbon (TOC)               | mg/L | -      |        |  |     | 14        | 14        | 14        | 14        | 14        |

Notes:

B - For organics Method blank contamination / For Inorganics = Estimated Value

J - Estimated concentration.

U - Not present at or above the associated value.

0.01 calculated value assuming a hardness of: 100 mg/L

Assuming a temperature of 20 degrees C and an average pH of 8.5 the percentage of NH3 in ammonia is:

11.2%

HCVd = HCV-Human Cancer Value-Drink

HNVd = Human Noncancer Value-Drink

FCV = Final Chronic Value

WV = Wildlife Value

TABLE 1

**SURFACE WATER ANALYTICAL RESULTS OF THE SECONDARY POND  
NODULAR FACILITY  
SAGINAW, MICHIGAN**

Sample Location:  
Sample ID:  
Sample Date:

SW-232-11  
SW-58502-062911-SH-232  
6/29/2011

Rule 57

| Parameters:                      | Units | <i>a</i><br>GSI | <i>b</i><br>FCV | <i>c</i><br>HCVd | <i>d</i><br>HNVd | <i>e</i><br>WV |
|----------------------------------|-------|-----------------|-----------------|------------------|------------------|----------------|
| <b>Metals</b>                    |       |                 |                 |                  |                  |                |
| Antimony, total recoverable      | mg/L  | 0.13            | 0.24            |                  | 0.0017           | 0.00047 J      |
| Arsenic, total recoverable       | mg/L  | 0.01            | 0.15            | 0.01             | 0.01             | 0.0025 J       |
| Barium, total recoverable (1)    | mg/L  | 0.44            | 0.44            |                  | 1.9              | 0.042 J        |
| Beryllium, total recoverable (1) | mg/L  | 0.0024          | 0.002           |                  | 0.16             | 0.001 U        |
| Cadmium, total recoverable (1)   | mg/L  | 0.0022          | 0.0025          |                  | 0.0025           | 0.001 U        |
| Chromium, total recoverable      | mg/L  | 0.011           | 0.07            |                  | 0.12             | 0.005 U        |
| Cobalt, total recoverable        | mg/L  | 0.1             | 0.10            |                  |                  | 0.00019 J      |
| Copper, total recoverable (1)    | mg/L  | 0.0090          | 0.009           |                  | 0.47             | 0.00051 J      |
| Lead, total recoverable (1)      | mg/L  | 0.010           | 0.04            |                  | 0.014            | 0.003 U        |
| Manganese, total recoverable (1) | mg/L  | 1.30            | 1.93            |                  | 1.3              | 0.17           |
| Mercury                          | mg/L  | 0.0000013       | 0.00077         |                  | 0.0000018        | 0.0002 U       |
| Mercury (convert from ng/L)      | mg/L  | 0.0000013       | 0.00077         |                  | 0.0000018        | 0.0000005 U    |
| Nickel, total recoverable (1)    | mg/L  | 0.052           | 0.05            |                  | 2.6              | 0.0012 J       |
| Selenium, total recoverable      | mg/L  | 0.005           | 0.01            |                  | 0.12             | 0.005 U        |
| Silver, total recoverable        | mg/L  | 0.0002          | 0.00006         |                  | 0.13             | 0.0002 U       |
| Thallium, total recoverable      | mg/L  | 0.0037          | 0.01            |                  | 0.0012           | 0.001 U        |
| Vanadium, total recoverable      | mg/L  | 0.012           | 0.03            |                  | 0.053            | 0.004 U        |
| Zinc, total recoverable (1)      | mg/L  | 0.12            | 0.12            |                  | 3.3              | 0.0024 J B     |

**Polychlorinated Biphenyls**

|                         |      |        |  |             |  |            |          |
|-------------------------|------|--------|--|-------------|--|------------|----------|
| Aroclor-1016 (PCB-1016) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U |
| Aroclor-1221 (PCB-1221) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U |
| Aroclor-1232 (PCB-1232) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U |
| Aroclor-1242 (PCB-1242) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U |
| Aroclor-1248 (PCB-1248) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U |
| Aroclor-1254 (PCB-1254) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U |
| Aroclor-1260 (PCB-1260) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U |
| Aroclor-1262 (PCB-1262) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U |
| Aroclor-1268 (PCB-1268) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U |

**General Chemistry**

|                                          |      |        |        |  |     |           |  |
|------------------------------------------|------|--------|--------|--|-----|-----------|--|
| Ammonia                                  | mg/L |        |        |  |     | 3.9       |  |
| warmwater Unionized Ammonia (calculated) | mg/L | 0.056  | 0.053  |  |     | 0.44      |  |
| Biochemical oxygen demand (BOD)          | mg/L | -      |        |  |     | 6.8       |  |
| Chemical oxygen demand (COD)             | mg/L | -      |        |  |     | 51        |  |
| Cyanide (amenable)                       | mg/L | -      |        |  |     | 0.010 U   |  |
| Cyanide (total)                          | mg/L | 0.0052 | 0.0052 |  | 0.6 | 0.010 U   |  |
| Formaldehyde                             | mg/L | 0.12   | 0.12   |  | 5.0 | 0.021 J B |  |
| Nitrate (as N)                           | mg/L | -      |        |  | 10  | 0.40      |  |
| Oil and grease (HEM), polar              | mg/L | -      |        |  |     | 0.81 J    |  |
| pH, lab                                  | s.u. | -      |        |  |     | 8.39 H    |  |
| Phenolics (total)                        | mg/L | -      |        |  |     | 0.040 U   |  |
| Total organic carbon (TOC)               | mg/L | -      |        |  |     | 14        |  |

Notes:

B - For organics Method blank contamination / For Inorganics = Estimated Value

J - Estimated concentration.

U - Not present at or above the associated value.

0.01 calculated value assuming a hardness of: 100 mg/L

Assuming a temperature of 20 degrees C and an average pH of 8.5 the percentage of NH3 in ammonia is:

11.2%

HCVd = HCV-Human Cancer Value-Drink

HNVd = Human Noncancer Value-Drink

FCV = Final Chronic Value

WV = Wildlife Value

TABLE 2

**ANALYTICAL RESULTS SUMMARY- SEDIMENT DATA  
RACER NODULAR  
JUNE 2011**

|                                  |              |                                                         |                              |                              |                              |                              |
|----------------------------------|--------------|---------------------------------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| <b>Sample Location:</b>          |              |                                                         | <b>SD-205-11</b>             | <b>SD-206-11</b>             | <b>SD-217-11</b>             | <b>SD-218-11</b>             |
| <b>Sample ID:</b>                |              |                                                         | <b>S-58502-062711-SH-205</b> | <b>S-58502-062711-SH-206</b> | <b>S-58502-062811-SH-217</b> | <b>S-58502-062811-SH-218</b> |
| <b>Sample Date:</b>              |              |                                                         | <b>6/27/2011</b>             | <b>6/27/2011</b>             | <b>6/28/2011</b>             | <b>6/28/2011</b>             |
| <b>Sample Depth:</b>             |              |                                                         | <b>-</b>                     | <b>-</b>                     | <b>-</b>                     | <b>-</b>                     |
| <b>Parameters:</b>               | <b>Units</b> | <b>Res/Non_Res/GW<br/>Prot_GW SW<br/>Interface Prot</b> |                              |                              |                              |                              |
| <b>Metals</b>                    |              |                                                         |                              |                              |                              |                              |
| Antimony                         | mg/kg        | 94                                                      | 0.096 J                      | 0.55                         | 3.2                          | 5.8                          |
| Arsenic                          | mg/kg        | 4.6                                                     | 2.7                          | 3.8                          | 12                           | 15                           |
| Barium                           | mg/kg        | -                                                       | 45                           | 52                           | 150                          | 220                          |
| Beryllium                        | mg/kg        | -                                                       | 0.17 U                       | 0.22 U                       | 1.1                          | 1.3                          |
| Cadmium                          | mg/kg        | -                                                       | 0.12                         | 0.50                         | 6.9                          | 9.3                          |
| Chromium                         | mg/kg        | 3.3                                                     | 14                           | 23                           | 130                          | 170                          |
| Cobalt                           | mg/kg        | 2                                                       | 4.8                          | 5.1                          | 6.9                          | 8.4                          |
| Copper                           | mg/kg        | -                                                       | 12                           | 34                           | 110                          | 160                          |
| Lead                             | mg/kg        | -                                                       | 9.8                          | 57                           | 1000                         | 1200                         |
| Manganese                        | mg/kg        | -                                                       | 500                          | 1000                         | 5400                         | 9900                         |
| Mercury                          | mg/kg        | 0.05                                                    | 0.013 J                      | 0.060 U                      | 0.072 J                      | 0.083 J                      |
| Nickel                           | mg/kg        | -                                                       | 13                           | 17                           | 31                           | 38                           |
| Selenium                         | mg/kg        | 0.4                                                     | 0.22                         | 0.58                         | 3.3                          | 5.1                          |
| Silver                           | mg/kg        | 0.1                                                     | 0.033 J                      | 0.16                         | 1.9                          | 2.8                          |
| Thallium                         | mg/kg        | 4.2                                                     | 0.15                         | 0.24                         | 0.83 J                       | 0.93 J                       |
| Vanadium                         | mg/kg        | 190                                                     | 17                           | 18                           | 19                           | 33                           |
| Zinc                             | mg/kg        | -                                                       | 15                           | 340                          | 6900                         | 5900                         |
| <b>Metals - SPLPEM</b>           |              |                                                         |                              |                              |                              |                              |
| Cadmium                          | umol/g       | -                                                       | 0.0012                       | 0.0025                       | 0.066                        | 0.053                        |
| Copper                           | umol/g       | -                                                       | 0.11                         | 0.13                         | 1.0                          | 1.1                          |
| Lead                             | umol/g       | -                                                       | 0.045                        | 0.11                         | 6.4                          | 5.7                          |
| Mercury                          | umol/g       | -                                                       | 0.000062 U                   | 0.000062 U                   | 0.000062 U                   | 0.000062 U                   |
| Nickel                           | umol/g       | -                                                       | 0.083                        | 0.12                         | 0.41                         | 0.45                         |
| SEM                              | umol/g       | -                                                       | 1.1                          | 2.8                          | 100                          | 70                           |
| SEM/ AVS                         | none         | -                                                       | 0.53                         | 0.52                         | 5.3                          | 3.6                          |
| Sulfide                          | umol/g       | -                                                       | 2.1                          | 5.3                          | 19                           | 19                           |
| Zinc                             | umol/g       | -                                                       | 0.84                         | 2.4                          | 94                           | 62                           |
| <b>Polychlorinated Biphenyls</b> |              |                                                         |                              |                              |                              |                              |
| Aroclor-1016 (PCB-1016)          | mg/kg        | -                                                       | 0.35 U                       | 0.39 U                       | 0.55 U                       | 0.61 U                       |
| Aroclor-1221 (PCB-1221)          | mg/kg        | -                                                       | 0.35 U                       | 0.39 U                       | 0.55 U                       | 0.61 U                       |
| Aroclor-1232 (PCB-1232)          | mg/kg        | -                                                       | 0.35 U                       | 0.39 U                       | 0.55 U                       | 0.61 U                       |
| Aroclor-1242 (PCB-1242)          | mg/kg        | -                                                       | 0.35 U                       | 0.39 U                       | 0.55 U                       | 0.28 J                       |
| Aroclor-1248 (PCB-1248)          | mg/kg        | -                                                       | 0.35 U                       | 0.048 J                      | 0.057 J                      | 0.61 U                       |
| Aroclor-1254 (PCB-1254)          | mg/kg        | -                                                       | 0.35 U                       | 0.39 U                       | 0.55 U                       | 0.61 U                       |
| Aroclor-1260 (PCB-1260)          | mg/kg        | -                                                       | 0.35 U                       | 0.39 U                       | 0.55 U                       | 0.61 U                       |
| Aroclor-1262 (PCB-1262)          | mg/kg        | -                                                       | 0.35 U                       | 0.39 U                       | 0.55 U                       | 0.61 U                       |
| Aroclor-1268 (PCB-1268)          | mg/kg        | -                                                       | 0.35 U                       | 0.39 U                       | 0.55 U                       | 0.61 U                       |
| <b>General Chemistry</b>         |              |                                                         |                              |                              |                              |                              |
| Ammonia                          | mg/kg        | -                                                       | 9.9                          | 9.4                          | 51                           | 110                          |
| Cyanide (total)                  | mg/kg        | 0.1                                                     | 0.64 U                       | 0.74 U                       | 1.7                          | 1.1                          |
| Nitrate (as N)                   | mg/kg        | -                                                       | 5.0 U                        | 5.0 U                        | 5.0 U                        | 5.0 U                        |
| Nitrite (as N)                   | mg/kg        | -                                                       | 5.0 U                        | 0.19 J                       | 5.0 U                        | 5.0 U                        |
| Orthophosphate                   | mg/kg        | -                                                       | 1.7 J                        | 5.0 U                        | 4.5 J                        | 3.3 J                        |
| pH, lab                          | s.u.         | -                                                       | 8.44 J                       | 8.21 J                       | 9.84 J                       | 9.50 J                       |
| Total organic carbon (TOC)       | mg/kg        | -                                                       | 18000                        | 19000                        | 66000                        | 68000                        |

Notes:

J - Estimated concentration.

U - Not present at or above the associated value.

**ANALYTICAL RESULTS SUMMARY- SEDIMENT DATA  
RACER NODULAR  
JUNE 2011**

Sample Location:

Sample ID:

Sample Date:

Sample Depth:

|                              |                              |                              |                              |
|------------------------------|------------------------------|------------------------------|------------------------------|
| <i>SD-219-11</i>             | <i>SD-220-11</i>             | <i>SD-235-11</i>             | <i>SD-236-11</i>             |
| <i>S-58502-062811-SH-219</i> | <i>S-58502-062811-SH-220</i> | <i>S-58502-063011-SH-235</i> | <i>S-58502-063011-SH-236</i> |
| <i>6/28/2011</i>             | <i>6/28/2011</i>             | <i>6/30/2011</i>             | <i>6/30/2011</i>             |
| <i>-</i>                     | <i>-</i>                     | <i>-</i>                     | <i>-</i>                     |

**Parameters:**

|              |                                                |
|--------------|------------------------------------------------|
| <b>Units</b> | Res/Non_Res/GW<br>Prot_GW SW<br>Interface Prot |
|--------------|------------------------------------------------|

**Metals**

|           |       |      |         |         |       |        |
|-----------|-------|------|---------|---------|-------|--------|
| Antimony  | mg/kg | 94   | 1.7     | 38 U    | 5.1 J | 1.0 J  |
| Arsenic   | mg/kg | 4.6  | 9.6     | 19 U    | 19    | 7.7    |
| Barium    | mg/kg | -    | 140     | 140     | 130   | 78     |
| Beryllium | mg/kg | -    | 0.79    | 0.62    | 1.7   | 0.19 U |
| Cadmium   | mg/kg | -    | 3.0     | 4.4     | 5.9   | 1.4    |
| Chromium  | mg/kg | 3.3  | 110     | 92      | 130   | 46     |
| Cobalt    | mg/kg | 2    | 6.3     | 9.4     | 6.2   | 7.3    |
| Copper    | mg/kg | -    | 77      | 90      | 120   | 44     |
| Lead      | mg/kg | -    | 340     | 550     | 900   | 210    |
| Manganese | mg/kg | -    | 3700    | 3400    | 4900  | 1500   |
| Mercury   | mg/kg | 0.05 | 0.035 J | 0.057 J | 0.17  | 0.078  |
| Nickel    | mg/kg | -    | 28      | 35      | 45    | 26     |
| Selenium  | mg/kg | 0.4  | 2.3     | 38 U    | 3.3   | 0.89   |
| Silver    | mg/kg | 0.1  | 0.78    | 19 U    | 2.9   | 0.58   |
| Thallium  | mg/kg | 4.2  | 0.38 J  | 19 U    | 5.0 J | 6.0 J  |
| Vanadium  | mg/kg | 190  | 20      | 31      | 16    | 23     |
| Zinc      | mg/kg | -    | 2100    | 13000   | 41000 | 6800   |

**Metals - SPLPEM**

|          |        |   |            |            |            |            |
|----------|--------|---|------------|------------|------------|------------|
| Cadmium  | umol/g | - | 0.015      | 0.016      | 0.051      | 0.048      |
| Copper   | umol/g | - | 0.25       | 0.57       | 1.3        | 1.2        |
| Lead     | umol/g | - | 1.5        | 1.5        | 4.3        | 4.1        |
| Mercury  | umol/g | - | 0.000062 U | 0.000062 U | 0.000062 U | 0.000062 U |
| Nickel   | umol/g | - | 0.30       | 0.24       | 0.47       | 0.45       |
| SEM      | umol/g | - | 26         | 90         | 380        | 330        |
| SEM/ AVS | none   | - | 2.6        | 8.8        | 8.8        | 11         |
| Sulfide  | umol/g | - | 9.9        | 10         | 43         | 31         |
| Zinc     | umol/g | - | 24         | 88         | 370        | 330        |

**Polychlorinated Biphenyls**

|                         |       |   |        |        |         |         |
|-------------------------|-------|---|--------|--------|---------|---------|
| Aroclor-1016 (PCB-1016) | mg/kg | - | 0.57 U | 0.69 U | 0.81 U  | 0.51 U  |
| Aroclor-1221 (PCB-1221) | mg/kg | - | 0.57 U | 0.69 U | 0.81 U  | 0.51 U  |
| Aroclor-1232 (PCB-1232) | mg/kg | - | 0.57 U | 0.69 U | 0.81 U  | 0.51 U  |
| Aroclor-1242 (PCB-1242) | mg/kg | - | 0.33 J | 0.69 U | 0.81 U  | 0.073 J |
| Aroclor-1248 (PCB-1248) | mg/kg | - | 0.57 U | 0.17 J | 0.074 J | 0.51 U  |
| Aroclor-1254 (PCB-1254) | mg/kg | - | 0.57 U | 0.69 U | 0.81 U  | 0.052 J |
| Aroclor-1260 (PCB-1260) | mg/kg | - | 0.57 U | 0.69 U | 0.81 U  | 0.51 U  |
| Aroclor-1262 (PCB-1262) | mg/kg | - | 0.57 U | 0.69 U | 0.81 U  | 0.51 U  |
| Aroclor-1268 (PCB-1268) | mg/kg | - | 0.57 U | 0.69 U | 0.81 U  | 0.51 U  |

**General Chemistry**

|                            |       |     |        |        |         |         |
|----------------------------|-------|-----|--------|--------|---------|---------|
| Ammonia                    | mg/kg | -   | 26     | 35     | 64      | 46      |
| Cyanide (total)            | mg/kg | 0.1 | 1.5    | 1.1 J  | 4.1     | 0.96 U  |
| Nitrate (as N)             | mg/kg | -   | 5.0 U  | 5.0 U  | 5.0 U   | 5.0 U   |
| Nitrite (as N)             | mg/kg | -   | 5.0 U  | 5.0 U  | 0.15 J  | 5.0 U   |
| Orthophosphate             | mg/kg | -   | 4.0 J  | 2.5 J  | 6.4     | 3.9 J   |
| pH, lab                    | s.u.  | -   | 9.87 J | 8.83 J | 8.65    | 8.80    |
| Total organic carbon (TOC) | mg/kg | -   | 89000  | 47000  | 44000 J | 41000 J |

Notes:

J - Estimated concentration.

U - Not present at or above the associated value.

**ANALYTICAL RESULTS SUMMARY- SEDIMENT DATA  
RACER NODULAR  
JUNE 2011**

|                         |                              |                              |                              |                              |
|-------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| <i>Sample Location:</i> | <i>SD-237-11</i>             | <i>SD-238-11</i>             | <i>SD-239-11</i>             | <i>SD-239-11</i>             |
| <i>Sample ID:</i>       | <i>S-58502-063011-SH-237</i> | <i>S-58502-063011-SH-238</i> | <i>S-58502-063011-SH-239</i> | <i>S-58502-063011-SH-240</i> |
| <i>Sample Date:</i>     | <i>6/30/2011</i>             | <i>6/30/2011</i>             | <i>6/30/2011</i>             | <i>6/30/2011</i>             |
| <i>Sample Depth:</i>    | <i>-</i>                     | <i>-</i>                     | <i>-</i>                     | <i>-</i>                     |

(Duplicate)

| <i>Parameters:</i> | <i>Units</i> | <i>Res/Non_Res/GW<br/>Prot_GW SW<br/>Interface Prot</i> |       |       |         |         |
|--------------------|--------------|---------------------------------------------------------|-------|-------|---------|---------|
| <i>Metals</i>      |              |                                                         |       |       |         |         |
| Antimony           | mg/kg        | 94                                                      | 3.2 J | 3.2 J | 0.77 J  | 0.87 J  |
| Arsenic            | mg/kg        | 4.6                                                     | 14    | 14    | 5.0     | 6.1     |
| Barium             | mg/kg        | -                                                       | 130   | 140   | 74      | 81      |
| Beryllium          | mg/kg        | -                                                       | 1.9   | 1.8   | 0.25 U  | 0.93    |
| Cadmium            | mg/kg        | -                                                       | 6.0   | 5.2   | 0.72    | 0.67    |
| Chromium           | mg/kg        | 3.3                                                     | 130   | 110   | 39      | 47      |
| Cobalt             | mg/kg        | 2                                                       | 7.7   | 8.4   | 5.3     | 5.8     |
| Copper             | mg/kg        | -                                                       | 130   | 120   | 30      | 34      |
| Lead               | mg/kg        | -                                                       | 840   | 760   | 120     | 140     |
| Manganese          | mg/kg        | -                                                       | 4800  | 4500  | 1300    | 1600    |
| Mercury            | mg/kg        | 0.05                                                    | 0.14  | 0.14  | 0.048 J | 0.040 J |
| Nickel             | mg/kg        | -                                                       | 46    | 43    | 19      | 22      |
| Selenium           | mg/kg        | 0.4                                                     | 3.1   | 2.9   | 0.84    | 0.89    |
| Silver             | mg/kg        | 0.1                                                     | 2.3   | 1.9   | 0.59    | 0.78    |
| Thallium           | mg/kg        | 4.2                                                     | 18 U  | 19 U  | 0.17 J  | 0.23    |
| Vanadium           | mg/kg        | 190                                                     | 22    | 27    | 18      | 20      |
| Zinc               | mg/kg        | -                                                       | 26000 | 21000 | 1500    | 980     |

*Metals - SPLPEM*

|          |        |   |            |            |            |            |
|----------|--------|---|------------|------------|------------|------------|
| Cadmium  | umol/g | - | 0.045      | 0.052      | 0.0060     | 0.0067     |
| Copper   | umol/g | - | 1.2        | 1.3        | 0.31       | 0.30       |
| Lead     | umol/g | - | 3.5        | 4.2        | 0.50       | 0.54       |
| Mercury  | umol/g | - | 0.000062 U | 0.000062 U | 0.000062 U | 0.000062 U |
| Nickel   | umol/g | - | 0.39       | 0.43       | 0.20       | 0.20       |
| SEM      | umol/g | - | 280        | 320        | 15         | 22         |
| SEM/ AVS | none   | - | 7.6        | 5.4        | 3.6        | 3.6        |
| Sulfide  | umol/g | - | 37         | 60         | 4.1        | 6.2        |
| Zinc     | umol/g | - | 270        | 310        | 14         | 21         |

*Polychlorinated Biphenyls*

|                         |       |   |         |        |        |       |
|-------------------------|-------|---|---------|--------|--------|-------|
| Aroclor-1016 (PCB-1016) | mg/kg | - | 0.67 U  | 0.75 U | 0.42 U | 4.1 U |
| Aroclor-1221 (PCB-1221) | mg/kg | - | 0.67 U  | 0.75 U | 0.42 U | 4.1 U |
| Aroclor-1232 (PCB-1232) | mg/kg | - | 0.67 U  | 0.75 U | 0.42 U | 4.1 U |
| Aroclor-1242 (PCB-1242) | mg/kg | - | 0.1 J   | 0.75 U | 0.2 J  | 2.6 J |
| Aroclor-1248 (PCB-1248) | mg/kg | - | 0.67 U  | 0.75 U | 0.42 U | 4.1 U |
| Aroclor-1254 (PCB-1254) | mg/kg | - | 0.068 J | 0.75 U | 0.42 U | 0.7 J |
| Aroclor-1260 (PCB-1260) | mg/kg | - | 0.67 U  | 0.75 U | 0.42 U | 4.1 U |
| Aroclor-1262 (PCB-1262) | mg/kg | - | 0.67 U  | 0.75 U | 0.42 U | 4.1 U |
| Aroclor-1268 (PCB-1268) | mg/kg | - | 0.67 U  | 0.75 U | 0.42 U | 4.1 U |

*General Chemistry*

|                            |       |     |         |         |         |         |
|----------------------------|-------|-----|---------|---------|---------|---------|
| Ammonia                    | mg/kg | -   | 82      | 47      | 85      | 65      |
| Cyanide (total)            | mg/kg | 0.1 | 2.0     | 2.5     | 0.78 U  | 0.74 U  |
| Nitrate (as N)             | mg/kg | -   | 5.1 U   | 5.0 U   | 5.0 U   | 5.0 U   |
| Nitrite (as N)             | mg/kg | -   | 5.1 U   | 5.0 U   | 5.0 U   | 5.0 U   |
| Orthophosphate             | mg/kg | -   | 3.8 J   | 2.7 J   | 4.3 J   | 2.7 J   |
| pH, lab                    | s.u.  | -   | 8.71    | 8.77    | 8.48    | 8.36    |
| Total organic carbon (TOC) | mg/kg | -   | 37000 J | 37000 J | 32000 J | 20000 J |

Notes:

J - Estimated concentration.

U - Not present at or above the associated value.

**ANALYTICAL RESULTS SUMMARY- SEDIMENT DATA  
RACER NODULAR  
JUNE 2011**

Sample Location: SD-241-11  
 Sample ID: S-58502-063011-SH-241  
 Sample Date: 6/30/2011  
 Sample Depth: -

| Parameters: | Units | Res/Non_Res/GW |       |
|-------------|-------|----------------|-------|
|             |       | Prot_GW        | SW    |
|             |       | Interface      | Prot  |
| Metals      |       |                |       |
| Antimony    | mg/kg | 94             | 3.5 J |
| Arsenic     | mg/kg | 4.6            | 9.8   |
| Barium      | mg/kg | -              | 280   |
| Beryllium   | mg/kg | -              | 2.6   |
| Cadmium     | mg/kg | -              | 2.0   |
| Chromium    | mg/kg | 3.3            | 130   |
| Cobalt      | mg/kg | 2              | 5.2   |
| Copper      | mg/kg | -              | 67    |
| Lead        | mg/kg | -              | 370   |
| Manganese   | mg/kg | -              | 6900  |
| Mercury     | mg/kg | 0.05           | 0.15  |
| Nickel      | mg/kg | -              | 24    |
| Selenium    | mg/kg | 0.4            | 3.1   |
| Silver      | mg/kg | 0.1            | 1.3   |
| Thallium    | mg/kg | 4.2            | 0.86  |
| Vanadium    | mg/kg | 190            | 17    |
| Zinc        | mg/kg | -              | 2100  |

**Metals - SPLPEM**

|          |        |   |            |
|----------|--------|---|------------|
| Cadmium  | umol/g | - | 0.016      |
| Copper   | umol/g | - | 0.025      |
| Lead     | umol/g | - | 1.8        |
| Mercury  | umol/g | - | 0.000062 U |
| Nickel   | umol/g | - | 0.26       |
| SEM      | umol/g | - | 24         |
| SEM/ AVS | none   | - | 1.3        |
| Sulfide  | umol/g | - | 19         |
| Zinc     | umol/g | - | 22         |

**Polychlorinated Biphenyls**

|                         |       |   |        |
|-------------------------|-------|---|--------|
| Aroclor-1016 (PCB-1016) | mg/kg | - | 5.5 U  |
| Aroclor-1221 (PCB-1221) | mg/kg | - | 5.5 U  |
| Aroclor-1232 (PCB-1232) | mg/kg | - | 5.5 U  |
| Aroclor-1242 (PCB-1242) | mg/kg | - | 4.2 J  |
| Aroclor-1248 (PCB-1248) | mg/kg | - | 5.5 U  |
| Aroclor-1254 (PCB-1254) | mg/kg | - | 0.99 J |
| Aroclor-1260 (PCB-1260) | mg/kg | - | 5.5 U  |
| Aroclor-1262 (PCB-1262) | mg/kg | - | 5.5 U  |
| Aroclor-1268 (PCB-1268) | mg/kg | - | 5.5 U  |

**General Chemistry**

|                            |       |     |         |
|----------------------------|-------|-----|---------|
| Ammonia                    | mg/kg | -   | 61      |
| Cyanide (total)            | mg/kg | 0.1 | 3.5     |
| Nitrate (as N)             | mg/kg | -   | 5.0 U   |
| Nitrite (as N)             | mg/kg | -   | 5.0 U   |
| Orthophosphate             | mg/kg | -   | 1.7 J   |
| pH, lab                    | s.u.  | -   | 8.70    |
| Total organic carbon (TOC) | mg/kg | -   | 57000 J |

## Notes:

J - Estimated concentration.

U - Not present at or above the associated value.



TABLE 3

AMMONIA ISOTOPE ANALYSIS  
SAGINAW NODULAR IRON  
SAGINAW, MI

| Sample                                                                               | Date      | Position | Mass<br>(mg) | N2 Ampl<br>(volts) | N2 Area<br>(V/s) | %N    | Obs N<br>(μg) | Exp N<br>(μg) | Percent<br>recovery | d <sup>15</sup> N<br>(‰) | Comments     |
|--------------------------------------------------------------------------------------|-----------|----------|--------------|--------------------|------------------|-------|---------------|---------------|---------------------|--------------------------|--------------|
| SH-208                                                                               | 22-Sep-11 | 5        |              | 0.81               | 19.80            |       | 38.31         | 40.00         | 95.78               | 23.82                    |              |
| SH-208                                                                               | 22-Sep-11 | 6        |              | 0.80               | 19.53            |       | 37.80         | 40.00         | 94.50               | 23.39                    |              |
| SH-208                                                                               | 22-Sep-11 | 7        |              | 0.82               | 20.02            |       | 38.75         | 40.00         | 96.89               | 23.84                    |              |
| SH-204                                                                               | 22-Sep-11 | 8        |              | 0.19               | 4.98             |       | 9.63          | 40.00         | 24.08               | 18.18                    |              |
| SH-204                                                                               | 22-Sep-11 | 9        |              | 0.20               | 5.49             |       | 10.62         | 40.00         | 26.55               | 20.19                    |              |
| SH-204                                                                               | 22-Sep-11 | 10       |              | 0.21               | 5.61             |       | 10.85         | 40.00         | 27.13               | 17.13                    |              |
| SH-202                                                                               | 22-Sep-11 | 11       |              | 0.28               | 7.27             |       | 14.08         | 40.00         | 35.20               | 20.01                    |              |
| SH-202                                                                               | 22-Sep-11 | 12       |              | 0.27               | 7.09             |       | 13.72         | 40.00         | 34.31               | 19.30                    |              |
| SH-202                                                                               | 22-Sep-11 | 14       |              | 0.27               | 7.00             |       | 13.55         | 40.00         | 33.86               | 19.38                    |              |
| SH-216                                                                               | 22-Sep-11 | 15       |              | 0.29               | 7.58             |       | 14.68         | 40.00         | 36.69               | 8.66                     |              |
| SH-216                                                                               | 22-Sep-11 | 16       |              | 0.66               | 16.08            |       | 31.12         | 40.00         | 77.80               | 22.84                    |              |
| SH-216                                                                               | 22-Sep-11 | 17       |              | 0.66               | 16.06            |       | 31.08         | 40.00         | 77.71               | 22.67                    |              |
| SH-215                                                                               | 22-Sep-11 | 18       |              | 0.73               | 17.82            |       | 34.50         | 40.00         | 86.24               | 23.58                    |              |
| SH-215                                                                               | 22-Sep-11 | 19       |              | 0.70               | 17.11            |       | 33.11         | 40.00         | 82.76               | 23.73                    |              |
| SH-215                                                                               | 22-Sep-11 | 20       |              | 0.71               | 17.29            |       | 33.47         | 40.00         | 83.66               | 23.50                    |              |
| SH-213                                                                               | 22-Sep-11 | 21       |              | 0.79               | 19.16            |       | 37.08         | 40.00         | 92.71               | 23.81                    |              |
| SH-213                                                                               | 22-Sep-11 | 22       |              | 0.79               | 19.13            |       | 37.01         | 40.00         | 92.54               | 23.36                    |              |
| SH-213                                                                               | 22-Sep-11 | 23       |              | 0.77               | 18.65            |       | 36.09         | 40.00         | 90.22               | 23.44                    |              |
| SH-210                                                                               | 22-Sep-11 | 24       |              | 0.73               | 17.63            |       | 34.12         | 40.00         | 85.31               | 25.27                    |              |
| SH-210                                                                               | 22-Sep-11 | 26       |              | 0.70               | 16.79            |       | 32.49         | 40.00         | 81.23               | 25.79                    |              |
| SH-210                                                                               | 22-Sep-11 | 27       |              | 0.72               | 17.26            |       | 33.41         | 40.00         | 83.53               | 25.80                    |              |
| SH-227                                                                               | 22-Sep-11 | 28       |              | 0.66               | 15.78            |       | 30.54         | 40.00         | 76.35               | 23.73                    |              |
| SH-227                                                                               | 22-Sep-11 | 29       |              | 0.63               | 15.28            |       | 29.57         | 40.00         | 73.92               | 23.25                    |              |
| SH-227                                                                               | 22-Sep-11 | 30       |              | 0.66               | 15.78            |       | 30.54         | 40.00         | 76.36               | 23.56                    |              |
| SH-233                                                                               | 22-Sep-11 | 31       |              | 0.84               | 20.05            |       | 38.81         | 40.00         | 97.02               | 23.77                    |              |
| SH-233                                                                               | 22-Sep-11 | 32       |              | 0.84               | 20.08            |       | 38.85         | 40.00         | 97.13               | 23.89                    |              |
| SH-233                                                                               | 22-Sep-11 | 33       |              | 0.83               | 19.90            |       | 38.52         | 40.00         | 96.31               | 23.75                    |              |
| SH-231                                                                               | 22-Sep-11 | 34       |              | 0.94               | 22.37            |       | 43.29         | 40.00         | 108.23              | 23.75                    |              |
| SH-231                                                                               | 22-Sep-11 | 35       |              | 0.94               | 22.37            |       | 43.29         | 40.00         | 108.23              | 23.62                    |              |
| SH-231                                                                               | 22-Sep-11 | 36       |              | 0.90               | 21.46            |       | 41.53         | 40.00         | 103.83              | 22.36                    |              |
| SH-225                                                                               | 22-Sep-11 | 38       |              | 0.81               | 20.63            |       | 39.93         | 40.00         | 99.81               | 23.72                    |              |
| SH-225                                                                               | 22-Sep-11 | 39       |              | 0.83               | 20.75            |       | 40.17         | 40.00         | 100.42              | 23.64                    |              |
| SH-225                                                                               | 22-Sep-11 | 40       |              | 0.84               | 20.72            |       | 40.11         | 40.00         | 100.27              | 23.98                    |              |
| SH-229                                                                               | 22-Sep-11 | 41       |              | 0.77               | 18.95            |       | 36.67         | 40.00         | 91.69               | 23.72                    |              |
| SH-229                                                                               | 22-Sep-11 | 42       |              | 0.78               | 19.06            |       | 36.89         | 40.00         | 92.23               | 23.91                    |              |
| SH-229                                                                               | 22-Sep-11 | 43       |              | 0.74               | 17.87            |       | 34.59         | 40.00         | 86.46               | 26.45                    |              |
| SH-223                                                                               | 22-Sep-11 | 44       |              | 0.73               | 17.76            |       | 34.38         | 40.00         | 85.95               | 23.89                    |              |
| SH-223                                                                               | 22-Sep-11 | 45       |              | 0.67               | 16.47            |       | 31.87         | 40.00         | 79.67               | 23.41                    |              |
| SH-223                                                                               | 22-Sep-11 | 46       |              | 0.51               | 12.81            |       | 24.79         | 40.00         | 61.98               | 12.27                    |              |
|                                                                                      |           |          | min          | 0.19               | 4.98             |       |               |               |                     |                          |              |
|                                                                                      |           |          | max          | 0.94               | 22.37            |       |               |               |                     |                          |              |
| Note: the accuracy of ‰ recovery depends on the accuracy of the supplied [NH4] data. |           |          |              |                    |                  |       |               |               |                     |                          |              |
| Diffused standards                                                                   |           |          |              |                    |                  |       |               |               |                     |                          | Expected     |
| IAEA N1                                                                              | 22-Sep-11 | 70       | 0.150        | 0.67               | 16.82            | 21.70 | 32.56         | 40.00         | 81.39               | 0.45                     | d15N = 0.43  |
| IAEA N1                                                                              | 22-Sep-11 | 71       | 0.167        | 0.72               | 17.56            | 20.35 | 33.98         | 40.00         | 84.94               | 0.31                     | d15N = 0.43  |
| IAEA N1                                                                              | 22-Sep-11 | 72       | 0.200        | 0.81               | 19.64            | 19.00 | 38.01         | 40.00         | 95.02               | 0.53                     | d15N = 0.43  |
|                                                                                      |           |          |              |                    |                  |       |               |               | avg                 | 0.43                     |              |
|                                                                                      |           |          |              |                    |                  |       |               |               | sd                  | 0.12                     |              |
| IAEA N2                                                                              | 22-Sep-11 | 74       | 0.184        | 0.85               | 20.54            | 21.61 | 39.76         | 40.00         | 99.40               | 20.29                    | d15N = 20.41 |
| IAEA N2                                                                              | 22-Sep-11 | 75       | 0.204        | 0.95               | 22.99            | 21.81 | 44.50         | 40.00         | 111.24              | 20.52                    | d15N = 20.41 |
| IAEA N2                                                                              | 22-Sep-11 | 76       | 0.188        | 0.89               | 21.48            | 22.11 | 41.57         | 40.00         | 103.91              | 20.42                    | d15N = 20.41 |
|                                                                                      |           |          |              |                    |                  |       |               |               | avg                 | 20.41                    |              |
|                                                                                      |           |          |              |                    |                  |       |               |               | sd                  | 0.11                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 77       |              | 0.77               | 18.09            |       | 35.00         | 40.00         | 87.51               | 0.92                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 79       |              | 0.74               | 17.88            |       | 34.61         | 40.00         | 86.52               | 0.84                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 81       |              | 0.75               | 17.90            |       | 34.65         | 40.00         | 86.62               | 0.92                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 82       |              | 0.74               | 17.85            |       | 34.55         | 40.00         | 86.38               | 1.08                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 84       |              | 0.75               | 17.97            |       | 34.78         | 40.00         | 86.96               | 1.09                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 86       |              | 0.74               | 17.66            |       | 34.19         | 40.00         | 85.46               | 0.98                     |              |
|                                                                                      |           |          | min          | 0.74               | 17.66            |       |               |               | avg                 | 0.97                     |              |
|                                                                                      |           |          | max          | 0.77               | 18.09            |       |               |               | sd                  | 0.10                     |              |
| Blank 1                                                                              | 22-Sep-11 | 67       |              | -                  | -                | -     | -             | -             | -                   | -                        |              |
| Blank 2                                                                              | 22-Sep-11 | 68       |              | -                  | -                | -     | -             | -             | -                   | -                        |              |
| Blank 3                                                                              | 22-Sep-11 | 69       |              | -                  | -                | -     | -             | -             | -                   | -                        |              |
| Powdered standards                                                                   |           |          |              |                    |                  |       |               |               |                     |                          | Expected     |
| IAEA N1                                                                              | 22-Sep-11 | 87       | 0.288        | 1.30               | 31.59            | 21.23 | 61.13         |               |                     | 0.43                     | d15N = 0.43  |
| IAEA N2                                                                              | 22-Sep-11 | 88       | 0.286        | 1.30               | 31.73            | 21.47 | 61.40         |               |                     | 20.41                    | d15N = 20.41 |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 3        | 0.303        | 1.36               | 33.40            | 21.34 | 64.65         |               |                     | 0.73                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 4        | 0.307        | 1.41               | 34.90            | 22.00 | 67.54         |               |                     | 0.78                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 13       | 0.322        | 1.44               | 35.53            | 21.36 | 68.76         |               |                     | 0.75                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 25       | 0.308        | 1.42               | 34.49            | 21.67 | 66.75         |               |                     | 0.90                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 37       | 0.319        | 1.39               | 36.39            | 22.08 | 70.44         |               |                     | 0.84                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 49       | 0.278        | 1.26               | 31.41            | 21.87 | 60.80         |               |                     | 0.73                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 61       | 0.300        | 1.37               | 33.61            | 21.69 | 65.06         |               |                     | 0.86                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 73       | 0.328        | 1.47               | 36.18            | 21.35 | 70.02         |               |                     | 0.74                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 85       | 0.292        | 1.35               | 32.87            | 21.79 | 63.62         |               |                     | 0.64                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 89       | 1.007        | 4.72               | 113.65           | 21.84 | 219.95        |               |                     | 0.97                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 90       | 0.466        | 2.18               | 52.47            | 21.79 | 101.55        |               |                     | 0.99                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 91       | 0.256        | 1.17               | 28.40            | 21.47 | 54.97         |               |                     | 0.76                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 92       | 0.054        | 0.23               | 5.67             | 20.33 | 10.98         |               |                     | 0.97                     |              |
| Lab (NH4)2SO4                                                                        | 22-Sep-11 | 93       | 0.296        | 1.36               | 32.92            | 21.52 | 63.70         |               |                     | 0.67                     |              |
|                                                                                      |           |          | min          | 0.23               | 5.67             |       |               |               | avg                 | 0.81                     |              |
|                                                                                      |           |          | max          | 4.72               | 113.65           |       |               |               | sd                  | 0.11                     |              |

TABLE 4

**FIELD AMMONIA READINGS  
SAGINAW NODULAR IRON  
SAGINAW, MI**

| <i>Location</i>                   | 23-Nov-11               |                                          | 2-Dec-11                |                                          | 9-Dec-11                |                                          | 16-Dec-11               |                                          |
|-----------------------------------|-------------------------|------------------------------------------|-------------------------|------------------------------------------|-------------------------|------------------------------------------|-------------------------|------------------------------------------|
|                                   | Total Ammonia<br>(mg/L) | Unionized Ammonia<br>(mg/L) - calculated | Total Ammonia<br>(mg/L) | Unionized Ammonia<br>(mg/L) - calculated | Total Ammonia<br>(mg/L) | Unionized Ammonia<br>(mg/L) - calculated | Total Ammonia<br>(mg/L) | Unionized Ammonia<br>(mg/L) - calculated |
| Lagoon 5                          |                         |                                          | 0.44                    | 0.0113                                   | 0.35                    | 0.0063                                   | 0.11                    | 0.0023                                   |
| Secondary Pond 1(point)           | 0.44                    | 0.0113                                   | 0.30                    | 0.0077                                   | 0.30                    | 0.0053                                   | 0.24                    | 0.0050                                   |
| Secondary Pond 2(pump house)      | 0.20                    | 0.0051                                   | 0.10                    | 0.0026                                   | 0.26                    | 0.0046                                   | 0.23                    | 0.0049                                   |
| Secondary Pond 3(NE corner)       | 0.30                    | 0.0077                                   | 0.40                    | 0.0103                                   | 0.27                    | 0.0048                                   | 0.28                    | 0.0059                                   |
| north ditch                       |                         |                                          |                         |                                          | 0.02                    | 0.0004                                   |                         |                                          |
| railroad sump                     |                         |                                          |                         |                                          | 0.00                    | 0.0000                                   |                         |                                          |
| Hack Rd. sump                     |                         |                                          |                         |                                          | 0.25                    | 0.0045                                   | 0.22                    | 0.0046                                   |
| Primary #3                        |                         |                                          |                         |                                          | 0.68                    | 0.0121                                   | 0.57                    | 0.0120                                   |
| Primary #4                        |                         |                                          |                         |                                          |                         |                                          |                         |                                          |
| pH of Saginaw River               | 8.3                     |                                          | 8.3 <sup>(1)</sup>      |                                          | 8.2                     |                                          | 8.2 <sup>(1)</sup>      |                                          |
| Temperature of Saginaw River (°F) | 39.75                   |                                          | 39.75 <sup>(1)</sup>    |                                          | 35.8                    |                                          | 38.3                    |                                          |
| Unionized ammonia fraction (%)    | 2.57%                   |                                          | 2.57%                   |                                          | 1.78%                   |                                          | 2.09%                   |                                          |

Notes:

(1) Value you taken from previous reading as current day's data is unavailable

(2) USGS 04157000 SAGINAW RIVER  
AT SAGINAW, MI

- Rule 57 Criteria for cold water  
unionized ammonia is **0.029 mg/L**

TABLE 4

**FIELD AMMONIA READINGS  
SAGINAW NODULAR IRON  
SAGINAW, MI**

| <i>Location</i>                   | 21-Dec-11               |                                          | 4-Jan-12                |                                          | 11-Jan-12               |                                          |
|-----------------------------------|-------------------------|------------------------------------------|-------------------------|------------------------------------------|-------------------------|------------------------------------------|
|                                   | Total Ammonia<br>(mg/L) | Unionized Ammonia<br>(mg/L) - calculated | Total Ammonia<br>(mg/L) | Unionized Ammonia<br>(mg/L) - calculated | Total Ammonia<br>(mg/L) | Unionized Ammonia<br>(mg/L) - calculated |
| Lagoon 5                          | 0.21                    | 0.0041                                   | 0.14                    | 0.0027                                   | 0.35                    | 0.0062                                   |
| Secondary Pond 1(point)           | 0.37                    | 0.0072                                   | 0.17                    | 0.0033                                   | 0.42                    | 0.0075                                   |
| Secondary Pond 2(pump house)      | 0.23                    | 0.0044                                   | 0.49                    | 0.0095                                   | 0.32                    | 0.0057                                   |
| Secondary Pond 3(NE corner)       | 0.37                    | 0.0071                                   | 0.28                    | 0.0054                                   | 0.37                    | 0.0066                                   |
| north ditch                       |                         |                                          |                         |                                          |                         |                                          |
| railroad sump                     |                         |                                          |                         |                                          |                         |                                          |
| Hack Rd. sump                     | 0.41                    | 0.0080                                   | 1.70                    | 0.0328                                   | 1.25                    | 0.0223                                   |
| Primary #3                        | 0.88                    | 0.0170                                   | 0.21                    | 0.0041                                   | 0.27                    | 0.0048                                   |
| Primary #4                        | 0.88                    | 0.0170                                   | 1.05                    | 0.0203                                   | 1.05                    | 0.0187                                   |
| pH of Saginaw River               | 8.2 <sup>(1)</sup>      |                                          | 8.2 <sup>(1)</sup>      |                                          | 8.2 <sup>(1)</sup>      |                                          |
| Temperature of Saginaw River (°F) | 36.4                    |                                          | 36.4 <sup>(1)</sup>     |                                          | 34.1                    |                                          |
| Unionized ammonia fraction (%)    | 1.93%                   |                                          | 1.93%                   |                                          | 1.78%                   |                                          |

Notes:

(1) Value you taken from previous reading as current day's data is unavailable

(2) USGS 04157000 SAGINAW RIVER  
AT SAGINAW, MI

- Rule 57 Criteria for cold water  
unionized ammonia is **0.029 mg/L**

ATTACHMENT 2

NPDES APPLICATION

**WASTEWATER DISCHARGE PERMIT APPLICATION****SECTION I – General Information**

Section I shall be completed by all permit applicants. Instructions for completing Section I, Pages 1 and 2, are on Page 2 of the Appendix. To submit additional information, see Page ii, Item 3.

**Water Resources Division Use****Cashier Use Only: 37000-40535-9412-481000-00**Only

Receipt #: \_\_\_\_\_

Permit ID #: \_\_\_\_\_

PLEASE TYPE OR PRINT

|                     |                                                                                                                                                                                                                                                                                                                         |                                            |                                                 |                                               |  |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------------------|-----------------------------------------------|--|
| <b>1</b>            | NPDES PERMIT NUMBER<br>NA                                                                                                                                                                                                                                                                                               |                                            |                                                 |                                               |  |
| <b>2. APPLICANT</b> | Applicant Name<br>Revitalizing Auto Communities Environmental Response Trust                                                                                                                                                                                                                                            |                                            |                                                 |                                               |  |
|                     | Address<br>2930 Ecorse Road                                                                                                                                                                                                                                                                                             |                                            | Address 2 or P.O. Box                           |                                               |  |
|                     | City<br>Ypsilanti                                                                                                                                                                                                                                                                                                       | State<br>MI                                | ZIP Code<br>48198                               |                                               |  |
|                     | Telephone (with area code)<br>217-741-6235                                                                                                                                                                                                                                                                              | FAX (with area code)<br>NA                 | Applicant Web Site Address<br>NA                |                                               |  |
| <b>3. FACILITY</b>  | Facility Name 1<br>Saginaw Nodular Industrial Land                                                                                                                                                                                                                                                                      |                                            |                                                 |                                               |  |
|                     | Facility Name 2                                                                                                                                                                                                                                                                                                         |                                            |                                                 |                                               |  |
|                     | Facility Name 3                                                                                                                                                                                                                                                                                                         |                                            |                                                 |                                               |  |
|                     | Street Address (do not use a P.O. Box Number)<br>2100 Veterans Memorial Parkway                                                                                                                                                                                                                                         |                                            |                                                 |                                               |  |
|                     | City<br>Saginaw                                                                                                                                                                                                                                                                                                         | State<br>MI                                | ZIP Code<br>48601                               |                                               |  |
|                     | Telephone (with area code)<br>NA                                                                                                                                                                                                                                                                                        | FAX (with area code)<br>NA                 | Facility Web Site Address<br>www.racertrust.org |                                               |  |
| <b>4. CONTACTS</b>  | <input checked="" type="checkbox"/> Application Contact<br><input type="checkbox"/> Facility Contact<br><input checked="" type="checkbox"/> Discharge Monitoring Reports<br><input type="checkbox"/> Storm Water Billing<br><input type="checkbox"/> Biosolids Billing<br><input type="checkbox"/> NPDES Annual Billing | First Name<br>Michael                      |                                                 | Last Name<br>Tomka                            |  |
|                     |                                                                                                                                                                                                                                                                                                                         | Title<br>Environmental Consultant          |                                                 | Business                                      |  |
|                     |                                                                                                                                                                                                                                                                                                                         | Address 1<br>651 Colby Drive               |                                                 | Address 2                                     |  |
|                     |                                                                                                                                                                                                                                                                                                                         | City<br>Waterloo                           | State<br>ON                                     | ZIP Code<br>N2V 1C2                           |  |
|                     |                                                                                                                                                                                                                                                                                                                         | Telephone (with area code)<br>519-884-0510 | FAX (with area code)                            | e-mail address<br>mtomka@craworld.com         |  |
|                     |                                                                                                                                                                                                                                                                                                                         |                                            |                                                 |                                               |  |
|                     | <input type="checkbox"/> Application Contact<br><input checked="" type="checkbox"/> Facility Contact<br><input type="checkbox"/> Discharge Monitoring Reports<br><input type="checkbox"/> Storm Water Billing<br><input type="checkbox"/> Biosolids Billing<br><input type="checkbox"/> NPDES Annual Billing            | First Name<br>Grant                        |                                                 | Last Name<br>Trigger                          |  |
|                     |                                                                                                                                                                                                                                                                                                                         | Title<br>Site Manager                      |                                                 | Business                                      |  |
|                     |                                                                                                                                                                                                                                                                                                                         | Address 1<br>2930 Ecorse Road              |                                                 | Address 2                                     |  |
|                     |                                                                                                                                                                                                                                                                                                                         | City<br>Ypsilanti                          | State<br>MI                                     | ZIP Code<br>48198                             |  |
|                     |                                                                                                                                                                                                                                                                                                                         | Telephone (with area code)<br>313-486-2908 | FAX (with area code)                            | e-mail address<br>gtrigger@racertrust.org     |  |
|                     |                                                                                                                                                                                                                                                                                                                         |                                            |                                                 |                                               |  |
|                     | <input type="checkbox"/> Application Contact<br><input type="checkbox"/> Facility Contact<br><input type="checkbox"/> Discharge Monitoring Reports<br><input checked="" type="checkbox"/> Storm Water Billing<br><input type="checkbox"/> Biosolids Billing<br><input checked="" type="checkbox"/> NPDES Annual Billing | First Name<br>Monica                       |                                                 | Last Name<br>Wallingford                      |  |
|                     |                                                                                                                                                                                                                                                                                                                         | Title                                      |                                                 | Business                                      |  |
|                     |                                                                                                                                                                                                                                                                                                                         | Address 1<br>2930 Ecorse Road              |                                                 | Address 2                                     |  |
|                     |                                                                                                                                                                                                                                                                                                                         | City<br>Ypsilanti                          | State<br>MI                                     | ZIP Code<br>48198                             |  |
|                     |                                                                                                                                                                                                                                                                                                                         | Telephone (with area code)<br>5            | FAX (with area code)                            | e-mail address<br>mwallingford@racertrust.org |  |
|                     |                                                                                                                                                                                                                                                                                                                         |                                            |                                                 |                                               |  |

**WASTEWATER DISCHARGE PERMIT APPLICATION****SECTION I – General Information**

PLEASE TYPE OR PRINT

|                                                  |                     |
|--------------------------------------------------|---------------------|
| FACILITY NAME<br>Saginaw Nodular Industrial Land | NPDES PERMIT NUMBER |
|--------------------------------------------------|---------------------|

5. PERMIT ACTION REQUESTED (Check one box only). Instructions for this item are on Page 2 of the Appendix.

- ☒ **NEW USE.** A proposed discharge.
- ☐ **EXISTING DISCHARGE** that is currently unpermitted.
- ☐ **REISSUANCE** of current permit.
- ☐ **MODIFICATION** of current permit. Attach a description of the proposed modification.

**Note:** Applications for **New Use** discharges, **Existing Discharges** that are currently unpermitted, and for either **Reissuance** or **Modification** that include an increased loading of pollutants to the receiving water are required to submit a Rule 98 Demonstration with the Application. See Item 6.

6. RULE 98 – ANTIDegradation REQUIREMENTS. Instructions for this item are on Page 2 of the Appendix.

In accordance with Rule 323.1098 of the Michigan Water Quality Standards, the applicant is required to submit an Antidegradation Demonstration for any new or increased loading of pollutants to the surface waters of the state. An Antidegradation Demonstration must contain the information specified in Rule 1098, outlined on Pages 8-9 of the Appendix. For assistance in completing this item, contact the Permits Section.

Will this discharge be an increased loading of pollutants to the surface waters of the state? ☒ Yes, continue below. ☐ No.

- ☐ Antidegradation Demonstration provided. ☒ Increased loading of pollutants is exempt from Antidegradation Demonstration as indicated below:
- ☒ A short-term (weeks to months) or temporary lowering of water quality
  - ☐ Bypasses that are not prohibited by regulations set forth in 40 CFR 122.41(m)
  - ☐ Response actions undertaken to alleviate a release of pollutants into the environment that may pose an imminent and substantial danger to the public health or welfare
  - ☐ Discharges of pollutant quantities from the intake water at a facility if the intake and discharge are to the same body of water
  - ☐ Increases in flow at a POTW if the increase is within the design flow of the facility, there is no increased loading of BCCs that are not specifically limited in the current permit, and there is no significant change expected in the characteristics of the wastewater collected
  - ☒ Intermittent increased loading related to wet-weather conditions
  - ☒ New or increased loading due to DNRE-approved controls related to wet-weather conditions
  - ☒ Discharges authorized by Certificates of Coverage (COC) and Notices of Coverage
  - ☐ Increased loadings within the authorized levels of a limit in an existing control document, except those loadings that result from actions by the permittee that would otherwise require submittal of an increased use request
  - ☐ Increased loadings of a pollutant which do not involve Bioaccumulative Chemicals of Concern and which use less than 10 percent of the unused loading capacity that exists at the time of the request

7. ADDITIONAL FACILITY LOCATION INFORMATION. Instructions for this item are on Page 2 of the Appendix.

|    |                                                   |       |         |     |                       |                             |
|----|---------------------------------------------------|-------|---------|-----|-----------------------|-----------------------------|
| A  | Local Unit of Government (LUG)<br>City of Saginaw |       |         |     | LUG e-mail address    |                             |
| B  | County<br>Saginaw                                 |       |         |     | Township              |                             |
| C. | Town                                              | Range | Section | 1/4 | 1/4, 1/4              | Private (French) Land Claim |
| D. | Latitude<br>43.4500                               |       |         |     | Longitude<br>-83.9189 |                             |

8. CERTIFIED OPERATOR

Does the facility have a DNRE-certified operator? ☒ Yes ☐ No Instructions for this item are on Page 2 of the Appendix.

|                                            |                           |                                                                                  |                   |
|--------------------------------------------|---------------------------|----------------------------------------------------------------------------------|-------------------|
| First Name<br>Steve                        |                           | Last Name<br>Hoevermeyer                                                         |                   |
| Certification Number<br>I-10477            |                           | Certification Classification(s)<br>Construction/Industrial/Surface Wate Empoun.r |                   |
| Address 1<br>14496 Sheldon Road, Suite 200 |                           | Address 2                                                                        |                   |
| City<br>Plymouth                           |                           | State<br>MI                                                                      | Zip Code<br>48170 |
| Telephone Number<br>734-453-5123           | Fax Number<br>734-4535201 | e-mail address<br>shoevermeyer@craworld.com                                      |                   |

**WASTEWATER DISCHARGE PERMIT APPLICATION****SECTION I – General Information**

PLEASE TYPE OR PRINT

|                                                         |                            |
|---------------------------------------------------------|----------------------------|
| <b>FACILITY NAME</b><br>Saginaw Nodular Industrial Land | <b>NPDES PERMIT NUMBER</b> |
|---------------------------------------------------------|----------------------------|

**9. OTHER ENVIRONMENTAL PERMITS**

Provide the information requested below for any other federal, state, or local environmental permits in effect or applied for at the time of submittal of this Application, including, but not limited to, permits issued under any of the following programs: Air Pollution Control, Hazardous Waste Management, Wetlands Protection, Soil Erosion and Sedimentation Control, and other NPDES permits. To submit additional information, see Page ii, Item 3.

| Issuing Agency                                      | Permit or COC Number | Permit Type               |
|-----------------------------------------------------|----------------------|---------------------------|
| MDEQ                                                | MIS110000/120000     | Stormwater General Permit |
| MDEQ                                                | MIS120003            | Certificate of Coverage   |
| MDNRE (old permit with GM, permit no longer active) | MI0001139            | NPDES Permit              |
|                                                     |                      |                           |
|                                                     |                      |                           |
|                                                     |                      |                           |
|                                                     |                      |                           |
|                                                     |                      |                           |
|                                                     |                      |                           |

**10. WATER FLOW DIAGRAM AND NARRATIVE DESCRIPTION**

Figure 1 presents the Site Map for the facility. Please note that the treatment plant stopped receiving water in September 2011 and the only inputs to the Site include stormwater that falls on the Site and an existing railroad sump that currently drains the ditch (catchment unknown) into the secondary pond.

**Recent Discharges**

A Significant Industrial User (SIU) Discharge Permit was entered into with the City of Saginaw for the discharge of water from the secondary pond to the nearby POTW, which was conducted between February and April 2011. No further discharges from the Site have been made.

**ATTACH THIS INFORMATION TO THIS APPLICATION. PLEASE DO NOT BIND THIS INFORMATION.**

**11. MAP OF FACILITY AND DISCHARGE LOCATION**

Figure 1 presents the Site map in addition to the proposed outfall locations. Figure 2 is an aerial of the Site.

**ATTACH THIS INFORMATION TO THIS APPLICATION.**

**WASTEWATER DISCHARGE PERMIT APPLICATION****SECTION I – General Information**

PLEASE TYPE OR PRINT

|                                                                                                                                                                                                                                                                                                                                                                            |                                |                      |                     |                                                      |          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------|---------------------|------------------------------------------------------|----------|
| FACILITY NAME<br>Saginaw Nodular Industrial Land                                                                                                                                                                                                                                                                                                                           |                                |                      | NPDES PERMIT NUMBER |                                                      |          |
| <b>12. CONTRACT LABORATORIES THAT PROVIDE ANALYTICAL SUPPORT</b><br>Provide the name and address of each contract laboratory or consulting firm that performed any analyses submitted as part of this Application. To submit additional information, see Page ii, Item 3.                                                                                                  |                                |                      |                     |                                                      |          |
| Laboratory Name<br>TestAmerica                                                                                                                                                                                                                                                                                                                                             |                                |                      | Laboratory Name     |                                                      |          |
| Street Address<br>4101 Shuffel Street NW                                                                                                                                                                                                                                                                                                                                   |                                |                      | Street Address      |                                                      |          |
| City<br>North Canton                                                                                                                                                                                                                                                                                                                                                       | State<br>OH                    | ZIP Code<br>44720    | City                | State                                                | ZIP Code |
| Telephone (with area code)<br>330-497-9396                                                                                                                                                                                                                                                                                                                                 |                                | Fax (with area code) |                     | Telephone (with area code)      Fax (with area code) |          |
| Analysis Performed<br>Metals, Phenols, Total Toxic Organics, PCBs, Gen. Chemistry                                                                                                                                                                                                                                                                                          |                                |                      | Analysis Performed  |                                                      |          |
| Laboratory Name                                                                                                                                                                                                                                                                                                                                                            |                                |                      | Laboratory Name     |                                                      |          |
| Street Address                                                                                                                                                                                                                                                                                                                                                             |                                |                      | Street Address      |                                                      |          |
| City                                                                                                                                                                                                                                                                                                                                                                       | State                          | City                 | State               | City                                                 | State    |
| Telephone (with area code)                                                                                                                                                                                                                                                                                                                                                 |                                | Fax (with area code) |                     | Telephone (with area code)      Fax (with area code) |          |
| Analysis Performed                                                                                                                                                                                                                                                                                                                                                         |                                |                      | Analysis Performed  |                                                      |          |
| <b>13. LIST ADJACENT PROPERTY OWNERS</b><br>List the names and mailing addresses of all property owners for all properties adjacent to the facility, treatment systems, and discharge locations. For vacant lots or empty buildings, supply the owner's mailing address – NOT the lot or building property address. To submit additional information, see Page ii, Item 3. |                                |                      |                     |                                                      |          |
| <b>Name</b>                                                                                                                                                                                                                                                                                                                                                                | <b>Address</b>                 | <b>City</b>          | <b>State</b>        | <b>ZIP Code</b>                                      |          |
| General Motors                                                                                                                                                                                                                                                                                                                                                             | 1629 North Washington Avenue   | Saginaw              | MI                  | 48605-5073                                           |          |
| Saginaw POTW                                                                                                                                                                                                                                                                                                                                                               | 2406 Veterans Memorial Parkway | Saginaw              | MI                  | 48601-1268                                           |          |
| Wolverine Human Services                                                                                                                                                                                                                                                                                                                                                   | 2424 North Outer Drive         | Saginaw              | MI                  | 48601-6010                                           |          |
| Tri-Cap - Halfway house                                                                                                                                                                                                                                                                                                                                                    | 2300 Veterans Memorial Parkway | Saginaw              | MI                  | •48601-1268                                          |          |
| Farhner - Road Maintenance                                                                                                                                                                                                                                                                                                                                                 | 2224 Veterans Memorial Parkwa  | Saginaw              | MI                  | 48601-1268                                           |          |
|                                                                                                                                                                                                                                                                                                                                                                            |                                |                      |                     |                                                      |          |
|                                                                                                                                                                                                                                                                                                                                                                            |                                |                      |                     |                                                      |          |
|                                                                                                                                                                                                                                                                                                                                                                            |                                |                      |                     |                                                      |          |
|                                                                                                                                                                                                                                                                                                                                                                            |                                |                      |                     |                                                      |          |
|                                                                                                                                                                                                                                                                                                                                                                            |                                |                      |                     |                                                      |          |
|                                                                                                                                                                                                                                                                                                                                                                            |                                |                      |                     |                                                      |          |
|                                                                                                                                                                                                                                                                                                                                                                            |                                |                      |                     |                                                      |          |



**WASTEWATER DISCHARGE PERMIT APPLICATION****SECTION I – General Information**

PLEASE TYPE OR PRINT

|                                                  |                     |
|--------------------------------------------------|---------------------|
| FACILITY NAME<br>Saginaw Nodular Industrial Land | NPDES PERMIT NUMBER |
|--------------------------------------------------|---------------------|

14. APPLICATION CERTIFICATION

Rule 323.2114(1-4), promulgated under the Michigan Act, requires that **this Application must be signed as follows:**

**A. For an organization, company, corporation, or authority, by a principal executive officer, vice president, or higher**  
**B. For a partnership, by a general partner**  
**C. For a sole proprietor, by the proprietor**  
**D. For a municipal, state, or other public facility, by a principal executive officer or ranking elected official (e.g., mayor, village president, city or village manager, or clerk)**

**Note:** If the signatory is not listed above, but is authorized to sign the Application, please provide documentation of that authorization.

*"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 the possibility of fine and imprisonment for having knowledge of violations."*

The last Application for this facility was submitted on: \_\_\_\_\_

**I understand that my signature constitutes a legal agreement to comply with the requirements of the NPDES Permit. I certify under penalty of law that I possess full authority on behalf of the legal owner/permittee to sign and submit this Application.**

|               |                              |
|---------------|------------------------------|
| Print Name    | Title:                       |
| Grant Trigger | Deputy Clean-up Manager - MI |

|           |       |
|-----------|-------|
| Signature | Date: |
|           |       |

**This completes Section I. Publicly-Owned Treatment Works discharging sanitary and industrial wastewater to the surface waters, and privately-owned treatment works discharging sanitary wastewater to the surface waters should complete Section II. Privately-owned treatment works include, but are not limited to, Mobile Home Parks, Campgrounds, Condominiums, Hotels and Motels, and Nursing Homes. All other applicants should complete Section III. If assistance is needed to complete this Application, contact the Permits Section.**

**Permit Application Submittal Checklist**

Please confirm the following before submitting the Application:

- ☒ 1. Section I has been completed, including all diagrams, maps, and the treatment process narrative.
- ☒ 2. The Application has been signed as required above in Section I.14.A.-D. or a copy of the letter authorizing the signatory to sign the letter has been included, as appropriate.
- ☒ 3. Section II or Section III has been completed, including any additional information or submissions.
- ☒ 4. Section IV has been completed by any facility that discharges storm water.
- ☐ 5. Section V has been completed by any facility that is a Concentrated Animal Feeding Operation.
- ☐ 6. Section VI has been completed by any facility that has Cooling Water Intake Structures.
- ☐ 7. A check or money order for the appropriate application fee has been made out to the "State of Michigan" and has been included with the Application submittal.
- ☒ 8. E-mail addresses have been provided.

**WASTEWATER DISCHARGE PERMIT APPLICATION****SECTION III – Industrial and Commercial Wastewater**

Section III is to be completed by all facilities classified as Industrial or Commercial facilities. Industrial and Commercial facilities include, but are not limited to, facilities that discharge or propose to discharge a wastewater generated by a production process, a service provided, or through a remediation project. Municipal and public facilities are not required to complete Section III (unless requesting authorization for discharges other than sanitary wastewater).

**A. Facility Information**

PLEASE TYPE OR PRINT

|                                                  |                     |
|--------------------------------------------------|---------------------|
| FACILITY NAME<br>Saginaw Nodular Industrial Land | NPDES PERMIT NUMBER |
|--------------------------------------------------|---------------------|

**1. BUSINESS INFORMATION**

A. Provide up to four Standard Industrial Classification (SIC) or North American Industry Classification System (NAICS) codes, in order of economic importance, which best describe the major products or services provided by this facility

|          |    |    |    |
|----------|----|----|----|
| 1. 52590 | 2. | 3. | 4. |
|----------|----|----|----|

B. Indicate if this facility is a primary industry (refer to Table 1 of the Appendix to determine if this facility is a primary industry).

- ☐ Yes. This facility is a primary industry. Indicate the primary industry as identified in Table 1 of the Appendix: \_\_\_\_\_
- ☒ No. This facility is not a primary industry.

**2. WATER SUPPLY AND DISCHARGE TYPE**

A. Identify all water sources entering the facility and treatment systems, and provide average flows. The volume may be estimated from water supply meter readings, pump capacities, etc. Provide the name of the source where appropriate (i.e., Grand River, Lake Michigan, City of Millpond). To submit additional information, see Page ii, Item 3.

|                      | Name and Location of Source | Average Volume or Flow Rate | Units |
|----------------------|-----------------------------|-----------------------------|-------|
| Municipal Supply     | NA                          |                             |       |
| Surface Water Intake |                             |                             |       |
| Private Well         |                             |                             |       |
| Other: _____         |                             |                             |       |

B. Identify water discharged by the facility and treatment systems, and provide average flows. If water is first used for one purpose and then is subsequently used for another purpose, indicate the type and amount of the last use. For example, if water is initially used for noncontact cooling water and then for process water, indicate the amount of process water. The amount of water from sources should approximate the amount of water usage. If the amounts are different, provide an explanation.

|                          | Average Flow Rate | Units |                          | Average Flow Rate | Units |
|--------------------------|-------------------|-------|--------------------------|-------------------|-------|
| Process Wastewater       | NA                |       | Sanitary Wastewater      |                   |       |
| Contact Cooling Water    |                   |       | Regulated Storm Water    |                   |       |
| Noncontact Cooling Water |                   |       | High Pressure Test Water |                   |       |
| Groundwater Cleanup      |                   |       | Other: _____             |                   |       |

**Note:** For A. and B. above, indicate units as MGD (million gallons per day), MGY (million gallons per year), GPD (gallons per day), or other appropriate unit.

**WASTEWATER DISCHARGE PERMIT APPLICATION****SECTION III – Industrial and Commercial Wastewater****B. Outfall Information**

Complete a separate Section III.B. – Outfall Information (Pages 19 – 24) for each outfall at the facility. Make copies of this blank section of the Application as necessary for additional outfalls.

PLEASE TYPE OR PRINT

|                                                  |                     |                           |
|--------------------------------------------------|---------------------|---------------------------|
| FACILITY NAME<br>Saginaw Nodular Industrial Land | NPDES PERMIT NUMBER | OUTFALL NUMBER<br>021/022 |
|--------------------------------------------------|---------------------|---------------------------|

1. OUTFALL INFORMATION. Instructions for this item are on Page 3 of the Appendix.

|      |                                                                                                                                                                                                                                                                                                                                  |                                 |       |          |                             |          |                             |  |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------|----------|-----------------------------|----------|-----------------------------|--|
| A.   | Receiving Water<br>Saginaw River and/or ditch to the north                                                                                                                                                                                                                                                                       | Hydrologic Unit Code<br>4080206 |       |          |                             |          |                             |  |
| B.   | County<br>Saginaw                                                                                                                                                                                                                                                                                                                | Township                        |       |          |                             |          |                             |  |
| C.   | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Town</td> <td style="width: 15%;">Range</td> <td style="width: 15%;">Section</td> <td style="width: 15%;">1/4</td> <td style="width: 15%;">1/4, 1/4</td> <td style="width: 30%;">Private (French) Land Claim</td> </tr> </table> | Town                            | Range | Section  | 1/4                         | 1/4, 1/4 | Private (French) Land Claim |  |
| Town | Range                                                                                                                                                                                                                                                                                                                            | Section                         | 1/4   | 1/4, 1/4 | Private (French) Land Claim |          |                             |  |
| D.   | Latitude<br>TBD                                                                                                                                                                                                                                                                                                                  | Longitude<br>TBD                |       |          |                             |          |                             |  |

E. Type of Wastewater Discharged (check all that apply to this outfall):

☐ Contact Cooling      ☐ Groundwater Cleanup      ☐ Hydrostatic Pressure Test      ☐ Noncontact Cooling Water  
☐ Process Wastewater      ☐ Sanitary Wastewater      ☐ Storm Water - not regulated      ☒ Storm Water - regulated  
☐ Storm water subject to effluent guidelines (indicate under which category): \_\_\_\_\_  
☐ Other – specify (see Table 8 – Other Common Types of Wastewater on Page 17 in the Appendix) \_\_\_\_\_

F. The Maximum Design Flow Rate for this outfall is: TBD MGD

G. What is the Maximum Authorized Daily Discharge Flow for this outfall for the next five years?

Seasonal Dischargers \_\_\_\_\_ MGY (Continue with Item H.)

Continuous Dischargers \_\_\_\_\_ MGD (Continue with Item I.)

H. Seasonal Discharge:

List the discharge periods (by month) and the volume discharged in the space provided below.

|             |         |                               |              |
|-------------|---------|-------------------------------|--------------|
| From<br>TBD | Through | Actual Discharge Volume (MGD) | Annual Total |
| From        | Through | Actual Discharge Volume (MGD) |              |
| From        | Through | Actual Discharge Volume (MGD) |              |
| From        | Through | Actual Discharge Volume (MGD) |              |

I. Continuous Discharge:

How often is there a discharge from this outfall (on average)? \_\_\_\_\_ Hours/Day \_\_\_\_\_ Days/Year

**Batch dischargers are required to provide the following additional information:**

Is there effluent flow equalization?    ☐ Yes                      ☐ No

Batch Peak Flow Rate: \_\_\_\_\_                      Number of batches discharged per day: \_\_\_\_\_

|                          |         |         |         |
|--------------------------|---------|---------|---------|
|                          | Minimum | Average | Maximum |
| Batch Volume (gallons)   |         |         |         |
| Batch Duration (minutes) |         |         |         |

**WASTEWATER DISCHARGE PERMIT APPLICATION****SECTION III – Industrial and Commercial Wastewater****B. Outfall Information**

PLEASE TYPE OR PRINT

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------|
| FACILITY NAME<br>Saginaw Nodular Industrial Land                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | NPDES PERMIT NUMBER | OUTFALL NUMBER<br>021/022 |
| <b>2. PROCESS STREAMS CONTRIBUTING TO OUTFALL DISCHARGE</b><br>Federal regulations require that different industries report different information depending on the type of facility. The information below is used to determine the applicable federal regulations for this facility. An abbreviated list is on Page 11 in the 'Summary of Information to be reported by Industry Type' section of the Appendix. Applicants are required to provide the name and the SIC or the NAICS code for each process at the facility. Facilities with production-based limits must report an estimated annual production rate for the next five (5) years or the life of the permit. If the wastestream is not regulated under federal categorical standards, the applicant is required to report all pollutants which have the reasonable potential to be present in the discharge. To submit additional information, see Page ii, Item 3. |                     |                           |
| <b>PROCESS INFORMATION</b><br>A. Name of the process contributing to the discharge: _____<br>B. SIC or NAICS code: _____<br>C. Describe the process and provide measures of production:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                           |
| <b>PROCESS INFORMATION</b><br>A. Name of the process contributing to the discharge: _____<br>B. SIC or NAICS code: _____<br>C. Describe the process and provide measures of production:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                           |
| <b>PROCESS INFORMATION</b><br>A. Name of the process contributing to the discharge: _____<br>B. SIC or NAICS code: _____<br>C. Describe the process and provide measures of production:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                           |
| <b>PROCESS INFORMATION</b><br>A. Name of the process contributing to the discharge: _____<br>B. SIC or NAICS code: _____<br>C. Describe the process and provide measures of production:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                           |
| <b>PROCESS INFORMATION</b><br>A. Name of the process contributing to the discharge: _____<br>B. SIC or NAICS code: _____<br>C. Describe the process and provide measures of production:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                           |

## WASTEWATER DISCHARGE PERMIT APPLICATION

## SECTION III – Industrial and Commercial Wastewater

## B. Outfall Information

PLEASE TYPE OR PRINT

|                                                  |                     |                           |
|--------------------------------------------------|---------------------|---------------------------|
| FACILITY NAME<br>Saginaw Nodular Industrial Land | NPDES PERMIT NUMBER | OUTFALL NUMBER<br>021/022 |
|--------------------------------------------------|---------------------|---------------------------|

3. EFFLUENT CHARACTERISTICS - CONVENTIONAL POLLUTANTS. Instructions for this item are on Page 4 of the Appendix.

☒ Check this box if additional information is included as an attachment. To submit additional information, see Page ii, Item 3.

**Please Note:** Rule 323.1062 allows the use of either *Escherichia coli* or Fecal Coliform Bacteria as an indicator that effluent has been disinfected. The DNRE will use the indicator selected below in the permit issued based on this Application. ☐ Use *Escherichia coli* as an indicator of disinfection. ☐ Use Fecal Coliform Bacteria as an indicator of disinfection.

| Submitted<br>via DMRs<br>or eDMRs | Waiver Request and the<br>Rationale Behind the Request | Parameter                                                | Maximum<br>Monthly<br>Concentration | Maximum<br>Daily<br>Concentration | Units                                                          | Number<br>of<br>Analyses | Sample Type                                                          |
|-----------------------------------|--------------------------------------------------------|----------------------------------------------------------|-------------------------------------|-----------------------------------|----------------------------------------------------------------|--------------------------|----------------------------------------------------------------------|
| <input type="checkbox"/>          |                                                        | Biochemical Oxygen Demand – five day (BOD <sub>5</sub> ) |                                     |                                   | mg/l                                                           |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>          |                                                        | Chemical Oxygen Demand (COD)                             |                                     |                                   | mg/l                                                           |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>          |                                                        | Total Organic Carbon (TOC)                               |                                     |                                   | mg/l                                                           |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>          |                                                        | Ammonia Nitrogen (as N)                                  |                                     |                                   | mg/l                                                           |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>          |                                                        | Total Suspended Solids                                   |                                     |                                   | mg/l                                                           |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>          | <b>Waiver Request Not Required</b>                     | Total Dissolved Solids                                   |                                     |                                   | mg/l                                                           |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>          | <b>Waiver Request Not Required</b>                     | Total Phosphorus (as P)                                  |                                     |                                   | mg/l                                                           |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>          | <b>Waiver Request Not Required</b>                     | Fecal Coliform Bacteria (report geometric means)         |                                     | Maximum 7-day                     | counts/100ml                                                   |                          | Grab                                                                 |
| <input type="checkbox"/>          | <b>Waiver Request Not Required</b>                     | <i>Escherichia coli</i> (report geometric means)         |                                     | Maximum 7-day                     | counts/100 ml                                                  |                          | Grab                                                                 |
| <input type="checkbox"/>          | <b>Waiver Request Not Required</b>                     | Total Residual Chlorine                                  |                                     |                                   | <input type="checkbox"/> mg/l<br><input type="checkbox"/> µg/l |                          | Grab                                                                 |
| <input type="checkbox"/>          | <b>Waiver Request Not Required</b>                     | Dissolved Oxygen                                         | <b>Do Not Use</b>                   | Minimum Daily                     | mg/l                                                           |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>          |                                                        | pH (report maximum and minimum of individual samples)    | Minimum                             | Maximum                           | standard units                                                 |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>          |                                                        | Temperature, Summer                                      |                                     |                                   | <input type="checkbox"/> °F <input type="checkbox"/> °C        |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>          |                                                        | Temperature, Winter                                      |                                     |                                   | <input type="checkbox"/> °F <input type="checkbox"/> °C        |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>          | <b>Waiver Request Not Required</b>                     | Oil & Grease                                             |                                     |                                   | mg/l                                                           |                          | Grab                                                                 |

**WASTEWATER DISCHARGE PERMIT APPLICATION****SECTION III – Industrial and Commercial Wastewater****B. Outfall Information**

PLEASE TYPE OR PRINT

|                                                  |                     |                           |
|--------------------------------------------------|---------------------|---------------------------|
| FACILITY NAME<br>Saginaw Nodular Industrial Land | NPDES PERMIT NUMBER | OUTFALL NUMBER<br>021/022 |
|--------------------------------------------------|---------------------|---------------------------|

**Note: For questions on this page, Tables 1 – 5 are found in the Appendix.****4. PRIMARY INDUSTRY PRIORITY POLLUTANT INFORMATION**

**Existing primary industries** that discharge process wastewater are required to submit the results of at least one permittee-collected effluent analysis for selected organic pollutants identified in Table 2 (as determined from Table 1, Testing Requirements for Organic Toxic Pollutants by Industrial Category), and all of the pollutants identified in Table 3. Existing primary industries are required to also provide the results of at least one permittee-collected effluent analysis for any other chemical listed in Table 2 known or believed to be present in the facility's effluent.

In addition, submit the results of all other effluent analyses performed within the last three years for any chemical listed in Tables 2 and 3.

**New primary industries** that propose to discharge process wastewater are required to provide an estimated effluent concentration for any chemical listed in Tables 2 and 3 expected to be present in the facility's effluent.

**5. DIOXIN AND FURAN CONGENER INFORMATION**

**Existing industries** that use or manufacture 2,3,5-trichlorophenoxy acetic acid (2,4,5-T); 2-(2,3,5-trichlorophenoxy) propanoic acid, (Silvex, 2,3,5-TP); 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon); 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothionate (Ronnell); 2,4,5-trichlorophenol (TCP); or hexachlorophrene (HCP), or knows or has reason to believe that 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) is present in the facility's effluent, are required to submit the results of at least one effluent analysis for the dioxin and furan congeners listed in Table 6. All effluent analyses for dioxin and furan congeners shall be conducted using USEPA Method 1613.

In addition, submit the results of all other effluent analyses performed within the last three years for any dioxin and furan congener listed in Table 6.

**New industries** that expect to use or manufacture 2,3,5-trichlorophenoxy acetic acid (2,4,5-T); 2-(2,3,5-trichlorophenoxy) propanoic acid (Silvex, 2,3,5-TP); 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon); 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothionate (Ronnell); 2,4,5-trichlorophenol (TCP); or hexachlorophrene (HCP), or knows or has reason to believe that 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) is present in the facility's effluent, shall provide estimated effluent concentrations for the dioxin and furan congeners listed in Table 6.

**6. OTHER INDUSTRY PRIORITY POLLUTANT INFORMATION**

**Existing secondary industries or existing primary industries** that discharge nonprocess wastewater are required to submit the results of at least one effluent analysis for any chemical listed in Tables 2 and 3 known or believed to be present in the facility's effluent.

In addition, submit the results of all other effluent analyses performed within the last three years for any chemical listed in Tables 2 and 3.

**New secondary industries or new primary industries** that propose to discharge nonprocess wastewater are required to provide an estimated effluent concentration for any chemical listed in Tables 2 and 3 expected to be present in the facility's effluent.

**7. ADDITIONAL TOXIC AND OTHER POLLUTANT INFORMATION**

**All existing industries**, regardless of discharge type, are required to provide the results of at least one analysis for any chemical listed in Table 4 known or believed to be present in the facility's effluent, and a measured or estimated effluent concentration for any chemical listed in Table 5 known or believed to be present in the facility's effluent. In addition, submit the results of any effluent analysis performed within the last three years for any chemical listed in Tables 4 and 5.

**New industries**, regardless of discharge type, are required to provide an estimated effluent concentration for any chemical listed in Tables 4 and 5 expected to be present in the facility's effluent.

**8. INJURIOUS CHEMICALS NOT PREVIOUSLY REPORTED**

**New or existing industries**, regardless of discharge type, are required to provide a measured or estimated effluent concentration for any toxic or otherwise injurious chemicals known or believed to be present in the facility's effluent that have not been previously identified in this Application. Quantitative effluent data for these chemicals that is less than five years old shall be reported.

**NOTE:** All effluent data submitted in response to questions 4, 5, 6, 7, and 8 above should be recorded on Page 23. To submit additional information, see Page ii, Item 3. If the effluent concentrations are estimated, place an "E" in the "Analytical Method" column. The following fields shall be completed for each data row: Parameter, CAS No., Concentration(s), Sample Type, and Analytical Method. For analytical test requirements, see Page ii, Item 5. Tables 1, 2, and 3 can be found in the Appendix.

If Alternate Test Procedures have been approved for any parameter listed above (Items 4. through 8.), see Page ii, Item 5. for additional instructions.

## B. Outfall Information

[illegible]

**WASTEWATER DISCHARGE PERMIT APPLICATION****SECTION III – Industrial and Commercial Wastewater****B. Outfall Information**

PLEASE TYPE OR PRINT

|                                                         |                                |                                  |
|---------------------------------------------------------|--------------------------------|----------------------------------|
| <b>FACILITY NAME</b><br>Saginaw Nodular Industrial Land | <b>NPDES PERMIT NUMBER</b><br> | <b>OUTFALL NUMBER</b><br>021/022 |
|---------------------------------------------------------|--------------------------------|----------------------------------|

**9. WATER TREATMENT ADDITIVES**

Water treatment additives include any material that is added to water used at the facility or to wastewater generated by the facility to condition or treat the water.

Approvals of water treatment additives are authorized by the DNRE under separate correspondence. The issuance of an NPDES permit does not constitute approval of the water treatment additives that are included in this Application.

**A. Are there water treatment additives in the discharge from this facility?**

☐ Yes.

☒ No. Proceed to Item 10.

**B. Have these water treatment additives been previously approved?**

☐ Yes. Submit a list of the previously-approved water treatment additives and the date on which they were approved. The information listed in Item C., Items 1. – 8. shall be updated if it has changed since the previous approval.

☐ No. Continue with Item C.

**C. Submit a list of water treatment additives that are or may be discharged from the facility. Applicants are required to submit the information listed below for each additive.**

1. The water treatment additive Material Safety Data Sheet
2. The proposed water treatment additive discharge concentration
3. The discharge frequency (i.e., number of hours per day, week)
4. The outfall from which the water treatment additive is to be discharged
5. The type of removal treatment, if any, that the water treatment additive receives prior to discharge
6. The water treatment additive function (i.e., microbiocide, flocculant)
7. A 48-hour LC50 or EC50 for a North American freshwater planktonic crustacean (either *Ceriodaphnia* sp., *Daphnia* sp., or *Simocephalus* sp.)
8. The results of a toxicity test for one other North American freshwater aquatic species (other than a planktonic crustacean) that meets a minimum requirement of Rule 323.1057(2)(a) of the Water Quality Standards. Examples of tests that would meet this requirement include a 96-hour LC50 for rainbow trout, bluegill, or fathead minnow.

The required toxicity information (described in Items 7. and 8. above) is currently available in the Water Resource Division's files for the water treatment additives listed on the DNRE's Internet page. To access that information, go to <http://www.michigan.gov/deq>, click on Site Map, at the bottom of the right column under **Water Quality Monitoring**, click on Assessment of Michigan Waters. Under the **Information** heading, click on the Water Treatment Additive List. If you intend to use one of the water treatment additives on this list, only the information in Items 1. through 6. above needs to be submitted to the Water Resources Division.

**Note:** The availability of toxicity information for a water treatment additive does not constitute approval to discharge the water treatment additive.

**10. WHOLE EFFLUENT TOXICITY (WET) TESTS**

Have any acute or chronic WET tests been conducted on any discharges or receiving water(s) in relation to facility discharges within the last three (3) years? If yes, identify the tests and summarize the results on a separate sheet, unless the test has been submitted to the DNRE in the last three (3) years. For assistance with WET testing, see "Whole Effluent Toxicity Test Guidance and Requirements" on Page 17 in the Appendix.

**This completes Section III. Return the completed Application (Sections I, III, IV, VI [if applicable], and any attachments) to one of the addresses on Page ii of this Application. If assistance is needed to complete this Application, contact the Permits Section.**



**WASTEWATER DISCHARGE PERMIT APPLICATION****SECTION III – Industrial and Commercial Wastewater****B. Outfall Information**

Complete a separate Section III.B. – Outfall Information (Pages 19 – 24) for each outfall at the facility. Make copies of this blank section of the Application as necessary for additional outfalls.

PLEASE TYPE OR PRINT

|                                                  |                     |                       |
|--------------------------------------------------|---------------------|-----------------------|
| FACILITY NAME<br>Saginaw Nodular Industrial Land | NPDES PERMIT NUMBER | OUTFALL NUMBER<br>023 |
|--------------------------------------------------|---------------------|-----------------------|

1. OUTFALL INFORMATION. Instructions for this item are on Page 3 of the Appendix.

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                 |       |          |                             |          |                             |  |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------|----------|-----------------------------|----------|-----------------------------|--|
| A.   | Receiving Water<br>Ditch to the north                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Hydrologic Unit Code<br>4080206 |       |          |                             |          |                             |  |
| B.   | County<br>Saginaw                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Township                        |       |          |                             |          |                             |  |
| C.   | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; border-bottom: 1px solid black;">Town</td> <td style="width: 15%; border-bottom: 1px solid black;">Range</td> <td style="width: 15%; border-bottom: 1px solid black;">Section</td> <td style="width: 15%; border-bottom: 1px solid black;">1/4</td> <td style="width: 15%; border-bottom: 1px solid black;">1/4, 1/4</td> <td style="width: 30%; border-bottom: 1px solid black;">Private (French) Land Claim</td> </tr> </table> | Town                            | Range | Section  | 1/4                         | 1/4, 1/4 | Private (French) Land Claim |  |
| Town | Range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Section                         | 1/4   | 1/4, 1/4 | Private (French) Land Claim |          |                             |  |
| D.   | Latitude<br>TBD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Longitude<br>TBD                |       |          |                             |          |                             |  |

E. Type of Wastewater Discharged (check all that apply to this outfall):

☐ Contact Cooling

☐ Groundwater Cleanup

☐ Hydrostatic Pressure Test

☐ Noncontact Cooling Water

☐ Process Wastewater

☐ Sanitary Wastewater

☐ Storm Water - not regulated

☒ Storm Water - regulated

☐ Storm water subject to effluent guidelines (indicate under which category): \_\_\_\_\_

☐ Other – specify (see Table 8 – Other Common Types of Wastewater on Page 17 in the Appendix) \_\_\_\_\_

F. The Maximum Design Flow Rate for this outfall is: TBD MGD

G. What is the Maximum Authorized Daily Discharge Flow for this outfall for the next five years?

Seasonal Dischargers \_\_\_\_\_ MGY (Continue with Item H.)

Continuous Dischargers \_\_\_\_\_ MGD (Continue with Item I.)

H. Seasonal Discharge:

List the discharge periods (by month) and the volume discharged in the space provided below.

|             |         |                               |              |
|-------------|---------|-------------------------------|--------------|
| From<br>TBD | Through | Actual Discharge Volume (MGD) | Annual Total |
| From        | Through | Actual Discharge Volume (MGD) |              |
| From        | Through | Actual Discharge Volume (MGD) |              |
| From        | Through | Actual Discharge Volume (MGD) |              |

I. Continuous Discharge:

How often is there a discharge from this outfall (on average)? \_\_\_\_\_ Hours/Day \_\_\_\_\_ Days/Year

**Batch dischargers are required to provide the following additional information:**

Is there effluent flow equalization? ☐ Yes ☐ No

Batch Peak Flow Rate: \_\_\_\_\_ Number of batches discharged per day: \_\_\_\_\_

|                          | Minimum | Average | Maximum |
|--------------------------|---------|---------|---------|
| Batch Volume (gallons)   |         |         |         |
| Batch Duration (minutes) |         |         |         |

**WASTEWATER DISCHARGE PERMIT APPLICATION****SECTION III – Industrial and Commercial Wastewater****B. Outfall Information**

PLEASE TYPE OR PRINT

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                     |                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------|
| FACILITY NAME<br>Saginaw Nodular Industrial Land                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NPDES PERMIT NUMBER | OUTFALL NUMBER<br>023 |
| <p><b>2. PROCESS STREAMS CONTRIBUTING TO OUTFALL DISCHARGE</b></p> <p>Federal regulations require that different industries report different information depending on the type of facility. The information below is used to determine the applicable federal regulations for this facility. An abbreviated list is on Page 11 in the 'Summary of Information to be reported by Industry Type' section of the Appendix. Applicants are required to provide the name and the SIC or the NAICS code for each process at the facility. Facilities with production-based limits must report an estimated annual production rate for the next five (5) years or the life of the permit. If the wastestream is not regulated under federal categorical standards, the applicant is required to report all pollutants which have the reasonable potential to be present in the discharge. To submit additional information, see Page ii, Item 3.</p> |                     |                       |
| <p><b>PROCESS INFORMATION</b></p> <p>A. Name of the process contributing to the discharge: _____</p> <p>B. SIC or NAICS code: _____</p> <p>C. Describe the process and provide measures of production:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |                       |
| <p><b>PROCESS INFORMATION</b></p> <p>A. Name of the process contributing to the discharge: _____</p> <p>B. SIC or NAICS code: _____</p> <p>C. Describe the process and provide measures of production:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |                       |
| <p><b>PROCESS INFORMATION</b></p> <p>A. Name of the process contributing to the discharge: _____</p> <p>B. SIC or NAICS code: _____</p> <p>C. Describe the process and provide measures of production:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |                       |
| <p><b>PROCESS INFORMATION</b></p> <p>A. Name of the process contributing to the discharge: _____</p> <p>B. SIC or NAICS code: _____</p> <p>C. Describe the process and provide measures of production:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |                       |
| <p><b>PROCESS INFORMATION</b></p> <p>A. Name of the process contributing to the discharge: _____</p> <p>B. SIC or NAICS code: _____</p> <p>C. Describe the process and provide measures of production:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |                       |

**WASTEWATER DISCHARGE PERMIT APPLICATION****SECTION III – Industrial and Commercial Wastewater****B. Outfall Information**

PLEASE TYPE OR PRINT

| FACILITY NAME<br>Saginaw Nodular Industrial Land                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                        | NPDES PERMIT NUMBER                                      |                                     | OUTFALL NUMBER<br>023             |                                                                |                          |                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------|-------------------------------------|-----------------------------------|----------------------------------------------------------------|--------------------------|----------------------------------------------------------------------|
| <p>3. EFFLUENT CHARACTERISTICS - CONVENTIONAL POLLUTANTS. Instructions for this item are on Page 4 of the Appendix.</p> <p><input type="checkbox"/> Check this box if additional information is included as an attachment. To submit additional information, see Page ii, Item 3.</p> <p><b>Please Note:</b> Rule 323.1062 allows the use of either <i>Escherichia coli</i> or Fecal Coliform Bacteria as an indicator that effluent has been disinfected. The DNRE will use the indicator selected below in the permit issued based on this Application. <input type="checkbox"/> Use <i>Escherichia coli</i> as an indicator of disinfection. <input type="checkbox"/> Use Fecal Coliform Bacteria as an indicator of disinfection.</p> |                                                        |                                                          |                                     |                                   |                                                                |                          |                                                                      |
| Submitted<br>via DMRs<br>or eDMRs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Waiver Request and the<br>Rationale Behind the Request | Parameter                                                | Maximum<br>Monthly<br>Concentration | Maximum<br>Daily<br>Concentration | Units                                                          | Number<br>of<br>Analyses | Sample Type                                                          |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                        | Biochemical Oxygen Demand – five day (BOD <sub>5</sub> ) |                                     |                                   | mg/l                                                           |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                        | Chemical Oxygen Demand (COD)                             |                                     |                                   | mg/l                                                           |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                        | Total Organic Carbon (TOC)                               |                                     |                                   | mg/l                                                           |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                        | Ammonia Nitrogen (as N)                                  |                                     |                                   | mg/l                                                           |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                        | Total Suspended Solids                                   |                                     |                                   | mg/l                                                           |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Waiver Request Not Required</b>                     | Total Dissolved Solids                                   |                                     |                                   | mg/l                                                           |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Waiver Request Not Required</b>                     | Total Phosphorus (as P)                                  |                                     |                                   | mg/l                                                           |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Waiver Request Not Required</b>                     | Fecal Coliform Bacteria (report geometric means)         |                                     | Maximum 7-day                     | counts/100ml                                                   |                          | Grab                                                                 |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Waiver Request Not Required</b>                     | <i>Escherichia coli</i> (report geometric means)         |                                     | Maximum 7-day                     | counts/100 ml                                                  |                          | Grab                                                                 |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Waiver Request Not Required</b>                     | Total Residual Chlorine                                  |                                     |                                   | <input type="checkbox"/> mg/l<br><input type="checkbox"/> µg/l |                          | Grab                                                                 |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Waiver Request Not Required</b>                     | Dissolved Oxygen                                         | <b>Do Not Use</b>                   | Minimum Daily                     | mg/l                                                           |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                        | pH (report maximum and minimum of individual samples)    | Minimum                             | Maximum                           | standard units                                                 |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                        | Temperature, Summer                                      |                                     |                                   | <input type="checkbox"/> °F <input type="checkbox"/> °C        |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                        | Temperature, Winter                                      |                                     |                                   | <input type="checkbox"/> °F <input type="checkbox"/> °C        |                          | <input type="checkbox"/> Grab<br><input type="checkbox"/> 24-Hr Comp |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Waiver Request Not Required</b>                     | Oil & Grease                                             |                                     |                                   | mg/l                                                           |                          | Grab                                                                 |

**WASTEWATER DISCHARGE PERMIT APPLICATION****SECTION III – Industrial and Commercial Wastewater****B. Outfall Information**

PLEASE TYPE OR PRINT

|                                                  |                     |                       |
|--------------------------------------------------|---------------------|-----------------------|
| FACILITY NAME<br>Saginaw Nodular Industrial Land | NPDES PERMIT NUMBER | OUTFALL NUMBER<br>023 |
|--------------------------------------------------|---------------------|-----------------------|

**Note: For questions on this page, Tables 1 – 5 are found in the Appendix.****4. PRIMARY INDUSTRY PRIORITY POLLUTANT INFORMATION**

**Existing primary industries** that discharge process wastewater are required to submit the results of at least one permittee-collected effluent analysis for selected organic pollutants identified in Table 2 (as determined from Table 1, Testing Requirements for Organic Toxic Pollutants by Industrial Category), and all of the pollutants identified in Table 3. Existing primary industries are required to also provide the results of at least one permittee-collected effluent analysis for any other chemical listed in Table 2 known or believed to be present in the facility's effluent.

In addition, submit the results of all other effluent analyses performed within the last three years for any chemical listed in Tables 2 and 3.

**New primary industries** that propose to discharge process wastewater are required to provide an estimated effluent concentration for any chemical listed in Tables 2 and 3 expected to be present in the facility's effluent.

**5. DIOXIN AND FURAN CONGENER INFORMATION**

**Existing industries** that use or manufacture 2,3,5-trichlorophenoxy acetic acid (2,4,5-T); 2-(2,3,5-trichlorophenoxy) propanoic acid, (Silvex, 2,3,5-TP); 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon); 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothionate (Ronnell); 2,4,5-trichlorophenol (TCP); or hexachlorophrene (HCP), or knows or has reason to believe that 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) is present in the facility's effluent, are required to submit the results of at least one effluent analysis for the dioxin and furan congeners listed in Table 6. All effluent analyses for dioxin and furan congeners shall be conducted using USEPA Method 1613.

In addition, submit the results of all other effluent analyses performed within the last three years for any dioxin and furan congener listed in Table 6.

**New industries** that expect to use or manufacture 2,3,5-trichlorophenoxy acetic acid (2,4,5-T); 2-(2,3,5-trichlorophenoxy) propanoic acid (Silvex, 2,3,5-TP); 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon); 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothionate (Ronnell); 2,4,5-trichlorophenol (TCP); or hexachlorophrene (HCP), or knows or has reason to believe that 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) is present in the facility's effluent, shall provide estimated effluent concentrations for the dioxin and furan congeners listed in Table 6.

**6. OTHER INDUSTRY PRIORITY POLLUTANT INFORMATION**

**Existing secondary industries or existing primary industries** that discharge nonprocess wastewater are required to submit the results of at least one effluent analysis for any chemical listed in Tables 2 and 3 known or believed to be present in the facility's effluent.

In addition, submit the results of all other effluent analyses performed within the last three years for any chemical listed in Tables 2 and 3.

**New secondary industries or new primary industries** that propose to discharge nonprocess wastewater are required to provide an estimated effluent concentration for any chemical listed in Tables 2 and 3 expected to be present in the facility's effluent.

**7. ADDITIONAL TOXIC AND OTHER POLLUTANT INFORMATION**

**All existing industries**, regardless of discharge type, are required to provide the results of at least one analysis for any chemical listed in Table 4 known or believed to be present in the facility's effluent, and a measured or estimated effluent concentration for any chemical listed in Table 5 known or believed to be present in the facility's effluent. In addition, submit the results of any effluent analysis performed within the last three years for any chemical listed in Tables 4 and 5.

**New industries**, regardless of discharge type, are required to provide an estimated effluent concentration for any chemical listed in Tables 4 and 5 expected to be present in the facility's effluent.

**8. INJURIOUS CHEMICALS NOT PREVIOUSLY REPORTED**

**New or existing industries**, regardless of discharge type, are required to provide a measured or estimated effluent concentration for any toxic or otherwise injurious chemicals known or believed to be present in the facility's effluent that have not been previously identified in this Application. Quantitative effluent data for these chemicals that is less than five years old shall be reported.

**NOTE:** All effluent data submitted in response to questions 4, 5, 6, 7, and 8 above should be recorded on Page 23. To submit additional information, see Page ii, Item 3. If the effluent concentrations are estimated, place an "E" in the "Analytical Method" column. The following fields shall be completed for each data row: Parameter, CAS No., Concentration(s), Sample Type, and Analytical Method. For analytical test requirements, see Page ii, Item 5. Tables 1, 2, and 3 can be found in the Appendix.

If Alternate Test Procedures have been approved for any parameter listed above (Items 4. through 8.), see Page ii, Item 5. for additional instructions.

## B. Outfall Information

[illegible]

**WASTEWATER DISCHARGE PERMIT APPLICATION****SECTION III – Industrial and Commercial Wastewater****B. Outfall Information**

PLEASE TYPE OR PRINT

|                                                         |                                |                              |
|---------------------------------------------------------|--------------------------------|------------------------------|
| <b>FACILITY NAME</b><br>Saginaw Nodular Industrial Land | <b>NPDES PERMIT NUMBER</b><br> | <b>OUTFALL NUMBER</b><br>023 |
|---------------------------------------------------------|--------------------------------|------------------------------|

**9. WATER TREATMENT ADDITIVES**

Water treatment additives include any material that is added to water used at the facility or to wastewater generated by the facility to condition or treat the water.

Approvals of water treatment additives are authorized by the DNRE under separate correspondence. The issuance of an NPDES permit does not constitute approval of the water treatment additives that are included in this Application.

**A. Are there water treatment additives in the discharge from this facility?**

☐ Yes.

☒ No. Proceed to Item 10.

**B. Have these water treatment additives been previously approved?**

☐ Yes. Submit a list of the previously-approved water treatment additives and the date on which they were approved. The information listed in Item C., Items 1. – 8. shall be updated if it has changed since the previous approval.

☐ No. Continue with Item C.

**C. Submit a list of water treatment additives that are or may be discharged from the facility. Applicants are required to submit the information listed below for each additive.**

1. The water treatment additive Material Safety Data Sheet
2. The proposed water treatment additive discharge concentration
3. The discharge frequency (i.e., number of hours per day, week)
4. The outfall from which the water treatment additive is to be discharged
5. The type of removal treatment, if any, that the water treatment additive receives prior to discharge
6. The water treatment additive function (i.e., microbiocide, flocculant)
7. A 48-hour LC50 or EC50 for a North American freshwater planktonic crustacean (either *Ceriodaphnia* sp., *Daphnia* sp., or *Simocephalus* sp.)
8. The results of a toxicity test for one other North American freshwater aquatic species (other than a planktonic crustacean) that meets a minimum requirement of Rule 323.1057(2)(a) of the Water Quality Standards. Examples of tests that would meet this requirement include a 96-hour LC50 for rainbow trout, bluegill, or fathead minnow.

The required toxicity information (described in Items 7. and 8. above) is currently available in the Water Resource Division's files for the water treatment additives listed on the DNRE's Internet page. To access that information, go to <http://www.michigan.gov/deq>, click on Site Map, at the bottom of the right column under **Water Quality Monitoring**, click on Assessment of Michigan Waters. Under the **Information** heading, click on the Water Treatment Additive List. If you intend to use one of the water treatment additives on this list, only the information in Items 1. through 6. above needs to be submitted to the Water Resources Division.

**Note:** The availability of toxicity information for a water treatment additive does not constitute approval to discharge the water treatment additive.

**10. WHOLE EFFLUENT TOXICITY (WET) TESTS**

Have any acute or chronic WET tests been conducted on any discharges or receiving water(s) in relation to facility discharges within the last three (3) years? If yes, identify the tests and summarize the results on a separate sheet, unless the test has been submitted to the DNRE in the last three (3) years. For assistance with WET testing, see "Whole Effluent Toxicity Test Guidance and Requirements" on Page 17 in the Appendix.

**This completes Section III. Return the completed Application (Sections I, III, IV, VI [if applicable], and any attachments) to one of the addresses on Page ii of this Application. If assistance is needed to complete this Application, contact the Permits Section.**

**WASTEWATER DISCHARGE PERMIT APPLICATION****SECTION IV – Storm Water**

PLEASE TYPE OR PRINT

|                                                  |                     |
|--------------------------------------------------|---------------------|
| FACILITY NAME<br>Saginaw Nodular Industrial Land | NPDES PERMIT NUMBER |
|--------------------------------------------------|---------------------|

**1. STORM WATER DISCHARGES**

Facilities that discharge storm water must provide the following information. (Note: The following discharges are also covered by a storm water authorization, provided they are addressed in the facility's Storm Water Pollution Prevention Plan [SWPPP]): discharges from fire hydrant flushing; potable water sources, including water line flushing; fire system test water; irrigation drainage; lawn watering; routine building wash down which does not use detergents or other compounds; pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; springs; uncontaminated ground water; and foundation or footing drains where flows are not contaminated with process materials such as solvents. **Unless otherwise specified, answer the following questions.**

A. Is the storm water from this facility discharged to the waters of the state either directly or through another conveyance? Note: If storm water is discharged to a municipal wastewater treatment system or a privately-owned activated sludge treatment system, check the "No" box.

- ☒ Yes.  
☐ No.

B. Is the facility identified in this Application primarily engaged in an "industrial activity" as defined in 40 CFR 122.26(b)(14)?

- ☐ Yes.  
☒ No.

C. Are there any industrial activities or materials exposed to storm water at this facility? Storm water discharge requirements may be excluded from an NPDES Permit when there are no industrial activities or materials exposed to storm water. To qualify, the applicant shall certify that the facility has met all the eligibility requirements to claim a condition of "no exposure." These requirements are found in the No Exposure Certification Form in the Appendix. This form is also available on the DNRE's Internet Page. To access the form, go to <http://www.michigan.gov/deq>. In the left column, click on WATER, click on Surface Water, click on Storm Water, in the middle column click on Industrial Program, then click on No Exposure Certification.

- ☒ Yes.  
☐ No. Complete the No Exposure Certification Form in the Appendix and submit it with this Application.

D. Does this facility have a current and up-to-date SWPPP?

- ☒ Yes.  
☐ No. **Note: The applicant must complete this program element to receive storm water discharge authorization.**

E. Has the facility implemented the nonstructural controls described in the SWPPP?

- ☐ Yes.  
☒ No. **Note: The applicant must complete this program element to receive storm water discharge authorization.**

F. Have all the structural controls described in the SWPPP been constructed and put into operation?

- ☐ Yes.  
☒ No. **Note: The applicant must complete this program element to receive storm water discharge authorization.**

G. Does this facility have a certified industrial storm water operator who supervises the facility's storm water treatment and control measures included in the SWPPP?

- ☒ Yes. Steve Hoevemeyer I-10477  
Storm Water Operator Name Certification Number
- ☐ No. **Note: The applicant must complete this program element to receive storm water discharge authorization.**

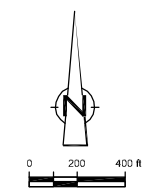
H. Is any of the storm water discharged from (check all that apply):

- ☐ Secondary containment structures that are required by state or federal law. On a separate page, provide a list of the materials that are stored in this area.
- ☐ Areas identified on Michigan's list of Sites of Environmental Contamination, pursuant to the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, Part 201 (formerly 307).

I. The storm water from this facility discharges to the following receiving water(s): will discharge to Saginaw Rive/or ditch to the North

**Applicants should provide any sample data taken of the storm water discharge as an attachment. To submit additional information, see Page ii, Item 3.**

- 1. Buildings and other permanent structures
- 2. Storage or Disposal areas for significant materials (NONE)
- 3. Secondary containment structures and descriptions of what they contain (NONE)
- 4. Storm water discharge outfalls
- 5. Location of storm water and non-storm water inlets contributing to each outfall (NONE)
- 6. Location of NDPES permitted discharges other than storm water (NONE)
- 7. Outlines of the drainage areas contributing to each outfall
- 8. Structural runoff controls or storm water treatment facilities (NONE)
- 9. Areas of vegetation (SEE FIGURE 2)
- 10. Areas of exposed and/or erodible soils (SEE FIGURE 2)
- 11. Impervious Surfaces (SEE FIGURE 2)
- 12. Name and location of receiving waters
- 13. Areas of known or suspected impacts on surface waters as designated under Part 201 (Environmental Response) of the Michigan Act (NONE)



LEGEND

--- APPROXIMATE PROPERTY BOUNDARY

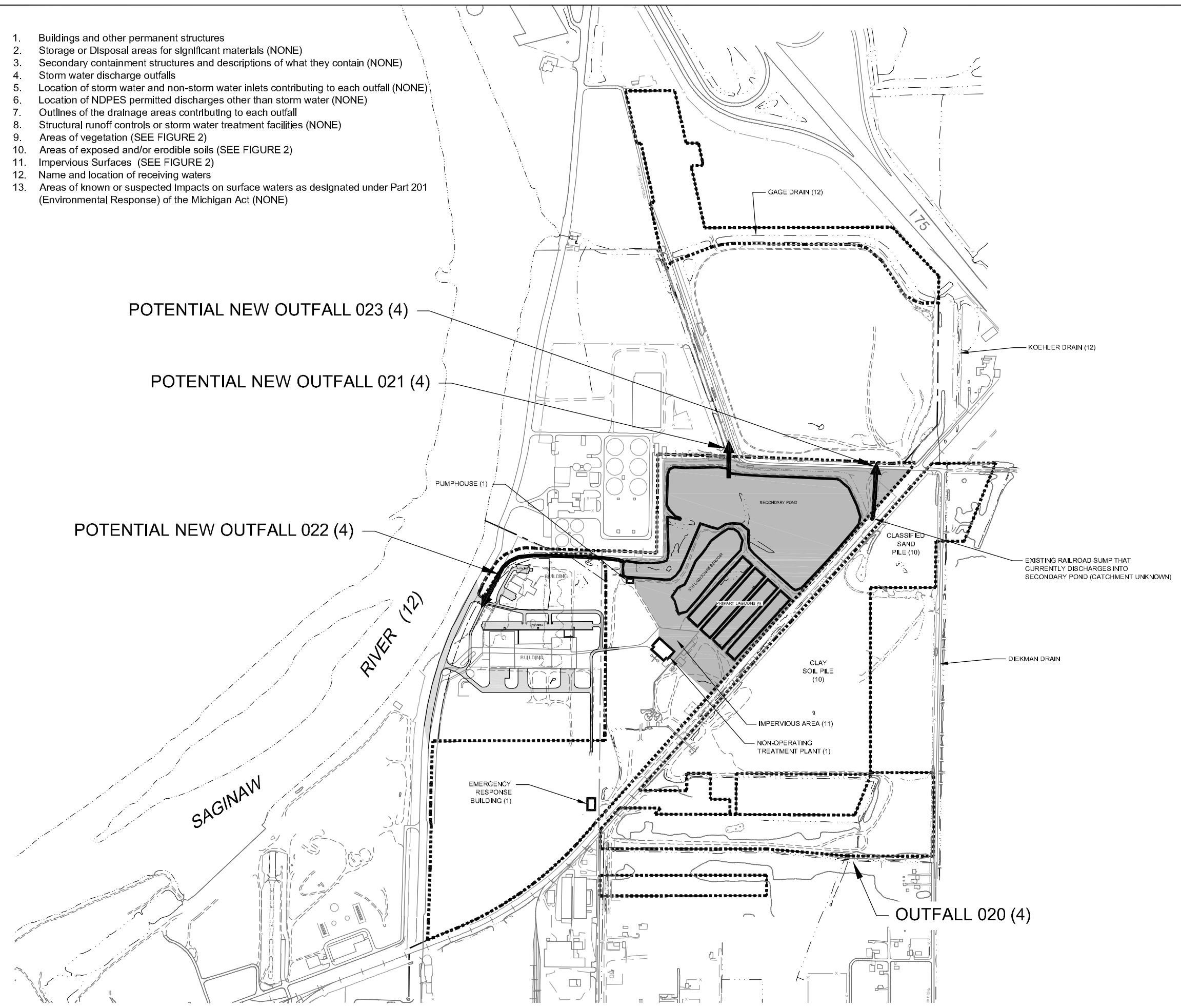
--- APPROXIMATE LIMITS OF RACER PROPERTY

■ APPROXIMATE AREA CONTRIBUTING TO NEW OUTFALLS 021/022

POTENTIAL NEW OUTFALL 023 (4)

POTENTIAL NEW OUTFALL 021 (4)

POTENTIAL NEW OUTFALL 022 (4)



NOTE: TOPO - SANBORN 1998

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

REVITALIZING AUTO COMMUNITIES  
ENVIRONMENTAL RESPONSE (RACER)  
SAGINAW NODULAR INDUSTRIAL LAND

SAGINAW, MICHIGAN

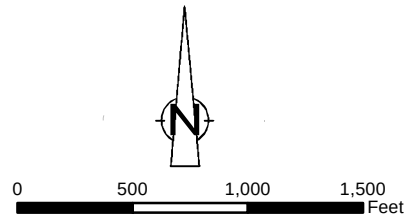
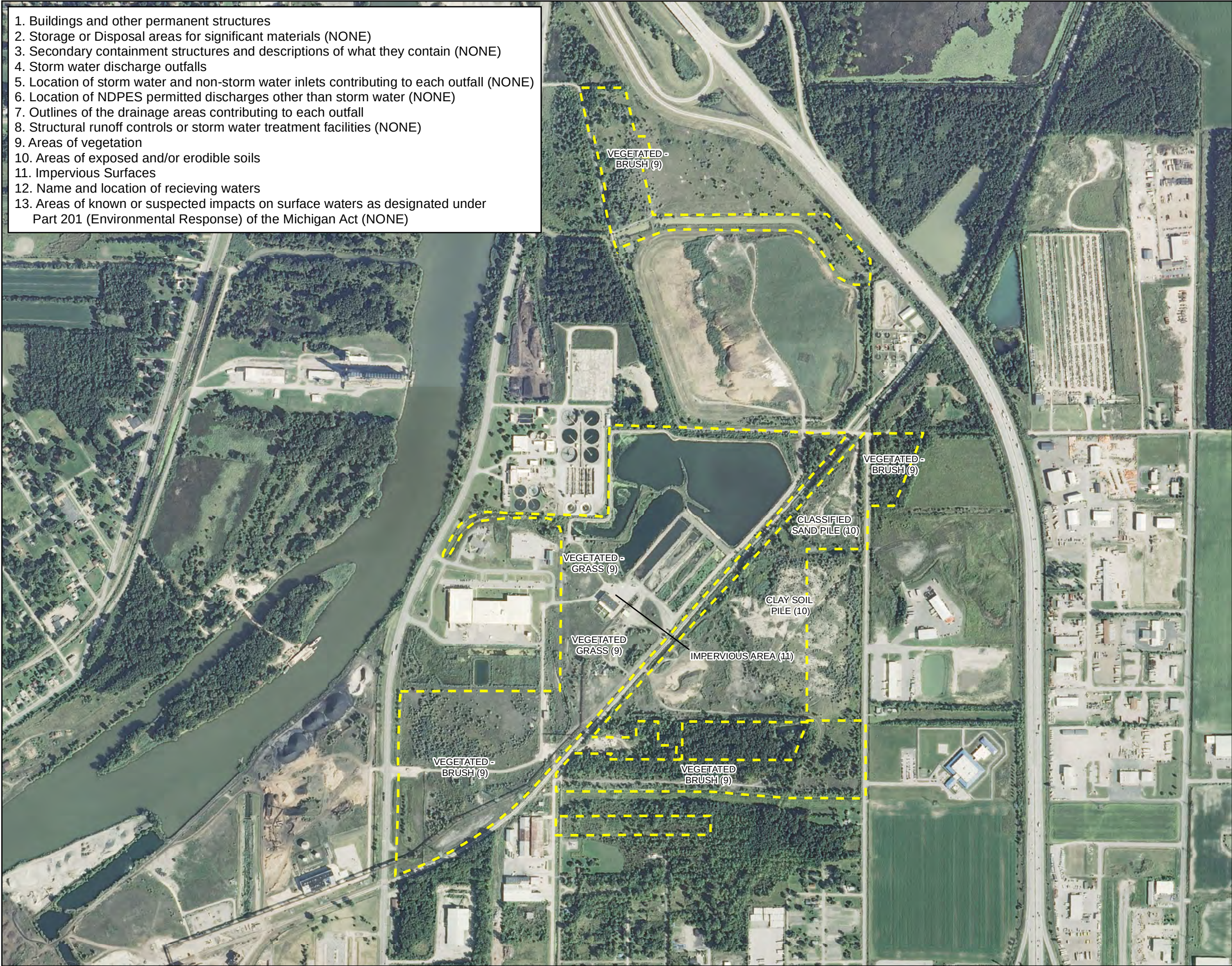
SITE MAP  
FOR SWPPP

Source Reference:  
MICHIGAN STATE PLANE SOUTH, NAD 83 USING INTERNATIONAL FEET, NGVD 88

|                          |                          |                       |                  |
|--------------------------|--------------------------|-----------------------|------------------|
| Project Manager:<br>M.T. | Reviewed By:<br>J.E.P.   | Date:<br>JANUARY 2012 |                  |
| Scale:<br>1" = 500'      | Project N°:<br>58502-T02 | Report N°:<br>007     | Drawing N°:<br>1 |



- 1. Buildings and other permanent structures
- 2. Storage or Disposal areas for significant materials (NONE)
- 3. Secondary containment structures and descriptions of what they contain (NONE)
- 4. Storm water discharge outfalls
- 5. Location of storm water and non-storm water inlets contributing to each outfall (NONE)
- 6. Location of NDPES permitted discharges other than storm water (NONE)
- 7. Outlines of the drainage areas contributing to each outfall
- 8. Structural runoff controls or storm water treatment facilities (NONE)
- 9. Areas of vegetation
- 10. Areas of exposed and/or erodible soils
- 11. Impervious Surfaces
- 12. Name and location of receiving waters
- 13. Areas of known or suspected impacts on surface waters as designated under Part 201 (Environmental Response) of the Michigan Act (NONE)



**LEGEND**  
— APPROXIMATE LIMITS OF RACER PROPERTY

REVITALIZING AUTO COMMUNITIES  
ENVIRONMENTAL RESPONSE (RACER)  
SAGINAW NODULAR INDUSTRIAL LAND

SAGINAW, MICHIGAN

2009 AERIAL



|                                                                                                                                       |                          |                      |                  |
|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------|------------------|
| Source Reference<br>MICHIGAN STATE PLANE SOUTH, NAD 83 USING INTERNATIONAL FEET, NAVD 88<br>2009 SAGINAW COUNTY NAIP PROVIDED BY USDA |                          |                      |                  |
| Project Manager<br>M.T.                                                                                                               | Reviewed By<br>J.E.P.    | Date<br>JANUARY 2012 |                  |
| Scale<br>1:10,000                                                                                                                     | Project No.<br>58502-T02 | Report No.<br>007    | Drawing No.<br>2 |



## APPENDIX A – SUPPORTING ANALYTICAL DATA

TABLE 1

**INITIAL CHARACTERIZATION SAMPLING OF THE WATER RECYCLE SYSTEM  
NODULAR FACILITY  
SAGINAW, MI**

Flow Rate (gpm) 300  
Flow Rate (gpd) 432000

**November 30 and December 10, 2010 Sample Results**

| Parameter                         | Rule 57 -<br>Drinking | Rule 57 - Non-<br>drinking | Secondary<br>Pond<br>(mg/L) | (lb/day) | Holding<br>Tank/Aeration<br>Basin<br>(mg/L) | (lb/day) | Lagoon<br>5/Reservoir<br>(mg/L) | (lb/day) | Primary<br>Lagoon 3<br>(mg/L) | (lb/day) |
|-----------------------------------|-----------------------|----------------------------|-----------------------------|----------|---------------------------------------------|----------|---------------------------------|----------|-------------------------------|----------|
| pH (su)                           |                       |                            | 7.29                        |          | 7.19                                        |          | 7.24                            |          | 7.58                          |          |
| Temperature (F)                   |                       |                            |                             |          |                                             |          |                                 |          |                               |          |
| Phosphorus, total (mg/L)          |                       |                            | 0.14                        |          | 0.28                                        |          | 0.32                            |          | 0.14                          |          |
| Bio-chemical Oxygen Demand (mg/L) |                       |                            | 20                          |          | 15                                          |          | 3                               |          | 23                            |          |
| Total Suspended Solids (mg/L)     |                       |                            | 7                           |          | 22                                          |          | 5                               |          | 8                             |          |
| Oil & Grease (mg/L)               |                       |                            | 2                           |          | ND                                          |          | ND                              |          |                               |          |
| Ammonia Nitrogen (mg/L)           |                       |                            | 7.31                        |          | 7.06                                        |          | 3.53                            |          | 8.68                          |          |
| Arsenic, total (mg/L)             | 0.01                  | 0.28                       | 0.005                       |          | 0.004                                       |          | 0.004                           |          | 0.004                         |          |
| Cadmium, total (mg/L)             | 0.0025                | 0.13                       | ND                          |          | ND                                          |          | ND                              |          | ND                            |          |
| Chromium, total (mg/L)            | 0.12                  | 9.4                        | ND                          |          | ND                                          |          | ND                              |          | ND                            |          |
| Copper, total (lbs/day)           | 0.47                  | 38                         | ND                          | 0        | ND                                          | 0        | ND                              | 0        | ND                            | 0        |
| Lead, total (lbs/day)             | 0.014                 | 0.19                       | ND                          | 0        | 0.004                                       |          | ND                              | 0        | ND                            | 0        |
| Mercury, total (mg/L)             | 0.0000018             | 0.0000018                  | ND                          |          | ND                                          |          | ND                              |          | ND                            |          |
| Nickel, total (mg/L)              | 2.6                   | 210                        | 0.005                       |          | ND                                          |          | ND                              |          | ND                            |          |
| Selenium, total (mg/L)            | 0.12                  | 2.7                        | 0.01                        |          | ND                                          |          | ND                              |          | ND                            |          |
| Zinc, total (lbs/day)             | 3.3                   | 16                         | 0.354                       | 1.28     | 0.014                                       | 0.05     | 0.028                           | 0.10     | 0.023                         | 0.08     |
| Cyanide, amenable (mg/L)          | 0.6 (free)            | 48 (free)                  | ND                          |          | ND                                          |          | ND                              |          | ND                            |          |
| Phenols, total (lbs/day)          |                       |                            | ND                          | 0        | ND                                          | 0        | ND                              | 0        | ND                            | 0        |
| Total Toxic Organics (lbs/day)    |                       |                            | ND                          | 0        | ND                                          | 0        | ND                              | 0        | ND                            | 0        |
| BTEX, total (mg/L)                |                       |                            | ND                          |          | ND                                          |          | ND                              |          | ND                            |          |
| Benzene (mg/L)                    |                       |                            | ND                          |          | ND                                          |          | ND                              |          | ND                            |          |
| PCB, total (µg/L)                 |                       |                            | ND                          |          | ND                                          |          | ND                              |          | ND                            |          |

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**

| <i>Date</i> | <i>Parameters Sampled</i> | <i>Concentration<br/>(mg/L)</i> | <i>Maximum Daily<br/>Loading<br/>(lbs/day)</i> | <i>Monthly<br/>Average<br/>(lbs/day)</i> | <i>City of Saginaw<br/>Maximum Daily<br/>(lbs/day)</i> | <i>City of Saginaw<br/>Monthly Average<br/>(lbs/day)</i> | <i>Number of<br/>Exceedances</i> | <i>Rate of<br/>Discharge <sup>(1)</sup><br/>(GPD)</i> | <i>Notes</i>               |
|-------------|---------------------------|---------------------------------|------------------------------------------------|------------------------------------------|--------------------------------------------------------|----------------------------------------------------------|----------------------------------|-------------------------------------------------------|----------------------------|
| 24-Feb-11   | Copper                    | ND                              | NA                                             | NA                                       | 0.1770                                                 | 0.0965                                                   | 0                                | 75,000                                                |                            |
|             | Lead                      | ND                              | NA                                             | NA                                       | 0.1816                                                 | 0.0896                                                   | 0                                |                                                       |                            |
|             | Zinc                      | 0.0304                          | 0.019                                          | 0.019                                    | 0.2627                                                 | 0.0988                                                   | 0                                |                                                       |                            |
|             | Total Phenols             | ND                              | NA                                             | NA                                       | 0.1830                                                 | 0.0638                                                   | 0                                |                                                       |                            |
|             | Total Toxic Organics      | ND                              | NA                                             | NA                                       | 0.4440                                                 | 0.1449                                                   | 0                                |                                                       |                            |
| 12-Mar-11   |                           |                                 |                                                |                                          |                                                        |                                                          |                                  | 300,000                                               | Increase of discharge rate |
| 16-Mar-11   | Zinc                      | 0.0125                          | 0.031                                          | (2)                                      | 0.2627                                                 | 0.0988                                                   | 0                                | 300,000                                               |                            |
| 23-Mar-11   | Copper                    | ND                              | NA                                             | NA                                       | 0.1770                                                 | 0.0965                                                   | 0                                | 300,000                                               |                            |
|             | Lead                      | ND                              | NA                                             | NA                                       | 0.1816                                                 | 0.0896                                                   | 0                                |                                                       |                            |
|             | Zinc                      | 0.0152                          | 0.038                                          | (2)                                      | 0.2627                                                 | 0.0988                                                   | 0                                |                                                       |                            |
|             | Total Phenols             | 0.0015                          | 0.004                                          | 0.004                                    | 0.1830                                                 | 0.0638                                                   | 0                                |                                                       |                            |
|             | Total Toxic Organics      | 0.0014                          | 0.004                                          | 0.004                                    | 0.4440                                                 | 0.1449                                                   | 0                                |                                                       |                            |
| 30-Mar-11   | Zinc                      | 0.0161                          | 0.040                                          | 0.0360                                   | 0.2627                                                 | 0.0988                                                   | 0                                | 300,000                                               |                            |

## Notes:

(1) Discharge initiated - February 24, 2011 - 75,000 GPD.

Discharge increased - March 12, 2011 - 300,000 GPD

(2) The daily average for the month (when there are multiple 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: March 15, 2011 daily zinc loading = Flow MGD x 8.34 lbs/gal x concentration mg/L (Feb. 24, 2011) = 0.3 x 8.34 x 0.0304 = 0.076 lbs/day). The monthly average for zinc is identified on the last sampling date of the month (March 30, 2011)

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**

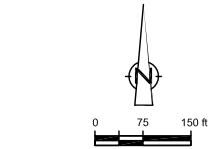
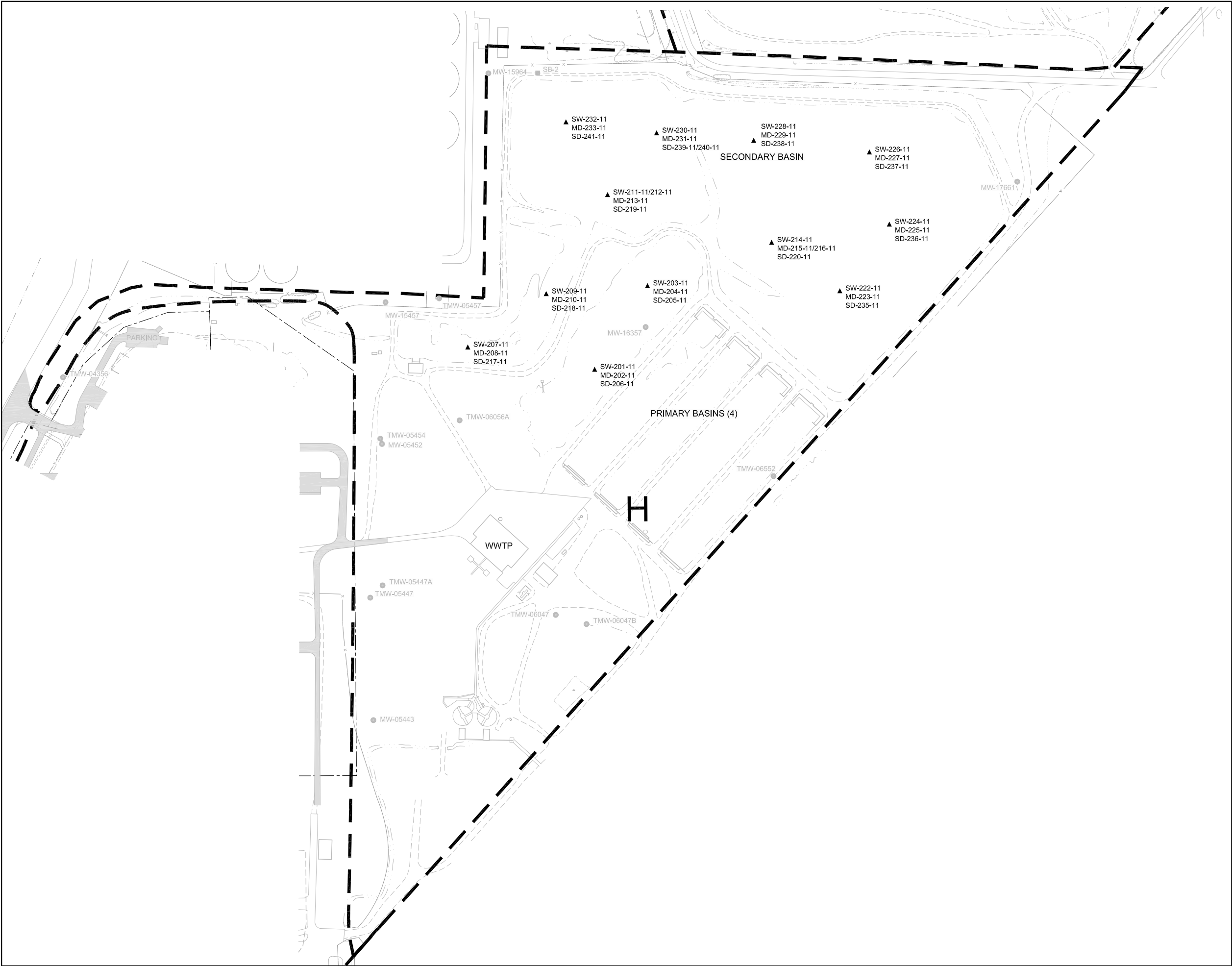
| <i>Date</i> | <i>Parameters Sampled</i>           | <i>Concentration<br/>(mg/L)</i> | <i>Maximum Daily<br/>Loading<br/>(lbs/day)</i> | <i>Monthly<br/>Average<br/>(lbs/day)</i> | <i>City of Saginaw<br/>Maximum Daily<br/>(lbs/day)</i> | <i>City of Saginaw<br/>Monthly Average<br/>(lbs/day)</i> | <i>Number of<br/>Exceedances</i> | <i>Rate of<br/>Discharge <sup>(1)</sup><br/>(GPD)</i> | <i>Notes</i>     |
|-------------|-------------------------------------|---------------------------------|------------------------------------------------|------------------------------------------|--------------------------------------------------------|----------------------------------------------------------|----------------------------------|-------------------------------------------------------|------------------|
| 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 <sup>(3)</sup> | 0.00089                         | 0.002                                          | 0.002                                    | 0.4440                                                 | 0.1449                                                   | 0                                |                                                       |                  |
| 24-Apr-11   |                                     |                                 |                                                |                                          |                                                        |                                                          |                                  | 0                                                     | discharge ceased |

## Notes:

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

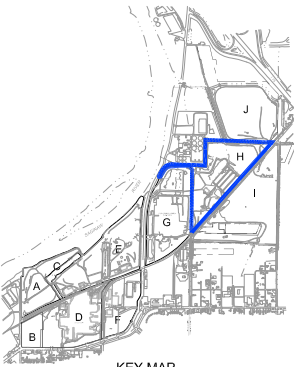
(2) The daily average for the month (when there are multiple samples collected in the month - zinc) is the sum of the daily loadings divided by the number of days in the month. The daily loading for a given day is calculated using the sample collected before the given day and the flow rate for that day (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



- LEGEND**
- A-- INVESTIGATIVE UNIT BOUNDARY AND IDENTIFIER
- MONITORING WELL LOCATION
- ▲ POND WATER AND SEDIMENT SAMPLE LOCATION

- NOTES:**
- POND ELEVATION APPROX. 593.00 ft AMSL
  - SW = SURFACE WATER
  - MD = MID-DEPTH
  - SD = SEDIMENT



KEY MAP

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.



REVITALIZING AUTOMOTIVE COMMUNITY  
ENVIRONMENTAL RESPONSE

SAGINAW, MICHIGAN

POND WATER AND SEDIMENT  
SAMPLE LOCATIONS



CONESTOGA-ROVERS & ASSOCIATES

Source Reference:  
MICHIGAN STATE PLANE SOUTH, NAD 83 USING INTERNATIONAL FEET, NGVD 88  
TOPO - SANBORN, 1996

|                          |                          |                    |                         |
|--------------------------|--------------------------|--------------------|-------------------------|
| Project Manager:<br>I.R. | Reviewed By:<br>M.T.     | Date:<br>JULY 2011 |                         |
| Scale:<br>1" = 200'      | Project N°:<br>58502-T02 | Report N°:<br>005  | Drawing N°:<br>figure 1 |

TABLE 1

**SURFACE WATER ANALYTICAL RESULTS OF THE SECONDARY POND  
NODULAR FACILITY  
SAGINAW, MICHIGAN**

Sample Location:

Sample ID:

Sample Date:

|                                          |       |           |          | Rule 57     |            | MD-202-11<br>SW-58502-062711-SH-202<br>6/27/2011 | MD-204-11<br>SW-58502-062711-SH-204<br>6/27/2011 | MD-208-11<br>SW-58502-062711-SH-208<br>6/27/2011 | MD-210-11<br>SW-58502-062811-SH-210<br>6/28/2011 | MD-213-11<br>SW-58502-062811-SH-213<br>6/28/2011 |
|------------------------------------------|-------|-----------|----------|-------------|------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| Parameters:                              | Units | a<br>GSI  | b<br>FCV | c<br>HCVd   | d<br>HNVd  | e<br>WV                                          |                                                  |                                                  |                                                  |                                                  |
| <b>Metals</b>                            |       |           |          |             |            |                                                  |                                                  |                                                  |                                                  |                                                  |
| Antimony, total recoverable              | mg/L  | 0.13      | 0.24     |             | 0.0017     | 0.00037 J                                        | 0.00034 J                                        | 0.00055 J                                        | 0.00053 J                                        | 0.00052 J                                        |
| Arsenic, total recoverable               | mg/L  | 0.01      | 0.15     | 0.01        | 0.01       | 0.0025 J                                         | 0.0026 J                                         | 0.0024 J                                         | 0.0024 J                                         | 0.0025 J                                         |
| Barium, total recoverable (1)            | mg/L  | 0.44      | 0.44     |             | 1.9        | 0.033 J                                          | 0.032 J                                          | 0.043 J                                          | 0.043 J B                                        | 0.044 J B                                        |
| Beryllium, total recoverable (1)         | mg/L  | 0.0024    | 0.002    |             | 0.16       | 0.001 U                                          | 0.001 U                                          | 0.001 U                                          | 0.001 U                                          | 0.001 U                                          |
| Cadmium, total recoverable (1)           | mg/L  | 0.0022    | 0.0025   |             | 0.0025     | 0.001 U                                          | 0.001 U                                          | 0.001 U                                          | 0.001 U                                          | 0.001 U                                          |
| Chromium, total recoverable              | mg/L  | 0.011     | 0.07     |             | 0.12       | 0.005 U                                          | 0.005 U                                          | 0.005 U                                          | 0.005 U                                          | 0.005 U                                          |
| Cobalt, total recoverable                | mg/L  | 0.1       | 0.10     |             |            | 0.00019 J                                        | 0.00015 J                                        | 0.00018 J                                        | 0.00023 J                                        | 0.00024 J                                        |
| Copper, total recoverable (1)            | mg/L  | 0.0090    | 0.009    |             | 0.47       | 0.00097 J                                        | 0.00095 J                                        | 0.00068 J                                        | 0.00054 J B                                      | 0.00059 J B                                      |
| Lead, total recoverable (1)              | mg/L  | 0.010     | 0.04     |             | 0.014      | 0.003 U                                          | 0.003 U                                          | 0.00027 J                                        | 0.00028 J                                        | 0.00019 J                                        |
| Manganese, total recoverable (1)         | mg/L  | 1.30      | 1.93     |             | 1.3        | 0.15                                             | 0.12                                             | 0.17                                             | 0.18                                             | 0.18                                             |
| Mercury                                  | mg/L  | 0.0000013 | 0.00077  |             | 0.0000018  | 0.0000013                                        | 0.0002 U                                         | 0.0002 U                                         | 0.0002 U                                         | 0.0002 U                                         |
| Mercury (convert from ng/L)              | mg/L  | 0.0000013 | 0.00077  |             | 0.0000018  | 0.00000037 J                                     | 0.00000014 J                                     | 0.00000014 J                                     | 0.00000024 J                                     | 0.0000003 J                                      |
| Nickel, total recoverable (1)            | mg/L  | 0.052     | 0.05     |             | 2.6        | 0.0011 J                                         | 0.00093 J                                        | 0.001 J                                          | 0.0012 J B                                       | 0.0013 J B                                       |
| Selenium, total recoverable              | mg/L  | 0.005     | 0.01     |             | 0.12       | 0.005 U                                          | 0.005 U                                          | 0.005 U                                          | 0.005 U                                          | 0.005 U                                          |
| Silver, total recoverable                | mg/L  | 0.0002    | 0.00006  |             | 0.13       | 0.0002 U                                         | 0.0002 U                                         | 0.0002 U                                         | 0.0002 U                                         | 0.0002 U                                         |
| Thallium, total recoverable              | mg/L  | 0.0037    | 0.01     |             | 0.0012     | 0.0003 J                                         | 0.001 U                                          | 0.001 U                                          | 0.001 U                                          | 0.00017 J B                                      |
| Vanadium, total recoverable              | mg/L  | 0.012     | 0.03     |             | 0.053      | 0.004 U                                          | 0.004 U                                          | 0.004 U                                          | 0.004 U                                          | 0.004 U                                          |
| Zinc, total recoverable (1)              | mg/L  | 0.12      | 0.12     |             | 3.3        | 0.0055 J B                                       | 0.02 U                                           | 0.0042 J B                                       | 0.02 U                                           | 0.0026 J B                                       |
| <b>Polychlorinated Biphenyls</b>         |       |           |          |             |            |                                                  |                                                  |                                                  |                                                  |                                                  |
| Aroclor-1016 (PCB-1016)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| Aroclor-1221 (PCB-1221)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| Aroclor-1232 (PCB-1232)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| Aroclor-1242 (PCB-1242)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| Aroclor-1248 (PCB-1248)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| Aroclor-1254 (PCB-1254)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| Aroclor-1260 (PCB-1260)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| Aroclor-1262 (PCB-1262)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| Aroclor-1268 (PCB-1268)                  | mg/L  | 0.0002    |          | 0.000000026 | 0.00000012 | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       | 0.000095 U                                       |
| <b>General Chemistry</b>                 |       |           |          |             |            |                                                  |                                                  |                                                  |                                                  |                                                  |
| Ammonia                                  | mg/L  |           |          |             |            | 0.83 J                                           | 0.83 J                                           | 3.6                                              | 3.6                                              | 3.9                                              |
| warmwater Unionized Ammonia (calculated) | mg/L  | 0.056     | 0.053    |             |            | 0.10                                             | 0.09                                             | 0.40                                             | 0.40                                             | 0.44                                             |
| Biochemical oxygen demand (BOD)          | mg/L  | -         |          |             |            | 2.0 U                                            | 2.0 U                                            | 2.3                                              | 10                                               | 9.0                                              |
| Chemical oxygen demand (COD)             | mg/L  | -         |          |             |            | 51                                               | 20 U                                             | 56                                               | 53                                               | 30                                               |
| Cyanide (amenable)                       | mg/L  | -         |          |             |            | 0.010 U                                          | 0.010 U                                          | 0.010 U                                          | 0.010 U                                          | 0.010 U                                          |
| Cyanide (total)                          | mg/L  | 0.0052    | 0.0052   |             | 0.6        | 0.010 U                                          | 0.010 U                                          | 0.010 U                                          | 0.010 U                                          | 0.010 U                                          |
| Formaldehyde                             | mg/L  | 0.12      | 0.12     |             | 5.0        | 0.025 J B                                        | 0.017 J B                                        | 0.022 J B                                        | 0.016 J B                                        | 0.016 J B                                        |
| Nitrate (as N)                           | mg/L  | -         |          |             | 10         | 0.27                                             | 0.27                                             | 0.41                                             | 0.53                                             | 0.43                                             |
| Oil and grease (HEM), polar              | mg/L  | -         |          |             |            | 4.8 U                                            | 0.86 J                                           | 0.96 J                                           | 1.2 J B                                          | 0.87 J B                                         |
| pH, lab                                  | s.u.  | -         |          |             |            | 8.18 H                                           | 8.50 H                                           | 8.55 H                                           | 8.43 H                                           | 8.40 H                                           |
| Phenolics (total)                        | mg/L  | -         |          |             |            | 0.040 U                                          | 0.040 U                                          | 0.040 U                                          | 0.040 U                                          | 0.040 U                                          |
| Total organic carbon (TOC)               | mg/L  | -         |          |             |            | 15                                               | 16                                               | 14                                               | 14                                               | 14                                               |

Notes:

B - For organics Method blank contamination / For Inorganics = Estimated Value

J - Estimated concentration.

U - Not present at or above the associated value.

0.01 calculated value assuming a hardness of: 100 mg/L

Assuming a temperature of 20 degrees C and an average pH of 8.5 the percentage of NH3 in ammonia is: 11.2%

HCVd = HCV-Human Cancer Value-Drink

HNVd = Human Noncancer Value-Drink

FCV = Final Chronic Value

WV = Wildlife Value

TABLE 1

SURFACE WATER ANALYTICAL RESULTS OF THE SECONDARY POND  
NODULAR FACILITY  
SAGINAW, MICHIGAN

Sample Location:  
Sample ID:  
Sample Date:

|  |  | MD-215-11              | MD-215-11              | MD-223-11              | MD-225-11              | MD-227-11              |
|--|--|------------------------|------------------------|------------------------|------------------------|------------------------|
|  |  | SW-58502-062811-SH-215 | SW-58502-062811-SH-216 | SW-58502-062911-SH-223 | SW-58502-062911-SH-225 | SW-58502-062911-SH-227 |
|  |  | 6/28/2011              | 6/28/2011              | 6/29/2011              | 6/29/2011              | 6/29/2011              |
|  |  |                        | (Duplicate)            |                        |                        |                        |

| Parameters: | Units | a   | b   | c    | d    | e  |
|-------------|-------|-----|-----|------|------|----|
|             |       | GSI | FCV | HCVd | HNVd | WV |

Metals

|                                  |      |           |         |      |           |             |              |              |              |              |
|----------------------------------|------|-----------|---------|------|-----------|-------------|--------------|--------------|--------------|--------------|
| Antimony, total recoverable      | mg/L | 0.13      | 0.24    |      | 0.0017    | 0.00053 J   | 0.00048 J    | 0.0005 J     | 0.00055 J    | 0.00046 J    |
| Arsenic, total recoverable       | mg/L | 0.01      | 0.15    | 0.01 | 0.01      | 0.0024 J    | 0.0023 J     | 0.0023 J     | 0.0024 J     | 0.0022 J     |
| Barium, total recoverable (1)    | mg/L | 0.44      | 0.44    |      | 1.9       | 0.044 J B   | 0.042 J B    | 0.043 J      | 0.043 J      | 0.043 J      |
| Beryllium, total recoverable (1) | mg/L | 0.0024    | 0.002   |      | 0.16      | 0.001 U     | 0.001 U      | 0.001 U      | 0.001 U      | 0.001 U      |
| Cadmium, total recoverable (1)   | mg/L | 0.0022    | 0.0025  |      | 0.0025    | 0.001 U     | 0.001 U      | 0.001 U      | 0.001 U      | 0.001 U      |
| Chromium, total recoverable      | mg/L | 0.011     | 0.07    |      | 0.12      | 0.005 U     | 0.005 U      | 0.005 U      | 0.005 U      | 0.005 U      |
| Cobalt, total recoverable        | mg/L | 0.1       | 0.10    |      |           | 0.00021 J   | 0.00022 J    | 0.0002 J     | 0.00019 J    | 0.00018 J    |
| Copper, total recoverable (1)    | mg/L | 0.0090    | 0.009   |      | 0.47      | 0.00058 J B | 0.00054 J B  | 0.0006 J     | 0.00058 J    | 0.00042 J    |
| Lead, total recoverable (1)      | mg/L | 0.010     | 0.04    |      | 0.014     | 0.003 U     | 0.003 U      | 0.003 U      | 0.003 U      | 0.003 U      |
| Manganese, total recoverable (1) | mg/L | 1.30      | 1.93    |      | 1.3       | 0.17        | 0.16         | 0.18         | 0.17         | 0.17         |
| Mercury                          | mg/L | 0.0000013 | 0.00077 |      | 0.0000018 | 0.0000013   | 0.0002 U     | 0.0002 U     | 0.0002 U     | 0.0002 U     |
| Mercury (convert from ng/L)      | mg/L | 0.0000013 | 0.00077 |      | 0.0000018 | 0.0000013   | 0.00000022 J | 0.00000033 J | 0.00000015 J | 0.00000019 J |
| Nickel, total recoverable (1)    | mg/L | 0.052     | 0.05    |      | 2.6       | 0.001 J B   | 0.0018 J B   | 0.0012 J     | 0.0012 J     | 0.0011 J     |
| Selenium, total recoverable      | mg/L | 0.005     | 0.01    |      | 0.12      | 0.005 U     | 0.005 U      | 0.005 U      | 0.005 U      | 0.005 U      |
| Silver, total recoverable        | mg/L | 0.0002    | 0.00006 |      | 0.13      | 0.0002 U    | 0.0002 U     | 0.0002 U     | 0.0002 U     | 0.0002 U     |
| Thallium, total recoverable      | mg/L | 0.0037    | 0.01    |      | 0.0012    | 0.001 U     | 0.001 U      | 0.001 U      | 0.0004 J     | 0.001 U      |
| Vanadium, total recoverable      | mg/L | 0.012     | 0.03    |      | 0.053     | 0.004 U     | 0.004 U      | 0.004 U      | 0.004 U      | 0.004 U      |
| Zinc, total recoverable (1)      | mg/L | 0.12      | 0.12    |      | 3.3       | 0.02 U      | 0.02 U       | 0.0042 J B   | 0.02 U       | 0.02 U       |

Polychlorinated Biphenyls

|                         |      |        |  |             |  |            |            |            |            |            |
|-------------------------|------|--------|--|-------------|--|------------|------------|------------|------------|------------|
| Aroclor-1016 (PCB-1016) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |
| Aroclor-1221 (PCB-1221) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |
| Aroclor-1232 (PCB-1232) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |
| Aroclor-1242 (PCB-1242) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |
| Aroclor-1248 (PCB-1248) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |
| Aroclor-1254 (PCB-1254) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |
| Aroclor-1260 (PCB-1260) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |
| Aroclor-1262 (PCB-1262) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |
| Aroclor-1268 (PCB-1268) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.000095 U | 0.000095 U | 0.000095 U | 0.000095 U |

General Chemistry

|                                          |      |        |        |  |     |           |           |           |           |           |
|------------------------------------------|------|--------|--------|--|-----|-----------|-----------|-----------|-----------|-----------|
| Ammonia                                  | mg/L |        |        |  |     | 4.2       | 4.7       | 4.2       | 3.6       | 4.7       |
| warmwater Unionized Ammonia (calculated) | mg/L | 0.056  | 0.053  |  |     | 0.47      | 0.53      | 0.47      | 0.40      | 0.53      |
| Biochemical oxygen demand (BOD)          | mg/L | -      |        |  |     | 8.7       | 8.9       | 4.0 H     | 8.3       | 5.7       |
| Chemical oxygen demand (COD)             | mg/L | -      |        |  |     | 56        | 58        | 40        | 48        | 51        |
| Cyanide (amenable)                       | mg/L | -      |        |  |     | 0.010 U   | 0.010 U   | 0.010 U   | 0.010 U   | 0.010 U   |
| Cyanide (total)                          | mg/L | 0.0052 | 0.0052 |  | 0.6 | 0.010 U   | 0.010 U   | 0.010 U   | 0.010 U   | 0.010 U   |
| Formaldehyde                             | mg/L | 0.12   | 0.12   |  | 5.0 | 0.018 J B | 0.018 J B | 0.016 J B | 0.017 J B | 0.017 J B |
| Nitrate (as N)                           | mg/L | -      |        |  | 10  | 0.43      | 0.45      | 0.38      | 0.39      | 0.38      |
| Oil and grease (HEM), polar              | mg/L | -      |        |  |     | 1.0 J B   | 1.1 J B   | 1.3 J     | 1.4 J     | 1.6 J     |
| pH, lab                                  | s.u. | -      |        |  |     | 8.40 H    | 8.46 H    | 8.22 H    | 8.32 H    | 8.32 H    |
| Phenolics (total)                        | mg/L | -      |        |  |     | 0.040 U   | 0.014 J   | 0.040 U   | 0.0094 J  | 0.0094 J  |
| Total organic carbon (TOC)               | mg/L | -      |        |  |     | 14        | 14        | 14        | 14        | 14        |

Notes:

B - For organics Method blank contamination / For Inorganics = Estimated Value  
J - Estimated concentration.

U - Not present at or above the associated value.

0.01 calculated value assuming a hardness of: 100 mg/L

Assuming a temperature of 20 degrees C and an average pH of 8.5 the percentage of NH3 in ammonia is: 11.2%

HCVd = HCV-Human Cancer Value-Drink

HNVd = Human Noncancer Value-Drink

FCV = Final Chronic Value

WV = Wildlife Value



TABLE 1

SURFACE WATER ANALYTICAL RESULTS OF THE SECONDARY POND  
NODULAR FACILITY  
SAGINAW, MICHIGAN

Sample Location:  
Sample ID:  
Sample Date:

| Sample Location:                         |       |           |         |             |            |           | MD-229-11              | MD-231-11              | MD-233-11              | SW-201-11              | SW-201-11              |
|------------------------------------------|-------|-----------|---------|-------------|------------|-----------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Sample ID:                               |       |           |         |             |            |           | SW-58502-062911-SH-229 | SW-58502-062911-SH-231 | SW-58502-062911-SH-233 | SW-58502-062711-SH-201 | SW-58502-062711-SH-207 |
| Sample Date:                             |       | Rule 57   |         |             |            |           | 6/29/2011              | 6/29/2011              | 6/29/2011              | 6/27/2011              | 6/27/2011              |
| Parameters:                              | Units | a         | b       | c           | d          | e         |                        |                        |                        |                        |                        |
|                                          |       | GSI       | FCV     | HCVd        | HNVd       | WV        |                        |                        |                        |                        |                        |
| Metals                                   |       |           |         |             |            |           |                        |                        |                        |                        |                        |
| Antimony, total recoverable              | mg/L  | 0.13      | 0.24    |             | 0.0017     | 0.00051 J | 0.00052 J              | 0.00049 J              | 0.00031 J              | 0.00052 J              |                        |
| Arsenic, total recoverable               | mg/L  | 0.01      | 0.15    | 0.01        | 0.01       | 0.0024 J  | 0.0025 J               | 0.0025 J               | 0.0023 J               | 0.0023 J               |                        |
| Barium, total recoverable (1)            | mg/L  | 0.44      | 0.44    |             | 1.9        | 0.043 J   | 0.044 J                | 0.042 J                | 0.032 J                | 0.041 J                |                        |
| Beryllium, total recoverable (1)         | mg/L  | 0.0024    | 0.002   |             | 0.16       | 0.001 U   | 0.001 U                | 0.001 U                | 0.001 U                | 0.001 U                |                        |
| Cadmium, total recoverable (1)           | mg/L  | 0.0022    | 0.0025  |             | 0.0025     | 0.001 U   | 0.001 U                | 0.001 U                | 0.001 U                | 0.001 U                |                        |
| Chromium, total recoverable              | mg/L  | 0.011     | 0.07    |             | 0.12       | 0.005 U   | 0.005 U                | 0.005 U                | 0.005 U                | 0.005 U                |                        |
| Cobalt, total recoverable                | mg/L  | 0.1       | 0.10    |             |            | 0.00019 J | 0.00019 J              | 0.00019 J              | 0.00016 J              | 0.00017 J              |                        |
| Copper, total recoverable (1)            | mg/L  | 0.0090    | 0.009   |             | 0.47       | 0.00062 J | 0.00056 J              | 0.00057 J              | 0.0011 J               | 0.00045 J              |                        |
| Lead, total recoverable (1)              | mg/L  | 0.010     | 0.04    |             | 0.014      | 0.003 U   | 0.003 U                | 0.003 U                | 0.003 U                | 0.003 U                |                        |
| Manganese, total recoverable (1)         | mg/L  | 1.30      | 1.93    |             | 1.3        | 0.17      | 0.2                    | 0.17                   | 0.13                   | 0.098                  |                        |
| Mercury                                  | mg/L  | 0.0000013 | 0.00077 |             | 0.0000018  | 0.0000013 | 0.0002 U               | 0.0002 U               | 0.0002 U               | 0.0002 U               |                        |
| Mercury (convert from ng/L)              | mg/L  | 0.0000013 | 0.00077 |             | 0.0000018  | 0.0000013 | 0.00000023 J           | 0.00000032 J           | 0.0000004 J            | 0.0000005 U            |                        |
| Nickel, total recoverable (1)            | mg/L  | 0.052     | 0.05    |             | 2.6        | 0.0013 J  | 0.00095 J              | 0.0011 J               | 0.0011 J               | 0.001 J                |                        |
| Selenium, total recoverable              | mg/L  | 0.005     | 0.01    |             | 0.12       | 0.005 U   | 0.005 U                | 0.005 U                | 0.005 U                | 0.005 U                |                        |
| Silver, total recoverable                | mg/L  | 0.0002    | 0.00006 |             | 0.13       | 0.0002 U  | 0.0002 U               | 0.0002 U               | 0.0002 U               | 0.0002 U               |                        |
| Thallium, total recoverable              | mg/L  | 0.0037    | 0.01    |             | 0.0012     | 0.001 U   | 0.001 U                | 0.001 U                | 0.00037 J              | 0.001 U                |                        |
| Vanadium, total recoverable              | mg/L  | 0.012     | 0.03    |             | 0.053      | 0.004 U   | 0.004 U                | 0.004 U                | 0.004 U                | 0.004 U                |                        |
| Zinc, total recoverable (1)              | mg/L  | 0.12      | 0.12    |             | 3.3        | 0.02 U    | 0.02 U                 | 0.0025 J B             | 0.0052 J B             | 0.0024 J B             |                        |
| Polychlorinated Biphenyls                |       |           |         |             |            |           |                        |                        |                        |                        |                        |
| Aroclor-1016 (PCB-1016)                  | mg/L  | 0.0002    |         | 0.000000026 | 0.00000012 | 0.00011 U | 0.000096 U             | 0.000095 U             | 0.000095 U             | 0.000095 U             |                        |
| Aroclor-1221 (PCB-1221)                  | mg/L  | 0.0002    |         | 0.000000026 | 0.00000012 | 0.00011 U | 0.000096 U             | 0.000095 U             | 0.000095 U             | 0.000095 U             |                        |
| Aroclor-1232 (PCB-1232)                  | mg/L  | 0.0002    |         | 0.000000026 | 0.00000012 | 0.00011 U | 0.000096 U             | 0.000095 U             | 0.000095 U             | 0.000095 U             |                        |
| Aroclor-1242 (PCB-1242)                  | mg/L  | 0.0002    |         | 0.000000026 | 0.00000012 | 0.00011 U | 0.000096 U             | 0.000095 U             | 0.000095 U             | 0.000095 U             |                        |
| Aroclor-1248 (PCB-1248)                  | mg/L  | 0.0002    |         | 0.000000026 | 0.00000012 | 0.00011 U | 0.000096 U             | 0.000095 U             | 0.000095 U             | 0.000095 U             |                        |
| Aroclor-1254 (PCB-1254)                  | mg/L  | 0.0002    |         | 0.000000026 | 0.00000012 | 0.00011 U | 0.000096 U             | 0.000095 U             | 0.000095 U             | 0.000095 U             |                        |
| Aroclor-1260 (PCB-1260)                  | mg/L  | 0.0002    |         | 0.000000026 | 0.00000012 | 0.00011 U | 0.000096 U             | 0.000095 U             | 0.000095 U             | 0.000095 U             |                        |
| Aroclor-1262 (PCB-1262)                  | mg/L  | 0.0002    |         | 0.000000026 | 0.00000012 | 0.00011 U | 0.000096 U             | 0.000095 U             | 0.000095 U             | 0.000095 U             |                        |
| Aroclor-1268 (PCB-1268)                  | mg/L  | 0.0002    |         | 0.000000026 | 0.00000012 | 0.00011 U | 0.000096 U             | 0.000095 U             | 0.000095 U             | 0.000095 U             |                        |
| General Chemistry                        |       |           |         |             |            |           |                        |                        |                        |                        |                        |
| Ammonia                                  | mg/L  |           |         |             |            | 3.9       | 3.3                    | 3.6                    | 0.83 J                 | 3.9                    |                        |
| warmwater Unionized Ammonia (calculated) | mg/L  | 0.056     | 0.053   |             |            | 0.44      | 0.37                   | 0.40                   | 0.09                   | 0.44                   |                        |
| Biochemical oxygen demand (BOD)          | mg/L  | -         |         |             |            | 4.8       | 4.3                    | 4.7                    | 2.0 U                  | 4.2                    |                        |
| Chemical oxygen demand (COD)             | mg/L  | -         |         |             |            | 56        | 40                     | 45                     | 53                     | 53                     |                        |
| Cyanide (amenable)                       | mg/L  | -         |         |             |            | 0.010 U   | 0.010 U                | 0.010 U                | 0.010 U                | 0.010 U                |                        |
| Cyanide (total)                          | mg/L  | 0.0052    | 0.0052  |             | 0.6        | 0.010 U   | 0.010 U                | 0.0060 J               | 0.010 U                | 0.010 U                |                        |
| Formaldehyde                             | mg/L  | 0.12      | 0.12    |             | 5.0        | 0.017 J B | 0.019 J B              | 0.016 J B              | 0.019 J B              | 0.019 J B              |                        |
| Nitrate (as N)                           | mg/L  | -         |         |             | 10         | 0.38      | 0.39                   | 0.39                   | 0.27                   | 0.51                   |                        |
| Oil and grease (HEM), polar              | mg/L  | -         |         |             |            | 0.77 J    | 4.8 U                  | 1.0 J                  | 1.1 J                  | 1.3 J                  |                        |
| pH, lab                                  | s.u.  | -         |         |             |            | 8.32 H    | 8.24 H                 | 8.45 H                 | 8.35 H                 | 8.40 H                 |                        |
| Phenolics (total)                        | mg/L  | -         |         |             |            | 0.040 U   | 0.0094 J               | 0.040 U                | 0.040 U                | 0.0073 J               |                        |
| Total organic carbon (TOC)               | mg/L  | -         |         |             |            | 14        | 14                     | 14                     | 16                     | 14                     |                        |

Notes:  
B - For organics Method blank contamination / For Inorganics = Estimated Value  
J - Estimated concentration.  
U - Not present at or above the associated value.  
0.01 calculated value assuming a hardness of: 100 mg/L.  
Assuming a temperature of 20 degrees C and an average pH of 8.5 the percentage of NH3 in ammonia is: 11.2%

HCVd = HCV-Human Cancer Value-Drink  
HNVd = Human Noncancer Value-Drink  
FCV = Final Chronic Value  
WV = Wildlife Value

TABLE 1

SURFACE WATER ANALYTICAL RESULTS OF THE SECONDARY POND  
NODULAR FACILITY  
SAGINAW, MICHIGAN

Sample Location:  
Sample ID:  
Sample Date:

| Sample Location:                         |       |           |         |             |           |            | SW-203-11              | SW-209-11              | SW-211-11              | SW-211-11              | SW-214-11              |
|------------------------------------------|-------|-----------|---------|-------------|-----------|------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Sample ID:                               |       |           |         |             |           |            | SW-58502-062711-SH-203 | SW-58502-062811-SH-209 | SW-58502-062811-SH-211 | SW-58502-062811-SH-212 | SW-58502-062811-SH-214 |
| Sample Date:                             |       | Rule 57   |         |             |           |            | 6/27/2011              | 6/28/2011              | 6/28/2011              | 6/28/2011              | 6/28/2011              |
|                                          |       | a         | b       | c           | d         | e          |                        |                        |                        |                        |                        |
| Parameters:                              | Units | GSI       | FCV     | HCVd        | HNVD      | WV         | (Duplicate)            |                        |                        |                        |                        |
| Metals                                   |       |           |         |             |           |            |                        |                        |                        |                        |                        |
| Antimony, total recoverable              | mg/L  | 0.13      | 0.24    |             | 0.0017    |            | 0.00031 J              | 0.00055 J              | 0.00055 J              | 0.00054 J              | 0.00053 J              |
| Arsenic, total recoverable               | mg/L  | 0.01      | 0.15    | 0.01        | 0.01      |            | 0.0026 J               | 0.0025 J               | 0.0024 J               | 0.0023 J               | 0.0024 J               |
| Barium, total recoverable (1)            | mg/L  | 0.44      | 0.44    |             | 1.9       |            | 0.033 J                | 0.043 J B              | 0.044 J B              | 0.042 J B              | 0.043 J B              |
| Beryllium, total recoverable (1)         | mg/L  | 0.0024    | 0.002   |             | 0.16      |            | 0.001 U                | 0.001 U                | 0.001 U                | 0.001 U                | 0.001 U                |
| Cadmium, total recoverable (1)           | mg/L  | 0.0022    | 0.0025  |             | 0.0025    |            | 0.001 U                | 0.001 U                | 0.001 U                | 0.001 U                | 0.001 U                |
| Chromium, total recoverable              | mg/L  | 0.011     | 0.07    |             | 0.12      |            | 0.005 U                | 0.005 U                | 0.005 U                | 0.005 U                | 0.005 U                |
| Cobalt, total recoverable                | mg/L  | 0.1       | 0.10    |             |           |            | 0.00016 J              | 0.00021 J              | 0.00022 J              | 0.00021 J              | 0.00023 J              |
| Copper, total recoverable (1)            | mg/L  | 0.0090    | 0.009   |             | 0.47      |            | 0.00099 J              | 0.00058 J B            | 0.00072 J B            | 0.0006 J B             | 0.00055 J B            |
| Lead, total recoverable (1)              | mg/L  | 0.010     | 0.04    |             | 0.014     |            | 0.003 U                | 0.00027 J              | 0.00018 J              | 0.00018 J              | 0.003 U                |
| Manganese, total recoverable (1)         | mg/L  | 1.30      | 1.93    |             | 1.3       |            | 0.12                   | 0.18                   | 0.17                   | 0.15                   | 0.16                   |
| Mercury                                  | mg/L  | 0.0000013 | 0.00077 |             | 0.0000018 | 0.0000013  | 0.0002 U               | 0.0002 U               | 0.0002 U               | 0.0002 U               | 0.0002 U               |
| Mercury (convert from ng/L)              | mg/L  | 0.0000013 | 0.00077 |             | 0.0000018 | 0.0000013  | 0.00000018 J           | 0.00000047 J           | 0.00000005 U           | 0.00000014 J           | 0.00000015 J           |
| Nickel, total recoverable (1)            | mg/L  | 0.052     | 0.05    |             | 2.6       |            | 0.0014 J               | 0.0011 J B             | 0.0013 J B             | 0.0011 J B             | 0.0012 J B             |
| Selenium, total recoverable              | mg/L  | 0.005     | 0.01    |             | 0.12      |            | 0.005 U                | 0.005 U                | 0.005 U                | 0.005 U                | 0.005 U                |
| Silver, total recoverable                | mg/L  | 0.0002    | 0.00006 |             | 0.13      |            | 0.0002 U               | 0.0002 U               | 0.0002 U               | 0.0002 U               | 0.0002 U               |
| Thallium, total recoverable              | mg/L  | 0.0037    | 0.01    |             | 0.0012    |            | 0.00018 J              | 0.001 U                | 0.001 U                | 0.00021 J B            | 0.001 U                |
| Vanadium, total recoverable              | mg/L  | 0.012     | 0.03    |             | 0.053     |            | 0.004 U                | 0.004 U                | 0.004 U                | 0.004 U                | 0.004 U                |
| Zinc, total recoverable (1)              | mg/L  | 0.12      | 0.12    |             | 3.3       |            | 0.02 U                 | 0.02 U                 | 0.0027 J B             | 0.0035 J B             | 0.02 U                 |
| Polychlorinated Biphenyls                |       |           |         |             |           |            |                        |                        |                        |                        |                        |
| Aroclor-1016 (PCB-1016)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| Aroclor-1221 (PCB-1221)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| Aroclor-1232 (PCB-1232)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| Aroclor-1242 (PCB-1242)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| Aroclor-1248 (PCB-1248)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| Aroclor-1254 (PCB-1254)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| Aroclor-1260 (PCB-1260)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| Aroclor-1262 (PCB-1262)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| Aroclor-1268 (PCB-1268)                  | mg/L  | 0.0002    |         | 0.000000026 |           | 0.00000012 | 0.000095 U             | 0.0001 U               | 0.000095 U             | 0.000095 U             | 0.000095 U             |
| General Chemistry                        |       |           |         |             |           |            |                        |                        |                        |                        |                        |
| Ammonia                                  | mg/L  |           |         |             |           |            | 1.1 J                  | 4.2                    | 4.2                    | 3.9                    | 4.2                    |
| warmwater Unionized Ammonia (calculated) | mg/L  | 0.056     | 0.053   |             |           |            | 0.12                   | 0.47                   | 0.47                   | 0.44                   | 0.47                   |
| Biochemical oxygen demand (BOD)          | mg/L  | -         |         |             |           |            | 2.0 U                  | 12                     | 7.6                    | 8.0                    | 7.4                    |
| Chemical oxygen demand (COD)             | mg/L  | -         |         |             |           |            | 51                     | 48                     | 33                     | 30                     | 38                     |
| Cyanide (amenable)                       | mg/L  | -         |         |             |           |            | 0.010 U                | 0.010 U                | 0.010 U                | 0.010 U                | 0.010 U                |
| Cyanide (total)                          | mg/L  | 0.0052    | 0.0052  |             | 0.6       |            | 0.010 U                | 0.010 U                | 0.0071 J               | 0.010 U                | 0.010 U                |
| Formaldehyde                             | mg/L  | 0.12      | 0.12    |             | 5.0       |            | 0.022 J B              | 0.018 J B              | 0.018 J B              | 0.016 J B              | 0.018 J B              |
| Nitrate (as N)                           | mg/L  | -         |         |             | 10        |            | 0.27                   | 0.48                   | 0.46                   |                        | 0.45                   |
| Oil and grease (HEM), polar              | mg/L  | -         |         |             |           |            | 4.9 U                  | 1.2 J B                | 0.82 J B               | 1.4 J B                | 5.2 U                  |
| pH, lab                                  | s.u.  | -         |         |             |           |            | 8.55 H                 | 8.27 H                 | 8.40 H                 | 8.25 H                 | 8.23 H                 |
| Phenolics (total)                        | mg/L  | -         |         |             |           |            | 0.040 U                | 0.23                   | 0.040 U                | 0.040 U                | 0.011 J                |
| Total organic carbon (TOC)               | mg/L  | -         |         |             |           |            | 15                     | 15                     | 14                     | 14                     | 14                     |

Notes:  
B - For organics Method blank contamination / For Inorganics = Estimated Value  
J - Estimated concentration.  
U - Not present at or above the associated value.  
0.01 calculated value assuming a hardness of: 100 mg/L.  
Assuming a temperature of 20 degrees C and an average pH of 8.5 the percentage of NH3 in ammonia is: 11.2%

HCVd = HCV-Human Cancer Value-Drink  
HNVD = Human Noncancer Value-Drink  
FCV = Final Chronic Value  
WV = Wildlife Value

TABLE 1

SURFACE WATER ANALYTICAL RESULTS OF THE SECONDARY POND  
NODULAR FACILITY  
SAGINAW, MICHIGAN

Sample Location:  
Sample ID:  
Sample Date:

|  | SW-222-11              | SW-224-11              | SW-226-11              | SW-228-11              | SW-230-11              |
|--|------------------------|------------------------|------------------------|------------------------|------------------------|
|  | SW-58502-062911-SH-222 | SW-58502-062911-SH-224 | SW-58502-062911-SH-226 | SW-58502-062911-SH-228 | SW-58502-062911-SH-230 |
|  | 6/29/2011              | 6/29/2011              | 6/29/2011              | 6/29/2011              | 6/29/2011              |

|             |       | Rule 57 |     |      |      |
|-------------|-------|---------|-----|------|------|
|             |       | a       | b   | c    | d    |
|             |       | GSI     | FCV | HCVd | HNVd |
| Parameters: | Units |         |     |      | WV   |

Metals

|                                  |      |           |         |      |           |             |              |             |              |             |
|----------------------------------|------|-----------|---------|------|-----------|-------------|--------------|-------------|--------------|-------------|
| Antimony, total recoverable      | mg/L | 0.13      | 0.24    |      | 0.0017    | 0.0005 J    | 0.00049 J    | 0.00052 J   | 0.00055 J    | 0.00076 J   |
| Arsenic, total recoverable       | mg/L | 0.01      | 0.15    | 0.01 | 0.01      | 0.0025 J    | 0.0024 J     | 0.0023 J    | 0.0024 J     | 0.0027 J    |
| Barium, total recoverable (1)    | mg/L | 0.44      | 0.44    |      | 1.9       | 0.045 J     | 0.043 J      | 0.043 J     | 0.043 J      | 0.046 J     |
| Beryllium, total recoverable (1) | mg/L | 0.0024    | 0.002   |      | 0.16      | 0.001 U     | 0.001 U      | 0.001 U     | 0.001 U      | 0.001 U     |
| Cadmium, total recoverable (1)   | mg/L | 0.0022    | 0.0025  |      | 0.0025    | 0.001 U     | 0.001 U      | 0.001 U     | 0.001 U      | 0.001 U     |
| Chromium, total recoverable      | mg/L | 0.011     | 0.07    |      | 0.12      | 0.005 U     | 0.005 U      | 0.005 U     | 0.005 U      | 0.005 U     |
| Cobalt, total recoverable        | mg/L | 0.1       | 0.10    |      |           | 0.00021 J   | 0.00019 J    | 0.00018 J   | 0.0002 J     | 0.00023 J   |
| Copper, total recoverable (1)    | mg/L | 0.0090    | 0.009   |      | 0.47      | 0.00053 J   | 0.0007 J     | 0.00058 J   | 0.0005 J     | 0.00068 J   |
| Lead, total recoverable (1)      | mg/L | 0.010     | 0.04    |      | 0.014     | 0.003 U     | 0.003 U      | 0.003 U     | 0.003 U      | 0.00019 J   |
| Manganese, total recoverable (1) | mg/L | 1.30      | 1.93    |      | 1.3       | 0.19        | 0.17         | 0.16        | 0.17         | 0.19 B      |
| Mercury                          | mg/L | 0.0000013 | 0.00077 |      | 0.0000018 | 0.0002 U    | 0.0002 U     | 0.0002 U    | 0.0002 U     | 0.0002 U    |
| Mercury (convert from ng/L)      | mg/L | 0.0000013 | 0.00077 |      | 0.0000018 | 0.0000003 J | 0.00000026 J | 0.0000002 J | 0.00000024 J | 0.0000005 U |
| Nickel, total recoverable (1)    | mg/L | 0.052     | 0.05    |      | 2.6       | 0.0013 J    | 0.001 J      | 0.00097 J   | 0.0011 J     | 0.0013 J    |
| Selenium, total recoverable      | mg/L | 0.005     | 0.01    |      | 0.12      | 0.005 U     | 0.005 U      | 0.005 U     | 0.005 U      | 0.005 U     |
| Silver, total recoverable        | mg/L | 0.0002    | 0.00006 |      | 0.13      | 0.0002 U    | 0.0002 U     | 0.0002 U    | 0.0002 U     | 0.0002 U    |
| Thallium, total recoverable      | mg/L | 0.0037    | 0.01    |      | 0.0012    | 0.001 U     | 0.001 U      | 0.001 U     | 0.001 U      | 0.0011      |
| Vanadium, total recoverable      | mg/L | 0.012     | 0.03    |      | 0.053     | 0.00066 J   | 0.004 U      | 0.004 U     | 0.004 U      | 0.004 U     |
| Zinc, total recoverable (1)      | mg/L | 0.12      | 0.12    |      | 3.3       | 0.0041 J B  | 0.0035 J B   | 0.0031 J B  | 0.0029 J B   | 0.0024 J    |

Polychlorinated Biphenyls

|                         |      |        |  |             |  |            |          |            |            |            |            |
|-------------------------|------|--------|--|-------------|--|------------|----------|------------|------------|------------|------------|
| Aroclor-1016 (PCB-1016) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |
| Aroclor-1221 (PCB-1221) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |
| Aroclor-1232 (PCB-1232) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |
| Aroclor-1242 (PCB-1242) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |
| Aroclor-1248 (PCB-1248) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |
| Aroclor-1254 (PCB-1254) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |
| Aroclor-1260 (PCB-1260) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |
| Aroclor-1262 (PCB-1262) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |
| Aroclor-1268 (PCB-1268) | mg/L | 0.0002 |  | 0.000000026 |  | 0.00000012 | 0.0001 U | 0.000095 U | 0.000097 U | 0.000095 U | 0.000095 U |

General Chemistry

|                                          |      |        |        |  |     |           |           |           |           |           |
|------------------------------------------|------|--------|--------|--|-----|-----------|-----------|-----------|-----------|-----------|
| Ammonia                                  | mg/L |        |        |  |     | 3.6       | 3.9       | 3.6       | 4.7       | 4.2       |
| warmwater Unionized Ammonia (calculated) | mg/L | 0.056  | 0.053  |  |     | 0.40      | 0.44      | 0.40      | 0.53      | 0.47      |
| Biochemical oxygen demand (BOD)          | mg/L | -      |        |  |     | 8.5       | 7.8       | 8.0       | 4.3       | 6.5       |
| Chemical oxygen demand (COD)             | mg/L | -      |        |  |     | 40        | 43        | 51        | 51        | 48        |
| Cyanide (amenable)                       | mg/L | -      |        |  |     | 0.010 U   | 0.010 U   | 0.010 U   | 0.010 U   | 0.010 U   |
| Cyanide (total)                          | mg/L | 0.0052 | 0.0052 |  | 0.6 | 0.010 U   | 0.010 U   | 0.010 U   | 0.010 U   | 0.010 U   |
| Formaldehyde                             | mg/L | 0.12   | 0.12   |  | 5.0 | 0.017 J B | 0.020 J B | 0.017 J B | 0.018 J B | 0.016 J B |
| Nitrate (as N)                           | mg/L | -      |        |  | 10  | 0.38      | 0.39      | 0.38      | 0.37      | 0.39      |
| Oil and grease (HEM), polar              | mg/L | -      |        |  |     | 1.0 J     | 1.1 J     | 1.2 J     | 1.2 J     | 0.91 J    |
| pH, lab                                  | s.u. | -      |        |  |     | 8.27 H    | 8.28 H    | 8.35 H    | 8.26 H    | 8.30 H    |
| Phenolics (total)                        | mg/L | -      |        |  |     | 0.040 U   | 0.0094 J  | 0.040 U   | 0.040 U   | 0.040 U   |
| Total organic carbon (TOC)               | mg/L | -      |        |  |     | 14        | 14        | 14        | 14        | 14        |

Notes:

B - For organics Method blank contamination / For Inorganics = Estimated Value

J - Estimated concentration.

U - Not present at or above the associated value.

0.01 calculated value assuming a hardness of: 100 mg/L

Assuming a temperature of 20 degrees C and an average pH of 8.5 the percentage of NH3 in ammonia is: 11.2%

HCVd = HCV-Human Cancer Value-Drink

HNVd = Human Noncancer Value-Drink

FCV = Final Chronic Value

WV = Wildlife Value

TABLE 1

**SURFACE WATER ANALYTICAL RESULTS OF THE SECONDARY POND  
NODULAR FACILITY  
SAGINAW, MICHIGAN**

Sample Location:  
Sample ID:  
Sample Date:

SW-232-11  
SW-58502-062911-SH-232  
6/29/2011

Rule 57

| Parameters:                      | Units | <i>a</i><br>GSI | <i>b</i><br>FCV | <i>c</i><br>HCVd | <i>d</i><br>HNVd | <i>e</i><br>WV |
|----------------------------------|-------|-----------------|-----------------|------------------|------------------|----------------|
| <b>Metals</b>                    |       |                 |                 |                  |                  |                |
| Antimony, total recoverable      | mg/L  | 0.13            | 0.24            |                  | 0.0017           | 0.00047 J      |
| Arsenic, total recoverable       | mg/L  | 0.01            | 0.15            | 0.01             | 0.01             | 0.0025 J       |
| Barium, total recoverable (1)    | mg/L  | 0.44            | 0.44            |                  | 1.9              | 0.042 J        |
| Beryllium, total recoverable (1) | mg/L  | 0.0024          | 0.002           |                  | 0.16             | 0.001 U        |
| Cadmium, total recoverable (1)   | mg/L  | 0.0022          | 0.0025          |                  | 0.0025           | 0.001 U        |
| Chromium, total recoverable      | mg/L  | 0.011           | 0.07            |                  | 0.12             | 0.005 U        |
| Cobalt, total recoverable        | mg/L  | 0.1             | 0.10            |                  |                  | 0.00019 J      |
| Copper, total recoverable (1)    | mg/L  | 0.0090          | 0.009           |                  | 0.47             | 0.00051 J      |
| Lead, total recoverable (1)      | mg/L  | 0.010           | 0.04            |                  | 0.014            | 0.003 U        |
| Manganese, total recoverable (1) | mg/L  | 1.30            | 1.93            |                  | 1.3              | 0.17           |
| Mercury                          | mg/L  | 0.0000013       | 0.00077         |                  | 0.0000018        | 0.0002 U       |
| Mercury (convert from ng/L)      | mg/L  | 0.0000013       | 0.00077         |                  | 0.0000018        | 0.0000005 U    |
| Nickel, total recoverable (1)    | mg/L  | 0.052           | 0.05            |                  | 2.6              | 0.0012 J       |
| Selenium, total recoverable      | mg/L  | 0.005           | 0.01            |                  | 0.12             | 0.005 U        |
| Silver, total recoverable        | mg/L  | 0.0002          | 0.00006         |                  | 0.13             | 0.0002 U       |
| Thallium, total recoverable      | mg/L  | 0.0037          | 0.01            |                  | 0.0012           | 0.001 U        |
| Vanadium, total recoverable      | mg/L  | 0.012           | 0.03            |                  | 0.053            | 0.004 U        |
| Zinc, total recoverable (1)      | mg/L  | 0.12            | 0.12            |                  | 3.3              | 0.0024 J B     |

**Polychlorinated Biphenyls**

|                         |      |        |  |             |            |          |
|-------------------------|------|--------|--|-------------|------------|----------|
| Aroclor-1016 (PCB-1016) | mg/L | 0.0002 |  | 0.000000026 | 0.00000012 | 0.0001 U |
| Aroclor-1221 (PCB-1221) | mg/L | 0.0002 |  | 0.000000026 | 0.00000012 | 0.0001 U |
| Aroclor-1232 (PCB-1232) | mg/L | 0.0002 |  | 0.000000026 | 0.00000012 | 0.0001 U |
| Aroclor-1242 (PCB-1242) | mg/L | 0.0002 |  | 0.000000026 | 0.00000012 | 0.0001 U |
| Aroclor-1248 (PCB-1248) | mg/L | 0.0002 |  | 0.000000026 | 0.00000012 | 0.0001 U |
| Aroclor-1254 (PCB-1254) | mg/L | 0.0002 |  | 0.000000026 | 0.00000012 | 0.0001 U |
| Aroclor-1260 (PCB-1260) | mg/L | 0.0002 |  | 0.000000026 | 0.00000012 | 0.0001 U |
| Aroclor-1262 (PCB-1262) | mg/L | 0.0002 |  | 0.000000026 | 0.00000012 | 0.0001 U |
| Aroclor-1268 (PCB-1268) | mg/L | 0.0002 |  | 0.000000026 | 0.00000012 | 0.0001 U |

**General Chemistry**

|                                          |      |        |        |  |     |           |
|------------------------------------------|------|--------|--------|--|-----|-----------|
| Ammonia                                  | mg/L |        |        |  |     | 3.9       |
| warmwater Unionized Ammonia (calculated) | mg/L | 0.056  | 0.053  |  |     | 0.44      |
| Biochemical oxygen demand (BOD)          | mg/L | -      |        |  |     | 6.8       |
| Chemical oxygen demand (COD)             | mg/L | -      |        |  |     | 51        |
| Cyanide (amenable)                       | mg/L | -      |        |  |     | 0.010 U   |
| Cyanide (total)                          | mg/L | 0.0052 | 0.0052 |  | 0.6 | 0.010 U   |
| Formaldehyde                             | mg/L | 0.12   | 0.12   |  | 5.0 | 0.021 J B |
| Nitrate (as N)                           | mg/L | -      |        |  | 10  | 0.40      |
| Oil and grease (HEM), polar              | mg/L | -      |        |  |     | 0.81 J    |
| pH, lab                                  | s.u. | -      |        |  |     | 8.39 H    |
| Phenolics (total)                        | mg/L | -      |        |  |     | 0.040 U   |
| Total organic carbon (TOC)               | mg/L | -      |        |  |     | 14        |

Notes:

B - For organics Method blank contamination / For Inorganics = Estimated Value

J - Estimated concentration.

U - Not present at or above the associated value.

0.01 calculated value assuming a hardness of: 100 mg/L

Assuming a temperature of 20 degrees C and an average pH of 8.5 the percentage of NH3 in ammonia is:

11.2%

HCVd = HCV-Human Cancer Value-Drink

HNVd = Human Noncancer Value-Drink

FCV = Final Chronic Value

WV = Wildlife Value

ATTACHMENT 3

GENERAL STORMWATER PERMIT

**PERMIT NO. MIS110000**



**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
WASTEWATER DISCHARGE GENERAL PERMIT**

**STORM WATER, FROM INDUSTRIAL ACTIVITY AND/OR WITH  
REQUIRED MONITORING, IN CYCLE-YEAR 1 WATERSHEDS**

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq; the "Federal Act"), Michigan Act 451, Public Acts of 1994, as amended (the "Michigan Act"), Parts 31 and 41, and Michigan Executive Order 2009-45, storm water associated with industrial activity, as defined under 40 CFR 122.26(b)(14)(i-ix) and (xi), or as deemed necessary under Section 402(p)(2)(E) of the Federal Act, and other storm water which is adequately regulated by this general permit is authorized to be discharged from facilities specified in individual "certificates of coverage" (COCs) in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this general National Pollutant Discharge Elimination System (NPDES) permit (the "permit").

The applicability of this permit shall be limited to facilities which discharge storm water to surface waters of the state located within a cycle-year 1 watershed as determined by the Michigan Department of Natural Resources and Environment (the "Department"). Applicable discharges include storm water from secondary containment structures required by State or Federal law, from lands on Michigan's List of Sites of Environmental Contamination pursuant to Part 201 (Environmental Response) of the Michigan Act, or from other activities which may contribute pollutants to the storm water for which the Department determines monitoring is needed. This permit does not authorize discharges determined by the Department to need individual NPDES permits or different general permits, or that may cause or contribute to a violation of the Water Quality Standards.

In order to constitute a valid authorization to discharge, this permit must be complemented by a COC issued by the Department. The COC will specify which sections of this permit apply at the individual facility.

Unless specified otherwise, all contact with the Department required by this permit shall be to the position indicated in the COC.

This general permit shall take effect **April 1, 2011**. The provisions of this permit are severable. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules.

This general permit shall expire at midnight, **April 1, 2016**.

**Issued August 27, 2010.**

Original Permit Signed by Daniel Dell  
Daniel Dell, Chief  
Permits Section  
Water Resources Division

## **PERMIT FEE REQUIREMENTS**

In accordance with Section 324.3118 of the Michigan Act, the permittee shall make payment of an annual storm water fee to the Department for each January 1 the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. The fee shall be postmarked by March 15 for notices mailed by February 1. The fee is due no later than 45 days after receiving the notice for notices mailed after February 1.

## **CONTESTED CASE INFORMATION**

The terms and conditions of this general permit shall apply to an individual facility on the effective date of a COC for the facility. The Department of Energy, Labor, and Economic Growth may grant a contested case hearing on this general permit in accordance with the Michigan Act. Any person who is aggrieved by this permit may file a sworn petition with the State Office of Administrative Hearings and Rules of the Michigan Department of Energy, Labor, and Economic Growth, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Department of Energy, Labor, and Economic Growth may grant a contested case hearing on the COC issued to an individual facility under this general permit in accordance with Rule 2192(c) (Rule 323.2192 of the Michigan Administrative Code).

**PART I****Section A. Effluent Limitations And Monitoring Requirements****1. Final Effluent Limitations for Facilities Without Required Monitoring**

During the period beginning on the effective date of this permit and an individual COC and lasting until the expiration of this permit or termination of the individual COC, the permittee is authorized to discharge an unspecified amount of storm water to the surface waters of the State of Michigan from industrial activity as defined under 40 CFR 122.26(b)(14)(i-ix). The discharge shall be limited by the permittee as specified below.

Storm water discharges are a violation of this permit if:

- a. The receiving water will contain unnatural turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge; or
- b. The permittee has not implemented an acceptable Storm Water Pollution Prevention Plan (SWPPP) as required by Part I.C. of this permit.

**2. Final Effluent Limitations for Facilities with Required Monitoring**

During the period beginning on the effective date of this permit and an individual COC and lasting until the expiration of this permit or termination of the individual COC, the permittee is authorized to discharge an unspecified amount of storm water to the surface waters of the State of Michigan from secondary containment structures required by State or Federal law, from lands on Michigan's List of Sites of Environmental Contamination pursuant to Part 201 (Environmental Response) of the Michigan Act, and from other activities which may contribute pollutants to the storm water for which the Department determines monitoring is needed. The discharge shall be limited by the permittee as specified below.

- a. Limitations for Discharges from Secondary Containment Structures  
Contained storm water may not be discharged if:
  - 1) The storm water contains unnatural turbidity, color, oil film, floating solids, foams, settleable solids, or suspended solids;
  - 2) The permittee knows or has reason to believe the contained storm water is contaminated by or has come in contact with materials stored within the primary containment structure, unless the Department approves the discharge. An operator of a bulk fuel storage facility may discharge storm water that is known to have contacted petroleum products stored within primary containment structures if the contained storm water has been treated to assure that the limitations in item 1) (above) are met; or
  - 3) The permittee has not implemented an acceptable SWPPP for the secondary containment as required by Part I.C. of this permit.
- b. Limitations for Discharges from Areas without Secondary Containment including Sites of Environmental Contamination and Areas with Other Activities which May Contribute Pollutants to the Storm Water for which the Department Determines Monitoring is Needed  
Storm water may not be discharged if:
  - 1) The receiving water will contain unnatural turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge;
  - 2) The permittee knows, or has reason to believe, the storm water contains contaminants from the site that may cause a violation of the Water Quality Standards; or
  - 3) The permittee has not implemented an acceptable SWPPP as required by Part I.C. of this permit.



## PART I

### Section A. Effluent Limitations And Monitoring Requirements

- c. Short-Term Storm Water Characterization Study (STSWCS) for Facilities with Required Monitoring  
The permittee shall complete a STSWCS which is an analysis of the storm water discharges authorized by Part I.B.2. of this permit. Permittees seeking reissuance under this permit may complete the STSWCS by following their STSWCS plan previously approved (written approval or approval as defined in a previous permit) by the Department, in which case the STSWCS shall be submitted to the Department within six (6) months of the effective date of the COC issued under this permit. If, however, changes have occurred at the facility which could result in the discharge of different pollutants than those identified in the previously approved STSWCS plan or if the permittee has never submitted a STSWCS plan then the permittee shall submit a new STSWCS plan in accordance with the following:

1) Monitoring Plan Submittal

Within six (6) months after the effective date of a COC issued under this permit the permittee shall submit to the Department either:

(a) a STSWCS plan (permittees without an approved STSWCS plan or permittees needing to revise the previously approved STSWCS plan), or

(b) a STSWCS (permittees with an approved STSWCS plan which is still appropriate).

The date for submittal of the STSWCS plan or STSWCS will be included in the COC. Guidance for the STSWCS plan is available on the Internet at [www.michigan.gov/dnre](http://www.michigan.gov/dnre), on the left hand side click on 'Water', then 'Surface Water', and then 'Storm Water'. In the center of the page, under the 'Information' heading, click on the 'Industrial Program' link and halfway down the page under the 'How do I get a Permit' heading is the guidance document link. The STSWCS plan shall include a proposed list of pollutants to be monitored to adequately characterize the discharge. At a minimum, the proposed list of pollutants shall include significant materials that the permittee knows or has reason to believe are present in areas which require storm water monitoring (these areas include secondary containment structures and associated storage vessels, Sites of Environmental Contamination, or other activities or areas which may contribute pollutants to the storm water for which the Department determines monitoring is needed). If the permittee has more than one area which requires storm water monitoring, such as a secondary containment structure **and** a Site of Environmental Contamination, then a separate STSWCS plan shall be submitted for each area. The STSWCS plan may include a request to monitor a combined discharge from multiple secondary containment structures if the permittee demonstrates in the STSWCS plan that the monitoring is representative of water from all secondary containment structures. The STSWCS plan(s) shall describe the monitoring frequency and duration, the total number of sampling events (each discharge is one event), the monitoring and analysis methods to be used, and a date for submittal of the summarized analytical results. Samples shall be collected, preserved, handled, and analyzed using EPA approved methods (see 40 CFR Part 136) and appropriate quantification levels. Some desired quantification levels are available in the NPDES Permit Application Appendix at [www.michigan.gov/dnre](http://www.michigan.gov/dnre), then on the left hand side click on 'Water', then 'Surface Water', and then 'NPDES Permits'. In the center of the page, under the 'Information' heading, click on 'How to Apply for an NPDES permit'. The Permit Application Appendix is under the 'Downloadable Forms' header.

2) Monitoring Secondary Containment Structures or Detention Basins with Detention Periods Greater than 24 Hours

Samples shall be collected from the water within a secondary containment structure or detention basin, or of the discharge prior to mixing with the receiving water or other waste streams. Grab samples may be taken unless the Department specifies other sampling methods. Pollutant concentrations and estimated total volume of the discharge shall be reported. Sampling may include visual observations to determine if the storm water contains unnatural turbidity, color, oil film, floating solids, foams, settleable solids, or suspended solids.

## PART I

### Section A. Effluent Limitations And Monitoring Requirements

3) Monitoring Storm Water Runoff from a Site of Environmental Contamination or Other Activity (without Secondary Containment or 24-Hour Detention) which May Contribute Pollutants to the Storm Water for which the Department Determines Monitoring is Needed.

Samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inch of rainfall, causes a discharge, and is at least 72 hours from the previous measurable (greater than 0.1 inch) storm event. Quantitative data shall be reported for a grab sample taken during the **first 30 minutes** of the discharge. Additional samples shall be collected during a discharge event, as necessary, to be representative of the pollutants discharged from the site. Date and duration of the storm event, the rainfall measurement or estimate, duration between the storm event sampled and the end date of the previous measurable storm event, pollutant concentration(s), visual observations, and estimated total volume of the discharge shall be reported.

4) Monitoring Startup

Upon approval of the STSWCS plan, the permittee shall begin monitoring the authorized discharge as specified in the plan. If the Department does not take action to approve or comment on the monitoring plan within 90 days after submittal, the permittee shall begin storm water monitoring in accordance with the STSWCS plan submitted. Nothing in this permit shall prevent additional sampling in addition to that specified in the monitoring plan from being conducted. The analytical results of all representative discharge samples collected must be reported to the Department.

If, upon review of the analysis, it is determined that any of the materials or constituents require limiting to protect the receiving waters in accordance with applicable Water Quality Standards, the Department may determine that an individual permit is needed for the discharge in accordance with Part I.D.10. of this permit.

**PART I****Section B. Schedules and Certifications****1. Schedules and Certifications for New Storm Water General Permit Applicants**

Applicants requesting first-time authorization to discharge under Part I.A.1. and/or Part A.2. of this permit shall comply with the following requirements prior to submittal of a Notice of Intent (NOI) or other Department-approved application to be covered under this permit.

a. Schedule

A first-time applicant will not receive a COC issued under this permit unless the NOI or application is accompanied by certification of compliance with the certified operator and SWPPP requirements of this permit as follows:

1) Certified Operator

The applicant shall have a storm water operator certified by the Department, as required by Section 3110 of the Michigan Act. The Certified Storm Water Operator shall have supervision over the facility's storm water treatment and control measures included in the SWPPP.

2) SWPPP

The applicant's SWPPP shall be developed in accordance with Part I.C. and ready for implementation prior to submittal of an NOI or other application to be covered under this permit. The SWPPP shall be reviewed and signed by the Certified Storm Water Operator and the permittee. Applicants shall be fully ready to carry out the activities specified in their SWPPP and comply with this permit in order to be issued a COC. New facilities shall have a COC issued under this permit prior to commencement of discharge of storm water.

b. Certification

When submitting an NOI or other application for this permit, the permittee shall also submit a written certification that the facility is in compliance with the requirements identified in Parts I.B.1.b.1) through I.B.1.b.5) of this permit. The certification shall be a written statement that the SWPPP has been completed and is being implemented. It is not necessary to submit the SWPPP to the Department unless requested. New facilities shall fulfill the requirements of Parts I.B.1.b.3) and I.B.1.b.4) when industrial activity begins.

1) The facility has a Certified Storm Water Operator as required in Part I.B.1.a.1) of this permit. The name and certification number of a Certified Storm Water Operator shall be included in the written certification. If the Certified Storm Water Operator's number is not available at the time the written certification is submitted, provide the date the individual took the certification exam, the location of the Department's office where the exam was taken and the signature of the person who took the exam.

2) The source identification requirements of the SWPPP are completed and identified in the SWPPP (see Part I.C.1.).

3) Non-structural preventive measures and source controls are being implemented (see Part I.C.2.).

4) The structural controls for prevention and treatment (see Part I.C.3.), if needed, are installed and operational. The permittee shall indicate, in writing, if a determination is made that no structural controls are necessary.

5) Non-storm water discharges are eliminated or authorized by an NPDES permit (see Part I.D.3.).

**PART I****Section B. Schedules and Certifications****2. Schedules and Certifications for Storm Water Dischargers with Previous Permit Requirements for a SWPPP**

A permittee who has been authorized to discharge storm water under a permit other than this permit, which required a SWPPP, and who submits an NOI or other application for authorization to discharge under this permit shall comply with the following:

- a. **Schedule**  
Continue development and implementation of the SWPPP in accordance with the schedule established under the individual permit, or general permit and COC, held previous to this permit. That schedule shall be enforceable under this permit.
- b. **Certification**
  - 1) When submitting an NOI or other application for this permit, the permittee shall also submit a written certification that the facility is in compliance with its current storm water general permit and COC or the SWPPP requirements of its individual permit. The certification shall be a written statement that the SWPPP has been completed and is being implemented. The written certification shall include the name and certification number of the Certified Storm Water Operator. It is not necessary to submit the SWPPP to the Department unless requested to do so.
  - 2) The applicant shall have a storm water operator certified by the Department as required by Section 3110 of the Michigan Act. The Certified Storm Water Operator shall have supervision over the facility's storm water treatment and control measures included in the SWPPP.

**PART I****Section C. Storm Water Pollution Prevention Plan (SWPPP)****1. Source Identification**

To identify potential sources of significant materials that can pollute storm water and subsequently be discharged from the facility, the SWPPP shall, at a minimum, include the following items:

- a. A site map identifying the following:
  - 1) buildings and other permanent structures;
  - 2) storage or disposal areas for significant materials;
  - 3) secondary containment structures and descriptions of what is contained in the primary containment structures;
  - 4) storm water discharge outfalls (numbered or otherwise labeled for reference);
  - 5) location of storm water and non-storm water inlets (catch basins, roof drains, conduits, drain tiles, retention pond riser pipes, and sump pumps) (numbered or otherwise labeled for reference) contributing to each outfall;
  - 6) location of NPDES permitted discharges other than storm water;
  - 7) outlines of the drainage areas contributing to each outfall;
  - 8) structural runoff controls or storm water treatment facilities;
  - 9) areas of vegetation (with brief description such as lawn, old field, marsh, wooded, etc);
  - 10) areas of exposed and/or erodible soils and gravel lots;
  - 11) impervious surfaces (roofs, asphalt, concrete);
  - 12) name and location of receiving water(s); and
  - 13) areas of known or suspected impacts on surface waters as designated under Part 201 (Environmental Response) of the Michigan Act.
- b. A list of all significant materials that could pollute storm water. For each material listed the SWPPP shall include each of the following descriptions:
  - 1) Ways in which each type of significant material has been or has reasonable potential to become exposed to storm water (e.g., spillage during handling; leaks from pipes, pumps, and vessels; contact with storage piles, contaminated materials, or soils; waste handling and disposal; deposits from dust or overspray; etc.).
  - 2) An evaluation of the reasonable potential for contribution of significant materials to runoff from at least the following areas or activities:
    - a. loading, unloading, and other significant material handling operations;
    - b. outdoor storage including secondary containment structures;
    - c. outdoor manufacturing or processing activities;
    - d. significant dust or particulate generating processes;
    - e. discharge from vents, stacks, and air emission controls;
    - f. on-site waste disposal practices;
    - g. maintenance and cleaning of vehicles, machines, and equipment;
    - h. areas of exposed and/or erodible soils;
    - i. Sites of Environmental Contamination listed under Part 201 (Environmental Response) of the Michigan Act;
    - j. areas of significant material residues;
    - k. areas where animals congregate (wild or domestic) and deposit wastes; and
    - l. other areas where storm water may contact significant materials.
  - 3) Identification of the outfall(s) and the inlet(s) contributing the significant material to each outfall through which the significant material may be discharged if released.

**PART I****Section C. Storm Water Pollution Prevention Plan**

- c. A listing of significant spills and significant leaks of polluting materials that occurred at areas that are exposed to precipitation or that otherwise discharge to a point source at the facility. The listing shall include spills that occurred over the three (3) years prior to the effective date of a COC authorizing discharge under this permit. The listing shall include the date, volume, and exact location of release, and the action taken to clean up the material and/or prevent exposure to storm water runoff or contamination of surface waters of the state. Any release that occurs after the SWPPP has been developed shall be controlled in accordance with the SWPPP and is cause for the SWPPP to be updated as appropriate within 14 calendar days of obtaining knowledge of the spill or loss.
- d. The permittee shall determine whether its facility discharges storm water to a water body for which the Department has established a Total Maximum Daily Load (TMDL). If so, the permittee shall assess whether the TMDL requirements for the facility's discharge are being met through the existing SWPPP controls or whether additional control measures are necessary. The permittee's assessment of whether the TMDL requirements are being met shall focus on the effectiveness, adequacy, and implementation of the permittee's SWPPP controls. The applicable TMDLs will be identified in the COC issued under this permit.
- e. A summary of existing storm water discharge sampling data (if available) describing pollutants in storm water discharges at the facility. This summary shall be accompanied by a description of the suspected source(s) of the pollutants detected.

**2. Preventive Measures and Source Controls, Non-Structural**

To prevent significant materials from contacting storm water at the source, the SWPPP shall, at a minimum, include each of the following non-structural controls:

- a. A program which includes a schedule for routine preventive maintenance. The preventive maintenance program shall consist of routine inspections and maintenance of storm water management and control devices (e.g., cleaning of oil/water separators and catch basins, routine housekeeping activities, etc.) as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to the storm sewer system or the surface waters of the state. The routine inspection shall include areas of the facility in which significant materials have the reasonable potential to contaminate runoff. A written report of the inspection and corrective actions shall be retained in accordance with Part I.D.1.
- b. A description of good housekeeping procedures to maintain a clean, orderly facility. Good housekeeping procedures shall include routine inspections that focus on the areas of the facility that have a reasonable potential to contaminate storm water runoff from the property. The routine housekeeping inspections may be combined with the routine inspections for the preventive maintenance program. A written report of the inspection and corrective actions shall be retained in accordance with Part I.D.1.
- c. A schedule for comprehensive site inspection shall include, but not be limited to, structural controls in use at the facility and the areas and equipment identified in the preventive maintenance program and good housekeeping procedures. This inspection shall also include a review of the routine preventive maintenance reports, good housekeeping inspections reports, and any other paperwork associated with the SWPPP. The comprehensive site inspection shall be conducted by the Certified Storm Water Operator at least quarterly. The permittee may request Department approval of an alternate schedule for comprehensive site inspections. A written report of the inspection and corrective actions shall be retained in accordance with Part I.D.1. Included in the report shall be a certification that the facility is in compliance with this permit and the SWPPP.

**PART I****Section C. Storm Water Pollution Prevention Plan**

- d. A description of material handling procedures and storage requirements for significant materials. Equipment and procedures for cleaning up spills shall be identified in the SWPPP and made available to the appropriate personnel. The procedures shall identify measures to prevent spilled materials or material residues from contaminating storm water runoff from the property. The SWPPP shall include language describing what a reportable spill or release is and the appropriate reporting requirements in accordance with Part II.C.6. and Part II.C.7. The SWPPP may include, by reference, requirements of either a Pollution Incident Prevention Plan (PIPP) prepared in accordance with the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code); a Hazardous Waste Contingency Plan prepared in accordance with 40 CFR 264 and 265 Subpart D, as required by Part 111 of the Michigan Act; or a Spill Prevention Control and Countermeasure (SPCC) plan prepared in accordance with 40 CFR 112.
- e. Identification of areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion. Gravel lots are areas to be included. The SWPPP shall also identify measures used to control soil erosion and sedimentation.
- f. A description of the employee training program which will be implemented to inform appropriate personnel at all levels of responsibility of the components and goals of the SWPPP. The SWPPP shall identify periodic dates for the employee training program (recommended at least once per year). Records of the employee training program shall be retained in accordance with Part I.D.1.
- g. Identification of actions to limit the discharge of significant materials in order to comply with TMDL requirements.
- h. Identification of significant materials expected to be present in storm water discharges following implementation of non-structural preventive measures and source controls.

**3. Structural Controls for Prevention and Treatment**

Where implementation of the measures required by Part I.C.2. does not control storm water discharges in accordance with Part I.D.2., the SWPPP shall provide a description of the location, function, design criteria, and installation/construction schedule of structural controls for prevention and treatment. Structural controls may be necessary:

- a. To prevent uncontaminated storm water from contacting or being contacted by significant materials; or
- b. If preventive measures are not feasible or are inadequate to keep significant materials at the site from contaminating storm water. Structural controls shall be used to treat, divert, isolate, recycle, reuse, or otherwise manage storm water in a manner that reduces the level of significant materials in the storm water and provides compliance with the Water Quality Standards as identified in Part I.D.2.

**PART I****Section C. Storm Water Pollution Prevention Plan****4. Keeping SWPPPs Current**

- a. The permittee and/or the Certified Storm Water Operator shall review the SWPPP annually after it is developed and maintain written summaries of the reviews in accordance with Part I.D.1. Based on the review, the permittee or the Certified Storm Water Operator shall amend the SWPPP as needed to ensure continued compliance with the terms and conditions of this permit.
- b. The SWPPP developed under the conditions of a previous permit shall be amended as necessary to ensure compliance with this permit.
- c. The SWPPP shall be updated or amended whenever changes at the facility have the potential to increase the exposure of significant materials to storm water, significant spills at the facility occur, or when the SWPPP is determined by the permittee or the Department to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity. Updates based on increased activity or spills at the facility shall include a description of how the permittee intends to control any new sources of significant materials or respond to and prevent spills in accordance with the requirements of Parts I.C.1., I.C.2., and I.C.3. of this permit.
- d. The Department or authorized representative may notify the permittee at any time that the SWPPP does not meet minimum requirements. Such notification shall identify why the SWPPP does not meet minimum requirements. The permittee shall make the required changes to the SWPPP within 30 days after such notification from the Department or authorized representative and shall submit to the Department a written certification that the requested changes have been made.
- e. Amendments shall be signed and retained with the SWPPP on site pursuant to Part I.C.6.

**5. Certified Storm Water Operator Update**

If the Certified Storm Water Operator is changed or an additional Certified Storm Water Operator is added, the permittee shall provide the name and certification number of the new Certified Storm Water Operator to the Department. If a facility has multiple Certified Storm Water Operators, the names and certification numbers of the Certified Storm Water Operators shall be included in the SWPPP.

**6. Signature and SWPPP Review**

- a. The SWPPP shall be reviewed and signed by the Certified Storm Water Operator(s) and by either the permittee or an authorized representative in accordance with 40 CFR 122.22. The SWPPP and associated records shall be retained on-site at the facility which generates the storm water discharge.
- b. The permittee shall make the SWPPP, reports, log books, storm water discharge sampling data (if collected), and items required by Part I.D.1. available upon request to the Department or authorized representative.



**PART I****Section D. Special Conditions****1. Record Keeping**

The permittee shall maintain records of all SWPPP related inspection and maintenance activities. Records shall also be kept describing incidents such as spills or other discharges that can affect the quality of storm water runoff. All such records shall be retained for three years. The following records are required by this permit:

- a. Routine preventive maintenance inspections reports (Part I.C.2.a.);
- b. Routine good housekeeping inspections reports (Part I.C.2.b.);
- c. Comprehensive site inspection reports (Part I.C.2.c.);
- d. Employee training records (Part I.C.2.f.); and
- e. Written summaries of the annual SWPPP review (Part I.C.4.a.).

**2. Water Quality Standards**

At the time of discharge, there shall be no violation of the Water Quality Standards in the receiving waters as a result of the storm water discharge. This requirement includes, but is not limited to, the following conditions:

- a. In accordance with Rule 323.1050 of the Water Quality Standards, the receiving waters shall not have any of the following unnatural physical properties as a result of this discharge in quantities which are or may become injurious to any designated use: turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits;
- b. Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits) shall be reported within 24 hours to the Department followed by a written report within five days detailing the findings of the investigation and the steps taken to correct the condition; and
- c. Any pollutant for which a level of control is specified to meet a TMDL established by the Department shall be controlled at the facility so that its discharge is reduced by/to the amount specified in the TMDL.

**3. Prohibition of Non-Storm Water Discharges**

Discharges of material other than storm water shall be in compliance with an NPDES permit (other than this permit) issued for the discharge. Storm water shall be defined to include all of the following non-storm water discharges provided pollution prevention controls for the non-storm water component are identified in the SWPPP:

- a. discharges from fire hydrant flushing;
- b. potable water sources including water line flushing;
- c. water from fire system testing and fire fighting training without burned materials or chemical fire suppressants;
- d. irrigation drainage;
- e. lawn watering;

**PART I****Section D. Special Conditions**

- f. routine building wash down which does not use detergents or other compounds;
- g. pavement wash waters where contamination by toxic or hazardous materials have not occurred (unless all contamination by toxic or hazardous materials have been removed) and where detergents are not used;
- h. air conditioning condensate;
- i. springs;
- j. uncontaminated ground water;
- k. foundation or footing drains where flows are not contaminated with process materials such as solvents; and
- l. discharges from fire fighting activities. Discharges from fire fighting activities are exempted from the requirement to be identified in the SWPPP.

**4. Request for Discharge of Water Treatment Additives**

In the event a permittee proposes to discharge water additives, the permittee shall submit a request to discharge water additives to the Department for approval. Such requests shall be sent to the Surface Water Assessment Section, Water Resources Division, Department of Natural Resources and Environment, P.O. Box 30273, Lansing, Michigan 48909, with a copy to the Department contact listed on the COC. Instructions to submit a request electronically may be obtained via the Internet (<http://www.michigan.gov/deq> and on the left side of the screen click on Water, Water Quality Monitoring, and Assessment of Michigan Waters; then click on the Water Treatment Additive List which is under the Information banner). Written approval from the Surface Water Assessment Section to discharge such additives at specified levels shall be obtained prior to discharge by the permittee. Additional monitoring and reporting may be required as a condition for the approval to discharge the additive.

A request to discharge water additives shall include all of the following water additive usage and discharge information:

- a. Material Safety Data Sheet;
- b. the proposed water additive discharge concentration;
- c. the discharge frequency (i.e., number of hours per day and number of days per year);
- d. the monitoring point from which the product is to be discharged;
- e. the type of removal treatment, if any, that the water additive receives prior to discharge;
- f. product function (i.e. microbiocide, flocculant, etc.);
- g. a 48-hour LC<sub>50</sub> or EC<sub>50</sub> for a North American freshwater planktonic crustacean (either *Ceriodaphnia* sp., *Daphnia* sp., or *Simocephalus* sp.); and
- h. the results of a toxicity test for one other North American freshwater aquatic species (other than a planktonic crustacean) that meets a minimum requirement of Rule 323.1057(2) of the Water Quality Standards.

**PART I****Section D. Special Conditions**

Prior to submitting the request, the permittee may contact the Surface Water Assessment Section by telephone at 517-335-1180 or via the Internet at the address given above to determine if the Department has the product toxicity data required by items g. and h. above. If the Department has the data, the permittee will not need to submit product toxicity data.

**5. Tracer Dye Discharges**

This permit does not authorize the discharge of tracer dyes without approval from the Department. Requests to discharge tracer dyes shall be submitted to the Department in accordance with Rule 1097 (Rule 323.1097 of the Michigan Administrative Code).

**6. Facility Contact**

The "Facility Contact" was specified in the application. The permittee may replace the facility contact at any time, and shall notify the Department in writing within 10 days after replacement (including the name, address and telephone number of the new facility contact).

- a. The facility contact shall be (or a duly authorized representative of this person):
  - 1) for a corporation, a principal executive officer of at least the level of vice president, or a designated representative, if the representative is responsible for the overall operation of the facility from which the discharge described in the permit application or other NPDES form originates;
  - 2) for a partnership, a general partner;
  - 3) for a sole proprietorship, the proprietor; or
  - 4) for a municipal, state, or other public facility, either a principal executive officer, the mayor, village president, city or village manager, or other duly authorized employee.
- b. A person is a duly authorized representative only if:
  - 1) the authorization is made in writing to the Department by a person described in Part I.D.6.a. of this permit; and
  - 2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the facility (a duly authorized representative may thus be either a named individual or any individual occupying a named position).

Nothing in this section obviates the permittee from properly submitting reports and forms as required by law.

**PART I****Section D. Special Conditions****7. Portable Industrial Facilities**

- a. Storm water discharges from satellite locations of a portable industrial facility may be authorized by obtaining a COC issued under this permit. To obtain a COC, an NOI, or other Department-approved application must be submitted to the Permits Section of the Water Resources Division for a primary mailing address of the owner or operator of the portable facility. Following receipt of a COC, if the portable facility is to be moved to a satellite location, the permittee shall notify the Department of the relocation, in writing, at least 10 days prior to start-up at the satellite location. Written notification shall include the location (township, range, section, and quarter-quarter section) of the current and proposed sites for the portable facility, the receiving water for the discharge, and the anticipated date of the move. Failure to notify the Department concerning the satellite location is a permit violation.
- b. The permittee shall submit an NOI or other Department-approved application for each portable facility that could be moved to a satellite location. A SWPPP shall be in place for each facility at the time of start-up and shall be modified for each new location as necessary.

**8. Expiration and Reissuance**

On or before October 1, 2015, a permittee seeking continued authorization to discharge under this permit beyond the permit's expiration date shall submit to the Department a written request containing such information, forms, and fees as required by the Department. Without an adequate request, a permittee's authorization to discharge will expire on April 1, 2016. With an adequate request, a permittee shall continue to be subject to the terms and conditions of the expired permit until the Department takes action on the request unless this permit is terminated or revoked.

If this permit is terminated or revoked, all authorizations to discharge under the permit shall expire on the date of termination or revocation.

If this permit is modified, the Department will notify the permittee of any required action. Without an adequate response, a permittee's authorization to discharge will terminate on the effective date of the modified permit. With an adequate response, a permittee shall be subject to the terms and conditions of the modified permit on the effective date of the modified permit unless the Department notifies the permittee otherwise.

If a discharge is terminated, the permittee shall request termination of discharge authorization.

**9. Termination of General Permit Coverage**

A permittee may submit a request to the Department to terminate the COC for a facility when:

- a. all storm water discharges authorized by Part I.A.1. and Part I.A.2. are eliminated; or
- b. industrial activity has ceased, no significant materials remain or are exposed to storm water, and no discharges are authorized under Part I.A.2.

**PART I****Section D. Special Conditions****10. Requirement to Obtain Individual Permit**

The Department may require any person who is authorized to discharge by a COC and this permit to apply for and obtain an individual NPDES permit if any of the following circumstances apply:

- a. the discharge is a significant contributor to pollution as determined by the Department on a case-by-case basis;
- b. the discharger is not complying or has not complied with the conditions of the permit;
- c. a change has occurred in the availability of demonstrated technology or practices for the control or abatement of waste applicable to the point source discharge;
- d. effluent standards and limitations are promulgated for point source discharges subject to this permit; or
- e. the Department determines that the criteria under which the permit was issued no longer apply.

Any person may request the Department to take action pursuant to the provisions of Rule 2191 (Rule 323.2191 of the Michigan Administrative Code).

## PART II

### Section A. Definitions

This list of definitions may include terms not applicable to this permit.

**Acute toxic unit (TU<sub>A</sub>)** means  $100/LC_{50}$  where the  $LC_{50}$  is determined from a whole effluent toxicity (WET) test which produces a result that is statistically or graphically estimated to be lethal to 50% of the test organisms.

**Bioaccumulative chemical of concern (BCC)** means a chemical which, upon entering the surface waters, by itself or as its toxic transformation product, accumulates in aquatic organisms by a human health bioaccumulation factor of more than 1000 after considering metabolism and other physiochemical properties that might enhance or inhibit bioaccumulation. The human health bioaccumulation factor shall be derived according to R 323.1057(5). Chemicals with half-lives of less than 8 weeks in the water column, sediment, and biota are not BCCs. The minimum bioaccumulation concentration factor (BAF) information needed to define an organic chemical as a BCC is either a field-measured BAF or a BAF derived using the biota-sediment accumulation factor (BSAF) methodology. The minimum BAF information needed to define an inorganic chemical as a BCC, including an organometal, is either a field-measured BAF or a laboratory-measured bioconcentration factor (BCF). The BCCs to which these rules apply are identified in Table 5 of R 323.1057 of the Water Quality Standards.

**Biosolids** are the solid, semisolid, or liquid residues generated during the treatment of sanitary sewage or domestic sewage in a treatment works. This includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes and a derivative of the removed scum or solids.

**Bulk biosolids** means biosolids that are not sold or given away in a bag or other container for application to a lawn or home garden.

**Certificate of Coverage (COC)** means a document, issued by the Department, which authorizes a discharge under this permit.

**Chronic toxic unit (TU<sub>C</sub>)** means  $100/MATC$  or  $100/IC_{25}$ , where the maximum acceptable toxicant concentration (MATC) and  $IC_{25}$  are expressed as a percent effluent in the test medium.

**Class B Biosolids** refers to material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with the Part 24 Rules. Processes include aerobic digestion, composting, anaerobic digestion, lime stabilization and air drying.

**Daily concentration** is the sum of the concentrations of the individual samples of a parameter divided by the number of samples taken during any calendar day. If the parameter concentration in any sample is less than the quantification limit, regard that value as zero when calculating the daily concentration. The daily concentration will be used to determine compliance with any maximum and minimum daily concentration limitations (except for pH and dissolved oxygen). When required by the permit, report the maximum calculated daily concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the Discharge Monitoring Reports (DMRs).

For pH, report the maximum value of any individual sample taken during the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs and the minimum value of any individual sample taken during the month in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. For dissolved oxygen, report the minimum concentration of any individual sample in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

**Daily loading** is the total discharge by weight of a parameter discharged during any calendar day. This value is calculated by multiplying the daily concentration by the total daily flow and by the appropriate conversion factor. The daily loading will be used to determine compliance with any maximum daily loading limitations. When required by the permit, report the maximum calculated daily loading for the month in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMRs.

**Department** means the Michigan Department of Natural Resources and Environment.

**Detection Level** means the lowest concentration or amount of the target analyte that can be determined to be different from zero by a single measurement at a stated level of probability.

## PART II

### Section A. Definitions

**EC<sub>50</sub>** means a statistically or graphically estimated concentration that is expected to cause 1 or more specified effects in 50% of a group of organisms under specified conditions.

**Fecal coliform bacteria monthly** is the geometric mean of the samples collected in a calendar month (or 30 consecutive days). The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMRs.

**Fecal coliform bacteria 7-day** is the geometric mean of the samples collected in any 7-day period. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

**Flow Proportioned sample** is a composite sample with the sample volume proportional to the effluent flow.

**Grab sample** is a single sample taken at neither a set time nor flow.

**IC<sub>25</sub>** means the toxicant concentration that would cause a 25% reduction in a nonquantal biological measurement for the test population.

**Individual Permit** means a site-specific NPDES permit.

**Inlet** means a catch basin, roof drain, conduit, drain tile, retention pond riser pipe, sump pump, or other point where storm water or wastewater enters into a closed conveyance system prior to discharge off site or into waters of the state.

**Interference** is a discharge which, alone or in conjunction with a discharge or discharges from other sources, both: 1) inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and 2) therefore, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or, of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act. [This definition does not apply to sample matrix interference.]

**Land Application** means spraying or spreading biosolids or a biosolids derivative onto the land surface, injecting below the land surface, or incorporating into the soil so that the biosolids or biosolids derivative can either condition the soil or fertilize crops or vegetation grown in the soil.

**LC<sub>50</sub>** means a statistically or graphically estimated concentration that is expected to be lethal to 50% of a group of organisms under specified conditions.

**Maximum acceptable toxicant concentration (MATC)** means the concentration obtained by calculating the geometric mean of the lower and upper chronic limits from a chronic test. A lower chronic limit is the highest tested concentration that did not cause the occurrence of a specific adverse effect. An upper chronic limit is the lowest tested concentration which did cause the occurrence of a specific adverse effect and above which all tested concentrations caused such an occurrence.

**MGD** means million gallons per day.

**Monthly frequency of analysis** refers to a calendar month. When required by this permit, an analytical result, reading, value or observation must be reported for that period if a discharge occurs during that period.

## PART II

### Section A. Definitions

**Monthly concentration** is the sum of the daily concentrations determined during a reporting month (or 30 consecutive days) divided by the number of daily concentrations determined. The calculated monthly concentration will be used to determine compliance with any maximum monthly concentration limitations. When required by the permit, report the calculated monthly concentration in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMRs.

For minimum percent removal requirements, the monthly influent concentration and the monthly effluent concentration shall be determined. The calculated monthly percent removal, which is equal to 100 times the quantity [1 minus the quantity (monthly effluent concentration divided by the monthly influent concentration)], shall be reported in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

**Monthly loading** is the sum of the daily loadings of a parameter divided by the number of daily loadings determined in the reporting month (or 30 consecutive days). The calculated monthly loading will be used to determine compliance with any maximum monthly loading limitations. When required by the permit, report the calculated monthly loading in the "AVERAGE" column under "QUANTITY OR LOADING" on the DMRs.

**National Pretreatment Standards** are the regulations promulgated by or to be promulgated by the Federal Environmental Protection Agency pursuant to Section 307(b) and (c) of the Federal Act. The standards establish nationwide limits for specific industrial categories for discharge to a POTW.

**New Facility** means a facility located on a newly-developed or redeveloped site which is ready to begin industrial operations on or after the effective date of this permit.

**NOI** means Notice of Intent to be covered by this permit.

**No observed adverse effect level (NOAEL)** means the highest tested dose or concentration of a substance which results in no observed adverse effect in exposed test organisms where higher doses or concentrations result in an adverse effect.

**Noncontact Cooling Water** is water used for cooling which does not come into direct contact with any raw material, intermediate product, by-product, waste product or finished product.

**Nondomestic user** is any discharger to a POTW that discharges wastes other than or in addition to water-carried wastes from toilet, kitchen, laundry, bathing or other facilities used for household purposes.

**Partially treated sewage** is any sewage, sewage and storm water, or sewage and wastewater, from domestic or industrial sources that is treated to a level less than that required by the permittee's National Pollutant Discharge Elimination System permit, or that is not treated to national secondary treatment standards for wastewater, including discharges to surface waters from retention treatment facilities.

**Point Source Discharge** means a discharge from any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container or rolling stock. Changing the surface of land or establishing grading patterns on land will result in a point source where the runoff from the site is ultimately discharged to waters of the state.

**Polluting Materials** means oil and any material, in solid or liquid form, identified as polluting material under the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code).

**Pretreatment** is reducing the amount of pollutants, eliminating pollutants, or altering the nature of pollutant properties to a less harmful state prior to discharge into a public sewer. The reduction or alteration can be by physical, chemical, or biological processes, process changes, or by other means. Dilution is not considered pretreatment unless expressly authorized by an applicable National Pretreatment Standard for a particular industrial category.

**POTW** is a publicly owned treatment works.



## PART II

### Section A. Definitions

**Quantification level** means the measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calculated at a specified concentration above the detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant.

**Quarterly frequency of analysis** refers to a three month period, defined as January through March, April through June, July through September, and October through December. When required by this permit, an analytical result, reading, value or observation must be reported for that period if a discharge occurs during that period.

**Regional Administrator** is the Region 5 Administrator, U.S. EPA, located at R-19J, 77 W. Jackson Blvd., Chicago, Illinois 60604.

**Secondary Containment Structure** means a unit, other than the primary container in which significant materials are packaged or held, which is required by State or Federal law to prevent the escape of significant materials by gravity into sewers, drains, or otherwise directly or indirectly into any sewer system or to the surface or ground waters of this state.

**Significant industrial user** is a nondomestic user that: 1) is subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; or 2) discharges an average of 25,000 gallons per day or more of process wastewater to a POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastestream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the permittee as defined in 40 CFR 403.12(a) on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's treatment plant operation or violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

**Significant Materials** means any material which could degrade or impair water quality, including but not limited to: raw materials; fuels; solvents, detergents, and plastic pellets; finished materials such as metallic products; hazardous substances designated under section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (See 40 CFR 372.65); any chemical the facility is required to report pursuant to section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA); polluting materials (as defined above); Hazardous Wastes as defined in Part 111 of the Michigan Act; fertilizers; pesticides; and waste products such as ashes, slag, sludge, and plant and animal wastes that have the potential to be released with storm water discharges.

**Significant Spills and Significant Leaks** means any release of a polluting material reportable under the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code).

**Storm Water** means storm water runoff, snow melt runoff, surface runoff and drainage, and non-storm water included under the conditions of Part I.D.3.

**SWPPP** means the Storm Water Pollution Prevention Plan prepared in accordance with Part I.C. of this permit.

**Tier I value** means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier I toxicity database.

**Tier II value** means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier II toxicity database.

**Total Maximum Daily Load or TMDL** means the amount of pollutant load a water body such as a lake or stream can assimilate and still meet Water Quality Standards.

**Toxicity Reduction Evaluation (TRE)** means a site-specific study conducted in a stepwise process designed to identify the causative agents of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.

## PART II

### Section A. Definitions

**Water Quality Standards** means the Part 4 Water Quality Standards promulgated pursuant to Part 31 of Act No. 451 of the Public Acts of 1994, as amended, being Rules 323.1041 through 323.1117 of the Michigan Administrative Code.

**Weekly frequency of analysis** refers to a calendar week which begins on Sunday and ends on Saturday. When required by this permit, an analytical result, reading, value or observation must be reported for that period if a discharge occurs during that period.

**Yearly frequency of analysis** refers to a calendar year beginning on January 1 and ending on December 31. When required by this permit, an analytical result, reading, value or observation must be reported for that period if a discharge occurs during that period.

**24-Hour Composite sample** is a flow proportioned composite sample consisting of hourly or more frequent portions that are taken over a 24-hour period.

**3-Portion Composite sample** is a sample consisting of three equal volume grab samples collected at equal intervals over an 8-hour period.

**7-day concentration** is the sum of the daily concentrations determined during any 7 consecutive days in a reporting month divided by the number of daily concentrations determined. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations. When required by the permit, report the maximum calculated 7-day concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. FOR SEASONAL LAGOON DISCHARGES ONLY: If the seven day period was partially in each of two months, the seven day average shall be reported on the DMR of the month in which the last day of discharge occurred.

**7-day loading** is the sum of the daily loadings of a parameter divided by the number of daily loadings determined during any 7 consecutive days in a reporting month. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations. When required by the permit, report the maximum calculated 7-day loading for the month in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMRs. FOR SEASONAL LAGOON DISCHARGES ONLY: If the seven day period was partially in each of two months, the seven day average shall be reported on the DMR of the month in which the last day of discharge occurred.

**PART II****Section B. Monitoring Procedures****1. Representative Samples**

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

**2. Test Procedures**

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to Section 304(h) of the Federal Act (40 CFR Part 136 - Guidelines Establishing Test Procedures for the Analysis of Pollutants), unless specified otherwise in this permit. Requests to use test procedures not promulgated under 40 CFR Part 136 for pollutant monitoring required by this permit shall be made in accordance with the Alternate Test Procedures regulations specified in 40 CFR 136.4. These requests shall be submitted to the Chief of the Permits Section, Water Resources Division, Michigan Department of Natural Resources and Environment, P.O. Box 30273, Lansing, Michigan, 48909-7773. The permittee may use such procedures upon approval.

The permittee shall periodically calibrate and perform maintenance procedures on all analytical instrumentation at intervals to ensure accuracy of measurements. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Control/Quality Assurance program.

**3. Instrumentation**

The permittee shall periodically calibrate and perform maintenance procedures on all monitoring instrumentation at intervals to ensure accuracy of measurements.

**4. Recording Results**

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information: 1) the exact place, date, and time of measurement or sampling; 2) the person(s) who performed the measurement or sample collection; 3) the dates the analyses were performed; 4) the person(s) who performed the analyses; 5) the analytical techniques or methods used; 6) the date of and person responsible for equipment calibration; and 7) the results of all required analyses.

**5. Records Retention**

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years or longer if requested by the Regional Administrator or the Department.

## PART II

### Section C. Reporting Requirements

#### 1. Start-up Notification

If the permittee will not discharge during the first 60 days following the effective date of the facility's COC, the permittee shall notify the Department within 14 days following the effective date of the COC, and then 60 days prior to the commencement of the discharge.

#### 2. Submittal Requirements for Self-Monitoring Data

Part 31 of Act 451 of 1994, as amended, specifically Section 324.3110(3) and Rule 323.2155(2) of Part 21 allows the Department to specify the forms to be utilized for reporting the required self-monitoring data. Unless instructed on the effluent limitations page to conduct "Retained Self Monitoring" the permittee shall submit self-monitoring data via the Department's Electronic Environmental Discharge Monitoring Reporting (e2-DMR) system.

The permittee shall utilize the information provided on the e2-Reporting website @ <https://secure1.state.mi.us/e2rs/> to access and submit the electronic forms. Both monthly summary and daily data shall be submitted to the department no later than the **20<sup>th</sup> day of the month** following each month of the authorized discharge period(s).

#### 3. Retained Self-Monitoring Requirements

If instructed on the effluent limits page (or otherwise authorized by the Department in accordance with the provisions of this permit) to conduct retained self-monitoring, the permittee shall maintain a year-to-date log of retained self-monitoring results and, upon request, provide such log for inspection to the staff of the Department (Department as defined on the COC). Retained self-monitoring results are public information and shall be promptly provided to the public upon written request from the public.

The permittee shall certify, in writing, to the Department, on or before January 10<sup>th</sup> of each year, that: 1) all retained self-monitoring requirements have been complied with and a year-to-date log has been maintained; and 2) the application on which this permit is based still accurately describes the discharge. With this annual certification, the permittee shall submit a summary of the previous year's monitoring data. The summary shall include maximum values for samples to be reported as daily maximums and/or monthly maximums and minimum values for any daily minimum samples.

#### 4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report. Such increased frequency shall also be indicated.

Monitoring required pursuant to Part 41 of the Michigan Act or Rule 35 of the Mobile Home Park Commission Act (Act 96 of the Public Acts of 1987) for assurance of proper facility operation shall be submitted as required by the Department.

#### 5. Compliance Dates Notification

Within 14 days of every compliance date specified in this permit, the permittee shall submit a written notification to the Department indicating whether or not the particular requirement was accomplished. If the requirement was not accomplished, the notification shall include an explanation of the failure to accomplish the requirement, actions taken or planned by the permittee to correct the situation, and an estimate of when the requirement will be accomplished. If a written report is required to be submitted by a specified date and the permittee accomplishes this, a separate written notification is not required.

## PART II

### Section C. Reporting Requirements

#### 6. Noncompliance Notification

Compliance with all applicable requirements set forth in the Federal Act, Parts 31 and 41 of the Michigan Act, and related regulations and rules is required. All instances of noncompliance shall be reported as follows:

- a. 24-hour reporting - Any noncompliance which may endanger health or the environment (including maximum daily concentration discharge limitation exceedances) shall be reported, verbally, within 24 hours from the time the permittee becomes aware of the noncompliance. A written submission shall also be provided within five (5) days.
- b. other reporting - The permittee shall report, in writing, all other instances of noncompliance not described in a. above at the time monitoring reports are submitted; or, in the case of retained self-monitoring, within five (5) days from the time the permittee becomes aware of the noncompliance.

Written reporting shall include: 1) a description of the discharge and cause of noncompliance; and 2) the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and the steps taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

#### 7. Spill Notification

The permittee shall immediately report any release of any polluting material which occurs to the surface waters or groundwaters of the state, unless the permittee has determined that the release is not in excess of the threshold reporting quantities specified in the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code), by calling the Department at the number indicated in the COC, or if the notice is provided after regular working hours call the Department's 24-hour Pollution Emergency Alerting System telephone number, 1-800-292-4706 (calls from out-of-state dial 1-517-373-7660).

Within ten (10) days of the release, the permittee shall submit to the Department a full written explanation as to the cause of the release, the discovery of the release, response (clean-up and/or recovery) measures taken, and preventive measures taken or a schedule for completion of measures to be taken to prevent reoccurrence of similar releases.

#### 8. Upset Noncompliance Notification

If a process "upset" (defined as an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee) has occurred, the permittee who wishes to establish the affirmative defense of upset, shall notify the Department by telephone within 24-hours of becoming aware of such conditions; and within five (5) days, provide in writing, the following information:

- a. that an upset occurred and that the permittee can identify the specific cause(s) of the upset;
- b. that the permitted wastewater treatment facility was, at the time, being properly operated; and
- c. that the permittee has specified and taken action on all responsible steps to minimize or correct any adverse impact in the environment resulting from noncompliance with this permit.

In any enforcement proceedings, the permittee, seeking to establish the occurrence of an upset, has the burden of proof.

**PART II****Section C. Reporting Requirements****9. Bypass Prohibition and Notification**

- a. Bypass Prohibition - Bypass is prohibited unless:
  - 1) bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
  - 2) there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass; and
  - 3) the permittee submitted notices as required under 9.b. or 9.c. below.
- b. Notice of Anticipated Bypass - If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Department, if possible at least ten (10) days before the date of the bypass, and provide information about the anticipated bypass as required by the Department. The Department may approve an anticipated bypass, after considering its adverse effects, if it will meet the three (3) conditions listed in 9.a. above.
- c. Notice of Unanticipated Bypass - The permittee shall submit notice to the Department of an unanticipated bypass by calling the Department at the number indicated in the COC (if the notice is provided after regular working hours, use the following number: 1-800-292-4706) as soon as possible, but no later than 24 hours from the time the permittee becomes aware of the circumstances.
- d. Written Report of Bypass - A written submission shall be provided within five (5) working days of commencing any bypass to the Department, and at additional times as directed by the Department. The written submission shall contain a description of the bypass and its cause; the period of bypass, including exact dates and times, and if the bypass has not been corrected, the anticipated time it is expected to continue; steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass; and other information as required by the Department.
- e. Bypass Not Exceeding Limitations - The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of 9.a., 9.b., 9.c., and 9.d., above. This provision does not relieve the permittee of any notification responsibilities under Part II.C.10. of this permit.
- f. Definitions
  - 1) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
  - 2) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

**PART II****Section C. Reporting Requirements****10. Notification of Changes in Discharge**

The permittee shall notify the Department, in writing, within 10 days of knowing, or having reason to believe, that any activity or change has occurred or will occur which would result in the discharge of: 1) detectable levels of chemicals on the current Michigan Critical Materials Register, priority pollutants or hazardous substances set forth in 40 CFR 122.21, Appendix D, or the Pollutants of Initial Focus in the Great Lakes Water Quality Initiative specified in 40 CFR 132.6, Table 6, which were not acknowledged in the application or listed in the application at less than detectable levels; 2) detectable levels of any other chemical not listed in the application or listed at less than detection, for which the application specifically requested information; or 3) any chemical at levels greater than five times the average level reported in the complete application (see the COC for the date(s) the complete application was submitted). Any other monitoring results obtained as a requirement of this permit shall be reported in accordance with the compliance schedules.

**11. Changes in Facility Operations**

Any anticipated action or activity, including but not limited to facility expansion, production increases, or process modification, which will result in new or increased loadings of pollutants to the receiving waters must be reported to the Department by a) submission of an increased use request (application) and all information required under Rule 323.1098 (Antidegradation) of the Water Quality Standards or b) by notice if the following conditions are met: 1) the action or activity will not result in a change in the types of wastewater discharged or result in a greater quantity of wastewater than currently authorized by this permit; 2) the action or activity will not result in violations of the effluent limitations specified in this permit; 3) the action or activity is not prohibited by the requirements of Part II.C.12.; and 4) the action or activity will not require notification pursuant to Part II.C.10. Following such notice, the permit may be modified according to applicable laws and rules to specify and limit any pollutant not previously limited.

**12. Bioaccumulative Chemicals of Concern (BCC)**

Consistent with the requirements of Rules 323.1098 and 323.1215 of the Michigan Administrative Code, the permittee is prohibited from undertaking any action that would result in a lowering of water quality from an increased loading of a BCC unless an increased use request and antidegradation demonstration have been submitted and approved by the Department.

**13. Transfer of Ownership or Control**

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the permittee shall submit to the Department 30 days prior to the actual transfer of ownership or control a written agreement between the current permittee and the new permittee containing: 1) the legal name and address of the new owner; 2) a specific date for the effective transfer of permit responsibility, coverage and liability; and 3) a certification of the continuity of or any changes in operations, wastewater discharge, or wastewater treatment.

If the new permittee is proposing changes in operations, wastewater discharge, or wastewater treatment, the Department may propose modification of this permit in accordance with applicable laws and rules.

**PART II****Section D. Management Responsibilities****1. Duty to Comply**

All discharges authorized herein shall be consistent with the terms and conditions of this permit and the facility's COC. The discharge of any pollutant identified in this permit and/or the facility's COC more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.

It is the duty of the permittee to comply with all the terms and conditions of this permit and the facility's COC. Any noncompliance with the Effluent Limitations, Special Conditions, or terms of this permit or the facility's COC constitutes a violation of the Michigan Act and/or the Federal Act and constitutes grounds for enforcement action; for COC termination, revocation and reissuance, or modification; or denial of an application for permit or COC renewal.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

**2. Operator Certification**

The permittee shall have the waste treatment facilities under direct supervision of an operator certified at the appropriate level for the facility certification by the Department, as required by Sections 3110 and 4104 of the Michigan Act.

**3. Facilities Operation**

The permittee shall, at all times, properly operate and maintain all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures.

**4. Power Failures**

In order to maintain compliance with the effluent limitations of this permit and prevent unauthorized discharges, the permittee shall either:

- a. provide an alternative power source sufficient to operate facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit; or
- b. upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, the permittee shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the effluent limitations and conditions of this permit.

**5. Adverse Impact**

The permittee shall take all reasonable steps to minimize any adverse impact to the surface waters or groundwaters of the state resulting from noncompliance with any effluent limitation specified in this permit including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in noncompliance.



## PART II

### Section D. Management Responsibilities

#### 6. Containment Facilities

The permittee shall provide facilities for containment of any accidental losses of polluting materials in accordance with the requirements of the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code). For a Publicly Owned Treatment Work (POTW), these facilities shall be approved under Part 41 of the Michigan Act.

#### 7. Waste Treatment Residues

Residuals (i.e. solids, sludges, biosolids, filter backwash, scrubber water, ash, grit, or other pollutants or wastes) removed from or resulting from treatment or control of wastewaters, including those that are generated during treatment or left over after treatment or control has ceased shall be disposed of in an environmentally compatible manner and according to applicable laws and rules. These laws may include, but are not limited to, the Michigan Act, Part 31 for protection of water resources, Part 55 for air pollution control, Part 111 for hazardous waste management, Part 115 for solid waste management, Part 121 for liquid industrial wastes, Part 301 for protection of inland lakes and streams, and Part 303 for wetlands protection. Such disposal shall not result in any unlawful pollution of the air, surface waters or groundwaters of the state.

#### 8. Right of Entry

The permittee shall allow the Department, any agent appointed by the Department or the Regional Administrator, upon the presentation of credentials:

- a. to enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and
- b. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect process facilities, treatment works, monitoring methods and equipment regulated or required under this permit; and to sample any discharge of pollutants.

#### 9. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Act and Rule 2128 (Rule 323.2128 of the Michigan Administrative Code), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department and the Regional Administrator. As required by the Federal Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Act and Sections 3112, 3115, 4106 and 4110 of the Michigan Act.

**PART II****Section E. Activities Not Authorized by This Permit****1. Discharge to the Groundwaters**

This permit does not authorize any discharge to the groundwaters. Such discharge may be authorized by a groundwater discharge permit issued pursuant to the Michigan Act.

**2. Facility Construction**

This permit does not authorize or approve the construction or modification of any physical structures or facilities. Approval for such construction for a POTW must be by permit issued under Part 41 of the Michigan Act. Approval for such construction for a mobile home park, campground or marina shall be from the Water Resources Division, Michigan Department of Natural Resources and Environment. Approval for such construction for a hospital, nursing home or extended care facility shall be from the Division of Health Facilities and Services, Michigan Department of Consumer and Industry Services upon request.

**3. Civil and Criminal Liability**

Except as provided in permit conditions on "Bypass" (Part II.C.9. pursuant to 40 CFR 122.41(m)), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance, whether or not such noncompliance is due to factors beyond the permittee's control, such as accidents, equipment breakdowns, or labor disputes.

**4. Oil and Hazardous Substance Liability**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee may be subject under Section 311 of the Federal Act except as are exempted by federal regulations.

**5. State Laws**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Federal Act.

**6. Property Rights**

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other Department of Natural Resources and Environment permits, or approvals from other units of government as may be required by law.

ATTACHMENT 4

CERTIFICATE OF COVERAGE



JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
LANSING



STEVEN E. CHESTER  
DIRECTOR

August 17, 2006

Mr. Raymond Ilkka  
General Motors Powertrain  
1629 North Washington Avenue  
Mail Code: 486-629-011  
Saginaw, Michigan 48605

Dear Mr. Ilkka:

SUBJECT: Storm Water General Permit  
Certificate of Coverage No. MIS120003  
Designated Name: GM-Powertrain Saginaw

The Water Bureau of the Department of Environmental received on September 29, 2005, your Notice of Intent to be covered under the Storm Water General Permit (Permit No. MIS120000).

Please find attached Certificate of Coverage No. MIS120003 granting this request. If needed, a copy of the Storm Water General Permit can be obtained via the Internet at: (<http://www.michigan.gov/deq> and on the left side of the screen click on Water, Surface Water, and NPDES Permits; then click on "General NPDES Permits" which is under the Permits banner), or if you do not have access to a computer, you may call the following number to request a paper copy be sent to you: (517) 241-1346. This certificate of coverage takes effect immediately. The granting of this coverage under this storm water general permit establishes several compliance requirements which are detailed in the certificate of coverage.

The issuance of this permit does not authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other Department of Environmental Quality permits, or approvals from other units of government as may be required by law.

Based on the issuance of this Certificate of Coverage, your storm water discharge control facility is officially classified as A.1.i, Storm Water Management Industrial Site. Please contact Keith Noble at 989-686-8025 ext. 8267 if you have any questions.

Sincerely,

Kelly Ploehn  
Storm Water Program  
Water Bureau

Attachment

cc: Saginaw Bay District Office, Water Bureau  
PCS Unit, Water Bureau (with COC)

File INSTITUTION HALL • 525 WEST ALLEGAN STREET • P.O. BOX 30273 • LANSING, MICHIGAN 48909-7773  
[www.michigan.gov](http://www.michigan.gov) • (517) 241-1300



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER BUREAU  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
*Authorized by Michigan Act 451, Public Acts of 1994, as amended, Part 31*

CERTIFICATE OF COVERAGE

Under General Permit No. MIS120000  
SW-Containment CY1 General Permit

CERTIFICATE OF COVERAGE NO.: MIS120003  
DESIGNATED NAME: GM-Powertrain Saginaw  
PERMITTEE MAILING ADDRESS: General Motors Powertrain  
1629 North Washington Avenue  
Mail Code: 486-629-011  
Saginaw, Michigan 48605

This certificate of coverage authorizes General Motors Powertrain to discharge an unspecified amount of storm water which meets the criteria established in General Permit No. MIS120000. The discharge is from General Motors Powertrain, Saginaw Metal Casting Operations, located at 1629 North Washington Avenue, Saginaw, Michigan 48605. The discharge is to the Saginaw River, in the SE1/4, SE1/4, Section 7, Town 12 N, Range 5 E, Saginaw County.

The discharge is to Diekman Drain in the SE1/4, SE1/4, Section 5, T12N, R5E, Saginaw County.

The discharge is to Koehler Drain in the SE1/4, NE1/4, Section 8, T12N, R5E, Saginaw County.

The discharge is to Gage Number One Drain in the NW1/4, SE1/4, Section 5, T12N, R5E, Saginaw County.

The discharge is to Koehler Drain in the NE1/4, SE1/4, Section 5, T12N, R5E, Saginaw County.

This authorization is based on written certification received on September 29, 2005, that the permittee is in compliance with the following requirements of the Storm Water Pollution Prevention Plan and the general permit (see Part I.A.4. of the general permit):

1. Source identification requirements.
2. Certified storm water operator requirements.
3. Prohibition of unauthorized non-storm water discharges.
4. Non-structural preventative measures and source controls.
5. Structural storm water pollution control requirements as needed.

By February 16, 2007, the permittee shall sample and analyze storm water in accordance with the short-term monitoring plan previously approved by the Department for the permitted facility and submit the storm water analytical data, or submit an updated approvable plan for monitoring and analysis of the storm water in accordance with the requirements of Part I.A.2. of the general permit.

Any party who is aggrieved by this certificate of coverage may file a sworn petition for a contested case hearing on this certificate of coverage with the State Office of Administrative Hearings and Rules of the Michigan Department of Labor and Economic Growth in accordance with the provisions of R323.2192(c) of the Michigan Administrative Code. The Department may reject any petition filed more than 60 days after issuance as being untimely.

The issuance of this certificate of coverage does not authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other Department of Environmental Quality permits, or approvals from other units of government as may be required by law.

This certificate of coverage is based on a complete application received by the Department of Environmental Quality on September 29, 2005, and is subject to all conditions specified in General Permit No. MIS120000 issued August 2, 2005, expiring April 1, 2011. This certificate of coverage may be modified, terminated, reissued, or revoked as allowed for in General Permit No. MIS120000. On the effective date of this certificate of coverage, this certificate of coverage shall supersede Certificate of Coverage No. MIS120003, issued July 11, 2001, which is hereby revoked.

This certificate of coverage takes effect immediately.

August 16, 2006  
Date Issued

EQP 4677 (10/97)

  
Michael J. Bray, P.E., Chief  
Lakes Erie and Huron Permits Unit  
Permits Section  
Water Bureau

GENERAL PERMIT NO. MIS120000

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
WASTEWATER DISCHARGE GENERAL PERMIT**

**STORM WATER DISCHARGES WITH REQUIRED MONITORING  
CYCLE-YEAR 1 WATERSHEDS**

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq; the "Federal Act"); Michigan Act 451, Public Acts of 1994, as amended (the "Michigan Act"), Part 31; and Michigan Executive Orders 1991-31, 1995-4 and 1995-18, storm water associated with industrial activity, as defined under 40 CFR 122.26(b)(14)(i-ix) and (xi), or as deemed necessary under Section 402(p)(2)(E) of the Federal Act, and other storm water which is adequately regulated by this general permit is authorized to be discharged from facilities specified in individual "certificates of coverage" in accordance with conditions set forth in this National Pollutant Discharge Elimination System (NPDES) general permit (the "permit").

The applicability of this permit shall be limited to facilities which discharge storm water to surface waters of the state located within a cycle-year 1 watershed, as listed in Part II.F. on page 21 of 21. Applicable discharges include storm water from secondary containment structures required by State or Federal law, from lands on Michigan's List of Sites of Environmental Contamination pursuant to Part 201 (Environmental Response) of the Michigan Act, or from other activities which may contribute pollutants to the storm water for which the Michigan Department of Environmental Quality (the "Department") determines monitoring is needed. This permit does not authorize discharges determined by the Department to need individual NPDES permits or different general permits, or that may cause or contribute to a violation of the Water Quality Standards.

In order to constitute a valid authorization to discharge, this permit must be complemented by a certificate of coverage issued by the Department.

Unless specified otherwise, all contact with the Department required by this permit shall be made to the positions indicated in the certificate of coverage, and all Department approvals specified in this permit shall be by the positions indicated in the certificate of coverage.

The terms and conditions of this permit shall apply to an individual facility beginning on the effective date of a certificate of coverage issued for that facility. The Department may grant a contested case hearing on this permit in accordance with the Michigan Act. Any person who is aggrieved by this permit may file a sworn petition with the Office of Administrative Hearings of the Michigan Department of Environmental Quality, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Department may grant a contested case hearing on the certificate of coverage issued to an individual facility under this permit in accordance with Rule 323.2192(c) (Rule 323.2192 of the Michigan Administrative Code).

In accordance with Section 324.3118 of the Michigan Act, the permittee shall make payment of an annual storm water fee to the Department. In response to the Department's annual notice, the permittee shall remit the fee to the address on the notice, postmarked no later than March 15 of each year.

This permit shall take effect on April 1, 2006. The provisions of this permit are severable. After notice and opportunity for a hearing, this permit may be modified, suspended or revoked in whole or in part during its term in accordance with applicable laws and rules. On its effective date this permit shall supersede NPDES Permit No. MIS120000, expiring April 1, 2001.

This permit shall expire at midnight, April 1, 2011.

Issued August 2, 2005

Original Permit Signed by Daniel Dell, Acting Section Chief  
William Creal, Chief  
Permits Section  
Water Bureau

**PART I****Section A. Limitations And Monitoring Requirements****1. Final Effluent Limitations**

During the period beginning on the effective date of this permit and an individual certificate of coverage, and lasting until the expiration of this permit or termination of the individual certificate of coverage, the permittee is authorized to discharge an unspecified amount of storm water to the surface waters of the State of Michigan from industrial activity as defined under 40 CFR 122.26(b)(14)(i-ix) and (xi), from secondary containment structures required by State or Federal law, from lands on Michigan's List of Sites of Environmental Contamination pursuant to Part 201 (Environmental Response) of the Michigan Act, and from other activities which may contribute pollutants to the storm water for which the Department determines monitoring is needed. The discharge shall be limited by the permittee as specified below.

- a. Limitations for Discharges from Secondary Containment Structures -- contained storm water may not be discharged if:
  - 1) The storm water contains unnatural turbidity, color, oil film, floating solids, foams, settleable solids, or suspended solids; or
  - 2) The permittee knows, or has reason to believe, the contained storm water is contaminated by or has come in contact with materials stored within the primary containment structure, unless the Department approves the discharge. An operator of a bulk fuel storage facility may discharge storm water that is known to have contacted petroleum products stored within primary containment structures if the contained storm water has been treated to assure that the limitations in item 1) (above) are met; or
  - 3) The permittee has not implemented an acceptable Storm Water Pollution Prevention Plan (SWPPP) as required by Part I.A.5. of this permit.
- b. Limitations for Discharges from areas without secondary containment, including Sites of Environmental Contamination and other activities which may contribute pollutants to the storm water for which the Department determines monitoring is needed -- storm water may not be discharged if:
  - 1) The receiving water will contain unnatural turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge; or
  - 2) The permittee knows, or has reason to believe, the storm water contains contaminants from the site that may cause a violation of the Water Quality Standards; or
  - 3) The permittee has not implemented an acceptable SWPPP as required by Part I.A.5. of this permit.

## PART I

## Section A. Limitations And Monitoring Requirements

c. Water Treatment Additives

This permit does not authorize the discharge of water additives without approval from the Department. Water additives include any material that is added to water used at the facility or to a wastewater generated by the facility to condition or treat the water.

In the event a permittee proposes to discharge water additives, the permittee shall submit a request to discharge water additives to the Department for approval. Such requests shall be sent to the Surface Water Assessment Section, Water Bureau, Department of Environmental Quality, P.O. Box 30273, Lansing, Michigan 48909, with a copy to the Department. Instructions to submit a request electronically may be obtained via the internet (<http://www.michigan.gov/deq> and on the left side of the screen click on Water, Water Quality Monitoring, Assessment of Michigan Waters; then click on the Water Treatment Additive List which is under the information banner). Written approval from the Department to discharge such additives at specified levels shall be obtained prior to discharge by the permittee. Additional monitoring and reporting may be required as a condition for the approval to discharge the additive.

A request to discharge water additives shall include all of the following water additive usage and discharge information:

- c. Material Safety Data Sheet;
- d. the proposed water additive discharge concentration;
- e. the discharge frequency (i.e., number of hours per day and number of days per year);
- f. the outfall from which the product is to be discharged;
- g. the type of removal treatment, if any, that the water additive receives prior to discharge;
- h. product function (i.e. microbiocide, flocculent, etc.);
- i. a 48-hour  $LC_{50}$  or  $EC_{50}$  for a North American freshwater planktonic crustacean (either *Ceriodaphnia sp.*, *Daphnia sp.*, or *Simocephalus sp.*); and
- j. the results of a toxicity test for one other North American freshwater aquatic species (other than a planktonic crustacean) that meets a minimum requirement of Rule 323.1057(2) of the Water Quality Standards.

Prior to submitting the request, the permittee may contact the Surface Water Assessment Section by telephone at 517-335-1180 or via the internet at the address given above to determine if the Department has the product toxicity data required by items g. and h. above. If the Department has the data, the permittee will not need to submit product toxicity data.

d. Tracer Dye Discharges

This permit does not authorize the discharge of tracer dyes without approval from the Department. Requests to discharge tracer dyes shall be submitted to the Department in accordance with Rule 1097 (Rule 323.1097 of the Michigan Administrative Code).



**PART I****Section A. Limitations And Monitoring Requirements****2. Short-Term Storm Water Characterization Study**

The permittee shall complete a short-term storm water characterization study. Permittees seeking reissuance under this permit may complete storm water analysis by following their short-term monitoring plan previously approved by the Department, in which case the monitoring results shall be submitted to the Department within six months of the effective date of the certificate of coverage issued under this permit. If, however, changes have occurred at the facility which could result in the discharge of different pollutants than those identified in the previously approved short-term monitoring plan, or if the permittee has never submitted a short term monitoring plan, then the permittee shall submit a new approvable short-term monitoring plan in accordance with the following:

**Monitoring plan submittal:** Within six (6) months after the effective date of a certificate of coverage issued under this permit, the permittee shall submit to the Department an approvable plan for monitoring and analysis of the storm water discharges authorized by the certificate of coverage and this permit. Guidance for the monitoring plan is available at <http://www.deq.state.mi.us/documents/deq-swq-stormwater-SWCharStudy.pdf>. The plan shall include a proposed list of pollutants to be monitored to adequately characterize the discharge. At a minimum, the proposed list of pollutants shall include significant materials that the permittee knows or has reason to believe are present in special use areas (special use areas include secondary containment structures and associated storage vessels, Sites of Environmental Contamination, or other activities or areas which may contribute pollutants to the storm water for which the Department determines monitoring is needed). If the permittee has more than one special use area that would require storm water monitoring, such as a secondary containment structure *and* a Site of Environmental Contamination, then a separate monitoring plan shall be submitted for each special use area. The monitoring plan may include a request to monitor a combined discharge from multiple secondary containment structures if the permittee demonstrates in the plan that the monitoring is representative of water from all secondary containment structures. The plan(s) shall describe the monitoring frequency and duration, the total number of sampling events (each discharge is one event), the monitoring and analysis methods to be used, and a date for submittal of the summarized analytical results. Samples shall be collected, preserved, handled, and analyzed using EPA approved methods (see 40 CFR part 136) and quantification levels. Some desired quantification levels are available in Appendix A to this permit.

**Monitoring secondary containment structures or retention basins with retention periods greater than 24 hours:** Samples shall be collected from the water within a secondary containment structure or retention basin, or of the discharge prior to mixing with the receiving water or other waste streams. Grab samples may be taken unless the Department specifies other sampling methods. Pollutant concentrations and estimated total volume of the discharge shall be reported. Sampling may include visual observations to determine if the storm water contains unnatural turbidity, color, oil film, floating solids, foams, settleable solids, or suspended solids.

**Monitoring storm water runoff from a Site of Environmental Contamination or other activity (without secondary containment or 24-hour retention) which may contribute pollutants to the storm water for which the Department determines monitoring is needed:** Samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inch of rainfall and causes a discharge; and at least 72 hours from the previous measurable (greater than 0.1 inch) storm event. Quantitative data shall be reported for a grab sample taken during the first thirty minutes of the discharge. Additional samples shall be collected during a discharge event as necessary to be representative of the pollutants discharged from the site. Date and duration of the storm event, the rainfall measurement or estimate, duration between the storm event sampled and the end date of the previous measurable storm event, pollutant concentration(s), visual observations, and estimated total volume of the discharge shall be reported.

**Monitoring startup:** Upon completion and implementation of the Storm Water Pollution Prevention Plan (Part I.A.5.) and approval of the monitoring plan, the permittee shall begin monitoring the authorized discharge as specified in the plan. If the Department does not take action to approve or comment on the monitoring plan within ninety (90) days after submittal, and the Storm Water Pollution Prevention Plan is being implemented by the permittee in its entirety, the permittee shall begin storm water monitoring in accordance with the plan submitted. Nothing in this permit shall prevent additional sampling, in addition to that specified in the monitoring plan, from being conducted. The analytical results of all representative discharge samples collected must be reported to the Department.

If, upon review of the analysis, it is determined that any of the materials or constituents require limiting to protect the receiving waters in accordance with applicable Water Quality Standards, the Department may determine that an individual permit is needed for the discharge in accordance with Part I.A.8. of this permit.

**PART I****Section A. Limitations And Monitoring Requirements****3. Schedules and Certifications for New Storm Water General Permit Applicants**

Applicants requesting first-time authorization to discharge storm water associated with industrial activity under a general permit shall comply with the schedule and certification requirements identified in this section prior to submittal of a Notice of Intent (NOI) or other Department-approved application to be covered under this permit.

**a. Schedule**

A first-time applicant will not receive a certificate of coverage issued under this permit unless the NOI or application is accompanied by certification of compliance with the certified operator and Storm Water Pollution Prevention Plan (SWPPP) requirements of this permit as follows.

- 1) **Certified Operator:** The applicant shall have a storm water operator certified by the Department, as required by Section 3110 of the Michigan Act. The certified operator shall have supervision over the facility's storm water treatment and control measures included in the SWPPP.
- 2) **Storm Water Pollution Prevention Plan:** The applicant's SWPPP shall be developed in accordance with Part I.A.5. and be ready for implementation prior to submittal of an NOI or other application to be covered under this permit. The SWPPP shall be signed by the certified operator and the permittee. Applicants shall be fully ready to carry out the activities specified in their SWPPP and comply with this permit in order to be issued a certificate of coverage. New facilities shall have a certificate of coverage issued under this permit prior to commencement of discharge of storm water associated with industrial activity.

**b. Certification**

When submitting an NOI or other application for this permit, the permittee shall also submit a written certification that the facility is in compliance with the requirements identified in Parts I.A.3.b.1) through 5). The certification shall be a written statement that the SWPPP has been completed and is being implemented. It is not necessary to submit the SWPPP to the Department unless requested to do so. New facilities shall fulfill the requirements of subparagraphs 4) and 5) when industrial activity begins.

- 1) The source identification requirements of the SWPPP are completed and identified in the plan (see Part I.A.5.a.).
- 2) Non-storm water discharges are eliminated or authorized by an NPDES permit (see Part I.D.3.).
- 3) The facility has a certified storm water operator as required in Part I.A.3.a.1). All operators' names and certification numbers shall be included in the written certification. If a certified operator's number is not available at the time the written certification is submitted, provide the date the operator took the certification exam, the location of the Department's office where the exam was taken, and the signature of the person who took the exam.
- 4) Non-structural preventative measures and source controls are being implemented (see Part I.A.5.b.).
- 5) The structural storm water pollution controls (see Part I.A.5.c.), if needed, are installed and operational. If no structural controls are needed, indicate so in writing.

**PART I****Section A. Limitations And Monitoring Requirements****4. Schedules and Certifications for Storm Water Dischargers with Previous Permit Requirements for a Storm Water Pollution Prevention Plan**

A permittee who has been authorized to discharge storm water under a NPDES permit other than this permit, that required a Storm Water Pollution Prevention Plan (SWPPP), and who submits a Notice of Intent (NOI) or other Department-approved application for authorization to discharge under this permit, shall comply with the schedule and certification requirements identified in this section.

a. **Schedule**

Continue development and implementation of the SWPPP in accordance with the schedule established under the individual permit, or general permit and certificate of coverage, held previous to this permit. That schedule shall be enforceable under this permit. The SWPPP shall be updated in accordance with Part I.A.5.d.

b. **Certification**

When submitting an NOI or another application for this permit, the permittee shall also submit a written certification that the facility is in compliance with its current storm water general permit and certificate of coverage or the storm water pollution prevention requirements of its individual permit. The certification shall be a written statement that the SWPPP has been completed and is being implemented. It is not necessary to submit the SWPPP to the Department unless requested to do so. The written certification shall include the name and certification number of the certified storm water operator.

**PART I****Section A. Limitations And Monitoring Requirements****5. Storm Water Pollution Prevention Plan****a. Source Identification**

To identify potential sources of significant materials that can pollute storm water and subsequently be discharged from the facility, the SWPPP shall, at a minimum, include the following items:

- 1) A site map identifying the following: buildings and other permanent structures; storage or disposal areas for significant materials; secondary containment structures and descriptions of what they contain; storm water discharge outfalls (numbered for reference); location of storm water and non-storm water inlets contributing to each outfall; location of NPDES permitted discharges other than storm water; outlines of the drainage areas contributing to each outfall; structural runoff controls or storm water treatment facilities; areas of vegetation (with brief description such as lawn, old field, marsh, wooded, etc); areas of exposed and/or erodible soils; impervious surfaces (roofs, asphalt, concrete); name and location of receiving water(s); and areas of known or suspected impacts on surface waters as designated under Part 201 (Environmental Response) of the Michigan Act.
- 2) A list of all significant materials that could pollute storm water. For each material listed, the SWPPP shall include each of the following descriptions:
  - a) Ways in which each type of material has been or has reasonable potential to become exposed to storm water (e.g., spillage during handling; leaks from pipes, pumps, and vessels; contact with storage piles, contaminated materials or soils; waste handling and disposal; deposits from dust or overspray; etc.).
  - b) Identification of the outfall(s) through which the material may be discharged if released.
  - c) A listing of significant spills and significant leaks of polluting materials that occurred at areas that are exposed to precipitation or that otherwise discharge to a point source at the facility. The listing shall include spills that occurred over the three (3) years prior to the effective date of a certificate of coverage authorizing discharge under this permit. The listing shall include the date, volume and exact location of release, and the action taken to clean up the material and/or prevent exposure to storm water runoff or contamination of surface waters of the state. Any release that occurs after the SWPPP has been developed shall be controlled in accordance with the SWPPP and is cause for the SWPPP to be updated as appropriate within 14 calendar days of obtaining knowledge of the spill or loss.
  - d) If there is a Total Maximum Daily Load (TMDL) established by the Department for the receiving water, which restricts the discharge of any of the identified significant materials or constituents of those materials, then the SWPPP shall identify the level of control for those materials necessary to comply with the TMDL, and an estimate of the current annual load of those materials via storm water discharges to the receiving stream.
- 3) An evaluation of the reasonable potential for contribution of significant materials to runoff from at least the following areas or activities: loading, unloading, and other material handling operations; outdoor storage including secondary containment structures; outdoor manufacturing or processing activities; significant dust or particulate generating processes; discharge from vents, stacks and air emission controls; on-site waste disposal practices; maintenance and cleaning of vehicles, machines and equipment; areas of exposed and/or erodible soils; Sites of Environmental Contamination listed under Part 201 (Environmental Response) of the Michigan Act; areas of significant material residues; areas where animals congregate and leave wastes behind; and other areas where storm water may contact significant materials.
- 4) A summary of existing storm water discharge sampling data (if available) describing pollutants in storm water discharges associated with industrial activity at the facility. This summary shall be accompanied by a description of the suspected source(s) of the pollutants detected.

**PART I****Section A. Limitations And Monitoring Requirements****b. Preventive Measures and Source Controls, Non-Structural**

To prevent significant materials from contacting storm water at the source, the SWPPP shall, at a minimum, include each of the following non-structural controls:

- 1) A description of a program for routine preventive maintenance which includes inspection and maintenance of storm water management and control devices ( e.g., cleaning of oil/water separators and catch basins) as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters. A log of the inspection and corrective actions shall be maintained on file by the permittee, and shall be retained in accordance with Part I.A.5.f.
- 2) A schedule for comprehensive site inspection to include visual inspection of equipment, plant areas, areas of containment or past contamination, and structural pollution prevention and treatment controls, to be performed at least once every six (6) months. A report of the results of the comprehensive site inspection shall be prepared and retained in accordance with Part I.A.5.f. The report shall identify any incidents of non-compliance with the SWPPP or this permit. When there are no reportable incidents of non-compliance, the report shall contain a certification that the facility is in compliance with this permit.
- 3) A description of good housekeeping procedures to maintain a clean, orderly facility.
- 4) A description of material handling procedures and storage requirements for significant materials. Equipment and procedures for cleaning up spills shall be identified in the SWPPP and made available to the appropriate personnel. The procedures shall identify measures to prevent spilled materials or material residues on the outside of containers from being discharged into storm water. The SWPPP may include, by reference, requirements of either a Pollution Incident Prevention Plan (PIPP) prepared in accordance with the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code); a Hazardous Waste Contingency Plan prepared in accordance with 40 CFR 264 and 265 Subpart D, as required by Part 111 of the Michigan Act; or a Spill Prevention Control and Countermeasure (SPCC) Plan prepared in accordance with 40 CFR 112.
- 5) Identification of areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion. The SWPPP shall also identify measures used to control soil erosion and sedimentation.
- 6) A description of employee training programs which will be implemented to inform appropriate personnel at all levels of responsibility of the components and goals of the SWPPP. The SWPPP shall identify periodic dates for such training.
- 7) Identification of actions to limit the discharge of significant materials in order to comply with TMDL requirements.
- 8) Identification of significant materials expected to be present in storm water discharges following implementation of non-structural preventative measures and source controls.

**PART I****Section A. Limitations And Monitoring Requirements****c. Structural Controls for Prevention and Treatment**

**NOTE:** Permittees who do not need to construct structural controls in accordance with this part shall certify to the Department that structural controls are not needed at the facility and begin storm water monitoring, as required in Part I.A.2., within one year after the effective date of a certificate of coverage issued under this permit, or as soon as the non-structural controls are implemented.

Where implementation of the measures required by Part I.A.5.b. does not control storm water discharges in accordance with Part I.A.5.g., the SWPPP shall provide a description of the location, function, and design criteria of structural controls for prevention and treatment. Structural controls may be necessary:

- 1) To prevent uncontaminated storm water from contacting or being contacted by significant materials; or
- 2) If preventive measures are not feasible or are inadequate to keep significant materials at the site from contaminating storm water. Structural controls shall be used to treat, divert, isolate, recycle, reuse or otherwise manage storm water in a manner that reduces the level of significant materials in the storm water and provides compliance with the Water Quality Standards as identified under Part I.A.5.g.

**d. Keeping Plans Current**

- 1) The permittee shall review the SWPPP annually after it is developed and maintain written summaries of the reviews. Based on the review, the permittee shall amend the SWPPP as needed to ensure continued compliance with the terms and conditions of this permit.
- 2) The SWPPP developed under the conditions of a previous permit shall be amended as necessary to ensure compliance with this permit.
- 3) The SWPPP shall be updated or amended whenever changes or spills at the facility increase or have the potential to increase the exposure of significant materials to storm water, or when the SWPPP is determined by the permittee or the Department to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity. Updates based on increased activity or spills at the facility shall include a description of how the permittee intends to control any new sources of significant materials or respond to and prevent spills in accordance with the requirements of Parts I.A.5.a., I.A.5.b. and I.A.5.c.
- 4) The Department or authorized representative may notify the permittee at any time that the SWPPP does not meet minimum requirements. Such notification shall identify why the SWPPP does not meet minimum requirements. The permittee shall make the required changes to the SWPPP within 30 days after such notification from the Department or authorized representative, and shall submit to the Department a written certification that the requested changes have been made.
- 5) Amendments and updates shall be signed and retained with the SWPPP on site pursuant to Part I.A.5.e.

**e. Signature and SWPPP Review**

- 1) The SWPPP shall be signed by the storm water certified operator and by either the permittee or an authorized representative in accordance with Part I.A.5.i. The SWPPP shall be retained on-site at the facility which generates the storm water discharge.
- 2) The permittee shall make plans, reports, log books, storm water discharge sampling data (if collected), and supporting documents available upon request to the Department.

**f. Record Keeping**

The permittee shall maintain records of all SWPPP related inspection and maintenance activities. Records shall also be kept describing incidents such as spills or other discharges that can affect the quality of storm water runoff. All such records shall be retained for three (3) years.

**g. Water Quality Standards**

At the time of discharge, there shall be no violation of the Water Quality Standards in the receiving waters as a result of the storm water discharge. This requirement includes, but is not limited to, the following conditions:

**PART I****Section A. Limitations And Monitoring Requirements**

- 1) In accordance with Rule 323.1050 of the Water Quality Standards, the receiving waters shall not have any of the following unnatural physical properties as a result of this discharge in quantities which are or may become injurious to any designated use: unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits.
  - 2) Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits) shall be reported within 24 hours to the Department followed by a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition.
  - 3) Any pollutant for which a level of control is specified to meet a Total Maximum Daily Load (TMDL) established by the Department shall be controlled at the facility so that its discharge is reduced by the amount specified in the waste load allocation of the TMDL. Any reduction achieved through implementation of the non-structural controls or structural controls in accordance with Parts I.A.5.b. or I.A.5.c. shall count toward compliance with the TMDL.
- h. **Certified Operator Update**  
If the certified operator is changed or an additional certified operator is added, the permittee shall provide the name and certification number of the new certified operator to the Department. The new operator shall review and sign the SWPPP.
- i. **Signatory Requirements**  
All applications, reports or information submitted to the Department shall be signed and certified in accordance with 40 CFR 122.22.
- j. **Prohibition of Non-Storm Water Discharges**  
Discharges of material other than storm water shall be in compliance with an NPDES permit (other than this permit) issued for the discharge. Storm water shall be defined to include all of the following non-storm water discharges provided pollution prevention controls for the non-storm water component are identified in the SWPPP: discharges from fire hydrant flushing, potable water sources including water line flushing, fire system test water, irrigation drainage, lawn watering, routine building wash down which does not use detergents or other compounds, pavement wash waters where contamination by toxic or hazardous materials have not occurred (unless all contamination by toxic or hazardous materials have been removed) and where detergents are not used, air conditioning condensate, springs, uncontaminated groundwater, and foundation or footing drains where flows are not contaminated with process materials such as solvents. Discharges from fire fighting activities are authorized by this permit, but are exempted from the requirement to be identified in the SWPPP.

**6. Expiration and Reissuance**

If the permittee wishes to continue a discharge authorized under this permit beyond the permit's expiration date, the permittee shall submit a written request to the Department on or before October 1, 2010. A person holding a valid certificate of coverage under an expired general permit shall continue to be subject to the terms and conditions of the expired permit until the permit is terminated, revoked, or reissued.

If this permit is modified or reissued, the permittee shall: a) request coverage under the modified or reissued permit, b) apply for an individual NPDES permit, or c) request termination of discharge authorization. Lacking an adequate response, the permittee's authorization to discharge shall expire on the effective date of the reissued or modified permit.

If this permit is terminated or revoked, all authorizations to discharge under the permit shall expire on the date of termination or revocation.

**PART I**

**Section A. Limitations And Monitoring Requirements**

**7. Termination of General Permit Coverage**

If all storm water discharges associated with industrial activity that are authorized by a certificate of coverage issued under this permit are eliminated, the permittee may submit a request to the Department to terminate the certificate of coverage.

For a facility where industrial activity has ceased and no significant materials remain or are exposed to storm water the permittee may request termination of the certificate of coverage.

**8. Requirement to Obtain Individual Permit**

The Department may require any person who is authorized to discharge by a certificate of coverage issued under this permit, to apply for and obtain an individual NPDES permit if any of the following circumstances apply:

- a. the discharge is a significant contributor to pollution, or contains materials or constituents which require limiting to protect the receiving waters in accordance with applicable water quality standards, as determined by the Department on a case-by-case basis;
- b. the discharger is not complying or has not complied with the conditions of the permit or schedules included in a certificate of coverage;
- c. a change has occurred in the availability of demonstrated technology or practices for the control or abatement of waste applicable to the point source discharge;
- d. effluent standards or limitations are promulgated for point source discharges subject to this permit; and
- e. the Department determines that the criteria by which the certificate of coverage was issued under this permit no longer apply.

Any person may request the Department to take action pursuant to the provisions of Rule 2191 (Rule 323.2191 of the Michigan Administrative Code).



## PART II

### Section A. Definitions

This list of definitions may include terms not applicable to this permit.

**Bioaccumulative Chemical of Concern (BCC)** means a chemical which, upon entering the surface waters, by itself or as its toxic transformation product, accumulates in aquatic organisms by a human health bioaccumulation factor of more than 1000 after considering metabolism and other physiochemical properties that might enhance or inhibit bioaccumulation. The human health bioaccumulation factor shall be derived according to R 323.1057(5). Chemicals with half-lives of less than 8 weeks in the water column, sediment, and biota are not BCCs. The minimum bioaccumulation concentration factor (BAF) information needed to define an organic chemical as a BCC is either a field-measured BAF or a BAF derived using the biota-sediment accumulation factor (BSAF) methodology. The minimum BAF information needed to define an inorganic chemical as a BCC, including an organometal, is either a field-measured BAF or a laboratory-measured bioconcentration factor (BCF). The BCCs to which these rules apply are identified in Table 5 of R 323.1057 of the Water Quality Standards.

**Certificate of Coverage** means a document, issued by the Department, which authorizes a discharge under this permit.

**Department** means the Michigan Department of Environmental Quality.

**Detection Level** means the lowest concentration or amount of the target analyte that can be determined to be different from zero by a single measurement at a stated level of probability.

**Grab sample** is a single sample taken at neither a set time nor flow.

**Individual Permit** means a site-specific NPDES permit.

**Inlet** means a catch basin, roof drain, conduit, drain tile, retention pond riser pipe, sump pump, or other point where storm water or wastewater enters into a closed conveyance system prior to discharge off site or into waters of the state.

**Interference** is a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:  
1) inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and  
2) therefore, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or, of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act. [This definition does not apply to sample matrix interference.]

**Maximum Acceptable Toxicant Concentration (MATC)** means the concentration obtained by calculating the geometric mean of the lower and upper chronic limits from a chronic test. A lower chronic limit is the highest tested concentration that did not cause the occurrence of a specific adverse effect. An upper chronic limit is the lowest tested concentration which did cause the occurrence of a specific adverse effect and above which all tested concentrations caused such an occurrence.

**National Pretreatment Standards** are the regulations promulgated by or to be promulgated by the Federal Environmental Protection Agency pursuant to Section 307(b) and (c) of the Federal Act. The standards establish nationwide limits for specific industrial categories for discharge to a POTW.

**New Facility** means a facility located on a newly-developed or redeveloped site which is ready to begin industrial operations on or after the effective date of this permit.

**Noncontact Cooling Water** is water used for cooling which does not come into direct contact with any raw material, intermediate product, by-product, waste product or finished product.

**Pretreatment** is reducing the amount of pollutants, eliminating pollutants, or altering the nature of pollutant properties to a less harmful state prior to discharge into a public sewer. The reduction or alteration can be by physical, chemical, or biological processes, process changes, or by other means. Dilution is not considered pretreatment unless expressly authorized by an applicable National Pretreatment Standard for a particular industrial category.

## PART II

### Section A. Definitions

**Point Source Discharge** means a discharge from any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container or rolling stock. Changing the surface of land or establishing grading patterns on land will result in a point source where the runoff from the site is ultimately discharged to waters of the state.

**Polluting Materials** means oil and any material, in solid or liquid form, identified as polluting material under the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code).

**POTW** is a publicly owned treatment works.

**Quantification Level** means the measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calculated at a specified concentration above the detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant.

**Regional Administrator** is the Region 5 Administrator, U.S. EPA, located at R-19J, 77 W. Jackson Blvd., Chicago, Illinois 60604.

**Secondary Containment Structure** means a unit, other than the primary container in which significant materials are packaged or held, which is required by State or Federal law to prevent the escape of significant materials by gravity into sewers, drains, or otherwise directly or indirectly into any sewer system or to the surface or ground waters of this state.

**Significant Contributor to Pollution** means a storm water discharge from a facility specifically designated by the Department or Regional Administrator to need an NPDES permit in accordance with Section 402(p)(2)(E) of the Federal Act or Rule 323.2109(d) of the Michigan Administrative Code.

**Significant Materials** means any material which could degrade or impair water quality, including but not limited to: raw materials; fuels; solvents, detergents, and plastic pellets; finished materials such as metallic products; hazardous substances designated under section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (See 40 CFR 372.65); any chemical the facility is required to report pursuant to section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA); polluting materials (as defined above); Hazardous Wastes as defined in Part 111 of the Michigan Act; fertilizers; pesticides; and waste products such as ashes, slag, sludge, and plant and animal wastes that have the potential to be released with storm water discharges.

**Significant Spills and Significant Leaks** means any release of a polluting material reportable under the Part 5 Rules of the Michigan Administrative Code.

**Site of Environmental Contamination** means land on Michigan's List of Sites of Environmental Contamination pursuant to Part 201 (Environmental Response) of the Michigan Act.

**Storm Water** means storm water runoff, snow melt runoff, surface runoff and drainage, and non-storm water included under the conditions of Part I.A.5.j.

**Total Maximum Daily Load or TMDL** means the amount of pollutant load a water body such as a lake or stream can assimilate and still meet Water Quality Standards.

**Water Quality Standards** means the Part 4 Water Quality Standards developed under Part 31 of Act No. 451 of the Public Acts of 1994, as amended, being Rules 323.1041 through 323.1117 of the Michigan Administrative Code.

**PART II****Section B. Monitoring Procedures****1. Representative Samples**

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

**2. Test Procedures**

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to Section 304(h) of the Federal Act (40 CFR Part 136 - Guidelines Establishing Test Procedures for the Analysis of Pollutants), unless specified otherwise in this permit. Requests to use test procedures not promulgated under 40 CFR Part 136 for pollutant monitoring required by this permit shall be made in accordance with the Alternate Test Procedures regulations specified in 40 CFR 136.4. These requests shall be submitted to the Chief of the Permits Section, Water Bureau, Michigan Department of Environmental Quality, P.O. Box 30273, Lansing, Michigan, 48909-7773. The permittee may use such procedures upon approval.

The permittee shall periodically calibrate and perform maintenance procedures on all analytical instrumentation at intervals to ensure accuracy of measurements. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Control/Quality Assurance program.

**3. Instrumentation**

The permittee shall periodically calibrate and perform maintenance procedures on all monitoring instrumentation at intervals to ensure accuracy of measurements.

**4. Recording Results**

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information: 1) the exact place, date, and time of measurement or sampling; 2) the person(s) who performed the measurement or sample collection; 3) the dates the analyses were performed; 4) the person(s) who performed the analyses; 5) the analytical techniques or methods used; 6) the date of and person responsible for equipment calibration; and 7) the results of all required analyses.

**5. Records Retention**

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Regional Administrator or the Department.

**PART II****Section C. Reporting Requirements****1. Noncompliance Notification**

Compliance with all applicable requirements set forth in the Federal Act, Parts 31 and 41 of the Michigan Act, and related regulations and rules is required. All instances of noncompliance shall be reported as follows:

- a. 24-hour reporting - Any noncompliance which may endanger health or the environment (including maximum daily concentration discharge limitation exceedances) shall be reported, verbally, within 24 hours from the time the permittee becomes aware of the noncompliance. A written submission shall also be provided within five (5) days.
- b. other reporting - The permittee shall report, in writing, all other instances of noncompliance not described in a. above at the time monitoring reports are submitted; or, in the case of retained self-monitoring, within five (5) days from the time the permittee becomes aware of the noncompliance.

Written reporting shall include: 1) a description of the discharge and cause of noncompliance; and 2) the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and the steps taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

**2. Spill Notification**

The permittee shall immediately report any release of any polluting material which occurs to the surface waters or groundwaters of the state, unless the permittee has determined that the release is not in excess of the threshold reporting quantities specified in the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code), by calling the Department at the number indicated in the certificate of coverage, or if the notice is provided after regular working hours call the Department's 24-hour Pollution Emergency Alerting System telephone number, 1-800-292-4706 (calls from out-of-state dial 1-517-373-7660).

Within ten (10) days of the release, the permittee shall submit to the Department a full written explanation as to the cause of the release, the discovery of the release, response (clean-up and/or recovery) measures taken, and preventative measures taken or a schedule for completion of measures to be taken to prevent reoccurrence of similar releases.

**3. Upset Noncompliance Notification**

If a process "upset" (defined as an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee) has occurred, the permittee who wishes to establish the affirmative defense of upset, shall notify the Department by telephone within 24-hours of becoming aware of such conditions; and within five (5) days, provide in writing, the following information:

- a. that an upset occurred and that the permittee can identify the specific cause(s) of the upset;
- b. that the permitted wastewater treatment facility was, at the time, being properly operated; and
- c. that the permittee has specified and taken action on all responsible steps to minimize or correct any adverse impact in the environment resulting from noncompliance with this permit.

In any enforcement proceedings, the permittee, seeking to establish the occurrence of an upset, has the burden of proof.

**PART II****Section C. Reporting Requirements****4. Bypass Prohibition and Notification**

- a. Bypass Prohibition - Bypass is prohibited unless:
- 1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
  - 2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass; and
  - 3) The permittee submitted notices as required under Part II.C.4.b. or Part II.C.4.c. below.
- b. Notice of Anticipated Bypass - If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Department, if possible at least ten (10) days before the date of the bypass, and provide information about the anticipated bypass as required by the Department. The Department may approve an anticipated bypass, after considering its adverse effects, if it will meet the three conditions listed in Part II.C.4.a. above.
- c. Notice of Unanticipated Bypass - The permittee shall submit notice to the Department of an unanticipated bypass by telephone at the number identified in a certificate of coverage issued under this permit (if the notice is provided after regular working hours, use the following number: 1-800-292-4706) as soon as possible, but no later than 24 hours from the time the permittee becomes aware of the circumstances.
- d. Written Report of Bypass - A written submission shall be provided within five (5) working days of commencing any bypass to the Department, and at additional times as directed by the Department. The written submission shall contain a description of the bypass and its cause; the period of bypass, including exact dates and times, and if the bypass has not been corrected, the anticipated time it is expected to continue; steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass; and other information as required by the Department.
- e. Bypass Not Exceeding Limitations - The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of parts II.C.4.a., 4.b., 4.c., and 4.d., above.
- f. Definitions
- 1) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
  - 2) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

**5. Compliance Dates Notification**

Within 14 days of every compliance date specified in this permit, the permittee shall submit a written notification to the Department indicating whether or not the particular requirement was accomplished. If the requirement was not accomplished, the notification shall include an explanation of the failure to accomplish the requirement, actions taken or planned by the permittee to correct the situation, and an estimate of when the requirement will be accomplished. If a written report is required to be submitted by a specified date and the permittee accomplishes this, a separate written notification is not required.

**PART II****Section C. Reporting Requirements****6. Changes in Facility Operations**

Any anticipated action or activity, including but not limited to facility expansion, production increases, or process modification, which will result in new or increased loadings of pollutants to the receiving waters must be reported to the Department by a) submission of an increased use request (application) and all information required under Rule 323.1098 (Antidegradation) of the Water Quality Standards or b) by notice if the following conditions are met: 1) the action or activity will not result in a change in the types of wastewater discharged or result in a greater quantity of wastewater than currently authorized by this permit; 2) the action or activity will not result in violations of the effluent limitations specified in this permit; and 3) the action or activity is not prohibited by the requirements of Part II.C.7. Following such notice, the permit may be modified according to applicable laws and rules to specify and limit any pollutant not previously limited.

**7. Bioaccumulative Chemicals of Concern (BCC)**

Consistent with the requirements of Rules 323.1098 and 323.1215 of the Michigan Administrative Code, the permittee is prohibited from undertaking any action that would result in a lowering of water quality from an increased loading of a BCC unless an increased use request and antidegradation demonstration have been submitted and approved by the Department.

**8. Transfer of Ownership or Control**

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the permittee shall submit to the Department 30 days prior to the actual transfer of ownership or control a written agreement between the current permittee and the new permittee containing: 1) the legal name and address of the new owner; 2) a specific date for the effective transfer of permit responsibility, coverage and liability; and 3) a certification of the continuity of or any changes in operations, wastewater discharge, or wastewater treatment.

If the new permittee is proposing changes in operations, wastewater discharge, or wastewater treatment, the Department may propose modification of this permit in accordance with applicable laws and rules.

**PART II****Section D. Management Responsibilities****1. Duty to Comply**

All discharges authorized herein shall be consistent with the terms and conditions of this permit and the facility's certificate of coverage (COC). The discharge of any pollutant identified in this permit and/or the facility's COC more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.

It is the duty of the permittee to comply with all the terms and conditions of this permit and the facility's COC. Any noncompliance with the Effluent Limitations, Special Conditions, or terms of this permit or the facility's COC constitutes a violation of the Michigan Act and/or the Federal Act and constitutes grounds for enforcement action; for COC termination, revocation and reissuance, or modification; or denial of an application for permit or COC renewal.

**2. Operator Certification**

The permittee shall have the waste treatment facilities under direct supervision of an operator certified at the appropriate level for the facility certification by the Department, as required by Sections 3110 and 4104 of the Michigan Act.

**3. Facilities Operation**

The permittee shall, at all times, properly operate and maintain all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures.

**4. Power Failures**

In order to maintain compliance with the effluent limitations of this permit and prevent unauthorized discharges, the permittee shall either:

- a. provide an alternative power source sufficient to operate facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit; or
- b. upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, the permittee shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the effluent limitations and conditions of this permit.

**5. Adverse Impact**

The permittee shall take all reasonable steps to minimize any adverse impact to the surface waters or groundwaters of the state resulting from noncompliance with any effluent limitation specified in this permit including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in noncompliance.

**6. Containment Facilities**

The permittee shall provide facilities for containment of any accidental losses of concentrated solutions, acids, alkalis, salts, oils, or other polluting materials in accordance with the requirements of the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code). For Publicly Owned Treatment Works (POTW), these facilities shall be approved under Part 41 of the Michigan Act. Other state and federal laws and rules that require secondary containment include but are not limited to the following for flammable and combustible liquids: 1974 P.A. 154 (Michigan), as amended, Part 75 Flammable and Combustible Liquid Rules along with Federal Safety Standard 29 CFR 1910.106, 1941 P.A. 207 (Michigan), as amended, and Michigan Storage and Handling of Flammable And Combustible Liquids (FL/CL) rules; for highly hazardous chemicals: 1974 P.A. 154, as amended, and 29 CFR 1910.119; for hazardous waste: Michigan Act, Part 111 and rules, and the Federal Resource Conservation and Recovery Act (RCRA) 40 CFR 260 to 299; and for oil: 40 CFR 112.

**PART II****Section D. Management Responsibilities****7. Waste Treatment Residues**

Residuals (i.e. solids, sludges, biosolids, filter backwash, scrubber water, ash, grit or other pollutants) removed from or resulting from treatment or control of wastewaters, shall be disposed of in an environmentally compatible manner and according to applicable laws and rules. These laws may include, but are not limited to, the Michigan Act, Part 31 for protection of water resources, Part 55 for air pollution control, Part 111 for hazardous waste management, Part 115 for solid waste management, Part 121 for liquid industrial wastes, Part 301 for protection of inland lakes and streams, and Part 303 for wetlands protection. Such disposal shall not result in any unlawful pollution of the air, surface waters or groundwaters of the state.

**8. Treatment System Closure**

In the event that discharges from a treatment system are planned to be eliminated, the permittee shall submit a closure plan to the Department for approval. The closure plan shall include characterization of any wastewater and residuals which will remain on-site after the discharges are eliminated, along with disposal methods, proposed schedule, and any other relevant information as required by the Department. Closure activities involving waste treatment residuals shall be consistent with Part II.D.7. of this permit.

The permittee shall implement the closure activities in accordance with the approved plan. Any wastewater or residual disposal inconsistent with the approved plan shall be considered a violation of this permit. After proper closure of the treatment system, this permit may be terminated.

**9. Right of Entry**

The permittee shall allow the Department, any agent appointed by the Department or the Regional Administrator, upon the presentation of credentials:

- a. to enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and
- b. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect process facilities, treatment works, monitoring methods and equipment regulated or required under this permit; and to sample any discharge of pollutants.

**10. Availability of Reports**

Except for data determined to be confidential under Section 308 of the Federal Act and Rule 2128 (Rule 323.2128 of the Michigan Administrative Code), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department and the Regional Administrator. As required by the Federal Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Act and Sections 3112, 3115, 4106 and 4110 of the Michigan Act.



**PART II****Section E. Activities Not Authorized by This Permit****1. Discharges Not Authorized by This Permit**

This permit does not authorize the following storm water discharges:

- a. Storm water discharges associated with industrial activity that are permitted by an existing NPDES individual permit or a different general permit;
- b. Storm water discharges associated with construction activities as identified under 40 CFR 122.26(b)(14)(x). Storm water discharges associated with industrial activity that are mixed with storm water discharges associated with construction activities may be authorized by this permit if the discharge from the construction activity is in compliance with a national permit for storm water discharge from a construction activity (Rule 323.2190 of the Michigan Administrative Code);
- c. Storm water discharges that have been determined by the Department to be contributing to unlawful pollution that cannot be adequately guarded against under the requirements of this permit. Such a determination constitutes grounds for revocation of a certificate of coverage issued under this permit;
- d. Storm water discharges associated with industrial activity from inactive mining, inactive landfill, or inactive oil and gas operations occurring on federal lands where an operator cannot be identified;
- e. Storm water discharges for which federal effluent limitation guidelines exist. The following industrial categories have storm water effluent limitation guidelines in the Code of Federal Regulations: cement manufacturing (40 CFR 411); feedlots (40 CFR 412); fertilizer manufacturing (40 CFR 418); petroleum refining (40 CFR 419); phosphate manufacturing (40 CFR 422); steam electric (40 CFR 423); coal mining (40 CFR 434); mineral mining and processing (40 CFR 436); ore mining and dressing (40 CFR 440); and asphalt emulsion (40 CFR 443 Subpart A);
- f. Storm water discharges to groundwaters; and
- g. Storm water from a new facility discharging to wild or wilderness rivers or water bodies within the boundaries of national lakeshores or national parks, which are designated "outstanding state resource waters" pursuant to Michigan Water Quality Standards.

**2. Civil and Criminal Liability**

Except as provided in permit conditions on "Bypass" (Part II.C.4. pursuant to 40 CFR 122.41(m)), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance, whether or not such noncompliance is due to factors beyond the permittee's control, such as accidents, equipment breakdowns, or labor disputes.

**3. Oil and Hazardous Substance Liability**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee may be subject under Section 311 of the Federal Act except as are exempted by federal regulations.

**4. State Laws**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Federal Act.

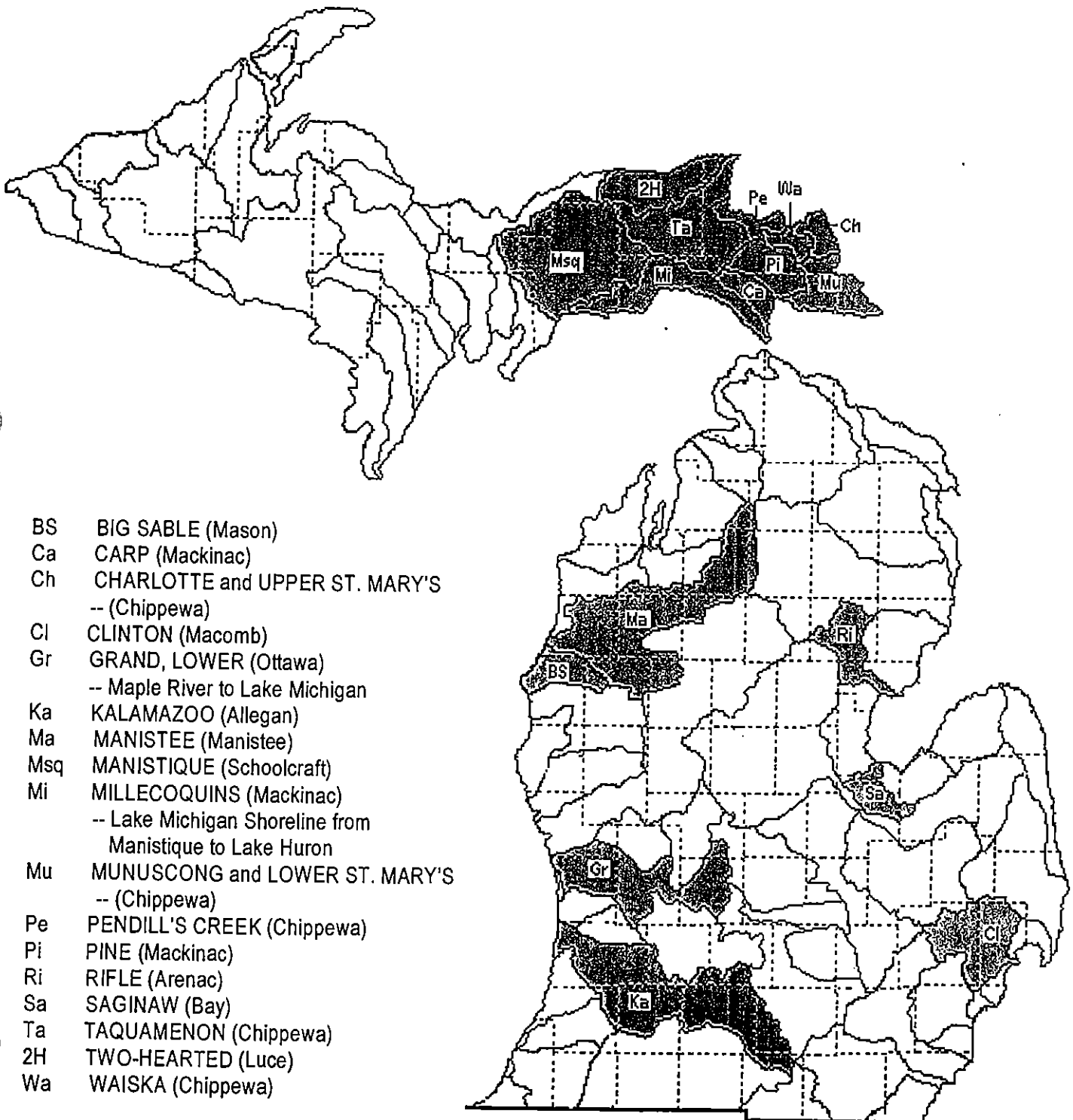
**5. Property Rights**

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits or approvals as may be required by law.

## PART II

**Section F. Cycle-Year 1 Watersheds**

Cycle-year 1 watersheds are shaded in the map below, and named according to the principal water body in the watershed. On the key below, the name of the principal water body is followed by the name of the county (in parentheses) where the most downstream segment of the principal water body is located.



## APPENDIX A

Samples shall be collected, preserved, handled, and analyzed using EPA approved methods (see 40 CFR part 136) and quantification levels. Alternative methods shall be approved by the Department. Some desired quantification levels are listed below.

| Parameter           | Typical Quantification Level (µg/l) |
|---------------------|-------------------------------------|
| Total Antimony      | 1                                   |
| Total Arsenic       | 1                                   |
| Total Beryllium     | 1                                   |
| Total Cadmium       | 0.2                                 |
| Hexavalent Chromium | 5                                   |
| Total Chromium      | 10                                  |
| Total Copper        | 1                                   |
| Cyanide, Available  | 2                                   |
| Total Cyanide       | 5                                   |
| Total Lead          | 1                                   |
| Total Mercury       | 0.0005                              |
| Total Nickel        | 5                                   |
| Total Selenium      | 1                                   |
| Total Silver        | 0.5                                 |
| Total Thallium      | 1                                   |
| Total Zinc          | 10                                  |

ATTACHMENT 5

EXECUTED NOTICE OF INTENT



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER BUREAU  
www.michigan.gov/deq

DEQ only-do not write in this space

**NOTICE OF INTENT**  
FOR COVERAGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY  
By Authority of Act 451, PA 1994, Part 31

Submission of this Notice of Intent (NOI) constitutes notice that the party identified as Owner/Permittee requests authorization to discharge under the NPDES General Permit issued for storm water discharges associated with industrial or other activity in Michigan. The Michigan Department of Environmental Quality may deny coverage under the general permit and require submittal of an application form for an individual permit. Becoming a permittee obligates a discharger to comply with the terms and conditions of the General Permit, including **annual fee of \$260.00 will be billed each JANUARY - DO NOT SEND MONEY WITH THIS APPLICATION.** Failure to comply with these provisions may result in fines of up to \$25,000 per day and the possibility of imprisonment, in accordance with Act 451, PA 1994, Part 31.

| FACILITY INFORMATION (where discharge occurs)                                                                                                                                                                    |             |                                 | OWNER/PERMITEE INFORMATION                                                       |             |                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------|----------------------------------------------------------------------------------|-------------|-------------------|
| SITE/FACILITY NAME<br>Saginaw Nodular Industrial Land                                                                                                                                                            |             |                                 | NAME<br>RACER Trust                                                              |             |                   |
| ADDRESS<br>2100 Veterans Memorial Parkway                                                                                                                                                                        |             |                                 | ADDRESS<br>2930 Ecorse Road                                                      |             |                   |
| CITY<br>Saginaw                                                                                                                                                                                                  | STATE<br>MI | ZIP CODE<br>48601               | CITY<br>Ypsilanti                                                                | STATE<br>MI | ZIP CODE<br>48198 |
| RECEIVING WATERS<br>Saginaw River                                                                                                                                                                                |             |                                 | CONTACT PERSON NAME AND EMAIL ADDRESS<br>Grant Trigger (gtrigger@racertrust.org) |             |                   |
| LATITUDE<br>43.450000000000003                                                                                                                                                                                   |             | LONGITUDE<br>-83.91887999999995 | CONTACT PERSON'S TELEPHONE NUMBER<br>313-486-2908                                |             |                   |
| ___ 1/4 of ___ 1/4 of Section ___<br>Town: _____ Range: _____<br>County: _____                                                                                                                                   |             |                                 | <b>MAILING INFORMATION (for billing)</b>                                         |             |                   |
|                                                                                                                                                                                                                  |             |                                 | NAME<br>Same as Owner Above                                                      |             |                   |
| Is the facility discharge: (must complete) New <input checked="" type="checkbox"/> or Existing <input type="checkbox"/><br>Facility started operations:<br><br>If existing with NPDES coverage: NPDES number(s): |             |                                 | ADDRESS                                                                          |             |                   |
|                                                                                                                                                                                                                  |             |                                 | CITY<br>STATE<br>ZIP CODE                                                        |             |                   |
|                                                                                                                                                                                                                  |             |                                 | TELEPHONE NUMBER (INCLUDING AREA CODE)                                           |             |                   |

|                                                                            |                                  |
|----------------------------------------------------------------------------|----------------------------------|
| CERTIFIED STORM WATER OPERATOR NAME (INDUSTRIAL ONLY):<br>Steve Hoevemeyer | CERTIFICATION NUMBER:<br>I-10477 |
|----------------------------------------------------------------------------|----------------------------------|

**PRIMARY STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE** (this information can be found in the corporate tax returns under Schedule K listed as the "Business Activity Code" or the "Manufactures Identity Code")

SIC code may no longer be applicable as there are no operations at the Site. NAICS code is: 525920

|  |  |  |  |
|--|--|--|--|
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TO DETERMINE THE PRIMARY INDUSTRIAL ACTIVITY, USE THE VALUE OF NET REVENUES. IF SUCH INFORMATION IS NOT AVAILABLE FOR A PARTICULAR FACILITY, THE NUMBER OF EMPLOYEES OR PRODUCTION RATE FOR EACH PROCESS MAY BE COMPARED. THE OPERATION THAT GENERATES THE MOST NET REVENUE OR EMPLOYS THE MOST PERSONNEL IS THE OPERATION IN WHICH THE FACILITY IS PRIMARILY ENGAGED.

**FACILITY IS ENGAGED IN:** CHECK THOSE THAT APPLY (if none apply, skip this block)

- |                                                                          |                                                                         |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------|
| <input type="checkbox"/> HAZARDOUS WASTE TREATMENT, STORAGE, OR DISPOSAL | <input type="checkbox"/> LANDFILL                                       |
| <input type="checkbox"/> LAND APPLICATION SITE OR OPEN DUMP              | <input type="checkbox"/> STEAM ELECTRIC POWER GENERATING FACILITY       |
| <input type="checkbox"/> SEWAGE TREATMENT WORKS                          | COAL HANDLING? <input type="checkbox"/> YES <input type="checkbox"/> NO |

Any person requesting authorization to discharge from an area described below may be subject to the terms of the NPDES General Permit for storm water discharges with **required monitoring**, and should examine the requirements of that permit prior to submitting this NOI. (if none apply skip the block)

☐ **SECONDARY CONTAINMENT**  
I (we) request to discharge storm water to a surface water of the state from a secondary containment structure installed at the facility as required by required by state or federal law.  
**\*Request not necessary if discharging storm water to a sanitary or combined sewer system.**

X ☒ **ENVIRONMENTAL CONTAMINATION SITE**  
I (we) request to discharge storm water from an area identified on Michigan's list of Sites of Environmental Contamination pursuant to the Natural Resources and Environmental Protection Act, PA 451 of 1994, Part 201(formerly 307).  
**\*Request only necessary if storm water comes into contact with contaminated materials.**

☐ **OTHER SIGNIFICANT CONTRIBUTOR**  
The Department of Environmental Quality has determined that the storm water discharges from this facility are a significant contributor of pollutants to waters of the state.

### CERTIFICATION

**State of Michigan regulations require this form be signed as follows:**

**Corporation:** By the principal executive officer or vice president or higher, or his/her designated representative if the representative is responsible for the overall operation of the facility from which the discharge described originates.

**Partnership:** By a general partner

**Sole Proprietorship:** By the proprietor

**Municipal, State, or Other Public Facility:** By a principal executive officer, the mayor, village president, city or village manager, or other duly authorized employee

**\*\*Note: If the signatory is not listed above, but is authorized to sign the Application please provide documentation of that authorization.**

I certify that my facility has developed a **Storm Water Pollution Prevention Plan (SWPPP)** according to the requirements of the Storm Water General Permit.

I certify that my facility has **no unauthorized discharges**.

I certify that my facility has implemented the **non-structural controls** as described in the **SWPPP**. New facilities shall fulfill requirement when industrial activity begins.

I certify my facility has completed construction and will put into operation all **structural controls** as described in the **SWPPP**. If necessary, new facilities shall fulfill requirement when industrial activity begins.

I certify, under penalty of law, that this document and all attachments were prepared by me, or under my direction or supervision in accordance with a system to assure qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) 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 there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I understand that my signature constitutes a legal agreement to comply with the requirements of the appropriate NPDES General Storm Water Permit. I certify under penalty of law that I possess full authority on behalf of the legal owner/permittee to sign and submit this Notice of Intent.

Printed Name

Grant Trigger

Title

Michigan Clean-Up Manager

Signature



Date

1-25-12

IF YOU HAVE ANY QUESTIONS ABOUT THE PREPARATION OF THIS FORM, PLEASE CALL 517-335-4137.

RETURN THIS COMPLETED FORM (original signatures only), AND ANY ATTACHMENTS TO:

KELLY PLOEHN  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER BUREAU  
2<sup>nd</sup> FLOOR NORTH  
525 WEST ALLEGAN STREET  
P.O. BOX 30273  
LANSING MI 48909