NPDES PART II STANDARD CONDITIONS
(January, 2007)

TABLE OF CONTENTS

PART II. A. GENERAL REQUIREMENTS

1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirements.

b. The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any of such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Section 402 (a)(3) or 402 (b)(8) of the CWA is subject to a civil penalty not to exceed $25,000 per day for each violation. Any person who negligently violates such requirements is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who knowingly violates such requirements is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

c. Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

Note: See 40 CFR §122.41(a)(2) for complete “Duty to Comply” regulations.

2. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or notifications of planned changes or anticipated noncompliance does not stay any permit condition.

3. Duty to Provide Information

The permittee shall furnish to the Regional Administrator, within a reasonable time, any information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this permit.

4. Reopener Clause

The Regional Administrator reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA in order to bring all discharges into compliance with the CWA.

For any permit issued to a treatment works treating domestic sewage (including "sludge-only facilities"), the Regional Administrator or Director shall include a reopener clause to incorporate any applicable standard for sewage sludge use or disposal promulgated under Section 405 (d) of the CWA. The Regional Administrator or Director may promptly modify or revoke and reissue any permit containing the reopener clause required by this paragraph if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or contains a pollutant or practice not limited in the permit.

Federal regulations pertaining to permit modification, revocation and reissuance, and termination are found at 40 CFR §122.62, 122.63, 122.64, and 124.5.

5. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

6. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges.

7. Confidentiality of Information

a. In accordance with 40 CFR Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 (Public Information).

b. Claims of confidentiality for the following information will be denied:

(1) The name and address of any permit applicant or permittee;
(2) Permit applications, permits, and effluent data as defined in 40 CFR §2.302(a)(2).

c. Information required by NPDES application forms provided by the Regional Administrator under 40 CFR §122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

8. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain a new permit. The permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Regional Administrator. (The Regional Administrator shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

9. State Authorities

Nothing in Part 122, 123, or 124 precludes more stringent State regulation of any activity covered by these regulations, whether or not under an approved State program.

10. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, or local laws and regulations.

PART II. B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of storm water pollution prevention plans. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

4. Bypass

a. Definitions

(1) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.

(2) *Severe property damage* means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can be reasonably expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of Paragraphs B.4.c. and 4.d. of this section.

c. Notice

(1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (Twenty-four hour reporting).

d. Prohibition of bypass

Bypass is prohibited, and the Regional Administrator may take enforcement action against a permittee for bypass, unless:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
(3) i) The permittee submitted notices as required under Paragraph 4.c. of this section.
ii) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects, if the Regional Administrator determines that it will meet the three conditions listed above in paragraph 4.d. of this section.

5. Upset

a. Definition. *Upset* means an exceptional incident in which there is an unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph B.5.c. of this section are met. No determination made during

administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;
(2) The permitted facility was at the time being properly operated;
(3) The permittee submitted notice of the upset as required in paragraphs D.1.a. and 1.e. (Twenty-four hour notice); and
(4) The permittee complied with any remedial measures required under B.3. above.

d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

PART II. C. MONITORING REQUIREMENTS

1. Monitoring and Records

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. Except for records for monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application except for the information concerning storm water discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator at any time.

c. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;
(2) The individual(s) who performed the sampling or measurements;
(3) The date(s) analyses were performed;
(4) The individual(s) who performed the analyses;
(5) The analytical techniques or methods used; and
(6) The results of such analyses.

d. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

e. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by

imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The permittee shall allow the Regional Administrator or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

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

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

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

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location.

PART II. D. REPORTING REQUIREMENTS

1. Reporting Requirements

a. Planned Changes. The permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR§122.29(b); or
(2) The alteration or addition could significantly change the nature or increase the quantities of the pollutants discharged. This notification applies to pollutants which are subject neither to the effluent limitations in the permit, nor to the notification requirements at 40 CFR§122.42(a)(1).
(3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition or change may justify the application of permit conditions different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

b. Anticipated noncompliance. The permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. Transfers. This permit is not transferable to any person except after notice to the Regional Administrator. The Regional Administrator may require modification or revocation and reissuance of the permit to change the name of the permittee and

incorporate such other requirements as may be necessary under the CWA. (See 40 CFR Part 122.61; in some cases, modification or revocation and reissuance is mandatory.)

d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.

(2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of the monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

(3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. Twenty-four hour reporting.

(1) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances.

A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(2) The following shall be included as information which must be reported within 24 hours under this paragraph.

(a) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR §122.41(g).)
(b) Any upset which exceeds any effluent limitation in the permit.
(c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Regional Administrator in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)

(3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e. if the oral report has been received within 24 hours.

f. Compliance Schedules. Reports of compliance or noncompliance with, any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

g. Other noncompliance. The permittee shall report all instances of noncompliance not reported under Paragraphs D.1.d., D.1.e., and D.1.f. of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph D.1.e. of this section.

h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, it shall promptly submit such facts or information.

2. Signatory Requirement

a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See 40 CFR §122.22)

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both.

3. Availability of Reports.

Except for data determined to be confidential under Paragraph A.8. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Regional Administrator. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

Administrator means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

Applicable standards and limitations means all, State, interstate, and Federal standards and limitations to which a “discharge”, a “sewage sludge use or disposal practice”, or a related activity is subject to, including “effluent limitations”, water quality standards, standards of performance, toxic effluent standards or prohibitions, “best management practices”, pretreatment standards, and “standards for sewage sludge use and disposal” under Sections 301, 302, 303, 304, 306, 307, 308, 403, and 405 of the CWA.

Application means the EPA standard national forms for applying for a permit, including any additions, revisions, or modifications to the forms; or forms approved by EPA for use in "approved States", including any approved modifications or revisions.

Average means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For total and/or fecal coliforms and Escherichia coli, the average shall be the geometric mean.

Average monthly discharge limitation means the highest allowable average of "daily discharges" over a calendar month calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

Average weekly discharge limitation means the highest allowable average of "daily discharges" measured during the calendar week divided by the number of "daily discharges" measured during the week.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Best Professional Judgment (BPJ) means a case-by-case determination of Best Practicable Treatment (BPT), Best Available Treatment (BAT), or other appropriate technology-based standard based on an evaluation of the available technology to achieve a particular pollutant reduction and other factors set forth in 40 CFR §125.3 (d).

Coal Pile Runoff means the rainfall runoff from or through any coal storage pile.

Composite Sample means a sample consisting of a minimum of eight grab samples of equal volume collected at equal intervals during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportional to flow, or a sample consisting of the same number of grab samples, or greater, collected proportionally to flow over that same time period.

Construction Activities - The following definitions apply to construction activities:

(a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.

(b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR Part 443.

(c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

(d) Final Stabilization means that all soil disturbing activities at the site have been complete, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

(e) Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff.

Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

Continuous discharge means a "discharge" which occurs without interruption throughout the operating hours of the facility except for infrequent shutdowns for maintenance, process changes, or similar activities.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, and Pub. L. 97-117; 33 USC §§1251 et seq.

Daily Discharge means the discharge of a pollutant measured during the calendar day or any other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Director normally means the person authorized to sign NPDES permits by EPA or the State or an authorized representative. Conversely, it also could mean the Regional Administrator or the State Director as the context requires.

Discharge Monitoring Report Form (DMR) means the EPA standard national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by "approved States" as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Discharge of a pollutant means:

(a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source", or

(b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation (See "Point Source" definition).

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead

to a treatment works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works.

This term does not include an addition of pollutants by any "indirect discharger."

Effluent limitation means any restriction imposed by the Regional Administrator on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States", the waters of the "contiguous zone", or the ocean.

Effluent limitation guidelines means a regulation published by the Administrator under Section 304(b) of CWA to adopt or revise "effluent limitations".

EPA means the United States "Environmental Protection Agency".

Flow-weighted composite sample means a composite sample consisting of a mixture of aliquots where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab Sample – An individual sample collected in a period of less than 15 minutes.

Hazardous Substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the CWA.

Indirect Discharger means a non-domestic discharger introducing pollutants to a publicly owned treatment works.

Interference means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

(a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

(b) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act (CWA), the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SDWA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection Research and Sanctuaries Act.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.

Land application unit means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.

Large and Medium municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and 40 CFR Part 122); or (ii) located in the counties with unincorporated urbanized

populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships, or towns within such counties (these counties are listed in Appendices H and I of 40 CFR 122); or (iii) owned or operated by a municipality other than those described in Paragraph (i) or (ii) and that are designated by the Regional Administrator as part of the large or medium municipal separate storm sewer system.

Maximum daily discharge limitation means the highest allowable "daily discharge" concentration that occurs only during a normal day (24-hour duration).

Maximum daily discharge limitation (as defined for the Steam Electric Power Plants only) when applied to Total Residual Chlorine (TRC) or Total Residual Oxidant (TRO) is defined as "maximum concentration" or "Instantaneous Maximum Concentration" during the two hours of a chlorination cycle (or fraction thereof) prescribed in the Steam Electric Guidelines, 40 CFR Part 423. These three synonymous terms all mean "a value that shall not be exceeded" during the two-hour chlorination cycle. This interpretation differs from the specified NPDES Permit requirement, 40 CFR § 122.2, where the two terms of "Maximum Daily Discharge" and "Average Daily Discharge" concentrations are specifically limited to the daily (24-hour duration) values.

Municipality means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribe organization, or a designated and approved management agency under Section 208 of the CWA.

National Pollutant Discharge Elimination System means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA. The term includes an "approved program".

New Discharger means any building, structure, facility, or installation:

(a) From which there is or may be a "discharge of pollutants";

(b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979;

(c) Which is not a "new source"; and

(d) Which has never received a finally effective NPDES permit for discharges at that "site".

This definition includes an "indirect discharger" which commences discharging into "waters of the United States" after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a "site" for which it does not have a permit; and any offshore rig or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a "site" under EPA's permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Regional Administrator in the issuance of a final permit to be in an area of biological concern. In determining whether an area is an area of biological concern, the Regional Administrator shall consider the factors specified in 40 CFR §§125.122 (a) (1) through (10).

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a "new discharger" only for the duration of its discharge in an area of biological concern.

New source means any building, structure, facility, or installation from which there is or may be a "discharge of pollutants", the construction of which commenced:

(a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or

(b) After proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

NPDES means "National Pollutant Discharge Elimination System".

Owner or operator means the owner or operator of any "facility or activity" subject to regulation under the NPDES programs.

Pass through means a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved" State.

Person means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to any pipe ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 CFR §122.2).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. §§2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

(b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well is used either to facilitate production or for disposal purposes is approved by the authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Primary industry category means any industry category listed in the NRDC settlement agreement (Natural Resources Defense Council et al. v. Train, 8 E.R.C. 2120 (D.D.C. 1976), modified 12 E.R.C. 1833 (D. D.C. 1979)); also listed in Appendix A of 40 CFR Part 122.

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operation is not the operator of the treatment works or (b) not a "POTW".

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Publicly Owned Treatment Works (POTW) means any facility or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a "State" or "municipality".

This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

Regional Administrator means the Regional Administrator, EPA, Region I, Boston, Massachusetts.

Secondary Industry Category means any industry which is not a "primary industry category".

Section 313 water priority chemical means a chemical or chemical category which:

(1) is listed at 40 CFR §372.65 pursuant to Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986);

(2) is present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and

(3) satisfies at least one of the following criteria:

(i) are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols), or Table V (certain toxic pollutants and hazardous substances);
(ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or
(iii) are pollutants for which EPA has published acute or chronic water quality criteria.

Septage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

Sewage Sludge means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, Type III Marine Sanitation Device pumpings (33 CFR Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

Sewage sludge use or disposal practice means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

Significant materials includes, but is not limited to: raw materials, fuels, materials such as solvents, detergents, and plastic pellets, raw materials used in food processing or production, hazardous substance designated under section 101(14) of CERCLA, any chemical the facility is required to report pursuant to EPCRA Section 313, fertilizers, pesticides, and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

Significant spills includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 CFR §110.10 and §117.21) or Section 102 of CERCLA (see 40 CFR § 302.4).

Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to Section 405(d) of the CWA, and is required to obtain a permit under 40 CFR §122.1(b)(3).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands.

Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm water discharge associated with industrial activity means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. (See 40 CFR §122.26 (b)(14) for specifics of this definition.

Time-weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.

Toxic pollutants means any pollutant listed as toxic under Section 307 (a)(1) or, in the case of "sludge use or disposal practices" any pollutant identified in regulations implementing Section 405(d) of the CWA.

Treatment works treating domestic sewage means a POTW or any other sewage sludge or wastewater treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, "domestic sewage" includes waste and wastewater from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Regional Administrator may designate any person subject to the standards for sewage sludge use and disposal in 40 CFR Part 503 as a "treatment works treating domestic sewage", where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 CFR Part 503.

Waste Pile means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

Waters of the United States means:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of tide;

(b) All interstate waters, including interstate "wetlands";

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands", sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;

(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as waters of the United States under this definition;

(e) Tributaries of waters identified in Paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in Paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the United States.

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test. (See Abbreviations Section, following, for additional information.)

2. Definitions for NPDES Permit Sludge Use and Disposal Requirements.

Active sewage sludge unit is a sewage sludge unit that has not closed.

Aerobic Digestion is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

Agricultural Land is land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

Agronomic rate is the whole sludge application rate (dry weight basis) designed:

(1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and

(2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

Air pollution control device is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

Anaerobic digestion is the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air.

Annual pollutant loading rate is the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period.

Annual whole sludge application rate is the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period.

Apply sewage sludge or sewage sludge applied to the land means land application of sewage sludge.

Aquifer is a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding ground water to wells or springs.

Auxiliary fuel is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of the sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

Base flood is a flood that has a one percent chance of occurring in any given year (i.e. a flood with a magnitude equaled once in 100 years).

Bulk sewage sludge is sewage sludge that is not sold or given away in a bag or other container for application to the land.

Contaminate an aquifer means to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR §141.11 to be exceeded in ground water or that causes the existing concentration of nitrate in the ground water to increase when the existing concentration of nitrate in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR §141.11.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 CFR §501.2, required to have an approved pretreatment program under 40 CFR §403.8 (a) (including any POTW located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10 (e) and any treatment works treating domestic sewage, as defined in 40 CFR § 122.2,

classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved state programs, the Regional Administrator in conjunction with the State Director, because of the potential for sewage sludge use or disposal practice to affect public health and the environment adversely.

Control efficiency is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

Cover is soil or other material used to cover sewage sludge placed on an active sewage sludge unit.

Cover crop is a small grain crop, such as oats, wheat, or barley, not grown for harvest.

Cumulative pollutant loading rate is the maximum amount of inorganic pollutant that can be applied to an area of land.

Density of microorganisms is the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge.

Dispersion factor is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

Displacement is the relative movement of any two sides of a fault measured in any direction.

Domestic septage is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.

Domestic sewage is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

Dry weight basis means calculated on the basis of having been dried at 105 degrees Celsius (°C) until reaching a constant mass (i.e. essentially 100 percent solids content).

Fault is a fracture or zone of fractures in any materials along which strata on one side are displaced with respect to the strata on the other side.

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

Final cover is the last layer of soil or other material placed on a sewage sludge unit at closure.

Fluidized bed incinerator is an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Food crops are crops consumed by humans. These include, but are not limited to, fruits, vegetables, and tobacco.

Forest is a tract of land thick with trees and underbrush.

Ground water is water below the land surface in the saturated zone.

Holocene time is the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present.

Hourly average is the arithmetic mean of all the measurements taken during an hour. At least two measurements must be taken during the hour.

Incineration is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

Industrial wastewater is wastewater generated in a commercial or industrial process.

Land application is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

Land with a high potential for public exposure is land that the public uses frequently. This includes, but is not limited to, a public contact site and reclamation site located in a populated area (e.g., a construction site located in a city).

Land with low potential for public exposure is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest and a reclamation site located in an unpopulated area (e.g., a strip mine located in a rural area).

Leachate collection system is a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit.

Liner is soil or synthetic material that has a hydraulic conductivity of 1×10^{-7} centimeters per second or less.

Lower explosive limit for methane gas is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

Monthly average (Incineration) is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

Monthly average (Land Application) is the arithmetic mean of all measurements taken during the month.

Municipality means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management agency under section 208 of the CWA, as amended. The definition includes a special district created under state law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

Other container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Pasture is land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover.

Pathogenic organisms are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

Permitting authority is either EPA or a State with an EPA-approved sludge management program.

Person is an individual, association, partnership, corporation, municipality, State or Federal Agency, or an agent or employee thereof.

Person who prepares sewage sludge is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

pH means the logarithm of the reciprocal of the hydrogen ion concentration; a measure of the acidity or alkalinity of a liquid or solid material.

Place sewage sludge or sewage sludge placed means disposal of sewage sludge on a surface disposal site.

Pollutant (as defined in sludge disposal requirements) is an organic substance, an inorganic substance, a combination or organic and inorganic substances, or pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could on the basis on information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or physical deformations in either organisms or offspring of the organisms.

Pollutant limit (for sludge disposal requirements) is a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of pollutant that can be applied to a unit of land (e.g., kilograms per hectare); or the volume of the material that can be applied to the land (e.g., gallons per acre).

Public contact site is a land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

Qualified ground water scientist is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground water hydrology and related fields, as may be demonstrated by State registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding ground water monitoring, pollutant fate and transport, and corrective action.

Range land is open land with indigenous vegetation.

Reclamation site is drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites.

Risk specific concentration is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of a site where the sewage sludge incinerator is located.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off the land surface.

Seismic impact zone is an area that has 10 percent or greater probability that the horizontal ground level acceleration to the rock in the area exceeds 0.10 gravity once in 250 years.

Sewage sludge is a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to:, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in treatment works.

Sewage sludge feed rate is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

Sewage sludge incinerator is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 CFR §122.2.

Sewage sludge unit boundary is the outermost perimeter of an active sewage sludge unit.

Specific oxygen uptake rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in sewage sludge.

Stack height is the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with 40 CFR §51.100 (ii).

State is one of the United States of America, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, and an Indian tribe eligible for treatment as a State pursuant to regulations promulgated under the authority of section 518(e) of the CWA.

Store or storage of sewage sludge is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

Surface disposal site is an area of land that contains one or more active sewage sludge units.

Total hydrocarbons means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

Total solids are the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius.

Treat or treatment of sewage sludge is the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

Treatment works is either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

Unstable area is land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

Unstabilized solids are organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Vector attraction is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

Volatile solids is the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess air.

Wet electrostatic precipitator is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Wet scrubber is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

3. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)

TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont. (Continuous)	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day
mg/l	Milligram(s) per liter
ml/l	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
Surfactant	Surface-active agent

Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
ug/l	Microgram(s) per liter
WET	"Whole effluent toxicity" is the total effect of an effluent measured directly with a toxicity test.
C-NOEC	"Chronic (Long-term Exposure Test) – No Observed Effect Concentration". The highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.
A-NOEC	"Acute (Short-term Exposure Test) – No Observed Effect Concentration" (see C-NOEC definition).
LC_{50}	LC_{50} is the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 100% is defined as a sample of undiluted effluent.
ZID	Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

NPDES PERMIT NO: **MA0003425**

PUBLIC NOTICE DATE:

NAME AND ADDRESS OF APPLICANT:

Global Petroleum Corporation
140 Lee Burbank Highway
Revere, MA 02151

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Global Petroleum Corporation
140 and 71 Lee Burbank Highway
Revere, MA 02151

RECEIVING WATER: **Chelsea River/Mystic River Watershed (MA71)**

CLASSIFICATION: **SB**

I. PROPOSED ACTION

The above named applicant has applied to the U.S. Environmental Protection Agency (EPA) for the re-issuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge treated storm water, hydrostatic test water, and ground water into the designated receiving water. The permit which was issued to Global Petroleum Corporation (Global Petroleum) on October 2, 1997 (Current Permit), became effective on November 1, 1997, thirty days after the date of issuance. The permit expired on November 1, 2002. EPA received a permit renewal application dated November 7, 2001, from Global Petroleum. Since the permit renewal application was deemed both timely and complete by EPA, the permit has been administratively continued.

II. TYPE OF FACILITY

The Global Petroleum facility, which is located in Revere, Massachusetts (See Figure 1), is engaged in the receipt, storage, and distribution of petroleum products. The product spectrum handled by this facility consists of gasoline, diesel fuel, kerosene, and No.2 Fuel Oil. Petroleum products are received in bulk quantities at a jointly owned marine vessel dock located along the Chelsea River on the west side of Lee Burbank Highway (Route 1A). Product is transferred underneath and east of Lee Burbank Highway to the facility's bulk storage tank farm. Final distribution of product is conducted at the facility's truck loading rack and on occasion at the marine vessel dock when product is shipped off-site. The NPDES discharge consists of: 1) treated storm water runoff from pervious and impervious areas at the facility including the tank farm and terminal yard; 2) occasionally water used for the hydrostatic testing of repaired tanks; and 2) ground water undergoing treatment as a result of a previous gasoline spill. The storm water, hydrostatic test water, and treated ground water discharges are to the Chelsea River through Outfall 001. The permit also establishes two internal waste stream outfalls with individual effluent limitations and monitoring requirements for the flow that is being discharged through Outfall 001. The first internal waste stream outfall (Outfall 002) consists of storm water runoff and hydrostatic test water. The second internal waste stream outfall (Outfall 003) consists of treated ground water.

III. SUMMARY OF MONITORING DATA

A quantitative description of the discharge in terms of significant effluent parameters based on the discharge monitoring reports (DMRs) submitted by the facility during the time period of 1998 through 2003, is included in Attachment A.

IV. PERMIT LIMITATIONS AND CONDITIONS

The effluent limitations, monitoring requirements, and any implementation schedule, if required, may be found in Part I (Effluent Limitations and Monitoring Requirements) of the draft NPDES permit (Draft Permit). The permit application is part of the administrative file (Permit No. MA0003425).

V. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATION DERIVATION

A. General Requirements

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a NPDES permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. This Draft NPDES permit was developed in accordance with various statutory and regulatory requirements established

pursuant to the CWA and any applicable State regulations. During development, EPA considered the most recent technology-based treatment requirements, water quality-based requirements, and all limitations and requirements in the current/existing permit. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, and 136. The general conditions of the Draft Permit are based on 40 CFR §122.41 and consist primarily of management requirements common to all permits. The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308(a) of the CWA in accordance with 40 CFR §122.41(j), §122.44(i) and §122.48.

1. Technology-Based Requirements

Subpart A of 40 CFR §125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under Section 301(b) of the CWA, including the application of EPA promulgated effluent limitations and case-by-case determinations of effluent limitations under Section 402(a)(1) of the CWA.

Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (See 40 CFR §125 Subpart A) to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. In general, technology-based effluent guidelines for non-POTW facilities must be complied with as expeditiously as practicable but in no case later than three years after the date such limitations are established and in no case later than March 31, 1989 [See 40 CFR §125.3(a)(2)]. Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA can not be authorized by a NPDES permit.

EPA has not promulgated technology-based National Effluent Guidelines for storm water discharges from petroleum bulk stations and terminals (Standard Industrial Code 5171). In the absence of technology-based effluent guidelines, the permit writer is authorized under Section 402(a)(1)(B) of the CWA to establish effluent limitations on a case-by-case basis using Best Professional Judgement (BPJ).

2. Water Quality-Based Requirements

Water quality-based criteria are required in NPDES permits when EPA and the State determine that effluent limits more stringent than technology-based limits are necessary to maintain or achieve state or federal water-quality standards (See Section 301(b) (1)(C) of the CWA). Water quality-based criteria consist of three (3) parts: 1) beneficial designated uses for a water body or a segment of a water body; 2) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s) of the water body; and 3) anti-degradation requirements to ensure that once a use is attained it will not be degraded. The Massachusetts State Water Quality Standards, found at 314 CMR 4.00, include these elements. The State Water Quality Regulations limit or prohibit discharges of pollutants to surface waters and thereby assure that the surface

water quality standards of the receiving water are protected, maintained, and/or attained. These standards also include requirements for the regulation and control of toxic constituents and require that EPA criteria, established pursuant to Section 304(a) of the CWA, be used unless a site-specific criteria is established. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR §122.44(d).

Section 101(a)(3) of the CWA specifically prohibits the discharge of toxic pollutants in toxic amounts. The State of Massachusetts has a similar narrative criteria in their water quality regulations that prohibits such discharges [See Massachusetts 314 CMR 4.05(5)(e)]. The Draft Permit does not allow for the addition of materials or chemicals in amounts which would produce a toxic effect to any aquatic life.

3. Anti-Backsliding

EPA's anti-backsliding provision as identified in Section 402(o) of the Clean Water Act and at 40 CFR §122.44(l) prohibits the relaxation of permit limits, standards, and conditions unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued. Anti-backsliding provisions apply to effluent limits based on technology, water quality, BPJ and State Certification requirements. Relief from anti-backsliding provisions can only be granted under one of the defined exceptions [See 40 CFR §122.44(l)(i)]. Since none of these exceptions apply to this facility, the effluent limits in the Draft Permit must be as stringent as those in the Current Permit.

4. Anti-Degradation

The Massachusetts Anti-Degradation Policy is found at Title 314 CMR 4.04. All existing uses of the Chelsea River must be protected. The Chelsea River is classified as a Class SB water body by the State of Massachusetts and as such, is designated as a habitat for fish, other aquatic life and wildlife and for primary (e.g., wading and swimming) and secondary (e.g., fishing and boating) contact recreation. A Class SB water body may also be suitable for shellfish harvesting but there are no areas within the Chelsea River currently approved by the State for such use. This Draft Permit is being reissued with allowable effluent limits as stringent or more stringent than the Current Permit and accordingly will continue to protect the existing uses of the Chelsea River.

B. Description of Facility

Global Petroleum is a bulk petroleum facility with operations consisting of the receipt, storage, and distribution of petroleum products. The terminal is located along the eastern shore of the Chelsea River (See Figure 1), approximately two and one-half (2.5) miles northeast of the confluence of the Mystic and Chelsea Rivers. The facility, which comprises approximately seventeen (17) acres, consists of three principal areas: a tank farm, terminal yard, and a marine vessel dock. (See Figure 2).

Most of the product stored at the facility (with the exception of some limited inventory of fuel additives transported by tanker truck) is received in bulk quantities by ship or barge. The facility has the ability to receive bulk product from two nearby marine vessel docks located along the Chelsea River. One marine vessel dock (See South Dock on Figure 2) is located behind the Irving Oil Revere Terminal (MA0001929) and is jointly owned by Global Petroleum and Irving Oil. This marine vessel dock is equipped with two (2) manifold areas for receipt and distribution of product. One manifold can handle ships or barges, the other barges only. Each manifold area has a steel drip pan located beneath it to recover any potentially spilled product. The second marine vessel dock (See North Dock on Figure 2) belongs to the Global REVCO Terminal, LLC (MA0003298). An inter-terminal supply network also allows Global Petroleum to receive as well as ship product from the Global REVCO marine vessel dock.

The product spectrum stored at the Global Petroleum terminal consists of gasoline (high and low octane grades), diesel fuel, kerosene, and No.2 Fuel Oil. Butane is no longer marketed at this facility. The facility also has the capability of physically blending some of these fuels together to market products which it does not currently store (e.g., mid-range octane grade of gasoline). There are no other chemical processes/reactions which occur at the facility.

Bulk product received by the facility, is transferred underneath Lee Burbank Highway to the Global Petroleum tank farm located on the east side of the highway (71 Lee Burbank Highway). The tank farm covers an area of approximately eleven and one-half (11.5) acres. It generally consists of aboveground bulk storage tanks, product piping, and secondary containment berms. There are seven (7) steel aboveground storage tanks in use with a total gross capacity of approximately 525,000 barrels (or 22 million gallons) of product.

Secondary containment for the tank farm is provided through the use of earthen berms surrounding each bulk storage tank. The one exception is Tank No.s 2 and 4 which are located within the same earthen containment area. The secondary containment has been sized to hold at least 110 to 130 percent of the largest tank's storage capacity plus an added volume to hold any fire-extinguishment chemicals, water and/or precipitation. The berms are used to help prevent any potentially spilled petroleum products from migrating from one containment area to another or into any surrounding waterways. There is a valve located directly outside of each bermed area which can be manually opened or closed to either allow the storm water to drain into the main storm water conveyance system or be retained within that bermed area.

The terminal yard, which is located on the opposite side of the highway, at 140 Lee Burbank Highway, consists of an office, warehouse, parking area, truck loading rack, rail car loading rack (no longer in use), product transfer lines, and storm water and ground water treatment systems. There are also several aboveground tanks located within the terminal yard which are used to store fuel and fuel additives. The largest of these tanks (Tank No. 26), which is used to store kerosene, is a 30,000 gallon tank enclosed within a concrete berm. A majority of the remaining tanks found in the terminal yard are used to store fuel additives. The fuel additive tanks, which have a total storage capacity of approximately 60,000 gallons, are located within the warehouse building.

The truck loading rack operates with a total of seventeen (17) bays for petroleum products. Product is piped from the tank farm to the truck loading rack for off-site distribution. The facility also occasionally loads distillate and residual products onto barges for off-site shipment.

Operations at the Global Petroleum terminal also depend on the use of a number of smaller aboveground and underground storage tanks which are located throughout the facility. These tanks range in size from several hundred gallons to several thousand gallons and are used for: the facility fire protection system, product recovery, and storing of heating oil and diesel fuel for the facility's "own use."

There are currently three (3) active underground storage tanks (USTs) at the Global Petroleum facility. Two of these USTs are 4,000 gallon tanks which are located within the terminal yard. One of the 4,000 gallon USTs is used to store heating oil for the office/warehouse building while the second 4,000 gallon tank contains diesel fuel for fueling vehicles. The one remaining UST is a 200 gallon tank associated with the vapor recovery unit on the tank farm side of the Global Petroleum property. Several USTs have been removed from the facility since the last permit cycle. The USTs taken out of service include a 12,000 gallon tank associated with the vapor recovery system and a 4,000 gallon tank associated with the storm water treatment system.

C. Description of Discharge

This Draft Permit authorizes the discharge of storm water runoff, hydrostatic test water, and treated ground water from one outfall (Outfall 001) at the facility into the Chelsea River. The permit also establishes two internal waste stream outfalls for the flow that is being discharged through Outfall 001. The first internal waste stream outfall (Outfall 002) consists of storm water runoff and hydrostatic test water. The second internal waste stream outfall (Outfall 003) is used to discharge treated ground water into the storm water conveyance system. The two internal waste stream outfalls, along with their respective effluent limits were established in the Draft Permit to ensure that the true characteristics of each waste stream can be monitored in order to minimize the potential impacts of dilution in accordance with 40 CFR §122.45(h).

1. Outfall 002

Storm water is primarily collected at the terminal within two (2) general areas: the secondary containment area of the tank farm and the terminal yard. To a certain extent, storm water accumulating in the unpaved areas of the tank farm can evaporate and/or infiltrate into the ground before being directed to the storm water conveyance system. As mentioned in the section above, there are earthen berms located around the bulk storage tanks to control the runoff of any storm water or spilled product. Water accumulating within these bermed areas is directed to low elevation catch basins. When the valve located outside of each berm is open, the water entering the catch basin is directed to a common underground drainage line which is located south of and adjacent to the paved access road within the tank farm. Staff at the facility are responsible for ensuring that there are no petroleum products observed on the water (i.e., a visible sheen) before the storm water is discharged from any of the bermed areas.

Storm water from the tank farm flows by gravity to an approximately 3,500 gallon concrete retention basin located in the northwest corner of the tank farm property. The retention basin also serves to a certain extent as an Oil/Water (O/W) Separator. The flow of storm water from the tank farm to the terminal yard is controlled through a valve located at the retention basin. When this valve is open, water flows by gravity underneath Lee Burbank Highway to the lift station in the terminal yard.

Storm water runoff within the terminal yard is directed toward several low elevation catch basins. At the truck loading rack, the roof directs storm water away from the truck rack equipment and loading operations to perimeter drains and individual catch basins located along the perimeter of the rack. Storm water reaching the perimeter drains and catch basins enters the terminal's underground collection system and flows by gravity to the lift station adjacent to the O/W Separator.

There are two pumps located within the lift station, each with a reported pumping capacity of 450 gallons per minute (gpm). Only one pump is typically operated at a time but under flooding conditions the second pump can be manually activated as well. When the pump(s) is activated, the water is discharged from the lift station into a nearby in-ground concrete retention basin which also serves as the facility's primary O/W Separator. The O/W Separator, which is located in the northwest corner of the terminal yard, is a baffle/weir unit with a reported storage capacity of approximately 40,000 gallons. Global Petroleum has identified the maximum design flow rate of the O/W Separator as being 830 gpm.

Storm water leaving the O/W Separator is designed to flow by gravity through a gate valve into the Chelsea River through Outfall 001. However, for the past seven years the gate valve has been closed and effluent from the O/W Separator is instead being pumped to a nearby trailer for additional treatment. A sump pump located at the discharge end of the O/W Separator is used to convey water to the trailer for additional treatment using activated carbon. The sump pump, which must be manually activated, is reported by Global Petroleum to have a pumping capacity of approximately 70 gpm. The water conveyed by the sump pump to the trailer undergoes treatment consisting of a filter bag (to remove suspended solids) and activated carbon (to remove volatile organic compounds). The original treatment system had two (2) carbon units located in series. A third carbon unit was added approximately three years ago to provide additional treatment capacity. After treatment, the water is discharged into a concrete vault located adjacent to the O/W Separator (See Insert B on Figure 2). From the vault, the water flows by gravity to Outfall 001.

Based on the current configuration of the storm water conveyance system, the flow through the O/W Separator is controlled and limited by the pumping rate of the sump pump located at the discharge end of the O/W Separator. Flow rates through O/W Separators are not to exceed the design capacity of the separator (thereby minimizing the potential for carry-over). In the event that Global Petroleum is able to eliminate the need for the carbon treatment system in the future, then the flow rate through the O/W Separator would be controlled and limited by the pumping rates of the two pumps located in the lift station. The combined pumping rate of these two pumps (i.e., 900 gpm) would exceed the maximum design flow rate of the O/W Separator (i.e., 830 gpm). As

such, Global Petroleum will need to install some other means of controlling the rate of flow into the O/W Separator (e.g., See Part I.A.4. of the 1997 NPDES permit) before such change could take place. The Draft Permit requires that the facility provide written notification and receive approval by EPA and MADEP prior to implementing any changes which have the potential to cause the maximum design flow rate through the O/W Separator to be exceeded.

The additional treatment of the storm water discharge is necessary due to the infiltration of contaminated groundwater into the storm water conveyance system. In February of 1997 Global Petroleum discovered a release of gasoline in the vicinity of the truck loading rack. The release was identified when gasoline was discovered in a storm water catch basin located adjacent to the truck loading rack. After contacting the MADEP, steps were taken by Global Petroleum to contain the spilled material as well as identify the source of the leak. Hydrostatic testing of the gasoline product pipes identified the source of the release in a section of the line beneath the truck loading rack. An unknown quantity of gasoline was released from this location and due to the high water table, the spilled material was able to migrate through the ground water into the storm water conveyance system.

Since the storm water drain line effectively functioned as a gasoline collection sump, it served as a collection point for gasoline released to the subsurface while a more permanent ground water recovery and treatment system was designed and constructed at the Global Petroleum terminal. It was estimated that at least several thousand gallons of gasoline were released into the environment based on the amount of product recovered in the first several months after the spill was noted.

Global Petroleum took steps to identify and rectify the potential sources of infiltration of ground water into the storm water conveyance system. In late 1997 and early 1998 the facility hired a contractor to survey its storm water system using a remote camera. Several potential points of infiltration were identified in the storm water system and at these locations the joints and cracks were grouted to prevent ground water infiltration. In addition, the facility was required by the MADEP to install a treatment system (i.e., activated carbon) to treat the water flowing through the storm water conveyance system before it could be discharged to the Chelsea River.

Despite Global Petroleum's efforts to eliminate ground water infiltration into the storm water conveyance system, it appears that some contaminated ground water continues to make its way into the system as evidenced by the elevated levels of MTBE reported during some of the quarterly monitoring events (See Attachment A to this Fact Sheet). It should be noted that the results included in the quarterly discharge monitoring reports submitted by the facility represent post-carbon treatment concentrations.

Given the presence of contaminated ground water, EPA is taking a conservative approach and is applying limits and conditions designed for a ground water remediation system to the discharge from the storm water conveyance system (See Limitations and Monitoring Requirements for Outfall 002 in the Draft Permit). Such limitations and monitoring requirements will remain in

effect until the infiltration of contaminated ground water into the storm water conveyance system is eliminated or reduced to the point where it no longer impacts the water quality of the discharge.

One important impact of using the carbon treatment system to treat the combined storm water and ground water infiltration flow is that the carbon system significantly reduces the rate at which water can be processed and discharged (i.e., to approximately 70 gpm) from the Global Petroleum facility after a storm event. As a result, whenever there is a significant storm event, the facility tends to accumulate water primarily within the tank farm. The extended storage of storm water within the tank farm has the potential to cause flooding and/or limit the amount of petroleum product which could be stored within the secondary containment in the event of a spill.

To address this potential flooding/storage problem Global Petroleum has in the past, requested permission from EPA and the MADEP to transfer storm water from its tank farm to either of the nearby tank farms of the Global South Terminal, LLC (MA0000825) or the Global REVCO Terminal, LLC (MA0003298) facilities. The transferred water is then treated in one of these facility's O/W Separators and is subject to the same treatment, monitoring, and reporting requirements/limits appropriate for storm water generated at a petroleum bulk station and terminal. EPA has agreed to such requests in the past, since the storm water in the tank farm of the Global Petroleum facility has not come in contact with the contaminated ground water located on the other side of the highway. As such, treatment through an O/W Separator should be adequate to remove any potential contamination found in this storm water. Global Petroleum has requested that the facility be allowed to continue to make such transfers of storm water in the future and that this become a permit condition in the new draft permits to be issued to the Global Petroleum and Global South facilities. An additional discussion of EPA's response to this request is provided in Section V.E.10 of this Fact Sheet.

The marine vessel dock jointly owned with Irving Oil has a steel drip pan located beneath each of the manifold areas to recover any potentially spilled product. Storm water as well as any residual product accumulating in the drip pan is pumped through existing product pipelines under the highway to one of Irving Oil terminal's above ground storage tanks for off-site disposal.

Global Petroleum has indicated that all tank bottom water is consolidated and hauled off-site by a licensed waste hauler(s) for treatment and disposal elsewhere. There were no hydrostatic-test water discharges reported at the facility since the issuance of the Current Permit. However, should there be a discharge of hydrostatic test water in the future, the water could be conveyed into the storm water system and would be subject to the treatment, monitoring, and reporting requirements discussed further in Section V.E.9 of this Fact Sheet.

2. Outfall 003

As a result of the gasoline release discussed above, the MADEP required the facility to design and operate a ground water recovery and treatment system. The original ground water recovery system, consisting of an interceptor trench and seven (7) recovery wells, became operational in the

fall of 1998. The interceptor trench and recovery wells were designed to recover product as well as dissolved contaminants found in the ground water in and around the truck loading rack area.

Extracted ground water is piped to a treatment system located in a trailer nearby the O/W Separator. This system is separate from the one being used to treat the discharge of storm water and ground water infiltration through Outfall 002. The ground water treatment system, which was designed to operate continuously and treat a maximum flow rate of 25 gpm, consists of an O/W Separator, a holding tank for recovered product, a low profile air stripper, and liquid-phase and air-phase activated carbon units for treating the liquid and vapor streams from the air stripper. The effluent from the ground water treatment system (Outfall 003) is discharged into the storm water conveyance system to the Chelsea River through Outfall 001.

The Global Petroleum facility recently installed a new independent ground water recovery and treatment system which is designed to replace the old ground water treatment system discussed in the paragraph above. The most significant difference between the old and new systems has to do with the method by which free product and contaminated ground water are collected. The new recovery system will use horizontal trenches which are designed to provide for the removal of contaminated soil vapor, contaminated ground water, and free floating product. Each of the trenches installed in and around the truck loading rack area will contain three extraction pipes; a soil vapor extraction pipe (approximately 1.5 feet below ground surface), a shallow ground water extraction pipe (approximately 2.5 feet below ground surface), and a deep ground water extraction pipe (approximately 5 feet below ground surface). Extracted soil vapor, ground water, and product will be piped to the new treatment system which has been constructed in a portion of the garage located at the northern most section of the office/warehouse building. The treatment system, which is designed to treat a maximum flow rate of 50 gpm, consists of a flow equalization tank, an O/W Separator, a coagulation/separation unit for the removal of metals, a multi-media filter, a low profile air stripper, and liquid and vapor phase carbon units for treatment of waste streams from the air stripper. Treated ground water will be pumped to a manhole located downstream of the O/W Separator and from there, will flow by gravity through Outfall 001 into the Chelsea River.

The new system ground water treatment system is expected to become operational during the Spring of 2005. The total maximum flow rate of treated ground water from the Global Petroleum facility may be has high as 75 gpm (i.e., 25 gpm from the old system and 50 gpm from the new system) during the short period when both treatment systems are operating.

The discharge of treated ground water is currently allowed through a NPDES Permit “Exclusion” letter issued by EPA to the facility (NPDES Exclusion #MA 02I-079) on November 8, 2002. EPA is proposing to incorporate the discharge of treated ground water into the Draft Permit as an internal waste stream outfall (Outfall 003). Additional details are provided in Section V.E.11 of this Fact Sheet.

D. Discharge Location

The receiving water, Chelsea River (Boston Harbor/Mystic River Watershed/Segment MA71-06), is an urban tidal river flowing from the mouth of Mill Creek, between Chelsea and Revere, to Boston's Inner Harbor, between East Boston and Chelsea. For centuries, Chelsea River has been flanked by working industries, many of which used the channel to transport raw materials and finished goods. The river is officially classified as a Designated Port Area: a stretch of waterfront set aside primarily for industrial and commercial use. Chelsea River, which is also locally known as Chelsea Creek, is designated Class SB by the State of Massachusetts (See Part V.A.4. of this Fact Sheet for additional information related to the Class SB designation).

Under Section 303(d) of the CWA, states are required to develop information on the quality of their water resources and report this information to the EPA, the U. S. Congress, and the public. In Massachusetts, the responsibility for monitoring the waters within the State, identifying those waters that are impaired, and developing a plan to bring them into compliance with the Massachusetts Water Quality Standards (314 CMR 4.0) resides with the MADEP. The MADEP evaluated and developed a comprehensive list of the assessed waters and the most recent list was published in the *Massachusetts Year 2002 Integrated List of Waters* (MADEP, September 2003). The list identifies the Chelsea River as one of the waterways within the State of Massachusetts that is considered impaired. The impairment, as identified by the MADEP, is related to the presence of the following "pollutants", which were not considered to be present due to natural causes: priority organics, unionized ammonia, organic enrichment/low dissolved oxygen, pathogens, oil and grease, taste, odor and color, and turbidity.

The MADEP is required under the CWA to develop a Total Maximum Daily Load (TMDL) for a water body once it is identified as impaired. A TMDL is essentially a pollution budget designed to restore the health of a water body. A TMDL typically identifies the source(s) of the pollutant from direct and indirect discharges, determines the maximum amount of pollutant, including a margin of safety, that can be discharged to a specific water body while maintaining water quality standards for designated uses, and outlines a plan to meet the goal. A TMDL has not yet been developed for the Chelsea River. In the interim, EPA is developing the conditions for this permit based on a combination of water quality-based standards and best professional judgement. Should a TMDL be developed in the future, and if that TMDL identifies that the discharge from the facility is causing or contributing to the impairment of Chelsea River, then the permit may be re-opened. Additional details regarding the basis for the effluent limits established in the Draft Permit and how such limits relate to any of the "pollutants" identified above as impacting the water quality of the Chelsea River are further discussed below in Sections V.E.3 and V.E.5 of this Fact Sheet.

E. Proposed Permit Effluent Limitations and Conditions

The Global Petroleum Draft Permit is not being considered in isolation, but rather, in the context of all potential direct dischargers (including other petroleum bulk stations and terminals) of light

and heavy hydrocarbons, which discharge either directly into Boston Harbor or indirectly (via its tributaries: the Island End, Chelsea, and Mystic Rivers).

Section 402(p) of the Clean Water Act requires that EPA issue NPDES permits for storm water discharges which were permitted prior to February 4, 1987 [See 40 CFR §122.26(a)(1)(i)]. Since the facility had a permitted storm water discharge prior to February 4, 1987, and the activities occurring at the facility do not fall within the description of industrial activities eligible for EPA's Storm Water Multi-Sector General Permit for Industrial Activities [See 40 CFR §122.26(b)(14)(viii)], the facility must continue to be permitted through an individual facility NPDES permit.

This Draft Permit is conditioned to: (1) better regulate plausible non-storm water discharges (e.g., hydrostatic test water and ground water) alone or in combination with storm water runoff to Boston Harbor, and (2) to better regulate ancillary operations that have the potential to contact storm water (e.g., materials storage, facility site-runoff, product blending, and product loading and unloading).

Storm water discharges from activities associated with petroleum bulk stations and terminals must satisfy best conventional technology (BCT) and best available technology (BAT) requirements and must comply with more stringent water quality standards if BCT and BAT requirements are not adequate. On September 25, 1992, EPA promulgated through its General Permit for Storm Water Discharge Associated with Industrial Activity, that the minimum BAT/BCT requirement for storm water discharges associated with industrial activity is a Storm Water Pollution Prevention Plan (SWPPP) [57 FR, 44438]. EPA has included SWPPP requirements in the Draft Permit. In addition, EPA has included numeric effluent limitations in the Draft Permit to ensure that appropriate technology-based and water quality-based limits are applied and that petroleum constituents do not contribute to violations of the State's surface water quality standards.

Thus, the Draft Permit for Global Petroleum, authorizing the discharge of treated storm water, hydrostatic test water, and ground water includes numeric effluent limits and requires the development, implementation, and annual review of a storm water pollution prevention plan. The effluent characteristics identified in Parts I.A.1- I.A.3 of the Draft Permit are discussed in more detail below.

1. Flow

The typical treatment technology employed by petroleum bulk storage terminals for storm water runoff is an O/W Separator. This device uses gravity to separate the lower-density oils from water; resulting in an oil phase above the oil/water interface and a heavier particulate phase (sludge) on the bottom of the separator. Accordingly, the sizing of an O/W Separator is based upon the following design parameters: water-flow rate; density of oil to be separated; desired percentage removal of oil; and the operating temperature range.

To ensure proper operation of installed O/W Separators such that the oil and/or particulate phases are not entrained to the waterway, it is important that the flow through the separator be maintained at or below the maximum design flow rate of the separator. In order to ensure that this criteria was being met, EPA and the MADEP required, as part of the Current Permit, that the facility identify both the maximum design flow rate of the O/W Separator and the measures taken by the facility to ensure that the maximum design flow rate is not exceeded (See Part I.A.4. of the 1997 NPDES permit).

In response to this permit requirement, Global Petroleum identified that the maximum design flow rate of the O/W Separator at the facility is 830 gpm. As discussed in Section V.C.1 of this Fact Sheet (Outfall 002), storm water runoff collected from the tank farm and storm water runoff and ground water infiltration from the terminal yard is conveyed to the O/W Separator through the operation of one lift station. The lift station contains two pumps with a combined pumping rate of 900 gpm. Right now only one of these pumps (e.g., pumping rate 450 gpm) is operated due to the requirement for the discharge from the O/W Separator to receive additional treatment using activated carbon. The rate of flow through the O/W Separator is currently controlled by the rate at which water can be pumped from the separator through the carbon units for treatment. The sump pump located at the discharge end of the O/W Separator has a pumping capacity of approximately 70 gpm. The 70 gpm pumping capacity is well below the maximum design flow rate of the O/W Separator (i.e., 830 gpm). Accordingly, Global Petroleum has demonstrated that appropriate controls are in place at the facility to control the flow through the O/W Separator.

In the future, should Global Petroleum receive approval to eliminate the use of the carbon treatment system, then the flow rate through the O/W Separator would be controlled and limited by the pumping rates of the two pumps located in the lift station. Since the combined pumping rates of these two pumps (i.e., 900 gpm) would exceed the maximum design flow rate of the O/W Separator (i.e., 830 gpm) Global Petroleum would be required to install some other means of flow control (e.g., See Part I.A.4. of the 1997 NPDES permit) before such change could take place. The Draft Permit requires that the facility provide written notification and receive approval by EPA and MADEP prior to implementing any changes which have the potential to cause the maximum design flow rate through the O/W Separator to be exceeded.

EPA and MADEP are using the design flow information submitted by Global Petroleum to identify the maximum daily effluent flow limit for Outfall 002 at the facility in accordance with Part I.A.8. of the Current Permit. The instantaneous flow rate of 830 gpm will become the new flow limit for Outfall 002. However, while the carbon treatment system is in place the actual flow rate discharged from the O/W Separator will be closer to approximately 70 gpm. The flow control device or system as described above and the identification of a instantaneous maximum flow rate should ensure compliance with "proper operation" as described at 40 CFR §122.41(e).

EPA is also establishing a maximum daily effluent flow limit of 75 gpm for the ground water remediation system discharging through Outfall 003. The basis for the flow rate as well as other effluent characteristics of Outfall 003 are discussed further in Section V.E.11 of this Fact Sheet.

The combined total maximum daily effluent flow limit of 905 gpm for Outfall 001 reflects the sum of the maximum daily effluent flow limits for Outfalls 002 and 003.

2. Total Suspended Solids (TSS)

The Draft Permit limit for TSS through Outfalls 002 and 003 remains unchanged at 30 mg/l and 100 mg/l for the average monthly and maximum daily values, respectively. The monitoring frequency for this parameter in Outfall 002 has been reduced in the Draft Permit from semimonthly to monthly based upon the facility's performance during the previous permit cycle. The monitoring frequency for this parameter in Outfall 003 remains monthly except during periods of system start up (See Section V.E.11 of this Fact Sheet).

The TSS limits in the Draft Permit are based upon the limits established in the Current Permit in accordance with the anti-backsliding requirements found in 40 CFR §122.44(l). Heavy metals and polynuclear aromatic hydrocarbons are readily adsorbed onto particulate matter and the release of these compounds into the environment can be reduced by regulating the amount of suspended solids discharged.

The limits in the Current Permit were developed based upon a BPJ determination. In making this determination, EPA considered the technology guidelines promulgated at 40 CFR Part 423 for the Steam Electric Power Point Source Category for guidance. Steam electric generating facilities, similar to bulk petroleum storage facilities, frequently include the storage of fuel oil on their premises. In developing effluent limits for Steam Electric Source Category, EPA identified TSS as a potential pollutant due to the drainage associated with equipment containing fuel oil and/or the leakage associated with the storage of oil (USEPA, 1982). EPA then considered the level of treatment that could be technologically achieved for TSS using an O/W Separator and set corresponding limits in the guidelines (See 40 CFR Part 423 "low volume waste sources"). Given the similarities between the storage of petroleum products at bulk stations and terminals and the storage of fuel oil at steam electric facilities, EPA is using the same TSS limits established for steam electric facilities for bulk petroleum storage facilities.

There were several instances during the previous permit cycle when TSS limits were exceeded for what is being designated as Outfall 002 in this Draft Permit, as shown in the summary of the discharge monitoring data submitted by the facility during the time period of 1998 to 2003 (See Attachment A to this Fact Sheet). Most of the exceedances, which occurred early on in the previous permit cycle, were for the monthly average TSS limit. However, the facility has been able to consistently meet its TSS limits over the last several years through the proper operation of a correctly-sized O/W Separator, appropriate source controls, routine inspections, preventative maintenance, and implementation of good housekeeping programs.

3. Oil and Grease

The Draft Permit limit for Oil and Grease (O&G) for Outfall 002 remains unchanged at 15 mg/L, for the maximum daily value. The monitoring frequency for this parameter has been reduced from

semimonthly to monthly based upon the facility's performance during the previous permit cycle. An alternate parameter (i.e., total petroleum hydrocarbons) is used in Outfall 003 as an indicator of similar types of contaminants (See Section V.E.11.b of this Fact Sheet).

O&G is to be measured using EPA method 1664. Originally this effluent limit was established by EPA-Headquarters as guidance to, and as a means of establishing a categorization within, the petroleum marketing terminals and oil production-facilities - categories. However, performance data from terminals in Massachusetts and Maine continue to support that this effluent limit can be achieved through the proper operation of a correctly-sized O/W Separator and properly implemented best management practices. EPA has made a BPJ determination based upon the technology-based and performance information to continue with an O&G limit of 15 mg/L in the Draft Permit.

As noted in Section V.D. of this Fact Sheet, O&G is one of the pollutants identified by the State of Massachusetts as having contributed to the impairment of Chelsea River. The MADEP uses a narrative description (e.g., waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water) rather than a numeric threshold to identify whether this pollutant is an issue for a water body. The information contained in the *Massachusetts Year 2002 Integrated List of Waters* (MADEP, September 2003) and in the *Boston Harbor Watershed 1999 Water Quality Assessment Report* (MADEP, October 2002) does not clearly identify the basis for why O&G was identified as a problem in Chelsea River. However, the *Boston Harbor Watershed 1999 Water Quality Assessment Report* does mention a small number of historic spills which took place during the transportation and offloading of petroleum products along the Chelsea River. These spills, which would have produced a visible film on the surface of the water, would have likely exceeded the MADEP's criteria for O&G. Such spills are under the jurisdiction of the U.S. Coast Guard (See 33 CFR Part 154) rather than EPA's NPDES program and the results appear unrelated to the performance of any of the storm water treatment systems at the petroleum bulk stations and terminals along Chelsea River.

EPA believes that the controls in place at Global Petroleum (i.e., Draft Permit limit for O&G of 15 mg/L and Best Management Practices) should ensure that the storm water discharge from the facility does not contribute to the further impairment of Chelsea River. An effluent limit for O&G of 15 mg/L should ensure that the discharge from the facility will be free from oil, grease and petrochemicals that might produce a visible film on the surface of the water. Best Management Practices being implemented by the facility, which include a Storm Water Pollution Prevention Plan, ensures that there is a program in place at the facility to limit the amount of pollutants being discharged with storm water runoff. Best Management Practices are fully enforceable permit conditions that serve to prevent pollution, rather than simply treat it. Global Petroleum has demonstrated its ability to meet the O&G permit condition in the Current Permit as shown in the summary of the discharge monitoring data submitted during the time period of 1998 to 2003 (See Attachment A to this Fact Sheet).

4. pH

Massachusetts State Surface Water Quality Standards require the pH of Class SA and Class SB waters to be within the range of 6.5 to 8.5 standard units (s.u.). A pH permit limit range of 6.5 to 8.5 has been established in the Draft Permit in accordance with the State Surface Water Quality Standards for Outfalls 002 and 003. The pH is to be monitored on a monthly basis for Outfall 002. The monitoring frequency for pH in Outfall 003 remains monthly except during periods of system start up (See Section V.E.11 of this Fact Sheet).

The discharge shall not exceed this pH range unless due to natural causes. In addition, there shall be no change from background conditions that would impair any uses assigned to the receiving water class. A summary of the discharge monitoring data submitted by the facility during the time period of 1998 to 2003 is included as Attachment A to this Fact Sheet. The Current Permit does not include a limit for pH, and as such, violations were not noted on the occasions during the previous permit cycle when the pH reported by the facility exceeded the range of 6.5 to 8.5.

5. Polynuclear Aromatic Hydrocarbons

Polynuclear Aromatic Hydrocarbons (PAHs) are a group of organic compounds which are found throughout the environment. PAHs are primarily introduced into the environment through the incomplete combustion of organic compounds. PAHs are also present in crude oil and some of the heavier petroleum derivatives and residuals (e.g., No. 2 Fuel Oil and asphalt). Spillage or discharge of these products can serve to introduce PAHs into the environment. PAHs will strongly adsorb to suspended particulate matter and biota and, can also bio-accumulate in fish and shellfish.

There are sixteen (16) PAH compounds identified as priority pollutants under the CWA (See 40 CFR 423 - Appendix A). Several of these PAHs are well known animal carcinogens, others are not considered carcinogenic alone but can enhance or inhibit the response of the carcinogenic PAHs. Typically, exposure would be to a mixture of PAHs rather than to an individual PAH.

EPA required the permittee to submit a PAH pollutant scan (for the 16 PAH compounds identified as priority pollutants) from the storm water outfall at the facility as part of the permit renewal application process for the Current Permit because of the health concerns discussed above and the potential for PAHs to be present in some of the heavier petroleum distillate and residual products stored at the facility. A similar requirement was put in place for the petroleum bulk stations and terminals located in South Portland, Maine starting in the early 1990's.

The sampling results from this facility did not show the presence of any of the reported 16 PAH compounds confirming a similar trend noted for the majority of the hundreds of quarterly samples obtained from the South Portland facilities. As a result, the Current Permit was issued with a requirement for quarterly monitoring without any limits for the following seven (7) PAH compounds identified as probable human carcinogens:

Benzo(a)anthracene	Benzo(a)pyrene
Benzo(b)fluoranthene	Benzo(k)fluoranthene
Chrysene	Dibenzo(a,h)anthracene
Indeno(1,2,3-cd)pyrene	

All of the petroleum storage terminals and facilities that had a reasonable potential to discharge PAHs into Boston Harbor were required to continue monitoring for PAHs. The seven (7) PAH compounds identified above for monitoring purposes, were selected primarily based on their toxicity and presence in petroleum products. EPA proposed as part of the Current Permit to evaluate the monitoring results to be collected from these facilities and to determine whether there was a need to establish PAH limits.

EPA has reviewed the storm water discharge monitoring data for PAHs submitted by Global Petroleum since the issuance of the Current Permit in 1997. The seven (7) PAHs analyzed for were not detected above their respective reporting limits during any of the quarterly sampling events which occurred since 1997. A majority of the other petroleum bulk stations and terminals located along Chelsea Creek also reported similar results. The reporting limits for each of the seven PAH compounds were typically around 5 µg/L (or 5 parts per billion) early on in the permit cycle and later decreased to around 1 µg/L (or 1 part per billion). A summary of the discharge monitoring data submitted by the facility during the time period of 1998 to 2003 is included as Attachment A to this Fact Sheet. A separate summary table providing the monitoring results from 2001 to 2003 for PAHs with their respective detection limits can be found in Attachment B to this Fact Sheet. As can be seen from a review of both attachments, there were no PAHs detected at the facility since the issuance of the Current Permit.

Based on EPA's review of the data from this facility as well as the other facilities for which PAH data were collected, EPA has concluded that permit limits for PAH compounds at Outfall 002 are not required at this time (with the exception of naphthalene which is discussed below). A similar discussion concerning EPA's approach towards PAHs in Outfall 003 can be found in Section V.E.11.c of this Fact Sheet.

Given the potential health concerns related to PAHs, the type of petroleum products stored at the facility, the historical levels of PAHs which have been documented in the sediment of Chelsea River and Boston Harbor, and the fact that priority organics were one of the "pollutants" identified by MADEP contributing to the impairment of Chelsea River, EPA will require the facility to continue to monitor Outfall 002 for PAHs without limits on a quarterly basis (with the exception of naphthalene which is discussed below). Future monitoring will be required to achieve the following Minimum Level (ML) of reporting for each of the PAH compounds identified below:

Benzo(a)anthracene	<0.05 µg/L	Benzo(a)pyrene	<2.0 µg/L
Benzo(b)fluoranthene	<0.1 µg/L	Benzo(k)fluoranthene	<2.0 µg/L
Chrysene	<5.0 µg/L	Dibenzo(a,h)anthracene	<0.1 µg/L
Indeno(1,2,3-cd)pyrene	<0.15 µg/L	Naphthalene	<0.2 µg/L

The ML is defined as the level at which the entire analytical system gives recognizable mass spectra and acceptable calibration points. This level corresponds to the lower points at which the calibration curve is determined based on the analysis of the pollutant of concern in reagent water.

EPA has added naphthalene to the list of PAH compounds to be reported by the facility and has included a technology-based maximum daily limit of 20 µg/L for naphthalene in the Draft Permit for Outfalls 002 and 003. Naphthalene is considered an important limiting pollutant parameter based upon the prevalence of this compound in petroleum products including gasoline (Potter, 1998) and its toxicity (i.e., naphthalene has been identified as a possible human carcinogen). As discussed in Section V.C.1 of this Fact Sheet, a release of gasoline at the facility in 1997 impacted portions of the ground water below the terminal yard. Despite the corrective actions taken by the facility, contaminated ground water continues to make its way into the storm water conveyance system. As a result the facility must treat the mixture of storm water and ground water flowing through the storm water system with activated carbon before it can be discharged. EPA has selected naphthalene as an PAH indicator compound for the contaminated ground water portion of the discharge based on a process similar to that used for identifying benzene as the limiting pollutant in the BTEX suite of compounds (See Section V.E.6 of this Fact Sheet).

As noted in Section V.D. of this Fact Sheet, "priority organics" were one of the pollutants identified by the State of Massachusetts as having contributed to the impairment of Chelsea River. The information contained in the *Massachusetts Year 2002 Integrated List of Waters* (MADEP, September 2003) and in the *Boston Harbor Watershed 1999 Water Quality Assessment Report* (MADEP, October 2002) does not clearly identify the basis for identifying priority organics as a problem in Chelsea River. However, MADEP personnel indicated during followup conversations that the primary stressor under the priority organics category was believed to be polychlorinated biphenyls (PCBs). The *Boston Harbor Watershed 1999 Water Quality Assessment Report* notes that a health advisory was issued by Massachusetts in 1988 for Boston Harbor based primarily on the presence of elevated levels of PCBs. The data from Boston Harbor was extrapolated to Chelsea River based on the fact that this also is an estuarine environment. PCBs are not typically associated with petroleum products and as such there is no limits or monitoring requirements for these compounds in the Current as well as the Draft Permit.

6. Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX)

Refined petroleum products contain numerous types of hydrocarbons. Individual components partition to environmental media on the basis of their physical/chemical properties (e.g., solubility, vapor pressure). Rather than attempt to establish effluent limits for every compound found in a petroleum release, limits are typically established for the compounds that would be the most difficult to remove as well as demonstrate the greatest degree of toxicity. Generally, the higher the solubility of a volatile organic compound (VOC) in water, the more difficult it is to remove.

VOCs such as benzene, toluene, ethylbenzene, or the three xylene compounds (BTEX) are normally found at relatively high concentrations in gasoline and the light distillates (e.g., diesel fuel) and then at decreasing concentrations in the heavier grades of petroleum distillate products (e.g., fuel oils). Since many petroleum spills involve gasoline or other light distillates, a traditional approach for such spills has been to limit the aggregate parameter of BTEX compounds. This approach partially stems from the availability of information concerning the health effects and physical properties of these compounds as well as the relatively high concentrations at which they are found in gasoline and other light distillates.

Of these four compounds, benzene has one of the highest solubilities, it is one of the most toxic constituents, and is found at relatively high concentrations in the light distillates. The concentration of benzene in gasoline is approximately 20,000 parts per million (Potter, 1998). Because of the reasons mentioned above, benzene can be considered one of the most important limiting pollutant parameters found in gasoline or other light distillates. Building on this premise, benzene can be used as an indicator-parameter for regulatory as well as characterization purposes of storm water which comes in contact with light distillate products. The primary advantage of using an indicator-parameter is that it can streamline monitoring efforts while simultaneously maintaining an effective level of environmental protection.

To better regulate the "potential" for gasoline and/or light distillates to come in contact with storm water via ancillary operations at this facility (i.e., such as product spills during loading and unloading operations), EPA included a quarterly monitoring requirement for BTEX and a maximum daily effluent limit of 500 µg/L for benzene in the Current Permit. The effluent limit of 500 µg/L established in the Current Permit was based on Best Professional Judgement and was derived from the demonstrated level of performance of Oil/Water Separators treating storm water at a dozen oil terminals located along the East Coast and Southern States.

A summary of the discharge monitoring data submitted by the facility during the time period of 1998 to 2003 for what is being designated as Outfall 002 in this Draft Permit is included as Attachment A to this Fact Sheet. A separate summary table providing the monitoring results from 2001 to 2003 for VOCs with their respective detection limits can be found in Attachment C to this Fact Sheet. Benzene concentrations identified in the discharge from the facility as shown in Attachment A were typically non-detect (i.e., below the laboratory reporting limit of 5.0 µg/L). On the few occasions where benzene was detected in the discharge from the facility, it was reported at one to two orders of magnitude below the effluent limit in the Current Permit (i.e., 500 µg/L). Similarly, a majority of the quarterly sampling events did not detect the presence of toluene, ethylbenzene, and total xylenes in the discharge from the facility. On the few occasions where any of these compounds were detected, they were typically reported at very low concentrations (i.e., in the low parts per billion range).

Global Petroleum has been operating a separate carbon treatment system since 1998 to remove the pollutants found in the contaminated ground water which is migrating into the storm water system. The carbon system is providing additional treatment (i.e., beyond that of the O/W Separator) to help remove the elevated levels of VOCs associated with the earlier gasoline spill.

Properly designed carbon treatment systems can remove those VOCs typically found in gasoline contaminated ground water down to the low parts per billion range. Based on the performance of such treatment systems, the Draft Permit includes a maximum daily limit for benzene as well as the aggregate sum of the BTEX compounds of 5 µg/L and 100 µg/L, respectively, for Outfalls 002 and 003. The permit also requires that individual toluene, ethylbenzene, and total xylene concentrations be monitored and reported on a monthly basis.

The effluent limits for Outfalls 002 and 003 also include a maximum daily limit of 5 mg/L for Total Petroleum Hydrocarbons (TPH). TPH, measures the total concentration of all petroleum related hydrocarbon compounds within a specified carbon range (Weisman, 1998). The petroleum related compounds included within this analysis range from compounds with 6 carbon (C_6) atoms to compounds with 25 carbon atoms (C_{25}). The use of TPH concentrations to establish target cleanup levels for soil or water is a common approach implemented by regulatory agencies in the United States (Weisman, 1998). EPA has made a BPJ determination based upon the technology-based and performance information to include TPH in this permit.

7. Methyl Tertiary-Butyl Ether (MTBE)

Another potential contaminant of concern found in gasoline is methyl tertiary-butyl ether (MTBE). MTBE is a synthetic compound used as a blending component in gasolines (e.g., oxygenated fuels, reformulated gasolines, and conventional gasolines). Since 1979 it has been used at low levels in gasoline (e.g., concentrations of 2-4 percent by volume) as a replacement to lead to enhance octane levels. MTBE has been used at higher concentrations (e.g, concentrations of 11-15 percent by volume) in some gasoline since 1992 to fulfill the oxygenate requirements established in the 1990 Clean Air Act Amendments. Due to its small molecular size and solubility in water, MTBE moves rapidly into the ground water, faster than do other constituents of gasoline. Because of these physical properties, MTBE has been detected in ground water in a growing number of studies conducted throughout the country. In some instances, these contaminated waters are a source of drinking water.

Since the spill impacting the discharge from Outfalls 002 and 003 involved gasoline, EPA has included a maximum daily limit for MTBE in the Draft Permit. Although there is a significant amount of research available regarding the toxicity MTBE, it is currently not listed as a priority pollutant by EPA and as such has not had either aquatic or human health standards developed yet under EPA's water quality program. Monitoring reports from gasoline remediation sites covered under exclusion authorizations demonstrate that using best available technology (e.g., air stripping and/or carbon) a MTBE limit of 70 µg/L can be consistently met by a properly designed and maintained treatment system. Therefore, EPA has established a technology-based limit for MTBE of 70 µg/L for Outfalls 002 and 003 in this Draft Permit. The facility is required to monitor and report MTBE concentrations for Outfall 002 on a monthly basis. The monitoring frequency for this parameter in Outfall 003 remains monthly except during periods of system start up (See Section V.E.11 of this Fact Sheet).

A summary of the discharge monitoring data submitted by the facility for what is being designated as Outfall 002 in this Draft Permit during the time period of 1998 to 2003 is included as Attachment A to this Fact Sheet. A separate summary table providing the monitoring results from 2001 to 2003 for MTBE and other VOCs with their respective detection limits can be found in Attachment C to this Fact Sheet. The concentrations of MTBE reported by the Global Petroleum terminal (after carbon treatment) during the quarterly sampling events range from non-detect (e.g., not found above the reporting limit of 5 µg/L for the laboratory) to several orders of magnitude larger than the MTBE limit of 70 µg/L proposed in this Draft Permit. The sampling events exceeding 70 µg/L of MTBE were not considered a violation since the Current Permit did not contain an effluent limit for MTBE.

8. Tank-Bottom and Bilge Water

The bottom of many petroleum product storage tanks may contain a layer of water that has separated from the stored petroleum product due to the density difference between the product and water. As this water coalesces and then settles to the bottom of the tank, compounds including BTEX and PAHs found in the product above it are able to partition and dissolve into the water. The partitioning and dissolution allows the concentrations of some of the more soluble and denser petroleum components to reach toxic levels. Facility operators drain this layer of water to prevent transfer with the finished product as well as to free up valuable storage space.

Whereas storm water contacts only those hydrocarbons spilled on the ground and then only for short periods of time; tank-bottom and bilge water remains in intimate proximity with petroleum derivatives for prolonged periods of time, allowing toxic pollutants to dissolve into the aqueous phase. EPA Region I considers both tank-bottom and bilge water "process wastewater", since soluble toxic materials can partition from the petroleum product into the water over time. To protect Boston Harbor from toxic pollutants dissolved in tank-bottom and bilge water, EPA is prohibiting the permittee from discharging any tank-bottom or bilge water alone or in combination with storm water or other wastewater.

9. Hydrostatic Test Water Discharges

Occasionally repairs are made at the facility to the tanks and the piping used for the storage and conveyance of petroleum products. To ensure safe working conditions during this maintenance work, storage tanks and/or pipe networks are rigorously cleaned (e.g., "Poly Brushed", "Squeegee Pigged") and certified as being "gas-free." After completing certain maintenance work, the vessels and/or pipe networks may require hydrostatic testing (e.g., to be filled with water and monitored for changes in water levels) before product replacement. Some of the bulk petroleum storage facilities located along Chelsea River use the river as a source of test water. Thus, hydrostatic test water discharge may contain minimal amounts of foreign matter, trace amounts of hydrocarbons, and other background material found in the river. Other facilities use potable water as a source of test water and as a result their may be some residual chlorine present in the discharge. As a precaution, the hydrostatic test water shall be monitored as described below and treated through the O/W Separator prior to being discharged to the Chelsea River. In addition, the flow of

hydrostatic test water into the O/W Separator shall be controlled to prevent it from exceeding the maximum design flow rate of the separator.

At a minimum, four (4) representative samples shall be taken of the hydrostatic test water: one (1) grab sample of the influent test water; and three (3) serial-grab samples of the hydrostatic test water effluent. The influent grab sample shall be taken approximately midway through the fill segment of the hydrostatic test procedure. The three (3) effluent serial-grab samples shall be taken over the duration of the entire discharge segment of the hydrostatic test procedure. The first effluent serial-grab sample shall be taken during the initial phase of discharge; the second around the midpoint; and the third near the end of the discharge. The effluent serial-grab samples shall be obtained before discharge into the O/W Separator and/or mixing with any storm water or other non-storm water flow.

These influent and effluent samples shall be analyzed for the following parameters:

1. Total Suspended Solids (TSS)
2. Oil & Grease (O&G)
3. pH
4. Dissolved Oxygen (DO)
5. Total Residual Chlorine
6. BTEX
7. MTBE
8. PAHs (16 compounds)

Testing for total residual chlorine is only required when potable water or a similar source of water which is likely to contain a residual chlorine concentration is used for hydrostatic testing. Testing for MTBE is only required if the tank undergoing testing was recently (i.e., within three years of the proposed testing date) used to store gasoline.

During discharge (i.e., approximately at the same time the three effluent grab samples are taken), the flow exiting through the O/W Separator and outfall should be observed in order to prevent the inadvertent release of hydrocarbons to the receiving water(s). In the event that there is evidence of such a release (e.g., visible oil sheen and/or noticeable increase in turbidity of discharge water), the permittee shall immediately halt the discharge of hydrostatic test water and take steps to correct the problem.

Sampling of the above parameters is needed to provide adequate characterization of the influent and effluent hydrostatic test water and to identify whether there are any contaminant residuals present in the hydrostatic test water which might require the conditions in the Draft Permit to be modified or reopened.

The permittee shall submit a letter/report to EPA and the MADEP, summarizing the results of the transfer within forty-five (45) days of completion of the test. This report shall contain: the date(s) of hydrostatic test water transfer; the source of the test water; the volume of test water transferred;

a copy of the analytical results identifying the detection limits and associated quality assurance/quality control information for all of the discharge monitoring required in the Draft Permit; and a brief discussion of the overall test results and how they relate to the discharge parameters and their respective effluent limits identified in the Draft Permit. Any changes to these procedures must be approved by EPA and the State prior to their implementation.

10. Transfer of Storm Water from Global Petroleum Facility

The Draft Permit authorizes under certain conditions the transfer of storm water accumulated in the tank farm area of the Global Petroleum facility, to the Global South Terminal, LLC (MA0000825) for treatment. Similar requirements and conditions concerning the transfer of storm water have been included in the Global South Terminal, LLC Draft Permit. Such transfers have been requested and allowed in the past due to the more limited rate at which water can be treated and processed at the Global Petroleum facility through the activated carbon system. The extended storage of storm water in the tank farm area at the Global Petroleum facility could potentially cause flooding and/or limit the amount of petroleum product that could be stored within the secondary containment in the event of a spill. To prevent this, EPA believes its acceptable to allow the transfer of storm water to take place since the storm water within the tank farm at the Global Petroleum has not been in contact with contaminated ground water and both tank farms store similar types of petroleum products. Accordingly, EPA and the MADEP are allowing Global Petroleum to transfer storm water from its tank farm to the tank farm of the Global South Terminal, LLC as long as the monitoring, engineering controls, Best Management Practices, and reporting requirements identified in the Global South Terminal, LLC Draft Permit are met.

11. Discharge of Treated Ground Water (Outfall 003)

The Draft Permit establishes an internal waste stream outfall (Outfall 003) through which treated ground water is to be discharged into the storm water conveyance system upstream of Outfall 001. The discharge of treated ground water is currently allowed through a NPDES Permit "Exclusion" letter issued by EPA to the facility (NPDES Exclusion #MA 02I-079) on November 8, 2002. The internal waste stream outfall along with its respective effluent limits was established to ensure that monitoring results reflect the true characteristics of the waste stream and not that of the more dilute storm water with which it is sometimes being mixed (See 40 CFR §122.45(h)).

Attachment D to this Fact Sheet contains a copy of the monitoring reports submitted by the facility during 2004 for the old ground water remediation system. The facility was able to comply with the conditions of the Exclusion letter during this time period. A copy of the Exclusion letter is also contained in Attachment D to this Fact Sheet.

As mentioned in Section V.C.2 of this Fact Sheet, the facility is planning to bring its new ground water treatment system on line during the Spring of 2005. Once the new system is operating properly, Global Petroleum plans to take the old ground water treatment system out of service.

Effluent samples taken in compliance with the monitoring requirements specified in the Draft Permit shall be taken at the outlet(s) of the ground water remediation system(s), prior to where treated ground water is discharged into the storm water conveyance system. The results of such sampling shall be reported to EPA on the appropriate discharge monitoring report. The facility also takes influent samples to help with the operation of the ground water treatment system. The influent sampling results shall be attached to the discharge monitoring report containing the corresponding effluent sampling results.

The frequency of sampling of the old ground water treatment system will continue on a monthly basis for influent and effluent samples until the system is shut down. Influent and effluent samples from new ground water treatment system will be obtained once each day for the first, third and sixth day of discharge during start up. These samples must be analyzed within a 72-hour turnaround time. If the system is working properly (i.e., if it is in compliance with the effluent limits and conditions established in this Draft Permit), sampling for the remainder of the month shall be weekly and then monthly thereafter.

Ground water in contact with spilled petroleum product for an extended period of time has the potential to be contaminated with compounds found in that product. As a result, compounds, such as BTEX and PAHs, may partition and dissolve into the ground water and potentially reach toxic levels. Accordingly, more stringent and extensive effluent limits are required for the ground water treatment system before it can discharge wastewater from the facility. The lower limits established for this waste stream also reflect that it is a continuous discharge rather than intermittent discharge (i.e., like storm water). The effluent characteristics identified in Part I.A.3 of the Draft Permit are discussed in more detail below.

a. Flow

The Draft Permit establishes a limit for the maximum daily flow rate of 75 gpm (i.e., 25 gpm from the old system and 50 gpm from the new system) for Outfall 003. Once the old treatment system has been shut down the flow rate of treated ground water will be closer to 50 gpm. However, the permit limit for Outfall 003 will remain at 75 gpm in case the old system needs to be brought back on line. The maximum daily value represents the maximum daily flow rate of treated ground water discharged by the facility during the reporting period. The Draft Permit also requires the facility to report total flow, which is the value that represents the total monthly flow rate in millions of gallons for that month. The maximum daily flow rate as well as the total flow rate shall be based upon the totalizer flow results or an equivalent flow measuring device which has been approved by EPA and MADEP.

b. Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX), Total Petroleum Hydrocarbons (TPH), and Methyl Tertiary-Butyl Ether (MTBE)

Historic information indicates that the spill impacting the ground water at the facility involved gasoline. As discussed previously in Part V.E.6 of this Fact Sheet, effluent limits are not typically established for every compound found in a petroleum release. Instead, limits are established for

the compounds that would be the most challenging to remove as well as demonstrate the greatest degree of toxicity. Based on this approach, Outfall 003 includes a maximum daily limit for benzene as well as the aggregate sum of the BTEX compounds. The permit also requires that individual toluene, ethylbenzene, and total xylene concentrations be monitored and reported on a quarterly basis. EPA has made a BPJ determination based upon technology-based criteria to establish effluent limits for benzene and BTEX at 5 µg/L and 100 µg/L, respectively.

The effluent limits for Outfall 003 also include a maximum daily limit of 5 mg/L for Total Petroleum Hydrocarbons (TPH). TPH, measures the total concentration of all petroleum related hydrocarbon compounds within a specified carbon range (Weisman, 1998). The petroleum related compounds included within this analysis range from compounds with 6 carbon (C_6) atoms to compounds with 25 carbon atoms (C_{25}). The use of TPH concentrations to establish target cleanup levels for soil or water is a common approach implemented by regulatory agencies in the United States (Weisman, 1998). EPA has made a BPJ determination based upon the technology-based and performance information to include TPH in this permit.

Since the spill involved gasoline, EPA has included a maximum daily limit for MTBE. EPA has established a technology-based limit for the discharge of MTBE from Outfall 003 at 70 µg/L. Monitoring reports from numerous gasoline remediation sites covered under exclusion authorizations demonstrate that using best available technology (e.g., air stripping and/or carbon) a MTBE limit of 70 µg/L can be consistently met by a properly designed and operated treatment system.

c. Polynuclear Aromatic Hydrocarbons (PAHs)

Effluent limits for Outfall 003 also includes a technology-based maximum daily limit of 20 µg/L for naphthalene. Naphthalene is considered an important limiting pollutant parameter based upon the prevalence of this compound in petroleum products (e.g., including gasoline) and its toxicity (i.e., naphthalene has been identified as a possible human carcinogen). Monitoring for naphthalene must be able to achieve a ML of <0.2 µg/L. The permit conditions for Outfall 003 do not include limits, reporting, and monitoring requirements for other PAHs associated with the heavier distillate products such as fuel oils since the release at the facility involved gasoline.

12. Prohibition of Non-Storm Water Discharges

Non-storm water discharges including fire protection foam, either in concentrate form or as a foam diluted with water, are excluded from coverage under this permit. EPA believes that there is a significant potential for these types of discharges to be contaminated. Thus, the permittee is required to obtain a separate NPDES permit for these non-storm water discharges prior to any such discharge or seek the necessary approval(s) from the appropriate local pretreatment authority to discharge to the sanitary sewer system.

However, this permit authorizes some non-storm water discharges. These discharges potentially include treated effluent from firefighting activities; fire hydrant flushings; and potable water

sources which may include vehicle, equipment, and surface wash-down waters which do not have chemicals (such as solvents, soaps, emulsifiers and/or detergents) added. To prevent hydrocarbon and/or particulate carry-over through the treatment system, the permittee shall not add chemicals, soaps, detergents, solvents, emulsifiers, etc. to any fresh water wash-down collection and treatment system without prior approval by EPA and the MADEP.

Treated effluent from these activities means that the effluent shall be directed to the O/W Separator either alone or commingled with storm water, prior to discharge from the outfall(s). No additional monitoring requirements, other than those specified in the Draft Permit, are necessary for these types of discharges.

13. Storm Water Pollution Prevention Plan

Pursuant to Section 304(e) of the CWA and 40 CFR §125.103(b), Best Management Practices (BMP) may be expressly incorporated into a permit on a case-by-case basis where necessary to carry out Section 402(a)(1) of the CWA. This facility stores and handles pollutants listed as toxic under Section 307(a)(1) of the CWA or pollutants listed as hazardous under Section 311 of the CWA and has ancillary operations which could result in significant amounts of these pollutants reaching the Chelsea River and Boston Harbor.

To control the activities/operations, which could contribute pollutants to waters of the United States via storm water discharges at this facility, the Current Permit required the facility to develop a Storm Water Pollution Prevention Plan (SWPPP) with site-specific BMPs. The SWPPP requirements and the BMPs identified therein are intended to facilitate a process whereby the permittee thoroughly evaluates potential pollution sources at the terminal and selects and implements appropriate measures to prevent or control potential discharges of pollutants in the storm water runoff. The SWPPP, upon implementation, becomes a supporting element to any numerical effluent limitations in the Draft Permit. Consequently, the SWPPP is as equally enforceable as the numerical limits.

The permittee has certified to EPA that a SWPPP was developed and implemented for this facility in accordance with the schedule and requirements identified in the Current Permit. The Draft Permit continues to ensure that the SWPPP is kept current and adhered to, by requiring the permittee to maintain and update the SWPPP as changes occur at the facility. In addition, the Draft Permit requires the permittee to provide annual certification to EPA and the MADEP, documenting that the previous year's inspections and maintenance activities were conducted, results recorded, records maintained, and that the facility is in compliance with its SWPPP. A signed copy of the certification will be sent each year to EPA and MADEP as well as appended to the SWPPP within thirty (30) days of the annual anniversary of the effective date of the Draft Permit. This certification shall be signed in accordance with the requirements identified in 40 CFR §122.22. A copy of the most recent SWPPP shall be kept at the facility and be available for inspection by EPA and MADEP.

14. Additional Requirements and Conditions

These effluent monitoring requirements have been established to yield data representative of the discharge under the authority of Section 308(a) of the CWA in accordance with 40 CFR §122.41(j), §122.44(i) and §122.48.

The remaining conditions of the permit are based on the NPDES regulations, Part 122 through 125 and consist primarily of management requirements common to all permits.

VI. ENDANGERED SPECIES ACT

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA) grants authority to and imposes requirements upon Federal agencies regarding endangered or threatened species of fish, wildlife, or plants ("listed species") and habitat of such species that has been designated as critical (a "critical habitat"). The ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, to insure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The National Marine Fisheries Service (NMFS) administers Section 7 consultations for marine species and anadromous fish.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, or plants to see if any such listed species might potentially be impacted by the re-issuance of this NPDES permit. The review has focused primarily on marine species and anadromous fish since the discharge is to the Chelsea River (Mystic River Watershed) which ultimately flows into Boston Harbor. Given the urban nature of Chelsea Creek, EPA believes that it is unlikely that there would be any listed marine species (See Attachment E) or critical habitat present. Furthermore, effluent limitations and other permit conditions which are in place in this Draft Permit should preclude any adverse effects should there be any incidental contact with listed species either in Chelsea Creek and/or Boston Harbor. EPA has discussed the results of its determination with NMFS and a copy of the Draft Permit has been provided to NMFS for review and comment as part of an informal Section 7 consultation.

VII. ESSENTIAL FISH HABITAT

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq. (1998)), EPA is required to consult with the National Marine Fisheries Services (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat" (EFH). The Amendments define EFH as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity," (16 U.S.C. § 1802 (10)). "Adverse impact" means any impact which reduces the quality and/or quantity of EFH (50 C.F.R. § 600.910 (a)). Adverse effects may include direct (e.g.,

contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Id.

Essential fish habitat is only designated for species for which federal fisheries management plans exist (16 U.S.C. § 1855(b) (1) (A)). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

A review of the relevant essential fish habitat information provided by NMFS indicates that essential fish habitat has been designated for 15 managed species within the NMFS boundaries encompassing the outfall location. A copy of the managed species within the EFH is included in Attachment F. EPA has concluded that the permitted discharge will not likely adversely impact the EFH and the managed species identified for this general location. This conclusion is based on the amount and frequency of the discharge, as well as effluent limitations and other permit requirements that are identified in this Fact Sheet. These factors are designed to be protective of all aquatic species, including those with EFH designations.

EPA has determined that a formal EFH consultation with NMFS is not required because the proposed discharge will not adversely impact the EFH. If adverse impacts are detected as a result of this permit action, NFMS will be notified and an EFH consultation will promptly be initiated.

VIII. STATE CERTIFICATION REQUIREMENTS

EPA may not issue a permit unless the MADEP certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards or unless state certification is waived. The staff of the MADEP is reviewing the Draft Permit and will determine if the limitations are adequate to protect water quality. EPA has requested permit certification by the State pursuant to 40 CFR 124.53 and expects that the Draft Permit will be certified.

IX. ADMINISTRATIVE RECORD, PUBLIC COMMENT PERIOD, HEARING REQUESTS, AND PROCEDURES FOR FINAL DECISION

The Administrative Record containing the documents forming the basis of this Draft Permit is on file and may be inspected at the EPA Record Center located in Boston at 1 Congress Street between 9:00 a.m. and 5:00 p.m., Monday through Friday, except holidays. Individuals interested in reviewing the Administrative Record should contact the Record Center staff at (617) 918-1440 to schedule an appointment.

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the U.S. EPA, Office of Ecosystem Protection Attn: Neil Handler, 1 Congress Street, Suite 1100 (CIP), Boston,

Massachusetts 02114-2023 or via email to handler.neil@epa.gov. **The comments should reference the name and permit number of the facility for which they are being provided.**

A public hearing will be held after at least thirty (30) days public notice, since the Regional Administrator has determined that significant public interest exists regarding this Draft Permit. In reaching a final decision on the Draft Permit the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within thirty (30) days following the notice of final permit decision, any interested person may submit a request for a formal evidentiary hearing to reconsider or contest the final decision. Requests for a formal evidentiary hearing must satisfy the Requirements of 40 CFR §124.74. In general, the reader should reference 40 CFR 124–PROCEDURES FOR DECISION MAKING, Subparts A, D, E and F for specifics relative to this section.

X. EPA & MADEP CONTACTS

Additional information concerning the Draft Permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays, from the EPA and MADEP contacts below:

Neil Handler, EPA New England - Region I
1 Congress Street, Suite 1100 (CIP)
Boston, MA 02114-2023
Telephone: (617) 918-1334 FAX: (617) 918-0334
email: handler.neil@epa.gov

Paul Hogan, Massachusetts Department of Environmental Protection
Division of Watershed Management, Surface Water Discharge Permit Program
627 Main Street, 2nd Floor Worcester, Massachusetts 01608
Telephone: (508) 767-2796 FAX: (508) 791-4131
email: paul.hogan@state.ma.us

_____
Date

Linda M. Murphy, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

REFERENCES

ES&T. 2002. *MTBE Ambient Water Quality Criteria Development: A Public/Private Partnership.* Mancini, E.R., et al., Environmental Science & Technology, Vol. 36, No. 2. 2002.

Global. 2004. *Global Petroleum Corporation - NPDES Permit No. MA0003425, Responses to EPA Information Request Dated December 3, 2004.* Global Petroleum Corporation, Waltham, MA. June 2004.

MADEP. 2002. *Boston Harbor 1999 Water Quality Assessment Report.* Massachusetts Department of Environmental Protection, Division of Watershed Management, Worcester, MA. October 2002 (70-AC-1)

MADEP. 2003. *Massachusetts Year 2002 Integrated List of Waters, Part 2 - Final Listing of Individual Categories of Waters.* Commonwealth of Massachusetts Executive Office of Environmental Affairs, September, 2003 (CN:125.2)

Potter, Thomas L. and Kathleen E. Simmons, 1998. *Composition of Petroleum Mixtures, Volume 2.* Total Petroleum Hydrocarbon Criteria Working Group Series, May 1998.

Triton, Inc. 2001. *NPDES Renewal - Wastewater Permit Application (MA 0003425), Global Petroleum Corporation - Revere, MA Terminal.* Triton Environmental, Inc., New Haven, CT. November 2001.

USEPA. 1982. *Development Document for Effluent Limitations Guidelines and Standards and Pretreatment Standards for the Steam Electric Point Source Category.* United States Environmental Protection Agency, Office of Water and Waste Management, Washington, D.C. EPA-440/1-82/029, November 1982.

USEPA. 2002. *National Recommended Water Quality Criteria:2002.* United States Environmental Protection Agency, Office of Water, Washington, D.C. EPA-822-R-02-047, November 2002.

FIGURES

ATTACHMENT A

SUMMARY OF DISCHARGE MONITORING REPORT (DMR) RESULTS

(1998 TO 2003)

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

ATTACHMENT B

SUMMARY OF DISCHARGE MONITORING REPORT (DMR) RESULTS

(2001 TO 2003)

FOR POLYNUCLEAR AROMATIC COMPOUNDS

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

ATTACHMENT C

SUMMARY OF DISCHARGE MONITORING REPORT (DMR) RESULTS

(2001 TO 2003)

FOR VOLATILE ORGANIC COMPOUNDS

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

ATTACHMENT D

SUMMARY OF GROUND WATER MONITORING DATA

(2004)

GLOBAL PETROLEUM CORPORATION

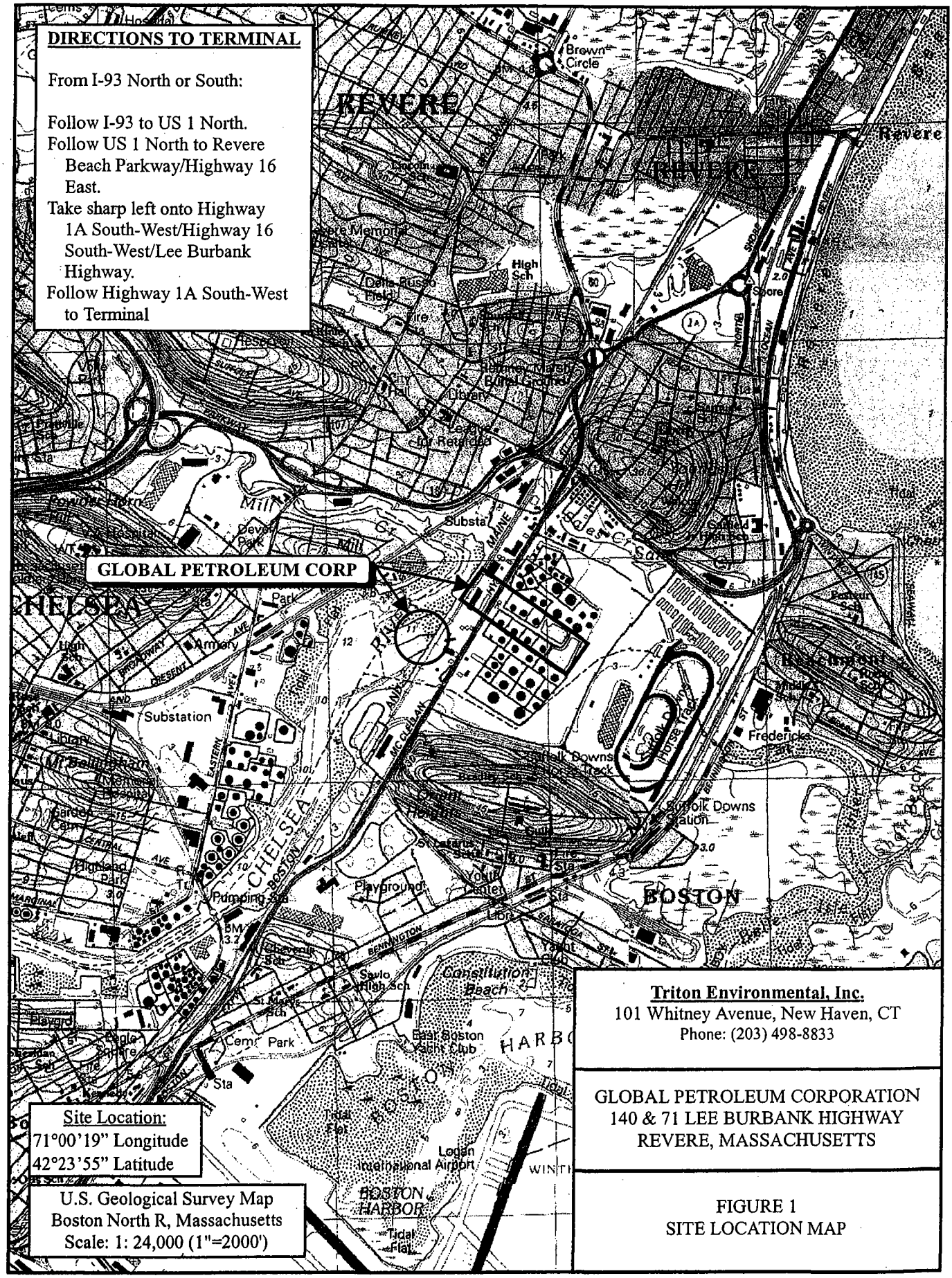
NPDES PERMIT NO. MA0003425

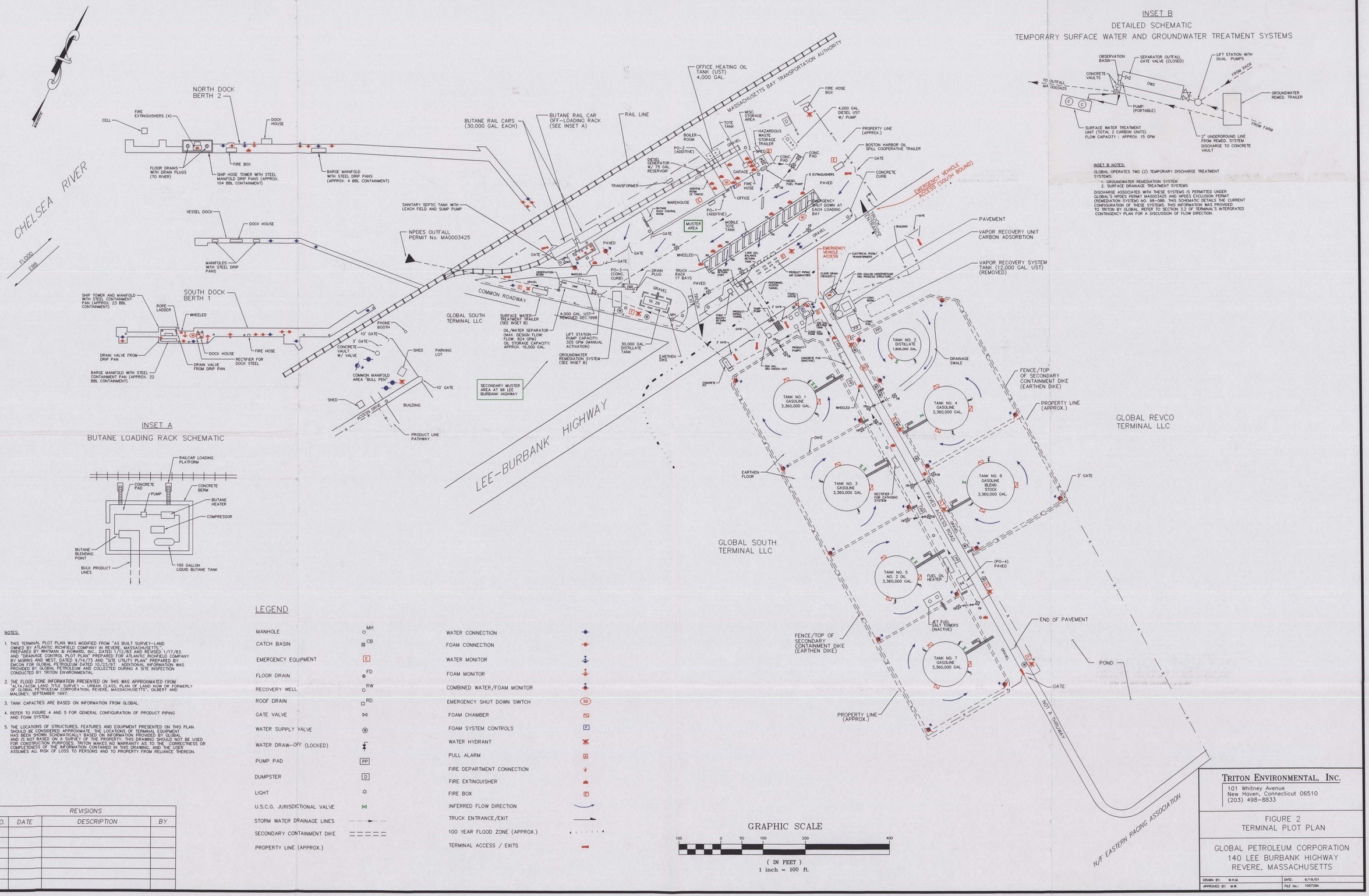
ATTACHMENT E

ENDANGERED SPECIES LIST

ATTACHMENT F

ESSENTIAL FISH HABITAT DESIGNATION





INSET A

BUTANE LOADING RACK SCHEMATIC

INSET B

DETAILED SCHEMATIC

TEMPORARY SURFACE WATER AND GROUNDWATER TREATMENT SYSTEMS

INSET B NOTES:

GLOBAL OPERATES TWO (2) TEMPORARY DISCHARGE TREATMENT SYSTEMS:

1. GROUNDWATER REMEDIATION SYSTEM
2. SURFACE DRAINAGE TREATMENT SYSTEMS

DISCHARGE ASSOCIATED WITH THESE SYSTEMS IS PERMITTED UNDER GLOBAL'S NPDES PERMIT MA0003425 AND NPDES EXCLUSION PERMIT (REMEDIATION SYSTEM) NO. 98-086. THIS SCHEMATIC DETAILS THE CURRENT CONFIGURATION OF THESE SYSTEMS. THIS INFORMATION WAS PROVIDED TO TRITON BY GLOBAL. REFER TO SECTION 3.2 OF TERMINAL'S INTERGRATED CONTINGENCY PLAN FOR A DISCUSSION OF FLOW DIRECTION.

LEGEND

MANHOLE	MH	WATER CONNECTION	
CATCH BASIN	CB	FOAM CONNECTION	
EMERGENCY EQUIPMENT	E	WATER MONITOR	
FLOOR DRAIN	FD	FOAM MONITOR	
RECOVERY WELL	RW	COMBINED WATER/FOAM MONITOR	
ROOF DRAIN	RD	EMERGENCY SHUT DOWN SWITCH	SD
GATE VALVE		FOAM CHAMBER	
WATER SUPPLY VALVE	W	FOAM SYSTEM CONTROLS	F
WATER DRAW-OFF (LOCKED)		WATER HYDRANT	
PUMP PAD	PP	PULL ALARM	A
DUMPSTER	D	FIRE DEPARTMENT CONNECTION	
LIGHT		FIRE EXTINGUISHER	
U.S.C.G. JURISDICTIONAL VALVE		FIRE BOX	F
STORM WATER DRAINAGE LINES		INFERRED FLOW DIRECTION	
SECONDARY CONTAINMENT DIKE		TRUCK ENTRANCE/EXIT	
PROPERTY LINE (APPROX.)		100 YEAR FLOOD ZONE (APPROX.)	
		TERMINAL ACCESS / EXITS	

NOTES:

1. THIS TERMINAL PLOT PLAN WAS MODIFIED FROM "AS BUILT SURVEY–LAND OWNED BY ATLANTIC RICHFIELD COMPANY IN REVERE, MASSACHUSETTS." PREPARED BY WHITMAN & HOWARD, INC., DATED 1/12/83 AND REVISED 1/17/83, AND "DRAINAGE CONTROL PLOT PLAN" PREPARED FOR ATLANTIC RICHFIELD COMPANY BY MORRIS AND WEST, DATED 9/14/73 AND "SITE UTILITY PLAN" PREPARED BY EMCON FOR GLOBAL PETROLEUM DATED 10/23/97. ADDITIONAL INFORMATION WAS PROVIDED BY GLOBAL PETROLEUM AND COLLECTED DURING A SITE INSPECTION CONDUCTED BY TRITON ENVIRONMENTAL.
2. THE FLOOD ZONE INFORMATION PRESENTED ON THIS WAS APPROXIMATED FROM "ALTA/ACSM LAND TITLE SURVEY – URBAN CLASS, PLAN OF LAND NOW OR FORMERLY OF GLOBAL PETROLEUM CORPORATION, REVERE, MASSACHUSETTS", GILBERT AND MALONEY, SEPTEMBER 1997.
3. TANK CAPACITIES ARE BASED ON INFORMATION FROM GLOBAL.
4. REFER TO FIGURE 4 AND 5 FOR GENERAL CONFIGURATION OF PRODUCT PIPING AND FOAM SYSTEM.
5. THE LOCATIONS OF STRUCTURES, FEATURES AND EQUIPMENT PRESENTED ON THIS PLAN SHOULD BE CONSIDERED APPROXIMATE. THE LOCATIONS OF TERMINAL EQUIPMENT HAS BEEN SHOWN SCHEMATICALLY BASED ON INFORMATION PROVIDED BY GLOBAL AND IS NOT BASED ON A SURVEY OF THE PROPERTY. THIS DRAWING SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES. TRITON MAKES NO WARRANTY AS TO THE CORRECTNESS OR COMPLETENESS OF THE INFORMATION CONTAINED IN THIS DRAWING, AND THE USER ASSUMES ALL RISK OF LOSS TO PERSONS AND TO PROPERTY FROM RELIANCE THEREON.

REVISIONS

NO.	DATE	DESCRIPTION	BY

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

GLOBAL REVCO TERMINAL LLC

TRITON ENVIRONMENTAL, INC.

101 Whitney Avenue
New Haven, Connecticut 06510
(203) 498-8833

FIGURE 2
TERMINAL PLOT PLAN

GLOBAL PETROLEUM CORPORATION
140 LEE BURBANK HIGHWAY
REVERE, MASSACHUSETTS

DRAWN BY:	W.H.M.	DATE:	6/19/01
APPROVED BY:	M.W.	FILE No.:	100726A

ATTACHMENT A

SUMMARY OF DISCHARGE MONITORING REPORT (DMR) RESULTS

(1998 TO 2003)

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

GLOBAL PETROLEUM CORPORATION DMR RESULTS (1998 - 2003)
NPDES PERMIT NO. MA0003425

QL ********** QL

001 - OIL/WATER SEPARATOR
Monitoring Parameter: Flow Rate (gal/min)
Permit Limit: Report Only
Monitoring Frequency: Once/Rain Event
Sample Type: Curve

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Percent Violations Daily Max.
01/31/98			330		0
02/28/98			650		0
03/31/98			650		0
04/30/98			650		0
05/31/98			650		0
06/30/98			325		0
07/31/98			650		0
08/31/98			650		0
09/30/98	C				
10/31/98			338		0
11/30/98			338		0
12/31/98			338		0
01/31/99			338		0
02/28/99			338		0
03/31/99			338		0
04/30/99			338		0
05/31/99			368		0
06/30/99			338		0
07/31/99			338		0
08/31/99			338		0
09/30/99			338		0
10/31/99			338		0
11/30/99			338		0
12/31/99			338		0
01/31/00			338		0
02/29/00			338		0
03/31/00			338		0
04/30/00			338		0
05/31/00			338		0
06/30/00			338		0
07/31/00			338		0
08/31/00			338		0
09/30/00			338		0
10/31/00			338		0
11/30/00			338		0
12/31/00			338		0
01/31/01			338		0
02/28/01			338		0
03/31/01			338		0
04/30/01			338		0
05/31/01			338		0
06/30/01			338		0
07/31/01			338		0
08/31/01			338		0
09/30/01			338		0
10/31/01			338		0
11/30/01	C				
12/31/01			338		0
01/31/02			338		0
02/28/02			338		0
03/31/02			338		0
04/30/02			338		0

05/31/02		338		0
06/30/02		338		0
07/31/02		338		0
08/31/02		338		0
09/30/02		338		0
10/31/02		338		0
11/30/02		338		0
12/31/02		338		0
01/31/03		80		0
02/28/03		80		0
03/31/03		80		0
04/30/03		80		0
05/31/03		80		0
06/30/03		80		0
07/31/03		80		0
08/31/03		80		0
09/30/03		80		0
11/30/03		80		0
12/31/03		80		0

001 - OIL/WATER SEPARATOR
Monitoring Parameter: pH (S.U.)
Permit Limit: Report Only
Monitoring Frequency: Once/Month
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
01/31/98			7.0		0
02/28/98			6.96		0
03/31/98			6.86		0
04/30/98			7.00		0
05/31/98			7.34		0
06/30/98			7.26		0
07/31/98			7.04		0
08/31/98			7.59		0
09/30/98	C				
10/31/98	E				
11/30/98			7.3		0
12/31/98			7.5		0
01/31/99			7.13		0
02/28/99			6.32		0
03/31/99			10.38		0
04/30/99	E				
05/31/99			7.27		0
06/30/99			7.2		0
07/31/99			7.47		0
08/31/99			7.27		0
09/30/99			7.91		0
10/31/99			7.62		0
11/30/99			7.12		0
12/31/99			7.71		0
01/31/00			8.42		0
02/29/00			8.12		0
03/31/00			7.10		0
04/30/00			7.52		0
05/31/00			7.36		0
06/30/00			9.0		0
07/31/00			8.88		0
08/31/00			8.32		0
09/30/00			7.71		0
10/31/00			7.53		0
11/30/00			7.75		0
12/31/00			7.21		0
01/31/01			7.72		0
02/28/01			7.72		0

03/31/01		8.12	0
04/30/01		8.35	0
05/31/01		8.45	0
06/30/01		7.61	0
07/31/01		6.84	0
08/31/01		7.9	0
09/30/01		8.41	0
10/31/01		7.51	0
11/30/01	C		
12/31/01		8.15	0
01/31/02		8.02	0
02/28/02		8.21	0
03/31/02		8.02	0
04/30/02		8.23	0
05/31/02		8.28	0
06/30/02		8.4	0
07/31/02		7.40	0
08/31/02		7.72	0
09/30/02		7.83	0
10/31/02		8.11	0
11/30/02		8.03	0
12/31/02		8.21	0
01/31/03		7.89	0
02/28/03		9.92	0
03/31/03		9.02	0
04/30/03		8.72	0
05/31/03		9.27	0
06/30/03		9.62	0
07/31/03		9.01	0
08/31/03		9.25	0
09/30/03		9.22	0
11/30/03		7.43	0
12/31/03		8.88	0

001 - OIL/WATER SEPARATOR
Monitoring Parameter: Total Supended Solids (mg/L)
Permit Limit: Monthly Avg. 30 mg/L; Daily Max. 100 mg/L
Monitoring Frequency: Twice/Month
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
01/31/98		42.98	78.0	43	0
02/28/98		47.8	80.8	59	0
03/31/98		11.55	20.4	0	0
04/30/98		13.93	26.0	0	0
05/31/98		70.6	162	135	62
06/30/98		12.8	25.5	0	0
07/31/98		79.75	122	166	22
08/31/98		10.5	12.5	0	0
09/30/98	C				
10/31/98		0.0	0.0	0	0
11/30/98		0.0	0.0	0	0
12/31/98		0.0	0.0	0	0
01/31/99		15.0	30.0	0	0
02/28/99		5.75	6.0	0	0
03/31/99		3.5	7.0	0	0
04/30/99		0.0	0.0	0	0
05/31/99		0.0	0.0	0	0
06/30/99		20.0	20.0	0	0
07/31/99		0.0	0.0	0	0
08/31/99		0.0	0.0	0	0
09/30/99		11.25	16.5	0	0
10/31/99		29.75	59.5	0	0
11/30/99		0.0	0.0	0	0
12/31/99		0.0	0.0	0	0

01/31/00		0.0	0.0	0	0
02/29/00		5.25	5.5	0	0
03/31/00		5.0	12.0	0	0
04/30/00		2.7	13.5	0	0
05/31/00		0.0	0.0	0	0
06/30/00		0.0	0.0	0	0
07/31/00		0.0	0.0	0	0
08/31/00		0.0	0.0	0	0
09/30/00		0.0	0.0	0	0
10/31/00		3.6	10.8	0	0
11/30/00		0.0	0.0	0	0
12/31/00		28.0	28.0	0	0
01/31/01		0.0	0.0	0	0
02/28/01		0.0	0.0	0	0
03/31/01		5.6	6.0	0	0
04/30/01		4.75	9.5	0	0
05/31/01		0.0	0.0	0	0
06/30/01		3.0	12.0	0	0
07/31/01		0.0	0.0	0	0
08/31/01		0.0	0.0	0	0
09/30/01		1.7	6.8	0	0
10/31/01		0.0	0.0	0	0
11/30/01	C				
12/31/01		0.0	0.0	0	0
01/31/02		0.0	0.0	0	0
02/28/02		0.0	0.0	0	0
03/31/02		0.0	0.0	0	0
04/30/02		0.0	0.0	0	0
05/31/02		0.0	0.0	0	0
06/30/02		0.0	0.0	0	0
07/31/02		0.0	0.0	0	0
08/31/02		1.87	5.6	0	0
09/30/02		1.9	5.6	0	0
10/31/02		0.0	0.0	0	0
11/30/02		0.0	0.0	0	0
12/31/02		0.0	0.0	0	0
01/31/03		0.0	0.0	0	0
02/28/03		0.0	0.0	0	0
03/31/03		8.5	28	0	0
04/30/03		0.0	0.0	0	0
05/31/03		0.0	0.0	0	0
06/30/03		0.0	0.0	0	0
07/31/03		0.0	0.0	0	0
08/31/03		0.0	0.0	0	0
09/30/03		0.0	0.0	0	0
11/30/03		0.0	0.0	0	0
12/31/03		0.0	0.0	0	0

001 - OIL/WATER SEPARATOR
Monitoring Parameter: Oil & Grease (mg/L)
Permit Limit: Daily Max. 15 mg/L
Monitoring Frequency: Twice/Month
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
01/31/98			5.9		0
02/28/98			3.5		0
03/31/98			0.0		0
04/30/98			0.0		0
05/31/98			0.0		0
06/30/98			0.0		0
07/31/98			6.0		0
08/31/98			0.0		0
09/30/98	C				
10/31/98			0.0		0

11/30/98		0.0	0
12/31/98		0.0	0
01/31/99		8.7	0
02/28/99		0.0	0
03/31/99		0.0	0
04/30/99		0.0	0
05/31/99		0.0	0
06/30/99		5.88	0
07/31/99		0.0	0
08/31/99		0.0	0
09/30/99		0.0	0
10/31/99		0.0	0
11/30/99		0.0	0
12/31/99		0.0	0
01/31/00		0.0	0
02/29/00		0.0	0
03/31/00		0.0	0
04/30/00		0.0	0
05/31/00		0.0	0
06/30/00		0.0	0
07/31/00		0.0	0
08/31/00		0.0	0
09/30/00		0.0	0
10/31/00		0.0	0
11/30/00		0.0	0
12/31/00		0.0	0
01/31/01		0.0	0
02/28/01		0.0	0
03/31/01		0.0	0
04/30/01		0.0	0
05/31/01		0.0	0
06/30/01		0.0	0
07/31/01		0.0	0
08/31/01		0.0	0
09/30/01		0.0	0
10/31/01		0.0	0
11/30/01	C		
12/31/01		0.0	0
01/31/02		0.0	0
02/28/02		0.0	0
03/31/02		0.0	0
04/30/02		0.0	0
05/31/02		0.0	0
06/30/02		0.0	0
07/31/02		0.0	0
08/31/02		0.0	0
09/30/02		0.0	0
10/31/02		0.0	0
11/30/02		0.0	0
12/31/02		0.0	0
01/31/03		0.0	0
02/28/03		0.0	0
03/31/03		0.0	0
04/30/03		0.0	0
05/31/03		0.0	0
06/30/03		0.0	0
07/31/03		0.0	0
08/31/03		0.0	0
09/30/03		0.0	0
11/30/03		0.0	0
12/31/03		0.0	0

001 - OIL/WATER SEPARATOR
Monitoring Parameter: Total Flow (Mgal/month)
Permit Limit: Report Only
Monitoring Frequency: Once/Rain Event
Sample Type: Estimate

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Percent Violations Daily Max.
01/31/98		356		0	
02/28/98		312		0	
03/31/98		351		0	
04/30/98		819		0	
05/31/98		399.8		0	
06/30/98		312		0	
07/31/98		448.5		0	
08/31/98		331.5		0	
09/30/98	C				
10/31/98		486.72		0	
11/30/98		202.8		0	
12/31/98		141.96		0	
01/31/99		415.7		0	
02/28/99		486.7		0	
03/31/99		349.83		0	
04/30/99		202.8		0	
05/31/99		344.75		0	
06/30/99		344.76		0	
07/31/99		468.7		0	
08/31/99		415.74		0	
09/30/99		182.52		0	
10/31/99		486.72		0	
11/30/99		182.52		0	
12/31/99		172.38		0	
01/31/00		172.38		0	
02/29/00		192.66		0	
03/31/00		378.56		0	
04/30/00		332.59		0	
05/31/00		486.72		0	
06/30/00		304.2		0	
07/31/00		486.7		0	
08/31/00		486.7		0	
09/30/00		486.7		0	
10/31/00		324.5		0	
11/30/00		432.6		0	
12/31/00		283.9		0	
01/31/01		223.1		0	
02/28/01		283.9		0	
03/31/01		475.2		0	
04/30/01		486.7		0	
05/31/01		202.8		0	
06/30/01		218.0		0	
07/31/01		324.48		0	
08/31/01		405.6		0	
09/30/01		486.7		0	
10/31/01		527.2		0	
11/30/01	C				
12/31/01		507		0	
01/31/02		1399.3		0	
02/28/02		1324.9		0	
03/31/02		405.6		0	
04/30/02		436.0		0	
05/31/02		432.6		0	
06/30/02		192.7		0	
07/31/02		517.1		0	
08/31/02		114.9		0	
09/30/02		270.4		0	
10/31/02		324.5		0	
11/30/02		294.1		0	

12/31/02		202.8	0
01/31/03	***	1.19	0
02/28/03		0.18	0
03/31/03		0.12	0
04/30/03		0.08	0
05/31/03		0.56	0
06/30/03		2.04	0
07/31/03		2.01	0
08/31/03		2.47	0
09/30/03		0.94	0
11/30/03		2.25	0
12/31/03		1.25	0

*** For the reporting periods prior to January 31, 2003, Total Flow was reported on the DMRs in the units of thousand of gallons/month. Starting with the reporting period ending January 31, 2003, Total Flow was reported in the units of millions of gallons/month (Mgal/month).

001 - OIL/WATER SEPARATOR
Monitoring Parameter: Methyl Tertiary-Butyl Ether (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			2700		0
06/30/98			4700		0
09/30/98			16000		0
12/31/98			110		0
03/31/99			370		0
06/30/99			6.6		0
09/30/99			0.0		0
12/31/99			72		0
03/31/00			630		0
06/30/00			35		0
09/30/00			19		0
12/31/00			6.9		0
03/31/01			4.6		0
06/30/01			280		0
09/30/01			7.8		0
12/31/01			2.0		0
03/31/02			488		0
06/30/02			226		0
09/30/02			25.0		0
12/31/02			591		0
03/31/03			6580		0
06/30/03			0.0		0
09/30/03			111		0
12/31/03			91.4		0

001 - OIL/WATER SEPARATOR
Monitoring Parameter: Toluene (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			8.1		0
06/30/98			0.0		0
09/30/98			0.0		0
12/31/98			0.0		0

03/31/99		0.0		0
06/30/99		0.0		0
09/30/99		0.0		0
12/31/99		0.0		0
03/31/00		0.0		0
06/30/00		0.0		0
09/30/00		0.0		0
12/31/00		0.0		0
03/31/01		0.0		0
06/30/01		0.0		0
09/30/01		0.0		0
12/31/01		0.0		0
03/31/02		0.0		0
06/30/02		0.0		0
09/30/02		0.0		0
12/31/02		0.0		0
03/31/03		0.0		0
06/30/03		0.0		0
09/30/03		0.0		0
12/31/03		0.0		0

001 - OIL/WATER SEPARATOR
Monitoring Parameter: Benzene (ug/L)
Permit Limit: 500 ug/L
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			64		0
06/30/98			6.2		0
09/30/98			0.0		0
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			0.0		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0
03/31/01			0.0		0
06/30/01			0.0		0
09/30/01			0.0		0
12/31/01			0.0		0
03/31/02			0.0		0
06/30/02			0.0		0
09/30/02			0.0		0
12/31/02			0.0		0
03/31/03			0.0		0
06/30/03			0.0		0
09/30/03			0.0		0
12/31/03			0.0		0

001 - OIL/WATER SEPARATOR
Monitoring Parameter: Benzo(b)fluoranthene (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Percent Violations Daily Max.
03/31/98			0.0		0
06/30/98			0.0		0
09/30/98	E				
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			0.0		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0
03/31/01			0.0		0
06/30/01			0.0		0
09/30/01			0.0		0
12/31/01			0.0		0
03/31/02			0.0		0
06/30/02			0.0		0
09/30/02			0.0		0
12/31/02			0.0		0
03/31/03			0.0		0
06/30/03			0.0		0
09/30/03			0.0		0
12/31/03			0.0		0

001 - OIL/WATER SEPARATOR
Monitoring Parameter: Benzo(k)fluoranthene (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Percent Violations Daily Max.
03/31/98			0.0		0
06/30/98			0.0		0
09/30/98	E				
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			0.0		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0
03/31/01			0.0		0
06/30/01			0.0		0
09/30/01			0.0		0
12/31/01			0.0		0
03/31/02			0.0		0
06/30/02			0.0		0
09/30/02			0.0		0
12/31/02			0.0		0
03/31/03			0.0		0
06/30/03			0.0		0

09/30/03		0.0		0
12/31/03		0.0		0

001 - OIL/WATER SEPARATOR
Monitoring Parameter: Benzo(a)pyrene (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			0.0		0
06/30/98			0.0		0
09/30/98	E				
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			0.0		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0
03/31/01			0.0		0
06/30/01			0.0		0
09/30/01			0.0		0
12/31/01			0.0		0
03/31/02			0.0		0
06/30/02			0.0		0
09/30/02			0.0		0
12/31/02			0.0		0
03/31/03			0.0		0
06/30/03			0.0		0
09/30/03			0.0		0
12/31/03			0.0		0

001 - OIL/WATER SEPARATOR
Monitoring Parameter: Chrysene (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			0.0		0
06/30/98			0.0		0
09/30/98	E				
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			0.0		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0
03/31/01			0.0		0
06/30/01			0.0		0
09/30/01			0.0		0
12/31/01			0.0		0
03/31/02			0.0		0
06/30/02			0.0		0
09/30/02			0.0		0
12/31/02			0.0		0

03/31/03		0.0		0
06/30/03		0.0		0
09/30/03		0.0		0
12/31/03		0.0		0

001 - OIL/WATER SEPARATOR
Monitoring Parameter: Ethylbenzene (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			13		0
06/30/98			0.0		0
09/30/98			0.0		0
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			2.3		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0
03/31/01			0.0		0
06/30/01			0.0		0
09/30/01			0.0		0
12/31/01			0.0		0
03/31/02			0.0		0
06/30/02			0.0		0
09/30/02			0.0		0
12/31/02			0.0		0
03/31/03			0.0		0
06/30/03			0.0		0
09/30/03			0.0		0
12/31/03			0.0		0

001 - OIL/WATER SEPARATOR
Monitoring Parameter: Indeno (1,2,3-cd)pyrene (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			0.0		0
06/30/98			0.0		0
09/30/98	E				
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			0.0		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0
03/31/01			0.0		0
06/30/01			0.0		0
09/30/01			0.0		0
12/31/01			0.0		0
03/31/02			0.0		0

06/30/02		0.0		0
09/30/02		0.0		0
12/31/02		0.0		0
03/31/03		0.0		0
06/30/03		0.0		0
09/30/03		0.0		0
12/31/03		0.0		0

001 - OIL/WATER SEPARATOR
Monitoring Parameter: Benzo(a)anthracene (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			0.0		0
06/30/98			0.0		0
09/30/98	E				
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			0.0		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0
03/31/01			0.0		0
06/30/01			0.0		0
09/30/01			0.0		0
12/31/01			0.0		0
03/31/02			0.0		0
06/30/02			0.0		0
09/30/02			0.0		0
12/31/02			0.0		0
03/31/03			0.0		0
06/30/03			0.0		0
09/30/03			0.0		0
12/31/03			0.0		0

001 - OIL/WATER SEPARATOR
Monitoring Parameter: Dibenzo(a,h)anthracene (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			0.0		0
06/30/98			0.0		0
09/30/98	E				
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			0.0		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0
03/31/01			0.0		0
06/30/01			0.0		0
09/30/01			0.0		0

12/31/01	0.0	0
03/31/02	0.0	0
06/30/02	0.0	0
09/30/02	0.0	0
12/31/02	0.0	0
03/31/03	0.0	0
06/30/03	0.0	0
09/30/03	0.0	0
12/31/03	0.0	0

001 - OIL/WATER SEPARATOR
Monitoring Parameter: Total Xylenes (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			39		0
06/30/98			0.0		0
09/30/98			0.0		0
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			0.0		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0
03/31/01			0.0		0
06/30/01			0.0		0
09/30/01			0.0		0
12/31/01			0.0		0
03/31/02			0.0		0
06/30/02			0.0		0
09/30/02			0.0		0
12/31/02			0.0		0
03/31/03			0.0		0
06/30/03			0.0		0
09/30/03			0.0		0
12/31/03			0.0		0

490 NO DISCHARGE INDICATOR CODES

NODI	DESCRIPTION
A	GENERAL PERMIT EXEMPTION
B	BELOW DETECT LIMIT/NO DETECT
C	NO DISCHARGE
D	LOST SAMPLE
E	ANALYSIS NOT CONDUCTED
F	INSUFFICIENT FLOW FOR SAMPLING
G	SAMPLING EQUIPMENT FAILURE
H	INVALID TEST
I	LAND APPLIED WASTE WATER
J	RECYCLED, WATER-CLOSED SYSTEM
K	FLOOD DISASTER
L	DMR RECEIVED BUT NOT ENTERED
M	NOT APPLIC DURING SLDGE MONITOR PERIOD
N	NOT TRACKED IN PCS FOR THIS PERIOD
Q	NOT QUANTIFIABLE
1	WRONG FLOW
2	OPERATIONS SHUTDOWN
3	LOW LEVEL PRODUCTION
4	LAGOON PROCESSING
5	FROZEN CONDITIONS
6	PRODUCTION BASED LIMITS DONT APPLY TO MP
7	DMR RECEIVED, PRODUCTION OR FLOW RELATED
8	OTHER
9	MONITORING IS CONDITIONAL/NOT REQ THIS MP

ATTACHMENT B

SUMMARY OF DISCHARGE MONITORING REPORT (DMR) RESULTS

(2001 TO 2003)

FOR POLYNUCLEAR AROMATIC COMPOUNDS

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

Global Petroleum Corporation (Permit No. MA0003425) 2001-2003 Quarterly Storm Water Monitoring Results for PAHs [1] / Outfall 001

PAH Compounds	1st Quarter 2001 (ug/L)	2nd Quarter 2001 (ug/L)	3rd Quarter 2001 (ug/L)	4th Quarter 2001 (ug/L)	1st Quarter 2002 (ug/L)	2nd Quarter 2002 (ug/L)	3rd Quarter 2002 (ug/L)	4th Quarter 2002 (ug/L)	1st Quarter 2003 (ug/L)	2nd Quarter 2003 (ug/L)	3rd Quarter 2003 (ug/L)	4th Quarter 2003 (ug/L)
Benzo(a)anthracene	<5.4	<5.2	ND[3]	ND[3]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
Benzo(a)pyrene	<5.4	<5.2	ND[3]	ND[3]	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(b)fluoranthene	<5.4	<5.2	ND[3]	ND[3]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	<5.4	<5.2	ND[3]	ND[3]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	<5.4	<5.2	ND[3]	ND[3]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
Dibenzo(a,h)anthracene	<5.4	<5.2	ND[3]	ND[3]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
Indeno(1,2,3-cd)pyrene	<5.4	<5.2	ND[3]	ND[3]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
Total PAHs [2]	<5.4	<5.2	ND[3]	ND[3]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

(1) PAHs or Polynuclear Aromatic Hydrocarbons
(2) Total PAHs include the detected values only
(3) ND- Values reported as non-detect (ND) for these sampling events, however reporting limits were not provided with Discharge Monitoring Reports.

ATTACHMENT C

SUMMARY OF DISCHARGE MONITORING REPORT (DMR) RESULTS

(2001 TO 2003)

FOR VOLATILE ORGANIC COMPOUNDS

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

Global Petroleum Corporation (Permit No. MA0003425) 2001-2003 Quarterly Storm Water Monitoring Results for VOCs [1] / Outfall 001

VOC Compounds	1st Quarter 2001 (ug/L)	2nd Quarter 2001 (ug/L)	3rd Quarter 2001 (ug/L)	4th Quarter 2001 (ug/L)	1st Quarter 2002 (ug/L)	2nd Quarter 2002 (ug/L)	3rd Quarter 2002 (ug/L)	4th Quarter 2002 (ug/L)	1st Quarter 2003 (ug/L)	2nd Quarter 2003 (ug/L)	3rd Quarter 2003 (ug/L)	4th Quarter 2003 (ug/L)
Benzene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Toluene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Total Xylenes	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl tertiary-butyl ether	4.6	280	7.8	2.0	488	226	25	591	6,580	0.0	111	91.4
BTEX [2]	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

(1) VOCs or Volatile Organic Compounds
(2) BTEX - summation of results for benzene, toluene, ethylbenzenze, and total xylenes (non-detects are not included in summation)

ATTACHMENT D

SUMMARY OF GROUND WATER MONITORING DATA

(2004)

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

Global Petroleum Corporation
140 Lee Burbank Highway, Revere, Massachusetts
NPDES Exclusion 98-086
Groundwater Treatment System
Influent/Effluent Testing Results

Date		Jan-04				Feb-03		Mar-03	
Parameter	NPDES Limit	Influent		Effluent		Influent	Effluent	Influent	Effluent
TPH	5 ppm	Note 1	mg/l	Note 1	mg/l	2.1 mg/l	ND mg/l	2.3 mg/l	ND mg/l
Methyl Butyl Tert Ether	70 ppb	Note 1	ug/l	Note 1	ug/l	46,400 ug/l	1.7 ug/l	77,300 ug/l	ND ug/l
Benzene	5 ppb	Note 1	ug/l	Note 1	ug/l	2,300 ug/l	ND ug/l	2,130 ug/l	ND ug/l
Toluene	*	Note 1	ug/l	Note 1	ug/l	8,990 ug/l	ND ug/l	3,660 ug/l	ND ug/l
Ethylbenzene	*	Note 1	ug/l	Note 1	ug/l	868 ug/l	ND ug/l	474 ug/l	ND ug/l
Xylenes	*	Note 1	ug/l	Note 1	ug/l	8,970 ug/l	ND ug/l	4,690 ug/l	ND ug/l
Total BTEX	100 ppb	Note 1	ug/l	Note 1	ug/l	21,128 ug/l	ND ug/l	10,954 ug/l	ND ug/l

ND - Not detected
Note 1 - System down. No sample collected.

New England ACCUTEST. Laboratories

03/17/04

Technical Report for

Camp Dresser & McKee

Global Petroleum, Revere MA

Accutest Job Number: M37937

Report to:

Camp, Dresser & McKee

WinklerJH@cdm.com

ATTN: Jim Winkler

Total number of pages in report: 15

ACCREDITED IN ACCORDANCE WITH nelac

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 Tand
Lab Director

Certifications: MA (M-MA136) CT (PH-0109) NH (250203) RI (00071) ME (MA136) FL (E87579) NY (11791) NJ (MA926) IL (000589) NAVY USACE

Sections: 1 2 3

Table of Contents

-1-

Sample Summary

Camp Dresser & McKee

Global Petroleum, Revere MA

Job No: M37937

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
M37937-1	02/27/04	10:00	TAN	03/01/04	AQ	Influent	INF-22704
M37937-2	02/27/04	10:10	TAN	03/01/04	AQ	Ground Water	CIN-22704
M37937-3	02/27/04	10:15	TAN	03/01/04	AQ	Ground Water	MID-1-22704
M37937-4	02/27/04	10:25	TAN	03/01/04	AQ	Ground Water	MID-2-22704
M37937-5	02/27/04	10:30	TAN	03/01/04	AQ	Effluent	EFF-22704

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-22704		
Lab Sample ID:	M37937-1	Date Sampled:	02/27/04
Matrix:	AQ - Influent	Date Received:	03/01/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN25698.D	100	03/10/04	AP	n/a	n/a	GMN968
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	2300	100	ug/l	
108-88-3	Toluene	8990	100	ug/l	
100-41-4	Ethylbenzene	868	100	ug/l	
1330-20-7	Xylenes (total)	8970	100	ug/l	
1634-04-4	Methyl Tert Butyl Ether	46400	100	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	80%		53-157%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-22704		
Lab Sample ID:	M37937-1	Date Sampled:	02/27/04
Matrix:	AQ - Influent	Date Received:	03/01/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	2.1	0.61	mg/l	1	03/02/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-22704		
Lab Sample ID:	M37937-2	Date Sampled:	02/27/04
Matrix:	AQ - Ground Water	Date Received:	03/01/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN25716.D	1	03/10/04	AP	n/a	n/a	GMN971
Run #2	MN25730.D	10	03/11/04	AP	n/a	n/a	GMN972

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	3.6	1.0	ug/l	
108-88-3	Toluene	12.1	1.0	ug/l	
100-41-4	Ethylbenzene	2.7	1.0	ug/l	
1330-20-7	Xylenes (total)	17.1	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1710 [a]	10	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	83%	77%	53-157%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-22704		
Lab Sample ID:	M37937-2	Date Sampled:	02/27/04
Matrix:	AQ - Ground Water	Date Received:	03/01/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	03/02/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-22704		
Lab Sample ID:	M37937-3	Date Sampled:	02/27/04
Matrix:	AQ - Ground Water	Date Received:	03/01/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN25717.D	1	03/10/04	AP	n/a	n/a	GMN971
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.9	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	77%		53-157%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-22704		
Lab Sample ID:	M37937-3	Date Sampled:	02/27/04
Matrix:	AQ - Ground Water	Date Received:	03/01/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	03/02/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-22704		
Lab Sample ID:	M37937-4	Date Sampled:	02/27/04
Matrix:	AQ - Ground Water	Date Received:	03/01/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN25718.D	1	03/10/04	AP	n/a	n/a	GMN971
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	77%		53-157%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-22704		
Lab Sample ID:	M37937-4	Date Sampled:	02/27/04
Matrix:	AQ - Ground Water	Date Received:	03/01/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	03/02/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-22704		
Lab Sample ID:	M37937-5	Date Sampled:	02/27/04
Matrix:	AQ - Effluent	Date Received:	03/01/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN25719.D	1	03/10/04	AP	n/a	n/a	GMN971
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.7	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	76%		53-157%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-22704		
Lab Sample ID:	M37937-5	Date Sampled:	02/27/04
Matrix:	AQ - Effluent	Date Received:	03/01/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	03/02/04	BF	EPA 418.1

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST

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

ACCUTEST JOB #: M37937
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: CDM
ADDRESS: 50 HAMPSHIRE ST
CITY: CAMBRIDGE STATE: MA ZIP:
SEND REPORT TO: JIM WINKLER
PHONE #: (617) 452-6263

FACILITY INFORMATION

PROJECT NAME: GLOBAL PETROLEUM
LOCATION: 140 VFW BURBANK HWY REVERE, MA
PROJECT NO.: 20394-35913-0M.INP
FAX #:

ANALYTICAL INFORMATION

BTEX / MTBE 602
TPH 418.1

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	PRESERVATION NaOH	PRESERVATION HNO3	PRESERVATION H2SO4	PRESERVATION NONE	BTEX / MTBE 602	TPH 418.1	LAB USE ONLY
M37937-1	INF-22704	2.22.04	10:00	TAN	GW	4	X			X		X	X	
-2	CIN-22704		10:10			4	X			X		X	X	
-3	MID-1-22704		10:15			4	X			X		X	X	
-4	MID-2-22704		10:25			4	X			X		X	X	
-5	EFF-22704	2.22.04	10:30	TAN	GW	4	X			X		X	X	
														6 VOC.
														359

DATA TURNAROUND INFORMATION

- [X] 14 DAYS STANDARD — APPROVED BY:
- [ ] 7 DAYS *RUSH*
- [ ] 48 HOUR EMERGENCY
- [ ] OTHER

14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] STANDARD
- [ ] COMMERCIAL "B"
- [ ] DISK DELIVERABLE
- [ ] STATE FORMS
- [ ] OTHER (SPECIFY)

COMMENTS/REMARKS

MAP-PRESUMPTIVE CERTAINTY REQUIRED

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	2.22.04 12:00	1. Jack Wilson	2. Jack Wilson	3/1/04 14:25	2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.	3/1/04 16:40	3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐	TEMPERATURE 0.8 C
5.		5.				

3.1
3

M37937: Chain of Custody
Page 1 of 1

ACCUTEST Laboratories

ATTACHMENT D

SUMMARY OF GROUND WATER MONITORING DATA

(2004)

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

Global Petroleum Corporation
140 Lee Burbank Highway, Revere, Massachusetts
NPDES Exclusion 98-086
Groundwater Treatment System
Influent/Effluent Testing Results

Date		Jan-04		Feb-03		Mar-03	
Parameter	NPDES Limit	Influent	Effluent	Influent	Effluent	Influent	Effluent
TPH	5 ppm	Note 1 mg/l	Note 1 mg/l	2.1 mg/l	ND mg/l	2.3 mg/l	ND mg/l
Methyl Butyl Tert Ether	70 ppb	Note 1 ug/l	Note 1 ug/l	46,400 ug/l	1.7 ug/l	77,300 ug/l	ND ug/l
Benzene	5 ppb	Note 1 ug/l	Note 1 ug/l	2,300 ug/l	ND ug/l	2,130 ug/l	ND ug/l
Toluene	*	Note 1 ug/l	Note 1 ug/l	8,990 ug/l	ND ug/l	3,660 ug/l	ND ug/l
Ethylbenzene	*	Note 1 ug/l	Note 1 ug/l	868 ug/l	ND ug/l	474 ug/l	ND ug/l
Xylenes	*	Note 1 ug/l	Note 1 ug/l	8,970 ug/l	ND ug/l	4,690 ug/l	ND ug/l
Total BTEX	100 ppb	Note 1 ug/l	Note 1 ug/l	21,128 ug/l	ND ug/l	10,954 ug/l	ND ug/l

ND - Not detected
Note 1 - System down. No sample collected.

New England ACCUTEST. Laboratories

03/31/04

Technical Report for

Camp Dresser & McKee

Global Petroleum, Revere MA

Accutest Job Number: M38294

Report to:

Camp, Dresser & McKee

WinklerJH@cdm.com

ATTN: Jim Winkler

Total number of pages in report: **15**

ACCREDITED IN ACCORDANCE WITH nelac

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 Tand
Lab Director

Certifications: MA (M-MA136) CT (PH-0109) NH (250203) RI (00071) ME (MA136) FL (E87579) NY (11791) NJ (MA926) IL (000589) NAVY USACE

Sections: 1 2 3

Table of Contents

-1-

Sample Summary

Camp Dresser & McKee

Global Petroleum, Revere MA

Job No: M38294

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
M38294-1	03/15/04	10:55	TAN	03/18/04	AQ	Influent	INF-31504
M38294-2	03/15/04	11:00	TAN	03/18/04	AQ	Ground Water	CIN-31504
M38294-3	03/15/04	11:05	TAN	03/18/04	AQ	Ground Water	MID-1-31504
M38294-4	03/15/04	11:10	TAN	03/18/04	AQ	Ground Water	MID-2-31504
M38294-5	03/15/04	11:15	TAN	03/18/04	AQ	Effluent	EFF-31504

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-31504		
Lab Sample ID:	M38294-1	Date Sampled:	03/15/04
Matrix:	AQ - Influent	Date Received:	03/18/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN26141.D	100	03/29/04	AP	n/a	n/a	GMN1006
Run #2	MN26148.D	250	03/29/04	AP	n/a	n/a	GMN1006

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	2130	100	ug/l	
108-88-3	Toluene	3660	100	ug/l	
100-41-4	Ethylbenzene	474	100	ug/l	
1330-20-7	Xylenes (total)	4690	100	ug/l	
1634-04-4	Methyl Tert Butyl Ether	77300 [a]	250	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	77%	76%	61-124%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-31504		
Lab Sample ID:	M38294-1	Date Sampled:	03/15/04
Matrix:	AQ - Influent	Date Received:	03/18/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	2.3	0.61	mg/l	1	03/22/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-31504		
Lab Sample ID:	M38294-2	Date Sampled:	03/15/04
Matrix:	AQ - Ground Water	Date Received:	03/18/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN26142.D	1	03/29/04	AP	n/a	n/a	GMN1006
Run #2	MN26145.D	50	03/29/04	AP	n/a	n/a	GMN1006

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	7.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	6130 [a]	50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	79%	73%	61-124%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-31504		
Lab Sample ID:	M38294-2	Date Sampled:	03/15/04
Matrix:	AQ - Ground Water	Date Received:	03/18/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	03/22/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-31504		
Lab Sample ID:	M38294-3	Date Sampled:	03/15/04
Matrix:	AQ - Ground Water	Date Received:	03/18/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN26143.D	1	03/29/04	AP	n/a	n/a	GMN1006
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	37.8	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	73%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-31504		
Lab Sample ID:	M38294-3	Date Sampled:	03/15/04
Matrix:	AQ - Ground Water	Date Received:	03/18/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	03/22/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-31504		
Lab Sample ID:	M38294-4	Date Sampled:	03/15/04
Matrix:	AQ - Ground Water	Date Received:	03/18/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN26146.D	1	03/29/04	AP	n/a	n/a	GMN1006
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	76%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-31504		
Lab Sample ID:	M38294-4	Date Sampled:	03/15/04
Matrix:	AQ - Ground Water	Date Received:	03/18/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	03/22/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-31504		
Lab Sample ID:	M38294-5	Date Sampled:	03/15/04
Matrix:	AQ - Effluent	Date Received:	03/18/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN26147.D	1	03/29/04	AP	n/a	n/a	GMN1006
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	74%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-31504		
Lab Sample ID:	M38294-5	Date Sampled:	03/15/04
Matrix:	AQ - Effluent	Date Received:	03/18/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	03/22/04	BF	EPA 418.1

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST

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

ACCUTEST JOB #: M38294
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: COM
ADDRESS: 50 HAMPSHIRE ST
CITY: CAMBRIDGE STATE: MA ZIP:
SEND REPORT TO: JIM WINKLER
PHONE #: (617)452-6263

FACILITY INFORMATION

PROJECT NAME: GLOBAL
LOCATION: 140 LEE BURBANK HWY REVERE, MA
PROJECT NO.: 20394-35913-OM.1AP
FAX #:

ANALYTICAL INFORMATION

BTEX MTBE 602
TDH 418.1

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	PRESERVATION NaOH	PRESERVATION HNO3	PRESERVATION H2SO4	PRESERVATION NONE	BTEX MTBE 602	TDH 418.1	LAB USE ONLY
M38294-1	INF-31504	3.15.4	10:55	TAN	GW	4	X					X	X	
-2	CIN-31504	"	11:00	"	"	4	X					X	X	
-3	MID-1-31504	"	11:05	"	"	4	X					X	X	
-4	MID-2-31504	"	11:10	"	"	4	X					X	X	
-5	EFF-31504	3.15.4	11:15	TAN	GW	4	X					X	X	
														40c 4D, 2E5

DATA TURNAROUND INFORMATION

- [X] 14 DAYS STANDARD — APPROVED BY:
- [ ] 7 DAYS *RUSH*
- [ ] 48 HOUR EMERGENCY
- [ ] OTHER

14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] STANDARD
- [ ] COMMERCIAL "B"
- [ ] DISK DELIVERABLE
- [ ] STATE FORMS
- [ ] OTHER (SPECIFY)

COMMENTS/REMARKS

MCP-PRESUMPTIVE CERTAINTY REQUIRED

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1. J. NAWN	3.16.4 7:10	1. Jack Wilson	2. Jack Wilson	3/18/4 14:14	2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.	3/18/04 15:00	3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐
5.		5.			TEMPERATURE 2.0 C

3.1 3

M38294: Chain of Custody
Page 1 of 1

ACCUTEST Laboratories

ATTACHMENT D

SUMMARY OF GROUND WATER MONITORING DATA

(2004)

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

Global Petroleum Corporation
140 Lee Burbank Highway, Revere, Massachusetts
NPDES Exclusion 98-086
Groundwater Treatment System
Influent/Effluent Testing Results

Date		Apr-04		May-04		Jun-04	
Parameter	NPDES Limit	Influent	Effluent	Influent	Effluent	Influent	Effluent
TPH	5 ppm	20.5 mg/l	ND mg/l	2.8 mg/l	ND mg/l	0.66 mg/l	ND mg/l
Methyl Butyl Tert Ether	70 ppb	862,000 ug/l	1.3 ug/l	3,540 ug/l	ND ug/l	47,000 ug/l	ND ug/l
Benzene	5 ppb	4,640 ug/l	ND ug/l	362 ug/l	ND ug/l	1,920 ug/l	ND ug/l
Toluene	*	14,500 ug/l	ND ug/l	2,920 ug/l	ND ug/l	2,190 ug/l	ND ug/l
Ethylbenzene	*	899 ug/l	ND ug/l	269 ug/l	ND ug/l	326 ug/l	ND ug/l
Xylenes	*	9,170 ug/l	ND ug/l	5,860 ug/l	ND ug/l	4,940 ug/l	ND ug/l
Total BTEX	100 ppb	29,209 ug/l	ND ug/l	9,411 ug/l	ND ug/l	9,376 ug/l	ND ug/l

New England ACCUTEST Laboratories

04/29/04

Technical Report for

Camp Dresser & McKee

Global Petroleum, Revere MA

Accutest Job Number: M38820

Sampling Date: 04/09/04

Report to:

Camp Dresser & McKee
50 Hampshire St.
Cambridge, MA 02139

ATTN: James H. Winkler

Total number of pages in report: 32

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 Tand
Lab Director

Certifications: MA (M-MA136) CT (PH-0109) NH (250203) RI (00071) ME (MA136) FL (E87579) NY (11791) NJ (MA926) IL (000589) NAVY USACE

ACCUTEST Laboratories

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Camp Dresser & McKee	**Job No:**	M38820
Site:	Global Petroleum, Revere MA	**Report Date**	4/28/04 3:01:32 PM

5 Sample(s) were collected on 04/09/2004 and were received at Accutest on 04/14/2004 properly preserved, at 3 Deg. C and intact. These Samples received an Accutest job number of M38820.A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GC By Method EPA 602

Matrix: AQ **Batch ID:** GAB712

- All samples were analyzed within the recommended method holding time.
- Sample(s) M38831-8MS, M38831-8MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ **Batch ID:** GAB713

- All samples were analyzed within the recommended method holding time.
- Sample(s) M38831-5MS, M38831-5MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ **Batch ID:** GMN1036

- All samples were analyzed within the recommended method holding time.
- Sample(s) M38820-4MS, M38820-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method EPA 418.1

Matrix: AQ **Batch ID:** GP4327

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) M38821-1DUP, M38821-4MS were used as the QC samples for Petroleum Hydrocarbons, Petroleum Hydrocarbons.
- All method blanks for this batch meet method specific criteria.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(M38820).

MADEP MCP Analytical Method Report Certification Form

Laboratory Name:	Accutest Laboratories of New England	Project #:	M38820
Project Location:	Global Petroleum, Revere MA	MADEP RTN [1]	None

This form provides certifications for the following data set:
M38820-1,M38820-2,M38820-3,M38820-4,M38820-5

Test methods: EPA 602, 418.1

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

MCP SW-846 Methods Used					
	8260B ( )	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )
	8270C ( )	8081A ( )	VPH ( )	6020 ( )	9014M [2] ( )
As specified in MADEP Compendium of Analytical Methods: (Check all that apply)	8082 ( )	8021B ( )	EPH ( )	7000 S [3] ( )	7196A ( )

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, C, and D is required for "Presumptive Certainty status

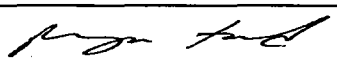
A	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	☑	Yes	☐ No [1]
B	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	☑	Yes	☐ No [1]
C	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	☐ No [1]
D	**VPH and EPH methods only:** Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	☑	Yes	☐ No [1]

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

E	Were all QC performance standards and recommendations for the specified methods achieved?	☑ Refer to Narrative	Yes	☐ No [1]
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	☑	Yes	☐ No [1]

[1] ***All Negative responses 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:** **Laboratory Director**

Printed Name: **Reza Tand** **Date:**

Sample Summary

Camp Dresser & McKee

Global Petroleum, Revere MA

Job No: M38820

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
M38820-1	04/09/04	12:45	TAN	04/14/04	AQ	Influent	INF-4904
M38820-2	04/09/04	12:55	TAN	04/14/04	AQ	Ground Water	CIN-4904
M38820-3	04/09/04	13:05	TAN	04/14/04	AQ	Ground Water	MID-1-4904
M38820-4	04/09/04	13:10	TAN	04/14/04	AQ	Ground Water	MID-2-4904
M38820-5	04/09/04	13:15	TAN	04/14/04	AQ	Effluent	EFF-4904

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-4904		
Lab Sample ID:	M38820-1	**Date Sampled:**	04/09/04
Matrix:	AQ - Influent	**Date Received:**	04/14/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB14402.D	100	04/20/04	DL	n/a	n/a	GAB712
Run #2	AB14430.D	2000	04/21/04	DL	n/a	n/a	GAB713

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	4640	100	ug/l	
108-88-3	Toluene	14500	100	ug/l	
100-41-4	Ethylbenzene	899	100	ug/l	
1330-20-7	Xylenes (total)	9170	100	ug/l	
1634-04-4	Methyl Tert Butyl Ether	862000 [a]	2000	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	103%	90%	61-124%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-4904		
Lab Sample ID:	M38820-1	**Date Sampled:**	04/09/04
Matrix:	AQ - Influent	**Date Received:**	04/14/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	20.5	3.1	mg/l	5	04/16/04	BF	EPA 418.1

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CIN-4904		
Lab Sample ID:	M38820-2	**Date Sampled:**	04/09/04
Matrix:	AQ - Ground Water	**Date Received:**	04/14/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB14403.D	1	04/20/04	DL	n/a	n/a	GAB712
Run #2	AB14404.D	20	04/20/04	DL	n/a	n/a	GAB712

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	5.6	1.0	ug/l	
100-41-4	Ethylbenzene	1.0	1.0	ug/l	
1330-20-7	Xylenes (total)	8.3	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	4360 [a]	20	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	106%	90%	61-124%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-4904		
Lab Sample ID:	M38820-2	**Date Sampled:**	04/09/04
Matrix:	AQ - Ground Water	**Date Received:**	04/14/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	04/16/04	BF	EPA 418.1

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MID-1-4904		
Lab Sample ID:	M38820-3	**Date Sampled:**	04/09/04
Matrix:	AQ - Ground Water	**Date Received:**	04/14/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB14405.D	1	04/20/04	DL	n/a	n/a	GAB712
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	3.3	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	87%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-4904		
Lab Sample ID:	M38820-3	**Date Sampled:**	04/09/04
Matrix:	AQ - Ground Water	**Date Received:**	04/14/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	04/16/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-4904		
Lab Sample ID:	M38820-4	**Date Sampled:**	04/09/04
Matrix:	AQ - Ground Water	**Date Received:**	04/14/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN26599.D	1	04/20/04	AP	n/a	n/a	GMN1036
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.1	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	96%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-4904		
Lab Sample ID:	M38820-4	**Date Sampled:**	04/09/04
Matrix:	AQ - Ground Water	**Date Received:**	04/14/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	04/16/04	BF	EPA 418.1

RL = Reporting Limit

Report of Analysis

Client Sample ID:	EFF-4904		
Lab Sample ID:	M38820-5	**Date Sampled:**	04/09/04
Matrix:	AQ - Effluent	**Date Received:**	04/14/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN26600.D	1	04/20/04	AP	n/a	n/a	GMN1036
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.3	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	95%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-4904		
Lab Sample ID:	M38820-5	**Date Sampled:**	04/09/04
Matrix:	AQ - Effluent	**Date Received:**	04/14/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	04/16/04	BF	EPA 418.1

RL = Reporting Limit

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: M38820
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GMN1036-MB	MN26590.D	1	04/19/04	AP	n/a	n/a	GMN1036

The QC reported here applies to the following samples: **Method:** EPA 602

M38820-4, M38820-5

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
	2,3,4-Trifluorotoluene	98%	61-124%

Method Blank Summary

Job Number: M38820
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAB712-MB	AB14398A.D	1	04/20/04	DL	n/a	n/a	GAB712

The QC reported here applies to the following samples: **Method:** EPA 602

M38820-1, M38820-2, M38820-3

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
	2,3,4-Trifluorotoluene	80%	61-124%

Method Blank Summary

Job Number: M38820
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAB713-MB	AB14422.D	1	04/21/04	DL	n/a	n/a	GAB713

The QC reported here applies to the following samples: **Method:** EPA 602

M38820-1

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
	2,3,4-Trifluorotoluene	86%	61-124%

Blank Spike Summary

Job Number: M38820
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GMN1036-BSP	MN26591.D	1	04/19/04	AP	n/a	n/a	GMN1036

The QC reported here applies to the following samples: **Method:** EPA 602

M38820-4, M38820-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	17.2	86	39-150
100-41-4	Ethylbenzene	20	16.7	84	32-160
1634-04-4	Methyl Tert Butyl Ether	20	17.9	90	65-122
108-88-3	Toluene	20	17.1	86	46-148
1330-20-7	Xylenes (total)	60	51.6	86	69-111

CAS No.	Surrogate Recoveries	BSP	Limits
	2,3,4-Trifluorotoluene	101%	61-124%

Blank Spike Summary

Job Number: M38820
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAB712-BSP	AB14398B.D	1	04/20/04	DL	n/a	n/a	GAB712

The QC reported here applies to the following samples: **Method:** EPA 602

M38820-1, M38820-2, M38820-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	22.6	113	39-150
100-41-4	Ethylbenzene	20	21.3	107	32-160
1634-04-4	Methyl Tert Butyl Ether	20	20.7	104	65-122
108-88-3	Toluene	20	21.7	109	46-148
1330-20-7	Xylenes (total)	60	65.0	108	69-111

CAS No.	Surrogate Recoveries	BSP	Limits
	2,3,4-Trifluorotoluene	100%	61-124%

Blank Spike Summary

Job Number: M38820
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAB713-BSP	AB14423.D	1	04/21/04	DL	n/a	n/a	GAB713

The QC reported here applies to the following samples: **Method:** EPA 602

M38820-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
1634-04-4	Methyl Tert Butyl Ether	20	21.5	108	65-122

CAS No.	Surrogate Recoveries	BSP	Limits
	2,3,4-Trifluorotoluene	96%	61-124%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M38820
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M38820-4MS	MN26593.D	1	04/19/04	AP	n/a	n/a	GMN1036
M38820-4MSD	MN26594.D	1	04/19/04	AP	n/a	n/a	GMN1036
M38820-4	MN26599.D	1	04/20/04	AP	n/a	n/a	GMN1036

The QC reported here applies to the following samples: **Method:** EPA 602

M38820-4, M38820-5

CAS No.	Compound	M38820-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	0.046		20	17.4	87	17.4	87	0	39-150/30
100-41-4	Ethylbenzene	0.045		20	16.6	83	16.3	81	2	32-160/30
1634-04-4	Methyl Tert Butyl Ether	2.1		20	18.2	81	18.7	83	3	57-126/30
108-88-3	Toluene	0.16		20	17.0	84	17.0	84	0	46-148/30
1330-20-7	Xylenes (total)	0.67		60	52.0	86	51.0	84	2	61-113/30

CAS No.	Surrogate Recoveries	MS	MSD	M38820-4	Limits
	2,3,4-Trifluorotoluene	99%	101%	96%	61-124%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M38820
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M38831-8MS	AB14409.D	1	04/21/04	DL	n/a	n/a	GAB712
M38831-8MSD	AB14410.D	1	04/21/04	DL	n/a	n/a	GAB712
M38831-8	AB14408.D	1	04/20/04	DL	n/a	n/a	GAB712

The QC reported here applies to the following samples: **Method:** EPA 602

M38820-1, M38820-2, M38820-3

CAS No.	Compound	M38831-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		20	21.8	109	21.2	106	3	39-150/30
100-41-4	Ethylbenzene	ND		20	20.0	100	19.4	97	3	32-160/30
1634-04-4	Methyl Tert Butyl Ether	ND		20	22.0	110	21.7	109	1	57-126/30
108-88-3	Toluene	ND		20	20.5	103	19.8	99	3	46-148/30
1330-20-7	Xylenes (total)	ND		60	61.3	102	59.1	99	4	61-113/30

CAS No.	Surrogate Recoveries	MS	MSD	M38831-8	Limits
	2,3,4-Trifluorotoluene	97%	93%	86%	61-124%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M38820
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M38831-5MS	AB14425.D	1	04/21/04	DL	n/a	n/a	GAB713
M38831-5MSD	AB14426.D	1	04/21/04	DL	n/a	n/a	GAB713
M38831-5	AB14424.D	1	04/21/04	DL	n/a	n/a	GAB713

The QC reported here applies to the following samples: **Method:** EPA 602

M38820-1

CAS No.	Compound	M38831-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
1634-04-4	Methyl Tert Butyl Ether	ND		20	21.4	107	21.5	108	0	57-126/30

CAS No.	Surrogate Recoveries	MS	MSD	M38831-5	Limits
	2,3,4-Trifluorotoluene	95%	97%	85%	61-124%

Volatile Surrogate Recovery Summary

Job Number: M38820
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Method: EPA 602 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
M38820-1	AB14402.D	103.0
M38820-1	AB14430.D	90.0
M38820-2	AB14403.D	106.0
M38820-2	AB14404.D	90.0
M38820-3	AB14405.D	87.0
M38820-4	MN26599.D	96.0
M38820-5	MN26600.D	95.0
GAB712-BSP	AB14398B.D	100.0
GAB712-MB	AB14398A.D	80.0
GAB713-BSP	AB14423.D	96.0
GAB713-MB	AB14422.D	86.0
GMN1036-BSP	MN26591.D	101.0
GMN1036-MB	MN26590.D	98.0
M38820-4MS	MN26593.D	99.0
M38820-4MSD	MN26594.D	101.0
M38831-5MS	AB14425.D	95.0
M38831-5MSD	AB14426.D	97.0
M38831-8MS	AB14409.D	97.0
M38831-8MSD	AB14410.D	93.0

Surrogate Compounds	Recovery Limits
S1 = 2,3,4-Trifluorotoluene	61-124%

(a) Recovery from GC signal #2

General Chemistry

QC Data Summaries

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: M38820
Account: CDM - Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Analyte	Batch ID	RL	MB Result	Units	BSP %Recov	QC Limits
Petroleum Hydrocarbons	GP4327/GN13670	0.60	<0.60	mg/l	94.0	80-120%

Associated Samples:
Batch GP4327: M38820-1, M38820-2, M38820-3, M38820-4, M38820-5

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: M38820
Account: CDM - Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Petroleum Hydrocarbons	GP4327/GN13670	M38821-1	mg/l	9.5	9.5	0.0	0-20%

Associated Samples:
Batch GP4327: M38820-1, M38820-2, M38820-3, M38820-4, M38820-5

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: M38820
Account: CDM - Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Petroleum Hydrocarbons	GP4327/GN13670	M38821-4	mg/l	<0.61	5.1	4.4	86.3	75-125%

Associated Samples:
Batch GP4327: M38820-1, M38820-2, M38820-3, M38820-4, M38820-5

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Sample Tracking Chronicle

Internal Sample Tracking Chronicle

Camp Dresser & McKee

Job No: M38820

Global Petroleum, Revere MA

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
M38820-1 Collected: 09-APR-04 12:45 By: TAN Received: 14-APR-04 By: RS INF-4904						
M38820-1	EPA 418.1	16-APR-04	BF	16-APR-04	BF	PHC
M38820-1	EPA 602	20-APR-04 19:44	DL			V602BTXM
M38820-1	EPA 602	21-APR-04 15:18	DL			V602BTXM
M38820-2 Collected: 09-APR-04 12:55 By: TAN Received: 14-APR-04 By: RS CIN-4904						
M38820-2	EPA 418.1	16-APR-04	BF	16-APR-04	BF	PHC
M38820-2	EPA 602	20-APR-04 20:24	DL			V602BTXM
M38820-2	EPA 602	20-APR-04 21:04	DL			V602BTXM
M38820-3 Collected: 09-APR-04 13:05 By: TAN Received: 14-APR-04 By: RS MID-1-4904						
M38820-3	EPA 418.1	16-APR-04	BF	16-APR-04	BF	PHC
M38820-3	EPA 602	20-APR-04 21:45	DL			V602BTXM
M38820-4 Collected: 09-APR-04 13:10 By: TAN Received: 14-APR-04 By: RS MID-2-4904						
M38820-4	EPA 418.1	16-APR-04	BF	16-APR-04	BF	PHC
M38820-4	EPA 602	20-APR-04 03:28	AP			V602BTXM
M38820-5 Collected: 09-APR-04 13:15 By: TAN Received: 14-APR-04 By: RS EFF-4904						
M38820-5	EPA 418.1	16-APR-04	BF	16-APR-04	BF	PHC
M38820-5	EPA 602	20-APR-04 04:11	AP			V602BTXM

CHAIN OF CUSTODY

ACCUTEST

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

ACCUTEST JOB #: M38820

ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: CDM

ADDRESS: 50 HAMPSHIRE ST

CITY: CAMBRIDGE STATE: MA ZIP:

SEND REPORT TO: JIM WINKLER

PHONE #: (617) 452-6263

FACILITY INFORMATION

PROJECT NAME: GLOBAL

LOCATION: 140 LEE BURBANK HGWY

PROJECT NO: REVERE, MA

FAX #: 20394-35913-DM.INP

ANALYTICAL INFORMATION

BTEX/MTBE 602
TPH 418.1

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

LAB USE ONLY

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	NaOH	HNO3	H2SO4	NONE	BTEX/MTBE 602	TPH 418.1
-1	INF-4904	4.9.04	12:45	TAN	GW	4	X					X	X
-2	CIN-4904		12:55			4	X					X	X
-3	MID-1-4904		13:05			4	X					X	X
-4	MID-2-4904		13:10			4	X					X	X
32 -5	EFF-4904	4.9.04	13:15	TAN	GW	4	X					X	X

DATA TURNAROUND INFORMATION

- [X] 14 DAYS STANDARD — APPROVED BY:
- [ ] 7 DAYS *RUSH*
- [ ] 48 HOUR EMERGENCY
- [ ] OTHER

14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] STANDARD
- [ ] COMMERCIAL "B"
- [ ] DISK DELIVERABLE
- [ ] STATE FORMS
- [ ] OTHER (SPECIFY) Loc.4D, IC2

COMMENTS/REMARKS

MBP-PRESUMPTIVE CERTAINTY REQUIRED

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1. T.C. Flynn	4.12.04 7AM	1. Jack Wilson	2. Jack Wilson	4/14/04 14:15	2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.	4/14/04 16:45	3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☑ TEMPERATURE 3.0 C
5.		5.			

ATTACHMENT D

SUMMARY OF GROUND WATER MONITORING DATA

(2004)

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

Global Petroleum Corporation
140 Lee Burbank Highway, Revere, Massachusetts
NPDES Exclusion 98-086
Groundwater Treatment System
Influent/Effluent Testing Results

Date		Apr-04		May-04		Jun-04	
Parameter	NPDES Limit	Influent	Effluent	Influent	Effluent	Influent	Effluent
TPH	5 ppm	20.5 mg/l	ND mg/l	2.8 mg/l	ND mg/l	0.66 mg/l	ND mg/l
Methyl Butyl Tert Ether	70 ppb	862,000 ug/l	1.3 ug/l	3,540 ug/l	ND ug/l	47,000 ug/l	ND ug/l
Benzene	5 ppb	4,640 ug/l	ND ug/l	362 ug/l	ND ug/l	1,920 ug/l	ND ug/l
Toluene	*	14,500 ug/l	ND ug/l	2,920 ug/l	ND ug/l	2,190 ug/l	ND ug/l
Ethylbenzene	*	899 ug/l	ND ug/l	269 ug/l	ND ug/l	326 ug/l	ND ug/l
Xylenes	*	9,170 ug/l	ND ug/l	5,860 ug/l	ND ug/l	4,940 ug/l	ND ug/l
Total BTEX	100 ppb	29,209 ug/l	ND ug/l	9,411 ug/l	ND ug/l	9,376 ug/l	ND ug/l

New England ACCUTEST Laboratories

05/20/04

Technical Report for

Camp Dresser & McKee

Global Petroleum, Revere MA

Accutest Job Number: M39312

Sampling Dates: 05/04/04 - 05/07/04

Report to:

Camp Dresser & McKee
50 Hampshire Street
Cambridge, MA 02139

ATTN: James H. Winkler

Total number of pages in report: 30

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 Tand
Lab Director

Certifications: MA (M-MA136) CT (PH-0109) NH (250203) RI (00071) ME (MA136) FL (E87579) NY (11791) NJ (MA926) IL (000589) NAVY USACE

ACCUTEST Laboratories

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Camp Dresser & McKee	**Job No:**	M39312
Site:	Global Petroleum, Revere MA	**Report Date**	5/20/2004 12:39:50 P

6 Sample(s) were collected on between 05/07/2004 and were received at Accutest on 05/10/2004 properly preserved, at 1.9 Deg. C and intact. These Samples received an Accutest job number of M39312.A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GC By Method EPA 602

Matrix: AQ **Batch ID:** GMN1065

- All samples were analyzed within the recommended method holding time.
- Sample(s) M39258-2MS, M39258-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Methyl Tert Butyl Ether are outside control limits. Outside control limits due to high level in sample relative to spike amount.

Matrix: AQ **Batch ID:** GMN1071

- All samples were analyzed within the recommended method holding time.
- Sample(s) M39391-3MS, M39391-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method EPA 418.1

Matrix: AQ **Batch ID:** GP4420

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) M39312-4MS, M39312-5DUP were used as the QC samples for Petroleum Hydrocarbons, Petroleum Hydrocarbons.
- All method blanks for this batch meet method specific criteria.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(M39312).

Title: MADEP MCP Response Action Analytical Report Certification Form

MADEP MCP Analytical Method Report Certification Form

Laboratory Name:	Accutest Laboratories of New England	Project #:	M39312
Project Location:	Global Petroleum, Revere MA	MADEP RTN [1]	None

This form provides certifications for the following data set:
M39312-1,M39312-2,M39312-3,M39312-4,M39312-5,M39312-6

Test method: EPA 602, 418.1

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

MCP SW-846 Methods Used	8260B ( )	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )
	8270C ( )	8081A ( )	VPH ( )	6020 ( )	9014M [2] ( )
As specified in MADEP Compendium of Analytical Methods. (Check all that apply)	8082 ( )	8021B ( )	EPH ( )	7000 S [3] ( )	7196A ( )

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, C, and D is required for "Presumptive Certainty status

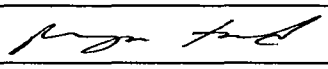
A	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	☑	Yes	☐ No [1]
B	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	☑	Yes	☐ No [1]
C	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	☐ No [1]
D	**VPH and EPH methods only:** Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	☑	Yes	☐ No [1]

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

E	Were all QC performance standards and recommendations for the specified methods achieved?	☑ Refer to Narrative	Yes	☐ No [1]
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	☑	Yes	☐ No [1]

[1] ***All Negative responses 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:** **Laboratory Director**

Printed Name: **Reza Tand** **Date:** **5/20/04**

Sample Summary

Camp Dresser & McKee

Global Petroleum, Revere MA

Job No: M39312

Sample Number	Collected Date	Time By	Received	Matrix Code	Matrix Type	Client Sample ID
M39312-1	05/07/04	12:15 TAN	05/10/04	AQ	Influent	INF-5704
M39312-2	05/07/04	12:20 TAN	05/10/04	AQ	Ground Water	CIN-5704
M39312-3	05/07/04	12:25 TAN	05/10/04	AQ	Ground Water	MID-1-5704
M39312-4	05/07/04	12:30 TAN	05/10/04	AQ	Ground Water	MID-2-5704
M39312-5	05/07/04	12:35 TAN	05/10/04	AQ	Effluent	EFF-5704
M39312-6	05/04/04	14:30 TAN	05/10/04	AQ	Ground Water	TP

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-5704		
Lab Sample ID:	M39312-1	**Date Sampled:**	05/07/04
Matrix:	AQ - Influent	**Date Received:**	05/10/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN27071.D	1	05/12/04	AP	n/a	n/a	GMN1065
Run #2	MN27144.D	25	05/14/04	AP	n/a	n/a	GMN1071

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	362	1.0	ug/l	
108-88-3	Toluene	2920 [a]	25	ug/l	
100-41-4	Ethylbenzene	269	1.0	ug/l	
1330-20-7	Xylenes (total)	5860 [a]	25	ug/l	
1634-04-4	Methyl Tert Butyl Ether	3540 [a]	25	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	91%	92%	61-124%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-5704		
Lab Sample ID:	M39312-1	**Date Sampled:**	05/07/04
Matrix:	AQ - Influent	**Date Received:**	05/10/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	2.8	0.61	mg/l	1	05/12/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-5704		
Lab Sample ID:	M39312-2	**Date Sampled:**	05/07/04
Matrix:	AQ - Ground Water	**Date Received:**	05/10/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN27070.D	1	05/12/04	AP	n/a	n/a	GMN1065
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	1.4	1.0	ug/l	
108-88-3	Toluene	1.8	1.0	ug/l	
100-41-4	Ethylbenzene	1.1	1.0	ug/l	
1330-20-7	Xylenes (total)	5.4	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	16.1	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	88%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-5704		
Lab Sample ID:	M39312-2	**Date Sampled:**	05/07/04
Matrix:	AQ - Ground Water	**Date Received:**	05/10/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	05/12/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-5704		
Lab Sample ID:	M39312-3	**Date Sampled:**	05/07/04
Matrix:	AQ - Ground Water	**Date Received:**	05/10/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN27069.D	1	05/12/04	AP	n/a	n/a	GMN1065
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	9.1	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	86%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-5704		
Lab Sample ID:	M39312-3	**Date Sampled:**	05/07/04
Matrix:	AQ - Ground Water	**Date Received:**	05/10/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	05/12/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-5704		
Lab Sample ID:	M39312-4	**Date Sampled:**	05/07/04
Matrix:	AQ - Ground Water	**Date Received:**	05/10/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN27068.D	1	05/12/04	AP	n/a	n/a	GMN1065
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	87%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-5704		
Lab Sample ID:	M39312-4	**Date Sampled:**	05/07/04
Matrix:	AQ - Ground Water	**Date Received:**	05/10/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	05/12/04	BF	EPA 418.1

RL = Reporting Limit

Report of Analysis

Client Sample ID:	EFF-5704		
Lab Sample ID:	M39312-5	**Date Sampled:**	05/07/04
Matrix:	AQ - Effluent	**Date Received:**	05/10/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN27067.D	1	05/12/04	AP	n/a	n/a	GMN1065
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	88%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-5704		
Lab Sample ID:	M39312-5	**Date Sampled:**	05/07/04
Matrix:	AQ - Effluent	**Date Received:**	05/10/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	05/12/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	TP		
Lab Sample ID:	M39312-6	**Date Sampled:**	05/04/04
Matrix:	AQ - Ground Water	**Date Received:**	05/10/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN27066.D	1	05/12/04	AP	n/a	n/a	GMN1065
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	88%		61-124%

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

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: M39312
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GMN1065-MB	MN27057.D	1	05/11/04	AP	n/a	n/a	GMN1065

The QC reported here applies to the following samples: **Method:** EPA 602

M39312-1, M39312-2, M39312-3, M39312-4, M39312-5, M39312-6

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
	2,3,4-Trifluorotoluene	90%	61-124%

Method Blank Summary

Job Number: M39312
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GMN1071-MB	MN27139.D	1	05/14/04	AP	n/a	n/a	GMN1071

The QC reported here applies to the following samples: **Method:** EPA 602

M39312-1

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
	2,3,4-Trifluorotoluene	90%	61-124%

Blank Spike Summary

Job Number: M39312
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GMN1065-BSP	MN27058.D	1	05/11/04	AP	n/a	n/a	GMN1065

The QC reported here applies to the following samples: **Method:** EPA 602

M39312-1, M39312-2, M39312-3, M39312-4, M39312-5, M39312-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	17.0	85	39-150
100-41-4	Ethylbenzene	20	15.8	79	32-160
1634-04-4	Methyl Tert Butyl Ether	20	18.4	92	65-122
108-88-3	Toluene	20	16.3	82	46-148
1330-20-7	Xylenes (total)	60	50.1	84	69-111

CAS No.	Surrogate Recoveries	BSP	Limits
	2,3,4-Trifluorotoluene	91%	61-124%

Blank Spike Summary

Job Number: M39312
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GMN1071-BSP	MN27140.D	1	05/14/04	AP	n/a	n/a	GMN1071

The QC reported here applies to the following samples: **Method:** EPA 602

M39312-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
1634-04-4	Methyl Tert Butyl Ether	20	19.5	98	65-122
108-88-3	Toluene	20	17.7	89	46-148
1330-20-7	Xylenes (total)	60	55.3	92	69-111

CAS No.	Surrogate Recoveries	BSP	Limits
	2,3,4-Trifluorotoluene	94%	61-124%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M39312
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M39258-2MS	MN27060.D	1	05/12/04	AP	n/a	n/a	GMN1065
M39258-2MSD	MN27061.D	1	05/12/04	AP	n/a	n/a	GMN1065
M39258-2	MN27063.D	1	05/12/04	AP	n/a	n/a	GMN1065

The QC reported here applies to the following samples: **Method:** EPA 602

M39312-1, M39312-2, M39312-3, M39312-4, M39312-5, M39312-6

CAS No.	Compound	M39258-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	0.14		20	16.6	82	16.5	82	1	39-150/30
100-41-4	Ethylbenzene	0.011		20	15.5	77	15.4	77	1	32-160/30
1634-04-4	Methyl Tert Butyl Ether	1100	E	20	1110	50* [a]	1110	50* [a]	0	57-126/30
108-88-3	Toluene	0.029		20	16.0	80	16.0	80	0	46-148/30
1330-20-7	Xylenes (total)	0.37		60	49.6	82	49.8	82	0	61-113/30

CAS No.	Surrogate Recoveries	MS	MSD	M39258-2	Limits
	2,3,4-Trifluorotoluene	90%	90%	87%	61-124%

(a) Outside control limits due to high level in sample relative to spike amount.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M39312
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M39391-3MS	MN27166.D	1	05/17/04	AP	n/a	n/a	GMN1071
M39391-3MSD	MN27167.D	1	05/17/04	AP	n/a	n/a	GMN1071
M39391-3	MN27147.D	1	05/14/04	AP	n/a	n/a	GMN1071

The QC reported here applies to the following samples: **Method:** EPA 602

M39312-1

CAS No.	Compound	M39391-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
1634-04-4	Methyl Tert Butyl Ether	0.37		20	18.0	88	18.0	88	0	57-126/30
108-88-3	Toluene	0.097		20	17.3	86	17.1	85	1	46-148/30
1330-20-7	Xylenes (total)	0.96		60	54.0	88	53.8	88	0	61-113/30

CAS No.	Surrogate Recoveries	MS	MSD	M39391-3	Limits
	2,3,4-Trifluorotoluene	92%	92%	84%	61-124%

Volatile Surrogate Recovery Summary

Job Number: M39312
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Method: EPA 602 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
M39312-1	MN27144.D	92.0
M39312-1	MN27071.D	91.0
M39312-2	MN27070.D	88.0
M39312-3	MN27069.D	86.0
M39312-4	MN27068.D	87.0
M39312-5	MN27067.D	88.0
M39312-6	MN27066.D	88.0
GMN1065-BSP	MN27058.D	91.0
GMN1065-MB	MN27057.D	90.0
GMN1071-BSP	MN27140.D	94.0
GMN1071-MB	MN27139.D	90.0
M39258-2MS	MN27060.D	90.0
M39258-2MSD	MN27061.D	90.0
M39391-3MS	MN27166.D	92.0
M39391-3MSD	MN27167.D	92.0

Surrogate Compounds	Recovery Limits
S1 = 2,3,4-Trifluorotoluene	61-124%

(a) Recovery from GC signal #2

General Chemistry

QC Data Summaries

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: M39312
Account: CDM - Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Analyte	Batch ID	RL	MB Result	Units	BSP %Recov	QC Limits
Petroleum Hydrocarbons	GP4420/GN13846	0.60	<0.60	mg/l	84.0	80-120%

Associated Samples:
Batch GP4420: M39312-1, M39312-2, M39312-3, M39312-4, M39312-5

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: M39312
Account: CDM - Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Petroleum Hydrocarbons	GP4420/GN13846	M39312-5	mg/l	<0.61	<0.61	0.0	0-20%

Associated Samples:
Batch GP4420: M39312-1, M39312-2, M39312-3, M39312-4, M39312-5

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: M39312
Account: CDM - Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Petroleum Hydrocarbons	GP4420/GN13846	M39312-4	mg/l	<0.61	5.1	4.2	82.4	75-125%

Associated Samples:
Batch GP4420: M39312-1, M39312-2, M39312-3, M39312-4, M39312-5

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Sample Tracking Chronicle

Internal Sample Tracking Chronicle

Camp Dresser & McKee

Global Petroleum, Revere MA

Job No: M39312

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
M39312-1 Collected: 07-MAY-04 12:15 By: TAN Received: 10-MAY-04 By: RS INF-5704						
M39312-1	EPA 418.1	12-MAY-04	BF	11-MAY-04	BF	PHC
M39312-1	EPA 602	12-MAY-04 08:27	AP			V602BTXM
M39312-1	EPA 602	14-MAY-04 21:17	AP			V602BTXM
M39312-2 Collected: 07-MAY-04 12:20 By: TAN Received: 10-MAY-04 By: RS CIN-5704						
M39312-2	EPA 418.1	12-MAY-04	BF	11-MAY-04	BF	PHC
M39312-2	EPA 602	12-MAY-04 07:43	AP			V602BTXM
M39312-3 Collected: 07-MAY-04 12:25 By: TAN Received: 10-MAY-04 By: RS MID-1-5704						
M39312-3	EPA 418.1	12-MAY-04	BF	11-MAY-04	BF	PHC
M39312-3	EPA 602	12-MAY-04 06:59	AP			V602BTXM
M39312-4 Collected: 07-MAY-04 12:30 By: TAN Received: 10-MAY-04 By: RS MID-2-5704						
M39312-4	EPA 418.1	12-MAY-04	BF	11-MAY-04	BF	PHC
M39312-4	EPA 602	12-MAY-04 06:16	AP			V602BTXM
M39312-5 Collected: 07-MAY-04 12:35 By: TAN Received: 10-MAY-04 By: RS EFF-5704						
M39312-5	EPA 418.1	12-MAY-04	BF	11-MAY-04	BF	PHC
M39312-5	EPA 602	12-MAY-04 05:32	AP			V602BTXM
M39312-6 Collected: 04-MAY-04 14:30 By: TAN Received: 10-MAY-04 By: RS TP						
M39312-6	EPA 602	12-MAY-04 04:49	AP			V602BTXM

CHAIN OF CUSTODY

ACCUTEST

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

ACCUTEST JOB #: M39312
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: CDM
ADDRESS: 50 HAMPSHIRE ST
CITY, STATE, ZIP: CAMBRIDGE, MA
SEND REPORT TO: JIM WINKLER
PHONE #: (617) 452-6263

FACILITY INFORMATION

PROJECT NAME: GLOBAL
LOCATION: 140 CLEE BURBANK HGWY REVERE, MA
PROJECT NO.: 20394-3503-8M.INP
FAX #:

ANALYTICAL INFORMATION

BTEX/MTBE 602
TPH 418.1

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

LAB USE ONLY

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	NaOH	HNO3	H2SO4	NONE	BTEX/MTBE 602	TPH 418.1
-1	INF-0704	5.7.04	12:15	TAN	GW	4	X					X	X
-2	OIN-0704		12:20			4	X					X	X
-3	MID-1-0704		12:25			4	X					X	X
-4	MID-2-0704		12:30			4	X					X	X
30 -5	EFF-0704	5.7.04	12:35	TAN	GW	4	X					X	X
-6	TP	5.4.04	14:30	NT	GW	2	X					X	

DATA TURNAROUND INFORMATION

- [X] 14 DAYS STANDARD — APPROVED BY:
- [ ] 7 DAYS *RUSH*
- [ ] 48 HOUR EMERGENCY
- [ ] OTHER

14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] STANDARD
- [ ] COMMERCIAL "B"
- [ ] DISK DELIVERABLE
- [ ] STATE FORMS
- [ ] OTHER (SPECIFY)

COMMENTS/REMARKS

MDP-PRESUMPTIVE CERTAINTY REQUIRED
Loc. 366, 4B

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1.	DATE TIME: 5.7.04 13:30	RECEIVED BY: 1.	RELINQUISHED BY: 2.	DATE TIME: 5/10/04 15:15	RECEIVED BY: 2.
RELINQUISHED BY: 3.	DATE TIME: 5/10/04 16:30	RECEIVED BY: 3.	RELINQUISHED BY: 4.	DATE TIME:	RECEIVED BY: 4.
RELINQUISHED BY: 5.	DATE TIME:	RECEIVED BY: 5.	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☑ TEMPERATURE 1.9 C

ATTACHMENT D

SUMMARY OF GROUND WATER MONITORING DATA

(2004)

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

Global Petroleum Corporation
140 Lee Burbank Highway, Revere, Massachusetts
NPDES Exclusion 98-086
Groundwater Treatment System
Influent/Effluent Testing Results

Date		Apr-04		May-04		Jun-04	
Parameter	NPDES Limit	Influent	Effluent	Influent	Effluent	Influent	Effluent
TPH	5 ppm	20.5 mg/l	ND mg/l	2.8 mg/l	ND mg/l	0.66 mg/l	ND mg/l
Methyl Butyl Tert Ether	70 ppb	862,000 ug/l	1.3 ug/l	3,540 ug/l	ND ug/l	47,000 ug/l	ND ug/l
Benzene	5 ppb	4,640 ug/l	ND ug/l	362 ug/l	ND ug/l	1,920 ug/l	ND ug/l
Toluene	*	14,500 ug/l	ND ug/l	2,920 ug/l	ND ug/l	2,190 ug/l	ND ug/l
Ethylbenzene	*	899 ug/l	ND ug/l	269 ug/l	ND ug/l	326 ug/l	ND ug/l
Xylenes	*	9,170 ug/l	ND ug/l	5,860 ug/l	ND ug/l	4,940 ug/l	ND ug/l
Total BTEX	100 ppb	29,209 ug/l	ND ug/l	9,411 ug/l	ND ug/l	9,376 ug/l	ND ug/l

New England ACCUTEST Laboratories

07/03/04

Technical Report for

Camp Dresser & McKee

Global Petroleum, Revere MA

Accutest Job Number: M40095

Sampling Date: 06/16/04

Report to:

Camp Dresser & McKee
50 Hampshire Street
Cambridge, MA 02139

ATTN: James H. Winkler

Total number of pages in report: 29

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 Tand
Lab Director

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

ACCUTEST Laboratories

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Camp Dresser & McKee **Job No:** M40095

Site: Global Petroleum, Revere MA **Report Date** 7/2/04 4:18:47 PM

5 Sample(s) were collected on 06/16/2004 and were received at Accutest on 06/18/2004 properly preserved, at 2 Deg. C and intact. These Samples received an Accutest job number of M40095. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GC By Method EPA 602

Matrix: AQ **Batch ID:** GMN1129

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M40095-4MS, M40095-4MSD were used as the QC samples indicated.

Matrix: AQ **Batch ID:** GMN1136

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M40187-1MS, M40187-1MSD were used as the QC samples indicated.

Wet Chemistry By Method EPA 418.1

Matrix: AQ **Batch ID:** GP4546

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M40037-1DUP, M40037-4MS were used as the QC samples for Petroleum Hydrocarbons.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(M40095).

Title: MADEP MCP Response Action Analytical Report Certification Form

MADEP MCP Analytical Method Report Certification Form

Laboratory Name:	Accutest Laboratories of New England	Project #:	M40095
Project Location:	Global Petroleum, Revere MA	MADEP RTN [1]	None

This form provides certifications for the following data set:
M40095-1,M40095-2,M40095-3,M40095-4,M40095-5

Test I

Sample Matrices:	Groundwater X	Soil/Sediment ( )	Drinking Water ( )	Other: ( )	( )
MCP SW-846 Methods Used	8260B ( )	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )
	8270C ( )	8081A ( )	VPH ( )	6020 ( )	9014M [2] ( )
As specified in MADEP Compendium of Analytical Methods (Check all that apply)	8082 ( )	8021B ( )	EPH ( )	7000 S [3] ( )	7196A ( )

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, C, and D is required for "Presumptive Certainty status

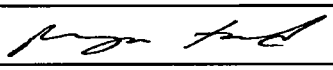
A	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	☑	Yes	☐ No [1]
B	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	☑	Yes	☐ No [1]
C	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	☐ No [1]
D	**VPH and EPH methods only:** Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	☑	Yes	☐ No [1]

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

E	Were all QC performance standards and recommendations for the specified methods achieved?	☑ Refer to Narrative	Yes	☐ No [1]
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	☑	Yes	☐ No [1]

[1] ***All Negative responses 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:**	**Laboratory Director**
Printed Name:	**Reza Tand**	**Date:**	**07/02/2004**

Sample Summary

Camp Dresser & McKee

Global Petroleum, Revere MA

Job No: M40095

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
M40095-1	06/16/04	09:25	TAN	06/18/04	AQ	Influent	INF-61604
M40095-2	06/16/04	09:45	TAN	06/18/04	AQ	Ground Water	CIN-61604
M40095-3	06/16/04	09:55	TAN	06/18/04	AQ	Ground Water	MID-1-61604
M40095-4	06/16/04	10:05	TAN	06/18/04	AQ	Ground Water	MID-2-61604
M40095-5	06/16/04	10:15	TAN	06/18/04	AQ	Effluent	EFF-61604

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-61604		
Lab Sample ID:	M40095-1	**Date Sampled:**	06/16/04
Matrix:	AQ - Influent	**Date Received:**	06/18/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN27821.D	1	06/23/04	AP	n/a	n/a	GMN1129
Run #2	MN27934.D	250	06/29/04	AP	n/a	n/a	GMN1136

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	1920 [a]	250	ug/l	
108-88-3	Toluene	2190 [a]	250	ug/l	
100-41-4	Ethylbenzene	326	1.0	ug/l	
1330-20-7	Xylenes (total)	4940 [a]	250	ug/l	
1634-04-4	Methyl Tert Butyl Ether	47000 [a]	250	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	93%	80%	61-124%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-61604		
Lab Sample ID:	M40095-1	**Date Sampled:**	06/16/04
Matrix:	AQ - Influent	**Date Received:**	06/18/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	0.66	0.61	mg/l	1	06/21/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-61604		
Lab Sample ID:	M40095-2	**Date Sampled:**	06/16/04
Matrix:	AQ - Ground Water	**Date Received:**	06/18/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN27822.D	1	06/23/04	AP	n/a	n/a	GMN1129
Run #2	MN27935.D	2	06/29/04	AP	n/a	n/a	GMN1136

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	1.1	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	5.2	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	556 [a]	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	87%	78%	61-124%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-61604		
Lab Sample ID:	M40095-2	**Date Sampled:**	06/16/04
Matrix:	AQ - Ground Water	**Date Received:**	06/18/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.62	0.62	mg/l	1	06/21/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-61604		
Lab Sample ID:	M40095-3	**Date Sampled:**	06/16/04
Matrix:	AQ - Ground Water	**Date Received:**	06/18/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN27823.D	1	06/23/04	AP	n/a	n/a	GMN1129
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	59.6	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	87%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-61604		
Lab Sample ID:	M40095-3	**Date Sampled:**	06/16/04
Matrix:	AQ - Ground Water	**Date Received:**	06/18/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.62	0.62	mg/l	1	06/21/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-61604		
Lab Sample ID:	M40095-4	**Date Sampled:**	06/16/04
Matrix:	AQ - Ground Water	**Date Received:**	06/18/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN27820.D	1	06/23/04	AP	n/a	n/a	GMN1129
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	91%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-61604		
Lab Sample ID:	M40095-4	**Date Sampled:**	06/16/04
Matrix:	AQ - Ground Water	**Date Received:**	06/18/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.62	0.62	mg/l	1	06/21/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-61604		
Lab Sample ID:	M40095-5	**Date Sampled:**	06/16/04
Matrix:	AQ - Effluent	**Date Received:**	06/18/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN27824.D	1	06/23/04	AP	n/a	n/a	GMN1129
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	89%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-61604		
Lab Sample ID:	M40095-5	**Date Sampled:**	06/16/04
Matrix:	AQ - Effluent	**Date Received:**	06/18/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.62	0.62	mg/l	1	06/21/04	BF	EPA 418.1

RL = Reporting Limit

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: M40095
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GMN1129-MB	MN27815.D	1	06/22/04	AP	n/a	n/a	GMN1129

The QC reported here applies to the following samples: **Method:** EPA 602

M40095-1, M40095-2, M40095-3, M40095-4, M40095-5

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
	2,3,4-Trifluorotoluene	91%	61-124%

Method Blank Summary

Job Number: M40095
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GMN1136-MB	MN27929.D	1	06/29/04	AP	n/a	n/a	GMN1136

The QC reported here applies to the following samples: **Method:** EPA 602

M40095-1, M40095-2

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
	2,3,4-Trifluorotoluene	79%	61-124%

Blank Spike Summary

Job Number: M40095
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GMN1129-BSP	MN27816.D	1	06/22/04	AP	n/a	n/a	GMN1129

The QC reported here applies to the following samples: **Method:** EPA 602

M40095-1, M40095-2, M40095-3, M40095-4, M40095-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	15.6	78	39-150
100-41-4	Ethylbenzene	20	15.3	77	32-160
1634-04-4	Methyl Tert Butyl Ether	20	16.3	82	65-122
108-88-3	Toluene	20	15.9	80	46-148
1330-20-7	Xylenes (total)	60	49.4	82	69-111

CAS No.	Surrogate Recoveries	BSP	Limits
	2,3,4-Trifluorotoluene	95%	61-124%

Blank Spike Summary

Job Number: M40095
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GMN1136-BSP	MN27930.D	1	06/29/04	AP	n/a	n/a	GMN1136

The QC reported here applies to the following samples: **Method:** EPA 602

M40095-1, M40095-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	15.2	76	39-150
1634-04-4	Methyl Tert Butyl Ether	20	16.1	81	65-122
108-88-3	Toluene	20	14.5	73	46-148
1330-20-7	Xylenes (total)	60	45.9	77	69-111

CAS No.	Surrogate Recoveries	BSP	Limits
	2,3,4-Trifluorotoluene	81%	61-124%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M40095
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M40095-4MS	MN27818.D	1	06/22/04	AP	n/a	n/a	GMN1129
M40095-4MSD	MN27819.D	1	06/22/04	AP	n/a	n/a	GMN1129
M40095-4	MN27820.D	1	06/23/04	AP	n/a	n/a	GMN1129

The QC reported here applies to the following samples: **Method:** EPA 602

M40095-1, M40095-2, M40095-3, M40095-4, M40095-5

CAS No.	Compound	M40095-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	0.0085		20	15.3	76	15.4	77	1	39-150/30
100-41-4	Ethylbenzene	0.014		20	15.2	76	15.3	76	1	32-160/30
1634-04-4	Methyl Tert Butyl Ether	0.15		20	16.4	81	16.4	81	0	57-126/30
108-88-3	Toluene	0.012		20	15.5	77	15.8	79	2	46-148/30
1330-20-7	Xylenes (total)	0.39		60	48.7	81	48.6	80	0	61-113/30

CAS No.	Surrogate Recoveries	MS	MSD	M40095-4	Limits
	2,3,4-Trifluorotoluene	94%	94%	91%	61-124%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M40095
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M40187-1MS	MN27932.D	1	06/29/04	AP	n/a	n/a	GMN1136
M40187-1MSD	MN27933.D	1	06/29/04	AP	n/a	n/a	GMN1136
M40187-1	MN27931.D	1	06/29/04	AP	n/a	n/a	GMN1136

The QC reported here applies to the following samples: **Method:** EPA 602

M40095-1, M40095-2

CAS No.	Compound	M40187-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1.6		20	16.7	76	16.8	76	1	39-150/30
1634-04-4	Methyl Tert Butyl Ether	1.9		20	17.9	80	18.3	82	2	57-126/30
108-88-3	Toluene	0.024		20	14.3	71	14.0	70	2	46-148/30
1330-20-7	Xylenes (total)	0.35		60	44.4	73	44.9	74	1	61-113/30

CAS No.	Surrogate Recoveries	MS	MSD	M40187-1	Limits
	2,3,4-Trifluorotoluene	80%	80%	77%	61-124%

Volatile Surrogate Recovery Summary

Job Number: M40095
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Method: EPA 602 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
M40095-1	MN27934.D	80.0
M40095-1	MN27821.D	93.0
M40095-2	MN27935.D	78.0
M40095-2	MN27822.D	87.0
M40095-3	MN27823.D	87.0
M40095-4	MN27820.D	91.0
M40095-5	MN27824.D	89.0
GMN1129-BSP	MN27816.D	95.0
GMN1129-MB	MN27815.D	91.0
GMN1136-BSP	MN27930.D	81.0
GMN1136-MB	MN27929.D	79.0
M40095-4MS	MN27818.D	94.0
M40095-4MSD	MN27819.D	94.0
M40187-1MS	MN27932.D	80.0
M40187-1MSD	MN27933.D	80.0

Surrogate Compounds	Recovery Limits
S1 = 2,3,4-Trifluorotoluene	61-124%

(a) Recovery from GC signal #2

General Chemistry

QC Data Summaries

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: M40095
Account: CDM - Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Analyte	Batch ID	RL	MB Result	Units	BSP %Recov	QC Limits
Petroleum Hydrocarbons	GP4546/GN14131	0.60	<0.60	mg/l	80.0	80-120%

Associated Samples:
Batch GP4546: M40095-1, M40095-2, M40095-3, M40095-4, M40095-5

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: M40095
Account: CDM - Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Petroleum Hydrocarbons	GP4546/GN14131	M40037-1	mg/l	2.3	2.2	4.4	0-20%

Associated Samples:
Batch GP4546: M40095-1, M40095-2, M40095-3, M40095-4, M40095-5

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: M40095
Account: CDM - Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Petroleum Hydrocarbons	GP4546/GN14131	M40037-4	mg/l	<0.62	5.2	4.7	90.4	75-125%

Associated Samples:
Batch GP4546: M40095-1, M40095-2, M40095-3, M40095-4, M40095-5

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Sample Tracking Chronicle

Internal Sample Tracking Chronicle

Camp Dresser & McKee

Job No: M40095

Global Petroleum, Revere MA

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
M40095-1 Collected: 16-JUN-04 09:25 By: TAN Received: 18-JUN-04 By: RS INF-61604						
M40095-1	EPA 418.1	21-JUN-04	BF	21-JUN-04	BF	PHC
M40095-1	EPA 602	23-JUN-04 00:47	AP			V602BTXM
M40095-1	EPA 602	29-JUN-04 13:27	AP			V602BTXM
M40095-2 Collected: 16-JUN-04 09:45 By: TAN Received: 18-JUN-04 By: RS CIN-61604						
M40095-2	EPA 418.1	21-JUN-04	BF	21-JUN-04	BF	PHC
M40095-2	EPA 602	23-JUN-04 01:30	AP			V602BTXM
M40095-2	EPA 602	29-JUN-04 14:09	AP			V602BTXM
M40095-3 Collected: 16-JUN-04 09:55 By: TAN Received: 18-JUN-04 By: RS MID-1-61604						
M40095-3	EPA 418.1	21-JUN-04	BF	21-JUN-04	BF	PHC
M40095-3	EPA 602	23-JUN-04 02:13	AP			V602BTXM
M40095-4 Collected: 16-JUN-04 10:05 By: TAN Received: 18-JUN-04 By: RS MID-2-61604						
M40095-4	EPA 418.1	21-JUN-04	BF	21-JUN-04	BF	PHC
M40095-4	EPA 602	23-JUN-04 00:04	AP			V602BTXM
M40095-5 Collected: 16-JUN-04 10:15 By: TAN Received: 18-JUN-04 By: RS EFF-61604						
M40095-5	EPA 418.1	21-JUN-04	BF	21-JUN-04	BF	PHC
M40095-5	EPA 602	23-JUN-04 02:56	AP			V602BTXM

CHAIN OF CUSTODY

ACCUTEST Laboratories

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

ACCUTEST JOB #: M40095
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: CDM
ADDRESS: 50 HAMPSHIRE ST
CITY, STATE ZIP: CAMBRIDGE, MA
SEND REPORT TO: JIM WINKLER
PHONE #: (617) 452-6263

FACILITY INFORMATION

PROJECT NAME: GLOBAL
LOCATION: 140 LEE BURBANK HGWY REVERE, MA
PROJECT NO: 20394-85913-OM.INP
FAX #:

ANALYTICAL INFORMATION

MTBE/BTEX 602
TPH 418.1

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	NaOH	HNO3	H2SO4	NONE	MTBE/BTEX 602	TPH 418.1	LAB USE ONLY
M40095(1)	INF-61604	6-16-4	9:25	TAN	GW	4	X					X	X	
-2	OIN-61604		9:45			4	X					X	X	
-3	MID-1-61604		9:55			4	X					X	X	
-4	MID-2-61604		10:05			4	X					X	X	
-5	EFF-61604	6-16-4	10:15	TAN	GW	4	X					X	X	
														4C,
														3EY,

29

DATA TURNAROUND INFORMATION

- [X] 14 DAYS STANDARD — APPROVED BY:
- [ ] 7 DAYS *RUSH*
- [ ] 48 HOUR EMERGENCY
- [ ] OTHER

14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] STANDARD
- [ ] COMMERCIAL "B"
- [ ] DISK DELIVERABLE
- [ ] STATE FORMS
- [ ] OTHER (SPECIFY)

COMMENTS/REMARKS

MA - PRESUMPTIVE CERTAINTY

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	6-17-94 7:00	1.	2.	6/18/94 11:45	2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.	6/18/94 11:45	3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☑ TEMPERATURE
5.		5.			2.0 C

ATTACHMENT D

SUMMARY OF GROUND WATER MONITORING DATA

(2004)

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

Global Petroleum Corporation
140 Lee Burbank Highway, Revere, Massachusetts
NPDES Exclusion 98-086
Groundwater Treatment System
Influent/Effluent Testing Results

Date			7/23/04				8/18/04				9/27/04			
Parameter	NPDES Limit		Influent		Effluent		Influent		Effluent		Influent		Effluent	
TPH	5	ppm	1.2	mg/l	ND	mg/l	ND	mg/l	ND	mg/l	ND	mg/l	ND	mg/l
Methyl Butyl Tert Ether	70	ppb	85,600	ug/l	ND	ug/l	29,600	ug/l	ND	ug/l	17,700	ug/l	ND	ug/l
Benzene	5	ppb	1,330	ug/l	ND	ug/l	946	ug/l	ND	ug/l	1,130	ug/l	ND	ug/l
Toluene	*		695	ug/l	ND	ug/l	1,900	ug/l	ND	ug/l	1,880	ug/l	ND	ug/l
Ethylbenzene	*		269	ug/l	ND	ug/l	160	ug/l	ND	ug/l	301.0	ug/l	ND	ug/l
Xylenes	*		2,990	ug/l	ND	ug/l	2,940	ug/l	ND	ug/l	540	ug/l	ND	ug/l
Total BTEX	100	ppb	5,284	ug/l	ND	ug/l	5,946	ug/l	ND	ug/l	3,851.0	ug/l	ND	ug/l

*No established limit

New England ACCUTEST Laboratories

08/05/04

Technical Report for

Camp Dresser & McKee

Global Petroleum, Revere MA

20394-35913-OM.INP

Accutest Job Number: M40841

Sampling Dates: 07/22/04 - 07/23/04

Report to:

Camp Dresser & McKee
50 Hampshire Street
Cambridge, MA 02139

ATTN: James H. Winkler

Total number of pages in report: 14

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 Tand
Lab Director

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

Sample Summary

Camp Dresser & McKee

Job No: M40841

Global Petroleum, Revere MA
Project No: 20394-35913-OM.INP

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
M40841-1	07/23/04	11:55 TAN	07/26/04	AQ	Influent	INF-7234
M40841-2	07/23/04	12:05 TAN	07/26/04	AQ	Ground Water	CIN-7234
M40841-3	07/23/04	12:55 TAN	07/26/04	AQ	Ground Water	MID-1-7234
M40841-4	07/23/04	13:00 TAN	07/26/04	AQ	Ground Water	MID-2-7234
M40841-5	07/23/04	13:05 TAN	07/26/04	AQ	Effluent	EFF-7234
M40841-6	07/22/04	09:00 RS	07/26/04	AQ	Trip Blank Water	TB

Report of Analysis

Client Sample ID:	INF-7234		
Lab Sample ID:	M40841-1	**Date Sampled:**	07/23/04
Matrix:	AQ - Influent	**Date Received:**	07/26/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN28539.D	1	07/27/04	AP	n/a	n/a	GMN1177
Run #2	MN28593.D	250	07/29/04	AP	n/a	n/a	GMN1179

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	1330 [a]	250	ug/l	
108-88-3	Toluene	695 [a]	250	ug/l	
100-41-4	Ethylbenzene	269	1.0	ug/l	
1330-20-7	Xylenes (total)	2990 [a]	250	ug/l	
1634-04-4	Methyl Tert Butyl Ether	85600 [a]	250	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	95%	87%	61-124%

(a) Result is from Run# 2

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:	INF-7234		
Lab Sample ID:	M40841-1	**Date Sampled:**	07/23/04
Matrix:	AQ - Influent	**Date Received:**	07/26/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	1.2	0.61	mg/l	1	07/28/04	BF	EPA 418.1

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CIN-7234		
Lab Sample ID:	M40841-2	**Date Sampled:**	07/23/04
Matrix:	AQ - Ground Water	**Date Received:**	07/26/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN28538.D	1	07/27/04	AP	n/a	n/a	GMN1177
Run #2	MN28594.D	50	07/29/04	AP	n/a	n/a	GMN1179

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	1.6	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	3.8	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	4610 [a]	50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	85%	81%	61-124%

(a) Result is from Run# 2

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:	CIN-7234		
Lab Sample ID:	M40841-2	**Date Sampled:**	07/23/04
Matrix:	AQ - Ground Water	**Date Received:**	07/26/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	07/28/04	BF	EPA 418.1

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MID-1-7234		
Lab Sample ID:	M40841-3	**Date Sampled:**	07/23/04
Matrix:	AQ - Ground Water	**Date Received:**	07/26/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN28537.D	1	07/27/04	AP	n/a	n/a	GMN1177
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	113	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	80%		61-124%

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:	MID-1-7234		
Lab Sample ID:	M40841-3	**Date Sampled:**	07/23/04
Matrix:	AQ - Ground Water	**Date Received:**	07/26/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	07/28/04	BF	EPA 418.1

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MID-2-7234		
Lab Sample ID:	M40841-4	**Date Sampled:**	07/23/04
Matrix:	AQ - Ground Water	**Date Received:**	07/26/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN28536.D	1	07/27/04	AP	n/a	n/a	GMN1177
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	81%		61-124%

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:	MID-2-7234		
Lab Sample ID:	M40841-4	**Date Sampled:**	07/23/04
Matrix:	AQ - Ground Water	**Date Received:**	07/26/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	07/28/04	BF	EPA 418.1

RL = Reporting Limit

Report of Analysis

Client Sample ID:	EFF-7234		
Lab Sample ID:	M40841-5	**Date Sampled:**	07/23/04
Matrix:	AQ - Effluent	**Date Received:**	07/26/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN28535.D	1	07/26/04	AP	n/a	n/a	GMN1177
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	81%		61-124%

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:	EFF-7234		
Lab Sample ID:	M40841-5	**Date Sampled:**	07/23/04
Matrix:	AQ - Effluent	**Date Received:**	07/26/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	07/28/04	BF	EPA 418.1

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TB		
Lab Sample ID:	M40841-6	**Date Sampled:**	07/22/04
Matrix:	AQ - Trip Blank Water	**Date Received:**	07/26/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN28534.D	1	07/26/04	AP	n/a	n/a	GMN1177
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	82%		61-124%

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

CHAIN OF CUSTODY

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

ACCUTEST JOB #: M40841
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: CDM
ADDRESS: 50 HAMPSHIRE ST
CITY, STATE, ZIP: CAMBRIDGE, MA
SEND REPORT TO: JIM WINKLER
PHONE #: 617-452-6263

FACILITY INFORMATION

PROJECT NAME: GLOBAL PETROLEUM
LOCATION: 140 LEE BURBANK HGWY
PROJECT NO.: REVERE, MA
FAX #: 20394-35913-SM.INP

ANALYTICAL INFORMATION

MTBE BTEX 602
TPH 418.1

MATRIX CODE

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

LAB USE ONLY

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	NaOH	HNO3	H2SO4	NONE	MTBE BTEX 602	TPH 418.1
-1	INF-7234	7.23.4	11:55	JAN	GW	4	X					X	X
-2	CIN-7234		12:05			4	X					X	X
-3	MID-1-7234		12:55			4	X					X	X
-4	MID-2-7234		13:00			4	X					X	X
-5	EFF-7234	~~7.23.4~~	13:05	JAN	GW	4	X					X	X
-6	TB	7.22.4	9:00	RS	GW	2	X					X	

DATA TURNAROUND INFORMATION

- [X] 14 DAYS STANDARD — APPROVED BY:
- [ ] 7 DAYS *RUSH*
- [ ] 48 HOUR EMERGENCY
- [ ] OTHER

14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] STANDARD
- [ ] COMMERCIAL "B"
- [ ] DISK DELIVERABLE
- [ ] STATE FORMS
- [ ] OTHER (SPECIFY)

COMMENTS/REMARKS

Loc. 3DS, 4D

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	7.23.4 14:00	1.	2.	7/26/04 13:05	2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.	7/26/04 14:40	3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☑ TEMPERATURE 2.0 C
5.		5.			

ATTACHMENT D

SUMMARY OF GROUND WATER MONITORING DATA

(2004)

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

Global Petroleum Corporation
140 Lee Burbank Highway, Revere, Massachusetts
NPDES Exclusion 98-086
Groundwater Treatment System
Influent/Effluent Testing Results

Date			7/23/04				8/18/04				9/27/04			
Parameter	NPDES Limit		Influent		Effluent		Influent		Effluent		Influent		Effluent	
TPH	5	ppm	1.2	mg/l	ND	mg/l	ND	mg/l	ND	mg/l	ND	mg/l	ND	mg/l
Methyl Butyl Tert Ether	70	ppb	85,600	ug/l	ND	ug/l	29,600	ug/l	ND	ug/l	17,700	ug/l	ND	ug/l
Benzene	5	ppb	1,330	ug/l	ND	ug/l	946	ug/l	ND	ug/l	1,130	ug/l	ND	ug/l
Toluene	*		695	ug/l	ND	ug/l	1,900	ug/l	ND	ug/l	1,880	ug/l	ND	ug/l
Ethylbenzene	*		269	ug/l	ND	ug/l	160	ug/l	ND	ug/l	301.0	ug/l	ND	ug/l
Xylenes	*		2,990	ug/l	ND	ug/l	2,940	ug/l	ND	ug/l	540	ug/l	ND	ug/l
Total BTEX	100	ppb	5,284	ug/l	ND	ug/l	5,946	ug/l	ND	ug/l	3,851.0	ug/l	ND	ug/l

*No established limit

New England ACCUTEST Laboratories

09/08/04

Technical Report for

Camp Dresser & McKee

Global Petroleum, Revere MA

Accutest Job Number: M41315

Sampling Dates: 08/16/04 - 08/18/04

Report to:

Camp Dresser & McKee
50 Hampshire Street
Cambridge, MA 02139

ATTN: James H. Winkler

Total number of pages in report: 27

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 Tand
Lab Director

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

ACCUTEST Laboratories

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Camp Dresser & McKee	**Job No**	M41315
Site:	Global Petroleum, Revere MA	**Report Date**	9/7/2004 8:22:05 AM

5 Sample and 1 Trip Blank were collected on between 08/16/2004 and 08/18/2004 and were received at Accutest on 08/20/2004 properly preserved, at 2 Deg. C and intact. These Samples received an Accutest job number of M41315. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GC By Method EPA 602

Matrix: AQ **Batch ID:** GAB836

- All samples were analyzed within the recommended method holding time.
- Sample(s) M41315-5MS, M41315-5MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M41315-1 has surrogates outside control limits due to possible matrix interference.
- For EPA 602, only BTX and MTBE requested.

Wet Chemistry By Method EPA 418.1

Matrix: AQ **Batch ID:** GP4735

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M41315-1DUP, M41315-2MS were used as the QC samples for Petroleum Hydrocarbons.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(M41315).

Title: MADEP MCP Response Action Analytical Report Certification Form

MADEP MCP Analytical Method Report Certification Form

Laboratory Name:	Accutest Laboratories of New England	Project #:	M41315
Project Location:	Global Petroleum, Revere MA	MADEP RTN [1]	None

This form provides certifications for the following data set:
M41315-1,M41315-2,M41315-3,M41315-4,M41315-5,M41315-6

Test Method: EPA 602, 418.1, and below

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

MCP SW-846 Methods Used					
	8260B ( )	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )
	8270C ( )	8081A ( )	VPH ( )	6020 ( )	9014M [2] ( )
As specified in MADEP Compendium of Analytical Methods: (Check all that apply)	8082 ( )	8021B ( )	EPH ( )	7000 S [3] ( )	7196A ( )

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, C, and D is required for "Presumptive Certainty status

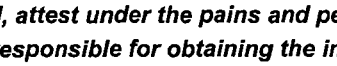
A	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	☑	Yes	☐ No [1]
B	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	☑	Yes	☐ No [1]
C	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	☐ No [1]
D	**VPH and EPH methods only:** Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	☑	Yes	☐ No [1]

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

E	Were all QC performance standards and recommendations for the specified methods achieved?	☑ Refer to Narrative	Yes	☐ No [1]
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	☐ Refer to Narrative	Yes	☑ No [1]

[1] ***All Negative responses 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:**	**Laboratory Director**
Printed Name:	**Reza Tand**	**Date:**	**09/07/2004**

Sample Summary

Camp Dresser & McKee

Global Petroleum, Revere MA

Job No: M41315

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
M41315-1	08/18/04	11:35	TAN	08/20/04	AQ	Influent	INF-81804
M41315-2	08/18/04	11:35	TAN	08/20/04	AQ	Ground Water	CIN-81804
M41315-3	08/18/04	11:35	TAN	08/20/04	AQ	Ground Water	MID-1-81804
M41315-4	08/18/04	11:35	TAN	08/20/04	AQ	Ground Water	MID-2-81804
M41315-5	08/18/04	11:35	TAN	08/20/04	AQ	Effluent	EFF-81804
M41315-6	08/16/04	11:35	TAN	08/20/04	AQ	Trip Blank Water	TB

Report of Analysis

Client Sample ID:	INF-81804		
Lab Sample ID:	M41315-1	**Date Sampled:**	08/18/04
Matrix:	AQ - Influent	**Date Received:**	08/20/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB16474.D	1	08/23/04	AA	n/a	n/a	GAB836
Run #2	AB16483.D	100	08/23/04	AA	n/a	n/a	GAB836

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	946 [a]	100	ug/l	
108-88-3	Toluene	1900 [a]	100	ug/l	
100-41-4	Ethylbenzene	160	1.0	ug/l	
1330-20-7	Xylenes (total)	2940 [a]	100	ug/l	
1634-04-4	Methyl Tert Butyl Ether	29600 [a]	100	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	56% [b]	74%	61-124%

(a) Result is from Run# 2
(b) Outside control limits due to possible matrix interference.

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-81804		
Lab Sample ID:	M41315-1	**Date Sampled:**	08/18/04
Matrix:	AQ - Influent	**Date Received:**	08/20/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	08/25/04	BF	EPA 418.1

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CIN-81804		
Lab Sample ID:	M41315-2	**Date Sampled:**	08/18/04
Matrix:	AQ - Ground Water	**Date Received:**	08/20/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB16475.D	1	08/23/04	AA	n/a	n/a	GAB836
Run #2	AB16482.D	5	08/23/04	AA	n/a	n/a	GAB836

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	3.1	1.0	ug/l	
108-88-3	Toluene	4.6	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	14.7	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1400 [a]	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	75%	71%	61-124%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-81804		
Lab Sample ID:	M41315-2	**Date Sampled:**	08/18/04
Matrix:	AQ - Ground Water	**Date Received:**	08/20/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	08/25/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-81804		
Lab Sample ID:	M41315-3	**Date Sampled:**	08/18/04
Matrix:	AQ - Ground Water	**Date Received:**	08/20/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB16476.D	1	08/23/04	AA	n/a	n/a	GAB836
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	299	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	72%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-81804		
Lab Sample ID:	M41315-3	**Date Sampled:**	08/18/04
Matrix:	AQ - Ground Water	**Date Received:**	08/20/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	08/25/04	BF	EPA 418.1

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MID-2-81804		
Lab Sample ID:	M41315-4	**Date Sampled:**	08/18/04
Matrix:	AQ - Ground Water	**Date Received:**	08/20/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB16477.D	1	08/23/04	AA	n/a	n/a	GAB836
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	72%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-81804		
Lab Sample ID:	M41315-4	**Date Sampled:**	08/18/04
Matrix:	AQ - Ground Water	**Date Received:**	08/20/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	08/25/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-81804		
Lab Sample ID:	M41315-5	**Date Sampled:**	08/18/04
Matrix:	AQ - Effluent	**Date Received:**	08/20/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB16478.D	1	08/23/04	AA	n/a	n/a	GAB836
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	71%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-81804		
Lab Sample ID:	M41315-5	**Date Sampled:**	08/18/04
Matrix:	AQ - Effluent	**Date Received:**	08/20/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	08/25/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	TB		
Lab Sample ID:	M41315-6	**Date Sampled:**	08/16/04
Matrix:	AQ - Trip Blank Water	**Date Received:**	08/20/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB16479.D	1	08/23/04	AA	n/a	n/a	GAB836
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	70%		61-124%

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

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: M41315
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAB836-MB	AB16472.D	1	08/23/04	AA	n/a	n/a	GAB836

The QC reported here applies to the following samples: **Method:** EPA 602

M41315-1, M41315-2, M41315-3, M41315-4, M41315-5, M41315-6

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
	2,3,4-Trifluorotoluene	64%	61-124%

Blank Spike Summary

Job Number: M41315
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAB836-BSP	AB16473.D	1	08/23/04	AA	n/a	n/a	GAB836

The QC reported here applies to the following samples: **Method:** EPA 602

M41315-1, M41315-2, M41315-3, M41315-4, M41315-5, M41315-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	18.1	91	39-150
100-41-4	Ethylbenzene	20	14.3	72	32-160
1634-04-4	Methyl Tert Butyl Ether	20	18.2	91	65-122
108-88-3	Toluene	20	16.0	80	46-148
1330-20-7	Xylenes (total)	60	44.5	74	69-111

CAS No.	Surrogate Recoveries	BSP	Limits
	2,3,4-Trifluorotoluene	74%	61-124%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M41315
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M41315-5MS	AB16480.D	1	08/23/04	AA	n/a	n/a	GAB836
M41315-5MSD	AB16481.D	1	08/23/04	AA	n/a	n/a	GAB836
M41315-5	AB16478.D	1	08/23/04	AA	n/a	n/a	GAB836

The QC reported here applies to the following samples: **Method:** EPA 602

M41315-1, M41315-2, M41315-3, M41315-4, M41315-5, M41315-6

CAS No.	Compound	M41315-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		20	16.0	80	18.3	92	13	39-150/30
100-41-4	Ethylbenzene	ND		20	13.2	66	14.4	72	9	32-160/30
1634-04-4	Methyl Tert Butyl Ether	ND		20	16.3	82	19.7	99	19	57-126/30
108-88-3	Toluene	ND		20	14.3	72	15.9	80	11	46-148/30
1330-20-7	Xylenes (total)	ND		60	40.8	68	44.7	75	9	61-113/30

CAS No.	Surrogate Recoveries	MS	MSD	M41315-5	Limits
	2,3,4-Trifluorotoluene	68%	74%	71%	61-124%

Volatile Surrogate Recovery Summary

Job Number: M41315
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Method: EPA 602 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
M41315-1	AB16483.D	74.0
M41315-1	AB16474.D	56.0* [b]
M41315-2	AB16482.D	71.0
M41315-2	AB16475.D	75.0
M41315-3	AB16476.D	72.0
M41315-4	AB16477.D	72.0
M41315-5	AB16478.D	71.0
M41315-6	AB16479.D	70.0
GAB836-BSP	AB16473.D	74.0
GAB836-MB	AB16472.D	64.0
M41315-5MS	AB16480.D	68.0
M41315-5MSD	AB16481.D	74.0

Surrogate Compounds	Recovery Limits
S1 = 2,3,4-Trifluorotoluene	61-124%

(a) Recovery from GC signal #2
(b) Outside control limits due to possible matrix interference.

General Chemistry

QC Data Summaries

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: M41315
Account: CDM - Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Analyte	Batch ID	RL	MB Result	Units	BSP %Recov	QC Limits
Petroleum Hydrocarbons	GP4735/GN14597	0.60	<0.60	mg/l	108.0	80-120%

Associated Samples:
Batch GP4735: M41315-1, M41315-2, M41315-3, M41315-4, M41315-5

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: M41315
Account: CDM - Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Petroleum Hydrocarbons	GP4735/GN14597	M41315-1	mg/l	<0.61	<0.61	0.0	0-20%

Associated Samples:
Batch GP4735: M41315-1, M41315-2, M41315-3, M41315-4, M41315-5

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: M41315
Account: CDM - Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Petroleum Hydrocarbons	GP4735/GN14597	M41315-2	mg/l	<0.61	5.1	4.2	82.4	75-125%

Associated Samples:
Batch GP4735: M41315-1, M41315-2, M41315-3, M41315-4, M41315-5

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Sample Tracking Chronicle

Internal Sample Tracking Chronicle

Camp Dresser & McKee

Job No: M41315

Global Petroleum, Revere MA

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
M41315-1 Collected: 18-AUG-04 11:35 By: TAN Received: 20-AUG-04 By: RS INF-81804						
M41315-1	EPA 602	23-AUG-04 12:09	AA			V602BTXM
M41315-1	EPA 602	23-AUG-04 18:13	AA			V602BTXM
M41315-1	EPA 418.1	25-AUG-04	BF	25-AUG-04	BF	PHC
M41315-2 Collected: 18-AUG-04 11:35 By: TAN Received: 20-AUG-04 By: RS CIN-81804						
M41315-2	EPA 602	23-AUG-04 12:49	AA			V602BTXM
M41315-2	EPA 602	23-AUG-04 17:32	AA			V602BTXM
M41315-2	EPA 418.1	25-AUG-04	BF	25-AUG-04	BF	PHC
M41315-3 Collected: 18-AUG-04 11:35 By: TAN Received: 20-AUG-04 By: RS MID-1-81804						
M41315-3	EPA 602	23-AUG-04 13:29	AA			V602BTXM
M41315-3	EPA 418.1	25-AUG-04	BF	25-AUG-04	BF	PHC
M41315-4 Collected: 18-AUG-04 11:35 By: TAN Received: 20-AUG-04 By: RS MID-2-81804						
M41315-4	EPA 602	23-AUG-04 14:09	AA			V602BTXM
M41315-4	EPA 418.1	25-AUG-04	BF	25-AUG-04	BF	PHC
M41315-5 Collected: 18-AUG-04 11:35 By: TAN Received: 20-AUG-04 By: RS EFF-81804						
M41315-5	EPA 602	23-AUG-04 14:50	AA			V602BTXM
M41315-5	EPA 418.1	25-AUG-04	BF	25-AUG-04	BF	PHC
M41315-6 Collected: 16-AUG-04 11:35 By: TAN Received: 20-AUG-04 By: RS TB						
M41315-6	EPA 602	23-AUG-04 15:30	AA			V602BTXM

CHAIN OF CUSTODY

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

ACCUTEST QUOTE #: M41315

CLIENT INFORMATION

NAME: CDM
ADDRESS: 50 HAMPSHIRE ST
CITY, STATE, ZIP: CAMBRIDGE, MA
SEND REPORT TO: JIM WINKLER
PHONE #: 617-452-6263

FACILITY INFORMATION

PROJECT NAME: GLOBAL
LOCATION: 140 LEE BURBANK HGWY
PROJECT NO.: REVERE, MA
FAX #: 20394.35913-SM.INP

ANALYTICAL INFORMATION

BTEX MTBE 602
TPH 418.1

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	PRESERVATION NaOH	PRESERVATION HNO3	PRESERVATION H2SO4	PRESERVATION NONE	BTEX MTBE 602	TPH 418.1	LAB USE ONLY
M41315-1	INF-81804	8-18-4	11:35	JAN	GW	4	X					X	X	
-2	DUP-81804		11:45			4	X					X	X	
-3	MID-1-81804		11:55			4	X					X	X	
-4	MID-2-81804		12:00			4	X					X	X	
-5	EFF-81804	8-18-4	12:05	JAN	GW	4	X					X	X	
-6	TB	8-16-4	11:30	RS	GW	2	X					X		

LAB USE ONLY: G: 4A, IES

DATA TURNAROUND INFORMATION

- [x] 14 DAYS STANDARD — APPROVED BY:
- [ ] 7 DAYS *RUSH* _____
- [ ] 48 HOUR EMERGENCY _____
- [ ] OTHER _____ _____

14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] STANDARD
- [ ] COMMERCIAL "B"
- [ ] DISK DELIVERABLE
- [ ] STATE FORMS
- [ ] OTHER (SPECIFY) _____

COMMENTS/REMARKS

MAP-PRESUMPTIVE CERTAINTY

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1. J. Gilmore	8-18-4 1400	1.	2.	8/20/04 16:00	2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.	8/20/04 17:10	3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐ TEMPERATURE 2.0 C
5.		5.			

ATTACHMENT D

SUMMARY OF GROUND WATER MONITORING DATA

(2004)

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

Global Petroleum Corporation
140 Lee Burbank Highway, Revere, Massachusetts
NPDES Exclusion 98-086
Groundwater Treatment System
Influent/Effluent Testing Results

Date			7/23/04				8/18/04				9/27/04			
Parameter	NPDES Limit		Influent		Effluent		Influent		Effluent		Influent		Effluent	
TPH	5	ppm	1.2	mg/l	ND	mg/l	ND	mg/l	ND	mg/l	ND	mg/l	ND	mg/l
Methyl Butyl Tert Ether	70	ppb	85,600	ug/l	ND	ug/l	29,600	ug/l	ND	ug/l	17,700	ug/l	ND	ug/l
Benzene	5	ppb	1,330	ug/l	ND	ug/l	946	ug/l	ND	ug/l	1,130	ug/l	ND	ug/l
Toluene	*		695	ug/l	ND	ug/l	1,900	ug/l	ND	ug/l	1,880	ug/l	ND	ug/l
Ethylbenzene	*		269	ug/l	ND	ug/l	160	ug/l	ND	ug/l	301.0	ug/l	ND	ug/l
Xylenes	*		2,990	ug/l	ND	ug/l	2,940	ug/l	ND	ug/l	540	ug/l	ND	ug/l
Total BTEX	100	ppb	5,284	ug/l	ND	ug/l	5,946	ug/l	ND	ug/l	3,851.0	ug/l	ND	ug/l

*No established limit

New England ACCUTEST Laboratories

10/13/04

Technical Report for

Camp Dresser & McKee

Global Petroleum, Revere MA

Accutest Job Number: M42134

Sampling Dates: 09/24/04 - 09/27/04

Report to:

Camp Dresser & McKee
50 Hampshire Street
Cambridge, MA 02139

ATTN: James H. Winkler

Total number of pages in report: 30

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 Pand
Lab Director

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

ACCUTEST Laboratories

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Camp Dresser & McKee **Job No:** M42134

Site: Global Petroleum, Revere MA **Report Date** 10/12/2004 5:57:31 P

5 Samples and 1 Trip Blank were collected on between 09/24/2004 and 09/27/2004 and were received at Accutest on 09/28/2004 properly preserved, at 1.7 Deg. C and intact. These Samples received an Accutest job number of M42134. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GC By Method EPA 602

Matrix: AQ	Batch ID: GMN1257

- All samples were analyzed within the recommended method holding time.
- Sample(s) M42042-3MS, M42042-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ	Batch ID: GMN1262

- All samples were analyzed within the recommended method holding time.
- Sample(s) M42134-5MS, M42134-5MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

For EPA 602, only BTX and MTBE requested.

Wet Chemistry By Method EPA 418.1

Matrix: AQ	Batch ID: GP4877

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M42188-1DUP, M42188-2MS were used as the QC samples for Petroleum Hydrocarbons.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(M42134).

Title: MADEP MCP Response Action Analytical Report Certification Form

MADEP MCP Analytical Method Report Certification Form

Laboratory Name:	Accutest Laboratories of New England	Project #:	M42134
Project Location:	Global Petroleum, Revere MA	MADEP RTN [1]	None

This form provides certifications for the following data set:
M42134-1 through M42134-6

Test Method: EPA 602, 418.1

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

MCP SW-846 Methods Used					
	8260B ( )	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )
	8270C ( )	8081A ( )	VPH ( )	6020 ( )	9014M [2] ( )
As specified in MADEP Compendium of Analytical Methods: (Check all that apply)	8082 ( )	8021B ( )	EPH ( )	7000 S [3] ( )	7196A ( )

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, C, and D is required for "Presumptive Certainty status

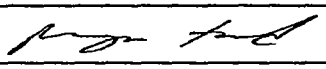
A	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	☑	Yes	☐ No [1]
B	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to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

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

E	Were all QC performance standards and recommendations for the specified methods achieved?	☑ Refer to Narrative	Yes	☐ No [1]
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	☐ Refer to Narrative	Yes	☑ No [1]

[1] ***All Negative responses 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:** Laboratory Director

Printed Name: Reza Tand **Date:** 10/12/2004

Sample Summary

Camp Dresser & McKee

Global Petroleum, Revere MA

Job No: M42134

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
M42134-1	09/27/04	12:15	TAN	09/28/04	AQ	Influent	INF-92704
M42134-2	09/27/04	12:35	TAN	09/28/04	AQ	Ground Water	CIN-92704
M42134-3	09/27/04	13:10	TAN	09/28/04	AQ	Ground Water	MID-1-92704
M42134-4	09/27/04	13:15	TAN	09/28/04	AQ	Ground Water	MID-2-92704
M42134-5	09/27/04	13:20	TAN	09/28/04	AQ	Effluent	EFF-92704
M42134-6	09/24/04	15:00	TAN	09/28/04	AQ	Trip Blank Water	TB

Report of Analysis

Client Sample ID:	INF-92704		
Lab Sample ID:	M42134-1	**Date Sampled:**	09/27/04
Matrix:	AQ - Influent	**Date Received:**	09/28/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN29825.D	1	10/02/04	AP	n/a	n/a	GMN1257
Run #2	MN29876.D	200	10/05/04	AP	n/a	n/a	GMN1262

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	1130 [a]	200	ug/l	
108-88-3	Toluene	1880 [a]	200	ug/l	
100-41-4	Ethylbenzene	301	1.0	ug/l	
1330-20-7	Xylenes (total)	2540 [a]	200	ug/l	
1634-04-4	Methyl Tert Butyl Ether	17700 [a]	200	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	86%	82%	61-124%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-92704		
Lab Sample ID:	M42134-1	**Date Sampled:**	09/27/04
Matrix:	AQ - Influent	**Date Received:**	09/28/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	10/04/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-92704		
Lab Sample ID:	M42134-2	**Date Sampled:**	09/27/04
Matrix:	AQ - Ground Water	**Date Received:**	09/28/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN29824.D	1	10/02/04	AP	n/a	n/a	GMN1257
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	41.4	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	84%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-92704		
Lab Sample ID:	M42134-2	**Date Sampled:**	09/27/04
Matrix:	AQ - Ground Water	**Date Received:**	09/28/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	10/04/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-92704		
Lab Sample ID:	M42134-3	**Date Sampled:**	09/27/04
Matrix:	AQ - Ground Water	**Date Received:**	09/28/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN29877.D	1	10/05/04	AP	n/a	n/a	GMN1262
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.8	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	80%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-92704		
Lab Sample ID:	M42134-3	**Date Sampled:**	09/27/04
Matrix:	AQ - Ground Water	**Date Received:**	09/28/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	10/04/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-92704		
Lab Sample ID:	M42134-4	**Date Sampled:**	09/27/04
Matrix:	AQ - Ground Water	**Date Received:**	09/28/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN29878.D	1	10/05/04	AP	n/a	n/a	GMN1262
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	79%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-92704		
Lab Sample ID:	M42134-4	**Date Sampled:**	09/27/04
Matrix:	AQ - Ground Water	**Date Received:**	09/28/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	10/04/04	BF	EPA 418.1

RL = Reporting Limit

Report of Analysis

Client Sample ID:	EFF-92704		
Lab Sample ID:	M42134-5	**Date Sampled:**	09/27/04
Matrix:	AQ - Effluent	**Date Received:**	09/28/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN29874.D	1	10/05/04	AP	n/a	n/a	GMN1262
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	79%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-92704		
Lab Sample ID:	M42134-5	**Date Sampled:**	09/27/04
Matrix:	AQ - Effluent	**Date Received:**	09/28/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	10/04/04	BF	EPA 418.1

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TB		
Lab Sample ID:	M42134-6	**Date Sampled:**	09/24/04
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/28/04
Method:	EPA 602	**Percent Solids:**	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN29875.D	1	10/05/04	AP	n/a	n/a	GMN1262
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	79%		61-124%

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

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: M42134
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GMN1257-MB	MN29811.D	1	10/02/04	AP	n/a	n/a	GMN1257

The QC reported here applies to the following samples: **Method:** EPA 602

M42134-1, M42134-2

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
	2,3,4-Trifluorotoluene	81%	61-124%

Method Blank Summary

Job Number: M42134
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GMN1262-MB	MN29869.D	1	10/05/04	AP	n/a	n/a	GMN1262

The QC reported here applies to the following samples: **Method:** EPA 602

M42134-1, M42134-3, M42134-4, M42134-5, M42134-6

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
	2,3,4-Trifluorotoluene	81%	61-124%

Blank Spike/Blank Spike Duplicate Summary

Job Number: M42134
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GMN1257-BSP	MN29812.D	1	10/02/04	AP	n/a	n/a	GMN1257
GMN1257-BSD	MN29813.D	1	10/02/04	AP	n/a	n/a	GMN1257

The QC reported here applies to the following samples: **Method:** EPA 602

M42134-1, M42134-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	15.3	77	15.4	77	1	39-150/30
100-41-4	Ethylbenzene	20	17.2	86	17.4	87	1	32-160/30
1634-04-4	Methyl Tert Butyl Ether	20	16.6	83	16.9	85	2	65-122/30
108-88-3	Toluene	20	17.2	86	17.2	86	0	46-148/30
1330-20-7	Xylenes (total)	60	56.2	94	56.0	93	0	69-111/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
	2,3,4-Trifluorotoluene	87%	86%	61-124%

Blank Spike/Blank Spike Duplicate Summary

Job Number: M42134
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GMN1262-BSP	MN29870.D	1	10/05/04	AP	n/a	n/a	GMN1262
GMN1262-BSD	MN29871.D	1	10/05/04	AP	n/a	n/a	GMN1262

The QC reported here applies to the following samples: **Method:** EPA 602

M42134-1, M42134-3, M42134-4, M42134-5, M42134-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	15.2	76	15.4	77	1	39-150/30
100-41-4	Ethylbenzene	20	17.6	88	17.7	89	1	32-160/30
1634-04-4	Methyl Tert Butyl Ether	20	16.5	83	16.7	84	1	65-122/30
108-88-3	Toluene	20	17.3	87	17.4	87	1	46-148/30
1330-20-7	Xylenes (total)	60	57.4	96	57.7	96	1	69-111/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
	2,3,4-Trifluorotoluene	83%	84%	61-124%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M42134
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M42042-3MS	MN29814.D	1	10/02/04	AP	n/a	n/a	GMN1257
M42042-3MSD	MN29815.D	1	10/02/04	AP	n/a	n/a	GMN1257
M42042-3	MN29816.D	1	10/02/04	AP	n/a	n/a	GMN1257

The QC reported here applies to the following samples: **Method:** EPA 602

M42134-1, M42134-2

CAS No.	Compound	M42042-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	0.54	J	20	16.3	79	16.2	78	1	39-150/30
100-41-4	Ethylbenzene	0.88	J	20	18.6	89	17.5	83	6	32-160/30
1634-04-4	Methyl Tert Butyl Ether	ND		20	16.1	81	15.4	77	4	57-126/30
108-88-3	Toluene	3.1		20	20.9	89	20.1	85	4	46-148/30
1330-20-7	Xylenes (total)	6.7		60	63.1	94	60.4	90	4	61-113/30

CAS No.	Surrogate Recoveries	MS	MSD	M42042-3	Limits
	2,3,4-Trifluorotoluene	87%	87%	82%	61-124%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M42134
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M42134-5MS	MN29872.D	1	10/05/04	AP	n/a	n/a	GMN1262
M42134-5MSD	MN29873.D	1	10/05/04	AP	n/a	n/a	GMN1262
M42134-5	MN29874.D	1	10/05/04	AP	n/a	n/a	GMN1262

The QC reported here applies to the following samples: **Method:** EPA 602

M42134-1, M42134-3, M42134-4, M42134-5, M42134-6

CAS No.	Compound	M42134-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		20	15.3	77	15.3	77	0	39-150/30
100-41-4	Ethylbenzene	ND		20	17.6	88	17.8	89	1	32-160/30
1634-04-4	Methyl Tert Butyl Ether	0.14		20	16.8	83	16.8	83	0	57-126/30
108-88-3	Toluene	ND		20	17.4	87	17.5	88	1	46-148/30
1330-20-7	Xylenes (total)	ND		60	57.3	96	57.8	96	1	61-113/30

CAS No.	Surrogate Recoveries	MS	MSD	M42134-5	Limits
	2,3,4-Trifluorotoluene	83%	84%	79%	61-124%

Volatile Surrogate Recovery Summary

Job Number: M42134
Account: CDM Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Method: EPA 602 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
M42134-1	MN29876.D	82.0
M42134-1	MN29825.D	86.0
M42134-2	MN29824.D	84.0
M42134-3	MN29877.D	80.0
M42134-4	MN29878.D	79.0
M42134-5	MN29874.D	79.0
M42134-6	MN29875.D	79.0
GMN1257-BSD	MN29813.D	86.0
GMN1257-BSP	MN29812.D	87.0
GMN1257-MB	MN29811.D	81.0
GMN1262-BSD	MN29871.D	84.0
GMN1262-BSP	MN29870.D	83.0
GMN1262-MB	MN29869.D	81.0
M42042-3MS	MN29814.D	87.0
M42042-3MSD	MN29815.D	87.0
M42134-5MS	MN29872.D	83.0
M42134-5MSD	MN29873.D	84.0

Surrogate Compounds	Recovery Limits
S1 = 2,3,4-Trifluorotoluene	61-124%

(a) Recovery from GC signal #2

General Chemistry

QC Data Summaries

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: M42134
Account: CDM - Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Petroleum Hydrocarbons	GP4877/GN14946	0.60	<0.60	mg/l	5	4.5	90.0	80-120%

Associated Samples:
Batch GP4877: M42134-1, M42134-2, M42134-3, M42134-4, M42134-5

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: M42134
Account: CDM - Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Petroleum Hydrocarbons	GP4877/GN14946	M42188-1	mg/l	<0.61	<0.61	0.0	0-20%

Associated Samples:
Batch GP4877: M42134-1, M42134-2, M42134-3, M42134-4, M42134-5

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: M42134
Account: CDM - Camp Dresser & McKee
Project: Global Petroleum, Revere MA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Petroleum Hydrocarbons	GP4877/GN14946	M42188-2	mg/l	<0.61	5.1	4.4	86.3	75-125%

Associated Samples:
Batch GP4877: M42134-1, M42134-2, M42134-3, M42134-4, M42134-5

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Sample Tracking Chronicle

Internal Sample Tracking Chronicle

Camp Dresser & McKee

Global Petroleum, Revere MA

Job No: M42134

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
M42134-1 Collected: 27-SEP-04 12:15 By: TAN Received: 28-SEP-04 By: RS INF-92704						
M42134-1	EPA 602	02-OCT-04 14:05	AP			V602BTXM
M42134-1	EPA 418.1	04-OCT-04	BF	04-OCT-04	BF	PHC
M42134-1	EPA 602	05-OCT-04 22:34	AP			V602BTXM
M42134-2 Collected: 27-SEP-04 12:35 By: TAN Received: 28-SEP-04 By: RS CIN-92704						
M42134-2	EPA 602	02-OCT-04 13:24	AP			V602BTXM
M42134-2	EPA 418.1	04-OCT-04	BF	04-OCT-04	BF	PHC
M42134-3 Collected: 27-SEP-04 13:10 By: TAN Received: 28-SEP-04 By: RS MID-1-92704						
M42134-3	EPA 418.1	04-OCT-04	BF	04-OCT-04	BF	PHC
M42134-3	EPA 602	05-OCT-04 23:17	AP			V602BTXM
M42134-4 Collected: 27-SEP-04 13:15 By: TAN Received: 28-SEP-04 By: RS MID-2-92704						
M42134-4	EPA 418.1	04-OCT-04	BF	04-OCT-04	BF	PHC
M42134-4	EPA 602	05-OCT-04 23:59	AP			V602BTXM
M42134-5 Collected: 27-SEP-04 13:20 By: TAN Received: 28-SEP-04 By: RS EFF-92704						
M42134-5	EPA 418.1	04-OCT-04	BF	04-OCT-04	BF	PHC
M42134-5	EPA 602	05-OCT-04 21:10	AP			V602BTXM
M42134-6 Collected: 24-SEP-04 15:00 By: TAN Received: 28-SEP-04 By: RS TB						
M42134-6	EPA 602	05-OCT-04 21:52	AP			V602BTXM

CHAIN OF CUSTODY

ACCUTEST Laboratories

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

ACCUTEST JOB #: M42134
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: CDM
ADDRESS: 50 HAMPSHIRE ST
CITY: CAMBRIDGE STATE: MA ZIP:
SEND REPORT TO: JIM WINKLER
PHONE #: 617-452-6263

FACILITY INFORMATION

PROJECT NAME: GLOBAL PETROLEUM
LOCATION: 140 LEE BURBANK HGWY
PROJECT NO.: REVERE, MA
FAX #: 20394-35913-OM.INP

ANALYTICAL INFORMATION

BTEX/MTBE 602
TPH 418.1

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

LAB USE ONLY

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	NaOH	HNO3	H2SO4	NONE	BTEX/MTBE 602	TPH 418.1
M42134-1	INF-92704	9.27.4	12:15	TAN	GW	4	X			X		X	X
-2	CMN-92704		12:35			4	X			X		X	X
-3	MID-1-92704		13:10			4	X			X		X	X
-4	MID-2-92704		13:15			4	X			X		X	X
-5	EFF-92704	9.27.4	13:20	TAN	GW	4	X			X		X	X
-6	TB	9.24.4	15:00		GW	2	X					X	

DATA TURNAROUND INFORMATION

☒ 14 DAYS STANDARD
☐ 7 DAYS *RUSH*
☐ 48 HOUR EMERGENCY
☐ OTHER

APPROVED BY:

14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

☐ STANDARD
☐ COMMERCIAL "B"
☐ DISK DELIVERABLE
☐ STATE FORMS
☐ OTHER (SPECIFY)

COMMENTS/REMARKS

MCP-PRESUMPTIVE CERTAINTY

Loc. 2G6, 4E

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	9-27-4 14:00	1.	2.	9-28 2:38 PM	2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.	9-28-04 1725	3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☑ TEMPERATURE 1.7° C
5.		5.			

ATTACHMENT D

SUMMARY OF GROUND WATER MONITORING DATA

(2004)

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

Global Petroleum Corporation
140 Lee Burbank Highway, Revere, Massachusetts
NPDES Exclusion 98-086
Groundwater Treatment System
Influent/Effluent Testing Results

Date			10/14/04				11/22/04				12/20/04			
Parameter	NPDES Limit		Influent		Effluent		Influent		Effluent		Influent		Effluent	
TPH	5	ppm	0.88	mg/l	ND	mg/l	1.6	mg/l	ND	mg/l	2.8	mg/l	ND	mg/l
Methyl Butyl Tert Ether	70	ppb	172,000	ug/l	ND	ug/l	193,000	ug/l	2.0	ug/l	200,000	ug/l	72	ug/l
Benzene	5	ppb	2,770	ug/l	ND	ug/l	2,180	ug/l	ND	ug/l	2,800	ug/l	ND	ug/l
Toluene	*		3,380	ug/l	ND	ug/l	3,040	ug/l	ND	ug/l	4,640	ug/l	ND	ug/l
Ethylbenzene	*		343	ug/l	ND	ug/l	551	ug/l	ND	ug/l	568	ug/l	ND	ug/l
Xylenes	*		3,840	ug/l	ND	ug/l	3,390	ug/l	ND	ug/l	5,120	ug/l	ND	ug/l
Total BTEX	100	ppb	10,333	ug/l	ND	ug/l	9,161	ug/l	ND	ug/l	13,128	ug/l	ND	ug/l

ND - Not detected

New England ACCUTEST Laboratories

11/04/04

Technical Report for

Camp Dresser & McKee

Global Petroleum, Revere MA

Accutest Job Number: M42578

Sampling Dates: 10/14/04 - 10/15/04

Report to:

Camp, Dresser & McKee

WinklerJH@cdm.com

ATTN: Jim Winkler

Total number of pages in report: **16**

ACCREDITED IN ACCORDANCE WITH nelac

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 Pand
Lab Director

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

Sections: 1 2 3

Table of Contents

-1-

Sample Summary

Camp Dresser & McKee

Global Petroleum, Revere MA

Job No: M42578

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
M42578-1	10/15/04	10:50	TAN	10/20/04	AQ	Influent	INF-101504
M42578-2	10/15/04	11:10	TAN	10/20/04	AQ	Ground Water	CIN-101504
M42578-3	10/15/04	12:05	TAN	10/20/04	AQ	Ground Water	MID-1-101504
M42578-4	10/15/04	12:15	TAN	10/20/04	AQ	Ground Water	MID-2-101504
M42578-5	10/15/04	12:25	TAN	10/20/04	AQ	Effluent	EFF-101504
M42578-6	10/14/04	08:30	TAN	10/20/04	AQ	Trip Blank Water	TB

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-101504		
Lab Sample ID:	M42578-1	Date Sampled:	10/15/04
Matrix:	AQ - Influent	Date Received:	10/20/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB17588.D	1	10/23/04	AF	n/a	n/a	GAB888
Run #2	AB17602.D	200	10/25/04	AF	n/a	n/a	GAB889
Run #3	AB17662.D	1000	10/27/04	AF	n/a	n/a	GAB892

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml
Run #3	5.0 ml

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	2770 [a]	200	ug/l	
108-88-3	Toluene	3380 [a]	200	ug/l	
100-41-4	Ethylbenzene	343	1.0	ug/l	
1330-20-7	Xylenes (total)	3840 [a]	200	ug/l	
1634-04-4	Methyl Tert Butyl Ether	172000 [b]	1000	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 3	Limits
	2,3,4-Trifluorotoluene	69%	74%	70%	61-124%

(a) Result is from Run# 2
(b) Result is from Run# 3

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-101504		
Lab Sample ID:	M42578-1	Date Sampled:	10/15/04
Matrix:	AQ - Influent	Date Received:	10/20/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	0.88	0.62	mg/l	1	10/20/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-101504		
Lab Sample ID:	M42578-2	Date Sampled:	10/15/04
Matrix:	AQ - Ground Water	Date Received:	10/20/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB17589.D	1	10/23/04	AF	n/a	n/a	GAB888
Run #2	AB17603.D	5	10/25/04	AF	n/a	n/a	GAB889

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	2.3	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1160 [a]	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	68%	72%	61-124%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-101504		
Lab Sample ID:	M42578-2	Date Sampled:	10/15/04
Matrix:	AQ - Ground Water	Date Received:	10/20/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	< 0.62	0.62	mg/l	1	10/20/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-101504		
Lab Sample ID:	M42578-3	Date Sampled:	10/15/04
Matrix:	AQ - Ground Water	Date Received:	10/20/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB17590.D	1	10/23/04	AF	n/a	n/a	GAB888
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	7.9	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	66%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-101504		
Lab Sample ID:	M42578-3	Date Sampled:	10/15/04
Matrix:	AQ - Ground Water	Date Received:	10/20/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	< 0.61	0.61	mg/l	1	10/20/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-101504		
Lab Sample ID:	M42578-4	Date Sampled:	10/15/04
Matrix:	AQ - Ground Water	Date Received:	10/20/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB17591.D	1	10/23/04	AF	n/a	n/a	GAB888
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	65%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-101504		
Lab Sample ID:	M42578-4	Date Sampled:	10/15/04
Matrix:	AQ - Ground Water	Date Received:	10/20/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	< 0.63	0.63	mg/l	1	10/20/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-101504		
Lab Sample ID:	M42578-5	Date Sampled:	10/15/04
Matrix:	AQ - Effluent	Date Received:	10/20/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB17592.D	1	10/23/04	AF	n/a	n/a	GAB888
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	65%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-101504		
Lab Sample ID:	M42578-5	Date Sampled:	10/15/04
Matrix:	AQ - Effluent	Date Received:	10/20/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	< 0.63	0.63	mg/l	1	10/20/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	TB		
Lab Sample ID:	M42578-6	Date Sampled:	10/14/04
Matrix:	AQ - Trip Blank Water	Date Received:	10/20/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB17593.D	1	10/23/04	AF	n/a	n/a	GAB888
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	64%		61-124%

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

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

ACCUTEST Laboratories

CHAIN OF CUSTODY

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

ACCUTEST JOB #: M42578
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: COM
ADDRESS: 50 HAMPSHIRE ST
CITY, STATE, ZIP: CAMBRIDGE, MA
SEND REPORT TO: JIM WINKLER
PHONE #: 617-452-6263

FACILITY INFORMATION

PROJECT NAME: GLOBAL PETROLEUM
LOCATION: 140 LEE BURBANK HWY
PROJECT NO.: REVERE, MA
FAX #: 20394-85913 ; OM.MP

ANALYTICAL INFORMATION

BTEX/MTBE 602
TPH 418.1

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	PRESERVATION HNO3	PRESERVATION H2SO4	PRESERVATION NONE	BTEX/MTBE 602	TPH 418.1	LAB USE ONLY
M42578-1	INF-101504	10-15-4	10:50	TAN	GW		X				X	X	
-2	CIN-101504		11:10				X				X	X	
-3	MID-1-101504		12:05				X				X	X	
-4	MID-2-101504		12:15				X				X	X	
-5	EFF-101504	10-15-4	12:25	TAN	GW		X				X	X	
-6	TB	10-14-4	8:30	RS	GW		X				X		

DATA TURNAROUND INFORMATION

- [x] 14 DAYS STANDARD — APPROVED BY:
- [ ] 7 DAYS *RUSH*
- [ ] 48 HOUR EMERGENCY
- [ ] OTHER

14 DAY TURNAROUND HARDCOPY, EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] STANDARD
- [ ] COMMERCIAL "B"
- [ ] DISK DELIVERABLE
- [ ] STATE FORMS
- [ ] OTHER (SPECIFY)

COMMENTS/REMARKS

MCP PRESUMPTIVE CERTAINTY
Loc. 4C, 1B7

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	10-15-4 15:20	1.	2.	10/16/04 15:40	2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.	10/19/04 11:20	3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐
5.		5.			TEMPERATURE 2.1 C

M42578: Chain of Custody
Page 1 of 1

ATTACHMENT D

SUMMARY OF GROUND WATER MONITORING DATA

(2004)

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

Global Petroleum Corporation
140 Lee Burbank Highway, Revere, Massachusetts
NPDES Exclusion 98-086
Groundwater Treatment System
Influent/Effluent Testing Results

Date			10/14/04				11/22/04				12/20/04			
Parameter	NPDES Limit		Influent		Effluent		Influent		Effluent		Influent		Effluent	
TPH	5	ppm	0.88	mg/l	ND	mg/l	1.6	mg/l	ND	mg/l	2.8	mg/l	ND	mg/l
Methyl Butyl Tert Ether	70	ppb	172,000	ug/l	ND	ug/l	193,000	ug/l	2.0	ug/l	200,000	ug/l	72	ug/l
Benzene	5	ppb	2,770	ug/l	ND	ug/l	2,180	ug/l	ND	ug/l	2,800	ug/l	ND	ug/l
Toluene	*		3,380	ug/l	ND	ug/l	3,040	ug/l	ND	ug/l	4,640	ug/l	ND	ug/l
Ethylbenzene	*		343	ug/l	ND	ug/l	551	ug/l	ND	ug/l	568	ug/l	ND	ug/l
Xylenes	*		3,840	ug/l	ND	ug/l	3,390	ug/l	ND	ug/l	5,120	ug/l	ND	ug/l
Total BTEX	100	ppb	10,333	ug/l	ND	ug/l	9,161	ug/l	ND	ug/l	13,128	ug/l	ND	ug/l

ND - Not detected

New England ACCUTEST Laboratories

12/20/04

Technical Report for

Camp Dresser & McKee

Global Petroleum, Revere MA

Accutest Job Number: M43477

Sampling Date: 11/22/04

Report to:

Camp, Dresser & McKee

WinklerJH@cdm.com

ATTN: Jim Winkler

Total number of pages in report: **15**

ACCREDITED IN ACCORDANCE WITH nelac

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 Tand
Lab Director

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

Sections: 1 2 3

Table of Contents

-1-

Sample Summary

Camp Dresser & McKee

Global Petroleum, Revere MA

Job No: M43477

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
M43477-1	11/22/04	10:10	TAN	11/24/04	AQ	Influent	INF-112204
M43477-2	11/22/04	10:20	TAN	11/24/04	AQ	Ground Water	CIN-112204
M43477-3	11/22/04	10:30	TAN	11/24/04	AQ	Ground Water	MID-1-112204
M43477-4	11/22/04	10:35	TAN	11/24/04	AQ	Ground Water	MID-2-112204
M43477-5	11/22/04	10:40	TAN	11/24/04	AQ	Effluent	EFF-112204

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-112204		
Lab Sample ID:	M43477-1	Date Sampled:	11/22/04
Matrix:	AQ - Influent	Date Received:	11/24/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB18419.D	1	12/01/04	AA	n/a	n/a	GAB932
Run #2	AB18426.D	500	12/01/04	AA	n/a	n/a	GAB932

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	2180 [a]	500	ug/l	
108-88-3	Toluene	3040 [a]	500	ug/l	
100-41-4	Ethylbenzene	551	1.0	ug/l	
1330-20-7	Xylenes (total)	3390 [a]	500	ug/l	
1634-04-4	Methyl Tert Butyl Ether	193000 [a]	500	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	83%	88%	61-124%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-112204		
Lab Sample ID:	M43477-1	Date Sampled:	11/22/04
Matrix:	AQ - Influent	Date Received:	11/24/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	1.6	0.61	mg/l	1	11/29/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-112204		
Lab Sample ID:	M43477-2	Date Sampled:	11/22/04
Matrix:	AQ - Ground Water	Date Received:	11/24/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB18420.D	1	12/01/04	AA	n/a	n/a	GAB932
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	1.9	1.0	ug/l	
108-88-3	Toluene	1.4	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	3.4	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	961	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	91%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-112204		
Lab Sample ID:	M43477-2	Date Sampled:	11/22/04
Matrix:	AQ - Ground Water	Date Received:	11/24/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	< 0.61	0.61	mg/l	1	11/29/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-112204		
Lab Sample ID:	M43477-3	Date Sampled:	11/22/04
Matrix:	AQ - Ground Water	Date Received:	11/24/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB18421.D	1	12/01/04	AA	n/a	n/a	GAB932
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	175	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	86%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-112204		
Lab Sample ID:	M43477-3	Date Sampled:	11/22/04
Matrix:	AQ - Ground Water	Date Received:	11/24/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	< 0.61	0.61	mg/l	1	11/29/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-112204		
Lab Sample ID:	M43477-4	Date Sampled:	11/22/04
Matrix:	AQ - Ground Water	Date Received:	11/24/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB18422.D	1	12/01/04	AA	n/a	n/a	GAB932
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	3.1	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	86%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-112204		
Lab Sample ID:	M43477-4	Date Sampled:	11/22/04
Matrix:	AQ - Ground Water	Date Received:	11/24/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	< 0.61	0.61	mg/l	1	11/29/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-112204		
Lab Sample ID:	M43477-5	Date Sampled:	11/22/04
Matrix:	AQ - Effluent	Date Received:	11/24/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB18423.D	1	12/01/04	AA	n/a	n/a	GAB932
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	85%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-112204		
Lab Sample ID:	M43477-5	Date Sampled:	11/22/04
Matrix:	AQ - Effluent	Date Received:	11/24/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	< 0.61	0.61	mg/l	1	11/29/04	BF	EPA 418.1

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

ACCUTEST Laboratories

CHAIN OF CUSTODY

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

ACCUTEST JOB #: M43477
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: CDM
ADDRESS: 50 HAMPSHIRE ST
CITY, STATE, ZIP: CAMBRIDGE, MA
SEND REPORT TO: JIM WINKLER
PHONE #: 617-452-6263

FACILITY INFORMATION

PROJECT NAME: GLOBAL
LOCATION: 140 LEE BURBANK HGHY REVERE, MA
PROJECT NO.: 20394-35913-OM.INP
FAX #:

ANALYTICAL INFORMATION

BTEX/MTBE 602
TPH 418.1

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	PRESERVATION MeOH	PRESERVATION HNO3	PRESERVATION H2SO4	PRESERVATION NONE	BTEX/MTBE 602	TPH 418.1	LAB USE ONLY
-1	INF-112204	11-22-4	10:10	TAN	GW	4	X					X	X	
-2	CIN-112204		10:20			4	X					X	X	
-3	MID-1-112204		10:30			4	X					X	X	
-4	MID-2-112204		10:35			4	X					X	X	
-5	EFF-112204	11-22-4	10:40	TAN	GW	4	X					X	X	

DATA TURNAROUND INFORMATION

- [X] 14 DAYS STANDARD — APPROVED BY:
- [ ] 7 DAYS *RUSH*
- [ ] 48 HOUR EMERGENCY
- [ ] OTHER

14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] STANDARD
- [ ] COMMERCIAL "B"
- [ ] DISK DELIVERABLE
- [ ] STATE FORMS
- [ ] OTHER (SPECIFY)

COMMENTS/REMARKS

MAP-PRESUMPTIVE CERTAINTY
Loc, 1A6, 4A

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1. T. A. Miller	11-22-4 17:00	1. Ryan M Sweeney 11-24-04 1240	2. Ryan M Sweeney	11/24/04 1600	2. Ryan M Sweeney
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.		3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE	ON ICE	TEMPERATURE
5.		5.			☑	2.6 C

M43477: Chain of Custody
Page 1 of 1

ATTACHMENT D

SUMMARY OF GROUND WATER MONITORING DATA

(2004)

GLOBAL PETROLEUM CORPORATION

NPDES PERMIT NO. MA0003425

Global Petroleum Corporation
140 Lee Burbank Highway, Revere, Massachusetts
NPDES Exclusion 98-086
Groundwater Treatment System
Influent/Effluent Testing Results

Date			10/14/04				11/22/04				12/20/04			
Parameter	NPDES Limit		Influent		Effluent		Influent		Effluent		Influent		Effluent	
TPH	5	ppm	0.88	mg/l	ND	mg/l	1.6	mg/l	ND	mg/l	2.8	mg/l	ND	mg/l
Methyl Butyl Tert Ether	70	ppb	172,000	ug/l	ND	ug/l	193,000	ug/l	2.0	ug/l	200,000	ug/l	72	ug/l
Benzene	5	ppb	2,770	ug/l	ND	ug/l	2,180	ug/l	ND	ug/l	2,800	ug/l	ND	ug/l
Toluene	*		3,380	ug/l	ND	ug/l	3,040	ug/l	ND	ug/l	4,640	ug/l	ND	ug/l
Ethylbenzene	*		343	ug/l	ND	ug/l	551	ug/l	ND	ug/l	568	ug/l	ND	ug/l
Xylenes	*		3,840	ug/l	ND	ug/l	3,390	ug/l	ND	ug/l	5,120	ug/l	ND	ug/l
Total BTEX	100	ppb	10,333	ug/l	ND	ug/l	9,161	ug/l	ND	ug/l	13,128	ug/l	ND	ug/l

ND - Not detected

New England ACCUTEST Laboratories

01/03/05

Technical Report for

Camp Dresser & McKee

Global Petroleum, Revere MA

Accutest Job Number: M44094

Sampling Date: 12/20/04

Report to:

Camp, Dresser & McKee

WinklerJH@cdm.com

ATTN: Jim Winkler

Total number of pages in report: 15

ACCREDITED IN ACCORDANCE WITH nelac

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 Tand
Lab Director

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

Sections: 1 2 3

Table of Contents

-1-

Sample Summary

Camp Dresser & McKee

Global Petroleum, Revere MA

Job No: M44094

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
M44094-1	12/20/04	11:05	TAN	12/23/04	AQ	Influent	INF-122004
M44094-2	12/20/04	11:00	TAN	12/23/04	AQ	Ground Water	CIN-122004
M44094-3	12/20/04	10:55	TAN	12/23/04	AQ	Ground Water	MID-1-122004
M44094-4	12/20/04	10:45	TAN	12/23/04	AQ	Ground Water	MID-2-122004
M44094-5	12/20/04	10:40	TAN	12/23/04	AQ	Effluent	EFF-122004

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-122004		
Lab Sample ID:	M44094-1	Date Sampled:	12/20/04
Matrix:	AQ - Influent	Date Received:	12/23/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB18873.D	1	12/24/04	AF	n/a	n/a	GAB957
Run #2	AB18878.D	250	12/24/04	AF	n/a	n/a	GAB957

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	2800 [a]	250	ug/l	
108-88-3	Toluene	4640 [a]	250	ug/l	
100-41-4	Ethylbenzene	568	1.0	ug/l	
1330-20-7	Xylenes (total)	5120 [a]	250	ug/l	
1634-04-4	Methyl Tert Butyl Ether	200000 [a]	250	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	72%	92%	61-124%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	INF-122004		
Lab Sample ID:	M44094-1	Date Sampled:	12/20/04
Matrix:	AQ - Influent	Date Received:	12/23/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	2.8	0.61	mg/l	1	12/27/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-122004		
Lab Sample ID:	M44094-2	Date Sampled:	12/20/04
Matrix:	AQ - Ground Water	Date Received:	12/23/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB18874.D	1	12/24/04	AF	n/a	n/a	GAB957
Run #2	AB18879.D	200	12/24/04	AF	n/a	n/a	GAB957

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	16.4	1.0	ug/l	
108-88-3	Toluene	19.8	1.0	ug/l	
100-41-4	Ethylbenzene	2.3	1.0	ug/l	
1330-20-7	Xylenes (total)	40.4	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	52800 [a]	200	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	113%	85%	61-124%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CIN-122004		
Lab Sample ID:	M44094-2	Date Sampled:	12/20/04
Matrix:	AQ - Ground Water	Date Received:	12/23/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	< 0.61	0.61	mg/l	1	12/27/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-122004		
Lab Sample ID:	M44094-3	Date Sampled:	12/20/04
Matrix:	AQ - Ground Water	Date Received:	12/23/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB18875.D	1	12/24/04	AF	n/a	n/a	GAB957
Run #2	AB18880.D	100	12/24/04	AF	n/a	n/a	GAB957

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

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	12000 [a]	100	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	90%	87%	61-124%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-1-122004		
Lab Sample ID:	M44094-3	Date Sampled:	12/20/04
Matrix:	AQ - Ground Water	Date Received:	12/23/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	< 0.61	0.61	mg/l	1	12/27/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-122004		
Lab Sample ID:	M44094-4	Date Sampled:	12/20/04
Matrix:	AQ - Ground Water	Date Received:	12/23/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB18876.D	1	12/24/04	AF	n/a	n/a	GAB957
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	309	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	88%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MID-2-122004		
Lab Sample ID:	M44094-4	Date Sampled:	12/20/04
Matrix:	AQ - Ground Water	Date Received:	12/23/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	< 0.61	0.61	mg/l	1	12/27/04	BF	EPA 418.1

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-122004		
Lab Sample ID:	M44094-5	Date Sampled:	12/20/04
Matrix:	AQ - Effluent	Date Received:	12/23/04
Method:	EPA 602	Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB18877.D	1	12/24/04	AF	n/a	n/a	GAB957
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	72.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	87%		61-124%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	EFF-122004		
Lab Sample ID:	M44094-5	Date Sampled:	12/20/04
Matrix:	AQ - Effluent	Date Received:	12/23/04
		Percent Solids:	n/a
Project:	Global Petroleum, Revere MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	< 0.61	0.61	mg/l	1	12/27/04	BF	EPA 418.1

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST Laboratories

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

ACCUTEST JOB #: M44094
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: WOM
ADDRESS: 50 HAMPSHIRE ST
CITY: CAMBRIDGE STATE: MA ZIP:
SEND REPORT TO: JIM WINKLER
PHONE #: 617-452-6263

FACILITY INFORMATION

PROJECT NAME: GLOBAL
LOCATION: 40 CONT. BURBANK HWY REVERE, MA
PROJECT NO.: 20394-35913-OM, MP
FAX #:

ANALYTICAL INFORMATION

BTEX MTBE 602
TPH 418.1

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	NaOH	HNO3	H2SO4	NONE	BTEX MTBE 602	TPH 418.1	LAB USE ONLY
M44094-1	INF-122004	12.20.4	11:05	TAN	GW	4	X					X	X	
-2	CIN-122004		11:00			4	X					X	X	
-3	MID-1-122004		10:55			4	X					X	X	
-4	MID-2-122004		10:45			4	X					X	X	
-5	EFF-122004	12.20.4	10:40	TAN	GW	4	X					X	X	

DATA TURNAROUND INFORMATION

- [X] 14 DAYS STANDARD — APPROVED BY:
- [ ] 7 DAYS *RUSH*
- [ ] 48 HOUR EMERGENCY
- [ ] OTHER

14 DAY TURNAROUND HARDCOPY, EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] STANDARD
- [ ] COMMERCIAL "B"
- [ ] DISK DELIVERABLE
- [ ] STATE FORMS
- [ ] OTHER (SPECIFY)

COMMENTS/REMARKS

MCP-PRESUMPTIVE CERTAINTY
Loc, 3G6, 4F

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY/SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1.	12.20.4 12:10	1. 12/23/04 1340	2.	12/23/04 1530	2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.		3.	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE	ON ICE	TEMPERATURE
5.		5.				2.5 C

3.1 3

M44094: Chain of Custody
Page 1 of 1

ATTACHMENT E

ENDANGERED SPECIES LIST

Protected Resources

NOAA Fisheries National Marine Fisheries Service

"conserving protected marine resources and maintaining marine biodiversity"

Species Listed under the Endangered Species Act of 1973

The authority to list species as threatened or endangered is shared by the National Marine Fisheries Service (NMFS), which is responsible for listing most marine species, and the Fish and Wildlife Service (FWS), which administers the listing of all other plants and animals. There are two classifications under which a species may be listed.

- Species determined to be in imminent danger of extinction throughout all of a significant portion of their range are listed as "endangered."
- Species determined likely to become endangered in the foreseeable future are listed as "threatened."

Further, distinct populations may be listed even if a species is abundant in other portions of its range. The criteria for endangerment must be based solely on biological evidence and the best scientific and/or commercial data available. Moreover, additions or deletions may be proposed by anyone who presents adequate evidence of the endangered status of a species.

Domestic Endangered Species			
Atlantic salmon	Green sea turtle	Leatherback sea turtle	Sperm whale
Blue whale	Hawaiian monk seal	Northern right whale	Steelhead
Bowhead whale	Hawksbill sea turtle	Olive ridley sea turtle	White abalone
Caribbean monk seal	Humpback whale	Sei whale	Smalltooth sawfish
Fin whale	Kemp's ridley sea turtle	Shortnose sturgeon	

Domestic Threatened Species			
Chinook salmon	Green sea turtle	Johnson's sea grass	Sockeye salmon

Coho salmon	Guadalupe fur seal	Loggerhead sea turtle	Steelhead
Chum salmon	Gulf sturgeon	Olive ridley sea turtle	Steller sea lion

Domestic Species Proposed for Listing

International Species Listed as Endangered or Threatened Under the ESA			
Chinese River dolphin	Gulf of California harbor porpoise (vaquita)	Mediterranean monk seal	Southern right whale
Gray whale - Western North Pacific population	Indus River dolphin	Ringed seal (Siamma seal)	Totoaba

Contact Us | Related Links | Search | Regional Offices | Privacy Statement | Disclaimer |

NOAA Fisheries, Office of Protected Resources, 1315 East West Highway, Silver Spring, MD 20910
Fax:301-713-0376 Phone:301-713-2332

U.S. Endangered Species Act

Listings under the U.S. Endangered Species Act

The U.S. Endangered Species Act (U.S. ESA) is the primary legislation that affords federal legal protections to threatened and endangered species in the United States, and is administered by the U.S. Fish and Wildlife Service (USFWS) (http://endangered.fws.gov/) and U.S. National Marine Fisheries Service (NMFS) (http://www.nmfs.noaa.gov/prot_res/overview/es.html). As defined by the Act, endangered refers to species that are "in danger of extinction within the foreseeable future throughout all or a significant portion of its range," while threatened refers to "those animals and plants likely to become endangered within the foreseeable future throughout all or a significant portion of their ranges." Plant species and varieties (including fungi and lichens), animal species and subspecies, and vertebrate animal populations are eligible for listing under the Act.

Status under the U.S. Endangered Species Act provided by *NatureServe Explorer* is based on formal notices published by USFWS or NMFS in the Federal Register. The date shown alongside the status (in parentheses) refers to the formal Federal Register publication date regarding the status designation. Dates appear only for taxa and populations that are specifically named in a Federal Register Notice of Review Table or in the section of a Federal Register Proposed or Final Rule that proposes or declares an amendment to 50 Code of Federal Regulations Part 17 Section 11 or 12 (i.e., changes to the Lists of Endangered and Threatened Wildlife and Plants).

Specifically, dates represent:

For listed endangered and threatened taxa and populations: the date of publication of the Federal Register "Final Rule" for the taxon or population.

For proposed taxa and populations: the date of publication of the most recent Federal Register "Proposed Rule" for the taxon or population.

For candidate taxa and populations: the date of publication of the most recent "Notice of Reclassification" or "Notice of Review" in which the candidate appears.

NatureServe staff update the central databases with changes in status due to proposals and determinations to add taxa to the Lists of Endangered and Threatened Wildlife and Plants within two weeks of publication in the Federal Register. Addition and removal of candidates in Notices of Review or Notices of Reclassification are entered within four weeks of their publication. *NatureServe Explorer* is updated periodically from the NatureServe Central Databases and reflects the federal status current at the time of update.

ESA Status Definitions in *NatureServe Explorer*

NatureServe Explorer generally uses the same scientific name as USFWS for species with status under the Endangered Species Act. For listed population segments of vertebrate animals, *NatureServe Explorer* information can typically be found in the species record associated with the subspecies or population. Where names used by the USFWS differ from those used by NatureServe, *NatureServe Explorer* records are cross-referenced and can be

found using either name. The following table provides abbreviations and definitions for various listing statuses under the U.S. Endangered Species Act.

U.S. Endangered Species Act Abbreviations	
***NatureServe Explorer* Abbreviation**	**Status Under the U.S. Endangered Species Act**
LE	Listed endangered
LT	Listed threatened
PE	Proposed endangered
PT	Proposed threatened
C	Candidate
PDL	Proposed for delisting
SAE or SAT	Listed endangered or threatened because of similarity of appearance
PSAE or PSAT	Proposed endangered or threatened because of similarity of appearance
XE	Essential experimental population
XN	Nonessential experimental population
Null value	Usually indicates that the taxon does not have any federal status. However, because of potential lag time between publication in the Federal Register and entry in the central databases and refresh of this website, some taxa may have a status which does not yet appear.

Status Due to Taxonomic Relationship ("Implied USESA Status")

In some cases species or infraspecific taxa may not be named in a federal register notice, but may still have federal protection due to their taxonomic relationship with formally listed taxa. Section 17.11(g) of the Endangered Species Act states, "the listing of a particular taxon includes all lower taxonomic units." Also, if an infraspecific taxon or population has federal status, then by default, some part of the species has federal protection. NatureServe Explorer notes where federal protection of a taxon is "implied" through such taxonomic relationships. Where federal status is implied due to a taxonomic relationship alone, the status abbreviation appears with a flag (1) and no date of listing is given.

Status of Geopolitically or Administratively Defined Populations

Distinct population segments of vertebrate animals may be listed as threatened or endangered under the Endangered Species Act. Listed populations may be defined by geopolitical boundaries (i.e., the status applies to the species or subspecies only within those boundaries, even though the taxon may range more broadly), or populations may be defined administratively (e.g., experimental populations). Because such populations do not typically have individual records in NatureServe Explorer, the U.S. ESA status is recorded for the species or subspecies to which that

population belongs. In these cases, the status abbreviation appears with a flag (s), after the abbreviation "PS" for "partial status" - indicating that the status applies only to a portion of the species' range.

Implied ESA Status Notations (Status Due to Taxonomic Relationship)		
Example	**Explanation**	**Definition**
value,value	Combination values	The taxon has one status currently, but a more recent proposal has been made to change that status with no final action yet published. For example, "LE, PDL" indicates that the species is currently listed as endangered, but has been proposed for delisting. Or, the taxon has two different statuses throughout its range. More specifically, it has a status in one portion of its range and a different status in the remainder of its range.
(*Value*)	Flagged Values	The taxon itself is not named in the Federal Register as having U.S. ESA status; however, it does have U.S. ESA status as a result of its taxonomic relationship to a named entity. For example, if a species is federally listed as endangered, then by default, all of its recognized subspecies also have endangered status. The subspecies in this example would have the value "LE (1)" under U.S. ESA Status. Likewise, if all of a species' infraspecific taxa (rangewide) have the same U.S. ESA status, then that status appears in the record for the "full" species as well. In this case, if the taxon at the species level is not mentioned in the Federal Register, the status appears in NatureServe Explorer with a flag (1).
(*value,value*)	Combination flagged values	The taxon itself is not named in the Federal Register as having U.S. ESA status; however, all of its infraspecific taxa (rangewide) have official status but two or more of the taxa do not have the same status. In this case, a combination of the statuses shown with a flag (7) indicates the statuses that apply to infraspecific taxa or populations within this taxon.
(PS)	partial status	Indicates "partial status"—status in only a portion of the species' range. Typically indicated in a "full" species record where at least one but not all of a species' infraspecific taxa or populations has U.S. ESA status.
(PS:*value*)	partial status	Indicates "partial status"—status in only a portion of the species' range. The value of that status appears because the listed entity (usually a population defined by geopolitical boundaries or defined administratively, such as experimental populations) does not have an individual entry in NatureServe Explorer. Information about the listed entity can be found in reports for the associated species.

Version 4.1 (11 November 2004)
Data last updated: October 2004

Site Index

ATTACHMENT F

ESSENTIAL FISH HABITAT DESIGNATION

Guide to Essential Fish Habitat Designations in the Northeastern United States

Important Note To Users

This guide provides a geographic species list of Essential Fish Habitat (EFH) designations completed by the New England Fishery Management Council, Mid-Atlantic Fishery Management Council, South Atlantic Fishery Management Council, and the National Marine Fisheries Service (NMFS) in the Northeastern United States pursuant to the Magnuson-Stevens Fishery Conservation and Management Act. The guide is designed to provide government agencies and other interested parties with a quick reference to determine the species and life stages of fish, shellfish, and mollusks for which EFH has been designated in a particular area. Using a "point and click" format, it lists the EFH species in selected 10' x 10' squares of latitude and longitude along the coast. Although not provided in this guide, EFH has also been designated in offshore areas throughout the Exclusive Economic Zone. This guide lists the EFH species within an area and is not intended for use on its own. The actual EFH descriptions, the species habitat preferences and life history parameters are provided in Guide to EFH Descriptions. The Councils' Fishery Management Plans (FMPs) should be referred to for more extensive information regarding EFH whenever necessary.

To skip the introduction, click here.

To view EFH Designations for Skate Species, which are not in the map below, click here.

Background

The 1996 amendments to the Magnuson-Stevens Act strengthened the ability of NMFS and the Councils to protect and conserve the habitat of marine, estuarine, and anadromous finfish, mollusks, and crustaceans. This habitat is termed "essential fish habitat" and is broadly defined to include "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The Act requires the Councils to describe and identify the essential habitat for the managed species, minimize to the extent practicable adverse effects on EFH caused by fishing, and identify other actions to encourage the conservation and enhancement of EFH.

The Act also establishes measures to protect EFH. NMFS must coordinate with other federal agencies to conserve and enhance EFH, and federal agencies must consult with NMFS on all actions or proposed actions authorized, funded, or undertaken by the agency that may adversely affect EFH. In turn NMFS must provide recommendations to federal and state agencies on such activities to conserve EFH. These recommendations may include measures to avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from actions or proposed actions authorized, funded, or

undertaken by that agency.

Description of the Guide

To facilitate the EFH consultation process, this guide provides a quick method of ascertaining what species and lifestages have EFH in a given geographic area. The information is presented as tabular summaries for selected 10' x 10' squares of latitude and longitude. Each table includes a short but detailed description of the square, including a table of coordinates, as well as landmarks along the coastline such as towns, cities, necks, points, rocks, islands, bays, coves, shoals, marshes, beaches, banks, estuaries, creeks, thorofares, or rivers. The information for the square descriptions was taken from National Oceanic and Atmospheric Administration (NOAA) Coast Survey nautical charts. An attempt was made to ensure the names used in the description are as thorough as possible. However, if a question arises in regards to a location, please refer to the nautical charts or any reference map. Also, when in doubt concerning whether a project is divided by a square boundary, please refer to a map or chart.

For the offshore squares, the information is based primarily on the offshore trawl survey data that was used to support the Councils' EFH designations. For squares located within major estuaries and bays, the EFH designations are based on Estuarine Living Marine Resources data along with some trawl survey data. For detailed species lists for the major estuaries, select from the estuaries list instead of the 10 minute square. The Guide to EFH Descriptions provides an overall species list categorized by the Council's jurisdictions. Click on the species name to retrieve the EFH Designations as well as additional habitat information, where available. These summaries are not a substitute for the actual EFH designations provided in the Council's FMPs. Users should refer to the Councils' FMPs when questions arise.

Definitions

The tables are fairly straightforward, but the following definitions will help clarify exactly what each summary shows:

10 Minute Square Tables

The notation "X" in a table indicates that EFH has been designated within the square for a given species and life stage.

The notation "n/a" in the tables indicates some of the species either have no data available on the designated lifestages, or those lifestages are not present in the species' reproductive cycle. These species are:

- redfish, which have no eggs (larvae born already hatched);
- long finned squid, short finned squid, surf clam, and ocean quahog which are referred to as pre-recruits and recruits (this corresponds with juveniles and adults in the tables);
- spiny dogfish, which have no eggs or larvae (juveniles born live);
- scup and black sea bass, for which there is insufficient data for the life stages listed, and no EFH designation has been made as of yet (some estuary data is available for all the life stages of these species, and some of the estuary squares will reflect this)

The Highly Migratory Species' life stages that are summarized within the squares are broken down into neonates, juveniles, and adults. For these species there are no 'egg' designations, and neonates correspond to the heading larvae within each summary table.

Estuaries Tables

S = The EFH designation for this species includes the seawater salinity zone of this bay or estuary (salinity > or = 25.0%).

M = The EFH designation for this species includes the mixing water/ brackish salinity zone of this bay or estuary (0.5% < salinity < 25.0%).

F = The EFH designation for this species includes the tidal freshwater salinity zone of this bay or estuary (0.0% < or = salinity < or = 0.5%).

n/a = The species does not have this lifestage in its life history (dogfish/ redfish), or has no EFH designation for this lifestage (squids, surf clam, ocean quahog). With regard to the squids, the surf clam, and the ocean quahog, juvenile corresponds with pre-recruits, and adult corresponds with recruits in these species' life histories.

These EFH designations of estuaries and embayments are based on the NOAA Estuarine Living Marine Resources (ELMR) program (Jury et al. 1994; Stone et al. 1994).

Disclaimer

The process involved in converting the EFH designations into this format was tedious. It consisted of determining the designations within each square, square by square and species life stage by species life stage, and then compiling the information into each table. Information has been double checked, but some errors may appear. When questions arise, the Councils' Fishery Management Plans are ultimately and legally determinative of the geographic limits of EFH.

To use the Guide, click here.

If you have comments on the Guide, send an e-mail message tojill.ortiz@noaa.gov.

Summary of Essential Fish Habitat (EFH) Designations

Name of Estuary/ Bay/ River: Boston Harbor, Massachusetts

10' x 10' latitude and longitude squares included in this bay or estuary or river (southeast corner boundaries):

4220/7100; 4210/7050; 4210/7100

Species	Eggs	Larvae	Juveniles	Adults	Spawning Adults
Atlantic salmon *(Salmo salar)*					
Atlantic cod *(Gadus morhua)*	S	S	M,S	M,S	S
haddock *(Melanogrammus aeglefinus)*	S	S			
pollock *(Pollachius virens)*	S	S	M,S		
whiting *(Merluccius bilinearis)*	S	S	M,S	M,S	
offshore hake *(Merluccius albidus)*					
red hake *(Urophycis chuss)*		S	S	S	
white hake *(Urophycis tenuis)*	S	S	S	S	
redfish *(Sebastes fasciatus)*	n/a				
witch flounder *(Glyptocephalus cynoglossus)*					
winter flounder *(Pleuronectes americanus)*	M,S	M,S	M,S	M,S	M,S
yellowtail flounder *(Pleuronectes ferruginea)*	S	S	S	S	S
windowpane flounder *(Scopthalmus aquosus)*	M,S	M,S	M,S	M,S	M,S
American plaice *(Hippoglossoides platessoides)*	S	S	S	S	S
ocean pout *(Macrozoarces americanus)*			S	S	
Atlantic halibut *(Hippoglossus hippoglossus)*	S	S	S	S	S
Atlantic sea scallop *(Placopecten magellanicus)*					
Atlantic sea herring *(Clupea harengus)*		S	M,S	M,S	
monkfish *(Lophius americanus)*					

bluefish *(Pomatomus saltatrix)*			M,S	M,S	
long finned squid *(Loligo pealei)*	n/a	n/a			
short finned squid *(Illex illecebrosus)*	n/a	n/a			
Atlantic butterfish *(Peprilus triacanthus)*	S	S			
Atlantic mackerel *(Scomber scombrus)*	M,S	M,S	M,S	M,S	
summer flounder *(Paralicthys dentatus)*					
scup *(Stenotomus chrysops)*					
black sea bass *(Centropristus striata)*					
surf clam *(Spisula solidissima)*	n/a	n/a			
ocean quahog *(Artica islandica)*	n/a	n/a			
spiny dogfish *(Squalus acanthias)*	n/a	n/a			
tilefish *(Lopholatilus chamaeleonticeps)*					

MASSACHUSETTS DIVISION OF MARINE FISHERIES - DESIGNATED SHELLFISH GROWING AREA

Division of Marine Fisheries
DIRECTOR PIERCE COUSER

MASS GIS

Produced: December 06, 1999

STATION TYPE

- CLASSIFICATION
- POLLUTION SOURCE
- AD-HOC
- PRIMARY PSP
- SECONDARY PSP
- TERTIARY PSP
- CHEMICAL
- MARINA

BOUNDARY LINES CLASS AREA TYPE, AS OF 07/01/1999

- GROWING AREA
- CLASSIFICATION AREA
- TOWN

- APPROVED
- CONDITIONALLY APPROVED
- CONDITIONALLY RESTRICTED
- RESTRICTED
- MANAGEMENT CLOSE
- PROHIBITED

This product is for planning and educational purposes only. It is not to be used by itself for legal boundary definition or regulatory interpretation.

GROWING AREA CODE: GBH4
AREA NAME: BOSTON INNER HARBOR
AREA TOWN(S): BOSTON/CAMBRIDGE/CHELSEA/EVERETT/REVERE/SOMERVILL