



**ELECTRONIC SUBMITTAL ([NPDES.GeneralPermits@epa.gov](mailto:NPDES.GeneralPermits@epa.gov))  
AND  
OVERNIGHT DELIVERY**

October 24, 2005

US Environmental Protection Agency  
RGP-NOI Processing  
Municipal Assistance Unit (CMU)  
1 Congress Street, Suite 1100  
Boston, MA 02114-2023

RE: NPDES REMEDIATION GENERAL PERMIT – NOI Submittal  
Shell-Branded Service Station  
380 Southbridge Street  
Auburn, Worcester County, MA

To Whom It May Concern:

On September 9, 2005, the USEPA published the NPDES Remediation General Permit ("RGP") in the Federal Register. It stated the deadline for submittal of Notice of Intents ("NOI") or individual NPDES applications for those facilities currently discharging under USEPA Permit Exclusions was October 10, 2005. On September 19, 2005, NewFields requested, in writing, a 60-day extension to the October 10, 2005 deadline. On October 6, 2005, George Papadopoulos granted an extension until October 24, 2005 via electronic mail. The electronic mail stated that in cases where the permittee was unable to submit all the required information by October 24, 2005, the application should be submitted with as much information as possible and supplemental data provided when it becomes available. Thus NewFields Princeton LLC, on behalf of Motiva Enterprises LLC, is submitting a complete NOI application package for the above referenced facility.

The above referenced facility is operating as a retail gasoline service station. Remediation of the facility is being conducted under the Massachusetts Contingency Plan (310 CMR 40.0000). A groundwater remediation system is currently operating under EPA Permit Exclusion #MA-02I-041. Pursuant to the NPDES RGP requirements, samples of the influent to the remediation system have been taken and analyzed by State of Massachusetts certified laboratories. The final data packages and associated quality control/ quality assurance ("QA/QC") documents are enclosed herein.

The results of the influent sampling indicate the presence of metals above the Appendix III and Appendix IV (0-5 dilution range) limitations for lead and zinc. It should be noted that these metals are naturally occurring in the groundwater and are not associated with the gasoline service station remediation project. A sample of zinc was taken in the receiving stream, upstream of the discharge point. It showed non-detectable levels of Zinc.

Since the dilution factor of the receiving stream was calculated at 2.03 using the USGS Stream Stats Program, a total hardness sample will be taken from the receiving stream, and effluent of the system, in order to calculate site-specific metal limitations. If the site specific metal limitations calculated are higher than the Appendix IV limitations, which were calculated using a MA statewide average hardness of 50 mg/l CaCO<sub>3</sub>, the permittee reserves the right to submit an individual NPDES application as specified in the *Response to Comments on the October 2004 Proposed Remediation General Permit ("Response to Comments")* document posted on the EPA website.

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The NPDES Remediation General Permit and associated *Response to Comments* document, allow the permittee to request revisions to the permit conditions based upon site-specific conditions. The following is a list of the requested revisions for this facility.

#### **TEMPERATURE**

In the *Response to Comments* document, the EPA agreed that "temperature limits should only apply if the water treatment contains a heating process that can alter the temperature of the discharge and therefore impact the receiving water body"....Therefore the EPA will review each NOI and determine whether the discharge has the potential to affect the temperature sufficiently enough to require monitoring". Since the existing groundwater treatment system does not, and will not, alter the temperature of the receiving waterbody, we are requesting that the EPA not impose monitoring and sampling requirements for temperature at the above referenced location.

#### **PH**

In the *Response to Comments* document, the EPA recognized that "in many cases, the pH will not be altered by the operation of the water treatment system." Thus Part I.C.2. of the RGP allows permittees in Massachusetts to request the pH range be widened to within 6.0 - 9.0 standard units (SU) or another range due to naturally occurring conditions in the receiving water. Similarly, permittees may request such a change if the naturally occurring source water is unaltered by the permittee's operation. The current pH limitation for Class B waters in Massachusetts is 6.5 - 8.3 SU. The measured pH of Dark Brook (i.e. the receiving waterbody) is 5.0 SU. Since the pH of the receiving waterbody is 5.0 SU and the permittee's operating will not alter the pH, we are requesting the pH range be widened to 5.0 - 9.0 SU for this facility.

#### **EXEMPTION FROM INITIAL START-UP SAMPLING REQUIREMENTS**

In the *Response to Comments* document, the EPA agreed that "treatment systems operating under the EPA Permit Exclusion that have been discharging for several years, unless the system has been down for 45 days or more as of the date that the final RGP becomes effective, can be exempted from the initial start-up sampling requirements." Since the referenced remediation system has been discharging under an EPA Permit Exclusion, and has not been down for greater than 45 days as of the date the RGP became effective (September 9, 2005), we are requesting exemption from the initial start-up sampling requirements listed in the RGP.

#### **COMPLIANCE PERIOD**

In the *Response to Comments* document, the EPA stated they "will make every effort to provide existing dischargers with sufficient transition time to make any necessary changes to the treatment system in order to comply with the RGP." Based on the influent sampling results enclosed herein, the EPA may impose sampling for parameters not previously required (e.g. Zinc), or lower limitations on parameters currently required. In order to avoid ceasing operation of the groundwater remediation system due to the risk of Notice of Violations (NOVs) and monetary penalties, the EPA should permit a compliance period of 30 months years. During this compliance period the EPA should waive the limitations on those parameters not previously required and maintain the existing limit on those parameters currently required to be sampled on a monthly basis under the EPA Permit Exclusion for a period of 30 months from the effective date of the permit. Regulation 40 CFR Part 122.47 allows a maximum compliance period of three years.

A compliance period of 30 months years is requested for the following reasons:

- The permittee needs to collect additional influent, midpoint and effluent data from the existing remediation system over a period of 12 months in order to determine if a system modification is warranted; one year is needed to account for the temperature changes and groundwater table fluctuations.
- If the sampling results indicate a system modification is warranted, an additional 18 months years is needed in order for the following activities to be performed: redesign of the treatment system by a professional engineer, research of various treatment options, obtain local permits, obtain access agreements, obtain capital dollars for equipment purchase, purchase equipment, install equipment, power drop modifications, existing treatment shed expansions and pilot testing the new treatment equipment.

## APPROVAL OF ALTERNATE METHODOLOGIES

### HEXAVALENT CHROMIUM

In the *Response to Comments* document, the EPA agreed that "Method 7196A is a possible substitute" for the hexavalent chromium methods 218.6 and 1636. To use this method, permittees were instructed to request it individually as an alternative test procedure. The permittee was unable to locate any labs able to run hexavalent chromium by method 218.6 or 1636 since they are considered outdated methods. Method 7196A is currently utilized. The required ML of 10 ug/l is achievable by this method. Thus we are requesting the EPA approve method 7196A for hexavalent chromium for this facility.

### TOTAL CHROMIUM

In the *Response to Comments* document, the EPA allowed methods 200.15, 200.7, 200.8, 200.9, 218.1 or 1620 to be utilized for the analysis of Total Chromium. Method 6010B is the SW846 approved equivalent method to 200.7. Therefore we are requesting approval of method 6010B for total chromium (see attached letter from Accutest Laboratories).

### TOTAL CYANIDE

Appendix VI of the NPDES RGP specifies the test method for Total Cyanide is 335.4. This method has not been approved for use to date, therefore method 335.3 was utilized.

## APPROVAL OF ALTERNATE MLs

### TOTAL ZINC

The ML listed for Total Zinc using an ICP test method is 10 ug/l. A survey of laboratories showed that the lowest ML obtainable was 20 ug/l. Thus we are requesting the USEPA accept this alternate ML. The laboratory QA/QC data deliverable package has been enclosed for your convenience.

### TOTAL COPPER

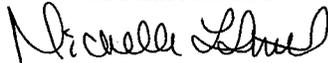
The ML listed for Total Copper using an ICP test method is 5 ug/l. A survey of laboratories showed that the lowest ML obtainable was 25 ug/l with an instrument detection level (IDL) of 5 ug/l. Thus we are requesting the USEPA accept this alternate ML. The laboratory QA/QC data deliverable package has been enclosed for your convenience.

### ETHYLENE DIBROMIDE

The ML listed for Ethylene Dibromide using method 504.1 is 0.01 ug/l. A survey of laboratories showed that the lowest ML obtainable was 0.015 ug/l. Thus we are requesting the USEPA accept this alternate ML. The laboratory QA/QC data deliverable package has been enclosed for your convenience.

If you have any questions, or require any additional information, I may be contacted at (732) 224-7066 extension 17.

Respectfully,  
NewFields Princeton LLC

  
Michelle L. Smith  
Project Scientist

**US Environmental Protection Agency  
RGP-NOI Processing  
Shell-Branded Service Station, 380 Southbridge Street, Auburn, MA  
October 24, 2005  
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Enclosures: Notice of Intent Form  
Figures  
Dilution Factor Calculations  
Approved Massachusetts Year 2002 Integrated List of Waters, September 2003 (303(d) list)  
Natural Heritage & Endangered Species Program – MA Div of Fisheries & Wildlife – Rare  
Species by Town  
Laboratory Analytical-System Influent  
Laboratory Analytical-Receiving Stream

C: Massachusetts Department of Environmental Protection  
Division of Watershed Management  
627 Main Street, 2<sup>nd</sup> Floor  
Worcester, MA 01608  
(w/ enclosures)

Town of Auburn  
104 Central Avenue  
Auburn, MA 01501  
(w/ enclosures)

David Weeks, Shell OPUS  
(w/ enclosures) via electronic mail

Scott Masse, CEA  
(w/ enclosures) via electronic mail

NewFields File  
(w/ enclosures)

# **NOI FORM**

## **I. Suggested Notice of Intent (NOI) Form**

In order to be covered by the remediation general permit (RGP), applicants must submit a written Notice of Intent (NOI) to EPA Region I and the appropriate state agency. **All parties meeting the definition of “operator” must fill out, sign, and submit separate NOIs.**

The “operator” is defined in Part I.B.1. as the person<sup>1</sup> who has operational control over plans and specifications, or the person who has day-to-day supervision and control of activities occurring at the site. For purposes of this permit, the operator is either:

- i. The owner<sup>2</sup> (e.g., title holder, developer, or easement holder of the property) if that entity is performing all work related to complying with this permit; **or**
- ii. Both the owner<sup>2</sup> (e.g., title holder, developer, or easement holder of the property) **and** contractor(s) if a contractor(s) has been hired to perform work related to complying with this permit.

This means that each party meeting the definition of operator should apply for coverage under the RGP if it has operational control over either the project site plans and specifications, including the ability to make modifications to those plans and specifications (e.g., the property owner), **or** has day-to-day operational control of those activities at a project which are necessary to ensure compliance with permit conditions (e.g., the contractor). Where a party’s activity is part of a larger common plan (e.g., for the development or sale of the property), that party is only responsible for applying for the portions of the project for which it meets the definition of “operator.” In many instances, there may be more than one party at a site performing tasks related to “operational control” and hence, more than one operator must submit an NOI. Depending on the site and the relationship between the parties (e.g., owner, contractor, etc.), there could be either a single party acting as site operator and consequently responsible for obtaining permit coverage, or there could be two or more operators all needing permit coverage.

The following are three general “operator” scenarios (variations on any of these three are possible, especially as the number of owners and contractors increases):

- ▶ *“Owner” as “Operator” - sole permittee.* The property owner designs the structures and control systems for the site, develops and implements the BMPP, and serves as general contractor (or has an on-site representative with full authority to direct day-to-day operations). Under the definition of operator, in this case, the “Owner” would be considered the “operator” and therefore the only party that needs permit coverage. Everyone else working on the site may be considered subcontractors and do not need to apply for permit coverage.

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<sup>1</sup> Defined in 40 CFR 122.2.

<sup>2</sup>For purposes of this permit, the “owner” of a property is the person, as defined by 40 CFR 122.2, holding the title, deed, or legal document to the regulated property, facility, or activity, including a party working under an easement on the property.

- ▶ *“Contractor” as “Operator” - sole permittee.* The property owner hires a company (e.g., a contractor) to design the project and oversee all aspects, including preparation and implementation of the BMPP and compliance with the permit (e.g., a “turnkey” project). Here, the contractor would likely be the only party needing a permit. It is under this scenario that an individual having a personal residence built for his own use (e.g., not those to be sold for profit or used as rental property) would not be considered an operator. Similarly, EPA expects that property owners hiring a contractor or consultant to perform groundwater remediation work (e.g., due to a leaking fuel oil tank) would come under this type of scenario. EPA believes that the contractor, being a professional in the industry, should be the responsible entity rather than the individual. The contractor is better equipped to meet the requirements of both applying for permit coverage and developing and properly implementing the plans needed to comply with the permit. However, property owners would also meet the definition of “operator” and require permit coverage in instances where they perform any of the required tasks on their personal properties.
  
- ▶ *“Owner” and “Contractor” as “Operators” - co-permittees.* The owner retains control over any changes to site plans, BMPPs, or wastewater conveyance or control designs, but the contractor is responsible for conducting and overseeing the actual activities (e.g., excavation, installation and operation of treatment train, etc.) and daily implementation of BMPP and other permit conditions. In this case, **both** parties need to apply for coverage.

Generally, a person would not be considered an “operator,” and subsequently would not need permit coverage, if: 1) that person is a subcontractor hired by, and under the supervision of, the owner or a general contractor (e.g., if the contractor directs the subcontractor’s activities on-site, it is probably not an operator); or 2) the person’s activities would otherwise result in the need for coverage under the RGP but another operator has legally assumed responsibility for the impacts of project activities.

**A. Instructions for the Suggested Notice of Intent (NOI)** - At a minimum, the Notice of Intent must include the following for each individual facility or site. Additional information may be attached as needed.

**1. General facility/site information.**

- a) Provide the **facility/site** name, mailing address, and telephone and fax numbers. Provide the facility SIC code(s). Provide the site location, including longitude and latitude.
- b) Provide the property **owner’s** name, address, email address, telephone and fax numbers, if different from the site information. Indicate whether the owner is a Federal, State, Tribal, private, or other entity.
- c) Provide the site **operator’s** (e.g., contractor’s) name, mailing address, telephone and fax numbers, and email address if different from the owner’s information.
- d) For the site for which the application is being submitted, indicate whether:
  - 1) a prior NPDES permit exclusion has been granted for the discharge (if so, provide the tracking number of the exclusion letter);

- 2) a prior NPDES application (Form 1 & 2C) has ever been filed for the discharge (if so, provide the tracking number and date that the application was submitted to EPA);
  - 3) the discharge is a "new discharge" as defined by 40 CFR 122.2; and
  - 4) for sites in Massachusetts, is the discharge covered under the MA Contingency Plan (MCP) and exempt from state permitting.
- e) Indicate whether there is any ongoing state permitting, licensing, or other action regarding the facility or site which is generating the discharge. If "yes," provide any site identification number assigned by the state of NH or MA, any permit or license number assigned, and the state agency contact information (e.g. name, location, telephone no.).
- f) Indicate whether or not the facility is covered by other EPA permits including: the multi-sector storm water general permit; the Phase I or II Construction Storm Water General Permit; an individual NPDES permit; or, any other water quality-related individual or general permit. If so, provide permit tracking number(s).

## **2. Discharge information.**

- a) Describe the discharge activities to be covered by the permit. Attach additional sheets as needed.
- b) Provide the following information about each discharge:
- 1) the number of discharge points;
  - 2) the **maximum** and **average flow rate** of the discharge in cubic feet per second. For the average flow magnitude, include the units and appropriate notation if this value is a calculated design value or estimate if technical/design information is not available;
  - 3) the latitude and longitude of each discharge with an accuracy of 100 feet (see EPA's siting tool at: [http://www.epa.gov/tri/report/siting\\_tool/](http://www.epa.gov/tri/report/siting_tool/));
  - 4) the total volume of potential discharge (gal), only if hydrostatic testing;
  - 5) indication whether the discharge(s) is intermittent or seasonal and if ongoing.
- c) Provide the expected start and end dates of discharge (month/day/year)
- d) Attach a line drawing or flow schematic showing water flow through the facility including:
- 1) sources of intake water;
  - 2) contributing flow from the operation;
  - 3) treatment units; and
  - 4) discharge points and receiving waters(s).

**3. Contaminant information.** In order to complete section I.3. of the NOI, the applicant will need to take a minimum of one sample of the untreated water and have it analyzed for **all** of the parameters listed in Appendix III. The applicant may use historical data as a substitute for the new sample if the data was collected no more than 2 years prior to the effective date of the permit and if collected pursuant to: i. Massachusetts' regulations 310 CMR 40.0000, the Massachusetts Contingency Plan ("Chapter 21E"); ii. New Hampshire's Title 50 RSA 485-A: Water Pollution and Waste Disposal or Title 50 RSA 485-C: Groundwater Protection Act; or iii. an EPA permit exclusion letter issued pursuant to 40 CFR 122.3, and was analyzed with the test methods required by this permit. Otherwise, a new sample shall be taken and analyzed.

- a) Based on the analysis of the sample(s) of the untreated influent, the applicant must indicate which of the sub-categories (listed in Table V of Part I.C of the permit) that the potential discharge falls within.
- b) Based on the analysis of the untreated influent, the applicant must indicate whether each listed chemical is **believed present** or **believed absent** in the potential discharge.

Based on the required sampling and analysis, the applicant must fill in the table, or provide a narrative description, with the following additional information for each chemical that is **believed present**:

- 1) the number of samples taken (minimum of one sample);
- 2) the type of sample (e.g. grab, composite, etc.);
- 3) the analytical method used, including the method number;
- 4) the minimum level (ML) of the method used (based on Appendix VI);
- 5) the maximum daily amount (concentration, ug/l, and mass, kg) of each pollutant, based on the sampling data (see Appendix VIII instructions for sample mass calculations); and
- 6) the average daily amount (concentration and mass) of each pollutant, based on the sampling data.

If the results of the required sampling indicate that pollutants exist in addition to those listed in Appendix III of the RGP of the permit, the applicant must also describe those contaminants on the NOI in boxes in section I.3.b) on the line marked "Other," or using additional sheets as needed. Subsequently, EPA will decide if the RGP can apply or if an individual permit is necessary.

c) Determination of Reasonable Potential and Allowable Dilution for Discharges of Metals: If any *metals* are believed present in the potential discharge to freshwater<sup>3</sup>, the applicant must follow the 2 step calculation procedures described below to determine the reasonable potential for exceedance of water quality standards and dilution factor for each metal.

#### ***Step 1: Initial Evaluation***

- 1) The applicant must evaluate all metals believed present in the discharge subject to this permit, including "naturally occurring" metals such as dissolved and/or total Iron. Applicants must enter the highest detected concentration of the metal at zero dilution in the "Maximum value" column of the NOI.
- 2) Based on the maximum concentration of each metal, the applicant must perform an initial evaluation assuming zero dilution in the receiving water. The applicant must compare the metals concentrations in the untreated (intake) waters to the limits contained in Appendix III.
  - i. If potential discharges (untreated influent) with metals contain concentrations above the concentration limits listed in Appendix III, applicant must proceed to step 2.

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<sup>3</sup>Dilution factors may be available for discharges to saline waters but only with approval of the flow modeling information from the State prior to the submission of the NOI.

ii. If potential discharges (untreated influent) with metals contain concentrations below the concentrations listed in Appendix III, the applicant may skip step 2 and those metals will **not** be subject to permit limitations or monitoring requirements.

***Step 2: Calculation of Dilution Factor***

1) **For applicants in NH:** If a metal concentration in a potential discharge (untreated influent) to **freshwater**<sup>3</sup> exceeds the limits in Appendix III with zero dilution, the applicant shall evaluate the potential concentration considering a dilution factor (DF) using the formula below. **For sites in New Hampshire, the applicant must contact NH DES to determine the 7Q10 and dilution factor.**

$$DF = [(Qd + Qs)/Qd] \times 0.9$$

**Where:**

<b>DF</b>	<b>= Dilution Factor</b>
<b>Qd</b>	<b>= Maximum flow rate of the discharge in cubic feet per second (cfs) (1.0 gpm = .00223 cfs)</b>
<b>Qs</b>	<b>= Receiving water 7Q10 flow, in cfs, where,</b>
<b>7Q10</b>	<b>= The annual minimum flow for 7 consecutive days with a recurrence interval of 10 years</b>
<b>0.9</b>	<b>= Allowance for reserving 10% of the assets in the receiving stream as per Chapter ENV-Ws 1700, Surface Water Quality Regulations</b>

i. Using the DF calculated from the formula above, the applicant must refer to the corresponding DF range column in Appendix IV. The applicant then compares the maximum concentration of the metal entered on the NOI to the corresponding total recoverable metals limits listed in Appendix IV.

1. If a metal concentration in the potential discharge (untreated influent) is less than the corresponding limit in Appendix IV, the metal will **not** be subject to permit limitations or monitoring requirements.
2. If a metal concentration in the potential discharge (untreated influent) is equal to or exceeds the corresponding limit in Appendix IV, the applicant must reduce it in the effluent to a concentration below the applicable total recoverable metals limit in Appendix IV prior to discharge.

ii. In either case, the applicant must submit the results of this calculation as part of the NOI. EPA and NH DES will review the proposed effluent limitations for each metal and approve or disapprove the limits in the notification of coverage letter to the applicant.

2) **For applicants in MA:** If a metal concentration in a in a potential discharge (untreated influent) to **freshwater**<sup>3</sup> exceeds the limits in Appendix III with zero dilution, the applicant must evaluate the potential concentration considering a dilution factor (DF) using the formula below.

$$DF = (Qd + Qs)/Qd$$

**Where:** **DF** = **Dilution Factor**  
**Qd** = **Maximum flow rate of the discharge in cubic feet per second (cfs)**  
(1.0 gpm = .00223 cfs)  
**Qs** = **Receiving water 7Q10 flow (cfs) where,**  
**7Q10** = **The minimum flow (cfs) for 7 consecutive days with a recurrence interval of 10 years**

i. The applicant may estimate the 7Q10 for a receiving water by using available information such as nearby USGS stream gauging stations directly or by application of certain “flow factors,” using historic streamflow publication information, calculations based on drainage area, information from state water quality offices, or other means. In many cases the states of MA have calculated 7Q10 information using “flow factors” for a number of streams in the state. The source of the low flow value(s) used by the applicant must be included on NOI application form. Flow data can also be obtained from web applications such as STREAMSTATS located at: <http://ma.water.usgs.gov/streamstats/>.

ii. Using the DF calculated from the formula above, the applicant must refer to the corresponding DF range column in Appendix IV. The applicant then compares the maximum concentration of each metal entered on the NOI to the corresponding total recoverable metals limit listed in Appendix IV.

1. If a metal concentration in the potential discharge (untreated influent) is less than the corresponding limit in Appendix IV, the metal will **not** be subject to permit limitations or monitoring requirements.

2. If a metal concentration in a potential discharge (untreated influent) is equal to or exceeds the corresponding limit in Appendix IV, the applicant must reduce it in the effluent to a concentration below the applicable total recoverable metals limit in Appendix IV prior to discharge.

iii. The applicant must submit the results of this calculation as part of the NOI. EPA (and MA DEP where the discharge not covered by 310 CMR 40.0000) will review the proposed effluent limitations for each metal and approve or disapprove the limits in the notification of coverage letter to the applicant.

#### **4. Treatment system information.**

a) Describe the treatment train for each discharge and attach a schematic of the proposed or existing treatment system.

b) Identify each major treatment unit (e.g. frac tanks, filters, air stripper, liquid phase/vapor phase activated carbon, oil/water separators, etc.) by checking all that apply and describing any additional equipment not listed. Provide a written description of how the system train will be set up. Attach additional sheets as needed.

c) Provide the proposed **average** and **maximum flow** rates (in gallons per minute, gpm) for the discharge and the **design flow** rates (in gpm) of the treatment system. Clearly identify the component of the treatment with the most limited flow, i.e., the part of the treatment train that establishes the **design flow**.

d) Describe any chemical additives being used, or planned to be used, and attach MSDS sheets for each. EPA may request further information regarding the chemical composition of the additive, potential toxic effects, or other information to insure that approval of the use of the additive will not cause or contribute to a violation of State water quality standards. Approval of coverage under the RGP will constitute approval of the use of the chemical additive(s). If coverage of the discharge under the RGP has already been granted and the use of a chemical additive becomes necessary, the permittee must submit a Notice of Change (NOC).

#### **5. Receiving surface water(s) information.**

a) Identify the discharge pathway by checking whether it is discharged: directly to the receiving water, within the facility (e.g., through a sewer drain), to a storm drain, to a river or brook, to a wetland, or other receiving body.

b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters into which discharge will occur.

c) Provide a detailed map(s) indicating the location of the site and outfall to the receiving water:

1) For multiple discharges, the discharges should be numbered sequentially.

2) In the case of indirect dischargers (to municipal storm sewer, etc) the map(s) must be sufficient to indicate the location of the discharge to the indirect conveyance and the discharge to the state classified surface water. The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.

d) Provide the state water quality classification of the receiving water and the basin;

e) Specify the reported seven day-ten year low flow (7Q10) of the receiving water (see Section I.A.3)c. above). In New Hampshire, the 7Q10 must be provided by to the applicant by the New Hampshire Department of Environmental Services.

f) Indicate whether the receiving water is a listed 303(d) water quality impaired or limited water and if so, for which pollutants (see Section VII.H. of the Fact Sheet for additional information). Also, indicate if there is a TMDL for any of the listed pollutants. For MA, the list of waters can be found at: <http://www.mass.gov/dep/brp/wm/tmdls.htm> and for NH: <http://www.epa.gov/ne/eco/tmdl/impairedh2o.html>. For more information, contact the states at: New Hampshire Department of Environmental Services, Watershed Management Bureau at 603-271-3503 or the Massachusetts Department of Environmental Protection at 508-767-2796 or 508-767-2873;

**6. Consultation with Federal Services** - As required in Part I.A.4 and Appendix VII the operator of a site/facility must ensure that the potential discharge will not affect adversely endangered species, designated critical habitat, or essential fish habitat, or national historic places that are in proximity to the potential discharge. If the potential discharge is to certain water bodies, the applicant must also submit a formal certification with the NOI that indicates the consultation, with the U.S. Fish and Wildlife Service and National Marine Fisheries Service (the Services), resulted in either a no jeopardy opinion or a written concurrence on a finding that the discharges are not likely to adversely affect any endangered species or critical habitat. Facilities should begin the

consultation as early in the process as possible.

- a) Indicate whether any listed threatened or endangered species, designated critical habitat, or essential fish habitat, are in proximity to the discharge to be covered by this permit and whether any consultation with the Services is complete or underway.
- b) Indicate whether or not there are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility or site or in proximity to the discharge (see <http://www.cr.nps.gov/nr/research/nris.htm>), and whether any state or tribal historic preservation officer (SHPO or THPO) was consulted in such a determination (for Massachusetts sites only).

**7. Supplemental information.** Applicants should provide any supplemental information needed to meet the requirements of the permit, including, any analytical data used to support the application, and any certification(s) required.

**8. Signature Requirements** - The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:

*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, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

## B. Suggested Form for Notice of Intent (NOI) for the Remediation General Permit

1. **General site information.** Please provide the following information about the site:

a) Name of facility/site: Shell-Branded Service Station		Facility/site address:		
Location of facility/site: longitude: 71°50' 14.8" latitude: 42° 12' 15.5"		Facility SIC code (s): 5541	Street: 380 Southbridge Street	
b) Name of facility/site owner: Motiva Enterprises LLC, David Weeks		Town: Auburn		
Email address of owner: David.Weeks@Shell.com		State: MA	Zip: 01501	County: Worcester
Telephone no. of facility/site owner: 845-462-5225		Owner is (check one) 1. Federal <input type="checkbox"/> 2. State/Tribal <input type="checkbox"/> 3. Private <input type="checkbox"/> 4. other, <input checked="" type="checkbox"/> if so, describe: Corporation		
Fax no. of facility/site owner: 845-462-4999				
Address of owner (if different from site):				
Street: 1830 South Road, Unit 24, PMB 301				
Town: Wappingers Falls		State: NY	Zip: 12590	County: Dutchess
c.) Legal name of operator: Motiva Enterprises LLC		Operator telephone no.: 845-462-5225		
		Operator fax no.: 845-462-4999		Operator email: David.Weeks@Shell.com
Operator contact name and title: David Weeks, Senior Environmental Engineer				
Address of operator (if different from owner): Same as owner		Street: Same as owner		
Town: Same as owner		State: Same as owner	Zip: Same as owner	County: Same as owner
d) Check "yes" or "no" for the following:				
1. Has a prior NPDES permit exclusion been granted for the discharge? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> , if "yes," number: MA-02I-041				
2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> , if "yes," date and tracking #:				
3. Is the discharge a "new discharge" as defined by 40 CFR 122.2? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
4. For sites in Massachusetts, is the discharge covered under the MA Contingency Plan (MCP) and exempt from state permitting? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

<p>e) Is site/facility subject to any State permitting or other action which is causing the generation of discharge? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>.</p> <p>If "yes," please list:</p> <p>1. site identification # assigned by the state of NH or MA:</p> <p>2. permit or license # assigned:</p> <p>3. state agency contact information: name, location, and telephone number:</p>	<p>f) Is the site/facility covered by any other EP A permit, including:</p> <p>1. multi-sector storm water general permit? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>, if Y, number:</p> <p>2. phase I or II construction storm water general permit? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>, if Y, number:</p> <p>3. individual NPDES permit? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>, if Y, number:</p> <p>4. any other water quality related permit? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>, if Y, number:</p>
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**2. Discharge information.** Please provide information about the discharge, (attaching additional sheets as needed) including:

<p>a) Describe the discharge activities for which the owner/applicant is seeking coverage:</p> <p>Groundwater remediation project at retail gasoline service station</p>			
<p>b) Provide the following information about each discharge:</p>	<table border="1"> <tr> <td style="vertical-align: top;"> <p>1) Number of discharge points:</p> <p>1</p> </td> <td style="vertical-align: top;"> <p>2) What is the <b>maximum</b> and <b>average flow rate</b> of discharge (in cubic feet per second, W/s)? Max. flow <u>0.029 ft<sup>3</sup>/sec</u></p> <p>Average flow <u>0.022 ft<sup>3</sup>/sec</u> Is maximum flow a <b>design value</b>? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>.</p> <p>For average flow, include the units and appropriate notation if this value is a design value or estimate if not available.</p> <p>Average flow <u>0.022 ft<sup>3</sup>/sec</u> (based on historical operations)</p> </td> </tr> </table>	<p>1) Number of discharge points:</p> <p>1</p>	<p>2) What is the <b>maximum</b> and <b>average flow rate</b> of discharge (in cubic feet per second, W/s)? Max. flow <u>0.029 ft<sup>3</sup>/sec</u></p> <p>Average flow <u>0.022 ft<sup>3</sup>/sec</u> Is maximum flow a <b>design value</b>? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>.</p> <p>For average flow, include the units and appropriate notation if this value is a design value or estimate if not available.</p> <p>Average flow <u>0.022 ft<sup>3</sup>/sec</u> (based on historical operations)</p>
<p>1) Number of discharge points:</p> <p>1</p>	<p>2) What is the <b>maximum</b> and <b>average flow rate</b> of discharge (in cubic feet per second, W/s)? Max. flow <u>0.029 ft<sup>3</sup>/sec</u></p> <p>Average flow <u>0.022 ft<sup>3</sup>/sec</u> Is maximum flow a <b>design value</b>? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>.</p> <p>For average flow, include the units and appropriate notation if this value is a design value or estimate if not available.</p> <p>Average flow <u>0.022 ft<sup>3</sup>/sec</u> (based on historical operations)</p>		
<p>3) Latitude and longitude of each discharge within 100 feet: pt.1 :long.<u>71 °50' 14.8"</u> lat. <u>42° 12' 15.5"</u>; pt.2: long. ___ lat. ___; pt.3: long. ___ lat. ___; pt.4:long. ___ lat. ___; pt.5: long. ___ lat. ___; pt.6:long. ___ lat. ___; pt.7: long. ___ lat. ___; pt.8:long. ___ lat. ___; etc.</p>			

<p>4) If hydrostatic testing, total volume of the discharge (gals):</p> <p>N/A</p>	<p>5) Is the discharge intermittent <input checked="" type="checkbox"/> Or seasonal <input type="checkbox"/> ?</p> <p>Is discharge ongoing Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>,</p>
<p>c) Expected dates of discharge (mm/dd/yy): start <u>04/07/03</u> end <u>unknown</u></p>	
<p>d) Please attach a line drawing or flow schematic showing water flow through the facility including: <u>See attached figures 2B, 3, and 4.</u></p> <p>1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s).</p>	

3. Contaminant information. In order to complete this section, the applicant will need to take a minimum of one sample of the untreated water and have it analyzed for all of the parameters listed in Appendix III. Historical data, (i.e., data taken no more than 2 years prior to the effective date of the permit) may be used if obtained pursuant to: i. Massachusetts' regulations 310 CMR 40.0000, the Massachusetts Contingency Plan ("Chapter 21E"); ii. New Hampshire's Title 50 RSA 485-A: Water Pollution and Waste Disposal or Title 50 RSA 485-C: Groundwater Protection Act; or iii. an EPA permit exclusion letter issued pursuant to 40 CFR 122.3, provided the data was analyzed with test methods that meet the requirements of this permit. Otherwise, a new sample shall be taken and analyzed.

a) Based on the analysis of the sample(s) of the untreated influent, the applicant must check the box of the sub-categories that the potential discharge falls within.

Gasoline Only <input checked="" type="checkbox"/>	VOC Only <input type="checkbox"/>	Primarily Metals <input type="checkbox"/>	Urban Fill Sites <input type="checkbox"/>	Contaminated Sumps <input type="checkbox"/>	Mixed Contaminants <input type="checkbox"/>	Aquifer Testing <input type="checkbox"/>
Fuel Oils (and <input type="checkbox"/> Other Oils) only	VOC with Other Contaminants <input type="checkbox"/>	Petroleum with Other Contaminants <input type="checkbox"/>	Listed Contaminated Sites <input type="checkbox"/>	Contaminated Dredge Condensates <input type="checkbox"/>	Hydrostatic Testing of Pipelines/Tanks <input type="checkbox"/>	Well Development or Rehabilitation <input type="checkbox"/>

b) Based on the analysis of the untreated influent, the applicant must indicate whether each listed chemical is believed present or believed absent in the potential discharge. Attach additional sheets as needed.

PARAMETER	Believe Absent	Believe Present	#of Samples (1 min- imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method (ug/l)	Maximum daily value		Avg. daily value	
							concentration ( ug/l)	mass (kg) (kg/day)	concentration (ug/l)	mass (kg) (kg/day)
1. Total Suspended Solids	√		1	GRAB	160.2	4000	<4000	<0.5458		
2. Total Residual Chlorine	√		1	GRAB	330.5	20	<20	<0.003		
3. Total Petroleum Hydrocarbons	√		1	GRAB	1664	4100	<4100	<0.560		
4. Cyanide	√		1	GRAB	335.3	10	<10	<0.0014		
5. Benzene		√	1	GRAB	8260B	0.5	<0.5	<0.00007		
6. Toluene		√	1	GRAB	8260B	1.0	<1.0	<0.00014		
7. Ethylbenzene		√	1	GRAB	8260B	1.0	<1.0	<0.00014		
8. (m,p,o) Xylenes		√	1	GRAB	8260B	1.0	<1.0	<0.00014		
9. Total BTEX <sup>4</sup>		√	1	GRAB	8260B	-----	<1.0	<0.00014		

<sup>4</sup>BTEX = Sum of Benzene, Toluene, Ethylbenzene, total Xylenes.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method (ug/l)	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg) (kg/day)	concentration (ug/l)	mass (kg) (kg/day)
10. Ethylene Dibromide (1,2- Dibromo-methane)	√		1	GRAB	504.1	0.015	<0.015	<2.05E-6		
11. Methyl-tert-Butyl Ether (MtBE)		√	1	GRAB	8260B	1.0	245	0.033		
12. tert-Butyl Alcohol (TBA)	√		1	GRAB	8260B	100	<100	<0.014		
13. tert-Amyl Methyl Ether (TAME)		√	1	GRAB	8260B	2.0	2.4	0.00033		
14. Naphthalene	√		1	GRAB	8270C SIM	0.1	<0.1	<0.00001		
15. Carbon Tetrachloride	√		1	GRAB	8260B	1.0	<1.0	<0.00014		
16. 1,4 Dichlorobenzene	√		1	GRAB	8260B	1.0	<1.0	<0.00014		
17. 1,2 Dichlorobenzene	√		1	GRAB	8260B	1.0	<1.0	<0.00014		
18. 1,3 Dichlorobenzene	√		1	GRAB	8260B	1.0	<1.0	<0.00014		
19. 1,1 Dichloroethane	√		1	GRAB	8260B	1.0	<1.0	<0.00014		
20. 1,2 Dichloroethane	√		1	GRAB	8260B	1.0	<1.0	<0.00014		
21. 1,1 Dichloroethylene	√		1	GRAB	8260B	1.0	<1.0	<0.00014		
22. cis-1,2 Dichloroethylene	√		1	GRAB	8260B	1.0	<1.0	<0.00014		
23. Dichloromethane (Methylene Chloride)	√		1	GRAB	8260B	2.0	<2.0	<0.00027		
24. Tetrachloroethylene		√	1	GRAB	8260B	1.0	9.1	0.0012		

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method (ug/l)	Maximum daily value		Avg. daily Value	
							concentration (ug/l)	mass (kg) (kg/day)	concentration (ug/l)	mass (kg) (kg/day)
25. 1,1,1 Trichloroethane	√		1	GRAB	8260B	1.0	<1.0	<0.00014		
26. 1,1,2 Trichloroethane	√		1	GRAB	8260B	1.0	<1.0	<0.00014		
27. Trichloroethylene	√		1	GRAB	8260B	1.0	<1.0	<0.00014		
28. Vinyl Chloride	√		1	GRAB	8260B	1.0	<1.0	<0.00014		
29. Acetone	√		1	GRAB	8260B	5.0	<5.0	<0.0007		
30. 1,4 Dioxane	√		1	GRAB	8260B	25	<25	<0.003		
31. Total Phenols	√		1	GRAB	8270C	See lab data	See lab data (Not Detected)	-----		
32. Pentachlorophenol	√		1	GRAB	8270C SIM	10	<10	<0.0014		
33. Total Phthalates <sup>6</sup> (phthalate esthers)	√		1	GRAB	8270C	10	<10	<0.0014		
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	√		1	GRAB	8270C	10	<10	<0.0014		
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	√		1	GRAB	8270C	5.1	<5.1	<0.0007		
a. Benzo(a) Anthracene	√		1	GRAB	8270C	0.051	<0.051	<0.000007		
b. Benzo(a) Pyrene	√		1	GRAB	8270C	0.1	<0.1	<0.00001		
c. Benzo(b )Fluoranthene	√		1	GRAB	8270C	0.051	<0.051	<0.000007		
d. Benzo(k) Fluoranthene	√		1	GRAB	8270C	0.1	<0.1	<0.00001		
e. Chrysene	√		1	GRAB	8270C	0.1	<0.1	<0.00001		

<sup>6</sup>The sum of individual phthalate compounds.

PARAMETER	Believe Absent	Believe Present	#of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method (ug/l)	Maximum daily value		Average daily value	
							concentration (ug/l)	mass (kg) (kg/day)	concentration (ug/l)	mass (kg) (kg/day)
<b>f. Dibenzo(a,h) anthracene</b>	√		1	GRAB	8270C	0.1	<0.1	<0.00001		
<b>g. Indeno(1,2,3-cd) Pyrene</b>	√		1	GRAB	8270C	0.1	<0.1	<0.00001		
<b>36. Total Group II Polycyclic Aromatic Hydrocarbons (pAR)</b>	√		1	GRAB	8270C	5.1	<5.1	<0.0007		
<b>h. Acenaphthene</b>	√		1	GRAB	8270C	0.1	<0.1	<0.00001		
<b>i. Acenaphthylene</b>	√		1	GRAB	8270C	0.1	<0.1	<0.00001		
<b>j. Anthracene</b>	√		1	GRAB	8270C	0.1	<0.1	<0.00001		
<b>k. Benzo(ghi) Perylene</b>	√		1	GRAB	8270C	0.1	<0.1	<0.00001		
<b>l. Fluoranthene</b>	√		1	GRAB	8270C	0.1	<0.1	<0.00001		
<b>m. Fluorene</b>	√		1	GRAB	8270C	0.1	<0.1	<0.00001		
<b>n. Naphthalene-</b>	√		1	GRAB	8270C	0.1	<0.1	<0.00001		
<b>o. Phenanthrene</b>	√		1	GRAB	8270C	0.1	<0.1	<0.00001		
<b>p. Pyrene</b>	√		1	GRAB	8270C	0.1	<0.1	<0.00001		
<b>37. Total Polychlorinated Biphenyls (PCBs)</b>	√		1	GRAB	608	0.51	<0.51	<0.00007		
<b>38. Antimony</b>	√		1	GRAB	3113B	5.0	<5.0	<0.0007		
<b>39. Arsenic</b>	√		1	GRAB	3010A-6010B	5.0	<5.0	<0.0007		
<b>40. Cadmium</b>	√		1	GRAB	3113B	0.5	<0.5	<0.00007		
<b>41. Chromium III (1)</b>	√		1	GRAB	Calculated	-----	<10	<0.0014		
<b>42. Chromium VI</b>	√		1	GRAB	7196A	10	<10	<0.0014		

NOTES: (1) Chromium III = Total Chromium – Hexavalent Chromium

PARAMETER	Believe Absent	Believe Present	#of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method (ug/l)	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg) (kg/day)	concentration (ug/l)	mass (kg) (kg/day)
43. Copper (2)	√		1	GRAB	3010A-6010B	25	<25	<0.003		
44. Lead		√	1	GRAB	3113B	2	3	0.00041		
45. Mercury	√		1	GRAB	7470A	0.20	<0.20	<0.00003		
46. Nickel		√	1	GRAB	200.7	5	12	0.002		
47. Selenium	√		1	GRAB	3113B	5	<5	<0.0007		
48. Silver	√		1	GRAB	3113B	0.5	<0.5	<0.00007		
49. Zinc		√	1	GRAB	200.7	20	130	0.018		
50. Iron	√		1	GRAB	3010A/6010B	100	<100	<0.014		
Other (describe):	---	---	---	---	---	---	---	---	---	---

NOTES: (2) Total Copper, Instrument Detection Level (IDL) = 5 ug/l

c. For discharges where **metals** are believed present, please fill out the following:

<p>Step 1: Do any of the metals in the influent have a reasonable potential to exceed the effluent limits in Appendix III (i.e., the limits set at zero to five dilutions)? Y <input checked="" type="checkbox"/> N <input type="checkbox"/></p>	<p>If yes, which metals? <u>Zinc, Lead</u></p>
<p>Step 2: For any metals which have <b>reasonable potential</b> to exceed the <b>Appendix III</b> limits, calculate the <b>dilution factor (DF)</b> using the formula in Part I.A.3.c) (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? Metals: <u>Zinc, Lead</u></p> <p>DF: <u>2.0345</u></p>	<p>Look up the limit calculated at the corresponding dilution factor in <b>Appendix IV</b>. Do any of the metals in the <b>influent</b> have the potential to exceed the corresponding <b>effluent</b> limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y <input checked="" type="checkbox"/> N <input type="checkbox"/> If "Yes," list which metals: <u>Zinc, Lead</u></p>

**4. Treatment system information.** Please describe the treatment system using separate sheets as necessary, including:

a) A description of the treatment system, including a schematic of the proposed or existing treatment system:  
 Groundwater is extracted from multiple recovery wells and treated by one bag filter, one low profile air stripper and three granular activated carbon units. See Figure 2B.

b) Identify each applicable treatment unit (check all that apply):	Frac. tank <input type="checkbox"/>	Air stripper <input checked="" type="checkbox"/>	Oil/water separator <input type="checkbox"/>	Equalization tanks <input type="checkbox"/>	Bag filter <input checked="" type="checkbox"/>	GAC filter <input checked="" type="checkbox"/>
	Chlorination <input type="checkbox"/>	Dechlorination <input type="checkbox"/>	Other (please describe):			

c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate(s)** (gallons per minute) of the treatment system:  
 Average flow rate of discharge 10 GPM Maximum flow rate of treatment system 13 GPM Design flow rate of treatment system 25 GPM

d) A description of chemical additives being used or planned to be used (attach MSDS sheets): Not Applicable

**5. Receiving surface water(s).** Please provide information about the receiving water (s) using separate sheets as necessary, including:

a) Identify the discharge pathway:	Direct <input type="checkbox"/>	Within facility <input type="checkbox"/>	Storm drain <input checked="" type="checkbox"/>	River/brook <input type="checkbox"/>	Wetlands <input type="checkbox"/>	Other (describe):
------------------------------------	---------------------------------	--	---	--------------------------------------	-----------------------------------	-------------------

b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters:  
 Discharge to an on-site stormwater catch basin which discharges to Dark Brook. Dark Brook discharges to Auburn Pond. Blackstone River Basin.

c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water:  
 1. For multiple discharges, number the discharges sequentially.  
 2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water  
 The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas. See Figure 3 and June 21, 2005 Map

d) Provide the state water quality classification of the receiving water Class B (freshwater)

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 0.12 cfs  
 Please attach any calculation sheets used to support stream flow and dilution calculations. See attached.

f) Is the receiving water a listed 303(d) water quality impaired or limited water? Yes  No  If yes, for which pollutant(s)? State Impairment – Cause Unknown (see attached)  
 Is there a TMDL? Yes  No  If yes, for which pollutant(s)? There were no TMDLs reported to EPA by the State (see attached).

**6. Results of Consultation with Federal Services:** Please provide the following information according to requirements of Part I.B.4 and Appendices II and VII.

a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes  No   
Has any consultation with the federal services been completed? Yes  No  or is consultation underway? Yes  No

What were the results of the consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service (check one): Not applicable  
a "no jeopardy" opinion?  or written concurrence  on a finding that the discharges are not likely to adversely affect any endangered species or critical habitat?

b) Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility or site or in proximity to the discharge?  
Yes  No  Have any state or tribal historic preservation officer been consulted in this determination (Massachusetts only)? Yes  No

**7. Supplemental information. :**

Please provide any supplemental information. **Attach any analytical data used to support the application.** Attach any certification(s) required by the general permit.  
See cover letter.

8. **Signature Requirements:** The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:

*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, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

Facility/Site Name:	<u>Shell Service Station, 380 Southbridge Street, Auburn, MA 01501</u>
Operator signature:	<u><i>David Weeks</i></u>
Title:	<u>David Weeks, Senior Environmental Engineer</u>
Date:	<u>10-24-05</u>

**B. Submission of NOI to EPA** - All operators applying for coverage under this General Permit must submit a written Notice of Intent (NOI) to EPA. Signed and completed NOI forms and attachments must be submitted to EPA-NE at:

US Environmental Protection Agency  
RGP-NOC Processing  
Municipal Assistance Unit (CMU),  
1 Congress Street, Suite 1100  
Boston, MA 02114-2023

or electronically mailed to [NPDES.Generalpermits@epa.gov](mailto:NPDES.Generalpermits@epa.gov),  
or faxed to the EPA Office at 617-918-0505.

If filling out the suggested NOI form electronically on EPA's website, the signature page must be signed and faxed or mailed to EPA at the phone number or address listed in Section I.B. below.

1. Filing with the states - A copy of any NOI form filed with EPA-NE must also be filed with state agencies. The state agency may elect to develop a state specific form or other information requirements.

a) Discharges in Massachusetts - In addition to the NOI, permit applicants must submit copies of the State Application Form BRPWM 12, Request for General Permit coverage for the RGP. The application form and the Transmittal Form for Permit Application and Payment, may be obtained from the Massachusetts Department of Environmental Protection (MA DEP) website at [www.state.ma.us/dep](http://www.state.ma.us/dep). Municipalities are fee-exempt, but should send a copy of the transmittal form to that address for project tracking purposes. All applicants should keep a copy of the transmittal form and a copy of the application package for their records.

1) A copy of the NOI, the transmittal form, a copy of the check, and Form BRPWM 12 should be sent to:

Massachusetts Department of Environmental Protection  
Division of Watershed Management  
627 Main Street, 2<sup>nd</sup> floor  
Worcester, MA 01608

2) A copy of the transmittal form and the appropriate fee should be sent to:

Massachusetts Department of Environmental Protection  
P.O. Box 4062  
Boston, MA 02111

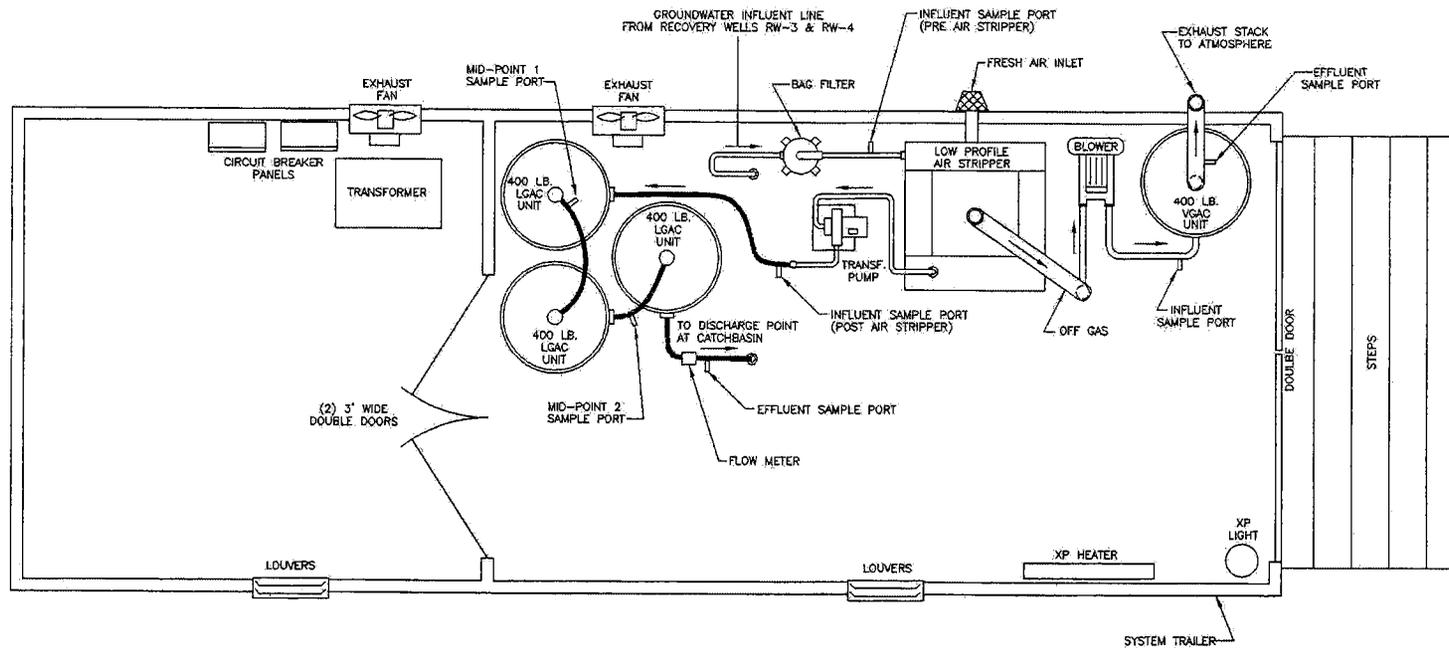
Please note: Applicants for discharges in Massachusetts should note that under 310 CMR 40.000, *as a matter of state law*, the general permit only applies to discharges that are **not** subject to the Massachusetts Contingency Plan (MCP) and 310 CMR 40.000. Therefore, discharges subject to the MCP are **not** required to fill out and submit the State Application Form BRPWM 12 or pay the state fees. However, they must submit a NOI to EPA.

b) Discharges in New Hampshire - applicants must provide a copy of the Notice of Intent to:

New Hampshire Department of Environmental Services  
Water Division  
Wastewater Engineering Bureau  
P.O. Box 95  
Concord, New Hampshire 03302-0095.

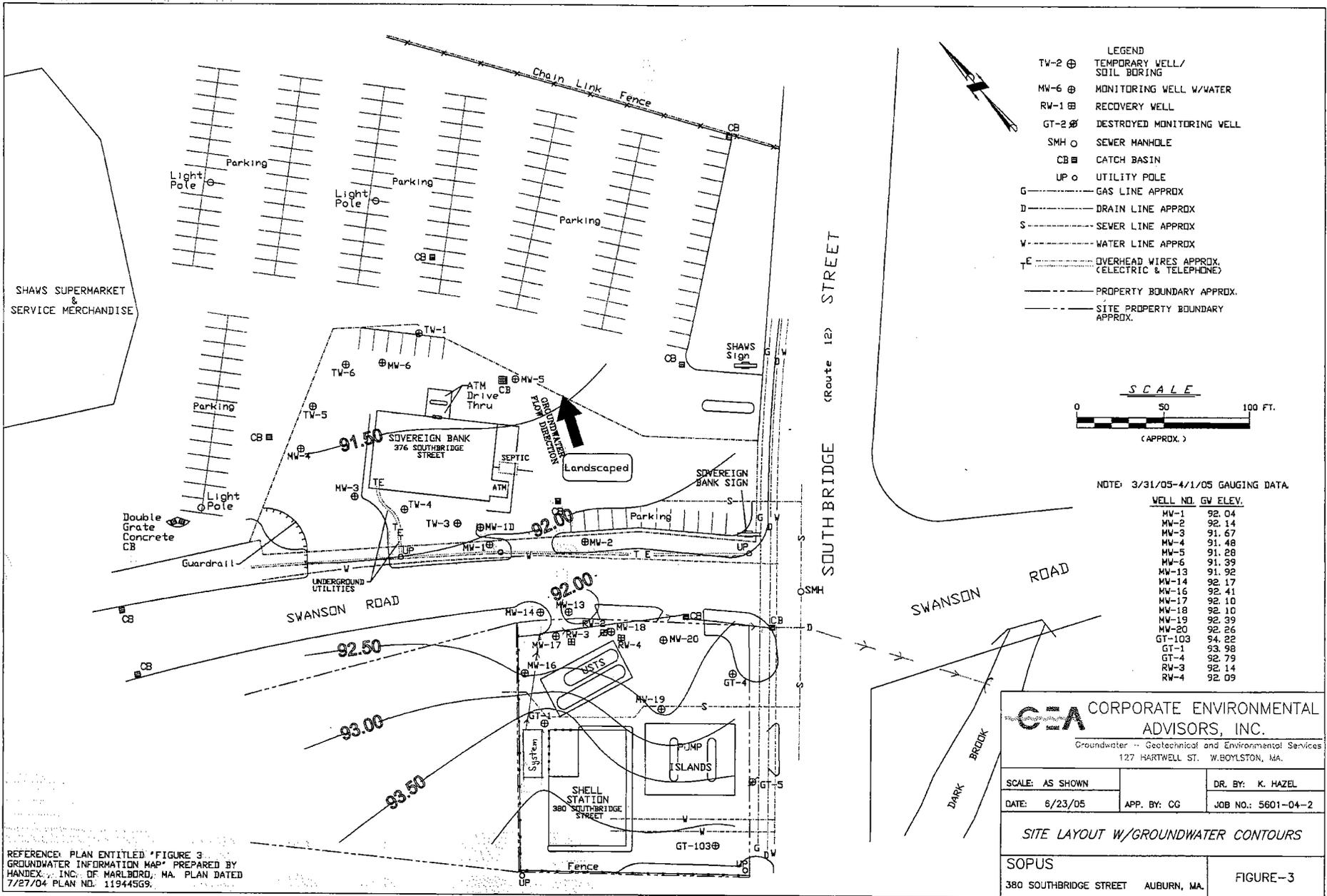
2. Filing with Municipalities - A copy of the NOI must be submitted to the municipality in which the proposed discharge would be located.

# FIGURES



TREATMENT SYSTEM LAYOUT  
NOT TO SCALE

 <b>CORPORATE ENVIRONMENTAL ADVISORS, INC.</b> <small>Assessments - Remediation - Emergency Response</small> <small>127 HARTWELL ST. W. BOYLSTON, MA.</small>		
SCALE: NOT TO SCALE	DR. BY: K. HAZEL	
DATE: 9/28/05	APP. BY: SM	JOB NO.: 5601-04-2
<i>PROCESS &amp; INSTRUMENTATION DIAGRAM</i>		
SOPUS		FIGURE-2B
380 SOUTHBRIDGE STREET AUBURN, MA.		

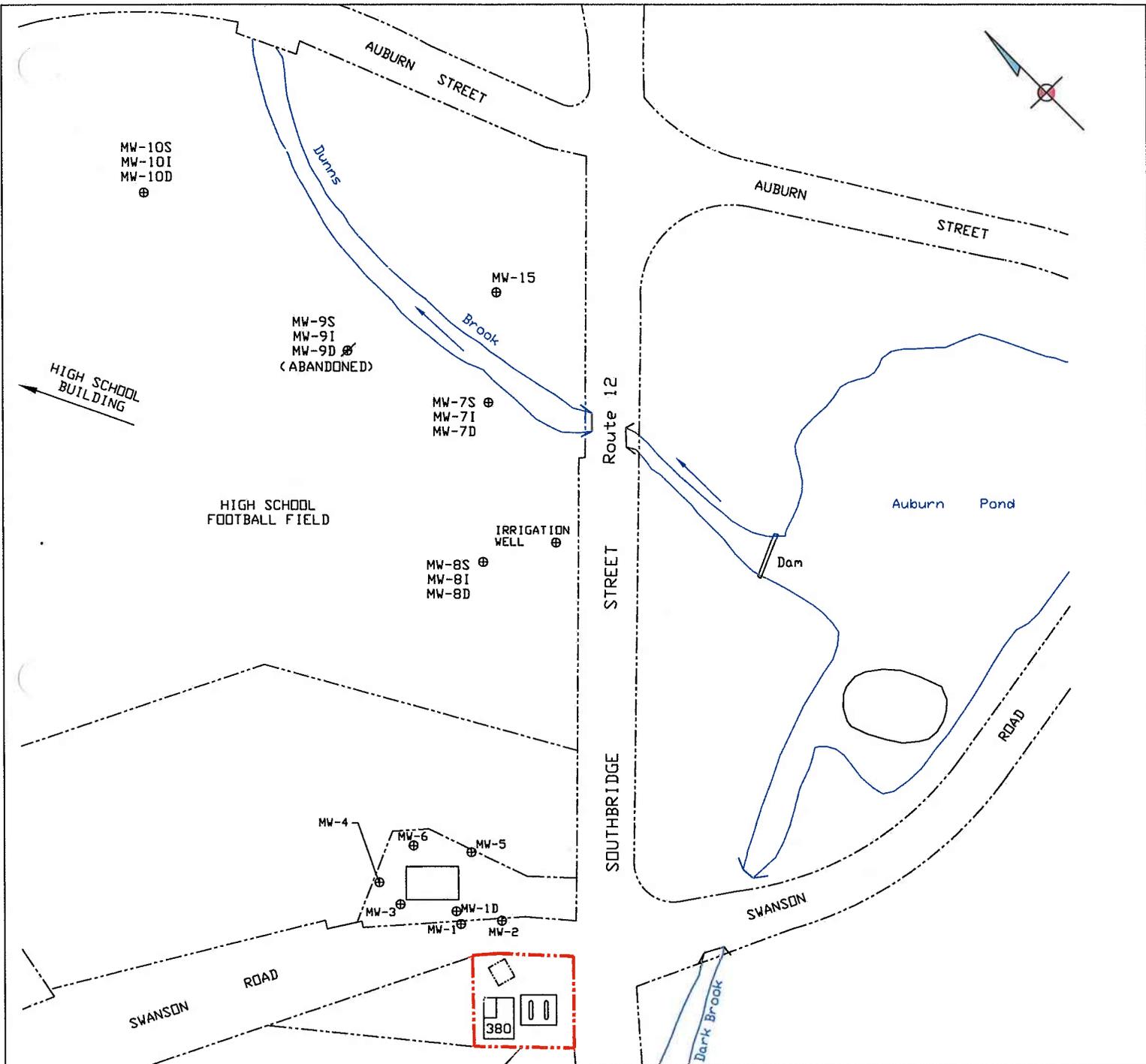


**CA** CORPORATE ENVIRONMENTAL ADVISORS, INC.  
 Groundwater - Geotechnical and Environmental Services  
 127 HARTWELL ST. W. BOYLSTON, MA.

SCALE: AS SHOWN	DR. BY: K. HAZEL
DATE: 6/23/05	APP. BY: CG
JOB NO.: 5601-04-2	

**SITE LAYOUT W/GROUNDWATER CONTOURS**

SOPUS	FIGURE-3
380 SOUTHBRIDGE STREET	AUBURN, MA.



LEGEND	
MW-1 ⊕	MONITORING WELL W/WATER
RW-1 ⊕	RECOVERY WELL
---	PROPERTY BOUNDARY APPROX.
- - - - -	SITE PROPERTY BOUNDARY APPROX.

**CEA** CORPORATE ENVIRONMENTAL ADVISORS, INC.  
 Assessments - Remediation - Emergency Response  
 127 HARTWELL ST. W.BOYLSTON, MA.

SCALE: 1" = 200'(APPROX.)	DR. BY: K. HAZEL
DATE: 2/10/05	APP. BY: CG
JOB NO.: 5601-04-1	

## AREA MAP

SOPUS	FIGURE-4
380 SOUTHBRIDGE STREET AUBURN, MA.	

# MA DEP - Bureau of Waste Site Cleanup

## Site Scoring Map: 500 feet & 0.5 Mile Radii

### SITE NAME:

Shell Station  
 30 Southbridge Street  
 AUBURN, MA 01501  
 421215n 715015ew



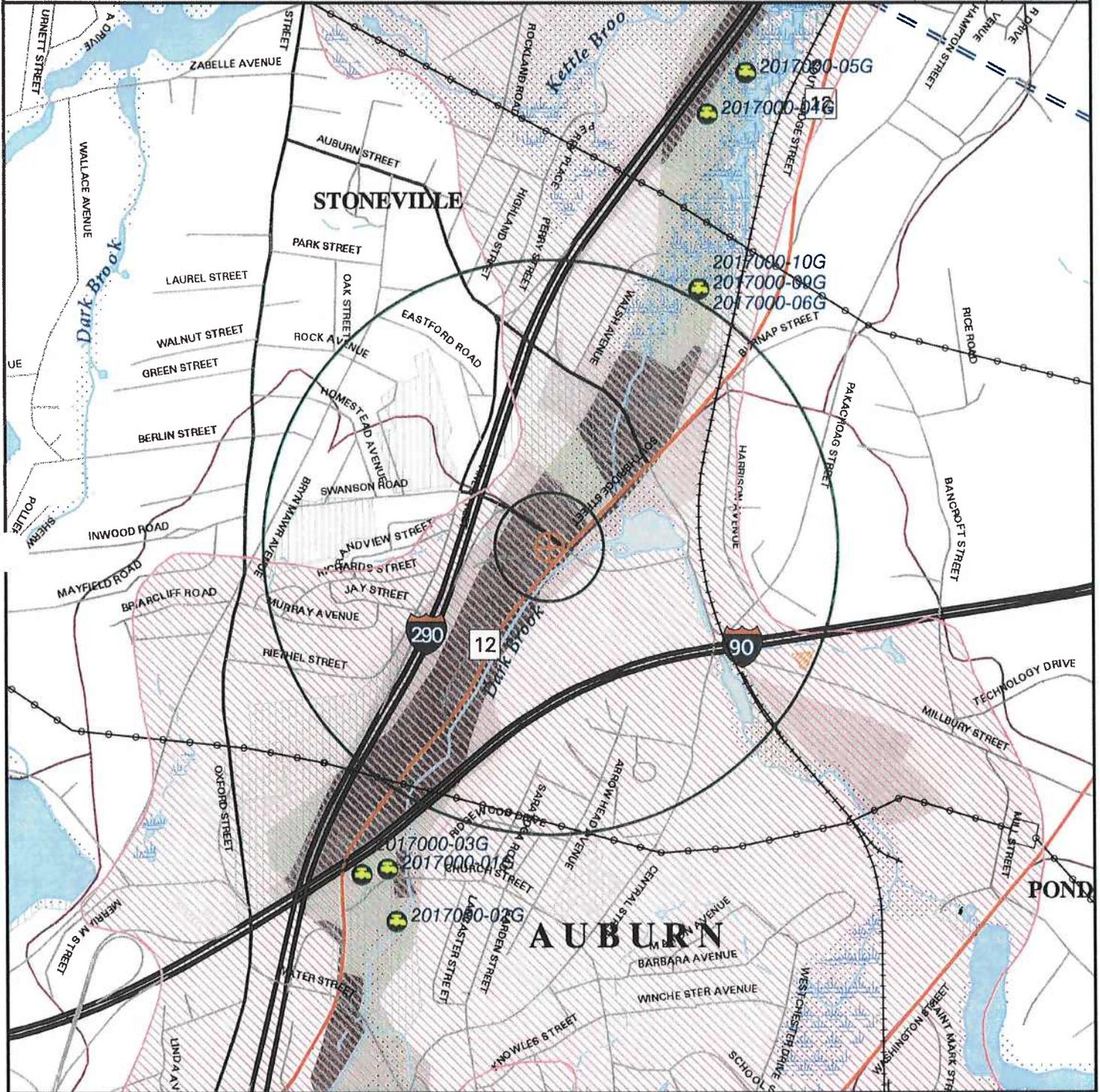
The information shown on this map is the best available at the date of printing. Please refer to the data source descriptions document.



Massachusetts Geographic Information System

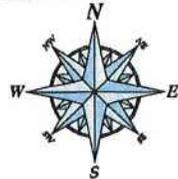


Massachusetts Executive Office of Environmental Affairs - 2005

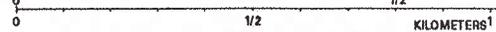


- Roads: Limited Access, Divided, Major Road, Connector, Street, Track, Trail
- Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct
- Basins: Major, Sub; Streams: Perennial, Intermittent, Man Made Shore, Dams
- Potentially Productive Aquifers: Medium, High Yield
- Non-Potential Drinking Water Source Area: Medium, High Yield

- EPA Sole Source Aquifer; FEMA 100-year floodplain
- Public Water Supplies: Ground, Surface, Non Community Approved Zone 2; IWPA; Surface Water Supply Zone A
- Hydrography: Water Features, Public Surface Water Supply
- Wetlands: Fresh, Salt, NHESP Wetlands Habitat
- Protected Open Space; ACEC
- DEP Permitted Solid Waste Facilities; Certified Vernal Pools



SCALE 1:15000



June 21, 2005

# **DILUTION FACTOR CALCULATIONS**

**DILUTION FACTOR CALCULATION WORKSHEET  
NPDES REMEDIATION GENERAL PERMIT - NOTICE OF INTENT FORM**

Site: Shell Service Station  
Address: 380 Southbridge Street, Auburn, Worcester County, MA  
Receiving Stream: Dark Brook

$Q_d = \underline{0.029} =$  Maximum flow rate of the discharge in cubic feet per second (cfs), 1.0 gpm = 0.00223 cfs

$Q_s = \underline{0.03} =$  Receiving water 7Q10 flow (cfs) where,

7Q10 = The minimum flow (cfs) for 7 consecutive days with a recurrence interval of 10 years

$DF = (Q_d + Q_s) / Q_d$

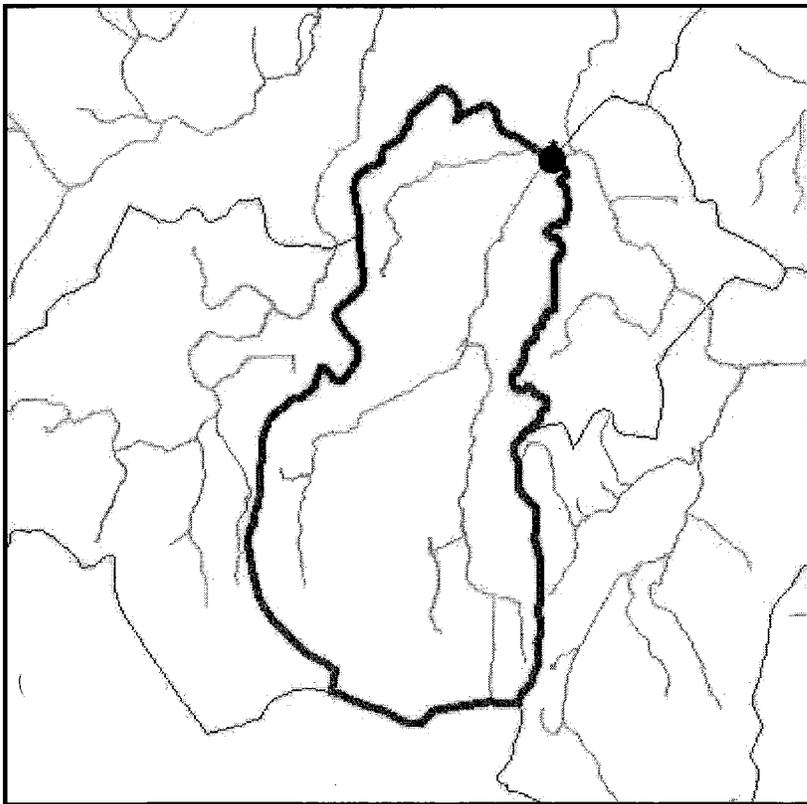
DF = Dilution Factor = 2.0345

**NOTE:**

Source: USGS, Streamflow Statistics Report, <http://ststdmamrl.er.usgs.gov/streamstats/expert.htm>



## Streamflow Statistics Report



**Date:** Tue Oct 11 10:49:50 2005

**Latitude:** 42.204

**Longitude:** -71.836

**Measured Basin Characteristics:**

**Drainage Area (square miles):** 2.66

**Stratified Drift Area (square miles):** 1.26

**Stream Length (miles):** 6.93

**Slope (percent):** 4.11

**Region:** 0

Statistic	Estimated streamflow, ft <sup>3</sup> /s	90% Prediction interval	
		Minimum	Maximum
99-percent duration flow	0.11	0.02	0.44
90-percent duration flow	0.17	0.05	0.59
95-percent duration flow	0.27	0.09	0.85

<b>90-percent duration flow</b>	0.47	0.17	1.26
<b>85-percent duration flow</b>	0.58	0.22	1.52
<b>80-percent duration flow</b>	0.78	0.30	2.00
<b>75-percent duration flow</b>	0.85	0.37	1.89
<b>70-percent duration flow</b>	1.10	0.49	2.45
<b>60-percent duration flow</b>	1.82	0.78	4.21
<b>50-percent duration flow</b>	2.59	1.09	6.14
<b>7-day, 2-year low flow</b>	0.26	0.08	0.83
<b>7-day, 10-year low flow</b>	0.12	0.03	0.45
<b>August median flow</b>	0.60	0.22	1.59

---

U.S. Department of the Interior, U.S. Geological Survey  
10 Bearfoot Road  
Northborough, MA 01532  
(508) 490-5000

Maintainer: [webmaster@mass1.er.usgs.gov](mailto:webmaster@mass1.er.usgs.gov)

**ENDANGERED SPECIES ACT  
TOWN SPECIES LIST**

In accordance with Appendix VII of the NPDES Remediation General Permit, it was determined that the four species of concern (**shortnose sturgeon, dwarf wedge mussel, bog turtle** and the **northern redbelly cooter**) are not present at the facility pursuant to USEPA Endangered Species Act Review Procedures website (<http://cfpub.epa.gov.npdes/stormwater/esa.cfm>). See attached list.

Town		Taxonomic Group	Scientific Name	Common Name	State Rank	Federal Rank	Most Recent Obs
AUBURN	*	Reptile	<i>Clemmys guttata</i>	Spotted Turtle	SC		2001
AUBURN	*	Reptile	<i>Clemmys insculpta</i>	Wood Turtle	SC		1990
AUBURN	*	Reptile	<i>Terrapene carolina</i>	Eastern Box Turtle	SC		1989
AUBURN	*	Mussel	<i>Alasmidonta undulata</i>	Triangle Floater	SC		1999
AUBURN	*	Butterfly/Moth	<i>Callophrys hesseli</i>	Hessel's Hairstreak	SC		2001
AUBURN		Vascular Plant	<i>Conioselinum chinense</i>	Hemlock Parsley	SC		1918
AUBURN	*	Vascular Plant	<i>Ranunculus pensylvanicus</i>	Bristly Buttercup	T		1989
AUBURN	*	Vascular Plant	<i>Rhododendron maximum</i>	Great Laurel	T		1999
AUBURN		Vascular Plant	<i>Waldsteinia fragarioides</i>	Barren Strawberry	SC		1833

**MASSACHUSETTS YEAR 2002  
INTEGRATED LIST OF WATERS  
(303 (d) LIST)**

# **Massachusetts Year 2002 Integrated List of Waters**

## ***Part 2 – Final Listing of Individual Categories of Waters***

**CN: 125.2**

**Commonwealth of Massachusetts**  
**Executive Office of Environmental Affairs**  
Ellen Roy Herzfelder, Secretary  
**Massachusetts Department of Environmental Protection**  
Robert W. Golley Jr., Commissioner  
**Bureau of Resource Protection**  
Cynthia Giles, Assistant Commissioner  
**Division of Watershed Management**  
Glenn Haas, Director

**September, 2003**

## Massachusetts Category 5 Waters "Waters requiring a TMDL"

\*-non Pollutant

NAME	SEGMENT ID	DESCRIPTION	SIZE	ASSESS DATE	POLLUTANT NEEDING TMDL [EPA APPROVAL DATE/DOCUMENT CONTROL NUMBER]
Blackstone River (5131000)	MA51-06_2002	From the Water Quality Monitor, Millville to the Rhode Island Border west of Route 122 (Main St.), Blackstone, MA/(Harris Avenue) North Smithfield RI.	3.7 miles	Oct-00	-Priority organics -Nutrients -pH -(Flow alteration*) -Pathogens -Taste, odor and color -Suspended solids -Turbidity
Burncoat Park Pond (51012)	MA51012_2002	Worcester	5 acres	Oct-00	-Noxious aquatic plants -Turbidity
City Farm Pond (51020)	MA51020_2002	Shrewsbury	2 acres	Oct-00	-Siltation -Noxious aquatic plants
Curtis Ponds (51033)	MA51033_2002	Worcester	18 acres	Oct-00	-Siltation -Noxious aquatic plants [5/2/2002/CN070.1]
Dark Brook (5132825)	MA51-16_2002	Outlet Eddy Pond to confluence with Kettle Brook, Auburn. Miles 2.5-0.0	2.5 miles	Oct-00	-Cause Unknown
Fish Pond (51047)	MA51047_2002	Northbridge	8 acres	Oct-00	-Noxious aquatic plants -(Exotic species*)
Fiske Millpond (51049)	MA51049_2002	Upton/Milford	16 acres	Oct-00	-Noxious aquatic plants -(Exotic species*)
Gilboa Pond (51052)	MA51052_2002	Douglas	21 acres	Oct-00	-Noxious aquatic plants -(Exotic species*)
Harris Pond (51058)	MA51058_2002	Blackstone	93 acres	Oct-00	-Noxious aquatic plants -(Exotic species*)
Hayes Pond (51060)	MA51060_2002	Grafton	6 acres	Dec-99	-Noxious aquatic plants -(Exotic species*)
Kettle Brook (5132800)	MA51-01_2002	Outlet Waite Pond, Leicester through Leesville Pond Auburn/Worcester to inlet Curtis Pond, Worcester.	8 miles	Oct-00	-Cause Unknown -Nutrients -Organic enrichment/Low DO -(Flow alteration*) -Pathogens
Manchaug Pond (51091)	MA51091_2002	Douglas/Sutton	348 acres	Oct-00	-Organic enrichment/Low DO -Noxious aquatic plants -(Exotic species*)
Marble Pond (51093)	MA51093_2002	Sutton	11 acres	Oct-00	-Noxious aquatic plants -(Exotic species*)
Meadow Pond (51193)	MA51193_2002	Northbridge/Sutton	45 acres	Oct-00	-Noxious aquatic plants -(Exotic species*)





**U.S. Environmental Protection Agency**

**Total Maximum Daily Loads**

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**Listed Water Information**

**CYCLE : 2002**

Click [here](#) to see metadata for this report.

**Cycle:** 2002    **State:** MA    **List ID:** MA51-16  
**Waterbody Name:** DARK BROOK  
**State Basin Name:** BLACKSTONE  
**Listed Water Map Link:** [MAP 303\(d\)](#)

**Comments:**

OUTLET EDDY POND TO CONFLUENCE WITH KETTLE BROOK, AUBURN. MILES 2.5-0.0

**State List IDs:**

Cycle	State List ID
2002	MA51-16_2002

**State Impairments:**

State Impairment	Parent Impairment	Priority	Rank	Targeted Flag	Anticipated TMDL Submittal
CAUSE UNKNOWN					

**Potential Sources of Impairment:**

There were no potential sources reported to EPA by the state.

**Total Maximum Daily Load (TMDL) Information:**

There were no TMDLs reported to EPA by the state.

**Watershed Information:**

There was no watershed information reported to EPA by the state.

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Last updated on Monday, October 10th, 2005

**LABORATORY ANALYTICAL  
(SYSTEM INFLUENT)**

# **REPORT OF ANALYTICAL RESULTS**

**NETLAB Case Number Q0926-09**

REVISED

Prepared for:

Attn: Maureen Foley  
CEA, Inc.  
127 Hartwell Street  
West Boylston, MA 01583

Report Date: October 6, 2005

Lab # RI010

**ANALYTICAL METHOD REPORT CERTIFICATION FORM**

Laboratory Name: New England Testing Laboratory, Inc.

Project #: 4218-00

Project Location: Sopus-Auburn

RTN<sup>1</sup>:

This form provides certifications for the following data set: Q0926-09

Sample Matrices: Groundwater (X) Soil/Sediment ( ) Drinking Water ( ) Other:

<b>SW-846 Methods Used</b>	8260B ( )	8151A ( )	8330 ( )	6010B (X)	7470A/1A ( )
	8270C ( )	8081A ( )	VPH ( )	6020 ( )	9014M <sup>2</sup> ( )
	8082 ( )	8021B ( )	EPH ( )	7000 S <sup>3</sup> (X)	Other: ( )
1 List Release Tracking Number (RTN), if known 2 M – SW-846 Method 9014 or MADEP Physiologically Available Cyanide (PAC) Method 3 S – SW-846 Methods 7000 Series List individual method and analyte					

**An affirmative response to questions A, B, and C is required for "Presumptive Certainty" status**

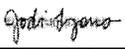
<b>A</b>	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of Custody documentation for the data set?	Yes (X) No <sup>1</sup> ( )
<b>B</b>	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	Yes (X) No <sup>1</sup> ( )
<b>C</b>	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in Section 2.0 of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No <sup>1</sup> ( ) Not Applicable ( )
<b>D</b>	<b><u>VPH and EPH Methods only:</u></b> Was the VPH and EPH Method conducted without significant modifications (see Section 11.3 of respective Methods)	Yes ( ) No <sup>1</sup> ( )

**A response to questions E and F below is required for "Presumptive Certainty" status**

<b>E</b>	Were all QC performance standards and recommendations for the specified methods achieved?	Yes (X) No <sup>1</sup> ( )
<b>F</b>	Were results for all analyte-list compounds/elements for the specified method(s) reported?	Yes (X) No <sup>1</sup> ( )

<sup>1</sup>All NO answers must be addressed in an attached Environmental Laboratory case narrative.

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: 

Position: Director, Inorganics

Printed Name: Jodi Lyons

Date: 11/5/2005

**STATEMENTS/CERTIFICATIONS REQUIRED BY THE NATIONAL  
ENVIRONMENTAL LABORATORY APPROVAL CONFERENCE (NELAC)**

New England Testing Laboratory is certified under the National Environmental Laboratory Approval Program (NELAP). This certification requires the following statements and certifications be included in our report.

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

New England Testing certifies that the test results contained within this report meet all NELAC requirements except as detailed in the Case Narrative section of this report.

**SAMPLES SUBMITTED and REQUEST FOR ANALYSIS:**

The samples listed in Table I were submitted to New England Testing Laboratory on September 26, 2005. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. The case number for this sample submission is Q0926-09.

Custody records are included in this report.

**Site: Sopus - Auburn**

**TABLE I, Samples Submitted**

Sample ID	Date Sampled	Matrix	Analysis Requested
Inf	9/26/05	Water	Table II

**TABLE II, Analysis and Methods**

ANALYSIS	DETERMINATIVE METHOD
Total Residual Chlorine	330.5
Hexavalent Chromium	7196A
Total Metals	
Antimony	3113B
Cadmium	3113B
Lead	3113B
Nickel	200.7
Selenium	3113B
Silver	3113B
Zinc	200.7

These methods are documented in:

*Standard Methods for the Examination of Water and Wastewater*, 18th Edition, 1992, APHA, AWWA-WPCF.

*Manual of Methods for Chemical Analysis of Water and Water Wastes*, EPA-600/4-79-020 (Revised 1983), USEPA/EMSL.

**CASE NARRATIVE:**

**Sample Receipt:**

No sample for ms/msd/duplicate analysis was supplied. No field blank was supplied. (This does not qualify the analytical results but does prevent conducting these SW-846 {Chapter 1, Section 3.4} QA Audits.)

The samples were received 15 deg. C.

The samples were received in the appropriate containers.

The chain of custody was adequately completed and corresponded to the samples submitted.

**Metals:**

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

**General Chemistry:**

Hexavalent Chromium: No anomalies or excursions from QC limits

Residual Chlorine: No anomalies or excursions from QC limits

## Sample Results

**Inf**

Parameter	Result, mg/l	Reporting Limit	Date Analyzed
Total Residual Chlorine	N.D.	0.02	9/26/05
Hexavalent Chromium	N.D.	0.01	9/26/05 @ 16:19

N.D. = Not Detected

## **METALS RESULTS**

The presence of the NETLAB LOGO in the top right corner of each page in this section indicates:

The Technical Manager of the Metals Analysis Department certifies that the results included in this section have been reviewed and approved. Any exceptions or qualifications of substance have been reported in the case narrative.

METALS RESULTS



Case Number: Q0926-09  
 Sample ID: Inf  
 Date collected: 09/26/05  
 Matrix: WATER  
 Sample Type: TOTAL

Analyst CC/RM

Parameter	CAS Number	Preparative Method	Analytical Method	Result	Reporting Limit	Detection Limit	Units	Date of Preparation	Date Analyzed
Antimony	7440-36-0	NA	3113B	ND	0.005	0.005	mg/l	9/27/05	9/29/05
Cadmium	7440-43-9	NA	3113B	ND	0.0005	0.0005	mg/l	9/27/05	9/30/05
Lead	7439-92-1	NA	3113B	0.003	0.002	0.002	mg/l	9/27/05	10/3/05
Nickel	7440-02-0	NA	200.7	0.012	0.005	0.005	mg/l	9/28/05	9/29/05
Selenium	7782-49-2	NA	3113B	ND	0.005	0.005	mg/l	9/27/05	10/4/05
Silver	7440-22-4	NA	3113B	ND	0.0005	0.0005	mg/l	9/27/05	10/5/05
Zinc	7440-66-6	NA	200.7	0.13	0.02	0.02	mg/l	9/28/05	9/29/05

ND indicates not Detected

METALS RESULTS



Sample ID: METHOD BLANK

Matrix WATER

Analyst CC/RM

Sample Type: Preparation Blank

Parameter	CAS Number	Preparative Method	Analytical Method	Result	Reporting Limit	Detection Limit	Units	Date of Preparation	Date Analyzed
Antimony	7440-36-0	NA	3113B	ND	0.005	0.005	mg/l	9/27/05	9/29/05
Cadmium	7440-43-9	NA	3113B	ND	0.0005	0.0005	mg/l	9/27/05	9/30/05
Lead	7439-92-1	NA	3113B	ND	0.002	0.002	mg/l	9/27/05	10/3/05
Nickel	7440-02-0	NA	200.7	ND	0.005	0.005	mg/l	9/28/05	9/29/05
Selenium	7782-49-2	NA	3113B	ND	0.005	0.005	mg/l	9/27/05	10/4/05
Silver	7440-22-4	NA	3113B	ND	0.0005	0.0005	mg/l	9/27/05	10/5/05
Zinc	7440-66-6	NA	200.7	ND	0.02	0.02	mg/l	9/28/05	9/29/05

ND indicates not Detected

## LABORATORY CONTROL SAMPLE RECOVERY

Parameter	True Value	Result	Units	Recovery, %	LCL, %	UCL, %	Date Analyzed
Antimony	0.0200	0.0212	mg/l	106	81	123	9/29/05
Cadmium	0.00500	0.00575	mg/l	115	80	122	9/30/05
Lead	0.0200	0.0189	mg/l	94.6	86	119	10/3/05
Nickel	1.000	1.00	mg/l	100	89	109	9/29/05
Selenium	0.0200	0.0208	mg/l	104	88	113	10/4/05
Silver	0.00500	0.00523	mg/l	105	71	118	10/5/05
Zinc	1.000	1.00	mg/l	100	91	110	9/29/05

## Custody Records





October 19, 2005

Michelle Smith  
NewFields Princeton LLC  
22 West Street  
Red Bank, NJ 07701

Dear Ms. Smith

As per your request, here is a brief note regarding analysis of metals based on methods SW846-6010B, and EPA 200.7. Both are acceptable methods using same technology (Inductively Coupled Plasma, ICP), instrumentation, and optimization techniques. Calibration standards and digested samples are matrix matched and internal standard is utilized for the analysis, and the results are generally compatible.

Sincerely,

Brad Madadian  
Laboratory Manager  
Accutest laboratories of New England



10/19/05

**Technical Report for**

**Shell Oil**

**CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA**

**Accutest Job Number: M51121**

**Sampling Date: 09/26/05**

---

**Report to:**

**Corporate Environmental Advisors**

**drobertson@cea-inc.com**

**ATTN: Danielle Robertson**

**Total number of pages in report: 57**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Reza Fand*  
**Reza Fand**  
**Lab Director**

Certifications: MA (M-MA136) CT (PH-0109) NH (250204) RI (00071) ME (MA136) FL (E87579)  
NY (23346) NJ (MA926) NAVY USACE

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## Sample Summary

Shell Oil

Job No: M51121

CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
M51121-1	09/26/05	12:30 JB	09/27/05	AQ	Influent	INFLUENT
M51121-1A	09/26/05	12:30 JB	09/27/05	AQ	Influent	INFLUENT

## Report of Analysis

Client Sample ID:	INFLUENT	Date Sampled:	09/26/05
Lab Sample ID:	M51121-1	Date Received:	09/27/05
Matrix:	AQ - Influent	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N4263.D	1	10/05/05	ZW	n/a	n/a	MSN152
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	5.0	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	245	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	2.4	2.0	ug/l	
75-65-0	Tert Butyl Alcohol	ND	100	ug/l	
127-18-4	Tetrachloroethene	9.1	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		82-127%
2037-26-5	Toluene-D8	103%		88-112%
460-00-4	4-Bromofluorobenzene	110%		80-118%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	INFLUENT	
Lab Sample ID:	M51121-1	Date Sampled: 09/26/05
Matrix:	AQ - Influent	Date Received: 09/27/05
Method:	SW846 8270C SW846 3510C	Percent Solids: n/a
Project:	CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E24555.D	1	10/04/05	PB	09/29/05	OP9725	MSE1284
Run #2							

Run #	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN PPL List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.1	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	ug/l	
88-75-5	2-Nitrophenol	ND	10	ug/l	
100-02-7	4-Nitrophenol	ND	20	ug/l	
108-95-2	Phenol	ND	5.1	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	ug/l	
85-68-7	Butyl benzyl phthalate	ND	10	ug/l	
84-74-2	Di-n-butyl phthalate	ND	10	ug/l	
117-84-0	Di-n-octyl phthalate	ND	10	ug/l	
84-66-2	Diethyl phthalate	ND	10	ug/l	
131-11-3	Dimethyl phthalate	ND	10	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	10	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	51%		10-120%
4165-62-2	Phenol-d5	36%		10-120%
118-79-6	2,4,6-Tribromophenol	87%		31-123%
4165-60-0	Nitrobenzene-d5	64%		32-120%
321-60-8	2-Fluorobiphenyl	72%		32-120%
1718-51-0	Terphenyl-d14	74%		33-123%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	INFLUENT		
Lab Sample ID:	M51121-1	Date Sampled:	09/26/05
Matrix:	AQ - Influent	Date Received:	09/27/05
Method:	EPA 504 EPA 504	Percent Solids:	n/a
Project:	CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ28764.D	1	10/03/05	CZ	10/01/05	OP9741	GYZ1197
Run #2							

Run #	Initial Volume	Final Volume
Run #1	35.9 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.015	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
460-00-4	Bromofluorobenzene (S)	98%		26-158%	
460-00-4	Bromofluorobenzene (S)	43%		26-158%	

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	INFLUENT		
Lab Sample ID:	M51121-1	Date Sampled:	09/26/05
Matrix:	AQ - Influent	Date Received:	09/27/05
Method:	EPA 608 SW846 3510C	Percent Solids:	n/a
Project:	CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ28721.D	1	10/01/05	CZ	09/29/05	OP9723	GYZ1195
Run #2							

Run #	Initial Volume	Final Volume
Run #1	990 ml	5.0 ml
Run #2		

**PCB List**

CAS No.	Compound	Result	RL	Units	Q
12674-11-2	Aroclor 1016	ND	0.51	ug/l	
11104-28-2	Aroclor 1221	ND	0.51	ug/l	
11141-16-5	Aroclor 1232	ND	0.51	ug/l	
53469-21-9	Aroclor 1242	ND	0.51	ug/l	
12672-29-6	Aroclor 1248	ND	0.51	ug/l	
11097-69-1	Aroclor 1254	ND	0.51	ug/l	
11096-82-5	Aroclor 1260	ND	0.51	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	92%		44-132%
877-09-8	Tetrachloro-m-xylene	108%		44-132%
2051-24-3	Decachlorobiphenyl	100%		12-151%
2051-24-3	Decachlorobiphenyl	118%		12-151%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	INFLUENT	Date Sampled:	09/26/05
Lab Sample ID:	M51121-1	Date Received:	09/27/05
Matrix:	AQ - Influent	Percent Solids:	n/a
Project:	CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA		

**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	ug/l	1	09/28/05	09/28/05 AC	SW846 6010B <sup>1</sup>	SW846 3010A <sup>3</sup>
Chromium	< 10	10	ug/l	1	09/28/05	09/28/05 AC	SW846 6010B <sup>1</sup>	SW846 3010A <sup>3</sup>
Copper	< 25	25	ug/l	1	09/28/05	09/28/05 AC	SW846 6010B <sup>1</sup>	SW846 3010A <sup>3</sup>
Iron	< 100	100	ug/l	1	09/28/05	09/28/05 AC	SW846 6010B <sup>1</sup>	SW846 3010A <sup>3</sup>
Mercury	< 0.20	0.20	ug/l	1	09/29/05	10/03/05 MA	SW846 7470A <sup>2</sup>	SW846 7470A <sup>4</sup>

- (1) Instrument QC Batch: MA6295
- (2) Instrument QC Batch: MA6303
- (3) Prep QC Batch: MP7683
- (4) Prep QC Batch: MP7690

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RL = Reporting Limit

## Report of Analysis

Client Sample ID:	INFLUENT	Date Sampled:	09/26/05
Lab Sample ID:	M51121-1	Date Received:	09/27/05
Matrix:	AQ - Influent	Percent Solids:	n/a
Project:	CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA		

### General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	10/01/05 12:07	MA	EPA 335.3
Oil And Grease, Gravimetric	< 4.1	4.1	mg/l	1	09/30/05	BF	EPA 1664
Solids, Total Suspended	< 4.0	4.0	mg/l	1	09/30/05	BF	EPA 160.2

RL = Reporting Limit

### Report of Analysis

Client Sample ID:	INFLUENT		
Lab Sample ID:	M51121-1A	Date Sampled:	09/26/05
Matrix:	AQ - Influent	Date Received:	09/27/05
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F16114.D	1	10/04/05	PB	09/29/05	OP9727	MSF879
Run #2							

Run #	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	Units	Q
87-86-5	Pentachlorophenol	ND	1.0	ug/l	
83-32-9	Acenaphthene	ND	0.10	ug/l	
208-96-8	Acenaphthylene	ND	0.10	ug/l	
120-12-7	Anthracene	ND	0.10	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.051	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.051	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	ug/l	
218-01-9	Chrysene	ND	0.10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	ug/l	
206-44-0	Fluoranthene	ND	0.10	ug/l	
86-73-7	Fluorene	ND	0.10	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	ug/l	
91-20-3	Naphthalene	ND	0.10	ug/l	
85-01-8	Phenanthrene	ND	0.10	ug/l	
129-00-0	Pyrene	ND	0.10	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	54%		10-120%
4165-62-2	Phenol-d5	38%		10-120%
118-79-6	2,4,6-Tribromophenol	89%		23-135%
4165-60-0	Nitrobenzene-d5	61%		30-120%
321-60-8	2-Fluorobiphenyl	75%		25-120%
1718-51-0	Terphenyl-d14	65%		24-132%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Misc. Forms

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### Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody

# CHAIN OF CUSTODY

495 TECHNOLOGY CENTER WEST • BUILDING ONE  
MARLBOROUGH, MA 01752  
TEL: 508-481-6200 • FAX: 508-481-7753

ACCUTEST JOB #: M51121

ACCUTEST QUOTE #:

CLIENT INFORMATION		FACILITY INFORMATION				ANALYTICAL INFORMATION										MATRIX CODES									
<b>CEA INC</b> NAME 127 Hartwell St ADDRESS West Boylston MA 01583 CITY, STATE ZIP SEND REPORT TO: PHONE # 508-835-8822		<b>SOPUS Auburn</b> PROJECT NAME 438 Southbridge St Auburn MA LOCATION 5001-02-2 PROJECT NO. FAX # 508-835-8812				RALOB RALOC, RALOSI 7 ED6 (604) Total CN PCB (608) CHL/PHI (604) TSS (600mg) Metals: As, total CR, Cu, Hg, Pb										DW - DRINKING WATER GW - GROUND WATER WW - WASTE WATER SO - SOIL SL - SLUDGE OL - OIL LIQ - OTHER LIQUID SOL - OTHER SOLID									
ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION			MATRIX	# OF BOTTLES	PRESERVATION										LAB USE ONLY								
		DATE	TIME	SAMPLED BY:			INH	INH1	INH2	INH3	INH4	INH5	INH6	INH7	INH8	INH9		INH10							
-1	Influent	9-26	12:30	JB	GW	14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
DATA TURNAROUND INFORMATION <input type="checkbox"/> 14 DAYS STANDARD <input checked="" type="checkbox"/> 7 DAYS RUSH <u>NO CHG PER REG.</u> <input type="checkbox"/> 48 HOUR EMERGENCY <input type="checkbox"/> OTHER 14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED		DATA DELIVERABLE INFORMATION <input type="checkbox"/> STANDARD <input type="checkbox"/> COMMERCIAL "B" <input type="checkbox"/> DISK DELIVERABLE <input type="checkbox"/> STATE FORMS <input type="checkbox"/> OTHER (SPECIFY) <u>Loc. 12C, 4B, 3J2, 14A SE</u>				COMMENTS/REMARKS <u>Bill to CEA, Copy to Shell</u> <u>See attached lists</u> <u>must meet MDLS/QA/QC</u>																			
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																									
RELINQUISHED BY SAMPLER:		DATE/TIME:		RECEIVED BY:		RELINQUISHED BY:		DATE/TIME:		RECEIVED BY:		RELINQUISHED BY:		DATE/TIME:		RECEIVED BY:		RELINQUISHED BY:		DATE/TIME:		RECEIVED BY:		RELINQUISHED BY:	
1. <u>CHBS</u>		9/26/05 09:20		1. <u>[Signature]</u>		2. <u>[Signature]</u>		9/27/05 10:00		2. <u>[Signature]</u>		3. <u>[Signature]</u>		9/27/05 10:00		4. <u>[Signature]</u>		4. <u>[Signature]</u>		5. <u>[Signature]</u>		5. <u>[Signature]</u>		5. <u>[Signature]</u>	
5.																									
										PRESERVE WHERE APPLICABLE					ON ICE		TEMPERATURE								
															8		20 C								

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**CHAIN OF CUSTODY ATTACHMENT - EPA NPDES RGP REQUIREMENTS**  
**PART 1 of 2**

PARAMETER	Minimum Levels and Test Methods	Discharge Effluent Limit
METHOD	ML	
<b>MISCELLANEOUS COMPOUNDS</b>		
Total Suspended Solids	160.2 5 mg/l	30 mg/l
Total Petroleum Hydrocarbons	1664 5 mg/l	5.0 mg/l
<b>PCBs</b>		
Total Polychlorinated Biphenyls (PCBs)	608 46863 <sup>4</sup> 0.5 ug/l 0.000064 ug/l	0.000064 ug/l (compliance limit = ML or test method used)
<b>INORGANIC PARAMETERS</b>		
Total Chromium	Flame-AA (248-1)	none specified
	ICP (200.7 <sup>1</sup> )	10 ug/l
	ICP (200.8)	40 ug/l
	ICP (200.45)	40 ug/l
	ICP (4820)	40 ug/l
	Furnace-AA (230.9)	5 ug/l
	Other	50 ug/l
Total Copper (Cu)	Flame-AA	MA = FW = 9.2 ug/l, MA = SW = 3.7 ug/l, NH = FW = 2.9 ug/l, NH = SW = 3.7 ug/l
	ICP	5 ug/l
	Furnace-AA	3 ug/l
Total Mercury (Hg)	Other	MA & NH = FW = 0.9 ug/l, MA & NH = SW = 1.1 ug/l
	60109	see footnote
Total Iron (Fe)	200.7 <sup>2</sup>	MA & NH = 1,000 ug/l
		see footnote

M51121: Chain of Custody  
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**CHAIN OF CUSTODY ATTACHMENT - EPA NPDES RGP REQUIREMENTS  
PART 2 of 2 (ACCUTEST)**

PARAMETER	Minimum Levels and Test Methods METHOD	ML	Discharge Effluent Limit

**LEGEND:**

- RGP = Remediation General Permit
- Flame AA = Flame Atomic Absorption
- ICP = Inductively Coupled Plasma
- Furnace AA = Furnace Atomic Absorption
- FW = Freshwater
- SW = Saltwater
- MA = State of Massachusetts
- NH = State of New Hampshire

**FOOTNOTES:**

1. Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the laboratory-determined method detection limit by 3.18 (see 40 CFR Part 136, Appendix B) Where a minimum level (ML) is listed but a test method is not specified, permittees may use any of the available methods approved for use under 40 CFR 135, including alternatives approved by this permit, that meets ML. See EPA's "Methods and Guidance for the Analysis of Water" at [www.epa.gov/water/cwrcatolog.nsf](http://www.epa.gov/water/cwrcatolog.nsf). Where a test method is specified but ML is not listed for that Method, the lowest ML for listed methods must be used before concentration can be considered as "non-detect".
2. For measuring volatile organic compounds, Method 8260C (or the latest version) may be used as a substitute for CWA Methods 524.2, 602, 624, or 1624. Method 8260C must be preceded by Method 5030 as the preparation method. However, any method changes must be accompanied by documented quality assurance quality control (QA/QC) test to prove that the analytical process can achieve the lower detection limits of Method 8260C. For TBA and TAME the EPA advises no acid as a preservative.
3. For measuring semi-volatile organic compounds, Method 8270D may be used as a substitute for Methods 610, 625, or 1625. Method 8270D must be preceded by Method 3520C as the sample preparation method. In either case, the quality control requirements of Method 3500B must be taken into account. The sample preparation method must be specified with data analysis records. Method 8270D may be modified to provide lower detection and quantitation limits using Selected Ion Monitoring (SIM). Any method changes must be accompanied by documented quality assurance quality control (QA/QC) test results to prove that the analytical process can achieve the lower detection limits of Method 8270D.
4. GC - gas chromatography.
5. GCMS - gas chromatography/mass spectrometry
6. LC-high pressure liquid chromatography.
7. Flame Atomic Absorption.
8. For measuring fuel oxygenates, Method 602 must be modified to include a heated purge.
9. The sum of individual phthalate compounds.
10. In the November 2002 WQC, EPA has revised the definition of total PCBs for aquatic life as "total PCBs is the sum of all homologues, all isomer, all congener, or all Aroclor analyses.
11. Method 1668a (HRGC/HRMS) has been proposed by EPA and is currently being validated. When approval of the method is finalized, it will be approved for use with this general permit
12. Methods 6010b and 200.7 for metals may only be used when sample prepared with SW-846 digestion method, Method 3010.
13. Any value below the ML shall be reported as zero.
14. Analysis of the influent samples shall use the test methods with the MLs at or below limits where practicable.

**CHAIN OF CUSTODY ATTACHMENT - EPA NPDES RGP REQUIREMENTS  
PART 2 of 2 (ACCUTES)**

PARAMETER	Minimum Levels and Test Methods METHOD	ML <sup>1</sup>	Discharge Effluent Limit
<b>MISCELLANEOUS COMPOUNDS</b>			
Cyanide (total)	335.4	10 ug/l	MA & NH = SW = 1.0 ug/l, MA & NH = FW = 5.2 ug/l (compliance limit = ML = 10 ug/l)
<b>VOLATILE ORGANIC COMPOUNDS</b>			
Benzene	603	0.5 ug/l	5.0 ug/l
	624 8260C <sup>2</sup>	2 ug/l see footnote	
Toluene	602	0.5 ug/l	Limited as Total BTEX
	624 8260C <sup>3</sup>	2 ug/l see footnote	
Ethylbenzene	602	0.5 ug/l	Limited as Total BTEX
	624 8260C <sup>2</sup>	2 ug/l see footnote	
Xylenes (total)	602	0.5 ug/l	Limited as Total BTEX
	624 8260C <sup>2</sup>	2 ug/l see footnote	
Total BTEX	602	0.5 ug/l	100 ug/l
	624 8260C <sup>2</sup>	2 ug/l see footnote	
Ethylene Dibromide (EDB), 1,2-Dibromomethane	648	4.0 ug/l	0.05 ug/l (must use method 504.1 for sites certifying this compound is not present)
	504.1	0.01 ug/l	
	524-2	0.1 ug/l	
	8260C <sup>2</sup>	see footnote	
Methyl, tert-butyl ether (MTBE)	602 <sup>4</sup>	0.5 ug/l	70 ug/l
	524-2	5.0 ug/l	
	8260C <sup>2</sup>	see footnote	
	602 <sup>4</sup>	0.5 ug/l	
tert-Butyl Alcohol (TBA)	4666	100 ug/l	Monitor Only
	8260C <sup>1</sup>	see footnote	
tert-Amyl Methyl Ether (TAME)	602 <sup>4</sup>	0.5 ug/l	Monitor Only
	8260C <sup>2</sup>	see footnote	
Naphthalene	610 (GC/FID)	40 ug/l	20 ug/l
	635	2 ug/l	
	524-2	5 ug/l	
	610-HPLC	0.2 ug/l	
Carbon Tetrachloride	8270D <sup>5</sup>	see footnote	4.4 ug/l
	604	0.5 ug/l	
	624	2 ug/l	
	4624	2 ug/l	
8260C <sup>2</sup>	see footnote		

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**CHAIN OF CUSTODY ATTACHMENT - EPA NPDES RGP REQUIREMENTS  
PART 2 of 2 (ACCUTEST)**

PARAMETER	Minimum Levels and Test Methods METHOD	ML	Discharge Effluent Limit
<b>POLYNUCLEAR AROMATIC HYDROCARBON COMPOUNDS</b>			
Total Group I Polynuclear Aromatic Hydrocarbons (PAH)	8270D <sup>3</sup>	see footnote	10.0 ug/l
Benzo (a) Anthracene	610-GC	40-ug/l	0.0038 ug/l (compliance limit = ML of test method used)
	625	5-ug/l	
	610-HPLC	0.05-ug/l	
	8270D <sup>3</sup>	see footnote	
Benzo(e)pyrene	625	40-ug/l	0.0038 ug/l (compliance limit = ML of test method used)
	610-HPLC	2-ug/l	
	8270D <sup>3</sup>	see footnote	
Benzo(b)fluoranthene	625	40-ug/l	0.0038 ug/l (compliance limit = ML of test method used)
	610-HPLC	0.1-ug/l	
	8270D <sup>3</sup>	see footnote	
	625	40-ug/l	
Benzo(k)fluoranthene	610-HPLC	2-ug/l	0.0038 ug/l (compliance limit = ML of test method used)
	8270D <sup>3</sup>	see footnote	
	625	40-ug/l	
	610-HPLC	5-ug/l	
Chrysene	625	40-ug/l	0.0038 ug/l (compliance limit = ML of test method used)
	610-HPLC	5-ug/l	
	8270D <sup>3</sup>	see footnote	
Dibenz(a,h)anthracene	625	40-ug/l	0.0038 ug/l (compliance limit = ML of test method used)
	610-HPLC	0.1-ug/l	
	8270D <sup>3</sup>	see footnote	
	625	40-ug/l	
Indeno(1,2,3-cd)pyrene	610-HPLC	0.05-ug/l	0.0038 ug/l (compliance limit = ML of test method used)
	8270D <sup>3</sup>	see footnote	
	625	40-ug/l	

07/07/2005

Prepared by NewField

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**CHAIN OF CUSTODY ATTACHMENT - EPA NPDES RGP REQUIREMENTS  
PART 2 of 2 (ACCUTEST)**

PARAMETER	Minimum Levels and Test Methods		Discharge Effluent Limit
	METHOD	ML	
Trichloroethylene (TCE)	601	0.5 ug/l	5.0 ug/l
	624	2 ug/l	
	8260C <sup>3</sup>	see footnote	
Vinyl Chloride (chloroethene)	601	0.5 ug/l	2.0 ug/l
	624	2 ug/l	
Acetone	8260C <sup>3</sup>	see footnote	Monitor Only
	824-2	1.0 ug/l	
	4624	50 ug/l	
1,4 Dioxane	8260C <sup>3</sup>	see footnote	Monitor Only
	4624	50 ug/l	
<b>PHENOL COMPOUNDS</b>			
Total Phenols	624	1.0 ug/l	300 ug/l
	8260 <sup>2</sup>	see footnote	
	625	1.0 ug/l	
	4625	1.0 ug/l	
	8260C <sup>3</sup>	see footnote	
Pentachlorophenol (PCP)	604 (GC/EID)	1.0 ug/l	1.0 ug/l
	625	5 ug/l	
	4625	5 ug/l	
Total Phthalates* (Phthalate esters)	8270D <sup>3</sup> (SIM, ML=1.0)	see footnote	3.0 ug/l
	8270D <sup>3</sup> (SIM, ML<=3.0)	see footnote	
Bis (2-Ethylhexyl) Phthalate	605	10 ug/l	6.0 ug/l
	625	5 ug/l	
	8270D <sup>3</sup>	see footnote	

**CHAIN OF CUSTODY ATTACHMENT - EPA NPDES RGP REQUIREMENTS  
PART 2 of 2 (ACCUTEST)**

PARAMETER	Minimum Levels and Test Methods METHOD	ML*	Discharge Effluent Limit
1,4-Dichlorobenzene (p-DCB)	604	0.5 ug/l	5.0 ug/l
	602	0.5 ug/l	
	624	2 ug/l	
	625	2 ug/l	
	8260C <sup>2</sup>	see footnote	
1,2-Dichlorobenzene (o-DCB)	604	0.5 ug/l	600 ug/l
	602	0.5 ug/l	
	624	2 ug/l	
	625	2 ug/l	
	8260C <sup>2</sup>	see footnote	
1,3-Dichlorobenzene (m-DCB)	604	0.5 ug/l	320 ug/l
	602	0.5 ug/l	
	624	2 ug/l	
	625	2 ug/l	
	8260C <sup>2</sup>	see footnote	
1,1 Dichloroethane (DCA)	604	0.5 ug/l	70 ug/l
	624	4 ug/l	
	8260C <sup>2</sup>	see footnote	
1,2 Dichloroethane (DCA)	604	0.5 ug/l	5.0 ug/l
	624	2 ug/l	
	8260C <sup>2</sup>	see footnote	
1,1 Dichloroethylene (DCE)	604	0.5 ug/l	3.2 ug/l
	624	2 ug/l	
	8260C <sup>2</sup>	see footnote	
cis-1,2 Dichloro-ethylene (DCE)	604	0.5 ug/l	70 ug/l
	624	2 ug/l	
	8260C <sup>2</sup>	see footnote	
Dichloromethane (Methylene Chloride)	604	0.5 ug/l	4.6 ug/l
	624	2 ug/l	
	8260C <sup>2</sup>	see footnote	
Tetrachloroethylene (PCE)	604	0.5 ug/l	5.0 ug/l
	624	2 ug/l	
	8260C <sup>2</sup>	see footnote	
1,1,1 Trichloro-ethane (TCA)	604	0.5 ug/l	200 ug/l
	624	2 ug/l	
	8260C <sup>2</sup>	see footnote	
1,1,2 Trichloro-ethane (TCA)	604	0.5 ug/l	5.0 ug/l
	624	2 ug/l	
	8260C <sup>2</sup>	see footnote	

M51121: Chain of Custody  
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**CHAIN OF CUSTODY ATTACHMENT - EPA NPDES RGP REQUIREMENTS  
PART 2 of 2 (ACCUTEST)**

PARAMETER	Minimum Levels and Test Methods METHOD	ML	Discharge Effluent Limit
Total Group II Polynuclear Aromatic Hydrocarbons	8270D <sup>3</sup>	see footnote	100 ug/l
Acenaphthene	610-GC/FID	1 ug/l	Limited as Total Group II PAHs
	625	4 ug/l	
	640-HPLC	0.5 ug/l	
Acenaphthylene	8270D <sup>3</sup>	see footnote	Limited as Total Group II PAHs
	625	40 ug/l	
	640-HPLC	0.2 ug/l	
Anthracene	8270D <sup>3</sup>	see footnote	Limited as Total Group II PAHs
	625	40 ug/l	
	640-HPLC	2 ug/l	
Benzo(a,h)pyrene	8270D <sup>3</sup>	see footnote	Limited as Total Group II PAHs
	625	5 ug/l	
	640-HPLC	0.1 ug/l	
Fluoranthene	8270D <sup>3</sup>	see footnote	Limited as Total Group II PAHs
	610-GC/FID	40 ug/l	
	625	4 ug/l	
Fluorene	8270D <sup>3</sup>	see footnote	Limited as Total Group II PAHs
	640-HPLC	0.5 ug/l	
	625	40 ug/l	
Phenanthrene	8270D <sup>3</sup>	see footnote	Limited as Total Group II PAHs
	640-HPLC	0.1 ug/l	
	625	5 ug/l	
Pyrene	8270D <sup>3</sup>	see footnote	Limited as Total Group II PAHs
	640-HPLC	40 ug/l	
	625	0.5 ug/l	
<b>INORGANIC PARAMETERS</b>			
Total Arsenic (As)	ICP	5 ug/l	MA & NH = FW = 10 ug/l; MA & NH = SW = 35 ug/l
	Furnace-AA	2 ug/l	

**CHAIN OF CUSTODY ATTACHMENT - EPA NPDES RGP REQUIREMENTS**  
**PART 1 of 2**

PARAMETER	Minimum Levels and Test Methods	ML	Discharge Effluent Limit

**LEGEND:**

- RGP = Remediation General Permit
- Flame AA = Flame Atomic Absorption
- ICP = Inductively Coupled Plasma
- Fluorace AA = Fluorace Atomic Absorption
- FW = Freshwater
- SW = Saltwater
- MA = State of Massachusetts
- NH = State of New Hampshire

**FOOTNOTES:**

1. Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the laboratory-determined method detection limit by 3.18 (see 40 CFR Part 136, Appendix B). Where a minimum level (ML) is listed but a test method is not specified, permittees may use any of the available methods approved for use under 40 CFR 136, including alternatives approved by this permit, that meets ML. See EPA's "Methods and Guidance for the Analysis of Water" at [www.epa.gov/water/owrcatalog.nsf](http://www.epa.gov/water/owrcatalog.nsf). Where a test method is specified but ML is not listed for that Method, the lowest ML for listed methods must be used before concentration can be considered as "non-detect".
2. For measuring volatile organic compounds, Method 8260C (or the latest version) may be used as a substitute for CWA Methods 524.2, 602, 924, or 1624. Method 8260C must be preceded by Method 5030 as the preparation method. However, any method changes must be accompanied by documented quality assurance quality control (QA/QC) test to prove that the analytical process can achieve the lower detection limits of Method 8260C. For TBA and TAME the EPA advises no acid as a preservative.
3. For measuring semi-volatile organic compounds, Method 8270D may be used as a substitute for Methods 610, 625, or 1625. Method 8270D must be preceded by Method 3520C as the sample preparation method. In either case, the quality control requirements of Method 3500B must be taken into account. The sample preparation method must be specified with data analysis records. Method 8270D may be modified to provide lower detection and quantitation limits using Selected Ion Monitoring (SIM). Any method changes must be accompanied by documented quality assurance quality control (QA/QC) test results to prove that the analytical process can achieve the lower detection limits of Method 8270D.
4. GC - gas chromatography.
5. GCMS - gas chromatography/mass spectrometry
6. LC-high pressure liquid chromatography.
7. Flame Atomic Absorption.
8. For measuring fuel oxygenates, Method 602 must be modified to include a heated purge.
9. The sum of individual phthalate compounds.
10. In the November 2002 WQC, EPA has revised the definition of total PCBs for aquatic life as "total PCBs is the sum of all homologues, all isomer, all congener, or all Aroclor analyses.
11. Method 1631a (HRGC-HRAMS) has been proposed by EPA and is currently being validated. When approval of the method is finalized, it will be approved for use with this general permit.
12. Methods 6010b and 200.7 for metals may only be used when sample prepared with SW-645 digestion method, Method 3010.
13. Any value below the ML shall be reported as zero.
14. Analysis of the influent samples shall use the test methods with the MLs at or below limits where practicable.

## GC/MS Volatiles

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### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

# Method Blank Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN152-MB	N4262.D	1	10/05/05	ZW	n/a	n/a	MSN152

4.1  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

M51121-1

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	5.0	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
75-65-0	Tert Butyl Alcohol	ND	100	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	105% 82-127%
2037-26-5	Toluene-D8	103% 88-112%
460-00-4	4-Bromofluorobenzene	106% 80-118%

# Blank Spike/Blank Spike Duplicate Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN152-BS	N4259.D	1	10/05/05	ZW	n/a	n/a	MSN152
MSN152-BSD	N4260.D	1	10/05/05	ZW	n/a	n/a	MSN152

4.2  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

M51121-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	30.6	61	28.8	58	6	31-150/25
71-43-2	Benzene	50	45.0	90	45.9	92	2	73-127/25
56-23-5	Carbon tetrachloride	50	66.3	133	68.7	137	4	70-141/25
95-50-1	1,2-Dichlorobenzene	50	42.4	85	43.0	86	1	75-125/25
541-73-1	1,3-Dichlorobenzene	50	42.3	85	39.2	78	8	76-124/25
106-46-7	1,4-Dichlorobenzene	50	41.1	82	41.1	82	0	76-127/25
75-34-3	1,1-Dichloroethane	50	46.3	93	50.3	101	8	70-136/25
107-06-2	1,2-Dichloroethane	50	56.8	114	56.5	113	1	68-137/25
75-35-4	1,1-Dichloroethene	50	42.8	86	46.2	92	8	65-142/25
156-59-2	cis-1,2-Dichloroethene	50	46.8	94	52.9	106	12	72-130/25
123-91-1	1,4-Dioxane	250	254	102	209	84	19	50-140/25
100-41-4	Ethylbenzene	50	45.0	90	48.4	97	7	77-126/25
1634-04-4	Methyl Tert Butyl Ether	50	49.3	99	51.2	102	4	65-135/25
75-09-2	Methylene chloride	50	45.3	91	49.1	98	8	67-136/25
91-20-3	Naphthalene	50	43.2	86	42.2	84	2	51-144/25
994-05-8	tert-Amyl Methyl Ether	50	49.9	100	50.1	100	0	61-139/25
75-65-0	Tert Butyl Alcohol	500	485	97	484	97	0	42-161/25
127-18-4	Tetrachloroethene	50	44.5	89	47.9	96	7	66-142/25
108-88-3	Toluene	50	45.5	91	44.2	88	3	76-124/25
71-55-6	1,1,1-Trichloroethane	50	50.4	101	55.7	111	10	71-137/25
79-00-5	1,1,2-Trichloroethane	50	49.1	98	48.7	97	1	68-134/25
79-01-6	Trichloroethene	50	42.0	84	44.3	89	5	71-130/25
75-01-4	Vinyl chloride	50	51.4	103	57.3	115	11	46-151/25
1330-20-7	Xylene (total)	150	139	93	146	97	5	78-129/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	105%	110%	82-127%
2037-26-5	Toluene-D8	102%	101%	88-112%
460-00-4	4-Bromofluorobenzene	99%	94%	80-118%

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M51137-5MS	N4279.D	5	10/05/05	ZW	n/a	n/a	MSN152
M51137-5MSD	N4280.D	5	10/05/05	ZW	n/a	n/a	MSN152
M51137-5	N4272.D	1	10/05/05	ZW	n/a	n/a	MSN152

The QC reported here applies to the following samples:

Method: SW846 8260B

M51121-1

CAS No.	Compound	M51137-5 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	250	145	58	132	53	9	30-150/35
71-43-2	Benzene	ND	250	249	100	232	93	7	67-132/20
56-23-5	Carbon tetrachloride	ND	250	401	160* a	375	150* a	7	63-144/20
95-50-1	1,2-Dichlorobenzene	ND	250	221	88	229	92	4	75-123/20
541-73-1	1,3-Dichlorobenzene	ND	250	216	86	217	87	0	75-122/20
106-46-7	1,4-Dichlorobenzene	ND	250	211	84	226	90	7	77-125/20
75-34-3	1,1-Dichloroethane	ND	250	263	105	233	93	12	66-141/20
107-06-2	1,2-Dichloroethane	ND	250	352	141	333	133	6	61-144/20
75-35-4	1,1-Dichloroethene	ND	250	226	90	210	84	7	57-150/20
156-59-2	cis-1,2-Dichloroethene	ND	250	260	104	241	96	8	69-133/20
123-91-1	1,4-Dioxane	ND	1250	1360	109	1130	90	18	43-141/32
100-41-4	Ethylbenzene	ND	250	240	96	233	93	3	72-129/20
1634-04-4	Methyl Tert Butyl Ether	ND	250	280	112	259	104	8	61-137/20
75-09-2	Methyl chloride	ND	250	250	100	239	96	4	64-143/20
91-20-3	Naphthalene	ND	250	209	84	217	87	4	37-146/28
994-05-8	tert-Amyl Methyl Ether	ND	250	273	109	266	106	3	54-144/20
75-65-0	Tert Butyl Alcohol	ND	2500	2590	104	2440	98	6	31-170/29
127-18-4	Tetrachloroethene	ND	250	231	92	216	86	7	57-145/20
108-88-3	Toluene	ND	250	248	99	240	96	3	69-129/20
71-55-6	1,1,1-Trichloroethane	ND	250	317	127	276	110	14	65-144/20
79-00-5	1,1,2-Trichloroethane	ND	250	285	114	276	110	3	63-138/20
79-01-6	Trichloroethene	ND	250	262	105	242	97	8	67-132/20
75-01-4	Vinyl chloride	ND	250	258	103	280	112	8	39-150/23
1330-20-7	Xylene (total)	ND	750	725	97	715	95	1	72-133/20

CAS No.	Surrogate Recoveries	MS	MSD	M51137-5	Limits
1868-53-7	Dibromofluoromethane	115%	102%	111%	82-127%
2037-26-5	Toluene-D8	104%	102%	99%	88-112%
460-00-4	4-Bromofluorobenzene	98%	101%	107%	80-118%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

4.3  
4

# Volatile Surrogate Recovery Summary

Job Number: M51121

Account: SHELLWIC Shell Oil

Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Method: SW846 8260B

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
M51121-1	N4263.D	108.0	103.0	110.0
M51137-5MS	N4279.D	115.0	104.0	98.0
M51137-5MSD	N4280.D	102.0	102.0	101.0
MSN152-BS	N4259.D	105.0	102.0	99.0
MSN152-BSD	N4260.D	110.0	101.0	94.0
MSN152-MB	N4262.D	105.0	103.0	106.0

Surrogate Compounds                      Recovery Limits

S1 = Dibromofluoromethane	82-127%
S2 = Toluene-D8	88-112%
S3 = 4-Bromofluorobenzene	80-118%

4.4

4

## GC/MS Semi-volatiles



### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

# Method Blank Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9725-MB	E24561.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285

The QC reported here applies to the following samples:

Method: SW846 8270C

M51121-1

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	5.0	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	5.0	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	10	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Results	Limits
367-12-4	2-Fluorophenol	45%	10-120%
4165-62-2	Phenol-d5	31%	10-120%
118-79-6	2,4,6-Tribromophenol	82%	31-123%
4165-60-0	Nitrobenzene-d5	65%	32-120%
321-60-8	2-Fluorobiphenyl	69%	32-120%
1718-51-0	Terphenyl-d14	77%	33-123%

5.1  
5

# Method Blank Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9727-MB	F16108.D	1	10/04/05	PB	09/29/05	OP9727	MSF879

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

M51121-1A

CAS No.	Compound	Result	RL	Units	Q
87-86-5	Pentachlorophenol	ND	1.0	ug/l	
83-32-9	Acenaphthene	ND	0.10	ug/l	
208-96-8	Acenaphthylene	ND	0.10	ug/l	
120-12-7	Anthracene	ND	0.10	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	ug/l	
218-01-9	Chrysene	ND	0.10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	ug/l	
206-44-0	Fluoranthene	ND	0.10	ug/l	
86-73-7	Fluorene	ND	0.10	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	ug/l	
91-20-3	Naphthalene	ND	0.10	ug/l	
85-01-8	Phenanthrene	ND	0.10	ug/l	
129-00-0	Pyrene	ND	0.10	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	47%	10-120%
4165-62-2	Phenol-d5	32%	10-120%
118-79-6	2,4,6-Tribromophenol	83%	23-135%
4165-60-0	Nitrobenzene-d5	58%	30-120%
321-60-8	2-Fluorobiphenyl	70%	25-120%
1718-51-0	Terphenyl-d14	74%	24-132%

5.1  
5

# Blank Spike/Blank Spike Duplicate Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9725-BS	E24562.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285
OP9725-BSD	E24563.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285

The QC reported here applies to the following samples:

Method: SW846 8270C

M51121-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
95-57-8	2-Chlorophenol	100	73.0	73	76.8	77	5	50-120/20
59-50-7	4-Chloro-3-methyl phenol	100	71.3	71	78.3	78	9	56-120/20
120-83-2	2,4-Dichlorophenol	100	77.0	77	88.0	88	13	56-120/20
105-67-9	2,4-Dimethylphenol	100	72.6	73	68.7	69	6	37-120/20
51-28-5	2,4-Dinitrophenol	100	56.3	56	66.6	67	17	27-120/20
534-52-1	4,6-Dinitro-o-cresol	100	78.1	78	91.5	92	16	36-125/20
88-75-5	2-Nitrophenol	100	74.6	75	77.5	78	4	54-120/20
100-02-7	4-Nitrophenol	100	43.3	43	46.2	46	6	7-120/20
108-95-2	Phenol	100	39.6	40	38.1	38	4	17-120/20
88-06-2	2,4,6-Trichlorophenol	100	77.9	78	90.2	90	15	53-120/20
85-68-7	Butyl benzyl phthalate	50	36.3	73	36.9	74	2	27-120/20
84-74-2	Di-n-butyl phthalate	50	41.6	83	41.6	83	0	47-120/20
117-84-0	Di-n-octyl phthalate	50	38.5	77	39.4	79	2	60-123/20
84-66-2	Diethyl phthalate	50	33.1	66	32.2	64	3	8-120/20
131-11-3	Dimethyl phthalate	50	18.4	37	17.6	35	4	1-120/20
117-81-7	bis(2-Ethylhexyl)phthalate	50	41.1	82	42.0	84	2	61-120/20

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	54%	59%	10-120%
4165-62-2	Phenol-d5	39%	40%	10-120%
118-79-6	2,4,6-Tribromophenol	92%	99%	31-123%
4165-60-0	Nitrobenzene-d5	74%	78%	32-120%
321-60-8	2-Fluorobiphenyl	86%	83%	32-120%
1718-51-0	Terphenyl-d14	87%	89%	33-123%

5.2  
5

# Blank Spike/Blank Spike Duplicate Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9727-BS	F16109.D	1	10/04/05	PB	09/29/05	OP9727	MSF879
OP9727-BSD	F16110.D	1	10/04/05	PB	09/29/05	OP9727	MSF879

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

M51121-1A

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
87-86-5	Pentachlorophenol	100	75.5	76	86.7	87	14	53-111/30
83-32-9	Acenaphthene	50	37.5	75	38.9	78	4	47-120/30
208-96-8	Acenaphthylene	50	31.3	63	32.4	65	3	49-120/30
120-12-7	Anthracene	50	42.6	85	44.5	89	4	55-120/30
56-55-3	Benzo(a)anthracene	50	45.6	91	47.0	94	3	50-129/30
50-32-8	Benzo(a)pyrene	50	40.8	82	42.3	85	4	57-120/30
205-99-2	Benzo(b)fluoranthene	50	37.4	75	40.7	81	8	62-120/30
191-24-2	Benzo(g,h,i)perylene	50	40.9	82	42.2	84	3	57-127/30
207-08-9	Benzo(k)fluoranthene	50	40.1	80	39.3	79	2	51-120/30
218-01-9	Chrysene	50	48.5	97	50.0	100	3	54-120/30
53-70-3	Dibenzo(a,h)anthracene	50	49.0	98	51.1	102	4	45-144/30
206-44-0	Fluoranthene	50	43.5	87	45.7	91	5	51-121/30
86-73-7	Fluorene	50	38.1	76	39.2	78	3	56-120/30
193-39-5	Indeno(1,2,3-cd)pyrene	50	41.8	84	43.5	87	4	54-121/30
91-57-6	2-Methylnaphthalene	50	33.4	67	35.1	70	5	40-120/30
91-20-3	Naphthalene	50	32.5	65	34.6	69	6	37-120/30
85-01-8	Phenanthrene	50	41.1	82	42.8	86	4	51-120/30
129-00-0	Pyrene	50	40.8	82	41.3	83	1	45-120/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	52%	61%	10-120%
4165-62-2	Phenol-d5	38%	44%	10-120%
118-79-6	2,4,6-Tribromophenol	82%	94%	23-135%
4165-60-0	Nitrobenzene-d5	67%	71%	30-120%
321-60-8	2-Fluorobiphenyl	77%	80%	25-120%
1718-51-0	Terphenyl-d14	79%	81%	24-132%

5.2  
5

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9725-MS	E24564.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285
OP9725-MSD	E24565.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285
M51224-1	E24566.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285

The QC reported here applies to the following samples:

Method: SW846 8270C

M51121-1

CAS No.	Compound	M51224-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
95-57-8	2-Chlorophenol	ND	100	75.0	75	75.7	76	1	43-120/24
59-50-7	4-Chloro-3-methyl phenol	ND	100	76.3	76	76.9	77	1	52-120/20
120-83-2	2,4-Dichlorophenol	ND	100	86.1	86	79.9	80	7	49-120/23
105-67-9	2,4-Dimethylphenol	ND	100	53.8	54	50.1	50	7	1-120/33
51-28-5	2,4-Dinitrophenol	ND	100	68.9	69	68.5	69	1	29-124/50
534-52-1	4,6-Dinitro-o-cresol	ND	100	86.4	86	89.1	89	3	41-126/37
88-75-5	2-Nitrophenol	ND	100	73.5	74	84.6	85	14	48-120/31
100-02-7	4-Nitrophenol	ND	100	47.9	48	48.1	48	0	7-120/22
108-95-2	Phenol	ND	100	38.7	39	40.7	41	5	13-120/25
88-06-2	2,4,6-Trichlorophenol	ND	100	86.0	86	83.6	84	3	44-120/26
85-68-7	Butyl benzyl phthalate	ND	50	33.8	68	34.9	70	3	28-120/29
84-74-2	Di-n-butyl phthalate	ND	50	40.9	82	41.7	83	2	46-120/25
117-84-0	Di-n-octyl phthalate	ND	50	40.0	80	39.8	80	1	57-124/26
84-66-2	Diethyl phthalate	ND	50	32.5	65	33.1	66	2	12-120/39
131-11-3	Dimethyl phthalate	ND	50	17.5	35	18.9	38	8	1-120/50
117-81-7	bis(2-Ethylhexyl)phthalate	ND	50	41.0	82	42.1	84	3	53-125/25

CAS No.	Surrogate Recoveries	MS	MSD	M51224-1	Limits
367-12-4	2-Fluorophenol	59%	59%	48%	10-120%
4165-62-2	Phenol-d5	39%	43%	29%	10-120%
118-79-6	2,4,6-Tribromophenol	98%	96%	86%	31-123%
4165-60-0	Nitrobenzene-d5	75%	79%	71%	32-120%
321-60-8	2-Fluorobiphenyl	85%	91%	80%	32-120%
1718-51-0	Terphenyl-d14	88%	89%	85%	33-123%

5.3



# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9727-MS	F16111.D	1	10/04/05	PB	09/29/05	OP9727	MSF879
OP9727-MSD	F16112.D	1	10/04/05	PB	09/29/05	OP9727	MSF879
M51357-1	F16113.D	1	10/04/05	PB	09/29/05	OP9727	MSF879

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

M51121-1A

CAS No.	Compound	M51357-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
87-86-5	Pentachlorophenol	ND	100	80.5	81	80.1	80	0	5-137/52
83-32-9	Acenaphthene	ND	50	40.9	82	41.9	84	2	49-120/20
208-96-8	Acenaphthylene	ND	50	33.2	66	34.0	68	2	50-120/22
120-12-7	Anthracene	ND	50	44.8	90	44.4	89	1	58-120/20
56-55-3	Benzo(a)anthracene	ND	50	46.0	92	45.9	92	0	50-132/20
50-32-8	Benzo(a)pyrene	ND	50	41.6	83	41.6	83	0	51-120/22
205-99-2	Benzo(b)fluoranthene	ND	50	38.2	76	40.2	80	5	67-120/20
191-24-2	Benzo(g,h,i)perylene	ND	50	41.7	83	41.9	84	0	63-121/20
207-08-9	Benzo(k)fluoranthene	ND	50	41.1	82	38.7	77	6	54-120/25
218-01-9	Chrysene	ND	50	49.3	99	49.5	99	0	59-120/20
53-70-3	Dibenzo(a,h)anthracene	ND	50	47.9	96	50.3	101	5	46-146/20
206-44-0	Fluoranthene	ND	50	45.1	90	45.5	91	1	58-120/20
86-73-7	Fluorene	ND	50	39.7	79	40.3	81	1	62-120/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND	50	42.6	85	42.9	86	1	52-124/20
91-57-6	2-Methylnaphthalene	ND	50	37.5	75	38.4	77	2	44-120/20
91-20-3	Naphthalene	ND	50	36.3	73	37.3	75	3	41-120/20
85-01-8	Phenanthrene	ND	50	43.4	87	43.9	88	1	51-120/21
129-00-0	Pyrene	ND	50	40.7	81	40.8	82	0	48-121/20

CAS No.	Surrogate Recoveries	MS	MSD	M51357-1	Limits
367-12-4	2-Fluorophenol	60%	57%	45%	10-120%
4165-62-2	Phenol-d5	43%	42%	27%	10-120%
118-79-6	2,4,6-Tribromophenol	94%	91%	79%	23-135%
4165-60-0	Nitrobenzene-d5	70%	71%	60%	30-120%
321-60-8	2-Fluorobiphenyl	80%	81%	86%	25-120%
1718-51-0	Terphenyl-d14	80%	78%	80%	24-132%

# Semivolatile Surrogate Recovery Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Method: SW846 8270C

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
M51121-1	E24555.D	51.0	36.0	87.0	64.0	72.0	74.0
OP9725-BS	E24562.D	54.0	39.0	92.0	74.0	86.0	87.0
OP9725-BSD	E24563.D	59.0	40.0	99.0	78.0	83.0	89.0
OP9725-MB	E24561.D	45.0	31.0	82.0	65.0	69.0	77.0
OP9725-MS	E24564.D	59.0	39.0	98.0	75.0	85.0	88.0
OP9725-MSD	E24565.D	59.0	43.0	96.0	79.0	91.0	89.0

Surrogate Compounds                      Recovery Limits

S1 = 2-Fluorophenol	10-120%
S2 = Phenol-d5	10-120%
S3 = 2,4,6-Tribromophenol	31-123%
S4 = Nitrobenzene-d5	32-120%
S5 = 2-Fluorobiphenyl	32-120%
S6 = Terphenyl-d14	33-123%

5.4

5

# Semivolatile Surrogate Recovery Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Method: SW846 8270C BY SIM	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
M51121-1A	F16114.D	54.0	38.0	89.0	61.0	75.0	65.0
OP9727-BS	F16109.D	52.0	38.0	82.0	67.0	77.0	79.0
OP9727-BSD	F16110.D	61.0	44.0	94.0	71.0	80.0	81.0
OP9727-MB	F16108.D	47.0	32.0	83.0	58.0	70.0	74.0
OP9727-MS	F16111.D	60.0	43.0	94.0	70.0	80.0	80.0
OP9727-MSD	F16112.D	57.0	42.0	91.0	71.0	81.0	78.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	10-120%
S2 = Phenol-d5	10-120%
S3 = 2,4,6-Tribromophenol	23-135%
S4 = Nitrobenzene-d5	30-120%
S5 = 2-Fluorobiphenyl	25-120%
S6 = Terphenyl-d14	24-132%

5.4  
5

## GC Volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

# Method Blank Summary

Job Number: M51121  
Account: SHELLWIC Shell Oil  
Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9741-MB	YZ28782.D	1	10/03/05	CZ	10/01/05	OP9741	GYZ1197

The QC reported here applies to the following samples:

Method: EPA 504

M51121-1

CAS No.	Compound	Result	RL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.015	ug/l	

CAS No.	Surrogate Recoveries	Limits
460-00-4	Bromofluorobenzene (S)	133% 26-158%
460-00-4	Bromofluorobenzene (S)	60% 26-158%

6.1

6

# Blank Spike Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9741-BS	YZ28760.D	1	10/02/05	CZ	10/01/05	OP9741	GYZ1197

The QC reported here applies to the following samples:

Method: EPA 504

M51121-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
106-93-4	1,2-Dibromoethane	0.071	0.082	115	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	140%	26-158%
460-00-4	Bromofluorobenzene (S)	57%	26-158%

6.2  
6

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9741-MS	YZ28761.D	1	10/02/05	CZ	10/01/05	OP9741	GYZ1197
OP9741-MSD	YZ28762.D	1	10/02/05	CZ	10/01/05	OP9741	GYZ1197
M51307-1	YZ28763.D	1	10/03/05	CZ	10/01/05	OP9741	GYZ1197

The QC reported here applies to the following samples:

Method: EPA 504

M51121-1

CAS No.	Compound	M51307-1 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
106-93-4	1,2-Dibromoethane	ND	0.071	0.095	134	0.094	132	1	65-135/30

CAS No.	Surrogate Recoveries	MS	MSD	M51307-1	Limits
460-00-4	Bromofluorobenzene (S)	141%	129%	156%	26-158%
460-00-4	Bromofluorobenzene (S)	58%	53%	60%	26-158%

6.3  
6

# Volatile Surrogate Recovery Summary

Job Number: M51121  
Account: SHELLWIC Shell Oil  
Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Method: EPA 504	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 <sup>a</sup>	S1 <sup>b</sup>
M51121-1	YZ28764.D	98.0	43.0
OP9741-BS	YZ28760.D	140.0	57.0
OP9741-MB	YZ28782.D	133.0	60.0
OP9741-MS	YZ28761.D	141.0	58.0
OP9741-MSD	YZ28762.D	129.0	53.0

Surrogate Compounds                      Recovery Limits

S1 = Bromofluorobenzene (S)                      26-158%

- (a) Recovery from GC signal #1
- (b) Recovery from GC signal #2

6.4  
6

## GC Semi-volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

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# Method Blank Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9723-MB	YZ28717.D	1	10/01/05	CZ	09/29/05	OP9723	GYZ1195

The QC reported here applies to the following samples:

Method: EPA 608

M51121-1

CAS No.	Compound	Result	RL	Units	Q
12674-11-2	Aroclor 1016	ND	0.50	ug/l	
11104-28-2	Aroclor 1221	ND	0.50	ug/l	
11141-16-5	Aroclor 1232	ND	0.50	ug/l	
53469-21-9	Aroclor 1242	ND	0.50	ug/l	
12672-29-6	Aroclor 1248	ND	0.50	ug/l	
11097-69-1	Aroclor 1254	ND	0.50	ug/l	
11096-82-5	Aroclor 1260	ND	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits
877-09-8	Tetrachloro-m-xylene	91% 44-132%
877-09-8	Tetrachloro-m-xylene	110% 44-132%
2051-24-3	Decachlorobiphenyl	58% 12-151%
2051-24-3	Decachlorobiphenyl	70% 12-151%

7.1



# Blank Spike Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9723-BS	YZ28718.D	1	10/01/05	CZ	09/29/05	OP9723	GYZ1195

The QC reported here applies to the following samples:

Method: EPA 608

M51121-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
12674-11-2	Aroclor 1016	2	2.0	100	50-114
11104-28-2	Aroclor 1221		ND		15-178
11141-16-5	Aroclor 1232		ND		10-215
53469-21-9	Aroclor 1242		ND		39-150
12672-29-6	Aroclor 1248		ND		38-158
11097-69-1	Aroclor 1254		ND		29-131
11096-82-5	Aroclor 1260	2	1.8	90	8-127

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	90%	44-132%
877-09-8	Tetrachloro-m-xylene	107%	44-132%
2051-24-3	Decachlorobiphenyl	60%	12-151%
2051-24-3	Decachlorobiphenyl	70%	12-151%

7.2  
7

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9723-MS	YZ28719.D	1	10/01/05	CZ	09/29/05	OP9723	GYZ1195
OP9723-MSD	YZ28720.D	1	10/01/05	CZ	09/29/05	OP9723	GYZ1195
M51222-1	YZ28788.D	1	10/04/05	CZ	09/29/05	OP9723	GYZ1198

The QC reported here applies to the following samples:

Method: EPA 608

M51121-1

CAS No.	Compound	M51222-1 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	ND	2	2.0	100	1.8	90	11	50-114/30
11104-28-2	Aroclor 1221	ND		ND		ND		nc	15-178/30
11141-16-5	Aroclor 1232	ND		ND		ND		nc	10-215/30
53469-21-9	Aroclor 1242	ND		ND		ND		nc	39-150/30
12672-29-6	Aroclor 1248	ND		ND		ND		nc	38-158/30
11097-69-1	Aroclor 1254	ND		ND		ND		nc	29-131/30
11096-82-5	Aroclor 1260	ND	2	2.0	100	1.9	95	5	8-127/30

CAS No.	Surrogate Recoveries	MS	MSD	M51222-1	Limits
877-09-8	Tetrachloro-m-xylene	91%	87%	99%	44-132%
877-09-8	Tetrachloro-m-xylene	106%	101%	55%	44-132%
2051-24-3	Decachlorobiphenyl	103%	100%	105%	12-151%
2051-24-3	Decachlorobiphenyl	122%	117%	56%	12-151%

7.3



# Semivolatile Surrogate Recovery Summary

Job Number: M51121  
 Account: SHELLWIC Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Method: EPA 608	Matrix: AQ
-----------------	------------

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 <sup>a</sup>	S1 <sup>b</sup>	S2 <sup>a</sup>	S2 <sup>b</sup>
M51121-1	YZ28721.D	92.0	108.0	100.0	118.0
OP9723-BS	YZ28718.D	90.0	107.0	60.0	70.0
OP9723-MB	YZ28717.D	91.0	110.0	58.0	70.0
OP9723-MS	YZ28719.D	91.0	106.0	103.0	122.0
OP9723-MSD	YZ28720.D	87.0	101.0	100.0	117.0

Surrogate Compounds                      Recovery Limits

S1 = Tetrachloro-m-xylene              44-132%  
 S2 = Decachlorobiphenyl                12-151%

(a) Recovery from GC signal #1  
 (b) Recovery from GC signal #2

7.4  
7

## Metals Analysis

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### QC Data Summaries



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**Includes the following where applicable:**

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: M51121  
Account: SHELLWIC - Shell Oil  
Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

QC Batch ID: MP7683  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 09/28/05 09/28/05

Metal	RL	IDL	MB raw	final	MB raw	final
Aluminum	200	14				
Antimony	6.0	2.4	anr			
Arsenic	5.0	2.3	0.060	<5.0	0.47	<5.0
Barium	200	.64	anr			
Beryllium	4.0	.18				
Boron	100	1.2				
Cadmium	4.0	.22	anr			
Calcium	5000	4.7				
Chromium	10	.53	0.84	<10	0.53	<10
Cobalt	50	.47				
Copper	25	1.2	1.7	<25	1.0	<25
Iron	100	14	13.8	<100	3.6	<100
Lead	5.0	1.2	anr			
Magnesium	5000	5.3				
Manganese	15	.17				
Molybdenum	100	.48				
Nickel	40	.49	anr			
Potassium	5000	19				
Selenium	10	1.7	anr			
Silicon	100	11				
Silver	5.0	.12	anr			
Sodium	5000	94				
Strontium	10	.12				
Thallium	10	2.9				
Tin	100	1.7				
Titanium	50	1.3				
Tungsten	100					
Vanadium	50	1.3				
Zinc	20	1.2	anr			

Associated samples MP7683: M51121-1

Results < IDL are shown as zero for calculation purposes  
(\* ) Outside of QC limits  
(anr) Analyte not requested

8.1.1  
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: M51121  
 Account: SHELLWIC - Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

QC Batch ID: MP7683  
 Matrix Type: AQUEOUS

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 09/28/05 09/28/05

Metal	M50963-2A Original MS	Spike lot MPIRWS2	% Rec	QC Limits	M50963-2A Original DUP	RPD	QC Limits		
Aluminum									
Antimony	anr								
Arsenic	13.2	534	500	104.2	75-125	13.2	12.5	5.4	0-20
Barium	anr								
Beryllium									
Boron									
Cadmium	anr								
Calcium									
Chromium	1.7	513	500	102.3	75-125	1.7	2.1	21.1 (a)	0-20
Cobalt									
Copper	0.0	520	500	104.0	75-125	0.0	0.0	NC	0-20
Iron	0.0	2020	2000	101.0	75-125	0.0	0.0	NC	0-20
Lead	anr								
Magnesium									
Manganese									
Molybdenum									
Nickel	anr								
Potassium									
Selenium	anr								
Silicon									
Silver	anr								
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									
Zinc	anr								

Associated samples MP7683: M51121-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested  
 (a) RPD acceptable due to low duplicate and sample concentrations.

8.1.2  
**8**

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: M51121  
 Account: SHELLWIC - Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

QC Batch ID: MP7683  
 Matrix Type: AQUEOUS

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 09/28/05

Metal	BSP Result	Spikelot MPIRWS2	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	488	500	97.6	80-120
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	479	500	95.8	80-120
Cobalt				
Copper	486	500	97.2	80-120
Iron	1900	2000	95.0	80-120
Lead	anr			
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	anr			

Associated samples MP7683: M51121-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested

8.1.3  
**8**

SERIAL DILUTION RESULTS SUMMARY

Login Number: M51121  
 Account: SHELLWIC - Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

QC Batch ID: MP7683  
 Matrix Type: AQUEOUS

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 09/28/05

Metal	M50963-2A Original	SDL 1:5	RPD	QC Limits
Aluminum				
Antimony	anr			
Arsenic	13.2	12.2	7.9	0-10
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	1.69	2.83	67.5 (a)	0-10
Cobalt				
Copper	0.00	0.00	NC	0-10
Iron	0.00	0.00	NC	0-10
Lead	anr			
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	anr			

Associated samples MP7683: M51121-1

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

8.1.4

8

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: M51121  
Account: SHELLWIC - Shell Oil  
Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

QC Batch ID: MP7690  
Matrix Type: AQUEOUS

Methods: SW846 7470A  
Units: ug/l

Prep Date: 09/29/05

Metal	RL	IDL	MB	
			raw	final
Mercury	0.20	.067	-0.070	<0.20

Associated samples MP7690: M51121-1

Results < IDL are shown as zero for calculation purposes  
(\* ) Outside of QC limits  
(anr) Analyte not requested

8.2.1

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: M51121  
 Account: SHELLWIC - Shell Oil  
 Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

QC Batch ID: MP7690  
 Matrix Type: AQUEOUS

Methods: SW846 7470A  
 Units: ug/l

Prep Date: 09/29/05 09/29/05

Metal	M51126-1A Original MS	Spike lot HGRWS1	% Rec	QC Limits	M51126-1A Original DUP	RPD	QC Limits		
Mercury	0.0	3.0	3	100.0	75-125	0.0	0.0	NC	0-20

Associated samples MP7690: M51121-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

8.2.2

8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: M51121  
Account: SHELLWIC - Shell Oil  
Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

QC Batch ID: MP7690  
Matrix Type: AQUEOUS

Methods: SW846 7470A  
Units: ug/l

Prep Date: 09/29/05

Metal	BSP Result	Spike lot HGRWS1	% Rec	QC Limits
Mercury	3.1	3	103.3	80-120

Associated samples MP7690: M51121-1

Results < IDL are shown as zero for calculation purposes  
(\* ) Outside of QC limits  
(anr) Analyte not requested

8.2.3

8

## General Chemistry

### QC Data Summaries

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Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: M51121  
Account: SHELLWIC - Shell Oil  
Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Cyanide	GP6011/GN17989	0.010	<0.010	mg/l	0.1	0.102	102.0	90-110%
Cyanide	GP6011/GN17989			mg/l	0.2	0.206	103.0	90-110%
Oil And Grease, Gravimetric	GP6010/GN17973	4.0	<4.0	mg/l	40	39.8	100.0	80-120%
Solids, Total Suspended	GN17969	4.0	<4.0	mg/l				

Associated Samples:  
Batch GN17969: M51121-1  
Batch GP6010: M51121-1  
Batch GP6011: M51121-1

9.1  
**9**

DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: M51121  
Account: SHELLWIC - Shell Oil  
Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Cyanide	GP6011/GN17989	M51100-2	mg/l	<0.010	<0.010	0.0	0-20%
Solids, Total Suspended	GN17969	M51121-1	mg/l	<4.0	<4.0	0.0	0-20%

Associated Samples:  
Batch GN17969: M51121-1  
Batch GP6011: M51121-1

9.2

9

MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: M51121  
Account: SHELLWIC - Shell Oil  
Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Cyanide	GP6011/GN17989	M51100-2	mg/l	<0.010	0.1	0.10	100.0	75-125%
Oil And Grease, Gravimetric	GP6010/GN17973	M51198-3	mg/l	<5.1	40.8	41.1	101.0	75-125%

Associated Samples:  
Batch GP6010: M51121-1  
Batch GP6011: M51121-1

9.3

9

MATRIX SPIKE DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: M51121  
Account: SHELLWIC - Shell Oil  
Project: CEA:98997711 (REIMBMA) 380 Southbridge St., Auburn MA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Oil And Grease, Gravimetric	GP6010/GN17973	M51198-3	mg/l	<5.1	40.8	40.9	0.5	

Associated Samples:  
Batch GP6010: M51121-1

9.4

9

**LABORATORY ANALYTICAL  
(RECEIVING STREAM)**



10/20/05

**Technical Report for**

**Shell Oil**

CEA:98997711 380 Southbrigde Street Auburn, MA

5601-04-105

Accutest Job Number: M51759

Sampling Date: 10/17/05

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**Report to:**

Corporate Environmental Advisors

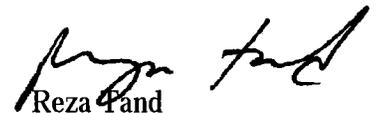
polson@cea-inc.com

ATTN: Phil Olson

Total number of pages in report: 7



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

  
Reza Fand  
Lab Director

Certifications: MA (M-MA136) CT (PH-0109) NH (250204) RI (00071) ME (MA136) FL (E87579)  
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## Sample Summary

Shell Oil

Job No: M51759

CEA:98997711 380 Southbrigde Street Auburn, MA  
Project No: 5601-04-105

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
M51759-1	10/17/05	09:15 MH	10/17/05	AQ Ground Water	SW-UPSTREAM

# Report of Analysis

Client Sample ID:	SW-UPSTREAM	Date Sampled:	10/17/05
Lab Sample ID:	M51759-1	Date Received:	10/17/05
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	CEA:98997711 380 Southbrigde Street Auburn, MA		

## Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Zinc	< 20	20	ug/l	1	10/17/05	10/19/05 AC	SW846 6010B <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA6368

(2) Prep QC Batch: MP7780

RL = Reporting Limit

# Report of Analysis

Client Sample ID:	SW-UPSTREAM	Date Sampled:	10/17/05
Lab Sample ID:	M51759-1	Date Received:	10/17/05
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	CEA:98997711 380 Southbrigde Street Auburn, MA		

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Hardness, Total as CaCO3	78.6	4.0	mg/l	1	10/19/05	CF	EPA 130.2

RL = Reporting Limit



## Misc. Forms

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### Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody

