

Permit Fact Sheet

General Information

Permit Number:	WI-0046531-05-0
Permit Name:	Petroleum Contaminated Water General Permit
Permittee:	Owners or operators of oil/water separators
Discharge Location:	Statewide
Receiving Water:	Surface water or groundwater in the state of Wisconsin

Section 283.35, Wisconsin Statutes authorizes the Department to issue general discharge permits for categories of point source discharges. It is more efficient for the Department to cover multiple facilities under a general permit (GP) rather than issuing individual permits for each facility when no special circumstances warrant site specific permit requirements or limitations. The general permit program is intended to minimize effort for the permittee and the Department.

When a GP is issued, all facilities meeting its requirements may be covered by the GP. For facilities that are eligible for coverage under a general permit, the Department sends a letter granting coverage and a copy of the permit to the facility. A facility may need to be covered under more than one GP, depending on the different types of waste streams that a facility discharges.

If the Department determines it is necessary or appropriate to withhold or withdraw coverage under a general permit, an individual site specific WPDES permit may be issued containing additional limitations to regulate the discharge because it contains pollutants that are not typical for the general permit category and the pollutants could exceed a water quality standard. A written request from the discharger to voluntarily withdraw from coverage under the general permit may also be requested.

Description

This general permit (GP) is applicable to point source discharges of wastewater that has been contaminated with petroleum. Petroleum products may include, but are not limited to: gasoline, diesel fuel, aircraft fuel, jet fuel, heating oils, and lubrication oils. The discharge from activities covered under the permit will be intermittent in nature, dependent on storm water runoff or the amount of condensation. Flow volumes may range from 1000 to 20,000 gallons per day.

Four types of water contaminated by petroleum products may be discharged under this permit as defined below:

(1) *Petroleum Contact Water* (excluding tank bottom water): The transfer of petroleum products and the general operation of equipment at these facilities typically result in small spills and drippings of petroleum products that may commingle with storm water runoff or other sources of water. In addition, storm water that falls within containment areas storing fuel may become contaminated with petroleum products. These contaminated waters contain free phase (not emulsified or dissolved) petroleum products and may be covered by this GP. Examples of facilities that may be regulated by this GP include vehicular fueling, railroad yards, airports, and petroleum tank farm operations. A standard treatment system for the removal of free phase petroleum products consists of an oil/water separator.

(2) *Tank Bottom Water*: Water collects in petroleum storage tanks due to condensation and infiltration of rain and snow. The volume of water collected in a tank over time depends on the tank design, precipitation, ambient temperature, and other factors. The wastewater drained from the storage tanks requires collection and treatment prior to discharge. The largest volumes of wastewaters will come from the bulk petroleum storage tank facilities; these are the facilities anticipated to be regulated by this GP. However, this GP may be appropriate for regulating other facilities that store petroleum products and drain the water from the storage tanks.

When water is removed from a tank, it has usually been in contact with petroleum products for an extended period of time. The waste removed from the bottom of the tanks (tank bottoms) contains a limited, and usually small, amount of

free product, water saturated with dissolved petroleum products, and sometimes water with emulsified petroleum products. The water removed from petroleum storage tanks requires more extensive treatment than other wastewaters contaminated with petroleum products because of the dissolved and emulsified petroleum products. Commonly, oil/water separators are used as pretreatment to remove free product from the wastewater. Treatment for removal of dissolved petroleum products may include: air stripping, activated carbon, activated clays, and distillation. Treatment for removal of emulsified petroleum products may include thermal or chemical treatment.

(3) *Scrap and Waste Storage Area Oily Water*: Storage areas for scrap and waste materials, especially scrap metal, may generate an “oily wastewater” from storm water contacting the material during storage. This petroleum contaminated storm water may not be discharged to waters of the state unless it is treated and complies with the treatment technology based effluent limits contained in this permit. This contaminated wastewater may contain a combination of free product and dissolved petroleum products, depending upon the exposure time.

(4) *Secondary Containment Water*: Wastewater collected in secondary containment structure at petroleum bulk stations, terminals, or tank farms is normally clean storm water and may discharge untreated. If an oil sheen is present or monitoring indicates contamination, this water must be treated before discharging. Refer to Subsection 2.2.

Facilities in the business of recycling of scrap and waste materials are typically covered under one of two storm water permits, either the “Recycling of Scrap and Waste Materials” permit WI-S058831, or the “Dismantling of Vehicles for Parts Selling and Salvage” permit WI-S059145. When treatment of the “oily wastewater” is necessary, because best management practices cannot control the petroleum product contamination, the facility must obtain coverage under this permit to discharge from the treatment system. Treatment for removal of the “oily wastewater” may include an oil/water separator and activated carbon adsorption system.

A facility is not eligible for coverage under this general permit to discharge process wastewater that may contaminate storm water. Process wastewater would include discharges from oily scrap waste processing areas such as metal shredding, washing, or engine block breaking. When processing is involved, metal contamination of the wastewater is likely, that requires treatment. An individual industrial WPDES permit is necessary for process wastewater discharges, which would contain site specific effluent limits for a discharge.

1 Applicability Criteria

1.1 Activities Covered

The permit is applicable to discharges of wastewater contaminated with petroleum products, including discharges from vehicle fueling facilities, railroad yards, airports, bulk petroleum stations and terminals (tank farms), and scrap metal storage areas.

A note advises permittees who are covered under this permit that a storm water permit for the industrial activities listed may also likely be necessary. Transportation facilities and petroleum bulk stations and terminals would be subject to the Tier 2 industrial general storm water permit (WI-S067857). Scarp recycling would be subject to the “Recycling of Scrap and Waste Material” storm water permit (WI-S058831). Auto parts recycling would be subject to the “Dismantling of Vehicles for Parts Selling and Salvage” storm water permit (WI-S059145). The storm water permits contain the requirements for storm water pollution prevention plans and other applicable requirements from ch. NR 216, Wis. Adm. Code. Additional information on the storm water permits is available at the following Department web site:

<http://dnr.wi.gov/topic/Stormwater/>

1.2 Activities Not Covered

Discharges of contaminated groundwater must be regulated under a different permit, and may be eligible for the “Contaminated Groundwater from Remedial Action Operations” general permit WI-0046566.

Discharges covered under this permit must meet the wetland protection requirements of ch. NR 103, Wis. Adm. Code, and may not significantly adversely impact wetlands. For discharges that impact wetlands, a facility will need to submit information that allows the Department to determine if a discharge meets code requirements.

Discharges to outstanding and exceptional resource waters are not authorized by this permit. Regulation of discharges to outstanding and exceptional resource waters requires an individual permit, which provides the oversight and discharge limitations necessary to protect these types of receiving waters.

The discharges from activities eligible for this permit are not expected to exceed any surface water or groundwater standards. Activities with discharges that may violate surface water quality standards or groundwater quality standards require the oversight and discharge limitation available under an individual permit.

2 Requirements for All Discharges

2.1 Required Treatment

The three categories of wastewater described below will be contaminated to a certain degree with petroleum products that must be treated to protect surface water and groundwater. Facilities without treatment equipment will be unable to control the discharge quality and will not be in compliance with this GP. An exception may be discharges of secondary containment water from petroleum bulk stations and terminals described in Subsection 2.2.

2.1.1 Petroleum Contact Water (excluding tank bottom water)

This category of wastewater will likely be contaminated by petroleum products. The permit requires treatment with an adequately sized, designed, and functioning oil/water separator. This provides simple gravity separation of the oil from collected water. A few important common features of oil/water separators include: a small inlet under-flow baffle extending a short distance under the operating level of the wastewater for distribution of the incoming flow across the cross section of the separator, a large outlet under-flow baffle that extends far below the water surface to prevent separated oil from discharging, and a method for removal of the collected oil from the surface of the water. Some of the methods for removal of petroleum products from the oil/water separator include: rope skimmers, paddle skimmers, semi-permeable membranes, absorbents, and manual removal. Oil/water separator equipment may also include: extensive baffle systems, inclined plates, coalescing media, and air flotation systems. The separated petroleum products are usually stored in slop tanks for recycle.

2.1.2 Tank Bottom Water

This category of wastewater will contain dissolved or emulsified petroleum products that cannot be removed by an oil/water separator. Water that may collect at the bottom of a petroleum storage tank is subject to long term exposure, causing it to become contaminated with dissolved or emulsified petroleum products. Methods for removing dissolved or emulsified petroleum products from water include air stripping, chemical addition, dissolved air floatation (DAF), activated carbon, activated clays, thermal treatment, and distillation. Activated clays or carbon units are used to remove contaminants from water resulting from contact with the heavier end hydrocarbons. To protect against contaminants breaking through carbon or clay units, two units are required in series when this type of treatment is used. The activated clays and carbon will remove insoluble organics and color. Hydrocarbons are adsorbed in the following order: unsaturates, aromatics, naphthenes, and paraffins. In each series, the high molecular weight hydrocarbons are adsorbed more readily. Resinous and asphaltic substances are actively adsorbed. Since wastewater contaminated strictly with gasoline mostly contains low molecular weight, saturated, paraffin hydrocarbons, these wastewaters are usually not treated by activated clay or carbon filters; rather air stripping is used to volatilize contaminants from the water.

2.1.3 Scrap and Waste Storage Area Oily Water

This category of wastewater will contain oil and grease, and dissolved or emulsified petroleum products that cannot all be removed by an oil/water separator. Methods for removing dissolved or emulsified petroleum products from water would be similar to the tank bottom water described above.

2.2 Secondary Containment Water

Wastewater collected in secondary containment structures at petroleum bulk stations, terminals, or tank farms is storm water that either doesn't contain petroleum products or may contain such low concentrations that treatment is unnecessary prior to discharge. The permit takes this into account by allowing the water that collects in secondary containment structures that meets uncontaminated conditions to be discharged without treatment. The main criterion is that the wastewater cannot contain a visible oil sheen or film, in which case it would comply with the 15 mg/L limit for oil and grease. Wastewater that doesn't meet the criteria must be treated and monitored as specified in Table 3.2.1 or Table 4.2.1.

During the first year after coverage is granted under the reissued permit, monitoring is required for flow, oil and grease, BOD₅, total BETX, PAH, benzo(a)pyrene, and naphthalene (for groundwater discharges BOD₅ is not required). If the chemical monitoring data for the secondary containment water is found to be uncontaminated, it may be discharged without treatment. No further chemical monitoring during the 5 year term of the permit is required.

2.3 Dykes and Berms

Water collection or treatment facilities with dikes and berms must be designed and maintained to prevent leakage above ground.

2.4 Adequate Design

Precipitation must be taken into account for exposed collection and treatment systems. Ch. NR 205, Wis. Adm. Code identifies the design rainfall amount and probable intensity of 10-year and 25-year, 24-hour rainfall events for locations in Wisconsin. This permit requires that treatment systems be capable of handling the water resulting from a storm having a 10-year, 24-hour event frequency that falls within or flows into the area of the treatment/disposal system. This design parameter is common to industrial treatment facilities in Wisconsin. Wastewater treatment systems must have sufficient hydraulic capacity.

2.5 Treatment System Usage Restrictions

Treatment system equipment may only be used for treatment of petroleum contaminated water. Activities that use treatment equipment for other purposes will not be able to meet permit requirements. For example, if an oil/water separator is used to store waste oils and spills, any contact water entering the oil/water separator could result in the discharge of oil and grease in exceedance of permit limits.

2.6 Treatment System Inspection and Maintenance

Inspection and maintenance of treatment system equipment is as important as the analytical monitoring of the discharge. Treatment equipment must be operating effectively and efficiently to insure that effluent limits are met. This can only be accomplished through regularly scheduled maintenance and cleaning.

2.7 Reporting Monitoring Results

The permittee is required to report monitoring data to the Department on a regular basis using either paper forms or electronically.

2.8 Disposal of Waste Oil and Solids Removed from Treatment Systems

Documentation of waste oil and solids disposal from the treatment system will provide information as to the cleanliness of the operation, and that wastes are properly disposed of. Large amounts of waste oil and solids for disposal may indicate excessive spills, dumping, and possible discharges of oil that may not be identified by analytical monitoring. Disposal is subject to applicable Department regulations. A report on the disposal of waste oil and solids is required annually.

2.9 Reporting of Tank Bottom Water Disposal

Facilities regulated by this GP that do not treat and discharge tank bottom water on site are required to report where they dispose of this wastewater. A facility may decide to dispose of the tank bottom water by hauling it to a sewage treatment plant or other appropriate treatment and disposal facility. Since tank bottom water contains hazardous pollutants, it is appropriate that all facilities regulated by this GP report to the Department where this water is being disposed.

2.10 Treatment System Plan Approval

Monitoring data from several current permit holders indicates there may be difficulty in meeting the proposed PAH effluent limits for the petroleum contact water category. Consequently, additional treatment beyond an oil/water separator may be necessary. An activated carbon adsorption unit to treat the effluent from the oil/water separator is expected to be a possible solution as the best available treatment economically achievable.

Because there may be many such treatment system modifications, and they would simply involve supplier furnished package treatment units, the Department's review of individual plans is unnecessary. The permittee may self approve their plans if they meet the criteria described in the permit. The Department uses a similar self approval process for wastewater holding tanks.

3 Surface Water Discharge Requirements

3.1 Sampling Points

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
001	Petroleum Contact Water: Storm water runoff or other water that contacts petroleum products and becomes contaminated. An oil/water separator is the typical treatment necessary.
002	Tank Bottom Water: Water that collects in the bottom of petroleum storage tanks that contains dissolved or emulsified petroleum products. An oil/water separator may provide pretreatment to remove free product, followed by advanced treatment processes to remove dissolved petroleum products.
003	Scrap and Waste Storage Area Oily Water: Storm water runoff from storage areas for scrap and waste materials such as salvage yards contain free product and dissolved or emulsified petroleum products. An oil/water separator may provide adequate treatment, but additional advanced treatment processes to remove dissolved substances may be necessary.
004	Secondary Containment Water: Water that collects in the secondary containment structures, which surround petroleum storage tanks to capture spills, may be discharged without treatment if it's uncontaminated. Prior to discharging a visual inspection must confirm the absence of a visible oil sheen from petroleum product contamination. Chemical monitoring is required once during the first year of each five year permit term.

3.2 Monitoring Requirements and Effluent Limitations

Surface water discharges include ditches, storm sewers and pipes that convey wastewater to creeks, streams, rivers and lakes. The effluent quality is regulated to prevent negative impacts to surface water. Tables 3.2.1, 3.2.2, 3.2.3 and 3.2.4 in the permit list the discharge limitations and monitoring requirements for surface water discharges for three categories of petroleum contaminated wastewater, and the one time monitoring required for secondary containment water. The limits are treatment technology based, not water quality based. If a surface water needs protection beyond the general permit, an individual permit with site specific water quality based limits must be issued.

In addition to the discharge limitations and monitoring requirements in the tables, there are six explanatory footnotes related to the monitoring requirements or operation of the treatment system. The floating solids and foam requirement is a best professional judgment narrative limit dating back to the Refuse Act Permit Program and the Corps of Engineer's River and Harbor Act of 1899.

3.2.1 Sample Point Number: 001- Petroleum Contact Water

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		gpd	Quarterly	Estimated	3.3, 3.4
Oil & Grease (Hexane)	Daily Max	15 mg/L	Quarterly	Grab	3.3, 3.5
BOD ₅ , Total	Monthly Avg	20 mg/L	Annual	Grab	3.5
BETX, Total	Monthly Avg	750 ug/L	Annual	Grab	3.5, 3.6
PAHs	Monthly Avg	0.1 ug/L	Annual	Grab	3.5, 3.7.1
Benzo(a)pyrene	Monthly Avg	0.1 ug/L	Annual	Grab	3.5, 3.7.2
Naphthalene	Monthly Avg	70 ug/L	Annual	Grab	3.5, 3.7.3

Explanation of Limits and Monitoring Requirements

Flow: An estimate of the average daily flow reported quarterly will be sufficient to assure that the facility is aware of the discharge amount. An estimate means a reasonable approximation of flow based on any of the following: (a) water balance, (b) an uncalibrated weir, (c) calculations from the velocity and cross section of the discharge, (d) intake water meter readings where the intake, or a specific portion of it, is discharged, (e) discharge water meter readings, and (f) any of the more complex methods listed in s. NR 218.05(1), Wis. Adm. Code. The Department may approve additional methods for estimating flow.

Oil and Grease: After the removal of free petroleum product treated wastewater may be discharged to surface water. The oil and grease effluent limit is 15 mg/l expressed as a daily maximum. This is a treatment technology based limit that reflects the ability of an oil/water separation to easily remove oil and grease. Oil and grease monitoring is required on a quarterly basis using a grab sample.

Biochemical Oxygen Demand (BOD₅): This parameter is monitored annually to gather information on BOD₅ levels in discharges to surface water. A best professional judgment limit of 20 mg/L expressed as a monthly average applies.

Total BETX (benzene, ethylbenzene, toluene, and xylenes): This parameter is monitored annually using a grab sample. The concentration should be below a level of concern as BETX is usually only associated with the tank bottom water. Included is the treatment technology based effluent limits of 750 µg/L Total BETX expressed as a monthly average. The limit is the same as in the “Contaminated Groundwater from Remedial Action Operations” general permit. Carbon

adsorption treatment can achieve this concentration levels. Data indicates just an oil/water separator may not be sufficient for meeting the effluent limits.

PAH (polynuclear aromatic hydrocarbons): These parameters are monitored annually using a grab sample. The concentration of these compounds should be below a level of concern as PAH are usually only associated with the tank bottom water. Included are treatment technology based effluent limits for three components of PAH expressed as a monthly average limits: 0.1 µg/L applies to a group of 10 PAH compounds, 0.1 µg/L applies to benzo(a)pyrene separately, and 70 µg/L applies to naphthalene separately (refer to attachment for a detailed explanation of the PAH limits). These limits are the same as those used in the “Contaminated Groundwater from Remedial Action Operations” general permit. Carbon adsorption treatment can achieve these concentration levels. Data indicates just an oil/water separator may not be sufficient for meeting the effluent limits.

3.2.2 Sample Point Number: 002- Tank Bottom Water

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		gpd	Quarterly	Estimated	3.3, 3.4
Oil & Grease (Hexane)	Daily Max	15 mg/L	Quarterly	Grab	3.3, 3.5
BOD ₅ , Total	Monthly Avg	20 mg/L	Annual	Grab	3.5
BETX, Total	Monthly Avg	750 ug/L	Quarterly	Grab	3.3, 3.5, 3.6
Benzene	Monthly Avg	50 ug/L	Quarterly	Grab	3.3, 3.5
PAHs	Monthly Avg	0.1 ug/L	Quarterly	Grab	3.3, 3.5, 3.7.1
Benzo(a)pyrene	Monthly Avg	0.1 ug/L	Quarterly	Grab	3.3, 3.5, 3.7.2
Naphthalene	Monthly Avg	70 ug/L	Quarterly	Grab	3.3, 3.5, 3.7.3

Explanation of Limits and Monitoring Requirements

Flow, Oil and Grease, BOD₅, Total BETX, PAH, Benzo(a)pyrene, and Naphthalene: These parameters are the same as the petroleum contact water described in 3.2.1. The monitoring frequency is increased to quarterly for the BETEX and PAH compounds because they’re more likely to be present.

Benzene: This parameter was added as a petroleum contaminant indicator for the tank bottom water. Included is a treatment technology based limit of 50 µg/L expressed as a monthly average.

3.2.3 Sample Point Number: 003- Scrap and Waste Storage Area Oily Water

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		gpd	Quarterly	Estimated	3.3, 3.4
Oil & Grease (Hexane)	Daily Max	15 mg/L	Quarterly	Grab	3.3, 3.5
BOD ₅ , Total	Monthly Avg	20 mg/L	Annual	Grab	3.5

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Suspended Solids, Total	Daily Max	40 mg/L	Quarterly	Grab	3.3, 3.5
BETX, Total	Monthly Avg	750 ug/L	Quarterly	Grab	3.3, 3.5, 3.6
Benzene	Monthly Avg	50 ug/L	Quarterly	Grab	3.3, 3.5
PAHs	Monthly Avg	0.1 ug/L	Quarterly	Grab	3.3, 3.5, 3.7.1
Benzo(a)pyrene	Monthly Avg	0.1 ug/L	Quarterly	Grab	3.3, 3.5, 3.7.2
Naphthalene	Monthly Avg	70 ug/L	Quarterly	Grab	3.3, 3.5, 3.7.3

Explanation of Limits and Monitoring Requirements

Flow, Oil and Grease, BOD₅, Total BETEX, Benzene, PAH, Benzo(a)pyrene, and Naphthalene: These parameters are the same as the tank bottom water described in 3.2.2.

Total Suspended Solids: This parameter was added as potential substances of concern in the runoff from storage areas. Included is a treatment technology based effluent limit of 40 mg/L expressed as a daily maximum.

3.2.4 Sample Point Number: 004- Secondary Containment Water

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		gpd	Once	Estimated	2.2.2, 3.4
Oil & Grease (Hexane)	Daily Max	15 mg/L	Once	Grab	2.2.2, 3.5
BOD ₅ , Total	Monthly Avg	20 mg/L	Once	Grab	2.2.2, 3.5
BETX, Total	Monthly Avg	750 ug/L	Once	Grab	2.2.2, 3.6
PAHs	Monthly Avg	0.1 ug/L	Once	Grab	2.2.2, 3.7.1
Benzo(a)pyrene	Monthly Avg	0.1 ug/L	Once	Grab	2.2.2, 3.5, 3.7.2
Naphthalene	Monthly Avg	70 ug/L	Once	Grab	2.2.2, 3.5, 3.7.3

Explanation of Limits and Monitoring Requirements

The monitoring is the same as for petroleum contact water in 3.2.1. Monitoring is only required once during the first year of permit coverage to assess for the presence of these contaminants.

Impaired Waters and TMDL Requirements

Total Daily Maximum Load Compliance. Facilities discharging under this general permit shall meet the requirements of any State and Federally Approved Total Daily Maximum Load TMDL allocation in effect on the start date of this permit. As of June 30, 2012, all Wisconsin and EPA approved TMDL allocations have been for sediment or phosphorus pollutants of concern. Wastewater discharged under this permit should have levels of suspended solids and phosphorus

that are normally very low, with maybe the exception of a discharge from scrape and waste storage areas under Outfall 003. Petroleum contaminated water must also be treated, therefore, the treated discharges covered under this permit are expected to be consistent with the baseline allocation granted to Wisconsin General Permit dischargers in all State and EPA approved TMDL's in effect on the start date of this permit.

Note: A "Pollutant(s) of concern" means a pollutant that is contributing to the impairment of a water body. State and Federal Approved TMDLs can be identified by contacting the Department, or by searching for the State and Federal Approved TMDL list on the Department Internet site. The current link to identify the list of State and Federal Approved Final TMDLs is: http://dnr.wi.gov/topic/impairedwaters/approved_tmdls.html.

New or Increased Discharges. Federal Statutes, 40 CFR 122.4, prohibit the issuance of a WPDES permit to a new discharger that will contribute to a violation of a water quality standard in a 303(d) listed water. Also, an increased discharge of a pollutant of concern that would cause or contribute to a violation of a water quality standard in a 303(d) listed water is not to be allowed. Therefore, this general permit specifies that a permittee may not establish a new pollutant of concern discharge to a 303(d) listed impaired water body or significantly increase the discharge of a pollutant of concern to an impaired water body unless the new or increased discharge does not contribute to the receiving water impairment, or the new discharge is consistent with a Department finalized total maximum daily load (TMDL) allocation for the impaired water body. Any new or increased pollutant of concern discharge to an impaired surface water authorized under this general permit shall be consistent with the baseline load allocation for general permittees discharging to an impaired receiving water.

This general permit may not be used if this requirement is not met for a new discharger. For a new discharge requesting coverage under this general permit, the Department will evaluate the proposed new pollutant discharge amount and receiving water to determine if the above requirement can be met. A variety of options may be available to insure any proposed new discharger does not contribute to the receiving water impairment such as on-site capture of the pollutant of concern, an alternate discharge location, wastewater reuse opportunities, directing the discharge to a seepage area, enhanced treatment options so the discharge would meet the water quality standard, etc.

If an existing discharger would proposed a significant increase in a pollutant of concern discharge to an impaired water body, evaluation of the proposed increase would begin via notification to the Department of a planned change under standard requirement 5.9 of the permit. Upon notification of the proposed increase, the Department would evaluate the proposed increased pollutant discharge amount and receiving water to determine if the discharge change would be within the baseline load allocation to general permittees discharging to the surface water. If necessary, a variety of options may be available to insure any proposed increased discharge does not contribute to the receiving water impairment such as on-site capture of the pollutant of concern, an alternate discharge location, wastewater reuse opportunities, directing the discharge to a seepage area, enhanced treatment options so the discharge would meet the water quality standard, etc.

Alternate Permit needed to meet TMDL. If the Department notifies a General Permit facility or applicant that the pollutant of concern discharge would not meet the requirements of a state and EPA approved TMDL allocation, the permittee would need to submit an application for a site specific individual WPDES permit or an alternate general permit that specifies the additional pollutant controls necessary to comply with the TMDL. The alternate permit may require the permittee to submit a proposed TMDL implementation plan to the Department. The proposed TMDL implementation plan shall specify feasible additional management practices, pollution prevention activities, and wastewater treatment improvements that can be implemented to meet the waste load allocation.

Note: The section 303(d) list of Wisconsin impaired surface water bodies may be obtained by contacting the Department or by searching for the section 303(d) list on the Department's Internet site. The Department updates the section 303(d) list approximately every two years. The updated list is effective upon approval by EPA. The current link to the section 303(d) list is: http://dnr.wi.gov/topic/impairedwaters/approved_tmdls.html (select "Impaired waters list").

Recommendations for Discharges to 303(d) Listed Impaired Surface Waters. If a facility discharges a pollutant of concern to a 303(d) listed impaired water body, the permittee is encouraged to minimize the pollutant discharge as part of an overall state effort to reduce the pollutant loading to the water body. Wisconsin water impairments are primarily due to

excessive sediment, phosphorus and mercury levels which are normally very low or non-detectable in remedial action wastewater discharges.

Since the 303(d) impaired waters list is updated every 2 years, the permittee is encouraged to check in the third year of the permit term whether the permittee discharges remedial action wastewater to a section 303(d) listed impaired water body. If so, the permittee is encouraged to evaluate whether additional control measures and practices could be used to voluntarily minimize, with the goal of elimination, the discharge of pollutant(s) of concern that contribute to the impairment of the water body. The permittee should keep a record of the amount of pollutant discharge reduction that has been voluntarily achieved. The exact amount of pollutant reduction needed will be legally established in the State and Federal Approved Total Daily Maximum Load (TMDL) allocation established for the discharge.

4 Groundwater Discharge Requirements

4.1 Sampling Points

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)
005	Petroleum Contact Water: Storm water runoff or other water that contacts petroleum products and becomes contaminated. An oil/water separator is the typical treatment necessary.
006	Tank Bottom Water: Water that collects in the bottom of petroleum storage tanks that contains dissolved or emulsified petroleum products. An oil/water separator may provide pretreatment to remove free product, followed by advanced treatment processes to remove dissolved petroleum products.
007	Scrap and Waste Storage Area Oily Water: Storm water runoff from storage areas for scrap and waste materials such as salvage yards contain free product and dissolved or emulsified petroleum products. An oil/water separator may provide adequate treatment, but additional advanced treatment processes to remove dissolved substances may be necessary.
008	Secondary Containment Water: Water that collects in the secondary containment structures, which surround petroleum storage tanks to capture spills, may be discharged without treatment if it's uncontaminated. Prior to discharging a visual inspection must confirm the absence of a visible oil sheen from petroleum product contamination. Chemical monitoring is required once during the first year of each five year permit term.

4.2 Monitoring Requirements and Limitations

A discharge to groundwater includes wastewater infiltration from irrigation, drain fields, ditches, and absorption ponds. The effluent quality is regulated to prevent negative impacts to the water beneath the ground surface. Tables 4.2.1, 4.2.2, 4.2.3 and 4.2.4 in the permit list the discharge limitations and monitoring requirements for groundwater discharges for three categories of petroleum contaminated wastewater, and the one time monitoring required for secondary containment water. The limits are treatment technology based.

In addition to the discharge limitations and monitoring requirements in the tables, there are six explanatory footnotes related to the monitoring requirements or operation of the treatment system.

4.2.1 Sample Point Number: 005- Petroleum Contact Water

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		gpd	Quarterly	Estimated	4.3, 4.4
Oil & Grease (Hexane)	Daily Max	15 mg/L	Quarterly	Grab	4.3, 4.5
BETX, Total	Monthly Avg	750 ug/L	Annual	Grab	4.5, 4.6
PAHs	Monthly Avg	0.1 ug/L	Annual	Grab	4.5, 4.7.1
Benzo(a)pyrene	Monthly Avg	0.02 ug/L	Annual	Grab	4.5, 4.7.2
Naphthalene	Monthly Avg	10 ug/L	Annual	Grab	4.5, 4.7.3

Explanation of Limits and Monitoring Requirements

Flow, Oil and Grease, Total BETX, PAH, Benzo(a)pyrene, and Naphthalene: These parameters are the same as the petroleum contact water for surface water described in 3.2.1, except for BOD₅ that's unnecessary for a groundwater discharge. The limits for benzo(a) pyrene and naphthalene reflect the groundwater preventive action limits (PAL) in ch. NR 140, Wis. Adm. Code, which are designed to ensure groundwater standards are not exceeded. The treatment technology based effluent limits used for the surface water discharge that are less stringent than the PALs.

4.2.2 Sample Point Number: 006- Tank Bottom Water

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		gpd	Quarterly	Estimated	4.3, 4.4
Oil & Grease (Hexane)	Daily Max	15 mg/L	Quarterly	Grab	4.3, 4.5
BETX, Total	Monthly Avg	750 ug/L	Quarterly	Grab	4.3, 4.5, 4.6
Benzene	Monthly Avg	0.5 ug/L	Quarterly	Grab	4.3, 4.5
Ethylbenzene	Monthly Avg	140 ug/L	Quarterly	Grab	4.3, 4.5
Toluene	Monthly Avg	160 ug/L	Quarterly	Grab	4.3, 4.5
PAHs	Monthly Avg	0.1 ug/L	Quarterly	Grab	4.3, 4.5, 4.7.1
Benzo(a)pyrene	Monthly Avg	0.02 ug/L	Quarterly	Grab	4.3, 4.5, 4.7.2
Naphthalene	Monthly Avg	10 ug/L	Quarterly	Grab	4.3, 4.5, 4.7.3

Explanation of Limits and Monitoring Requirements

Flow, Oil and Grease, Total BETX, PAH, Benzo(a)pyrene, and Naphthalene: These parameters are the same as the tank bottom water for surface water described in 3.2.2., and using the groundwater PAL limits for benzo(a) pyrene and naphthalene as described in 4.2.1 above.

Benzene, Ethylbenzene, and Toluene: These parameters were added as a petroleum contaminant indicator for the tank bottom water. The three BETX components are monitored individually because of their stringent discharge limits based on the PALs in ch. NR 140, Wis. Adm. Code. Setting the discharge limitations at the PALs, expressed as monthly average limits, is designed to ensure groundwater standards are not exceeded.

4.2.3 Sample Point Number: 007- Scrap and Waste Storage Area Oily Water

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		gpd	Quarterly	Estimated	4.3, 4.4
Oil & Grease (Hexane)	Daily Max	15 mg/L	Quarterly	Grab	4.3, 4.5
Suspended Solids, Total	Daily Max	40 mg/L	Quarterly	Grab	4.3, 4.5
BETX, Total	Monthly Avg	750 ug/L	Quarterly	Grab	4.3, 4.5, 4.6
Benzene	Monthly Avg	0.5 ug/L	Quarterly	Grab	4.3, 4.5
Ethylbenzene	Monthly Avg	140 ug/L	Quarterly	Grab	4.3, 4.5
Toluene	Monthly Avg	160 ug/L	Quarterly	Grab	4.3, 4.5
PAHs	Monthly Avg	0.1 ug/L	Quarterly	Grab	4.3, 4.5, 4.7.1
Benzo(a)pyrene	Monthly Avg	0.02 ug/L	Quarterly	Grab	4.3, 4.5, 4.7.2
Naphthalene	Monthly Avg	10 ug/L	Quarterly	Grab	4.3, 4.5, 4.7.3

Explanation of Limits and Monitoring Requirements

Flow, Oil and Grease, PAHs, Benzo(a)pyrene, Naphthalene, Benzene, Ethylbenzene, Toluene, and Total BETX: These parameters are monitored the same as the tank bottom water described in 4.2.2 above.

Total Suspended Solids: Solids may be a contaminant in the storm water runoff that enters scrap and waste storage areas, so it was added as a potential parameter of concern. Included is a treatment technology based effluent limit of 40 mg/L expressed as a daily maximum.

4.3 Sample Point Number: 008- Secondary Containment Water

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		gpd	Quarterly	Estimated	2.2.2, 4.3, 4.4
Oil & Grease (Hexane)	Daily Max	15 mg/L	Quarterly	Grab	2.2.2, 4.3, 4.5
BETX, Total	Monthly Avg	750 ug/L	Once	Grab	2.2.2, 4.5, 4.6
PAHs	Monthly Avg	0.1 ug/L	Once	Grab	2.2.2, 4.5, 4.7.1

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Benzo(a)pyrene	Monthly Avg	0.02 ug/L	Once	Grab	2.2.2, 4.5, 4.7.2
Naphthalene	Monthly Avg	10 ug/L	Once	Grab	2.2.2, 4.5, 4.7.3

Explanation of Limits and Monitoring Requirements

The monitoring is the same as for petroleum contact water in 4.2.1. Monitoring is only required once during the first year of permit coverage to assess for the possible presence of these contaminants.

5 Standard Requirements

These requirements apply to all permittees, and reflect the general permit conditions contained in ch. NR 205, Wis. Adm. Code. They consist of the applicable permittee obligations and reporting requirements.

6 Summary of Reports Due

Reports that must be submitted by the permittee are summarized. In most cases annual reporting on the previous year is required by February 15th. The DMR submittal must include information on monitoring results, with attached reports on waste oil and solids removed, and tank bottom water disposal.

Changes from Previous Permit:

- The permit and fact sheet drafted in standard format using SWAMP so the appearance is different.
- The permit schedule in the current permit for complying with the then new limits for BETX and PAH was eliminated because it's no longer applicable.
- Eliminated the EPA test method references for petroleum contaminants that are monitored. Standard Requirement 5.5 references ch. NR 219, Wis. Adm. Code that contains the test methods. Because the approved test methods may change it's preferred to reference the code instead of including the methods in the permit.
- Clarified the expression of the limits for the three components of PAH (refer to the attachment). This resulted in adding benzo(a)pyrene and naphthalene as parameters to some monitoring tables.
- Added monitoring tables for secondary containment water to clarify what's required.
- Added a provision for re-testing the secondary containment water that the permittee may pursue if they found contamination in the first test. If additional testing demonstrates the secondary containment water is uncontaminated, because it complies with limits, treatment and monitoring would become unnecessary.
- Added requirements for the EPA 303(d) list of impaired surface waters and TMDL requirements applicable to surface water discharges when there is an approved TMDL.
- To reflect changes in ch. NR 140 groundwater PALS the discharge limit for naphthalene was changed from 8.0 µg/L to 10 µg/L and for toluene was changed from 200 µg/L to 160 µg/L.

Proposed Expiration Date:

June 30, 2017

Prepared By:

Paul W. Luebke, P.H.
Wastewater Specialist
Bureau of Water Quality

Date: May 21, 2012

Attachment: Explanation of PAH Surface Water Limits

Explanation of PAH Surface Water Effluent Limits

The regulation of point source wastewater discharges containing Polynuclear Aromatic Hydrocarbon (PAH) compounds in Wisconsin are best professional judgment (BPJ) limitations based on activated carbon adsorption as the best available, economically achievable treatment mechanism. The BPJ limit of 0.1 ug/L for benzo(a)pyrene is applied individually to that one compound. Ten of the other 16 PAH compounds, which have a similar atomic structure to benzo(a)pyrene, are regulated together as a group with a 0.1 ug/L limit applicable to the sum of the detected amounts of the specific ten PAH components. The PAH group limitation applies to the following compounds: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenzo(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene. Naphthalene is regulated separately with a 70 ug/L limit BPJ treatment technology limit based on air stripping. These limits are included in the groundwater remediation general permit, the petroleum contaminated water general permit, and other site specific individual WPDES permits.

The best professional judgment PAH limits would also meet site specific water quality standards for most Wisconsin waters. The previous version of ch. NR 105 had a criterion for one PAH compound, benzo(a)pyrene and a group criteria for the ten other PAH compounds with a structure similar to benzo(a) pyrene. In the most recent version of ch. NR 105, the criteria for these PAH compounds did not meet the new set of guidelines for the number of species with toxicology data. Therefore, in 1997 the PAH criteria were removed from ch. NR 105, and changed to a secondary value water quality criteria. A number of PAH compounds are excluded from the PAH group limit because they are not believed to exhibit the same toxicity because of their dissimilar atomic structure.

	PAH Compounds	Summed Compounds with a 0.1 µg/L Limit	Individual Compounds with Limits
1	Acenaphthene		
2	Acenaphthylene		
3	Anthracene		
4	Benzo(a)anthracene	Benzo(a)anthracene	
5	Benzo(a)pyrene		Benzo(a)pyrene 0.1 µg/L
6	Benzo(b)fluoranthene	Benzo(b)fluoranthene	
7	Benzo(g,h,i)perylene	Benzo(g,h,i)perylene	
8	Benzo(k)fluoranthene	Benzo(k)fluoranthene	
9	Chrysene	Chrysene	
10	Dibenzo(a,h)anthracene	Dibenzo(a,h)anthracene	
11	Fluoranthene	Fluoranthene	
12	Fluorene		
13	Indeno(1,2,3-cd)pyrene	Indeno(1,2,3-cd)pyrene	
14	Naphthalene		Naphthalene 70 µg/L
15	Phenanthrene	Phenanthrene	
16	Pyrene	Pyrene	