New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Point Source Permitting

FACT SHEET

Masterfile #: Varies **PI #:** Varies

This fact sheet sets forth the principle facts and the significant factual, legal, and policy considerations examined during preparation of the draft master general petroleum products clean-up (GPPC) permit. This action has been prepared in accordance with the New Jersey Water Pollution Control Act and its implementing regulations at N.J.A.C. 7:14A-1 et seq. - The New Jersey Pollutant Discharge Elimination System (NJPDES).

PERMIT ACTION: Surface Water Renewal Action - Master General Petroleum Products Clean-up (GPPC) Permit

The Department is proposing to issue a Surface Water Master General Permit Renewal.

1 Description of Master General Petroleum Product Clean-up Permit:

Pursuant to N.J.A.C. 7:14A-6.13(b)4 of the NJPDES Regulations, the Department has determined that the petroleum product clean-up category of point sources require the same effluent limitations or operating conditions, require the same or similar monitoring conditions, and are more appropriately controlled under a general permit than under an individual permit. Given that many facilities with petroleum product contamination contain similar contaminants, the Department has issued one master general permit to regulate these wastestreams. Issuance of a master general permit serves to simplify and streamline the NJPDES permitting process for these similar types of discharges.

Applicants must request authorization to be covered under the general permit by submitting appropriate NJPDES application forms. If the New Jersey Department of Environmental Protection (hereafter "the Department") determines that the individual facility meets the eligibility requirements of the master GPPC permit, then an individual authorization is issued to that facility.

Any individual authorization issued under the GPPC permit is given two NJPDES numbers. The NJPDES number on the individual authorization page will be specific to the individual facility whereas the NJPDES number NJ0102709 of the master general permit is for the master GPPC permit.

2 Name and Address of the Applicant:

Indicated on individual authorizations.

3 Name and Address of the Facility/Site:

Indicated on individual authorizations.

4 Discharge Location Information and Receiving Waterbody Classification:

The receiving waterbody classification and outfall name for each discharge is indicated on the individual authorization page for each facility. A copy of the appropriate section of a USGS quadrangle map indicating the location of the facility and discharge point(s) is also included in each individual authorization.

Receiving waterbody classifications are obtained from N.J.A.C. 7:9B-1.1 et seq., the New Jersey Surface Water Quality Standards (NJSWQS). In accordance with the NJSWQS, saline waters are considered to be those waters classified as SE1, SE2, SE3, or SC and fresh waters are considered to be those waters classified as FW1 or FW2 waters. For waters with two classifications (e.g. FW2-NT/SE1), the waterbody is defined as saline if the result of the salinity measurement exceeds 3.5 parts per thousand at mean high tide or as fresh if the salinity is less than or equal to

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3.5 parts per thousand, in accordance with N.J.A.C. 7:9B-1.4. With respect to the Delaware River, where the classifications are specified as zones, the Delaware Memorial Bridge is the approximate location of the interface between fresh and saline waters; therefore, discharges north of the Delaware Memorial Bridge will be considered to be discharging to fresh waters and dischargers south of the Delaware Memorial Bridge will be considered to be discharging to saline waters.

As per the SQWS at N.J.A.C. 7:9B, the designated uses for the Freshwater 2 (FW2), Saline Estuary 1 (SE1), Saline Estuary 2 (SE2), Saline Estuary 3 (SE3), and Saline Coastal (SC) receiving waters are:

FW2:
1. Maintenance, migration and propagation of the natural and established biota;
2. Primary and secondary contact recreation;
3. Industrial and agricultural water supply;
4. Public potable water supply after conventional filtration treatment (a series of processes including filtration, flocculation, coagulation, and sedimentation, resulting in substantial particulate removal but no consistent removal of chemical constituents) and disinfection; and
5. Any other reasonable uses.

SE1:
1. Shellfish harvesting in accordance with N.J.A.C. 7:12;
2. Maintenance, migration and propagation of the natural and established biota;
3. Primary and secondary contact recreation; and
4. Any other reasonable uses.

SE2:
1. Maintenance, migration and propagation of the natural and established biota;
2. Migration of diadromous fish;
3. Maintenance of wildlife;
4. Secondary contact recreation; and
5. Any other reasonable uses.

SE3:
1. Secondary contact recreation;
2 Maintenance and migration of fish populations;
3 Migration of diadromous fish;
4. Maintenance of wildlife; and
5. Any other reasonable uses.

SC:
1. Shellfish harvesting in accordance with N.J.A.C. 7:12;
2. Primary and secondary contact recreation;
3. Maintenance, migration and propagation of the natural and established biota; and
4. Any other reasonable uses.

The designated uses for the mainstem Delaware River and Delaware Bay are those contained in "Delaware River Basin Commission, Water Quality Regulations, Administrative Manual - Part III," Article 3, dated October 23, 1996, including all amendments and future supplements thereto and are described below:

Zone 1C is that part of the Delaware River extending from the U.S. Routes 6 and 209 bridge at Port Jervis, New York, R.M. 254.75, to Tocks Island Dam, 217.0 (proposed axis of dam).

The quality of Zone 1C waters shall be maintained in a safe and satisfactory condition for the following uses:
1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

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2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. spawning and nursery habitat for anadromous fish,
   c. passage of anadromous fish,
   d. wildlife; 29
3. recreation.

Zone 1D is that part of the Delaware River extending from Tocks Island Dam, R.M. 217.0 (proposed axis of dam), to the mouth of the Lehigh River at Easton, Pennsylvania, R.M. 183.66.

The quality of Zone 1D waters shall be maintained in a safe and satisfactory condition for the following uses:
1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;
2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. spawning and nursery habitat for anadromous fish,
   c. passage of anadromous fish,
   d. wildlife;
3. recreation.

Zone 1E is that part of the Delaware River extending from the mouth of the Lehigh River at Easton, Pennsylvania, R.M. 183.66, to the head of tidewater at Trenton, New Jersey, R.M. 133.4 (Trenton-Morrisville Toll Bridge).

The quality of Zone 1E waters shall be maintained in a safe and satisfactory condition for the following uses:
1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;
2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. spawning and nursery habitat for anadromous fish,
   c. passage of anadromous fish,
   d. wildlife;
3. recreation.

Zone N2 is: 1. Clove Brook extending from its source in Steeny Kill Lake in New Jersey to its mouth in New York at R.M. 0.5 on the Neversink River; an unnamed tributary of Clove Brook extending from its source in New York to its mouth in New Jersey at R.M. 1.0 on Clove Brook; an unnamed tributary to the above unnamed tributary of Clove Brook extending from its source in New York to its mouth in New Jersey at R.M. 0.7 on the unnamed tributary of Clove Brook.

The quality of Zone N2 waters shall be maintained in a safe and satisfactory condition for the following uses:
1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;
2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. maintenance and propagation of trout,
   c. wildlife;
3. recreation.

Zone 2 is that part of the Delaware River extending from the head of tidewater at Trenton, New Jersey, R.M. (River Mile) 133.4 (Trenton-Morrisville Toll Bridge) to R.M. 108.4 below the mouth of Pennypack Creek, including the tidal portions of the tributaries thereof.

The quality of Zone 2 waters shall be maintained in a safe and satisfactory condition for the following uses:
1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

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2. a. maintenance and propagation of resident fish and other aquatic life,
   b. passage of anadromous fish,
   c. wildlife;
3. recreation;
4. navigation.

Zone 3 is that part of the Delaware River extending from R.M. 108.4 to R.M. 95.0 below the mouth of Big Timber Creek, including the tidal portions of the tributaries thereof.

The quality of Zone 3 waters shall be maintained in a safe and satisfactory condition for the following uses:
1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;
2. a. maintenance of resident fish and other aquatic life,
   b. passage of anadromous fish,
   c. wildlife;
3. recreation - secondary contact;
4. navigation.

Zone 4 is that part of the Delaware River extending from R.M. 95.0 to R.M. 78.8, the Pennsylvania-Delaware boundary line, including the tidal portions of the tributaries thereof.

The quality of Zone 4 waters shall be maintained in a safe and satisfactory condition for the following uses:
1. industrial water supplies after reasonable treatment;
2. a. maintenance of resident fish and other aquatic life, 64
   b. passage of anadromous fish,
   c. wildlife;
3. a. recreation - secondary contact above R.M. 81.8,
   b. recreation below R.M. 81.8;
4. navigation.

Zone 5 is that part of the Delaware River extending from R.M. 78.8 to R.M. 48.2, Liston Point, including the tidal portions of the tributaries thereof.

The quality of waters in Zone 5 shall be maintained in a safe and satisfactory condition for the following uses:
1. industrial water supplies after reasonable treatment;
2. a. maintenance of resident fish and other aquatic life,
   b. propagation of resident fish from R.M. 70.0 to R.M. 48.2,
   c. passage of anadromous fish,
   d. wildlife;
3. recreation;
4. navigation.

Zone 6 is Delaware Bay extending from R.M. 48.2 to R.M. 0.0, the Atlantic Ocean, including the tidal portions of the tributaries thereof.

The quality of Zone 6 waters shall be maintained in a safeand satisfactory condition for the following uses:
1. a. industrial water supplies after reasonable treatment,
2. a. maintenance and propagation of resident fish and other aquatic life,
   b. maintenance and propagation of shellfish,
   c. passage of anadromous fish,
   d. wildlife;
3. recreation;
4. navigation.

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5 Type and Quantity of the Wastes or Pollutants:

The Permit Summary Table near the end of this fact sheet contains a summary of the quantity and quality of pollutants treated and discharged from the facilities covered under this GPPC permit. Effluent data was obtained from the Monitoring Report Forms (MRFs) for the time period specified in the table for any facilities covered under the GPPC permit.

Residuals/Sludge Conditions:

All treatment works with a discharge regulated under N.J.A.C. 7:14A must have permits that implement applicable technical standards for residuals management. Generally, the permit issued to the treatment works generating the residual will include applicable residual quality monitoring as well as other general conditions required by N.J.A.C. 7:14A-6. In addition, the permit may include conditions related to any aspect of residual management developed on a case-by-case basis where the Department determines that such conditions are necessary to protect public health and the environment.

Typically, spent granular activated carbon generated by the treatment systems at these types of facilities is regenerated for further use and is not considered to be a sludge for purposes of reporting under the Sludge Quality Assurance Regulations (SQAR, N.J.A.C. 7:14C). Bag filters and cartridge filters removed from these treatment systems are also not considered to be sludges. However, these materials are considered to be residuals as defined in the New Jersey Pollutant Discharge Elimination System regulations (NJPDES, N.J.A.C. 7:14A). Consequently, general residuals conditions have been included in Part II of the permit. Residuals removed that are manifested as hazardous waste are exempt from SQAR as provided for under N.J.A.C 7:14C-1.13(b)1.iii. Should there be any significant change in residual use or disposal practices, the permittee shall give written notification to the Department in accordance with Part II, General Conditions, Section B.4.a.

The documents listed below have been used to establish the residual conditions of the Draft Permit:

a. United States Environmental Protection Agency "Standards for the use or disposal of sewage sludge" (40 CFR Part 503),
b. "New Jersey Pollutant Discharge Elimination System" (N.J.A.C. 7:14A),
c. Technical Manual for Residuals Management, May 1998,
d. USEPA Part 503 Implementation Guidance, EPA 833-R-95-001, October 1995. This document is a compilation of federal requirements, management practices and EPA recommended permit conditions for sewage sludge use and management practices,
e. USEPA A Plain English Guide to the EPA Part 503 Biosolids Rule, EPA/832/R-93/003, September 1994,
f. New Jersey "Statewide Sludge Management Plan", January 2006 and
g. New Jersey "Sludge Quality Assurance Regulations" (SQAR), N.J.A.C. 7:14C.

6 Description of Facilities Covered by the Master GPPC Permit:

Authorized permittees will discharge only decontaminated groundwater resulting from the remediation of contaminated groundwater associated with petroleum products. Dewatering and pump test discharges that have petroleum product contamination are also eligible under this master permit.

This permit authorizes the discharge of these point sources into surface waters of the State or separate storm sewers, except those waters classified as FW-1 and PL (Pinelands), in compliance with the limitations and conditions described below and in a manner that will not cause violation of the NJSWQS of N.J.A.C. 7:9B-1.1 et seq. and the Federal Surface Water Quality Standards, 40 CFR 131.

All facilities considered eligible under this master general permit are considered minor facilities by the Department in accordance with the United States Environmental Protection Agency (EPA) rating criteria.

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Effluent limitations are dependent on the quality of the contaminated groundwater, contaminants present, the duration of the effluent discharge, the ultimate receiving waterbody, and the nature of the remedial activity. Therefore, this permit contains three effluent limitation tables to address various concerns. The three tables can be described as follows:

Table 1: Remediation discharges into waters classified as FW2-NT, FW2-TM, FW2-TP, SE, or SC where petroleum related constituents are present. Other metals, volatile organics, acid extractables, base-neutrals and pesticides may also be present.

Table 2: Short term dewatering or pump test discharges into waters classified as FW2-NT, FW2-TM, FW2-TP, SE or SC where petroleum related constituents are present. Other metals, volatile organics, acid extractables, base-neutrals and pesticides may also be present.

Table 3: Remediation discharges into waters classified as C1 (Category 1) where strictly petroleum related constituents are present.

In order to minimize confusion for renewal authorizations, all outfall designations have been retained from the previous individual general permit authorization. For new authorizations under this master general permit, outfalls will be designated as DSN 001A regardless of which table is utilized.

Petroleum products are defined as leaded gasoline, unleaded gasoline, aviation fuel, jet fuel, kerosene, diesel fuel, number 1 fuel oil, number 2 fuel oil, number 4 fuel oil, number 5 fuel oil and number 6 fuel oil. If additional site specific constituents are contained in the petroleum product discharge, the Department will make a case specific determination of the applicant's eligibility for this general permit. If the Department determines that an applicant is not eligible for this general permit due to site specific constituents, the applicant may pursue an individual permit. This permit is not intended for groundwater contamination at residential homes.

7 History of GPPC Permit:

The first master GPPC permit was issued on October 29, 1993. This GPPC permit was tracked as "Category B4B" in the Department's database. The October 29, 1993 master GPPC permit authorized the discharge of treated groundwater (i.e. remediations, dewatering projects and pump tests) contaminated by gasoline as well as by other petroleum products. This October 29, 1993 permit served to replace the General Groundwater Fuel Clean-up (GFC) permit issued on June 2, 1988. The GFC permit (Category B4) was limited to discharges resulting from gasoline contamination and did not cover contamination by other petroleum products.

The October 29, 1993 master GPPC permit was renewed on October 28, 1998. The October 28, 1998 master GPPC permit contained several differences from the October 29, 1993 master permit including the following: effluent limitations and/or monitoring requirements for Methyl *tert* butyl ether (MTBE) and *tert* butyl alcohol (TBA); authorization for remediation discharges where other metals, volatile organics, acid extractables or base/neutral compounds were present; and biomonitoring requirements (i.e. whole effluent toxicity) for any remediation discharge where metals were present in addition to petroleum related constituents.

The October 28, 1998 master GPPC permit was renewed on October 31, 2003. Differences from the October 28, 1998 permit included imposition of an alternate lead limit; inclusion of an influent TBA monitoring requirement; and discontinuation of the authorization to discharge to Pinelands waters under Table C.

The master GPPC permit was renewed on November 14, 2008. Differences from the 2008 master GPPC permit include the simplification to three tables, imposition of a more stringent MTBE limit, the inclusion of a TBA limit, inclusion of an alternate lead limit, the ability to regulate pesticides, and the inclusion of alternate monitoring frequencies dependent on site-specific factors.

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8 Background to the Selection of Regulated Parameters for all Tables:

A summary of effluent data is included in the Permit Summary Tables at the end of this Fact Sheet. In addition, influent data (untreated wastewater) continues to be required in the applications for individual authorizations under the master GPPC permit and was considered as part of the decision making in this renewal permit. Both effluent and influent data was considered in the Department's determination regarding which parameters to regulate. In addition, the Department considered the parameters included in the existing GPPC permit, in accordance with N.J.A.C. 7:14A-13.19, as well as information contained in available literature.

Flow, pH, Total Organic Carbon, Total Suspended Solids, and Petroleum Hydrocarbons

As discussed further in the section for Table 1, the Department has retained effluent limitations and/or monitoring requirements for **flow**, **pH**, **total organic carbon**, **total suspended solids**, and **petroleum hydrocarbons** in the master GPPC permit renewal. The majority of these parameters are generally regulated in all NJPDES/DSW permits throughout the State of New Jersey for wastewater discharges. Total organic carbon, total suspended solids and petroleum hydrocarbons are consistently present at detectable levels in untreated groundwater as evidenced by recent renewal application data for requests for authorization under the master GPPC permit renewal.

Benzene

Effluent limitations and monitoring requirements have been retained for benzene from the 2008 master GPPC permit because benzene, ethylbenzene, toluene and xylene (BTEX) constituents are consistently present in petroleum products. As discussed in the 2008 master GPPC permit, benzene is singled out as an appropriate indicator parameter for BTEX constituents and other volatile organic compounds because of its treatability characteristics. Two of the most widely used technologies for the treatment of groundwater contaminated with petroleum products are air stripping and granular activated carbon. Because compounds with lower Henry's Law Constants are more difficult to remove by air stripping than compounds with higher Henry's Law Constants, the compound with the lowest Henry's Law Constant will generally be the limiting compound where multiple volatile organic compounds are present.[1] In addition to Henry's Law Constants, generally the higher the solubility and boiling point of a constituent in water, the more difficult it is to remove that constituent from the water using air stripping.[1] Benzene has a relatively low Henry's Law Constant and a relatively high solubility in water at a consistent temperature; therefore, benzene is an appropriate indicator parameter for the treatment efficiency of groundwater contaminated with petroleum products. Considering treatment with granular activated carbon, benzene has a low mean adsorptive capacity and is therefore expected to be one of the first constituents to "break-through" the carbon or appear in the effluent when the adsorptive capacity is exhausted.[1] In addition to mean adsorption capacity, constituents with a high boiling point in water also "break through" carbon first thereby further supporting the use of benzene as a major indicator parameter for the control of pollutants from petroleum product contaminated groundwater.[1]

The NJSWQS for benzene, ethylbenzene and toluene for freshwater are 0.15 µg/L, 530 µg/L and 1300 µg/L, respectively. A NJSWQS does not exist at this time for xylene. Because the NJSWQS for benzene is significantly lower than that for ethylbenzene and toluene, this further supports the inclusion of an effluent limit for benzene.

In sum, in order to control the discharge levels of benzene, ethylbenzene, toluene and xylene, an effluent limitation has been retained for benzene.

Naphthalene

Effluent limitations and monitoring requirements have been retained for naphthalene from the 2008 master GPPC permit because this constituent is consistently present in petroleum products based on GPPC permit renewal application data. Naphthalene can be present in gasoline as well as fuel oils, although it is typically present in higher concentrations in fuel oil. Naphthalene has a very low Henry's Law Constant and is therefore more difficult to remove by air stripping than most compounds including benzene.[1] Considering adsorptive capacities, benzene is expected to "break-through" the granular activated carbon before naphthalene; however, because benzene may not be present in

fuel oils in large quantities, it is still necessary to limit naphthalene to ensure that the removal efficiency of treatment is adequate. [1]

Other Organics Which May Be Present in Petroleum Products

Other compounds indicated as present in a random sampling of GPPC renewal applications include phenanthrene, acenapthene, fluorene, methylene chloride, di N butyl phthalate, 2,4 dimethyl phenol, bis (2-ethylhexyl) phthalate and phenol. Although these compounds may be present on a case-by-case basis in petroleum products, the Department will not impose effluent limitations and/or monitoring requirements for any of these compounds if they are present in trace amounts. This is because it is expected that limiting benzene and naphthalene will serve to control the discharge of these compounds as benzene and naphthalene are present at significantly higher levels and are comparatively more difficult to treat based on treatability information. However, if these compounds are present at levels comparable to N.J.A.C. 7:14A-12, Appendix B, the Department may limit these compounds as discussed later.

Total Recoverable Lead

Effluent limitations and monitoring requirements have been retained for total recoverable lead on a case-by-case basis. The applicability of the lead limitation and monitoring requirement is dependent on whether or not detectable levels of lead are indicated in the NJPDES GPPC permit application, in levels comparable to or in excess of the remediation standards at N.J.A.C. 7:14A-12, Appendix B.

Methyl *tert* Butyl Ether

Effluent limitations and monitoring requirements have been retained for methyl *tert* butyl ether (MTBE) in the master GPPC permit renewal since recent application data indicates the presence of MTBE. If there is a consistent record of influent MTBE not being detected, the Department will not impose an MTBE effluent limit and monitoring requirement in individual authorizations.

MTBE has been blended with gasoline in the United States since 1979, initially as an octane enhancer then subsequently as an oxygenate and was used to replace lead as an octane enhancer. The purpose of an oxygenate is to help gasoline burn more completely, thereby reducing tailpipe emissions, diluting or displacing gasoline components such as benzene and sulfur; and optimization of oxidation during the combustion process. The volume of MTBE blended with gasoline had increased between 1992 and 2005 in response to the Clean Air Act Amendments for oxygenated fuels.[1] Congress passed the Energy Policy Act in 2005 which removed the requirement for oxygenates in gasoline. This change caused refiners to start using ethanol to blend with fuel. Therefore, MTBE has not significantly been used since 2005. [1]

MTBE, a colorless, flammable liquid with a turpentine-like odor, is highly water soluble, highly flammable and extremely volatile. MTBE does not adsorb to vadose zone materials and, along with its high vapor pressure, moves quickly through soil columns. MTBE has higher water solubility, exhibits lower adsorption to soil, and is more resistant to chemical degradation than the other common groundwater contaminants from gasoline namely benzene, toluene, ethylbenzene, and xylene (BTEX compounds).[4] The water solubility of MTBE is about 50 g/L which makes it about 25 times more soluble than benzene, the most soluble of the BTEX constituents. [4] This implies that MTBE should be more readily leached to groundwater, and transported more quickly and further in groundwater, than the BTEX compounds. [4] Because of its low Henry's Law Constant, MTBE is difficult to remove once it is made soluble in groundwater.[2]

Air stripping, to remove some MTBE and most of the other volatile organic compounds, followed by activated carbon, to remove the remainder, can be the most efficient treatment approach in some cases. Other forms of treatment to remove MTBE include soil vapor extraction (SVE) and activated oxidation technologies. SVE pulls air through the soil to volatize MTBE where the vapors are then extracted and vacuumed from the soil to be properly treated and disposed of. Activated oxidation techniques use a combination of ultraviolet light, chemical oxidants, and catalysts to transform the MTBE. [3]

***tert* Butyl Alcohol**

Effluent limitations and monitoring requirements have been retained for *tert* butyl alcohol (TBA) in the master GPPC renewal since recent application data indicates the presence of TBA. If there is a consistent record of influent TBA not being detected, the Department will not impose a TBA effluent limit and monitoring requirement in individual authorizations.

It should be noted that TBA is often detected in groundwater affected by spills or leaks of fuels oxygenated with MTBE. TBA in groundwater may originate from three separate sources. First, in some areas of the United States, TBA has been directly added to fuels as an oxygenate or octane booster. Second, commercial MTBE may contain a small percentage of TBA (Shell Global Solutions 2003). Third, TBA has been documented as an intermediate or transformation product of MTBE biodegradation (Schmidt et al. 2004). TBA also may be detected in groundwater samples as a result of hydrolysis of MTBE to TBA during sample preservation or analysis (O'Reilly et al. 2001; Lin, Wilson, and Fine 2003). [4]

Because TBA is a metabolite of MTBE, TBA could be present in greater quantities in the effluent from the treatment system as compared to the influent. Despite the physical differences, the same technologies are generally used for MTBE and TBA as for other gasoline constituents. However, the application of these technologies needs to be adjusted significantly based on the properties of the target compounds. [4]

References:
1. Methyl Tertiary Butyl Ether (MTBE), Gasoline, from the USEPA website at http://www.epa.gov/mtbe/gas.htm.
2. Koenigsberg, S. "MTBE Wild Card in Groundwater Cleanup", Environmental Protection. November 1997. Page 26. (http://www.researchgate.net/publication/255261901_MTBE_Wild_card_in_groundwater_cleanup)
3. Methyl Tertiary Butyl Ether (MTBE), Clean Up and Treatment, from the USEPA website at http://www.epa.gov/mtbe/clean.htm.
4. ITRC (Interstate Technology & Regulatory Council). 2005. *Overview of Groundwater Remediation Technologies for MTBE and TBA*. MTBE-1. Washington, D.C.: Interstate Technology & Regulatory Council, MTBE and Other Fuel Oxygenates Team. Available on the Internet at http://www.itrcweb.org.

9 Description of Limitations and Conditions for all Tables:

A. Basis for Effluent Limitations and Permit Conditions - General

The effluent limitations and permit conditions in this permit have been developed to ensure compliance with the following:

1. NJPDES Regulations (N.J.A.C. 7:14A),
2. New Jersey Surface Water Quality Standards (N.J.A.C. 7:9B),
3. New Jersey 2010 Integrated Water Quality Monitoring and Assessment Report (Integrated Report),
4. Water Quality Regulations of the Delaware River Basin Commission (N.J.A.C. 7:9B-1.5(b)1),
5. Interstate Environmental Commission (N.J.A.C. 7:9B-1.5(b)2),
6. Existing permit limitations in accordance with N.J.A.C. 7:14A-13.19 and 40 CFR 122.44 (antibacksliding requirements),
7. Permit limitations in accordance with N.J.A.C. 7:9B-1.5(d) (antidegradation requirements),
8. Statewide Water Quality Management Planning Rules (N.J.A.C. 7:15).

Technology based limitations are authorized by Section 301 of the Clean Water Act, 40 CFR 122, N.J.S.A. 58:10A-4, and N.J.A.C. 7:14A-13.2(a)1.ii., 13.3(b), and 13.4. BPJ determinations are authorized by Section 402 (a)(1) of the Clean Water Act.

In accordance with N.J.A.C. 7:14A-13.5, Water Quality Based Effluent Limitations (WQBELs) are imposed when it has been determined that the discharge of a pollutant causes an excursion of criteria specified in the New Jersey

Surface Water Quality Standards (NJSWQS), N.J.A.C. 7:9B-1.1 et seq., and the Federal Water Quality Standards, 40 CFR Part 131. WQBELs are authorized by Section 301 of the Clean Water Act, 40 CFR 122, N.J.S.A. 58:10A-4, and N.J.A.C. 7:14A-13.2 and 13.3. The policies used to develop WQBELs are contained in the State and Federal Standards. Specific procedures, methodologies, and equations are contained in the current USEPA "Technical Support Document for Water Quality-based Toxics Control" (TSD) (EPA- 505/2-90-001) and are referenced in N.J.A.C. 7:14A-13.5 and 13.6.

Expression of all effluent limitations is in accordance with N.J.A.C. 7:14A-13.14 and 13.15. Whole effluent toxicity limitations are expressed as a minimum as a percent.

This permit action does not authorize any increase in the concentration or loading of pollutants above those levels authorized under the existing permit. All permit limitations and conditions in this permit action are equal to or more stringent than those contained in the existing permit action. As a result, this permit action satisfies the federal and state anti-degradation regulations at 40 CFR 131.12 and N.J.A.C. 7:9B-1.5(d), and no further anti-degradation analysis is necessary.

B. Basis and Derivation for Effluent Limitations and Monitoring Requirements - Specific

Summary of Monitoring Report Form Data

A full summary of monitoring report form data is included at the end of this Fact Sheet. This data was evaluated in determining whether or not facilities can meet the proposed limitations.

Dilution Credit for all Tables

The Department has not considered dilution effects in the application of any effluent limits in this master GPPC permit renewal. Consideration of site-specific dilution effects is not feasible for a master general permit where effluent limits and conditions need to be streamlined.

Table 1

- Remediation discharges into waters classified as FW2-NT, FW2-TM, FW2-TP, SE or SC where petroleum product related constituents are present. Effluent limitations and monitoring requirements can also be included for metals, volatile organics, acid extractables, base/neutral compounds and pesticides.

Flow

Monitoring for flow is required pursuant to N.J.A.C. 7:14A-13.13 and is consistent with the existing master GPPC permit. Flow monitoring shall be performed with a flow meter on a continuous basis.

Total Suspended Solids (TSS)

The TSS limitation for discharges to FW2-NT waters, SE, SC waters, and fresh and saline portions of the Delaware River is consistent with the 2008 master GPPC permit. This daily maximum limitation of 40 mg/L is also consistent with the NJSWQS at N.J.A.C. 7:9B-1.1 et seq. for FW2-NT waters. This limitation is economically and technologically achievable based on monitoring report form effluent data which shows average TSS levels well below the limitation of 40 mg/L. Monthly average monitoring and reporting is also required.

The TSS limitation for discharges to FW2-TM and FW2-TP is 25 mg/L as a daily maximum and is consistent with the 2008 master GPPC permit. This limitation is also consistent with the NJSWQS at N.J.A.C. 7:9B-1.1 et seq. for FW2-TM and FW2-TP waters. This limitation is economically and technologically achievable based on monitoring report form effluent data. Monthly average monitoring and reporting is also required.

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Petroleum Hydrocarbons

The effluent limitations for petroleum hydrocarbons are consistent with the 2008 master GPPC permit and are consistent with N.J.A.C. 7:14A-12.8. These limitations are 10 mg/L as a monthly average and 15 mg/L as a daily maximum. Monitoring report form effluent data shows that treatment systems are consistently capable of reducing total petroleum hydrocarbon levels well below the proposed effluent limitations.

Total Organic Carbon (TOC)

The effluent limitation of 20 mg/L as a daily maximum for TOC is consistent with the 2008 master GPPC permit. This limitation is economically and technologically achievable based on monitoring report form effluent data. Monthly average monitoring and reporting is also required.

pH

The pH range of 6.0 standard units as a minimum and 9.0 standard units as a maximum is imposed for both fresh and saline waters consistent with the 2008 master GPPC permit. These minimum and maximum pH levels are economically and technologically achievable based on existing monitoring report form effluent data.

Benzene

The effluent limitation of 7 µg/L as a daily maximum for benzene is consistent with the 2008 master GPPC permit. This daily maximum limit is equivalent to the recommended quantitation level (RQL) for benzene and is consistent with N.J.A.C. 7:14A-12, Appendix B. Any value below the RQL is considered to be non-detectable for the purposes of permit compliance. Monthly average monitoring and reporting is also required. Based on existing monitoring report form data this limitation is both economically and technologically achievable.

Naphthalene

The effluent limitations for naphthalene of 22 µg/L as a monthly average and 59 µg/L as a daily maximum are consistent with the 2008 master GPPC permit. These limitations are economically and technologically achievable as evidenced by existing monitoring report form effluent data. These limitations are also consistent with N.J.A.C. 7:14A-12, Appendix B for FW2 waters.

Total Recoverable Lead

For renewal authorizations: The daily maximum effluent limitation of 10 µg/L continues to be applicable to those discharges where lead is shown to be detectable in the permittee's GPPC permit application or in other available data. This limit is consistent with the 2008 master general permit and is appropriate pursuant to N.J.A.C. 7:14A-13.19.

For new authorizations: The effluent limitation of 37 µg/L as a monthly average and 79 µg/L as a daily maximum are only applicable for those discharges where lead is shown to be detectable in the permittee's GPPC permit application or in other available data. The Department has determined that it is beneficial and appropriate to include a limit as a monthly average. These limits are consistent with the 2008 master general permit.

Methyl *tert* Butyl Ether (MTBE)

Pursuant to the NJSWQS at N.J.A.C. 7:9B-1.1 et seq., there is a NJSWQS of 70 µg/L for MTBE. As a result, the Department has imposed a daily maximum limit of 70 µg/L in this master GPPC permit renewal. Monthly average monitoring and reporting is also required.

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***tert* Butyl Alcohol (TBA)**

In the 2008 master GPPC permit, the Department imposed an effluent and influent monitoring requirement for TBA. While a promulgated NJSWQS, pursuant to N.J.A.C. 7:9B-1.1 et seq. does not exist for TBA at this time, New Jersey does have a drinking water standard of 100 µg/L and an interim specific groundwater criterion of 100 µg/L. Because of the inclusion of TBA influent and effluent monitoring requirements as contained in the 2003 master GPPC permit, the Department has a comprehensive data set available for influent and effluent TBA. Treatability varies widely. Some sites are removing TBA despite significant influent levels while other sites are showing no change between influent and effluent values.

Based on a careful evaluation of the TBA data set, the Department established an effluent limitation based on Best Professional Judgment pursuant to 40 CFR Part 401.14. Specifically, the Department required an effluent limit of 500 µg/L as a quarterly average in the 2008 master GPPC permit. The Department has retained a quarterly average limit of 500 µg/L in this master GPPC permit renewal. Monitoring and reporting is also required as a monthly average and as a daily maximum.

Other Metals, Volatile Organics, Acid Extractables, Base/Neutral Compounds or Pesticides Present

The Department is continuing to include the authorization of discharges that contain these parameters in the master GPPC permit renewal since there are times that additional parameters are present in addition to petroleum related constituents. Inclusion of these pollutants in a general permit rather than an individual permit saves time and effort on the part of the permittee and the Department. By including these pollutants that are present in addition to petroleum product contamination, the Department can issue more NJPDES/DSW permits for remediation projects in an expeditious manner with no sacrifice in the protection of the water resource. If any of these pollutants are present in quantities comparable to the remediation standards at N.J.A.C. 7:14A-12, Appendix B, the Department may include effluent limitations and monitoring requirements for those pollutants included in Part III-Attachment.

The Department has expanded this master GPPC permit to allow for the inclusion of pesticides. Because these compounds are toxic in low amounts, the Department will issue an authorization for any discharge that may contain these components on a case-by-case basis. In reviewing applications to determine eligibility under this master general permit, the Department will consider such factors as the feasibility of meeting effluent limits, the level of Department oversight, and the availability of other discharge options. Given the environmental benefit of ensuring that pumped groundwater remains in the same aquifer, the Department has determined that this option is appropriate. The Department will review applications for remediation discharges on a case-by-case basis and, if the Department determines that the effluent limits can not be attained, it reserves the right to deny authorization to discharge under the master GPPC permit.

The effluent limitations for other metals, volatile organics, acid extractables, or base neutral compounds are consistent with the 2008 master GPPC permit. These limits are consistent with and were originally based on N.J.A.C. 7:14A-12, Appendix B for either FW2 or SE or SC waters depending on the classification of the receiving waterbody. Many of these effluent limits are equivalent to RQLs. Any effluent data which is below the RQL is considered to be non-detectable for the purposes of permit compliance.

Monitoring Frequencies for Flow, TSS, TOC, pH, Petroleum Hydrocarbons, Benzene, Naphthalene, Total Recoverable Lead (where applicable), MTBE, TBA, Metals, Volatile Organics, Acid Extractables, Base/Neutral Compounds and Pesticides (where applicable)

Monitoring frequencies for these pollutants are as follows:

- **For new authorizations and renewal authorizations:** A monthly monitoring frequency is specified for all parameters with the exception of petroleum hydrocarbons. A monthly monitoring frequency is consistent with the existing master GPPC permit for flow, TSS, TOC, pH, benzene, naphthalene, MTBE and TBA whereas a quarterly monitoring requirement is consistent with the existing GPPC permit for petroleum hydrocarbons.

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- **For renewal authorizations:** The Department may choose to impose a quarterly monitoring frequency for all parameters provided that all effluent data points for all parameters are consistently in compliance.

Whole Effluent Toxicity (WET)
- Requirements applicable only to those dischargers where one or more metals are present:

Section 101(a) of the CWA establishes a national policy of restoring and maintaining the chemical, physical and biological integrity of the Nation's waters. In addition, section 101(a)(3) of the CWA and the NJSWQS at N.J.A.C. 7:9B-1.5(a)3 state that the discharge of toxic pollutants in toxic amounts is prohibited. Further, 40 CFR 122.44(d) and N.J.A.C. 7:14A-13.6(a) require that where the Department determines using site-specific WET data that a discharge causes, shows a reasonable potential to cause, or contributes to an excursion above the SWQS, the permitting authority must establish effluent limits for WET. In order to satisfy the requirements of the CWA, the NJSWQS and the NJPDES Regulations, the need for a WQBEL for WET was evaluated for these discharges.

There are two types of WET tests, acute toxicity testing which measures only the lethal effects (mortality) of the effluent on the test organisms, and chronic toxicity testing which measures the lethal and sublethal (ie. growth and/or reproduction) of the effluent on the test organisms. The type of WET test required for a particular facility is determined by evaluating the mixing characteristics of the effluent (i.e. dilution factor) in the receiving water. The acute mixing zone and the chronic mixing zone are compared, and whichever results in a more stringent limit is used to regulate the discharge.

The 2008 master GPPC permit included WET requirements for those discharges that contained metals in the discharge at levels comparable to NJSWQS. As a result, the Department does have existing WET data for these discharges for consideration in this GPPC master permit renewal. Existing WET data showed a wide variability in WET effects as summarized later in this Fact Sheet.

WQBELs for acute and chronic WET were calculated in accordance with N.J.A.C. 7:14A-13.6 and USEPA's "Technical Support Document for Water Quality Based Toxics Control" (EPA/505/2-90-001), March 1991 (TSD).

Since the master GPPC permit renewal does not consider dilution effects, these limits are developed using an acute dilution factor (Df_a) of 1 and a chronic dilution factor (Df_c) of 1. Because the vast majority of discharges covered under the master GPPC permit are routed to small waterbodies, the use of a dilution factor of one serves to simplify and streamline the master general permit and is likely reflective of site-specific conditions.

The Df_a and Df_c were then used to determine acute and chronic Wasteload Allocations (WLAs) consistent with N.J.A.C. 7:14A-13.5, using a steady state model, as specified in section 5.4.1 of the TSD. Consistent with recommendations in the TSD, values of 0.3 acute toxic unit (TU_a) and 1.0 chronic toxic unit (TU_c) were used to interpret the narrative water quality criteria for WET contained at N.J.A.C. 7:9B-1.14(c) (see Response to Comments 13-74 through 13-89, 29 NJR 1861, (May 5, 1997)). The acute WLA (WLA_a) was translated to equivalent chronic toxic units (WLA_{ac}), to enable comparison of acute and chronic WET limits, by multiplying the WLA_a by a default acute to chronic ratio (ACR) of 10.

The Department evaluated available chronic WET data collected under the existing GPPC permit. Chronic WET limits were applied to those sites where metals were present (excluding lead). Given that the GPPC permit covers similar discharges and chronic WET limits were only applied if metals were present, the Department has determined that this data is representative for consideration in retaining these requirements in this renewal permit. While much of the data indicated no toxicity (i.e. results of >100%), some data showed some toxicity. As a result the Department has retained the chronic WET limitation of 61% in this master GPPC permit renewal. A chronic WET limitation of 61% will continue to be applied to those sites were metals are present (excluding lead) at levels comparable to N.J.A.C. 7:14A-12, Appendix B.

For new discharges only (i.e. not renewal authorizations): In accordance with N.J.A.C. 7:14A-6.4(a) and 13.21(b), a schedule to achieve compliance with the new chronic WET WQBEL has been included in this permit and is applicable for new dischargers. Interim monitoring and reporting requirements have been included based on N.J.A.C.

7:14A-6.2(a)14. Specifically, monitoring only is required for the first three years of the discharge authorization beginning with the commencement of pumping. After that time the referenced limit of 61% is imposed.

For discharges to fresh waters: The test species method to be used for chronic testing shall be the *Ceriodaphnia dubia*, Survival and Reproduction Test, 40 CFR 136.3, method 1002.0 and will be indicated in Part III of the individual authorization. Such selection is based on the freshwater characteristics of the receiving stream, the existing permit (if applicable), N.J.A.C. 7:9B-1.5 and the Department's "Chronic Toxicity Testing Specifications for Use in the NJPDES Permit Program" document. This document is included as Appendix A of this permit, in accordance with N.J.A.C. 7:14A-6.5, 11.2(a)2.iv. and 40 CFR Part 136.

For discharges to saline waters: The test species method to be used for chronic testing shall be the *Mysidopsis bahia*, Survival, Growth, and Fecundity Test, 40 CFR 136.3, method 1007.0 and will be indicated in Part III of the individual authorization. Such selection is based on the saline characteristics of the receiving stream, the existing permit (if applicable), N.J.A.C. 7:9B-1.5 and the Department's "Chronic Toxicity Testing Specifications for Use in the NJPDES Permit Program" document. This document is included as Appendix A of this permit, in accordance with N.J.A.C. 7:14A-6.5, 11.2(a)2.iv. and 40 CFR Part 136.

The Toxicity Reduction Implementation Requirements (TRIR) are included in accordance with N.J.A.C. 7:14A-13.17(a), 7:14A-6.2(a)5 and recommendations in Section 5.8 of the TSD. The requirements are necessary to ensure compliance with the applicable WET limitation on its effective date and to expedite compliance with the WET limitation should exceedances of the WET limitation occur. As included in section B.1 of the TRIR requirements, the initial step of the TRIR is to identify the variability of the effluent toxicity and to verify that a consistent toxicity problem does in fact exist.

Effluent samples for conducting WET testing are to be collected after the last treatment step, consistent with the collection location for all other parameters. The monitoring frequency is set at **quarterly** consistent with the 2003 master GPPC permit. In the event there are more than ten data points showing results of greater than 100%, the Department can reduce the frequency to annual as specified in item A.1.k. of Part IV.

Table 2

- Short term dewatering or pump test discharges into waters classified as FW2-NT, FW2-TM, FW2-TP, SE or SC where petroleum product related constituents are present. Effluent limitations and monitoring requirements can also be included for metals, volatile organics, acid extractables, base/neutral compounds and pesticides.

Flow, TSS, Petroleum Hydrocarbons, TOC, pH, Benzene, Naphthalene, Total Recoverable Lead (where applicable), MTBE as well as Metals, Volatile Organics, Acid Extractable, Base/Neutral Compounds or Pesticides (where applicable)

The rationale for the effluent limitations and monitoring requirements for flow, TSS, Petroleum Hydrocarbons, TOC, pH, benzene, naphthalene, total recoverable lead (where applicable), MTBE and TBA for Table 2 is identical to the discussion for Table 1. If deemed appropriate and applied, the basis for the effluent limitations and monitoring requirements for metals, volatile organics, acid extractables, base/neutral compounds and pesticides is identical to the discussion for Table 1. Limitations for total recoverable lead are consistent with the limits for new authorizations since these are short term discharges.

TBA

A TBA limit of 500 µg/L has been applied as a monthly average based on Best Professional Judgment as discussed for Table 1. While a quarterly average has been imposed for Table 1, it is not certain that short term dewatering or pump test discharges will last a full quarter; therefore, this limit has been imposed as a monthly average. Monitoring and reporting is also required as a daily maximum.

Monitoring Frequency

Due to the short term and intermittent nature of dewatering and pump test activities, the monitoring frequency is set as follows:

Flow Rate	Expected Duration of Project	
	Less Than Two Months	Greater than Two Months
Less than 10 gallons per minute (gpm)	Once / 4 Days	Weekly
10 gpm to 50 gpm	Once / 4 Days	Weekly
Greater than 50 gpm	Once / 4 Days	Weekly

The Department reserves the right to adjust this monitoring frequency on an as needed basis based on site-specific factors.

Effective Date

The Department will authorize the dewatering or pump test portion of this permit for the first six months following the effective date of the individual authorization or before the expiration of the master general permit, whichever comes first. After such time the individual permit authorization will administratively expire. The Department may issue authorizations for a longer term on an as needed basis but any such period will not extend past the permit expiration date. Please note that the permittee may specify its effective date during the application process. For example, if a permittee expects to conduct a dewatering discharge activity in May, but submitted the application in February where this chosen effective date is specified, the Department can issue the individual permit authorization with a May 1 effective date.

Table 3

- Remediation discharges into waterbodies classified as C1 (Category One) where strictly petroleum product related constituents are present.

Impact of Discharge Approvals to High Water Quality Classifications

Pursuant to N.J.A.C. 7:9B-1.5(d), Category One waters shall be protected from any measurable changes to the existing water quality characteristics that are generally worse than the water quality criteria. However, often times when a pump and treat remediation project is deemed necessary, it is because the facility can not ensure hydraulic control of the contaminated groundwater plume and contaminated groundwater is migrating off-site which could impact sensitive receptors. Therefore, in order to ensure approval of these remediation projects in an expeditious manner, the Department has included requirements for remediation discharges to Category One waters in the master GPPC permit renewal. Water quality concerns have been considered for each limited parameter as discussed below where non-detectable limitations have been imposed in certain instances.

The Department has issued a minimal number of authorizations for Category One waters during the term of the 2008 master GPPC permit.

Flow

Monitoring for flow is required pursuant to N.J.A.C. 7:14A-13.13 and shall be metered on a continuous basis.

TSS, Petroleum Hydrocarbons, TOC

The effluent limitation for TSS is consistent with the 2008 master GPPC permit. Considering current monitoring report form data collected under the 2008 master GPPC permit, permittees can consistently comply with the proposed daily maximum effluent limitation of 25 mg/L; therefore, this limit is economically and technologically achievable. In

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fact, the vast majority of TSS effluent data collected under the 2008 master GPPC permit shows non-detectable levels. Monthly average monitoring and reporting is also required.

Effluent limitations for petroleum hydrocarbons are imposed consistent with the 2008 master GPPC permit. These limits of 10 mg/L as a monthly average and 15 mg/L as a daily maximum are consistent with N.J.A.C. 7:14A-12.8. Based on current monitoring report form data, current treatment technology can consistently treat total petroleum hydrocarbons to non-detectable or trace levels.

Effluent limitations for TOC are imposed consistent with the 2008 master GPPC permit. Based on current monitoring report form data, current treatment technology can consistently treat to the proposed limit of 20 mg/L as a daily maximum where current data shows primarily non-detectable or trace levels. Monthly average monitoring and reporting is also required.

pH

The effluent limits for minimum and maximum pH for Category 1 waters are based on N.J.A.C. 7:9B-1.1 et seq. for FW2 waters. The in-stream pH range of 6.5 standard units as a minimum and 8.5 standard units as a maximum have been imposed as effluent limits due to the high quality characteristics of Category 1 waters. These limits are consistent with the 2008 master GPPC permit.

Benzene, Total Recoverable Lead (where applicable)

Due to the low in-stream NJSWQS for benzene and total recoverable lead as well as the "no measurable change" criteria for Category 1 waters pursuant to N.J.A.C. 7:9B-1.5(d)6.iii., non-detectable effluent limitations are appropriate pursuant to N.J.A.C. 7:9B-1.5(e)7. Therefore, the RQL of 7 µg/L for benzene and 10 µg/L for lead have been established as daily maximum effluent limitations. RQLs are levels which certified laboratories can routinely attain as method detection levels. As such, any value below the RQL is considered to be non-detectable for the purposes of permit compliance. Monthly average monitoring and reporting is also required. A requirement for lead is only imposed if lead is present in the influent application data.

Naphthalene

Although there is no NJSWQS for naphthalene at this time, naphthalene is listed as a toxic pollutant at N.J.A.C. 7:14A-4 Appendix A Table II. Based on the fact that naphthalene is toxic as well as the "no measurable change" criteria for Category 1 waters, pursuant to N.J.A.C. 7:9B-1.5(d)6iii, the Department has determined that a non-detectable effluent limitation is appropriate. Therefore, the applicable RQL of 8 µg/L has been imposed as an effluent limitation consistent with the 2008 master GPPC permit.

MTBE

The Department has retained a daily maximum limitation of 70 µg/L from the 2008 master GPPC permit for Category One waters. This limit is consistent with the NJSWQS. Monthly average monitoring and reporting is also required.

TBA

The Department has conservatively imposed a TBA monthly average effluent limitation of 100 µg/L based on the drinking water standard and interim specific groundwater criterion. Monitoring and reporting is also required as a daily maximum.

Metals, Volatile Organics, Acid Extractable, Base/Neutral Compounds or Pesticides (where applicable)

The rationale for the effluent limitations and monitoring requirements for metals, volatile organics, acid extractables, base/neutral compounds and pesticides is identical to the discussion for Table 1.

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While the Department has issued a very limited number of authorizations under the master GPPC for C1 waterbodies, the Department is proposing to include the option to include effluent limitations and monitoring requirements for any metals, volatile organics, acid extractables, base/neutral compounds and pesticides that may be present. Effluent limits will be set at the Recommended Quantitation Level (RQL) as specified in Part III – Attachment. Inclusion of these pollutants in a general permit rather than an individual permit saves time and effort on the part of the permittee and the Department. By including these pollutants that are present in addition to petroleum product contamination, the Department can issue more NJPDES/DSW permits for remediation projects in an expeditious manner with no sacrifice in the protection of the water resource given these stringent effluent limits that are equivalent to the RQL. Any effluent data which is below the RQL is considered to be non-detectable for the purposes of permit compliance.

The Department will review applications for remediation discharges on a case-by-case basis and, if the Department determines that the effluent limits can not be attained, it reserves the right to deny authorization to discharge under the master GPPC permit.

Whole Effluent Toxicity (WET)

The Department has imposed WET requirements for Table 3 in the event that any metals are detected. The rationale for WET requirements is identical to that as specified in Table 1.

Monitoring Frequency

Due to the high quality classification of C1 waters, the monitoring frequency for Table 3 is set at once per two weeks for all parameters with the exception of WET which is set at quarterly.

C. Effluent Monitoring Frequencies and Sample Types:

Monitoring frequencies and sample types are in accordance with N.J.A.C. 7:14A-14, unless specified otherwise in the permit.

D. Recommended Quantitation Levels Policy (RQLs):

The Department developed the RQLs to insure that useful data is provided to the Department in order to characterize the discharger's effluent. The Department recommends that the permittee achieve detection levels that are at least as sensitive as the RQLs found in Part III. The Department has determined that the quantitation levels listed therein can be reliably and consistently achieved by most state certified laboratories for most of the listed pollutants using the appropriate procedures specified in 40 CFR Part 136. FAILURE TO ATTAIN A QUANTITATION LEVEL AS SENSITIVE AS A LISTED RQL IS NOT A VIOLATION OF THE PERMIT, BUT DOES TRIGGER SOME ADDITIONAL REPORTING REQUIREMENTS FOR THE PERMITTEE AS SPECIFIED IN PART IV OF THE PERMIT.

E. Reporting Requirements:

All data requested to be submitted by this permit shall be reported on the Discharge Monitoring Reports (DMRs) as appropriate and submitted to the Department as required by N.J.A.C. 7:14A-6.8(a).

F. General conditions:

In accordance with N.J.A.C. 7:14A-2.3 and 6.1(b), specific rules from the New Jersey Administrative Code have been incorporated either expressly or by reference in Part I and Part II.

G. Outfall Tag:

Pursuant to N.J.A.C. 7:14A-6.2(a)9, the permittee shall ensure that a tag is present to mark the location of the outfall pipe on or before the start of discharge.

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H. Operator Classification Number:

The operator classification requirement is no longer included in the individual requests for authorization. To obtain or determine the appropriate licensed operator classification for the treatment works utilized in each individual authorization, the permittee shall contact the Bureau of Construction and Connection Permits at (609) 984-4429.

I. Flow Related Conditions:

Groundwater remediations such as those regulated under this permit are not included in the applicable Water Quality Management Plan and/or Wastewater Management Plan for each individual request for authorization.

J. Compliance Schedule:

In accordance with N.J.A.C. 7:14A-6.4(a), a schedule of compliance is included in the permit for WET, including interim deadlines for progress or reports of progress towards compliance with the conditions of this permit. N.J.A.C. 7:14A-13.21(b) allows the Department to include a schedule to achieve compliance with a WET WQBEL. This compliance schedule time frame is established at three years and is modeled after the schedule applied to new source, new dischargers, or expanded direct discharges at N.J.A.C. 7:14A-12.31(c).

1. WET Compliance Schedule:

For new dischargers under Table 1 and, if deemed appropriate, Table 3, the Department may set a compliance schedule for WET. In this circumstance, the Department will set an initial and final phase for WET limits. During the **initial** phase, which begins from the commencement of pumping (as specified in the application) and extends three years from that effective date, a monitoring and reporting requirement applies for Chronic WET. During the **final** phase, a 61% effluent limit applies.

For Table 2 a WET limitation does not apply given the short term nature of the discharge.

10 Variances to Permit Conditions:

Procedures for modifying a WQBEL are found in the NJSWQS, N.J.A.C. 7:9B-1.8 and 1.9. If a WQBEL has been proposed in this permit action, the permittee may request a modification of that limitation in accordance with N.J.A.C. 7:14A-11.7(a). This request must be made prior to the close of the public comment period. The information that must be submitted to support the request may be obtained from the Bureau of Water Quality Standards and Assessment at (609) 777-1753.

11 Description of Procedures for Reaching a Final Decision on the Draft Action:

Please refer to the procedures described in the public notice that is part of the draft permit. In addition to the DEP Bulletin, the public notice for this permit action is published in the following newspapers:

Atlantic City Press *The Star Ledger* *The Times*

12 Contact Information

If you have any questions regarding this permit action, please contact Robert Hall, Tara Klimowicz or Brian Salvo all of the Bureau of Surface Water Permitting. All can be reached at either (609) 292-4860 or via e-mail at robert.hall@dep.state.nj.us, tara.klimowicz@dep.state.nj.us or brian.salvo@dep.state.nj.us.

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13 Data Summary

Wastewater data was summarized for the period beginning on April 2010 and ending on March 2013. There were 86 active outfalls within this period. Average and maximum values do not consider non-detectable quantities. Values that were out of compliance are not considered in the average, minimum, and maximum calculations.

Typical Petroleum Product Parameters

Parameter	Wastewater Data	Parameter	Wastewater Data
Total Suspended Solids, mg/L	average – 10.9 maximum - 40 # detect - 193 # non-detect -592 **% non-detect - 75%** # out of compliance – 10	Benzene, µg/L	average – 1.4 maximum – 7 # detect – 39 # non-detect - 746 **% non-detect - 95%** # out of compliance - 0
Petroleum Hydrocarbons, mg/L	average – 2.07 maximum – 7.5 # detect - 80 # non-detect - 342 **% non-detect - 81%** # out of compliance - 3	Naphthalene, µg/L	average – 3.12 maximum – 18.7 # detect – 39 # non-detect - 710 **% non-detect - 94%** # out of compliance – 0
Total Organic Carbon, mg/L	average – 2.93 maximum – 17.8 # detect - 449 # non-detect - 335 **% non-detect - 42%** # out of compliance – 4	Total Recoverable Lead, µg/L	average – 4.8 maximum – 21 # detect – 24 # non-detect - 88 **% non-detect - 78%** # out of compliance - 0
MTBE - Effluent, µg/L	average – 3.5 maximum - 57 # detect - 120 # non-detect - 615 **% non-detect - 83%** # out of compliance - 1	pH, s.u.	minimum – 5.2 maximum – 10.4 # < 6.0 – 4 # > 9.0 – 2 Total data points - 539
TBA - Effluent, µg/L	monthly average – 76.28 maximum – 500 # detect - 228 # non-detect - 508 **% non-detect – 69%** # out of compliance – 34 ---------- quarterly average – 67.51 # detect - 118 # non-detect - 204 **% non-detect - 61** # out of compliance - 29	Chronic WET, %	# < 20% - 6 # 20% to 40% - 4 # 40% to 60% - 5 # 60% to 80% - 13 # 80% to 100% - 5 # >100% - 32 **% >100% - 49%**

The following conclusions can be drawn from the existing data:

- In comparing effluent data to effluent limits, very few data points are out of compliance.
- The majority of the effluent points are non-detectable.
- Chronic toxicity data is available for 20 sites. This data ranges from 3.4 to >100%. This data supports the retention of the chronic toxicity requirement for Table 1.

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Summary of Toxic Pollutants from April 1, 2010 through March 31, 2013

Pollutants (All units are in µg/L)	Number of Non-Detect Values	Number of Detected Values	Maximum	Average*	Number of Sites that Include Limits for this Pollutant
1,1,1 Trichloroethane	0	1	0.06	0.06	4
1,1,2,2-Tetrachloroethane	0	1	0.16	0.16	1
1,1,2-Trichloroethane	0	1	0.19	0.19	1
1,1-Dichloroethane	0	1	0.13	0.13	4
1,1-Dichloroethylene	0	1	0.09	0.09	3
1,2,4-Trichlorobenzene	0	1	0.27	0.27	1
1,2-Dichlorobenzene	0	1	2.6	2.6	1
1,2-Dichloroethane	5	1	0.19	0.19	3
1,2-Dichloropropane	0	1	0.09	0.09	1
1,2-trans-Dichloroethylene	0	1	0.13	0.13	1
1,3-Dichlorobenzene	0	1	2.4	2.4	1
1,3-Dichloropropane	0	1	0.24	0.24	1
1,4-Dichlorobenzene	4	1	2.6	2.6	2
2,4,6-Dichlorophenol	0	1	2.4	2.4	1
2,4-Dichlorophenol	0	1	2.7	2.7	1
2,4-Dimethylphenol	128	1	3.5	3.5	13
2,4-Dinitrophenol	0	1	5.5	5.5	1
2,4-Dinitrotoluene	0	2	0.55	0.62	1
2-Chlorophenol	0	1	2.2	2.2	1
2-Nitrophenol	0	1	2.4	2.4	1
3,3-Dichlorobenzidine	0	1	5.0	5.0	1
4,6-Dinitro-o-cresol	0	1	4.8	4.8	1
4-Nitrophenol	0	1	2.4	2.4	1
Acrolein	0	1	1.3	1.3	1
Acrylonitrile	0	1	0.68	0.68	1
Anthracene	5	1	2.9	2.9	4
Arsenic (Total & TR)	52	88	11.7	123	16
Benzidine	0	1	0.91	0.91	1
Benzo (a) Anthracene	3	2	0.20	0.53	3
Benzo (a) Pyrene	3	2	0.10	0.29	3
Benzo (b) Fluoranthene	5	2	0.19	0.48	4
Benzo (k) Flouranthene	3	2	0.18	0.41	3
Bis(2-chloroethyl) ether	0	1	0.29	0.29	1
Bis(2-chloroisopropyl)ether	0	1	2.0	2.0	1
Bis 2 Ethyl Hexyl Phthalate	22	6	2.85	9.09	6
Bromoform	0	1	0.19	0.19	1
Butyl benzyl phthalate	0	1	2.6	2.6	1
Dichlorobromomethane					
Cadmium	4	1	0.89	0.89	6
Carbon Tetrachloride	0	1	0.06	0.06	1
Chlorobenzene	4	1	0.11	0.11	4
Chloroethane	0	1	0.17	0.17	3
Chloroform	0	1	0.08	0.08	1
Chromium	53	3	9.83	20.1	7

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Pollutants (All units are in µg/L)	**Number of Non-Detect Values**	**Number of Detected Values**	**Maximum**	**Average ***	**Number of Sites that Include Limits for this Pollutant**
Chrysene	4	2	1.65	3.2	4
Copper (Total & TR)	77	16	15.58	65.9	20
Cyanide	37	3	5.71	8.7	
Diethyl Phthalate	0	1	3.0	3.0	1
Dimethyl Phthalate	0	1	2.9	2.9	1
Dibenzo (a,h) anthracene	3	2	0.11	0.46	2
Dichlorobromomethane	0	1	0.2	0.2	1
Di-N-Butyl Phthalate	0	1	1.5	1.5	1
Ethylbenzene	0	1	0.1	0.1	1
Fluoranthene	4	2	1.68	0.26	4
Fluorene	12	1	2.9	2.9	5
Hexachlorobenzene	0	1	0.3	0.3	1
Hexachlorobutadiene	0	1	0.58	0.58	1
Hexachlorocyclopentadiene	0	1	1.7	1.7	1
Hexachloroethane	0	1	0.26	0.26	1
Indeno (1,2,3 c,d) Pyrene	4	2	0.14	0.46	3
Isophorone	0	1	2.8	2.8	1
Mercury	4	3	0.16	0.18	5
Methyl Bromide	0	1	0.18	0.18	1
Methyl Chloride	0	1	0.1	0.1	1
Methylene Chloride	0	1	0.18	0.18	2
Nickel (Total & TR)	23	9	10.02	23.8	8
Nitrobenzene	0	1	0.31	0.31	1
N-nitrosodimethylamine	0	2	2	3	1
Pentachlorophenol	0	1	5.4	5.4	1
Phenanthrene	13	1	3.2	3.2	6
Phenol (Single Compound)	24	3	2.44	11	7
Pyrene	4	2	1.53	3	4
Selenium	0	1	3.9	3.9	2
Silver	0	1	0.69	0.69	1
Tetrachloroethylene	1	1	0.1	0.1	3
Toluene	0	1	0.15	0.15	1
Trans-1,2-Dichloroethylene	1	0	<0.65	<0.65	1
Tricholoroethylene	1	1	0.09	0.09	2
Vinyl Chloride	1	1	0.14	0.14	3
Zinc (Total & TR)	98	101	53.68	341	32
*** Average values do not consider non-detectable quantities.**					

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14 Permit Summary Table

Unless otherwise noted all effluent limitations are expressed as maximums. MR indicates monitoring and reporting.

PARAMETER	UNITS	AVERAGING PERIOD	TABLE 1 - FINAL LIMITS	TABLE 2 - FINAL LIMITS	TABLE 3 - FINAL LIMITS
Flow	GPD	Monthly Avg. Daily Max.	MR MR	MR MR	MR MR
Total Suspended Solids (TSS)	mg/L	Monthly Avg. Daily Max.	MR 40 (1)	MR 40 (1)	MR 25
Petroleum Hydrocarbons	mg/L	Monthly Avg. Daily Max.	10 15	10 15	10 15
Total Organic Carbon	mg/L	Monthly Avg. Daily Max.	MR 20	MR 20	MR 20
pH Range	S.U.	Monthly Min. Monthly Max.	6.0 9.0	6.0 9.0	6.5 8.5
Benzene	µg/L	Monthly Avg. Daily Max	MR 7	MR 7	MR 7
Naphthalene	µg/L	Monthly Avg. Daily Max.	22 59	22 59	MR 8.0
Effluent MTBE	µg/L	Monthly Avg. Daily Max.	MR 70	MR 70	MR 70
Effluent TBA	µg/L	Monthly Avg. Quarterly Avg. Daily Max.	MR 500 MR	500 -- MR	100 -- MR
Total Recoverable Lead – renewal authorizations (2)	µg/L	Monthly Avg. Daily Max.	MR 10	N/A N/A	MR 10
Total Recoverable Lead – new authorizations (2)	µg/L	Monthly Avg. Daily Max.	37 79	37 79	MR 10
Chronic Toxicity, IC25	%	Minimum	61 (3) (4)	--	61 (3) (4)
Other Metals, Volatile Organics, Base/Neutral Compounds, Acid Extractables, Pesticides	µg/L	Monthly Avg. Daily Max.	Applied as needed – see Part III – Attachment (5)	Applied as needed – see Part III – Attachment (5)	Applied as needed – see Part III – Attachment (5)

Footnotes and Abbreviations:

(1) The daily maximum TSS limit is 25 mg/L for FW2-TM and FW2-TP waters.

(2) A lead limit and monitoring requirement is only applied if lead is present at quantities comparable to the remediation standards at N.J.A.C. 7:14A-12, Appendix B in the influent application data. For any renewal authorization, if lead is still present and the existing authorization contained a lead limit of 10 µg/L, this limit will be retained.

(3) Limit is only applicable if one or more metals are present in quantities comparable to or greater than the remediation standards at N.J.A.C. 7:14A-12, Appendix B.

(4) For new authorizations - Chronic WET limit is imposed with a three year compliance schedule beginning with commencement of pumping.

(5) Limits are applied as needed where parameters are detected at quantities comparable to the remediation standards at N.J.A.C. 7:14A-12, Appendix B. For Table 3 the RQL (as specified in Part III-Attachment) will be applied as the daily maximum effluent limit.

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15 Contents of the Administrative Record

The following items are used to establish the basis of the Draft Permit:

Rules and Regulations:

1. 33 U.S.C. 1251 et seq., Federal Water Pollution Control Act. [C]
2. 40 CFR Part 131, Federal Water Quality Standards. [A] [C]
3. 40 CFR Part 122, National Pollutant Discharge Elimination System. [C]
4. N.J.S.A. 58:10A-1 et seq., New Jersey Water Pollution Control Act. [A] [B]
5. N.J.A.C. 7:14A-1 et seq., New Jersey Pollutant Discharge Elimination System Regulations. [A] [B]
6. N.J.A.C. 7:9B-1 et seq., New Jersey Surface Water Quality Standards. [A] [B]
7. N.J.A.C. 7:15, Statewide Water Quality Management Planning Rules. [A] [B]
8. N.J.A.C. 7:14C, Sludge Quality Assurance Regulations. [B]

Guidance Documents / Reports:

1. "Field Sampling Procedures Manual", published by the NJDEP. [A]
2. "NJPDES Monitoring Report Form (MRF) Reference Manual", published by the NJDEP. [A]
3. "EPA Technical Support Document for Water Quality-based Toxics Control", EPA/505/2-90-001, March 1991. [A]
4. New Jersey's 2010 Integrated Water Quality Monitoring and Assessment Report (includes 305 (b) Report 303(d) List). [A] [B]
5. Methyl Tertiary Butyl Ether (MTBE), Gasoline, from the USEPA website at http://www.epa.gov/mtbe/gas.htm.
6. Koenigsberg, S. "MTBE Wild Card in Groundwater Cleanup", Environmental Protection. November 1997. Page 26. (http://www.researchgate.net/publication/255261901_MTBE_Wild_card_in_groundwater_cleanup)
7. Methyl Tertiary Butyl Ether (MTBE), Clean Up and Treatment, from the USEPA website at http://www.epa.gov/mtbe/clean.htm.
8. ITRC (Interstate Technology & Regulatory Council). 2005. Overview of Groundwater Remediation Technologies for MTBE and TBA. MTBE-1. Washington, D.C.: Interstate Technology & Regulatory Council, MTBE and Other Fuel Oxygenates Team. Available at http://www.itrcweb.org.

Permits / Applications:

1. NJPDES/DSW General Petroleum Product Cleanup (GPPC) Permit No. NJ0102709 issued on November 14, 2008 and effective January 1, 2009.
2. NJPDES/DSW General Petroleum Product Cleanup (GPPC) Permit No. NJ0102709 issued October 31, 2003 and effective December 1, 2003.
3. NJPDES/DSW General Petroleum Product Cleanup (GPPC) Permit No. NJ0102709 issued October 29, 1998 and effective December 1, 1998.
4. NJPDES/DSW General Groundwater Fuel Cleanup (GFC) Permit No. NJ0070122 issued September 26, 1988 and effective November 1, 1988.

Footnotes:

[A] Denotes items that may be found in the NJPDES/DSW Administrative Record Library located in the NJDEP Central File Room, 401 East State Street, Trenton, New Jersey.

[B] Denotes items that may be found on the New Jersey Department of Environmental Protection (NJDEP) website located at "http://www.state.nj.us/dep/".

[C] Denotes items that may be found on the United States Environmental Protection Agency (USEPA) website at http://www.epa.gov/."

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NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM

The New Jersey Department of Environmental Protection hereby grants you a NJPDES permit for the facility/activity named in this document. This permit is the regulatory mechanism used by the Department to help ensure your discharge will not harm the environment. By complying with the terms and conditions specified, you are assuming an important role in protecting New Jersey's valuable water resources. Your acceptance of this permit is an agreement to conform with all of its provisions when constructing, installing, modifying, or operating any facility for the collection, treatment, or discharge of pollutants to waters of the state. If you have any questions about this document, please feel free to contact the Department representative listed in the permit cover letter. Your cooperation in helping us protect and safeguard our state's environment is appreciated.

Permit Number: NJ0102709

Draft: Surface Water Master General Permit Renewal

Permittee:
NJPDES Master General Permit Program Interest
Category B4B
Per Individual Notice Of Authorization
Division Of Water Quality
Mail Code: 401-02B
PO Box 420
401 East State Street
Trenton, NJ 08625-0420

Property Owner:
NJPDES Master General Permit Program Interest
Category B4B
Per Individual Notice Of Authorization
Division Of Water Quality
Mail Code: 401-02B
PO Box 420
401 East State Street
Trenton, NJ 08625-0420

Location Of Activity:
NJPDES Master General Permit Program Interest
Category B4B
Per Individual Notice Of Authorization
Division Of Water Quality
Mail Code: 401-02B
PO Box 420
401 East State Street
Trenton, NJ 08625-0420

Authorization(s) Covered Under This Approval	Issuance Date	Effective Date	Expiration Date
B4B - General Permit GW Petro Prod Cleanup	*Pending*	*Pending*	*Pending*

By Authority of:
Commissioner's Office

DEP AUTHORIZATION
Pilar Patterson, Chief
Bureau of Surface Water Permitting
Division of Water Quality

(Terms, conditions and provisions attached hereto)

PART I
GENERAL REQUIREMENTS:
NJPDES

A. General Requirements of all NJPDES Permits

1. Requirements Incorporated by Reference

a. The permittee shall comply with all conditions set forth in this permit and with all the applicable requirements incorporated into this permit by reference. The permittee is required to comply with the regulations, including those cited in paragraphs b. through e. following, which are in effect as of the effective date of the final permit.

b. General Conditions

Penalties for Violations	N.J.A.C. 7:14-8.1 et seq.
Incorporation by Reference	N.J.A.C. 7:14A-2.3
Toxic Pollutants	N.J.A.C. 7:14A-6.2(a)4i
Duty to Comply	N.J.A.C. 7:14A-6.2(a)1 & 4
Duty to Mitigate	N.J.A.C. 7:14A-6.2(a)5 & 11
Inspection and Entry	N.J.A.C. 7:14A-2.11(e)
Enforcement Action	N.J.A.C. 7:14A-2.9
Duty to Reapply	N.J.A.C. 7:14A-4.2(e)3
Signatory Requirements for Applications and Reports	N.J.A.C. 7:14A-4.9
Effect of Permit/Other Laws	N.J.A.C. 7:14A-6.2(a)6 & 7 & 2.9(c)
Severability	N.J.A.C. 7:14A-2.2
Administrative Continuation of Permits	N.J.A.C. 7:14A-2.8
Permit Actions	N.J.A.C. 7:14A-2.7(c)
Reopener Clause	N.J.A.C. 7:14A-6.2(a)10
Permit Duration and Renewal	N.J.A.C. 7:14A-2.7(a) & (b)
Consolidation of Permit Process	N.J.A.C. 7:14A-15.5
Confidentiality	N.J.A.C. 7:14A-18.2 & 2.11(g)
Fee Schedule	N.J.A.C. 7:14A-3.1
Treatment Works Approval	N.J.A.C. 7:14A-22 & 23

c. Operation And Maintenance

Need to Halt or Reduce not a Defense	N.J.A.C. 7:14A-2.9(b)
Proper Operation and Maintenance	N.J.A.C. 7:14A-6.12

d. Monitoring And Records

Monitoring	N.J.A.C. 7:14A-6.5
Recordkeeping	N.J.A.C. 7:14A-6.6
Signatory Requirements for Monitoring Reports	N.J.A.C. 7:14A-6.9

e. Reporting Requirements

Planned Changes	N.J.A.C. 7:14A-6.7
Reporting of Monitoring Results	N.J.A.C. 7:14A-6.8
Noncompliance Reporting	N.J.A.C. 7:14A-6.10 & 6.8(h)
Hotline/Two Hour & Twenty-four Hour Reporting	N.J.A.C. 7:14A-6.10(c) & (d)
Written Reporting	N.J.A.C. 7:14A-6.10(e) &(f) & 6.8(h)
Duty to Provide Information	N.J.A.C. 7:14A-2.11, 6.2(a)14 & 18.1
Schedules of Compliance	N.J.A.C. 7:14A-6.4
Transfer	N.J.A.C. 7:14A-6.2(a)8 & 16.2

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PART II

GENERAL REQUIREMENTS: DISCHARGE CATEGORIES

A. Additional Requirements Incorporated By Reference

1. Requirements for Discharges to Surface Waters

a. In addition to conditions in Part I of this permit, the conditions in this section are applicable to activities at the permitted location and are incorporated by reference. The permittee is required to comply with the regulations which are in effect as of the effective date of the final permit.

i. Surface Water Quality Standards N.J.A.C. 7:9B-1

B. General Conditions

1. Scope

a. The issuance of this permit shall not be considered as a waiver of any applicable federal, state, and local rules, regulations and ordinances.

2. Permit Renewal Requirement

a. Permit conditions remain in effect and enforceable until and unless the permit is modified, renewed or revoked by the Department.

b. Submit a complete permit renewal application: 180 days before the the Expiration Date.

3. Notification of Non-Compliance

a. The permittee shall notify the Department of all non-compliance when required in accordance with N.J.A.C. 7:14A-6.10 by contacting the DEP HOTLINE at 1-877-WARNDEP (1-877-927-6337).

b. The permittee shall submit a written report as required by N.J.A.C. 7:14A-6.10 within five days.

4. Notification of Changes

a. The permittee shall give written notification to the Department of any planned physical or operational alterations or additions to the permitted facility when the alteration is expected to result in a significant change in the permittee's discharge and/or residuals use or disposal practices including the cessation of discharge in accordance with N.J.A.C. 7:14A-6.7.

b. Prior to any change in ownership, the current permittee shall comply with the requirements of N.J.A.C. 7:14A-16.2, pertaining to the notification of change in ownership.

5. Access to Information

a. The permittee shall allow an authorized representative of the Department, upon the presentation of credentials, to enter upon a person's premises, for purposes of inspection, and to access / copy any records that must be kept under the conditions of this permit.

6. Operator Certification

a. Pursuant to N.J.A.C. 7:10A-1.1 et seq. every wastewater system not exempt pursuant to N.J.A.C. 7:10A-1.1(b) requires a licensed operator. The operator of a system shall meet the Department's requirements pursuant to N.J.A.C. 7:10A-1.1 and any amendments. The name of the proposed operator, where required shall be submitted to the Department at the address below, in order that his/her qualifications may be determined prior to initiating operation of the treatment works.

i. Notifications shall be submitted to:
NJDEP
Bureau of Licensing and Pesticide Operations
Mail Code 401-04E
P.O. Box 420
Trenton, New Jersey 08625-0420
(609) 984-6507

b. The permittee shall notify the Department of any changes in licensed operator within two weeks of the change.

7. Operation Restrictions

a. The operation of a waste treatment or disposal facility shall at no time create: (a) a discharge, except as authorized by the Department in the manner and location specified in Part III of this permit; (b) any discharge to the waters of the state or any standing or ponded condtion for water or waste, except as specifically authorized by a valid NJPDES permit.

8. Residuals Management

a. The permittee shall comply with land-based sludge management criteria and shall conform with the requirements for the management of residuals and grit and screenings under N.J.A.C. 7:14A-6.15(a), which includes:

i. Standards for the Use or Disposal of Residual, N.J.A.C. 7:14A-20;

ii. Section 405 of the Federal Act governing the disposal of sludge from treatment works treating domestic sewage;

iii. The Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., and the Solid Waste Management Rules, N.J.A.C. 7:26;

iv. The Sludge Quality Assurance Regulations, N.J.A.C. 7:14C;

v. The Statewide Sludge Management Plan promulgated pursuant to the Water Quality Planning Act, N.J.S.A. 58:11A-1 et seq., and the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq.; and

vi. The provisions concerning disposal of sewage sludge and septage in sanitary landfills set forth at N.J.S.A. 13:1E-42 and the Statewide Sludge Management Plan.

vii. Residual that is disposed in a municipal solid waste landfill unit shall meet the requirements in 40 CFR Part 258 and/or N.J.A.C. 7:26 concerning the quality of residual disposed in a municipal solid waste landfill unit. (That is, passes the Toxicity Characteristic Leaching Procedure and does not contain "free liquids" as defined at N.J.A.C. 7:14A-1.2.)

b. If any applicable standard for residual use or disposal is promulgated under section 405(d)of the Federal Act and Sections 4 and 6 of the State Act and that standard is more stringent than any limitation on the pollutant or practice in the permit, the Department may modify or revoke and reissue the permit to conform to the standard for residual use or disposal.

c. The permittee shall make provisions for storage, or some other approved alternative management strategy, for anticipated downtimes at a primary residual management alternative. The permittee shall not be permitted to store residual beyond the capacity of the structural treatment and storage components of the treatment works. N.J.A.C. 7:14A-20.8(a) and N.J.A.C. 7:26 provide for the temporary storage of residuals for periods not exceeding six months, provided such storage does not cause pollutants to enter surface or ground waters of the State. The storage of residual for more than six months is not authorized under this permit. However, this prohibition does not apply to residual that remains on the land for longer than six months when the person who prepares the residual demonstrates that the land on which the residual remains is not a surface disposal site or landfill. The demonstration shall explain why residual must remain on the land for longer than six months prior to final use or disposal, discuss the approximate time period during which the residual shall be used or disposed and provide documentation of ultimate residual management arrangements. Said demonstration shall be in writing, be kept on file by the person who prepares residual, and submitted to the Department upon request.

d. The permittee shall comply with the appropriate adopted District Solid Waste or Sludge Management Plan (which by definition in N.J.A.C. 7:14A-1.2 includes Generator Sludge Management Plans), unless otherwise specifically exempted by the Department.

e. The preparer must notify and provide information necessary to comply with the N.J.A.C. 7:14A-20 land application requirements to the person who applies bulk residual to the land. This shall include, but not be limited to, the applicable recordkeeping requirements and certification statements of 40 CFR 503.17 as referenced at N.J.A.C 7:14A-20.7(j).

f. The preparer who provides biosolids to another person who further prepares the biosolids for application to the land must provide this person with notification and information necessary to comply with the N.J.A.C. 7:14A-20 land application requirements.

g. Any person who prepares bulk residual in New Jersey that is applied to land in a State other than New Jersey shall comply with the requirement at N.J.A.C. 7:14A-20.7(b)1.ix to provide written notice to the Department and to the permitting authority for the State in which the bulk residual is proposed to be applied.

PART III
LIMITS AND MONITORING REQUIREMENTS

MONITORED LOCATION:	RECEIVING STREAM:	STREAM CLASSIFICATION:	DISCHARGE CATEGORY(IES):
AB4B Table 1	Varies		B4B - General Permit GW Petro Prod Cleanup

Location Description

This table is utilized for remediation discharges into eligible waters classified as FW2-NT, FW2-TM, FW2-TP, SE or SC where petroleum related constituents are present. Other metals, volatile organics, acid extractables, base-neutrals and pesticies may also be present and will be included based on the limits referenced in Part III - Attachment.

Contributing Waste Types

Groundwater Remediation

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Sampling frequency can be reduced to quarterly for renewal authorizations given consistent compliance;Limits are applied as needed where parameters are detected at quantities comparable to the remediation standards;3 year WET compliance schedule for new authorizations beginning with the start of discharging when metals are limited;TSS limit varies

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	GPD	*****	*****	*****	*****	1/Month	Metered
January thru December	QL	***	***		***	***	***			
pH	Effluent Gross Value	*****	*****	*****	6.0 Monthly Minimum	*****	9.0 Monthly Maximum	SU	1/Quarter	Grab
January thru December	QL	***	***		***	***	***			
Solids, Total Suspended	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	40 Daily Maximum	MG/L	1/Month	Grab
January thru December	QL	***	***		***	***	***			
IC25 Statre 7day Chr Ceriodaphnia	Effluent Gross Value	*****	*****	*****	61 Report Per Minimum	*****	*****	%EFFL	1/Quarter	Composite
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Sampling frequency can be reduced to quarterly for renewal authorizations given consistent compliance;Limits are applied as needed where parameters are detected at quantities comparable to the remediation standards;3 year WET compliance schedule for new authorizations beginning with the start of discharging when metals are limited;TSS limit varies

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Petroleum Hydrocarbons	Effluent Gross Value	*****	*****	*****	*****	10 Monthly Average	15 Daily Maximum	MG/L	1/Quarter	Grab
January thru December	QL	***	***		***	***	***			
Carbon, Tot Organic (TOC)	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	20 Daily Maximum	MG/L	1/Month	Grab
January thru December	QL	***	***		***	***	***			
Naphthalene	Effluent Gross Value	*****	*****	*****	*****	22 Monthly Average	59 Daily Maximum	UG/L	1/Month	Grab
January thru December	RQL	***	***		***	8	8			
Methyl tert-butyl Ether	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	70 Daily Maximum	UG/L	1/Month	Grab
January thru December	QL	***	***		***	***	***			
Benzene	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	7 Daily Maximum	UG/L	1/Month	Grab
January thru December	RQL	***	***		***	7	7			
Tertiary Butyl Alcohol (TBA)	Effluent Gross Value	*****	*****	*****	500 Quarterly Average	REPORT Monthly Average	REPORT Daily Maximum	UG/L	1/Month	Grab
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:	RECEIVING STREAM:	STREAM CLASSIFICATION:	DISCHARGE CATEGORY(IES):
BB4B Table 2	Varies		B4B - General Permit GW Petro Prod Cleanup

Location Description

This table is utilized for short term dewatering or pump test discharges into eligible waters classified as FW2-NT, FW2-TM, FW2-TP, SE or SC where petroleum related constituents are present. Other metals, volatile organics, acid extractables, base-neutrals and pesticides may also be present and will be included based on the limits referenced in Part III - Attachment.

Contributing Waste Types

Ground Water Treatment

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Limits are applied as needed where parameters are detected at quantities comparable to the remediation standards at N.J.A.C. 7:14A-12, Appendix B; No Chronic WET; TSS limit varies.

Table III - B - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	GPD	*****	*****	*****	*****	1/4 Days	Metered
January thru December	QL	***	***		***	***	***			
pH	Effluent Gross Value	*****	*****	*****	6.0 Monthly Minimum	*****	9.0 Monthly Maximum	SU	1/4 Days	Grab
January thru December	QL	***	***		***	***	***			
Solids, Total Suspended	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	40 Daily Maximum	MG/L	1/4 Days	Grab
January thru December	QL	***	***		***	***	***			
Petroleum Hydrocarbons	Effluent Gross Value	*****	*****	*****	*****	10 Monthly Average	15 Daily Maximum	MG/L	1/4 Days	Grab
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:
Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:
Limits are applied as needed where parameters are detected at quantities comparable to the remediation standards at N.J.A.C. 7:14A-12, Appendix B; No Chronic WET; TSS limit varies.

Table III - B - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Carbon, Tot Organic (TOC)	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	20 Daily Maximum	MG/L	1/4 Days	Grab
January thru December	QL	***	***		***	***	***			
Naphthalene	Effluent Gross Value	*****	*****	*****	*****	22 Monthly Average	59 Daily Maximum	UG/L	1/4 Days	Grab
January thru December	RQL	***	***		***	8	8			
Methyl tert-butyl Ether	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	70 Daily Maximum	UG/L	1/4 Days	Grab
January thru December	QL	***	***		***	***	***			
Benzene	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	7 Daily Maximum	UG/L	1/4 Days	Grab
January thru December	RQL	***	***		***	7	7			
Tertiary Butyl Alcohol (TBA)	Effluent Gross Value	*****	*****	*****	REPORT Quarterly Average	500 Monthly Average	REPORT Daily Maximum	UG/L	1/4 Days	Grab
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:	RECEIVING STREAM:	STREAM CLASSIFICATION:	DISCHARGE CATEGORY(IES):
CB4B Table 3	Varies		B4B - General Permit GW Petro Prod Cleanup

Location Description

This table is utilized for remediation discharges into waters classified as C1 (Category 1) .

Contributing Waste Types

Ground Water Treatment

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Limits are applied as needed where parameters are detected; Chronic WETrequirements will be imposed in the event that any metals are detected; 3 year WET compliance schedule for new authorizations beginning with the start of discharging when metals are limited.

Table III - C - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	GPD	*****	*****	*****	*****	1/2 Weeks	Metered
January thru December	QL	***	***		***	***	***			
pH	Effluent Gross Value	*****	*****	*****	6.5 Monthly Minimum	*****	8.5 Monthly Maximum	SU	1/2 Weeks	Grab
January thru December	QL	***	***		***	***	***			
Solids, Total Suspended	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	25 Daily Maximum	MG/L	1/2 Weeks	Grab
January thru December	QL	***	***		***	***	***			
Petroleum Hydrocarbons	Effluent Gross Value	*****	*****	*****	*****	10 Monthly Average	15 Daily Maximum	MG/L	1/2 Weeks	Grab
January thru December	QL	***	***		***	***	***			
Carbon, Tot Organic (TOC)	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	20 Daily Maximum	MG/L	1/2 Weeks	Grab
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:
Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:
Limits are applied as needed where parameters are detected; Chronic WETrequirements will be imposed in the event that any metals are detected; 3 year WET compliance schedule for new authorizations beginning with the start of discharging when metals are limited.

Table III - C - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Naphthalene	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	8 Daily Maximum	UG/L	1/2 Weeks	Grab
January thru December	RQL	***	***		***	8	8			
Methyl tert-butyl Ether	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	70 Daily Maximum	UG/L	1/2 Weeks	Grab
January thru December	QL	***	***		***	***	***			
Benzene	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	7 Daily Maximum	UG/L	1/2 Weeks	Grab
January thru December	RQL	***	***		***	7	7			
Tertiary Butyl Alcohol (TBA)	Effluent Gross Value	*****	*****	*****	*****	100 Monthly Average	REPORT Daily Maximum	UG/L	1/2 Weeks	Grab
January thru December	QL	***	***		***	***	***			

Other Pollutants That May Be Limited

In addition to complying with the effluent limitations and monitoring conditions of Table 1, 2 and 3 on the preceding pages, any other parameters indicated below may also be limited in an individual authorization. These additional parameters will be included in Part III of the individual authorization. All units are in µg/L. MR is defined as monitoring and reporting is required.

Parameter	FW2 Waters Monthly Average	FW2 Waters Daily Maximum	SE, SC Waters Monthly Average	SE, SC Waters Daily Maximum	RQL*
Volatile Organics					
Acrolein	MR	100	MR	100	50
Acrylonitrile	MR	50	MR	50	50
Bromoform	MR	8.6	29	58	8
Carbon Tetrachloride	MR	6	8.8	MR	6
Chlorobenzene	15	28	15	28	6
Chlorodibromomethane	MR	8.2	MR	14	6
Chlorethane	104	268	104	268	-
Chloroform	MR	11.4	21	46	5
Dichlorobromomethane	MR	5	MR	12	5
1,1-Dichloroethane	22	59	22	59	23.5
1,2-Dichloroethane	MR	3	68	211	3
1, 1-Dichloroethylene	MR	6	16	25	6
1,2-Dichloropropane	153	230	153	230	-
1,3-Dichloropropylene	10	20	29	44	-
Ethylbenzene	32	108	32	108	6
Methyl Bromide	20	40	20	40	9
Methyl Chloride	86	190	86	190	10
Methylene Chloride	MR	9.4	40	89	6
1,1,2,2 Tetrachloroethane	MR	10	MR	10	10
Tetrachloroethylene	MR	16	22	56	9
1,2-Trans-Dichloroethylene	21	54	21	54	4
1,1,1-Trichloroethane	21	54	21	54	6
1,1,2-Trichloroethane	MR	12	21	54	6
Trichloroethylene	MR	5.4	21	54	5
Vinyl Chloride	MR	10	104	268	10
Acid Compounds					
2-Chlorophenol	31	98	31	98	20
2,4 Dichlorophenol	39	112	39	112	10
2,4 Dimethylphenol	18	36	18	36	13.5
4,6 Dinitro-O-Cresol	MR	60	78	277	60
2,4 Dinitrophenol	71	123	71	123	40
2-Nitrophenol	41	69	41	69	18
4-Nitrophenol	72	124	72	124	12
Pentachlorophenol	MR	30	MR	30	30
Phenol	15	26	15	26	10
2,4,6 Trichlorophenol	MR	20	MR	20	20

Parameter	FW2 Waters Monthly / Daily Average	Maximum	SE, SC Waters Monthly / Daily Average	Maximum	RQL*
Base/Neutral Compounds					
Anthracene	22	59	22	59	10
Benzidine	MR	50	MR	50	50
Benzo (a) Anthracene	MR	10	MR	10	10
Benzo (a) Pyrene	MR	20	MR	20	20
Benzo (b) fluoranthene	MR	10	MR	10	-
Benzo (k) fluoranthene	MR	20	MR	20	20
Bis (2-Chloroethyl) Ether	MR	10	MR	10	10
Bis (2-Chloroisopropyl) Ether	301	757	301	757	10
Bis (2-Ethylhexyl)Phthalate	MR	36	59	118	30
Butyl Benzyl Phthalate	MR	24	MR	24	20
Chrysene	MR	20	MR	20	20
Dibenzo (a,h) Anthracene	MR	20	MR	20	20
1,2 Dichlorobenzene	77	163	77	163	9
1,3 Dichlorobenzene	31	44	31	44	9
1,4 Dichlorobenzene	MR	28	MR	28	20
3,3 Dichlorobenzidine	MR	60	MR	60	60
Diethyl Phthalate	81	203	81	203	10
Dimethyl Phthalate	19	47	19	47	10
Di-N-Butyl Phthalate	27	57	27	57	20
2,4 Dinitrotoluene	MR	10	MR	18.2	10
2,6 Dinitrotoluene	255	641	255	641	9.5
Fluoranthene	25	68	25	68	10
Fluorene	22	59	22	59	10
Hexachlorobenzene	MR	10	MR	10	10
Hexachlorobutadiene	MR	10	20	49	10
Hexchloropentadiene	240	480	MR	1800	10
Hexachloroethane	19	38	21	54	10
Ideno (1,2,3-cd) Pyrene	MR	20	MR	20	20
Isophorone	MR	20	MR	20	10
Nitrobenzene	17	34	27	68	10
N-Nitrosodimethylamine	MR	20	MR	20	20
N-Nitrosodiphenylamine	MR	20	MR	20	20
Phenanthrene	22	59	22	59	10
Pyrene	25	67	25	67	20
1,2,4 Trichlorobenzene	68	140	68	140	10
Pesticides					
Aldrin	MR	0.04	MR	0.04	0.04
Alpha-BHC	MR	0.02	MR	0.02	0.02
Beta-BHC	0.137	0.274	0.46	0.92	0.04
Gamma-BHC (Lindane)	MR	0.08	MR	0.03	0.03
Chlordane	MR	0.2	MR	0.2	0.2

Parameter	FW2 Waters Monthly / Daily Average	Maximum	SE, SC Waters Monthly / Daily Average	Maximum	RQL*
Pesticides *(continued)*					
4,4'-DDT	MR	0.06	MR	0.06	0.06
4,4'-DDE	MR	0.04	MR	0.04	0.04
4,4'-DDD	MR	0.04	MR	0.04	0.04
Dieldrin	MR	0.03	MR	0.03	0.03
Alpha-Endosulfan	MR	0.02	MR	0.02	0.02
Beta-Endosulfan	MR	0.04	MR	0.04	0.04
Endosulfan Sulfate	0.93	1.86	2	4	0.08
Endrin	MR	0.04	MR	0.04	0.04
Endrin Aldehyde	0.76	1.52	0.81	1.62	0.1
Heptachlor	MR	0.02	MR	0.02	0.02
Heptachlor Expoxide	MR	0.4	MR	0.4	0.4
Toxaphene	MR	1	MR	1	1
Metals and Cyanide					
Arsenic **	50	100	50	100	8
Cadmium **	50	100	50	100	4
Chromium **	50	100	50	100	10
Copper **	50	100	50	100	10
Lead** (1)	37	79	37	79	10
Mercury **	MR	1	MR	1	1
Nickel **	72	144	50	100	10
Selenium **	50	100	50	100	10
Silver **	25	50	25	50	2
Zinc **	100	200	100	200	30
Cyanide	100	200	100	200	40

* The permittee shall ensure that analytical data is sampled at detection levels as sensitive as the Recommended Quantitation Levels (RQL's) for any of the above parameters limited in the individual authorization. In the event that any of these parameters are included for Table 3 discharges, the effluent limit shall be set at the RQL.

** If this parameter is regulated in the individual authorization, a chronic WET limit is also applicable for Tables 1 and 3.

(1) **For renewal authorizations:** The lead daily maximum effluent limitation of 10 µg/L continues to be applicable to those discharges where lead is shown to be detectable in the permittee's GPPC permit application or in other available data. This limit is consistent with the 2008 master general permit and is appropriate pursuant to N.J.A.C. 7:14A-13.19.

For new authorizations: The lead effluent limitation of 37 µg/L as a monthly average and 79 µg/L as a daily maximum are only applicable for those discharges where lead is shown to be detectable in the permittee's GPPC permit application or in other available data. The Department has determined that it is beneficial and appropriate to include a limit as a monthly average. These limits are consistent with the 2008 master general permit.

PART IV

SPECIFIC REQUIREMENTS: NARRATIVE

General Permit GW Petro Prod Cleanup

A. MONITORING REQUIREMENTS

1. Standard Monitoring Requirements

a. Each analysis required by this permit shall be performed by a New Jersey Certified Laboratory that is certified to perform that analysis.

b. The Permittee shall perform all water/wastewater analyses in accordance with the analytical test procedures specified in 40 CFR 136 unless other test procedures have been approved in writing or as otherwise specified in the permit. Further information regarding analytical testing methods can be found at http://water.epa.gov/scitech/methods/cwa/index.cfm. If you have further questions or comments regarding analytical methods, please contact NJDEP, Office of Quality Assurance at (609) 292-3950.

c. The permittee shall utilize analytical methods that will ensure compliance with the Quantification Levels (QLs) listed in PART III. QLs include, but are not limited to, Recommended Quantification Levels (RQLs) and Method Detection Levels (MDLs). If the permittee and/or contract laboratory determines that the QLs achieved for any pollutant(s) generally will not be as sensitive as the QLs specified in PART III, the permittee must submit a justification of such to the Bureau of Surface Water Permitting. For limited parameters with no QL specified, the sample analysis shall use a detection level at least as sensitive as the effluent limit.

d. All sampling shall be conducted in accordance with the Department's Field Sampling Procedures Manual, or an alternate method approved by the Department in writing.

e. All monitoring shall be conducted as specified in Part III.

f. All sample frequencies expressed in Part III are minimum requirements. Any additional samples taken consistent with the monitoring and reporting requirements contained herein shall be reported on the Monitoring Report Forms.

g. If applicable, annual wastewater testing shall be conducted in a different quarter of each year so that tests are conducted in each of the four permit quarters of the permit cycle. Testing may be conducted during any month of the permit quarters.

h. Flow shall be measured using a meter unless specified otherwise in the individual authorization.

B. RECORDKEEPING

1. Standard Recordkeeping Requirements

a. The permittee shall retain records of all monitoring information, including 1) all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation (if applicable), 2) copies of all reports required by this NJPDES permit, 3) all data used to complete the application for a NJPDES permit, and 4) monitoring information required by the permit related to the permittee's residual use and/or disposal practices, for a period of at least 5 years, or longer as required by N.J.A.C. 7:14A-20, from the date of the sample, measurement, report, application or record.

b. Records of monitoring information shall include 1) the date, locations, and time of sampling or measurements, 2) the individual(s) who performed the sampling or measurements, 3) the date(s) the 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.

C. REPORTING

1. Standard Reporting Requirements

a. The permittee shall submit all required monitoring results to the Department on the forms provided to them. The Monitoring Report Forms (MRFs) may be provided to the permittee in either a paper format or in an electronic file format. Unless otherwise noted, all requirements below pertain to both paper and electronic formats.

b. Any MRFs in paper format shall be submitted to the following addresses:

i. NJDEP
Division of Water Quality
Bureau of Permit Management
Mailcode 401-02B
P.O. Box 420
Trenton, New Jersey 08625-0420

ii. (if requested by the Water Compliance and Enforcement Bureau)
NJDEP: Northern Bureau of Water Compliance and Enforcement
7 Ridgedale Avenue
Cedar Knolls, New Jersey 07927
(Counties of Bergen, Essex, Hudson, Hunterdon, Morris, Passaic, Somerset, Sussex and Warren)
NJDEP: Central Bureau of Water Compliance and Enforcement
Mail Code: 44-03
22 South Clinton Avenue
P.O. Box 420
Trenton, NJ 08625-0420
(Counties of Mercer, Middlesex, Monmouth, Ocean and Union)
NJDEP: Southern Bureau of Water Compliance and Enforcement
2 Riverside Drive, Suite 201
Camden, New Jersey 08103
(Counties of Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester and Salem)

c. Any electronic data submission shall be in accordance with the guidelines and provisions outlined in the Department's Electronic Data Interchange (EDI) agreement with the permittee. Paper copies must be available for on-site inspection by DEP personnel or provided to the DEP upon written request.

d. All monitoring report forms shall be certified by the highest ranking official having day-to-day managerial and operational responsibilities for the discharging facility.

e. The highest ranking official may delegate responsibility to certify the monitoring report forms in his or her absence. Authorizations for other individuals to sign shall be made in accordance with N.J.A.C. 7:14A-4.9(b).

f. Monitoring results shall be submitted in accordance with the current NJPDES Monitoring Report Form (MRF) Reference Manual and any updates thereof.

g. If monitoring for a parameter is not required in a monitoring period, the permittee must report "CODE=N" for that parameter.

h. If there are no discharge events during an entire monitoring period, the permittee must notify the Department when submitting the monitoring results. This is accomplished by placing a check mark in the "No Discharge this monitoring period" box on the paper or electronic version of the monitoring report submittal form.

D. FACILITY MANAGEMENT

1. Discharge Requirements

a. The permittee shall discharge at the location(s) specified in PART III of this permit.

b. The permittee shall not discharge foam or cause foaming of the receiving water that: 1) Forms objectionable deposits on the receiving water, 2) Forms floating masses producing a nuisance, or 3) Interferes with a designated use of the waterbody.

c. The permittee's discharge shall not produce objectionable color or odor in the receiving stream.

d. The discharge shall not exhibit a visible sheen.

e. When quantification levels (QL) and effluent limits are both specified for a given parameter in Part III, and the QL is less stringent than the effluent limit, effluent compliance will be determined by comparing the reported value against the QL.

2. Operation, Maintenance and Emergency conditions

a. The permittee shall operate and maintain treatment works and facilities which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit as specified in the Operation & Maintenance Manual.

b. The permittee shall develop emergency procedures to ensure effective operation of the treatment works under emergency conditions in accordance with NJAC 7:14A-6.12(d).

3. Applicability of Discharge Limitations and Effective Dates

a. Surface Water Discharge Monitoring Report (DMR) Form Requirements

i. Table 1: Chronic WET (if both the chronic WET requirement and a compliance schedule is applicable in the individual authorization) - For new authorizations, the initial phase requirement of monitoring and reporting as a minimum is effective on the effective date of the individual authorization. The final phase limit of 61% is effective three years from the date of commencement of pumping as specified in the individual authorizations. For renewal authorizations, the final limit becomes effective on the date specified in the individual authorization.

4. Toxicity Testing Requirements - Chronic Whole Effluent Toxicity (applicable only if a chronic toxicity requirement is specified in Part III)

a. The permittee shall conduct toxicity tests on its wastewater discharge in accordance with the provisions in this section. Such testing will determine if appropriately selected effluent concentrations adversely affect the test species.

b. Chronic toxicity tests shall be conducted using the test species and method identified in Part III of this permit.

c. Any test that does not meet the specifications contained in the Department's "Chronic Toxicity Testing Specifications for Use in the NJPDES Program" document must be repeated within 30 days of the completion of the initial test. The repeat test shall not replace subsequent testing required in Part III.

d. IC25 - Inhibition Concentration - Concentration of effluent which has an inhibitory effect on 25% of the test organisms for the monitored effect, as compared to the control (expressed as percent effluent).

e. Test results shall be expressed as the IC25 for each test endpoint. Where a chronic toxicity testing endpoint yields IC25's from more than one test endpoint, the most sensitive endpoint will be used to evaluate effluent toxicity.

f. For new authorizations: Submit a Chronic Methodology Questionnaire: within 60 days from the effective date of the permit (EDP).

g. For renewal authorizations: The permittee shall resubmit a Chronic Methodology Questionnaire within 60 days of any change in laboratory.

h. If a quarterly monitoring frequency is specified for Chronic WET: Submit a chronic whole effluent toxicity test report: due within twenty-five days after the end of every quarterly monitoring period beginning from the effective date of the permit (EDP).

i. If an annual monitoring frequency is specified for Chronic WET: Submit a chronic whole effluent toxicity test report: due within twenty-five days after the end of every annual monitoring period beginning from the effective date of the permit.

j. Test reports shall be submitted to:

   i. New Jersey Department of Environmental Protection
   Division of Water Quality
   Bureau of Surface Water Permitting
   Mail Code: 401-02B
   P.O. Box 420
   Trenton, New Jersey 08625-0420

5. Toxicity Reduction Implementation Requirements (TRIR) (applicable only if a chronic toxicity limit is specified in Part III)

a. The permittee shall initiate a tiered toxicity investigation if two out of six consecutive WET tests demonstrate that the effluent does not comply or will not comply with the toxicity limit specified in Part III of this permit.

   i. If the exceedence of the toxicity limit is directly caused by a documented facility upset, or other unusual event which has been identified and appropriately remedied by the permittee, the toxicity test data collected during the event may be eliminated when determining the need for initiating a TRIR upon written Department approval.

b. The permittee shall begin toxicity characterization within 30 days of the end of the monitoring period when the second toxicity test exceeds the toxicity limits in Part III. The monitoring frequency for toxicity testing shall be increased to semi-monthly (i.e. every two months). Up to 12 additional tests may be required.

   i. The permittee may return to the toxicity testing frequency specified in Part III if four consecutive toxicity tests conducted during the Toxicity Characterization do not exceed the toxicity limit.

   ii. If two out of any six consecutive, acceptable tests again exceed the toxicity limit in Part III, the permittee shall repeat the Toxicity Reduction Implementation Requirements.

c. The permittee shall initiate a preliminary toxicity identification (PTI) upon the fourth exceedence of the toxicity limit specified in Part III during the toxicity characterization.

   i. The permittee may return to the monitoring frequency specified in PART III while conducting the PTI. If more frequent WET testing is performed during the PTI, the permittee shall submit all biomonitoring reports to the DEP and report the results for the most sensitive species on the DMR.

   ii. As appropriate, the PTI shall include:
      (1) treatment plant performance evaluation,
      (2) evaluation of chemical use and processes at the facility, and
      (3) an evaluation of toxic pollutants present in the effluent.

   iii. The permittee shall submit a Preliminary Toxicity Identification Notification within 15 months of triggering TRIR. This notification shall include a determination that the permittee intends to demonstrate compliance OR plans to initiate a CTI.

d. The permittee must demonstrate compliance with the WET limitation in four consecutive WET tests to satisfy the requirements of the Toxicity Reduction Investigation Requirements. After successful completion, the permittee may return to the WET monitoring frequency specified in PART III.

e. The permittee shall initiate a Comprehensive Toxicity Investigation (CTI) if the PTI does not identify the cause of toxicity and a demonstration of consistent compliance with the toxicity limit in Part III can not be made.

   i. The permittee shall develop a project study plan identifying the party or parties responsible for conducting the comprehensive evaluation, establish a schedule for completing the study, and a description of the technical approach to be utilized.

   ii. If the permittee determines that the PTI has failed to demonstrate consistent compliance with the toxicity limit in Part III , a Comprehensive Toxicity Investigation Workplan must be prepared and submitted within 90 days.

   iii. The permittee shall summarize the data collected and the actions taken in CTI Quarterly Reports. The reports shall be submitted within 30 calendar days after the end of each quarter.

   iv. The permittee shall submit a Final CTI Report 90 calendar days after the last quarterly report. The final CTI report shall include the corrective actions identified to reduce toxicity and a schedule for implementing these corrective actions.

f. Upon receipt of written approval from the Department of the corrective action schedule, the permittee shall implement those corrective actions consistent with that schedule.

i. The permittee shall satisfy the requirements of the Toxicity Reduction Implementation Requirements and return to the original toxicity monitoring frequency after corrective actions are implemented and the permittee demonstrates consistent compliance with the toxicity limit in Part III in four consecutive toxicity tests.

ii. If the implemented corrective measures do not result in consistent compliance with the toxicity limit in Part III, the permittee shall submit a plan for resuming the CTI.

iii. Documents regarding Toxicity Investigations shall be sent to the following:
New Jersey Department of Environmental Protection
Mail Code: 401-02B
Division of Water Quality
Bureau of Surface Water Permitting
401 East State Street
P.O. Box 420
Trenton, New Jersey 08625-0420

E. Conditions for modification

1. Causes for modification

a. The Department may modify or revoke and reissue any permit to incorporate 1) any applicable effluent standard or any effluent limitation, including any effluent standards or effluent limitations to control the discharge of toxic pollutants or pollutant parameters such as acute or chronic whole effluent toxicity and chemical specific toxic parameters, 2) toxicity reduction requirements, or 3) the implementation of a TMDL or watershed management plan adopted in accordance with N.J.A.C. 7:15-7.

b. For new dischargers where a chronic whole effluent toxicity requirement is imposed - the Department may issue a minor modification further deferring the effective date of the chronic whole effluent toxicity limitation if a facility is implementing the Toxicity Reduction Implementation Requirements (TRIR) in Part IV of this permit.

c. The Department may modify individual authorizations under this permit through a minor modification in accordance with N.J.A.C. 7:14A-16.5(a)1 to reduce WET monitoring to either semi-annual, annual or once per permit cycle. The criteria for such reduction is a minimum of 4 data points with a result of >100. The Department may also consider site-specific characteristics such as discharge volume, location and wastewater constituents.

d. The Department may modify individual authorizations under this permit through a minor modification in accordance with N.J.A.C. 7:14A-16.5(a)1 to reduce toxics and conventionals monitoring to quarterly or an alternate monitoring frequency provided that all parameters are consistently in compliance.

F. Custom Requirements

1. Third Party Storm Sewers

a. If the permittee proposes to discharge or discharges through an off-site public or private storm drainage system, please note that this GPPC permit authorization to discharge does not exempt, nor shall be construed to exempt, the permittee from compliance with rules, regulations, policies, and/or laws lodged in any agency or subdivision of the state having legal jurisdiction over the storm sewer system proposed for use as a wastewater conveyance.

2. Permanent Cessation of Discharge to Surface Waters

a. If the permittee permanently discontinues its discharge to surface waters for 30 days or more the appropriate Regional Bureau of Water and Compliance Enforcement shall be notified:

   i. NORTHERN BUREAU (Counties of Bergen, Essex, Hudson, Hunterdon, Morris, Passaic, Somerset, Sussex and Warren) - (973) 656-4099.

   ii. CENTRAL BUREAU (Counties of Mercer, Middlesex, Monmouth, Ocean and Union) - (609) 292-3010.

   iii. SOUTHERN BUREAU (Counties of Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester and Salem) - (856) 614-3655.

3. Revocation of an Individual Authorization under the GPPC Permit.

a. If the permittee has permanently ceased its discharge to surface water, the permittee can request revocation of its individual authorization under the GPPC permit. The permittee can obtain the necessary revocation forms by accessing www.state.nj.us/dep/dwq or by contacting the Department's Office of Permit Management at (609) 984-4428. The permittee can also contact the appropriate Regional Enforcement Office for further guidance on closure proceedings.

b. Upon receipt of an administratively complete revocation request, the Department will verify with the appropriate Regional Enforcement Office that the discharge has ceased and that the treatment works has undergone closure, in conformance with N.J.A.C. 7:14A-23.34. The Department will then revoke such individual authorization by preparing a copy of the individual authorization page showing the revocation date of the individual authorization and sending such to the permittee.

c. For short term discharges covered under Table 2, the individual authorization will expire consistent with the permit expiration date without the permit revocation procedure described in b. above.

4. Use of Treatment Additives

a. If a permittee proposes addition of any chemical or treatment enhancement product in its treatment system in order to enhance treatment effectiveness and system performance, the permittee must obtain permission from the Department in writing prior to use of such compounds.

b. The permittee shall submit a letter to the Department describing the use of such chemical addition agents, including information pertaining to dosage rates and frequency of dosage, and shall include a material safety data sheet for the product(s) that contains toxicological data. The letter shall be submitted to the appropriate Bureau of Surface Water Permitting where the address for such is included in the cover letter of the individual authorization. The Department will then evaluate the submittal and notify the permittee in writing as to whether the compound can be utilized under the conditions of the individual authorization. Please note that N.J.A.C. 7:14A-22.4(a)7 does not require a treatment works approval (TWA) modification for chemical addition where it is used for the purposes of improving treatment system performance.

5. Operational Requirements

a. The treatment works shall operate at the optimal average design flow rate for maximum groundwater clean-up.

b. No backwash from any treatment unit(s) for maintenance purposes or any other reasons shall be discharged through the authorized outfall(s).

c. The permittee shall not attain any effluent limitations by dilution pursuant to N.J.A.C. 7:14A-6.2. Specifically, the permittee shall not pump from a recovery well and divert such waters to the treatment system for the purposes of diluting groundwater from other contaminated recovery wells.

d. Samples taken in compliance with the specified monitoring requirements shall be taken at the discharge outfall(s) specified in Part III of this permit authorization at the nearest accessible point after final treatment but prior to actual discharge.

APPENDIX A:

CHRONIC TOXICITY TESTING SPECIFICATIONS

FOR USE IN THE NJPDES PERMIT PROGRAM

Version 2.1

May 1997

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VIII. REFERENCES

Notice: Mention of trade names or commercial products do not constitute endorsement or recommendation for use.

I. AUTHORITY AND PURPOSE

These methods specifications for the conduct of whole effluent chronic toxicity testing are established under the authority of the NJPDES permitting program, N.J.A.C. 7:14A-6.5(a)2 and 40 CFR 136, for discharges to waters of the State. The methods referenced herein are included by reference in 40 CFR 136, Table 1.A. and, therefore, constitute approved methods for chronic toxicity testing. The information contained herein serves to clarify testing requirements not sufficiently clarified in those methods documents and also serves to outline and implement the interlaboratory Standard Reference Toxicant Program until a formal laboratory certification program is established under N.J.A.C. 7:18. As such these methods are intended to be used to determine compliance with discharge permits issued under the authority of the NJPDES permit program. Tests are to be conducted in accordance with the general conditions and test organism specific method specifications contained in this document. All other conditions and specifications can be found in 40 CFR 136 and USEPA methodologies.

Until a subchapter on chronic toxicity testing within the regulations governing the certification of laboratories and environmental measurements (N.J.A.C. 7:18) becomes effective, tests shall be conducted in conformance with the methodologies as designated herein and contained in 40 CFR 136. The laboratory performing the testing shall be within the existing acute toxicity testing laboratory certification program established under N.J.A.C. 7:18, as required by N.J.A.C. 7:9B-1.5(c)5.

Testing shall be in conformance with the subchapter on chronic toxicity testing within the N.J.A.C. 7:18 when such regulations become effective. The laboratory performing the toxicity testing shall be within the chronic toxicity testing laboratory certification program to be established under that subchapter, when it becomes effective.

These methods are incorporated into discharge permits as enforceable permit conditions. Each discharge permit will specify in Part IV of the permit, the test species specific methods from this document that will be required under the terms of the discharge permit. Although the test species specific methods for each permit are determined on a case-by-case basis, the purpose of this methods document is to assure consistency among dischargers and to provide certified laboratories with information on the universe of tests to be utilized so that they can make the necessary preparations, including completing the required Standard Reference Toxicant testing. Please note that these methodologies are required for compliance testing only. Facilities and/or laboratories conducting testing under the requirements of a Toxicity Identification Evaluation or for informational purposes are not bound by these methods.

This document constitutes the second version of the NJDEP's interim chronic methodologies. This version contains no significant changes to the test methods themselves. However, in keeping with the Department's continued emphasis on good laboratory practices and quality control, the areas addressing the Standard Reference Toxicant Program, data analysis and data reporting, have been significantly revised.

II. GENERAL CONDITIONS

A. LABORATORY SAFETY, GLASSWARE, ETC.

All safety procedures, glassware cleaning procedures, etc., shall be in conformance with 40 CFR 136 and USEPA's "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms" and N.J.A.C. 7:18.

B. TEST CONCENTRATIONS / REPLICATES

All testing is to be performed with a minimum of five effluent concentrations plus a dilution water control. A second reference water control is optional when a dilution water other than culture water is used. The use of both a 0.5 or 0.75 dilution factor is acceptable for the selection of test concentrations. If hypothesis testing will be used to determine the test endpoint, one effluent concentration shall be the chronic permit limitation, unless the existing data for the discharge indicate that the NOEC is expected to be significantly less than the permit limit. The use of the 0.5 dilution factor may require more than five dilutions to cover the entire range of effluent concentrations as well as the chronic permit limit, since the permit limit will often not be one of the nominal concentrations in a 0.5 dilution series. In such an instance, the 0.5 dilution series may be altered by including an additional test concentration equal to the permit limit in the dilution series, or by changing the concentration closest to the permit toxicity limit to be equal to that limit. The Department recommends the use of the 0.75 dilution factor using Table 1.0 to determine test concentrations. That table establishes test concentrations based on the chronic toxicity limitation.

For either the 0.5 or 0.75 dilution factor, there shall be at least one test concentration above the permit limitation and at least three test concentrations below the permit limit along with the dilution water control unless the permit limitation prohibits such (e.g., limitations greater than 75% effluent). An effort shall be made to bracket the anticipated test result.

To use Table 1.0, locate the permit limit in column 4. The dilution series becomes the row that corresponds to the permit limit in column 4. For example, a permit limit of 41 would require a dilution series of the dilution water control, 17%, 23%, 31%, 41% and 55% effluent.

The number of replicates used in the test must, at a minimum, satisfy the specifications of the applicable methods contained herein. Increased data sensitivity can be obtained by increasing the number of replicates equally among test concentrations and thus an increased number of replicates is acceptable. Further, the use of nonparametric statistical analysis requires a minimum of four replicates per test concentration. If the data for any particular test is not conducive to parametric analyses and if less than four replicates were included, the test may not be considered acceptable for compliance purposes.

The use of single concentration tests consisting of the permit limitation as a concentration and a control is not permitted for compliance purposes, but may be used by a permittee in the conduct of a Toxicity Investigation Evaluation (TIE) or for information gathering purposes. Such a test would be considered a "pass" if there was no significant difference in test results, using hypothesis testing methods.

Table 1.0: 0.75 DILUTION SERIES INDEXED BY PERMIT LIMIT

				Permit Limit						Permit Limit	
Col #	1	2	3	4	5	**Col #**	1	2	3	4	5
	0.4	0.6	0.8	1	1.3		22	29	38	51	68
	0.8	1.1	1.5	2	2.7		22	29	39	52	69
	1.3	1.7	2.3	3	4		22	30	40	53	71
	1.7	2.3	3	4	5.3		23	30	41	54	72
	2.1	2.8	3.8	5	6.7		23	31	41	55	73
	2.5	3.4	4.5	6	8		24	32	42	56	75
	3	4	5	7	9		24	32	43	57	76
	3	5	6	8	11		24	33	44	58	77
	4	5	7	9	12		25	33	44	59	79
	4	6	8	10	13		25	34	45	60	80
	5	6	8	11	15		26	34	46	61	81
	5	7	9	12	16		26	35	47	62	83
	5	7	10	13	17		27	35	47	63	84
	6	8	11	14	19		27	36	48	64	85
	6	8	11	15	20		27	37	49	65	87
	7	9	12	16	21		28	37	50	66	88
	7	10	13	17	23		28	38	50	67	89
	8	10	14	18	24		29	38	51	68	91
	8	11	14	19	25		29	39	52	69	92
	8	11	15	20	27		30	39	53	70	93
	9	12	16	21	28		30	40	53	71	95
	9	12	17	22	29		30	41	54	72	96
	10	13	17	23	31		31	41	55	73	97
	10	14	18	24	32		31	42	56	74	99
	11	14	19	25	33		32	42	56	75	100
	11	15	20	26	35	24	32	43	57	76	
	11	15	20	27	36	24	32	43	58	77	
	12	16	21	28	37	25	33	44	59	78	
	12	16	22	29	39	25	33	44	59	79	
	13	17	23	30	40	25	34	45	60	80	
	13	17	23	31	41	26	34	46	61	81	
	14	18	24	32	43	26	35	46	62	82	
	14	19	25	33	44	26	35	47	62	83	
	14	19	26	34	45	27	35	47	63	84	
	15	20	26	35	47	27	36	48	64	85	
	15	20	27	36	48	27	36	48	65	86	
	16	21	28	37	49	28	37	49	65	87	
	16	21	29	38	51	28	37	50	66	88	
	16	22	29	39	52	28	38	50	67	89	
	17	23	30	40	53	28	38	51	68	90	
	17	23	31	41	55	29	38	51	68	91	
	18	24	32	42	56	29	39	52	69	92	
	18	24	32	43	57	29	39	52	70	93	
	19	25	33	44	59	30	40	53	71	94	
	19	25	34	45	60	30	40	53	71	95	
	19	26	35	46	61	30	41	54	72	96	
	20	26	35	47	63	31	41	55	73	97	
	20	27	36	48	64	31	41	55	74	98	
	21	28	37	49	65	31	42	56	74	99	
	21	28	38	50	67	32	42	56	75	100	

* Select the dilution series by finding the row which contains the permit limit in column #4.
NOTE: All values are in units of "% effluent" not toxic units.

C. DILUTION WATER

1. Marine and Estuarine Waters

A high quality natural water, such as the Manasquan River Inlet is strongly recommended as the dilution water source for chronic toxicity testing with marine and estuarine organisms. The use of the receiving water as the dilution water source is not required. Saline waters prepared with hypersaline brine and deionized water may also be used as dilution water. Hypersaline brines shall be prepared from a high quality natural seawater and shall not exceed a concentration of 100 ppt. The type of a dilution water for a permittee may not be changed without the prior approval of the Department.

The standard test salinity shall be 25 ppt, except for *Champia parvula,* which shall be tested at 30 ppt. Since most effluents are freshwater based, in most cases it will be necessary to adjust the salinity of the test concentrations to the standard test salinity.

2. Fresh Waters

A high quality natural water, such as Round Valley Reservoir (if access is allowed) or Lake Hopatcong, is strongly recommended as the dilution water source for chronic toxicity testing with freshwater organisms. It is not required to perform the toxicity testing with the receiving water as dilution water. Tests performed with a reconstituted water or up to 20% Diluted Mineral Water (DMW) as dilution water is acceptable. For testing with *Ceriodaphnia dubia*, the addition of 5 µg/l selenium (2 µg/l selenium with natural water) and 1 µg/l vitamin B12 is recommended (Keating and Dagbusan, 1984: Keating, 1985 and 1988). The source of a dilution water for a permittee may not be changed without the prior approval of the Department. Reconstituted water and DMW should be prepared with Millipore Super Q^{R} or equivalent, meet the requirements of N.J.A.C. 7:18-6 and should be aerated a minimum of 24 hrs prior to use, but not supersaturated.

D. EFFLUENT SAMPLE COLLECTION

Effluent samples shall be representative of the discharge being regulated. For each discharge serial number (DSN), the effluent sampling location shall be the same as that specified in the NJPDES permit for other sampling parameters unless an alternate sampling point is specified in the NJPDES discharge permit. For industrial dischargers with a combined process/sanitary waste stream, effluent sampling shall be after chlorination, unless otherwise designated in the permit.

For continuous discharges, effluent sampling shall consist of 24 hour composite samples consisting either of equal volumes taken once every hour or of a flow-proportionate composite sample, unless otherwise approved by the Department. At a minimum, three samples shall be collected as specified above, one every other day. The first sample shall be used for test initiation and the first renewal. The second sample for the next two renewals. The third sample shall be used for the final three renewals. For the *Champia* and *Selenastrum* tests, a single sample shall be collected not more than 24 hours prior to test initiation. No effluent sample shall be over 72 hours old at the time of its use to initiate or renew solutions in a test. It is acceptable to collect samples more frequently for chronic WET testing and if samples are collected daily for acute toxicity testing conducted concurrently, available samples may be used to renew the test solutions as appropriate.

For all other types of discharges, effluent sampling shall be conducted according to specifications contained within the discharge permit, methodology questionnaire or as otherwise specified by the Department. The use of grab samples or other special sampling procedures will be based on time of occurrence and duration of intermittent discharge events.

If a municipal discharger has concerns that the concentrations of ammonia and/or chlorine in an effluent are adequate to cause violations of the permit limit for chronic toxicity testing, the permittee should conduct analyses, as specified in USEPA's toxicity investigation methods documents, to illustrate the relationship between chronic effluent toxicity and chlorine and/or ammonia as applicable. This data may then be submitted

to the Department as justification for a request to use modified test procedures, which account for ammonia and/or chlorine toxicity, in future chronic toxicity tests. The Department may, where adequate justification exists, permit the adjustment of these pollutants in the effluent sample if discharge limits for these pollutants are contained in the NJPDES permit and those permit limitations are adequate for the protection of water quality. Any proposed modified test procedures to adjust effluent chlorine and/or ammonia shall be approved by the Department prior to use of those test procedures for any compliance testing.

Except for filtration through a 2 mm or larger screen or an adjustment to the standard test salinity, no other adjustments to the effluent sample shall be made without prior written approval by the Department. Aeration of samples prior to test start shall be minimized where possible and samples shall not be aerated where adequate saturation exists to maintain dissolved oxygen.

E. PHYSICAL CHEMICAL MEASUREMENTS

At a minimum, the physical chemical measurements shall be as follows:

- pH and dissolved oxygen shall be measured at the beginning and end of each 24 hour exposure period, in at least one chamber, of the high, medium and low test concentrations and the control. In order to ensure that measurements for these parameters are representative of the test concentrations during the test, measurements for these parameters should be taken in an additional replicate chamber for such concentrations which contains no test organisms, but is subject to the same test conditions.

- Temperature shall either be monitored continuously, measured daily in at least two locations in the environmental control system, or measured at the beginning of each 24 hr exposure period in at least one replicate for each treatment.

- Salinity shall be measured in all salt water tests at the beginning of each 24 hour exposure period, in at least one replicate for each treatment.

- For all freshwater tests, alkalinity, hardness and conductivity shall be measured in each new sample (100% effluent) and control.

- Nitrite, nitrate and ammonia shall be measured in the control before each renewal in the mysid test only.

- For samples of discharges where concentrations of ammonia and/or chlorine are known or are suspected to be sufficient to cause toxicity, it is recommended that the concentrations of these pollutants be determined and submitted with the standardized report form. The laboratory is advised to consult with the permittee to determine if these parameters should be measured in the effluent. Where such measurements are deemed appropriate, measurements shall be conducted at the beginning of each 24 hour exposure period. Also, since a rise in the test pH can affect the toxicity of ammonia in the effluent, analysis of ammonia during the test may be appropriate if a rise in pH is accompanied by a significant increase in mortality.

F. STATISTICS

The use of both hypothesis testing techniques and point estimate techniques are currently in use by the Department or by permittees for compliance purposes. The NJPDES permit should be checked to determine which type of analysis is required and appropriate for each specific facility. It is not acceptable to simply evaluate any data by "visual data review" unless in the analysis of survival data, no mortality occurred in the test. All data sets must be appropriately statistically evaluated.

For hypothesis testing techniques, statistical analysis shall follow the protocols in USEPA (1988, 1989) to evaluate adverse effects. A significance level of 0.05 shall be utilized to evaluate such effects. Use of a protocol not contained in these documents must be accompanied by a reference and explanation addressing its

applicability to the particular data set. Please note the following when evaluating data using hypothesis testing techniques.

Special attention should be given to the omission and inclusion of a given replicate in the analysis of mysid fecundity data (USEPA 1994, p. 275) and *Ceriodaphnia* reproduction data (USEPA 1994, page 174).

Determination of acceptability criteria and average individual dry weight for the growth endpoints must follow the specifications in the applicable documents (e.g., p.84 for saltwater methods document.)

Use of nonparametric statistical analyses requires a minimum of four replicates per test concentration. If the data for any particular test are not conducive to parametric analyses and if less than four replicates were included, the test may not be acceptable to the Department.

Where hypothesis testing is used for compliance purposes, if the results of hypothesis testing indicate that a deviation from the dose response occurs such that two test concentrations are deemed statistically significant from the control but an intermediate test concentration is not, the test is deemed unacceptable and cannot be used for compliance testing purposes.

For point estimate techniques, statistical analysis should follow the protocol contained in "A Linear Interpolation Method for Sublethal Toxicity: The Inhibition Concentration (ICp) Approach (Version 2.0), July 1993, National Effluent Toxicity Assessment Center Technical Report 03-93." Copies of the program can be obtained by contacting the Department. The linear interpolation estimate ICp values and not the bootstrap mean ICp, shall be reported for permit compliance purposes. The ICp value reported on the Discharge Monitoring Report shall be rounded off as specified in the Department's "Discharge Monitoring Report (DMR) Instruction Manual, December 1993." IC25 values shall be reported under the parameter code listed as "NOEC" on the DMR, until the DMR's are adjusted accordingly.

If the result reported by the ICp method is greater than the highest concentration tested, the test result is reported as "greater than C" where "C" is the highest tested concentration. If the ICp is lower than the lowest concentration tested, the test result is reported as "less than C" where "C" is the lowest tested concentration.

If separate NOEC's/IC25's can be calculated from multiple test endpoints, for example a reproductive endpoint and a growth endpoint, the lowest NOEC/IC25 value expressed in units of "% effluent" will be used to determine permit compliance and should, therefore, be reported as the NOEC/IC25 value for the test. If the NOEC value for growth and/or reproduction is not lower than that for survival, the NOEC/IC25 value reported for the test shall be as survival. For saltwater tests, where additional controls are used in a test (i.e. brine and/or artificial sea salt control), a T-test shall be used to determine if there is a significant difference between the original test control and the additional controls. If there is a significant difference between any of the controls, the test may be deemed unacceptable and if so, will not be used for permit compliance.

III. TEST ACCEPTABILITY CRITERIA

Any test that does not meet these acceptability criteria will not be used by the Department for any purpose and must be repeated as soon as practicable, with a freshly collected sample.

1. Tests must be performed by a laboratory approved for the conduct of chronic toxicity tests and certified for acute toxicity testing under N.J.A.C. 7:18.

2. Test results may be rejected due to inappropriate sampling, including the use of less than three effluent samples in a test and/or use of procedures not specified in a permit or methodology questionnaire, use of frozen or unrefrigerated samples or unapproved pretreatment of an effluent sample.

3. Controls shall meet the applicable performance criteria specified in the Table 2.0 and in the individual method specifications contained herein.

4. Acceptable and applicable Standard Reference Toxicant Data must be available for the test.

5. No unapproved deviations from the applicable test methodology may be present.

6. When using hypothesis testing techniques, a deviation from the dose response as explained in the statistical portion of this document shall not be present in the data.

Table 2.0: CONTROL PERFORMANCE

TEST ORGANISM	MINIMUM SURVIVAL	MINIMUM WEIGHT GAIN	MINIMUM FECUNDITY/ REPRODUCTION
Pimephales promelas	80%	0.25 mg avg	N/A
Ceriodaphnia dubia	80%	N/A	Average of ≥15 young per surviving female
Selenastrum capricornutum	Density ≥$2x10^5$cells/ml	N/A	Variability in controls not to exceed 20%.
Cyprinodon variegatus	80%	0.60 mg (unpreserved) avg 0.50 mg (preserved) avg	N/A
Menidia beryllina	80%	0.50 mg (unpreserved) avg 0.43 mg (preserved) avg	N/A
Mysidopsis bahia	80%	0.2 mg per mysid avg	egg production by 50% of control females if fecundity is used as an endpoint.
Champia parvula	100%	N/A	≥10 cystocarps per plant Plants in controls and lower test concentrations shall not fragment so that individual plants cannot be identified.

THE DETERMINATION OF A TEST AS UNACCEPTABLE DOES NOT RELIEVE THE FACILITY FROM MONITORING FOR THAT MONITORING PERIOD

IV. STANDARD REFERENCE TOXICANT TESTING

All chronic testing shall be accompanied by testing with a Standard Reference Toxicant (SRT) as a part of each laboratory's internal quality control program. Such a testing program should be consistent with the quality assurance/quality control protocols described in the USEPA chronic testing manuals. Laboratories may utilize the reference toxicant of their choice and toxicants such as cadmium chloride, potassium chloride, sodium dodecyl sulfate and copper sulfate are all acceptable. However, Potassium chloride has been chosen by several laboratories and is recommended by the Department. The concentration of the reference toxicant shall be verified by chemical analysis in the low and high test concentrations once each year or every 12 tests, whichever is less. It is not necessary to run SRT tests, for all species using the same SRT.

A. INITIAL STANDARD REFERENCE TOXICANT (SRT) TESTING REQUIREMENTS

At a minimum, this testing shall include an initial series of at least five SRT tests for each test species method. Acceptable SRT testing for chronic toxicity shall be performed utilizing the short term chronic toxicity test methods as specified herein. Reference toxicant tests utilizing acute toxicity testing methods, or any method other than those contained in this document are not acceptable. The laboratory should forward results of the initial SRT testing, including control charts, the name of the reference toxicant utilized, the supplier and appropriate chemical analysis of the toxicant to either address listed in the reporting requirements section herein. The initial series of a least five SRT tests for a specific test species method shall be completed and approved in writing by the Department prior to the conduct of any chronic toxicity testing for compliance purposes.

B. SUBSEQUENT SRT TESTING REQUIREMENTS

After receiving the initial approval from the Department to conduct chronic toxicity tests for compliance purposes, subsequent SRT testing shall be conducted as follows:

1. Where organisms used in testing are cultured at the testing laboratory, SRT testing should be conducted once per month for each species/method.

2. Where the laboratory purchases organisms from a laboratory certified in New Jersey for the conduct of acute toxicity testing and approved for the conduct of chronic toxicity testing for the test organism in question (i.e. the "supplier laboratory"), SRT data provided by the "supplier laboratory" for each lot of organisms purchased is acceptable as long as the SRT test result falls within the control limits of the control chart established by the "supplier laboratory" for that organism. The laboratory using purchased organisms is responsible for the results of any compliance tests they perform.

3. A testing laboratory purchasing organisms from a supplier laboratory must still perform SRT testing on a quarterly basis at a minimum, for each species they test with, in order to adequately document their own interlaboratory precision.

4. If a testing laboratory purchasing organisms elects not to use the SRT data from a "supplier laboratory" or such data is unavailable or where organisms are purchased from another organism supplier, the testing laboratory must conduct SRT testing on each lot of organisms purchased.

5. For industrial laboratories certified under N.J.A.C. 7:18 to conduct acute toxicity tests, only the SRT testing conditions specified in 2. through 4. above apply. Where that laboratory/facility cultures their own test organisms, the frequency of SRT testing required will be determined on a case by case basis, based on the frequency of testing for that facility.

NOTE: Based on these requirements, SRT data are considered applicable to a compliance test when the SRT test results are acceptable and the SRT test is conducted within 30 days of the compliance test, for the test species and SRT in question. Therefore, it is not necessary for an approved laboratory to run an SRT test every month if the laboratory is not conducting compliance tests for a particular species.

C. CHANGING OF AN ESTABLISHED REFERENCE TOXICANT

The SRT used for any species by a laboratory may be changed at any time provided that the following conditions have been satisfied:

1. A series of at least three reference toxicant tests are conducted with the new reference toxicant and the results of those tests are identified as satisfactory, in writing, by the Department.

2. Laboratories must continue using the already approved SRT in their ongoing QA/QC program, until such time as the letter referenced above, is received by the laboratory.

D. CONTROL CHARTS

Control charts shall be established from SRT test results in accordance with the procedures outlined in the USEPA methods documents. Control charts shall be constructed using IC25's using the following methods:

1. The upper and lower control limits shall be calculated by determining +/- two standard deviations above and below the mean.

2. SRT test results which exhibit an IC25 that is greater than the highest concentration tested or less than the lowest concentration tested (i.e. a definitive endpoint cannot be determined), shall not be used to establish control charts.

3. SRT tests which do not meet the acceptability criteria for a specific species shall not be used to establish control charts.

4. All values used in the control charts should be as nominal concentrations. However, the control charts shall be accompanied by a chart tabulating the test results as measured concentrations.

5. An outlier (i.e. values which fall outside the upper and lower control limits) should be included on the control chart unless it is determined that the outlier was caused by factors not directly related to the test organisms (e.g., test concentration preparation) as the source of variability would not be directly applicable to effluent tests. In such case, the result and explanation shall be reported to the Department within 30 days of the completion of the SRT test.

The control chart established for the initial series of SRT data submitted will be used by the laboratory and the Department to determine outliers from SRT test results reported in the "NJPDES Biomonitoring Report Form - Chronic Toxicity Test" submitted by the permittees for the test species. These initial control limits will remain unchanged until twenty SRT tests have been completed by the laboratory.

The following procedures shall be used for continually updating control charts after twenty acceptable SRT tests have been completed:

1. Once a laboratory has completed twenty acceptable SRT tests for a test species, the upper and lower control limits shall be recalculated with those twenty values.

2. For each successive SRT test conducted after these first twenty tests, a moving average shall be calculated and the control limits reevaluated using the last twenty consecutive test results.

3. The upper and lower control limits shall be reported on the "NJPDES Biomonitoring Report Form - Chronic Toxicity Tests" along with the SRT test result.

E. UNACCEPTABLE SRT TEST RESULTS

If a laboratory produces any SRT test results which are outside the established upper and lower control limits for a test species at a frequency greater than one test in any ten tests, a report shall be forwarded to the Department at the address contained herein. This report shall include any identified problem which caused the values to fall outside the expected range and the corresponding actions that have been taken by the laboratory. The Department may not accept or may require repeat testing for any toxicity testing that may have been affected by such an occurrence.

If a laboratory produces two consecutive SRT test results or three out of any ten test results which are outside the established upper and lower limits for a specific test species, the laboratory shall be unapproved to conduct chronic toxicity tests for compliance purposes for that test species. Reapproval shall be contingent upon the laboratory producing SRT test results within the established upper and lower control limits for that test species in two consecutive SRT tests. If one or both of those test results again fall outside the established control levels, the laboratory is unapproved for that test species until five consecutive test results within the established upper and lower control limits are submitted and approved by the Department.

F. ANNUAL SUBMITTALS

Control charts shall be forwarded to the Department on an annual basis, on the anniversary of approval for the test species.

The Department may request, at any time, any information which is essential in the evaluation of SRT results and/or compliance data.

V. TEST CANCELLATION / RESCHEDULING EVENTS

A lab may become aware of QA problems during or immediately following a test that will prevent data from being submitted or a lab may be unable to complete a tests due to sample collection or shipping problems. If for any reason a chronic toxicity test is initiated and then prematurely ended by the laboratory or at the request of the permittee, the laboratory shall submit the form entitled "Chronic Whole Effluent Toxicity Testing Test Cancellation / Rescheduling Event Form" contained herein. This form shall be used to detail the reason for prematurely ending the test. This completed form and any applicable raw data sheets shall be submitted to the appropriate biomonitoring program at the address above within 30 days of the cessation of the test.

Tests are considered to be initiated once test organisms have been added to all test chambers.

Submission of this form does not relieve the facility from monitoring for that monitoring period.

VI. REPORTING

The report form entitled "NJPDES Biomonitoring Report Form - Chronic Toxicity Tests" should be used to report the results of all NJPDES chronic compliance biomonitoring tests. Laboratory facsimiles are acceptable but must contain all information included on any recent revisions of the form by the Department. Statistical printouts and raw data sheets for all endpoints analyzed shall be included with the report submitted to the Department. One copy of all chronic toxicity test report forms shall be submitted to the following address as applicable:

New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Surface Water Permitting
Mailcode 401-02B
PO Box 420
Trenton, New Jersey 08625-0420

It is not necessary to attach a copy of a test report form to the Discharge Monitoring Report (DMR) form when submitting this form to the Department. However, the results of all chronic toxicity tests conducted for compliance purposes must be reported on the DMR form under the appropriate parameter code in the monitoring period in which the test was conducted.

VII. METHOD SPECIFICATIONS

The following method specifications shall be followed as specified in the NJPDES permit. Any changes to these methods will not be considered acceptable unless they are approved in writing by the Department, prior to their use.

A. Fathead Minnow (*Pimephales promelas*), Larval Survival and Growth Test, method 1000.0
B. *Ceriodaphnia dubia*, Survival and Reproduction Test, method 1002.0
C. Algal, (*Selenastrum capricornutum*), Growth Test, method 1003.0
D. Sheepshead Minnow (*Cyprinodon variegatus*), Larval Survival and Growth Test, method 1005.0
E. Inland Silverside (*Menidia beryllina*), Larval Survival and Growth Test, method 1006.0
F. *Mysidopsis bahia*, Survival, Growth, and Fecundity Test, method 1007.0
G. *Champia parvula*, Sexual Reproduction Test, method 1009.0

VIII. REFERENCES

1. Keating, K. 1985. The influence of Vitamin B12 deficiency on the reproduction of Daphnia pulex Leydig (Cladocera). J. Crustacean Biology 5:130-136.

2. Keating, K. 1988. N.J.D.E.P. Project C29589, Fiscal 1988 Third Quarter Summary Report. Producing Nutritionally Competent Daphnids for Use in Bioassay. 44p.

3. Keating, K., and B. Dagbusan. 1984. Effect of selenium deficiency on cuticle integrity in Cladocera (Crustacea). Proc. Natl. Acad. Sci. USA 81:3433-3437.

4. NJDEP, 1993. Discharge Monitoring Report (DMR) Instruction Manual.

5. USEPA. 1994. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. EPA-600/4-91-003. July 1994. Second Edition.

6. USEPA. 1994. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. EPA/600/4-91/002. July 1994. Third Edition.

New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Surface Water Permitting
Mailcode 401-02B
PO Box 420
Trenton, New Jersey 08625-0420
BIOMONITORING PROGRAM

CHRONIC WHOLE EFFLUENT TOXICITY TESTING
TEST CANCELLATION / RESCHEDULING EVENT FORM

THIS FORM IS TO BE COMPLETED AND SUBMITTED TO THE DEPARTMENT DIRECTLY BY THE LABORATORY CONDUCTING CHRONIC TOXICITY TESTS WHENEVER A CHRONIC TOXICITY TEST IS PREMATURELY ENDED FOR ANY REASON

NJPDES No.: _____

FACILITY NAME: _____

LOCATION: _____

CONTACT: _____ PHONE: _____

CANCELLATION EVENT:

LABORATORY NAME / NUMBER: _____

CONTACT: _____

TEST START DATE: _____/_____/_____ TEST END DATE: _____/_____/_____

REASON FOR CANCELLATION: _____

_____

_____

_____

_____

_____

EFFLUENT SAMPLING:

SAMPLING POINT / DESCRIPTION OF SAMPLING SITE: _____

_____

SAMPLING INITIATED: DATE: ____/____/____ TIME: _____

SAMPLING ENDED: DATE: ____/____/____ TIME: _____

NUMBER OF EFFLUENT SAMPLES COLLECTED: _____

SAMPLE TYPE (GRAB/COMPOSITE): _____

RECEIVED IN LAB BY/FROM: _____

_____

METHOD OF SHIPMENT: _____

(ALL APPLICABLE RAW DATA SHEETS MUST BE ATTACHED)

c: Permittees authorized agent.