GUIDELINES FOR PERMIT APPLICATION, DESIGN, AND CONSTRUCTION OF SURFACE WASTE MANAGEMENT FACILITIES

(Revised 7-97)

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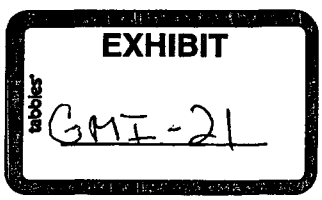

PREFACE

The following specifications shall be used as a guide to the preparation of a permit application for commercial or centralized surface waste management facilities to be used to treat oilfield wastes classified as 1) nonexempt from Federal Resource Conservation and Recovery Act (RCRA) Subtitle C Regulations, or 2) nonhazardous by characteristic testing. Surface waste management facility permits are reviewed and approved pursuant to the New Mexico Oil Conservation Division (OCD) Rule 711.

The applicant shall submit an "Application for Surface Waste Management Facility" accompanied by the information necessary to evaluate the application. All plans and specifications shall be submitted to and approved by the Oil Conservation Division prior to construction. Designs for construction and operation may deviate from the following specifications if it can be shown that the design integrity and operation of the facility will not effect any present or foreseeable beneficial uses of protectable ground water, and the facility is protective of public health and the environment.

The following landfarm procedures shall also be used as a guide for the treatment of contaminated solids at locations where a permit is not required such as a production site or leak/spill location where the contaminated materials are solely from that individual site. OCD approval from the appropriate district office must be obtained prior to conducting onsite landfarm operations at individual well site locations.

An OCD Rule 711 permit does not relieve the applicant of liability should the operation result in pollution of surface or ground waters or the environment actionable under other laws and/or regulations. In addition, an OCD Rule 711 permit does not relieve the applicant of liability to comply with all other federal, state or rules and/or regulations.

If any levee to be constructed is more than ten feet (10') in height from ground level, or if a pit volume is more than 10 acre-feet, the State Engineer Office must also review and issue a permit for construction of the pit.

GUIDELINES FOR APPLICATION FOR SURFACE WASTE MANAGEMENT FACILITY PERMITS

1. Type of Operation

Indicate the major purpose(s) of the facility (e.g., produced water evaporation pit, remediation of oil field solids, etc.) and briefly describe the processes occurring at the facility.

2. Operator

Name of owner or legally responsible party, include address and telephone number.

3. Location of Disposal Pit

Give a legal description of the location (i.e., 1/4 1/4 Section, Township, Range, and County). Use state coordinates or latitude/longitude on unsurveyed land. Submit a large scale topographic map, site plan, or detailed aerial photograph for use in conjunction with the written material. It should depict highways or roads giving access to the facility site.

4. Expansion Request

If the application is for an expansion of an existing facility, include the original OCD order or approval authorization for the facility.

5. Land Ownership

Include a topographic map, plot map or aerial photograph delineating land ownership boundaries. Include the name and address of the landowner of the facility site and landowners of record within one mile of the site.

6. Facilities Description

A. Describe what types of liquids, solids, and/or soils are proposed to be accepted for management (e.g. produced water, drilling muds, completion fluids, tank bottoms, hydrocarbon contaminated solids, etc.)

B. Describe proposed on-site facilities to be used for effluent management of process/produced water, drilling mud, sludges, waste oils, etc., including surface impoundments, disposal pits, below grade tanks, landfarm cells etc. Locate the various management areas on the facility site plan or topographic map. If materials or effluent other than produced water are proposed to be discharged at the site, describe in detail and provide expected volumes.

C. Attach a description of the facility with a diagram indicating the location of the following:

1. Roads, fences, gates, berms, ditches, and proposed cells.

2. All pipelines crossing the facility, including owner, contents, depth and size of the pipeline(s).

3. Actual or proposed offices and/or storage buildings.

4. Chemical storage areas indicating the type of storage containers (ie. drums, sacks, tanks, etc.).

5. All tanks indicating whether they are above ground or below ground and saddle or vertical.

6. Any on-site storage/disposal facilities for wastes other than contaminated soils to be landfarmed (ie. waste oil, washbay sumps, etc.).

7. Engineering Design

A. Provide technical data on the design elements of each disposal method. Engineering designs must be submitted to OCD for approval prior to construction.

1. Surface impoundments - Type and volume of effluent stored, area, volume, depth, slope of pond sides, sub-grade description, liner type and thickness, compatibility of liner and effluent, installation methods, leak detection methods, freeboard, runoff/runon protection.

2. Solids and semi-solids treatment and disposal - Describe in detail how petroleum waste solids, semi-solids or sludges will be handled including proposals for recycling, reclaiming and/or disposal. Provide disposal pit(s) location, size, volume, liner, and type of solids. Facilities reclaiming oil are subject to OCD Rule 711.

3. Landfarming - Describe how contaminated solids (including soils and/or tank bottoms) will be landfarmed. Include information on proposed spreading rates, lift thickness, discing frequency, use of nutrients or chemicals to enhance degradation and proposed testing to monitor effectiveness.

B. General Pit/Pond Construction Requirements

1. Location

Liquid and solids disposal pits and ponds shall not be located in any watercourse, lakebed, sink-hole, or other depression. Pits and ponds adjacent to any such watercourse or depression shall be located safely above the high-water level of such watercourse or depression.

2. Design and Construction

a. Evaporation ponds shall be designed and constructed to provide the minimum evaporative surface area needed for the maximum yearly volume of liquid to be discharged to the pond. This design parameter shall be based upon local climatological data. Such data and calculations used for the pond design shall be submitted with any proposed plans and specifications. Special care should be taken when calculating the pond volume to account for the decrease in the evaporation rate during the winter months.

b. The design freeboard allowance shall take wave action into account to prevent overtopping due to wave action. A determination of the wave type (breaking or non-breaking) shall be made to determine the forces acting upon the levee. Such calculations shall be submitted with the details for pond construction. Liner markings or some other device shall be installed to accurately measure freeboard.

c. The pond is to be constructed so that the inside grade of the levee is no steeper than 2:1. Levees shall have an outside grade no steeper than 3:1 (see Figure 1).

d. The top of the levees shall be level and shall be at least eighteen inches (18") wide.

e. An aeration system may be required to be constructed to prevent anaerobic conditions from forming in a pond. The necessity for this requirement will be determined individually based on pond design specifications submitted.

f. Upon completion of construction "as-built" completion diagrams certified by a registered professional engineer shall be submitted including locations and top-of-pipe elevation of monitor wells, if required.

3. Synthetically Lined Evaporation Ponds

a. Materials

(1) Synthetic materials used for lining evaporation ponds shall be impermeable and may be rigid, semi-rigid, or flexible.

(2) If rigid or semi-rigid materials are used, leak proof expansion joints shall be provided, or the material shall be of sufficient thickness and strength to withstand (without cracking) expansion, contraction, and settling movements in the underlying earth.

(3) If flexible membrane materials are used, they shall be of at least 30 mil thickness and shall have good resistance to tears or punctures.

(4) All materials used for lining evaporation ponds shall be resistant to hydrocarbons, salts, and acidic and alkaline solutions. The liners shall also be resistant to ultraviolet light or provision made to protect the material from the sun, as specified in Section c.(6).

(5) Synthetically lined pits shall incorporate a double liner system with a leak detection system installed between the primary (top) and secondary (bottom) liner.

b. Leak Detection System

(1) A leak detection system of an approved design shall be installed between the primary and secondary liner. The appropriate OCD district office should be notified at least 24 hours in advance of the scheduled installation of the primary liner to afford the opportunity for a Division representative to inspect the leak detection system.

(2) Leak detection systems may consist of, but are not necessarily limited to, approved fail-safe electric detection system or drainage and sump systems.

(3) If an electric grid detection system is used, provision must be made for adequately testing all components to ensure the system remains functional.

(4) If the drainage and sump system is to be used, a network of slotted or perforated drainage pipes shall be installed between the primary and secondary liners. The network shall be of sufficient density so that no point in the pond bed is more than twenty feet (20') from such drainage pipe or lateral thereof. The material placed between the pipes and laterals shall be sufficiently permeable to allow transport of the fluids to the drainage pipe. The slope for all drainage lines and laterals shall be at least six inches (6") per fifty feet (50'). The slope of the pond bed shall also conform to these values to assure fluid flow towards the leak detection system. The drainage pipe shall convey any fluids to a corrosion-proof sump located outside the perimeter of the pond (see Figure 2).

c. Preparation of Pond Bed for Installation of Liners

(1) The bed of the pond and inside grade of the levee shall be smooth and compacted, free of holes, rocks, stumps, clods, or any other debris which may rupture the liner. In extremely rocky areas, it will probably be necessary to cover the pond bed with a compacted layer of sand or other suitable materials.

(2) A trench shall be excavated on the top of the levee the entire perimeter of the pond for the purpose of anchoring flexible liners. This trench shall be located a minimum of nine inches (9") from the slope break and shall be a minimum of twelve inches (12") deep. (See Figure 3).

(3) The liner shall rest smoothly on the pond bed and the inner face of the levees, and shall be of sufficient size to extend down to the bottom of the anchor trench and come back out a minimum of two inches (2") from the trench on the side furthest from the pond. (See Figure 3). In locations where temperature variations are significant, wrinkles or folds shall be placed at each corner of the pond to allow for the contraction and expansion of the membrane due to temperature variations. The membrane manufacturer should be consulted on this matter.

(4) Certain conditions require the venting of gas that may accumulate beneath a liner. If organic matter exists in the soils under the liner, or if natural gas is present in the region, gas production is likely. When a fluctuating water table is present immediately below the pond bottom, pockets of are may also accumulate below the liner. The net result of gas or air accumulation below the liner may be the "floating" of the liner to the pond surface. Two possible vent designs are illustrated in Figure 4. The need to vent this accumulated gas can be accomplished by providing a uniform layer of sand (which less than 5% will pass the 200 sieve) or a geotextile beneath the liners. To achieve the best results from either of these media, the slope from the lowest point of the pond to the toe of the dike must be at least 2%. The venting medium is carried across the entire bottom and up the side slopes. Vents should be located approximately one foot (1') down from the crown of the dike. (See Figure 3)

(5) An anchor of used pipe or other similar material shall be placed over the liner in the anchor trench and the trench back-filled. The anchor trench shall extend the entire perimeter of the pond.

(6) If the lining material used for the primary liner is not sun-resistant, at least one inch (1") of sand or other suitable material shall be spread uniformly to cover the liner over the floor of the pit. Gravel or other wave-resistant material with sufficient angle of repose to remain in place shall be used to cover the sloping inner wall of the levee. A geotextile liner shall be placed beneath any gravel layer to provide protection for the membranae liner. Any gravel or sand layers used to protect the membranae liner from the sun shall extend to the anchor trench.

(7) Any sand or gravel layers placed on top of a membranae liner shall be done in such a manner that the risk of tearing the liner is minimized.

(8) At any point of discharge into the pond, no fluid force shall be directed toward the liner.

5. Unlined Evaporation Ponds

   a. Unlined disposal ponds will not be approved in areas where fresh water (as defined by OCD rules) underlies the site unless the constituent quality of the produced water is better than then underlying ground water.

   b. Sufficient geologic and hydrologic information will be required to be provided to demonstrate that water disposal in unlined evaporation ponds will not migrate to areas of protectable fresh water.

6. Spray Evaporation Systems

   a. Sprayer systems may be approved to enhance natural evaporation.

   b. Engineering designs for the sprayer system must be submitted for approval prior to installation.

   c. Spray systems shall be operated such that spray-borne salt does not leave the bermed area.

7. Skimmer Ponds/Tanks

   a. Required Use

      A skimmer pond or tank shall be used to separate any oil from the water prior to allowing the water to discharge into the evaporation pond, except for the following cases:

      (1) It can be shown that the water being discharged into the pond contains no oil or grease.

      (2) The discharge into the pond is from an oil or natural gas processing facility where the discharge has already clarifier passed through a skimmer basin, skimmer tank, decanter, or API Separator.

   b. Design Criteria

      The skimmer pond shall be designed to allow or oil/water separation only; oil shall be removed in a timely manner and stored in tanks. Per OCD Rule 310, oil shall not be stored or retained in earthen reservoirs or in open receptacles.

(1) If a skimmer pond is to be used, the pond shall conform to the same design criteria as the evaporation pond.

(2) If a skimmer tank is to be used, the material of construction and/or design shall provide for corrosion resistance.

(3) If a skimmer pond is to be used, siphons or other suitable means shall be employed to draw water from oil/water interface for transfer to the evaporation pond. The siphon shall be located as far as possible from the inlet to the skimmer pond.

(4) The skimmer pond/tank shall at all times be kept free of appreciable oil buildup to prevent oil flow into the evaporation pond.

(5) Figures 5 - a and b illustrate general design criteria for skimmer ponds and tanks, respectively. All skimmer pond shall be lined unless specifically exempted.

8. Fences, Signs and Netting

a. Unless otherwise permitted by the OCD, a fence shall be constructed and maintained in good condition around the facility perimeter. Adequate space will be provided between the fence and levees for passage of maintenance vehicles. The fences shall be constructed so as to prevent livestock from entering the facility area. Fences shall not be constructed on levees.

b. A sign not less than 12" x 24" with lettering of not less than two inches (2") shall be posted in a conspicuous place on the fence surrounding the facility. The sign shall be maintained in legible condition and shall identify the operator of the disposal system, the location of the facility by quarter-quarter section, township, and range; and emergency telephone numbers.

c. To protect migratory birds, all tanks exceeding 16 feet in diameter, and exposed pits and ponds shall be screened, netted or covered. Upon written application by the operator, an exception to screening, netting or covering of a facility may be granted by the district supervisor upon a showing that an alternative method will protect migratory birds or that the facility is not hazardous to migratory birds.

C. General Landfarm Construction Requirements

1. Location: A landfarm facility shall not be located in any watercourse, lakebed, sink-hole, or other depression. Facilities located adjacent to any such watercourses or depression shall be located safely above the high water level of such watercourse or depression. In addition, facilities located adjacent to any watercourses shall include a storm water runoff plan.

2. Fences & Signs: The facility shall be fenced and have a sign at the entrance. The sign shall be legible from at least fifty (50) feet and contain the following information: a) name of the facility, b) location by section, township and range, and c) emergency phone number.

3. Facility Buffer Zone: No contaminated soils should be placed within one hundred (100) feet of the boundary of the facility unless it can be demonstrated that a smaller buffer zone will not adversely impact the adjacent properties.

4. Pipeline Buffer Zone: No contaminated soils should be placed within twenty (20) feet of any pipelines crossing the landfarm. In addition, no equipment should be operated within ten (10) feet of a pipeline. All pipelines crossing the facility should have surface markers identifying the location of the pipelines.

5. Facility Berming: The portion of the facility containing contaminated soils shall be bermed to prevent runoff and runon. A berm should be constructed and maintained such that it capable of containing precipitation from a one-hundred year flood for that specific region.

6. Treatment Zone Monitoring: Because a landfarm is designed to remediate contaminated soils and not transfer contaminants into the underlying native soil and/or groundwater, the applicant shall submit a plan to detect leaching of contaminants. If the native ground surface has a minimum of three feet of uncemented material (ie. soil) then a treatment zone monitoring program may be incorporated into the facility design to ensure contaminants are not leaching into the native soil/groundwater. The following procedures should be used to monitor a treatment zone not to exceed three (3) feet beneath the landfarm:

   a. One (1) background soil sample should be taken from the center portion of the landfarm two (2) feet below the native ground surface prior to operation. The sample should be analyzed for total petroleum hydrocarbons (TPH), major cations/anions, volatile aromatic organics (BTEX), and heavy metals using approved EPA methods.

b. A treatment zone not to exceed three (3) feet beneath the land farm should be monitored. A minimum of one random soil sample should be taken from each individual cell, with no cell being larger than five (5) acres, six (6) months after the first contaminated soils are received in the cell and then quarterly thereafter. The sample should be taken at two to three (2-3) feet below the native ground surface.

c. The soil samples should be analyzed using approved EPA methods for TPH and BTEX quarterly, and for major cations/anions and heavy metals annually.

d. After obtaining the soil samples the boreholes should be filled with an impermeable material such as cement.

e. Analytical results from the treatment zone monitoring should be submitted to the OCD Santa Fe Office for review on a regular schedule to be proposed by the applicant.

7. Double-Lined System: If the native ground surface is composed of resistant cemented materials which make it infeasible to sample a treatment zone then another method shall be proposed to guarantee that contaminants do not leach into the underlying soils and/or groundwater. This may be accomplished by installing a double-lined system with leak detection in accordance with the OCD "Engineering Design Guidelines for Construction of Waste Storage/Disposal Ponds (10/90). In addition, the facility shall be constructed so that the primary liner will not be ripped or punctured when the contaminated soils are disked.

C. Landfarm Facility Operation - The Director shall consider, but is not limited to, the following operating procedures for commercial and centralized landfarms. The purpose of specific operating requirements is so that operation of a landfarm will not adversely impact ground water, surface water, public health or the environment.

1. Disposal shall only occur when an attendant is on duty. The facility shall be secured when no attendant is present.

2. All contaminated soils received at the facility should be spread and disked within 72 hours of receipt.

3. Soils should be spread on the surface in six inch lifts or less unless the applicant can demonstrate that the equipment will adequately disk a thicker lift

4. Soils should be disked a minimum of one time every two weeks (biweekly) to enhance biodegradation of contaminants.

5. Exempt contaminated soils should be placed in the landfarm so that they are physically separate (ie. bermed) from nonexempt contaminated soils. There should be no mixing of exempt and nonexempt soils.

6. Successive lifts of contaminated soils should not be spread until a laboratory measurement of Total Petroleum Hydrocarbons (TPH) in the previous lift is less than 100 parts per million (ppm), and the sum of all aromatic hydrocarbons (BTEX) is less than 50 ppm, and the benzene is less than 10 ppm. Comprehensive records of the laboratory analyses and the sampling locations shall be maintained at the facility. Authorization from the OCD shall be obtained prior to application of successive lifts.

7. Moisture should be added as necessary to enhance bioremediation and to control blowing dust. There shall be no ponding, pooling or run-off of water allowed. Any ponding of precipitation should be removed within seventy-two (72) hours of discovery.

8. Enhanced bio-remediation through the application of microbes (bugs) and/or fertilizers shall only be permitted after prior approval from the OCD. Request for application of microbes should include the location of the area designated for the bio-remediation program, composition of additives, and the method, amount and frequency of application.

9. No free liquids or soils with free liquids shall be accepted at the facility.

10. Comprehensive records of all material disposed of at the facility shall be maintained at the facility. The records for each load will include: 1) the generator, 2) the origin, 3) date received, 4) quantity, 5) Certification of exempt status or analysis for hazardous constituents if non-exempt, 6) transporter, and 7) exact cell location and any addition of microbes, moisture, fertilizers, etc.

D. Characterization & Tracking of Wastes - The operator of a landfarm must be able to distinguish between those oilfield contaminated solids which are exempt from RCRA Subtitle C (hazardous waste) regulations and those which are subject to the RCRA Subtitle C regulations. To aid the landfarm applicant in making those determinations and therefore prohibiting hazardous waste from entering the facility, all OCD permitted landfarms should operate under the following conditions:

1. The facility should be authorized to accept only:

a. Oilfield contaminated solids which are exempt from RCRA Subtitle C regulations. These wastes should be accompanied by a "Certification of Waste Status" from the generator.

b. "Non-hazardous" non-exempt oilfield contaminated solids from OCD permitted facilities on a case-by-case basis after conducting an analysis for hazardous characteristics and receiving OCD approval. The test for hazardous characteristics for a particular waste may be effective for one year from the date of analysis, if, the subsequent wastes from the same waste stream are accompanied by a statement from the generator that there has been no change in the processes employed or the chemicals stored/used at the facility generating the waste.

c. Other non-oilfield contaminated solids which are RCRA Subtitle C exempt or non-hazardous by characteristic testing, if ordered by the Department of Public Safety on an emergency basis as the waste poses an eminent danger to public health. The wastes should be accompanied by a "Verification of Waste Status" demonstrating the exempt or non-hazardous classification of the solids and signed by the appropriate regulatory agency. OCD approval shall be obtained prior to accepting the wastes.

2. At no time will any OCD permitted landfarms accept wastes which are hazardous by either testing or listing.

3. All loads received at the facility will be accompanied by the following:

a. A "Certification of Waste Status" signed by the waste generator or "Verification of Waste Status" issued by the New Mexico Environment Department (NMED) or the appropriate agency from another state tor wastes regulated by that agency. The state agency verification is based on specific information on the subject waste submitted by the generator and demonstrating the exempt or non-hazardous classification of the waste.

b. The analytical results of Hazardous Waste Characterization for non-exempt waste including corrosivity, reactivity, ignitability, and toxic constituents and a certification that no listed hazardous wastes are contained within the wastes. The samples for these analyses and results will be obtained from the wastes prior to removal from the generator's facility and without dilution in accordance with EPA SW-846 sampling procedures.

4. The transporter of all wastes to the facility will supply a certification that wastes delivered are those wastes received from the generator and that no additional materials have been added.

8. Spill/Leak Prevention and Reporting Procedures (Contingency Plans)

It is necessary to include in the discharge plan submittal a contingency plan that anticipates where any leaks or spills might occur. It must describe how the discharger proposes to guard against such accidents and detect them when they have occurred. The contingency plan also must describe the steps proposed to contain and remove the spilled substance or mitigate the damage caused by the discharge such that ground water is protected, or movement into surface waters is prevented. The applicant shall commit to notify the OCD of any break, spill, blow out, or fire or any other circumstance that could constitute a hazard or contamination in accordance with OCD Rule 116. This commitment and proposed notification threshold levels must be included in the contingency plan.

A. Describe measures to be taken in the event of pond or pit failure as determined by the leak detection sumps or by ground water monitoring. Outline a procedure for analyses of fluids found, proposed schedule for OCD notification, removal of fluids from the leak detection system, repairs to the pond, and cleanup of contaminated water.

B. Describe proposed procedures addressing containment, cleanup and reporting in case of major and minor spills at the facility. Include information as to whether areas are curbed, paved and drained to sumps; final disposition of spill material; proposed schedule for OCD notification of spills; etc.

C. If an injection well is used for on-site effluent disposal, describe the procedures to be followed to prevent unauthorized discharges to the surface or subsurface in the event the disposal well or disposal line is shut-in for workover or repairs (e.g. extra storage tanks, emergency pond, shipment offsite, etc.). Address actions to be taken in the event of disposal pipeline failure, extended disposal well downtime, etc.

D. The application shall contain a contingency plan that anticipates where any leaks/spill might occur. It should describe how the applicant proposes to guard against such accidents and detect them when they have occurred.

E. The contingency plan shall describe the steps proposed to contain and remove the spilled substance or mitigate the damage caused by the discharge such that ground water is protected, or movement into surface waters is prevented.

F. The application shall describe how any ponding, pooling or runon of precipitation will be removed from the landfarm and where its final disposition will be.

G. The application shall contain a contingency plan that describes what procedures will be taken to contain and mitigate any contaminants which are leached beneath the native surface of the landfarm. The precise method will depend upon the engineering design of the facility and the method used to detect leaching of contaminants (ie. monitoring a two foot treatment zone, installing a double-lined system with leak detection, etc.)

H. The applicant shall commit to notify the OCD of any break, spill, blow out, or fire or any other circumstance that could constitute a hazard or contamination in accordance with OCD Rule 116.

9. Operation and Maintenance

A. Leak detection sumps shall be inspected for fluids at least weekly; monitor wells, if required, shall be checked at least monthly and sampled if fluids are present. Analyses will be furnished to the OCD. Records of dates, inspector and status of the leak detection system or ground water monitoring wells shall be maintained.

B. Landfarm facilities should be maintained to keep soils from blowing and to minimize odors from leaving the facility boundary. Discuss how this will be accomplished. Berms should be maintained in such a manner to prevent erosion. Inspections of the berms should be made after any rainfall or wind storms of consequence.

C. Outside walls of all levees shall be maintained in such a manner to prevent erosion. Inspections of the outside walls of the levees shall be made after any rainfall of consequence.

D. Pond freeboard levels shall not be less than approved by OCD.

E. All surface waste disposal facility operators shall file forms C-117-A, C-118, and C-120-A as required by OCD rules.

F. No produced water shall be received at the facility from motor vehicles unless the transporter has a valid Form C-133 (Authorization to Move Produced Water) on file with the Division.

G. Only liquids and solids that are non-hazardous by RCRA Subtitle C exemption or by characteristic testing will be accepted at the facility. Liquids and solids from operations not currently exempt under RCRA Subtitle C will be tested for appropriate hazardous constituents prior to disposal.

H. Each operator of a commercial surface waste management facility shall keep and make available for inspection records for each calendar month on the source, location, volume and type of waste (produced water, acids, completion fluids, drilling mud, etc.), analysis for hazardous constituents (if required), date of disposal, and hauling company that disposes of fluids or material in their facility. Such records shall be maintained for a period of two (2) years from the date of disposal.

I. Disposal at a surface facility shall occur only when an attendant is on duty. The facility shall be secured when no attendant is present. When loads can be monitored or otherwise isolated for inspection before disposal, no attendant is required.

J. The applicant should commit to submitting all required analytical results, OCD forms and other specified reports referenced in the guidelines.

10. Closure Plan

A. OCD shall be notified when operation of the facility is discontinued for a period in excess of six months or when the facility is to be dismantled. A closure plan for the facility will be provided including the following OCD closure procedures:

1. When the facility is to be closed no new material should be accepted.

2. Existing landfarm soils should be remediated until they meet the OCD standards in effect at the time of closure;

3. Provide a facility closure plan detailing plans as necessary for removal of all fluids and/or wastes, back-filling, grading and mounding of pits, cleanup of contaminated soils, and if necessary, aquifer restoration

4. The area should be reseeded with natural grasses and allowed to return to its natural state;

5. Closure shall be pursuant to all OCD requirements in effect at the time of closure, and any other applicable local, state and/or federal regulations.

B. A closure plan shall contain a commitment from the applicant that he shall notify the Division of cessation of operations. Upon cessation of disposal operations for six (6) consecutive months, the operator shall complete cleanup of constructed facilities and restoration of the facility site within the following six (6) months, unless an extension of time is granted by the Director.

11. Site Characteristics - Fresh Water Protection Demonstration

A. The following hydrologic/geologic information is required to be submitted with all applications. Some information already may be on file with OCD and can be provided to the applicant on request.

1. Hydrologic Features

a. Provide the name, description, and location of any bodies of water, streams (indicate perennial or intermittent), or other watercourses (arroyos, canals, drains, etc.); and ground water discharge sites (water wells, seeps, springs, marshes, swamps) within one (1) mile of the outside perimeter of the facility. For water wells, specify use of water (e.g., public supply, domestic, stock, etc.)

b. Provide the total dissolved (TDS) concentration (in mg/l) of the ground water most likely to be affected by any discharge. Include the source of the information and how it was determined.

c. Provide the flow direction of the ground water most likely to be affected by any leaks. Include the source of the information and how it was determined.

d. It is suggested that you provide a recent water quality analysis of the ground water, if available, including the name of the analyzing laboratory, sample location, and data the sample was taken. This suggestion is made so that background information is available in case of leaks or charges of neighboring groundwater contamination.

2. Geologic Description of Facility Site
Provide the following information and attach or reference source information, as available, (e.g., driller's logs):

a. Soil type(s) -sand, clay caliche, bedrock. Include a lithologic description of all soil and rock members from ground surface down to the shallowest fresh water aquifer;

b. Depth to, name of, and thickness of the shallowest fresh water aquifer(s);

c. Composition of aquifer material - alluvium, sandstone, basalt, etc.;

d. Depth to bedrock at base of alluvium.

3. Flood Protection

Provide information on:

a. The flooding potential at the facility with respect to major precipitation and/or runoff events; and

b. Flood protection measures (berms, drainage channels, etc.), if applicable, for at least a 100-year flood.

c. Proposed schedule for OCD notification in case of flooding or washout.

B. Provide any additional information necessary to demonstrate that approval of the application will not result adversely affect fresh water protected for present or reasonably foreseeable future use. Depending on the method and location of discharge, detailed technical information on site hydrologic and geologic conditions may be required to be submitted for discharge plan evaluation. This material is most likely to be required for unlined surface impoundments and pits, and leach fields. Check with OCD before providing this information. However, if required it could include but not be limited to:

1. Stratigraphic information including formation and member names, thickness, lithologies, lateral extent, etc.

2. Generalized maps and cross-sections;

3. Potentiometric maps for aquifers potentially affected;

4. Porosity, hydraulic conductivity, storativity and other hydrologic parameters of the aquifer;

5. Specific information on the water quality of the receiving aquifer; and

6. Information on expected alteration of contaminants due to sorption, precipitation or chemical reaction in the unsaturated zone, and expected reactions and/or dilution in the aquifer.

7. Porosity, permeability, conductivity, cation exchange rates, compaction ratios and swelling characteristics for the sediments on which the contaminated soils will be directly placed upon.

12. Proof of Notice

Attach proof that the notice requirements of OCD Rule 711 have been met. For commercial and centralized waste management facilities the applicant must give written notice of application to the owners of surface lands and occupants within one (1) mile of the proposed facility boundary. For permit modifications, the Division may require the applicant to give written notice as above.

13. H_2S Contingency Plan

A contingency plan in the event of a release of H_2S shall be submitted for approval along with the details for pit construction. The contingency plan will outline a procedure for monitoring for H_2S, notifying the OCD, aeration or treatment of pit fluids for H_2S generation, H_2S monitoring and notification of appropriate authorities. H_2S contingency plans are not applicable for land farm facilities unless the landfarm is designed to generate H2S.

14. Additional Information

Provide any additional information necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.

15. Certification

Include the signature information required on the application form. The form must be signed by an authorized representative of the applicant.