



**GENERAL PERMIT FOR A SOLID WASTE MANAGEMENT FACILITY**  
NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF WASTE MANAGEMENT  
TELEPHONE: 701-328-5166 REV. 09/2023

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Pursuant to Chapter 23.1-08 of the North Dakota Century Code (NDCC), (Solid Waste Management and Land Protection Act), and Article 33.1-20 of the North Dakota Administrative Code (NDAC), (Solid Waste Management Rules), a general permit is hereby issued authorizing a person who obtains coverage under this general permit (Permittee) to construct and operate a solid waste management facility (site) for the purpose of land treatment of petroleum contaminated soil, subject to compliance with all conditions set forth in this general permit. The North Dakota Department of Environmental Quality (Department) encourages, where appropriate, land treatment of petroleum contaminated soil as an alternative to landfill disposal. Land treatment effectiveness is well documented, preserves soil resources, and saves limited landfill capacity. If any of the conditions of this general permit are not met or if the Department determines the Permittee is conducting an activity that may present a threat of harm to human health, safety, or the environment, the Permittee may be required to apply for and obtain an individual solid waste permit as specified in NDAC Section 33.1-20-02.1-03. In addition, the Permittee may be subject to enforcement, cleanup of the site to background conditions and civil penalties set forth in NDCC Section 23.1-08-23.

- A. **General Permit Description:** Single-use land treatment site for petroleum-contaminated soil, statewide throughout North Dakota. Single-use means only one application of contaminated soil may be treated at the site following requirements of Condition F.8.
- B. **General Permit Number:** GP-LT0000
- C. **General Conditions:**
  - C.1. The Permittee of the site is subject to the Solid Waste Management and Land Protection Act (NDCC Chapter 23.1-08), the Solid Waste Management Rules (NDAC Article 33.1-20), all other North Dakota and federal laws, rules or regulations and orders now or hereafter effected by the Department, and to all conditions of this permit.
  - C.2. Compliance with terms of this general permit does not constitute a defense to any order issued or any action brought under NDCC Chapter 23.1-08, NDAC Article 33.1-20, NDCC Chapter 23.1-04, NDAC Article 33.1-24, Sections 3013, 7003, or 3008(a) of Resource Conservation and Recovery Act (RCRA), Sections 106(a), 104 or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et. seq.), NDCC Chapter 61-28 or any other law providing for protection of public health or the environment.
  - C.3. Issuance of this general permit does not convey property rights of any sort or any exclusive privilege, nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations. (NDAC 33.1-20-02.1-06)
  - C.4. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (NDAC 33.1-20-02.1-04)
  - C.5. This general permit is based on the premise that the information submitted by the

Permittee is accurate and that the site will be or has been constructed and operated as specified in the application for coverage under this general permit and all related documents. Any inaccuracies or misrepresentations found in the application for coverage may be grounds for the termination of coverage under this general permit and the Permittee must apply for and obtain an individual solid waste permit to continue to perform land treatment of petroleum contaminated soils. The Permittee must inform the Department in writing within thirty days of any deviation from, or changes in, the information in the application which would affect the Permittee's ability to comply with the applicable rules or general permit conditions. (NDAC 33.1-20-02.1-07)

- C.6.** The Permittee shall at all times properly operate and maintain the site and related appurtenances which are installed or used by the Permittee to achieve compliance with the conditions of this general permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit. (NDAC 33.1-20-02.1-04)
- C.7.** The Permittee shall give written notice to the Department of any planned physical alterations or additions to the permitted site. Any physical change in, or change in the method of the operation of, the land treatment site shall be considered to be construction, installation or establishment of a new operation. No construction, installation or establishment of a new operation shall be commenced unless the Permittee thereof shall file an amended application for coverage and receive authorization from the Department. (NDAC 33.1-20-02.1-03 and NDAC 33.1-20-02.1-04)
- a.** The Permittee shall give advance written notice to the Department of any planned changes in the permitted site or activity which may result in noncompliance with general permit requirements.
- b.** Whenever the Permittee becomes aware that the Permittee failed to submit any relevant facts in the general permit application or submitted incorrect information in the general permit application or in any report to the Department, the Permittee shall promptly submit such facts or information in writing.
- C.8.** The Permittee shall construct, operate, maintain and close the solid waste management units and the site according to the criteria of law and rule, conditions of this permit, and other reasonable precautions to prevent or minimize, if applicable, any environmental impacts including, but not limited to, fugitive dust emissions, objectionable odors, air toxics and gas emissions, spills, litter, and contamination of surface water and groundwater. (NDAC 33.1-20-02.1-04)
- C.9.** The Permittee shall furnish to the Department, within a reasonable time, any relevant information which the Department may request to determine whether cause exists for terminating coverage under this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit. (NDAC 33.1-20-04.1-04)
- C.10.** This general permit may be modified, suspended, revoked or reissued as specified in NDAC Section 33.1-20-02.1-03. The filing of a request for termination of coverage under

the permit, application for an individual permit, or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any condition of this general permit.

This general permit may be renewed as specified in NDAC Section 33.1-20-02.1-08. Review of any application for a general permit renewal shall consider improvements in the state of control and measurement technology, compliance with state rules and this permit, as well as changes in applicable regulations.

- C.11.** This general permit addresses only the environmental aspects and operational procedures of the site. It does not supersede local zoning authority or any other requirements of any political subdivision of the state. The Permittee must obtain any and all local zoning, conditional use permits, or meet any other county, township or municipal requirements prior to commencing construction and/or operation. The Permittee shall keep a record of any local zoning or other requirements necessary for operation of the site and make available to the Department if requested. (NDAC 33.1-20-02.1-06)
- C.12.** The Permittee shall design, close, maintain and operate the site in a manner to minimize the possibility of a fire, explosion or any unplanned sudden or nonsudden release of petroleum contaminated soil or its constituents to air, soil, groundwater or surface water which could threaten human health or the environment. (NDAC 33.1-20-04.1-02)
- C.13.** Any entity that controls the permit holder (Permittee) agrees to accept responsibility for any remedial measures, closure and postclosure care or penalties incurred by the Permittee. For purposes of this permit, "control" means ownership or control, directly, indirectly, or through the actions of one or more persons of the power to vote 25% or more of any class of voting shares of a permit holder, or the direct or indirect power to control in any manner the election of a majority of the directors of a permit holder, or to direct the management or policies of a permit holder, whether by individuals, corporations, partnerships, trusts, or other entities or organization of any type. Within thirty (30) days of authorization of coverage under this permit, if not previously provided with the application for coverage, or within thirty (30) days of the existence of any new controlling entity, the Permittee shall submit to the Department the name of the controlling entity, a statement signed by the controlling entity in which the controlling entity agrees to accept responsibility for any remedial measures, closure, and postclosure care or penalties incurred by the Permittee and a disclosure statement from the controlling entity containing the same information as required from permit applicants under NDCC Section 23.1-08-17. (NDCC 23.1-08-09(1))
- C.14.** All personnel involved in petroleum contaminated soil handling and in the site operation or monitoring must be provided a copy of this general permit and shall be instructed in specific procedures to ensure compliance with the permit, the site plans and the state rules as necessary to prevent accidents and environmental impacts. Documentation of training such as names, dates, description of instruction methods and copies of training sign-in sheets must be maintained by the Permittee and be made available to the Department if requested. (NDAC 33.1-20-04.1-02)
- C.15.** Except as modified by conditions of this general permit or future approvals from the Department, this site and related structures shall be designed, constructed, operated and closed in accordance with the application for coverage under this general permit, previous correspondence and documents contained in Departmental files pertaining to

this site, which are hereby incorporated by reference in this permit. Future submittals approved by the Department may supersede or supplement these items. (NDAC 33.1-20-02.1-04)

- C.16.** The Permittee shall allow the Department access to inspect the site and activities approved under this permit, at all reasonable times, to ensure compliance with the laws and rules of this state and this permit, including collection of samples or monitoring for any parameter. (NDCC 23.1-08-18)

**D. Request for Authorization Conditions:**

- D.1.** Duty to apply for site approval and coverage under this general permit.

To obtain authorization to operate a single-use petroleum-contaminated soil land treatment site under the terms and conditions of this general permit, an application for coverage must be submitted and approved prior to commencing any land treatment operations. The application for coverage must be submitted on forms provided by the Department.

- D.2.** Required contents of the application for coverage under this general permit.

The application shall include:

1. The name, address, and phone number of both the landowner and operator (Permittee) of the proposed petroleum-contaminated soil land treatment site;
2. The general location and size of the proposed site, including the legal description (quarter, section, township, range, and county);
3. A description of the petroleum contaminated soils to be accepted and managed at the proposed site, including the source and generator of the petroleum contaminated soils and chemical analyses showing compliance with Condition F.1. The applicant may submit an application without chemical analyses, but shall submit the information as soon as available from the laboratory performing the tests. The Department will not approve coverage under this general permit until chemical analyses are submitted and reviewed. Analyses must be performed by a Department-certified laboratory;
4. The estimated volume or tonnage of contaminated soil to be accepted and managed;
5. Maps, including a schematic diagram of the land treatment site showing water control structures, a soil survey map, and topographic map, with the land treatment site outlined, and a scale presented;
6. A description of the site and soil characteristics;
7. A general description of the operation, including the expected date(s) of soil application and a description of treatment procedures; and
8. Local zoning approval if required.

**D.3. Fees.**

Non-refundable application fees for a petroleum land treatment site are as follows:

<b>Volume of Petroleum Contaminated Soil</b>	<b>Application Fee</b>
0 – 500 cubic yards	No Fee
501 – 1000 cubic yards	\$500
Greater than 1000 cubic yards	\$1000

If a fee is required, it shall be included with an application for coverage or application for renewal of coverage. Checks must be written to the North Dakota Department of Environmental Quality or payment can be made electronically through the North Dakota Department of Environmental Quality website (if available).

**D.4. Duration of Authorization.**

Initial authorization to operate under this general permit shall be valid for up to three years from the date of issuance and may be renewed for a period of up to five additional years. The Department may amend, suspend, or revoke authorization if the Permittee is not in compliance with the conditions of this permit or other requirements of NDAC Chapter 33.1-20.

**D.5. Renewal of Authorization.**

If the soils in the site have not attained the criteria for closure under Condition F.6., the Permittee must submit a renewal application for coverage to the Department at least 60 calendar days before the general permit authorization expires, accompanied with payment for the renewal fee specified in Condition D.3. If the soils in the site have not attained the criteria for closure under Condition F.6. at the end of the renewal of authorization period (a maximum of eight years from initial authorization) the soils must be removed from the site and properly disposed at an approved special waste landfill and the site must be closed under the requirements of Section H.

**D.6. Transfers.**

Authorizations for coverage under this general permit are nontransferable. An application for coverage of a new operator must be submitted at least 60 calendar days before the change in operation occurs. The application for coverage must include the information required in Condition D.2. and the fee required in Condition D.3.

**E. Location and Design Conditions:**

**E.1. Siting.**

A petroleum-contaminated soil land treatment site shall be located such that the operation of the facility will not result in an adverse effect to human health, the environment, or nearby natural resources. When determining a facility location, the Permittee may not consider a site that is located:

1. Within 200 feet of any surface water body;
2. Within 200 feet of any perennial or ephemeral stream;
3. Within 500 feet of an occupied dwelling, unless the owner(s) provides written permission;
4. Within 100 feet of a property boundary, unless the adjacent property owner(s) provides written permission;
5. Within a delineated source water protection area;
6. Within 250 feet of any private well or 1,000 feet of any public well which supplies drinking water for human consumption;
7. Within the incorporated limits of any municipality;
8. Within 50 feet of a 100-year floodplain;
9. Where the depth to an aquifer is less than 20 feet;
10. Where the primary subsurface material is sand or gravel (as determined by the Unified Soil Classification System) within 20 feet of the ground surface;
11. On land that has an average slope greater than six percent; or
12. In an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species.

Occupied dwelling exception: Any occupied dwelling constructed less than 500 feet from a petroleum-contaminated soil land treatment site after an initial general permit authorization has been approved will not be grounds to prevent future authorization renewals under this general permit.

**E.2. Access Control.**

The Permittee shall control access to the petroleum-contaminated soil land treatment site using fences and gates, as needed. Livestock shall be excluded from the land treatment site.

**E. 3. Surface Water Control.**

The Permittee shall construct and maintain soil berms or containment structures around the petroleum-contaminated soil land treatment area(s) to divert run-on and contain runoff volume from a 25-year, 24-hour storm event, maintaining one foot of freeboard depth at all times. The berms or structures shall be adequately constructed to prevent leakage.

**F. Operational Conditions:**

**F.1. Authorized and Unauthorized Wastes.**

The Permittee may accept for treatment soils contaminated with gasoline, diesel fuel, fuel oil, American Petroleum Institute (API) light or medium gravity crude oil, natural gas condensate, or similar petroleum hydrocarbons. The Permittee shall obtain pre-treatment laboratory results or other acceptable documentation demonstrating that contaminated soil accepted for land treatment contains only the petroleum hydrocarbons listed above. Analyses must be performed by a Department-certified laboratory.

The Permittee may not accept:

1. Soils contaminated with API heavy gravity crude oil (less than API gravity 22.3), motor oil, transformer oil or other petroleum lubricants;
2. Soils contaminated with hazardous waste (as defined in NDAC Section 33.1-24-02-03);
3. Soil with electrical conductivity (EC) greater than six millimhos per centimeter or sodium adsorption ratio (SAR) greater than twelve; or
4. Solid waste materials unsuitable for land application treatment.

**F.2. Routine Inspections Required.**

The Permittee shall inspect all loads of petroleum-contaminated soil to ensure that foreign objects such as metal, plastic, and other unauthorized wastes are not delivered to the land treatment area. Unauthorized wastes present in the contaminated soil must be collected and disposed of properly within seven days after the initial application of the soil. During routine inspections, the Permittee shall also evaluate storm water management berms and make any repairs necessary to prevent run-on and runoff.

**F.3. Stockpiling Limitations.**

Stockpiling of petroleum-contaminated soil shall not be conducted unless ground or weather conditions prevent spreading of the soil. The Permittee shall ensure that any contaminated soil stockpiled on-site is placed inside the bermed area.

**F.4. Spreading Requirements.**

Petroleum-contaminated soil shall be spread as soon as physically possible within the bermed land treatment area. The Permittee shall spread the soil no greater than four inches in depth (approximately 535 cubic yards per acre). If sufficient land area is not available to spread the soil at a depth of four inches, the Permittee may request approval from the Department to spread at a maximum depth of six inches (approximately 800 cubic yards per acre).

**F.5. Petroleum-Contaminated Water Acceptance.**

Petroleum-contaminated water from the same source as the petroleum-contaminated soil, that does not contain any free phase product, may be accepted for land application within the bermed land treatment area. The contaminated water shall be uniformly land applied at a rate of one-quarter inch (approximately 6,500 gallons) or less per acre. The

application of petroleum-contaminated water is limited to one time, within two weeks of initial spreading of the petroleum contaminated soil. Stormwater runoff water that has accumulated within the bermed land treatment area may be uniformly land applied at a rate of one-quarter inch (approximately 6,500 gallons) or less per acre per week. The application of petroleum-contaminated water or accumulated stormwater runoff water during November through March is not allowed.

**F.6. Treatment / Aeration and Post-Treatment Standards.**

The Permittee shall treat the petroleum-contaminated soil within the first 30 days following the application and approximately monthly from April through October, depending on soil moisture conditions. The treatment shall include aeration using tilling or disking techniques and may include application of nutrients and irrigation water or other amendments as approved by the department. The Permittee shall treat petroleum-contaminated soil until it meets a post-treatment standard of 10 parts per million (ppm) or less Gasoline Range Organics (GRO) and 100 ppm or less Diesel Range Organics (DRO).

**F.7. Sampling and Testing.**

The Permittee shall periodically monitor the site to assess treatment progress. At a minimum, the Permittee shall collect one composite sample per acre in the Fall of each year. For post-treatment final closure testing, the Permittee shall collect a minimum of one composite sample per acre. Each composite sample must consist of a minimum of four representative samples taken from each acre. Analyses must be performed by a Department-certified laboratory. The collection, packaging, storage, and preservation of soil samples shall be conducted according to directions provided by the laboratory. Laboratory soil analysis must be conducted for both gasoline and diesel range organics by EPA method SW 8015 or other comparable method.

**F.8. Land Application Frequency.**

This general permit is for a single-use land treatment site – only one application of contaminated soil may be treated at the site following the spreading requirements of Condition F.4. The site may not be requested for subsequent land treatment of petroleum-contaminated soils until at least five years after the site has been approved for final closure by the Department.

**F.9. Removal of Treated Soil.**

The Permittee shall not remove any soil from the site until soil analysis demonstrating that the soil meets the post-treatment standards in Condition F.6. The removal and re-use of treated soils, either as backfill at the spill location or by spreading soils in treatment area, or other proposed use, must have written Department approval.

**F.10. Emergency Procedures.**

The Permittee must notify the Department, within one business day, of any emergency situation that arises at a petroleum-contaminated soil land treatment site, including rain events that cause less than one foot of freeboard in any containment berm. The Permittee must inform the Department of its plan to remedy the emergency situation and

prevent its reoccurrence.

**G. Recordkeeping and Reporting Conditions:**

**G.1. Required Records.**

The Permittee shall maintain all records required by this general permit and shall make records available to the Department upon request. At a minimum, the records shall include:

1. The amount, sources, types, and dates for contaminated soils received;
2. Documentation of the required routine site inspections;
3. Documentation of unauthorized waste found on-site, and the steps taken in response;
4. Records of any emergency conditions at the site;
5. Documentation of periodic monitoring and laboratory analytical reports;
6. Documentation of complaints received by the Department or the Permittee and responses to complaints; and
7. Copies of the current general permit, application for coverage under this general permit, Department authorization to operate, and any other permits or licenses required by state, local, or federal laws, rules, and regulations.

**G.2. Maintenance of Records.**

The Permittee shall maintain all required records for a period of three years following final closure of the land treatment site.

**G. 3. Annual Reporting.**

The Permittee shall submit to the Department, by March 1st of each year, an annual report for the previous year's petroleum-contaminated soil land treatment site activities. The report shall be submitted on a form provided by the Department and shall include the following information for the prior year:

1. The origin of soil received at the site;
2. The type of petroleum contamination in the soil;
3. The date soil was received;
4. The quantity of soil;
5. The date soil was spread;
6. The dates soil was treated;

7. Documentation of any amendments to the soil;
8. Results of periodic and annual soil analysis data;
9. A diagram generally identifying where soil samples were collected; and
10. A summary of any complaints or emergency events and the response by the Permittee.

An annual report is not required after the final closure of the site is approved by the Department.

#### **H. Closure Conditions:**

##### **H.1. Request for Closure.**

When the Permittee has conducted soil analyses to verify that all soil at the site meets the post-treatment standards in Condition F.6. the Permittee shall submit a Request for Closure to the Department. The request must include the same information as the Annual Report required in Condition G.3.

##### **H.2. Startup of Closure Activities.**

Closure activities shall not begin until the Request for Closure has been approved by the Department.

##### **H.3. Final Closure Requirements.**

The final closure activities for the petroleum-contaminated soil land treatment site shall include:

1. Removal of berms and water control structures and incorporating contours of the land treatment area(s) into the contours of the surrounding area;
2. Grading to prevent ponding of water;
3. Seeding and revegetating the entire site back to original vegetation conditions unless the site will be planted with a crop for harvest; and
4. The only food chain crop that may be produced on the closed land treatment area for two years following final closure is animal feed.

##### **H.4. Completion of Final Closure.**

The Permittee shall complete all closure activities for the entire petroleum-contaminated soil land treatment site within 180 days of documenting that all soil meets the post-treatment standards specified in Condition F.6. and receiving closure approval from the Department. The Department may inspect the final closure and require additional closure work if closure has not been satisfactorily performed.

**H.5. Certification of Closure.**

Upon completion of closure of the petroleum-contaminated soil land treatment site, the Permittee shall provide the Department with a certification confirming that the site has been closed in accordance with the H. conditions of this general permit and that the closure is acceptable to the landowner. The certification must be signed by the Permittee and by the landowner. Closure is not final until written approval is received from the Department.

**I. Financial Assurance Condition:**

- I.1.** The Department will not typically require financial assurance for a site authorized under this general permit as long as the Permittee complies with the environmental laws and rules of the state and the conditions of this general permit. However, the Department reserves the right to require financial assurance if it determines violations have occurred or are likely to occur at the site subject to coverage under this general permit or at any petroleum-contaminated soil land treatment site previously operated by the Permittee, or if unique circumstances dictate the need for financial assurance. If required, financial assurance shall comply with NDAC Chapter 33.1-20-14 and shall include funds sufficient to remove all waste from the site, transport and dispose of the waste at a permitted solid waste disposal facility, and complete closure in compliance with the H. conditions of this permit.

Should questions or issues arise, the Permittee shall contact the North Dakota Department of Environmental Quality at 701-328-5166.

This general permit is effective as of September 12, 2023 and shall remain in effect until September 12, 2028, unless modified, superseded, or revoked under NDAC Section 33.1-20-02.1-07 or continued in accordance with NDAC Section 33.1-20-02.1-08.

  
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Charles R. Hyatt, Director  
Division of Waste Management

1/12/23  
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Date

**Attachments:**

Guideline 7: Land Treatment of Petroleum Contaminated Soils – Single Application Sites  
Land Treatment Site Application (SFN 51601)



## **GUIDELINE 7 – LAND TREATMENT OF PETROLEUM CONTAMINATED SOIL: SINGLE APPLICATION SITES**

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4201 Normandy St., Bismarck, ND 58503-1324

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Website: <https://deq.nd.gov/wm>

Updated 9-2023

### **I. Introduction**

The North Dakota Department of Environmental Quality (Department) encourages land treatment of petroleum contaminated soil as an alternative to landfill disposal. Land treatment preserves soil resources and saves limited landfill capacity. If the soil cannot be land treated it must be disposed properly at facilities permitted or approved by the Department. A list of permitted treatment and disposal facilities is on the Department's website (see Links at the end of this document).

Residual amounts of petroleum hydrocarbons may be broken down by aerobic bacteria common to good surface soils (and compost operations). Land treatment of wastes can be effective when approached scientifically, using naturally occurring soil microorganisms to biodegrade petroleum. Some volatilization of petroleum hydrocarbons will also occur during the process.

This document provides information on suitable site and soil characteristics, land application procedures, soil sampling procedures, and the Department's approval requirements for applicants proposing a single-use site for land treatment of petroleum contaminated soil.

General Permit Number GP-LT0000 has been issued by the Department for single-use land treatment sites for petroleum contaminated soil. All applicants must submit the Department form titled "Land Treatment Site Application," which must be approved by the Department before any contaminated soil is delivered to the site. All land treatment activities must follow the conditions of the General Permit. If an applicant desires any variances to the General Permit, such as non-listed types of petroleum contaminants or multiple uses of the treatment site, the applicant must apply for an individual solid waste management permit for a land treatment facility following the procedures in North Dakota Administrative Code (NDAC) Section 33.1-20-02.1-03. Variances will not be approved for oil-based drilling cuttings or other wastes that do not readily break down due to the presence of longer-chain hydrocarbon molecules (asphaltenes, paraffins, etc.) and/or waste containing salt, metals, or other contaminants. Applicants must also follow all local zoning requirements.

### **II. Background Information**

The minimum information which should be provided to the Department with the application includes:

- A. Name, address, telephone, and email of the operator (Permittee).
- B. Name, address, telephone number, and approval of the landowner.

- C. Land treatment site location description (township, range, section, and quarter section).
- D. Topographic and soil survey maps with the proposed land treatment site outlined and a map scale presented.
- E. A schematic diagram of the land treatment site, including water control structures.
- F. Estimated volume of soil to be land treated.
- G. Projected date of soil application.
- H. Site and soil characteristics (see below).
- I. Proposed land application procedures (see below).
- J. Proposed sampling, tillage, and reporting schedule (see below).
- K. Any previous history of waste disposal activities at the proposed site.

### **III. Site and Soil Characteristics**

Published soil survey information (available through local Natural Resources Conservation Service offices or online) provides an excellent reference for site slope, depth to ground water, and soil type for most locations in North Dakota. If specific soil information is not available or if more detailed soil information is required, a Professional Soil Classifier can be utilized to determine site-specific soil conditions. Soil borings or trenching, and/or a hydrogeologic evaluation, may be required to evaluate the proposed land application site. The recommended site and soil characteristics for a land treatment site are as follows:

- A. Relatively level site slope: 6 percent maximum.
- B. Minimum depth of three feet to seasonal high-water table for most soils.
- C. Soil characteristics:
  - 1. Permeability: slow to moderate, less than two inches per hour. Areas underlain by highly permeable (sandy) soils, very slowly permeable soils, or sodium affected soils must be avoided.
  - 2. pH: minimum pH of 6.5, neutral or slightly alkaline preferred.
  - 3. Nutrients: soils with moderate to high levels of fertility and organic matter are preferred.

Generally, cropland areas are preferred for land treatment. The Department may make exceptions to the recommended criteria on a site-specific basis.

Adequate soil nitrogen and phosphorus levels are critical for bacterial growth and effective land treatment of contaminated soil. Soil nitrogen and phosphorus tests are

recommended to determine if minimum fertility levels exist at the land treatment site, and if fertilizer application is necessary. See Section VI.C for details on soil fertility sampling and testing. The amount of soil nitrogen necessary for effective land treatment is based on a ratio of parts per million (ppm) total petroleum hydrocarbons (TPH) to ppm nitrogen (N). The Department considers a TPH:N ratio of 100:2 acceptable. Adequate extractable soil phosphorus levels are also required for effective land treatment.

Recommended land treatment site fertility levels are listed in the following table. The table illustrates what fertility levels are required to maintain a TPH:N ratio of 100:2 at specific total hydrocarbon concentrations. Using results from soil fertility testing, one can determine if fertilizer should be added to the treatment site. For example, assume soil contaminated with 2000 ppm total hydrocarbons is land treated. If soil fertility tests indicate the six-inch surface layer contains 40 pounds per acre nitrogen, an additional 40 pounds per acre nitrogen should be added to the treatment site. Extractable soil phosphorus levels should be maintained in the 20 to 30-pound per acre range.

Soil Contaminant Concentration	Fertility Requirements (Pounds Per Acre)	
	Nitrate-Nitrogen	Extractable Phosphorus
1000 ppm TPH	40	20-30
1500 ppm TPH	60	20-30
2000 ppm TPH	80	20-30
2500 ppm TPH	100	20-30
3000 ppm TPH (or greater)	120	20-30

NOTE: Fertility levels assume four-inch soil application thickness. Maintain proportionally lower fertility levels for thinner soil application. Fertility levels should not exceed 120 pounds per acre nitrate-nitrogen or 30 pounds per acre extractable phosphorus. One part per million equals approximately two pounds per acre (1 ppm = 2 lbs./ac.).

#### IV. Excluded Areas

As stated in General Permit Number GP-LT0000, a petroleum-contaminated soil land treatment site shall not be located in any of the following areas:

- A. Within 200 feet of any surface water body;
- B. Within 200 feet of any stream that appears as a broken or solid blue line (or a purple line) on a USGS topographic map;
- C. Within 500 feet of an occupied dwelling unless the owner(s) provides written permission. (Occupied dwelling exception: Any occupied dwelling constructed less than 500 feet from a petroleum-contaminated soil land treatment site after an initial general permit authorization has been granted will not be grounds to prevent future authorization renewals under this general permit);
- D. Within 100 feet of a property boundary, unless the adjacent property owner(s) provides written permission;

- E. Within a delineated wellhead protection area;
- F. Within 250 feet of any private well or 1,000 feet of any public well which supplies drinking water for human consumption;
- G. Within the incorporated limits of any municipality;
- H. Within 50 feet of a 100-year floodplain;
- I. Where the depth to an aquifer is less than 20 feet;
- J. Where the primary subsurface material is sand or gravel (as determined by the Unified Soil Classification System) within 20 feet of the ground surface;
- K. On land that has an average slope greater than six percent; or
- L. In an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species.

#### **V. Land Application Procedures**

Recommended procedures for land application are described below. The Department will consider exceptions on a site-specific basis.

- A. Contaminated soil should be applied only when the land is tillable, but no earlier than April 1 and no later than November 1. If contaminated soil is to be stockpiled, it should be in an area where surface water run-on and runoff are controlled.
- B. Surface water run-on and runoff should be diverted or contained around storage and treatment areas. Ditches and berms up slope of the site should divert surface water run-on around and away from the treatment area. Surface water runoff must not cause degradation of any streams, rivers, wetlands, lakes, etc. Berms, ditches, or impoundments down slope of the site may be needed to contain and store any contaminated runoff during precipitation events.
- C. Generally, contaminated soil should not be applied more than four inches thick. Thinner applications may be required on a site-specific basis. If sufficient land area is not available to spread the soil at a depth of four inches, the Permittee may request approval from the Department to spread at a maximum depth of six inches. A six-inch application may not be appropriate for heavier petroleum products or for heavily contaminated soil due to the longer time frame that will be needed to complete the treatment. Soil application rates for specific application thicknesses are as follows:
  - 1. 535 cubic yards/acre at 4-inch spreading thickness
  - 2. 400 cubic yards/acre at 3-inch spreading thickness
  - 3. 270 cubic yards/acre at 2-inch spreading thickness
  - 4. 135 cubic yards/acre at 1-inch spreading thickness

(1 cubic yard = 27 cubic feet, 1 acre = 43,560 sq. ft.)

The petroleum loading rate should not exceed 2 percent or 20,000 parts per million (ppm) TPH as diesel, fuel oil or gasoline in the soil to be land applied. This corresponds to approximately 67 barrels (2800 gallons) per acre for soil applied four inches thick and contaminated with petroleum.

- D. Contaminated soil application method (spreader, dozer, grader, etc.) should be specified.
- E. Land applied soil should be incorporated (mixed) with the upper four to six inches of native soil within 48 hours after application. Fertilizers should be broadcast either just before or just after contaminated soil application, but prior to contaminated soil incorporation. Fertilizer should be added as necessary to maintain an optimum TPH:N ratio of 100:2 and extractable phosphorus levels of 20-30 pounds per acre. Addition of compost, manure, straw etc. is helpful.
- F. To enhance hydrocarbon breakdown, the soil should be tilled at least four times during the land application season. Less frequent tillage may not provide adequate aeration and mixing and, therefore, may slow hydrocarbon breakdown. More frequent tillage could be done if soil moisture is adequate, soil compaction is not a problem, and wind erosion can be controlled.

For fields where petroleum contaminated soil is land applied prior to July 1, tillage may not be needed in subsequent years. However, soil monitoring should continue until contamination is below levels, as outlined in Section VI.D. For land applications after July 1, a minimum of four tillage operations are probably necessary (excluding the period from November 1 to April 1), unless soil monitoring results are below the post-treatment standards.

Active land treatment must continue until all soil at the treatment site meets a post-treatment standard of 10 parts per million (ppm) or less Gasoline Range Organics (GRO) and 100 ppm or less Diesel Range Organics (DRO).

- G. Depending on site conditions, climatic conditions, and other factors, measures to control soil moisture and wind erosion and to improve the soil bacterial culture may be necessary. If the soils are excessively dry, addition of moisture to the site may be necessary (ponded surface runoff water could be used). Optimum soil moisture content is 50-70 percent of the soil water holding capacity. More frequent tillage or site drainage may be necessary if the site is wet. The incorporation of grass or legume hay is advised to help control wind erosion and improve soil aeration. If the soil is deficient in organic matter and/or oil-degrading soil bacteria, the addition of inoculants, rotted manure, mature compost, or topsoil is advised.

## **VI. Soil Sampling Requirements**

- A. Contaminated stockpiled soil: Soil samples are necessary to evaluate and document contamination levels in the soil to be treated. Obtain a composite soil sample by digging a minimum of one foot into the pile at least three places within the pile before collecting subsamples. To avoid cross-contamination, subsamples should be taken using clean disposable gloves (and other clean sampling utensils) at each sample location (refer to NDDEQ "Procedures for the Collection of Soil Samples at Underground Storage Tank (UST) Sites"). Mix

equal portions of each subsample to obtain a composite sample. Completely fill each sample vial so that no headspace exists, wipe soil from the vial threads, and seal the vial using a cap with a Teflon septum. Label the vial, wrap it in aluminum foil, and place in a covered cooler with ice for transport to a laboratory for analysis.

- B. The number of soil samples should be based on the following table:

<b>Volume of Soil (cubic yards)</b>	<b>Number of Samples</b>
<10	0
10-50	1
50-500	2
500-1000	3
1000-2000	4
2000-4000	5
Each additional 2000	One additional sample

Analyses must be performed by a Department-certified laboratory. Packaging, storage, preservation, and shipping of soil samples shall be conducted according to directions provided by the laboratory. Laboratory soil analysis must be conducted for TPH as both Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) by EPA method SW-846 8015 or other comparable method. If heavy oil is suspected then TPH as Oil Range Organics (ORO) should also be performed. Other analysis such as lead, benzene, ethylbenzene, toluene, xylenes, and/or toxicity characteristic leaching procedure (TCLP) may be necessary depending on the product involved or site conditions.

- C. Land application site soil fertility level determination: A composite of several representative soil samples from the top six inches of native soil should be collected to evaluate fertility status of the proposed land application site. The composite sample should be handled and prepared for analysis in accordance with the procedures recommended by the soil testing laboratory to be used.

Soil fertility samples should be analyzed for nitrate-nitrogen, extractable phosphorus, and pH according to methods accepted by the North Dakota State University Soil Testing Laboratory ([https://www.ndsu.edu/snrs/services/soil\\_testing\\_lab/](https://www.ndsu.edu/snrs/services/soil_testing_lab/)). Nitrate-nitrogen levels are generally reported in pounds per acre, whereas extractable phosphorus levels are generally reported in ppm. To convert pounds per acre to ppm, divide by two. Conversely, to convert ppm to pounds per acre, multiply by two. For example, 80 pounds per acre nitrate-nitrogen equals 40 ppm, and 10 ppm extractable phosphorus equals 20 pounds per acre.

- D. Follow-up monitoring: Follow-up monitoring is required to assess and document hydrocarbon treatment progress. At a minimum, the Permittee shall collect one composite sample per acre in the Fall of each year, though more frequent monitoring may be beneficial (see table below). For post-treatment final closure testing, the Permittee shall collect a minimum of one composite sample per acre. Each composite sample must consist of a minimum of four representative samples taken from a depth of four inches. Samples need only be analyzed for

TPH as GRO and GRO; however, the Department may require sampling for additional constituents under some circumstances.

During the year of land application, samples should be taken at the times specified below until soil analytical results indicate that post-closure standards have been reached for all areas of the land treatment site.

<u>Land Application Date</u>	<u>Soil Sampling in First Year</u>
Before July 1	Once in August & once in October
July 1 to September 15	Once in October
After September 15	None

Sampling in subsequent treatment years should include three samples taken approximately in June, August, and October, unless results indicate that post-closure standards have been reached for all areas of the land treatment site.

Refer to Department form titled "Soil Monitoring Results for Land Treated Petroleum Contaminated Soil" for reporting results.

## **VII. Land Use and Zoning**

The General Permit site application form requires information from the landowner and local officials. Careful planning and compliance with state rules helps to assure local authorities and citizens that the waste will be properly managed. Coordination with local emergency managers, county agents, and/or local health districts may suffice for local zoning approval under emergency conditions, contingent upon concurrence by local (county) planning personnel. It is the responsibility of the Permit Applicant to be in compliance with all local land use and zoning requirements.

## **VIII. Submittal and Approval Process**

Applications for coverage under General Permit Number GP-LT0000 must be initiated and completed by the waste generator or their legal designee. The form titled "Land Treatment Site Application," should be completed and submitted with the maps and information to the Department. Arrangements should be made with the Department for a site inspection. The site inspection will be done by either Department staff, by an individual authorized by the Department (e.g., local government officials), or by a qualified environmental professional whose evaluation is subject to Department review and approval. If approved, the inspector will sign and date the application form. On a site-specific basis, a site inspection may not be required.

Following these procedures does not guarantee approval of a site for coverage under the General Permit. The Department reserves the right to make any modifications or require remedial measures in the event of issues that are not protective of human health or the environment. Approval of coverage under the General Permit does not convey property rights of any sort or any exclusive privilege, nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations. An approval does not supersede local zoning authority or any other requirements of any political subdivision of the state.

Compliance with terms of General Permit GP-LT0000 or approval does not constitute a defense to any order issued or any action brought under NDCC 23.1-08, NDAC 33.1-20, NDCC 23.1-04, NDAC 33.1-24, Sections 3013, 7003, or 3008(a) of RCRA, Sections 106(a), 104 or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. et. seq.) or any other law providing for protection of public health or the environment.

#### **IX. Annual Reporting**

The Permittee shall submit an annual report to the Department, by March 1st of each year, for the previous year's petroleum-contaminated soil land treatment site activities. The report shall be submitted on the form provided by the Department and shall include the following information for the prior year:

1. The origin of soil received at the site;
2. The type of petroleum contamination in the soil;
3. The date soil was received;
4. The quantity of soil;
5. The date soil was spread;
6. The dates soil was treated (disked or aerated);
7. Documentation of any amendments to the soil;
7. Results of periodic and annual soil analysis monitoring;
8. A diagram showing where soil samples were collected;
9. A summary of any complaints or emergency events and the response by the Permittee.

#### **X. Closure, Closure Report, and Closure Certification**

When the Permittee has conducted soil analyses to verify that all soil at the site meets the post-treatment standards the Permittee may submit a Request for Closure to the Department. The request must include the same information as the Annual Report. Closure activities may not begin until the Request for Closure has been approved by the Department.

The final closure activities for the petroleum-contaminated soil land treatment site shall include:

1. Removal of any berms and water control structures and incorporating contours of the land treatment area(s) into the contours of the surrounding area;
2. Grading to prevent ponding of water;

3. Seeding and revegetating the entire closed site back to original vegetation conditions unless the site will be planted with a crop for harvest; and
4. The only food chain crop that may be produced on the closed land treatment area for two years following final closure is animal feed.

The Permittee shall complete all closure activities for the entire petroleum-contaminated soil land treatment site within 180 days of documenting that all soil meets the post-treatment standards and receiving closure approval from the Department. The Department may inspect the final closure and require additional closure work if closure has not been satisfactorily performed.

Upon completion of closure of the petroleum-contaminated soil land treatment site, the Permittee must provide the Department with a certification confirming that the site has been closed in accordance with the General Permit. The certification must be signed by the Permittee and by the landowner. Closure is not final until written approval is received from the Department.

## **XI. Financial Assurance**

The Department will not typically require financial assurance for a site authorized under General Permit Number GP-LT0000 as long as the Permittee complies with the environmental laws and rules of the state and the conditions of this general permit. However, the Department reserves the right to require financial assurance if violations occur at the site or at any petroleum-contaminated soil land treatment site previously operated by the Permittee, or if unique circumstances dictate the need for financial assurance. If required, financial assurance shall comply with NDAC Chapter 33.1-20-14 and shall include funds sufficient to remove all waste from the site, transport and dispose of the waste at a permitted solid waste disposal facility, and complete closure in compliance with the conditions of the permit.

## **XII. Links**

NDDEQ Division of Waste Management publications:  
(scroll to "Land Treatment-Petroleum" under "Solid Waste Program")  
<https://deq.nd.gov/WM/Publications.aspx>

Solid Waste Facilities for Treatment/Disposal Of Petroleum Contaminated Soils;  
Land Treatment Variance Application;  
Land Treatment Annual Report;  
Soil Monitoring Results For Land Treated Petroleum Contaminated Soil.

Natural Resources Conservation Service – Web Soil Survey Maps  
<https://websoilsurvey.sc.egov.usda.gov>

North Dakota Department of Water Resources – Online Aquifer Maps  
<https://mapservice.dwr.nd.gov>



**LAND TREATMENT SITE APPLICATION**  
NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF WASTE MANAGEMENT  
SFN 51601 (09-2023)

Telephone: 701-328-5166  
Fax: 701-328-5200  
Email: [solidwaste@nd.gov](mailto:solidwaste@nd.gov)  
Website: <https://deq.nd.gov/wm>

This application is for coverage under General Permit Number GP-LT0000. Please consult the Department and *Guideline 7 – Land Treatment of Petroleum Contaminated Soil: Single Application Sites* before completing the application. Approvals may be granted for a one-time event only. Repeat operations may require a full permit. In addition, applicable portions of the state solid waste management regulations should be referenced in completing the application. The location of a land treatment site shall comply with General Permit Number GP-LT0000 and NDAC 33.1-20-04.1-01., General Location Standards, Subpart 1., and Subpart 2. Applications must be thorough and complete to be considered. A written approval must be received from the Department before any petroleum contaminated soil may be delivered to the proposed treatment site. Please call the Department's Solid Waste Program at (701) 328-5166 to coordinate your application with a Department staff member.

**1. Waste Description: Please attach copies of pertinent waste analysis.**

Waste Source/Facility Name		Waste Type		Approximate Volume	
How was the waste generated?					
Release Site Legal Description/Street Address					
County	Section/Quarter Section	Township	Range	Latitude-Longitude	
Generator/Owner			Telephone Number		
Street or Mailing Address		City	State	ZIP Code	

**2. Proposed Land Treatment Location and Ownership**

County	Section/Quarter Section	Township	Range	Latitude-Longitude	
Total Acreage		Property Owner		Telephone Number	
Street or Mailing Address				Telephone Number	
City				State	ZIP Code
Present Land Use		Future Land Use			

**3. Maps**

Indicate which maps accompany the application (see Instructions in <u>Disposal Site Selection</u> of guideline)					
<input type="checkbox"/> Published Soil Survey Map	<input type="checkbox"/> Unpublished Soil Survey Map	<input type="checkbox"/> Topographic Map	<input type="checkbox"/> Other Map		
Exact location must be marked on the soil survey or other map					

**4. Site and Soil Characteristics and Proposed Operation - attach any assessment of soil nutrients and any additional details of the operation**

Site Slope (Percentage)	Distance to Surface Water	Feet	Distance (in feet) to Nearest Building or Residence	Depth (in feet) to Seasonal High-Water Table
		Miles		
Area of Land to be Used	Square Feet	Land Treatment Procedures and Monitoring		
	Acres			
Expected Date(s) of Fertilizer Application (See Guidelines)			Application Thickness (inches)	
Expected Date of Waste Application			Expected Date(s) of Tillage (See Guidelines)	

## 5. Local Zoning Approval (if required)

Waste disposal must not conflict with local zoning ordinances. Consult with representatives of the applicable zoning jurisdiction (county, township or city) to determine waste disposal compliance with zoning ordinances. A representative of the local zoning jurisdiction must sign the application if local zoning approval is required.

The undersigned acknowledge(s) that the above-described waste management or land treatment activities do not conflict with local zoning ordinances.

Signature of County Official		Printed Name		Date
Address	City	State	ZIP Code	Telephone Number
Signature of City or Township Official		Printed Name		Date
Address	City	State	ZIP Code	Telephone Number

## 6. Signatures

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who will manage this system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Activities will be conducted in accordance with Departmental procedures and as described herein. I am aware that there are significant penalties for submitting false information.

Applicant's Signature				Date
Printed Name		Official Title		
Address	City	State	ZIP Code	Telephone Number

Operator's Signature				Date
Printed Name		Official Title		
Address	City	State	ZIP Code	Telephone Number

Property Owner's Signature (as listed on page 1)				Date
Printed Name		Official Title		

Engineer's or Consultant's Signature				Date
Printed Name		Registration		

**Mail this application and supplemental forms to:**

North Dakota Department of Environmental  
Quality Division of Waste Management  
4201 Normandy Street  
Bismarck, ND 58503-1324

Signature of NDDEQ Staff (who performed the on-site visit/pre-check)				Date
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