Environment Act Licence
Loi sur l'environnement Licence

Manitoba Conservation
Conservation Manitoba

Licence No./Licence n° 2439 R

Issue Date/Date de délivrance January 14, 2000

Revised: December 13, 2004

IN ACCORDANCE WITH THE MANITOBA ENVIRONMENT ACT (C.C.S.M. c. E125) THIS LICENCE IS ISSUED PURSUANT TO SECTION 11(1) TO:

RURAL MUNICIPALITY OF TACHE; "the Licencee"

for the construction, operation and maintenance of the Development being a wastewater collection system, an aerated wastewater treatment lagoon located on River Lot 8, Parish of Lorette in the Rural Municipality of Tache and a forcemain connection between the Local Urban District (L.U.D.) of Lorette and the aerated lagoon and with discharge of treated effluent to a drainage ditch that flows into the Seine River Diversion which empties into the Red River, in accordance with the Proposal filed under The Environment Act on October 28, 1999 and previously submitted forcemain information provided on October 6, 1999, subsequent information provided on November 29, 1999 and January 5, 2000, the request of November 5, 2004 to amend the Licence, and subject to the following specifications, limits, terms and conditions:

DEFINITIONS

In this Licence,

"accredited laboratory" means a laboratory accredited by the Standard Council of Canada (SCC), another accrediting agency recognized by Manitoba Conservation to be equivalent to the SCC, or at a laboratory which can demonstrate to Manitoba Conservation that it has the quality assurance/quality control (QA/QC) procedures in place equivalent to accreditation based on the Canadian Standard Can/CSA-Z753, extension of the international standard ISO 9000, Guide 25;

"approved" means approved by the Director in writing;

"appurtenances" means machinery, appliances, or auxiliary structures attached to a main structure to enable it to function, but not considered an integral part of it;

****A COPY OF THE LICENCE MUST BE KEPT ON SITE AT THE DEVELOPMENT AT ALL TIMES****

"aerated" means the bringing about of intimate contact between air and a liquid by bubbling air through the liquid;

"as constructed drawings" means engineering drawings complete with all dimensions which indicate all features of the Development as it has actually been built;

"ASTM" means the American Society for Testing and Materials;

"Director" means an employee so designated pursuant to The Environment Act;

"effluent" means treated wastewater flowing or pumped out of the wastewater treatment lagoon;

"fecal coliform" means aerobic and facultative, Gram-negative, nonspore-forming, rod-shaped bacteria capable of growth at 44.5° C, and associated with fecal matter of warm-blooded animals;

"five-day biochemical oxygen demand" means that part of the oxygen demand usually associated with biochemical oxidation of organic matter within five days at a temperature of 20° C;

"flooding" means the flowing of water onto lands, other than waterways, due to the overtopping of a waterway or waterways;

"high water mark" means the line on the interior surface of the primary and secondary cells which is normally reached when the cell is at the maximum allowable liquid level or the line of the exterior of the perimeter dykes which is reached during local flooding;

"hydraulic conductivity" means the quantity of water that will flow through a unit cross-sectional area of a porous material per unit of time under a hydraulic gradient of 1.0;

"in-situ" means on the site;

"low water mark" means the line on the interior surface of the primary and secondary cells which is normally reached when the cell is discharged;

"MPN Index" means the most probable number of coliform organisms in a given volume of wastewater which, in accordance with statistical theory, would yield the observed test result with the greatest frequency;

"primary cell" means the first in a series of cells of the wastewater treatment lagoon system and which is the cell that receives the untreated wastewater;

"riprap" means small, broken stones or boulders placed compactly or irregularly on dykes or similar embankments for protection of earth surfaces against wave action or current;

"secondary cell" means a cell of the wastewater treatment lagoon system which is the cell that receives partially treated wastewater from the primary cell;

"septage" means the sludge produced in individual on-site wastewater disposal systems such as septic tanks;

"sewage" means household and commercial wastewater that contains human waste;

"sludge" means the accumulated solids separated from liquids, such as water or wastewater, during processing;

"Standard Methods for the Examination of Water and Wastewater" means the most recent edition of Standard Methods for the Examination of Water and Wastewater published jointly by the American Public Health Association, the American Waterworks Association and the Water Environment Association;

"total coliform" means a group of aerobic and facultative anaerobic, Gram-negative, nonspore-forming, rod-shaped bacteria, that ferment lactose with gas and acid formation within 48 hours at 35° C, and inhabit predominantly the intestines of man or animals, but are occasionally found elsewhere and include the sub-group of fecal coliform bacteria;

"wastewater" means the spent or used water of a community or industry which contains dissolved and suspended matter;

"wastewater collection system" means the sewer and pumping system used for the collection and conveyance of domestic, commercial, and industrial wastewater; and

"wastewater treatment lagoon" means the component of the development which consists of an impoundment into which wastewater is discharged for storage and treatment and natural oxidation.

GENERAL TERMS AND CONDITIONS

This Section of the Licence contains requirements intended to provide guidance to the Licencee in implementing practices to ensure that the environment is maintained in such a manner as to sustain a high quality of life, including social and economic development, recreation and leisure for present and future Manitobans.

1. The Licencee shall direct all wastewater generated within the L.U.D. of Lorette toward the wastewater treatment lagoon or other approved sewage treatment facilities.

2. In addition to any of the limits, terms and conditions specified in this Licence, the Licencee shall, upon the request of the Director:

   a) sample, monitor, analyze and/or investigate specific areas of concern regarding any segment, component or aspect of pollutant storage, containment, treatment, handling, disposal or emission systems, for such pollutants or ambient quality, aquatic toxicity, leachate characteristics and discharge or emission rates, for such duration and at such frequencies as may be specified;
   b) determine the environmental impact associated with the release of any pollutant(s) from the Development; or
   c) provide the Director, within such time as may be specified, with such reports, drawings, specifications, analytical data, descriptions of sampling and analytical procedures being used, bioassay data, flow rate measurements and such other information as may from time to time be requested.

3. The Licencee shall operate and maintain the wastewater treatment lagoon and wastewater collection system in such a manner that the release of offensive odours is minimized.

4. The Licencee shall, in case of physical or mechanical breakdown of the wastewater collection and/or treatment system:

   a) notify the Director immediately;
   b) identify the repairs required to the wastewater collection and/or treatment system;
   c) undertake all repairs to minimize unauthorized discharges of wastewater; and
   d) complete the repairs in accordance with any written instructions of the Director.

5. The Licencee shall, unless otherwise specified in this Licence:

a) carry out all preservations and analyses on liquid samples in accordance with the methods prescribed in "Standard Methods for the Examination of Water and Wastewater" or in accordance with an equivalent analytical methodology approved by the Director;
b) ensure that all analytical determinations are undertaken by an accredited laboratory; and
c) report the results to the Director, in writing or in a format acceptable to the Director, within 60 days of the samples being taken.

6. The Licencee shall ensure that, during construction and operation of the Development, spills of fuels or other contaminants are reported to an Environment Officer in accordance with the requirements of *Manitoba Regulation 439/87* respecting *Environmental Accident Reporting.*

7. The Licencee shall ensure that non-reusable demolition and construction debris from the Development is disposed of at a waste disposal ground operating under the authority of a permit issued under *Manitoba Regulation 150/91* respecting *Waste Disposal Grounds.*

8. The Licencee shall notify the Director of, and receive approval from the Director for, any alteration in the Development as Licenced, prior to proceeding with such alteration.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

9. The Licencee shall, prior to the construction of the dykes for the wastewater treatment lagoon, remove the organic topsoil from the area where the dykes will be constructed.

10. The Licencee shall construct and maintain the wastewater treatment lagoon, with a continuous liner under all interior surfaces of the cells in accordance with the following specifications:

a) the liner shall be made of clay;
b) the liner shall be at least one metre in thickness;
c) the liner shall have a hydraulic conductivity of 1×10^{-7} centimetres per second or less at all locations; and
d) the liner shall be constructed to an elevation of 4.6 metres above the floor elevation of the primary cells and an elevation of 2.5 metres above the floor elevation of the secondary cells.

11. The Licencee shall operate and maintain the wastewater treatment lagoon in such a manner that:

    a) a minimum of 2 milligrams of dissolved oxygen per litre is detectable at all times in the top 2.0 metres of the liquid in the aerated primary cells;
    b) the organic loading on the wastewater treatment lagoon, in terms of the five-day biochemical oxygen demand, is not in excess of 280 kilograms per day; and
    c) the depth of liquid in the aerated primary cells does not exceed 3.6 metres and the depth of liquid in the secondary cells does not exceed 1.5 metres.

12. The Licencee shall ensure that if, in the opinion of the Director, significant erosion of the interior surfaces of the dykes occurs, rip rap shall be placed on the interior dyke surfaces from 0.6 metres above the high water mark to at least 0.6 metres below the low water mark to protect the dykes from wave action.

13. The Licencee shall install and maintain a fence around the wastewater treatment lagoon to control access.

14. The Licencee shall construct and maintain an all-weather access road to the wastewater treatment lagoon.

15. The Licencee shall ensure that septage is not discharged to the Development.

16. The Licencee shall provide and maintain a grass cover on the dykes of the wastewater treatment lagoon and shall regulate the growth of the vegetation so that the height of the vegetation does not exceed 0.3 metres on all dykes.

17. The Licencee shall annually remove by mechanical methods all reeds, rushes and trees located above the low water mark in every cell of the wastewater treatment lagoon.

18. The Licencee shall implement an ongoing program to ensure that burrowing animals are removed from the site of the wastewater treatment lagoon.

19. The Licencee shall not discharge effluent from the wastewater treatment lagoon:

    a) where the organic content of the effluent, as indicated by the five-day biochemical oxygen demand (BOD_5), is in excess of 30 milligrams per litre;
    b) where the fecal coliform content of the effluent, as indicated by the MPN index, is in excess of 200 per 100 millilitres of sample; or
    c) where the total coliform content of the effluent, as indicated by the MPN index, is in excess of 1500 per 100 millilitres of sample; or

d) between the 1st day of November of any year and the 15th day of June of the following year.

20. The Licencee shall construct waterway crossings by augering, tunneling or boring. Open cut waterway crossings shall not be made unless prior consultation with Manitoba Natural Resources staff and Department of Fisheries and Oceans staff has occurred and the prior written approval of the Director has been obtained. This condition applies on continuously flowing watercourses at all times, and on intermittent streams and artificial drainage channels only when flow is occurring.

21. The Licencee shall revegetate soil exposed during the construction of the Development with native or introduced grasses or legumes. Native species shall be used to revegetate areas where native species existed prior to construction. Revegetation is not required for pipelines installed by chain trenching or ploughing on previously disturbed ground including road allowances or on the floors of the wastewater treatment lagoon.

22. The Licencee shall ensure that local drainage patterns are not altered by the construction of the Development, including inflows and outflows from small wetlands adjacent to the route of pipelines.

23. The Licencee shall, where open cut stream crossing techniques are used on intermittent waterways and artificial drainage channels, minimize disturbance to riparian areas and restore the bottom and banks of the waterways to their original elevations and shapes.

24. The Licencee shall notify the assigned Environment Officer not less than two weeks prior to beginning construction of the Development. The notification shall include the intended starting date of construction and the name of the contractor responsible for the construction.

25. The Licencee shall separate and replace topsoil from backhoe and trenching operations in accordance with the methodology described in Figures 1, 2 and 3 attached to this Licence. This requirement is not applicable where the topsoil has been previously disturbed due to the construction of roads or drains.

26. Notwithstanding Clause 20 of this Licence, the Licencee shall not construct open cut crossings of streams associated with the Development between April 1 and June 15 of any year. Open cut crossings shall comply with the provisions of the Canadian Association of Petroleum Producers publication "Watercourse Crossing Guidelines for Pipeline Systems" (1993).

27. The Licencee shall ensure that fuel storage and equipment servicing areas established for the construction and operation of the Development are located a minimum distance of 100 metres from any waterbody, and shall comply with the requirements of *Manitoba Regulation 97/88R* respecting *Storage and Handling of Gasoline and Associated Products.*

MONITORING AND REPORTING

28. The Licencee shall:

a) weekly assess the operation of the aeration system blowers;
b) annually inspect the aeration system and make any necessary repairs;
c) maintain a record of aeration system inspection dates, observations, maintenance and repairs completed; and
d) make records of these activities available to the designated Environment Officer on request.

29. The Licencee shall maintain records of the wastewater collection system and wastewater treatment lagoon operations and/or maintenance requirements including, but not limited to, the following:

a) lift station pumps daily elapsed time and service activities;
b) aeration system pumps daily elapsed time;
c) weekly summer and winter liquid levels in all cells and presence of odours and their source;
d) weekly winter inspections for frozen piping ;
e) liquid levels, duration of discharge, and procedures followed at the start of and during discharge(s); and
f) make these records available to the designated Environment Officer on request.

30. The Licencee shall prior to each effluent discharge, obtain grab samples of the treated wastewater and have them analyzed for:

a) organic content as indicated by the five day biochemical oxygen demand and expressed as milligrams per litre;
b) fecal coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres of sample;
c) total coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres of sample; and
d) submit the results of the analyses to the Director prior to each effluent discharge.

31. The Licencee shall:

    a) during each year maintain records of:
        i) wastewater sample dates;
        ii) original copies of laboratory analytical results of the sampled wastewater; and
        iii) effluent discharge dates;
    b) make the records being maintained pursuant to Sub-Clause 31 (a) of this Licence available to an Environment Officer upon request; and
    c) keep the maintained records of any one calendar year available for inspection for a period of three years following the respective calendar year in which they were recorded.

32. The Licencee shall actively participate in any current or future watershed-based management study, plan and/or nutrient reduction program, approved by the Director, for the Seine River Diversion and associated waterways and watersheds.

33. The Licencee shall arrange with the designated Environment Officer a mutually acceptable time and date for any required soil sampling between the 15th day of May and the 15th day of October of any year.

34. The Licencee shall take and test undisturbed soil samples, in accordance with Schedule "A" attached to this Licence, from the liner of the wastewater treatment lagoon; the number and location of samples and test methods to be specified by the designated Environment Officer up to a maximum of 30 samples.

35. The Licencee shall, not less than 2 weeks before the wastewater treatment system and wastewater treatment lagoon are placed in operation, submit to the Director the results of the tests carried out pursuant to Clause 34 of this Licence.

36. The Licencee shall:

    a) prepare "as constructed drawings" for the Development and shall label the drawings "As Constructed"; and
    b) provide to the Director, on or before 30th day of March, 2001, two sets of "as constructed drawings" of the wastewater treatment lagoon.

DECOMMISSIONING OF OLD WASTEWATER TREATMENT LAGOON

37. The Licencee shall, after placing the Development into operation, prevent any additional wastewater or septage from being discharged into the old wastewater treatment lagoon located on River Lots 49 and 50 in the Parish of Lorette in the Rural Municipality of Tache, Manitoba.

38. The Licencee shall:

a) remove the wastewater from the old wastewater treatment lagoon and transport it to the new wastewater treatment lagoon located on River Lot 8 in the Parish of Lorette in the Rural Municipality of Tache, Manitoba or discharge treated effluent in accordance with Environment Act Licence No. 619;

b) dewater the sludge in the old wastewater treatment lagoon;

c) remove all of the sludge from the old wastewater treatment lagoon; and

d) dispose of the sludge at a waste disposal ground operated under a permit issued in accordance with Manitoba Regulation 150/91.

39. The Licencee shall ensure that any continuing use of the site shall be in accordance with the by-laws of the Rural Municipality of Tache, and other Federal and Provincial regulations as applicable.

REVIEW AND REVOCATION

A. Environment Act Licence No. 2439 is hereby rescinded.

B. If, in the opinion of the Director, the Licencee has exceeded or is exceeding or has or is failing to meet the specifications, limits, terms, or conditions set out in this Licence, the Director may, temporarily or permanently, revoke this Licence.

C. If the Licencee has not commenced construction of the Development within three years of the date of this Licence, the Licence is revoked.

D. If, in the opinion of the Director, new evidence warrants a change in the specifications, limits, terms or conditions of this Licence, the Director may require the filing of a new proposal pursuant to Section 11 of The Environment Act.

Larry Strachan, P. Eng.
Director
Environment Act

Client File No.: 4482.00

Soil Sampling:

1. The Licencee shall provide a drilling rig, acceptable to the designated Environment Officer, to extract soil samples from the liner which is not placed or found at the surface of the lagoon structure. This includes all wastewater treatment lagoons constructed with clay cutoffs at the interior base of the dyke or with a clay cutoff in the centre of the dyke. The drill rig shall have the capacity to drill to the maximum depth of the clay cutoff plus an additional 2 metres. The drill rig shall be equipped with both standard and hollow stem augers. The minimum hole diameter shall be 5 inches.

2. For lagoon liners placed or found at the surface of the lagoon structure, the Licencee shall provide a machine, acceptable to the designated Environment Officer, capable of pressing a sampling tube into the liner in a straight line motion along the centre axis line of the sample tube and without sideways movement.

3. Soil samples shall be collected and shipped in accordance with ASTM Standard D 1587 (Standard Practice for Thin-Walled Tube Sampling of Soils), D 4220 (Standard Practice for Preserving and Transporting Soil Samples) and D 3550 (Standard Practice for Ring-Lines Barrel Sampling of Soils). Thin-walled tubes shall meet the stated requirements including length, inside clearance ratio and corrosion protection. An adequate venting area shall be provided through the sampling head.

4. At the time of sample collection, the designated Environment Officer shall advise the Licencee as to the soil testing method that must be used on each sample. The oedometer method may be used for a sample were the Environment Officer determines that the soil sample is taken from an undisturbed clay soil which has not been remoulded and which is homogeneous and unweathered. The triaxial test shall be used for all samples taken from disturbed and remoulded soils or from non homogenous and weathered soils.

5. The Licencee shall provide a report on the collection of soil samples to the designated Environment Officer and to the laboratory technician which includes but is not limited to: a plot plan indicating sample location, depth or elevation of sample, length of advance of the sample tube length of soil sample contained in the tube after its advancement, the soil test method specified by the Environment Officer for each soil sample and all necessary instructions from the site engineer to the laboratory technician.

6. All drill and sample holes shall be sealed with bentonite pellets after the field drilling and sampling has been completed.

Soil Testing Methods:

1. Triaxial Test Method
   (a) The soil samples shall be tested for hydraulic conductivity using ASTM D 5084 (Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter).

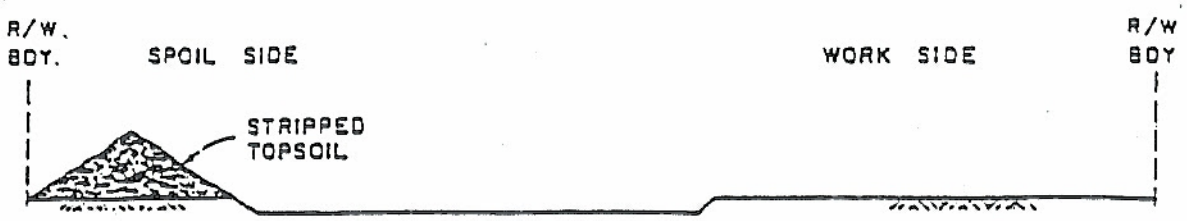
   (b) Soil specimens shall have a minimum diameter of 70 mm (2.75 inches) and a minimum height of 70 mm (2.75 inches). The soil specimens shall be selected from a section of the soil sample which contains the most porous material based on a visual inspection. The hydraulic gradient shall not exceed 30 during sample preparation and testing. Swelling of the soil specimen should be controlled to adjust for: the amount of compaction measured during sample collection and extraction from the tube and the depth or elevation of the sample. The effective stress used during saturation or consolidation of the sample shall not exceed 40 kPa (5.7 psi) or the specific stress level, that is expected in the field location were the sample was taken, which ever is greater.

   (c) The complete laboratory report, as outlined in ASTM D 5084, shall be supplied for each soil sample collected in the field.

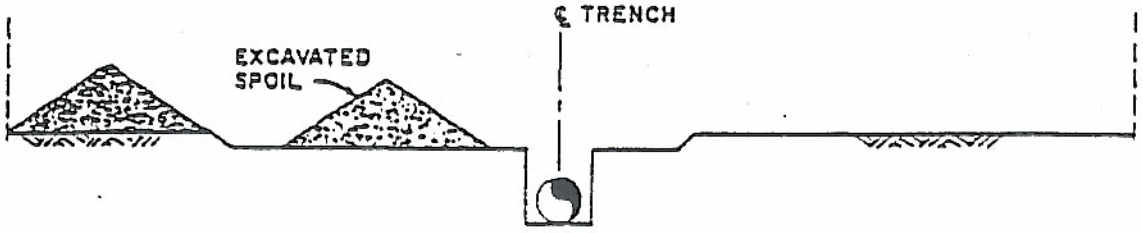
2. Oedometer Test Method
   (a) The soil samples shall be tested for hydraulic conductivity using ASTM D 2435 (Standard Test Method for One-Dimensional Consolidation Properties of Soils).

   (b) Soil specimens shall have a minimum diameter of 50 mm (2 inches) and a minimum height of 20 mm (0.8 inches). The soil specimens shall be selected from a section of the soil sample which contains the most porous material based on a visual inspection. The soil specimen shall be taken from an undisturbed soil sample. The soil specimen shall be completely saturated.

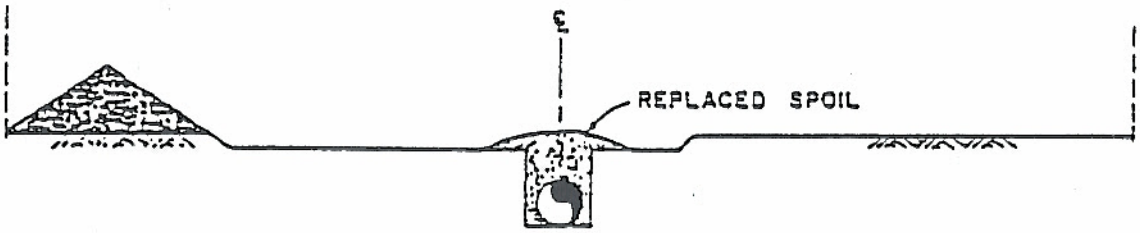
   (c) The complete laboratory report, as outlined in ASTM D 2435, shall be supplied for each soil sample collected in the field.



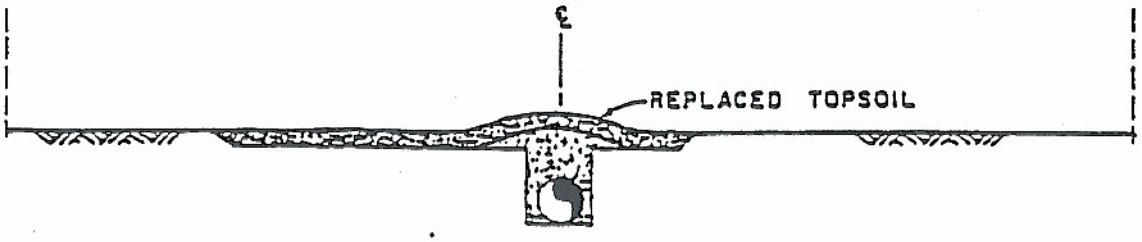
1. TOPSOIL STRIPPED



2. TRENCH EXCAVATED



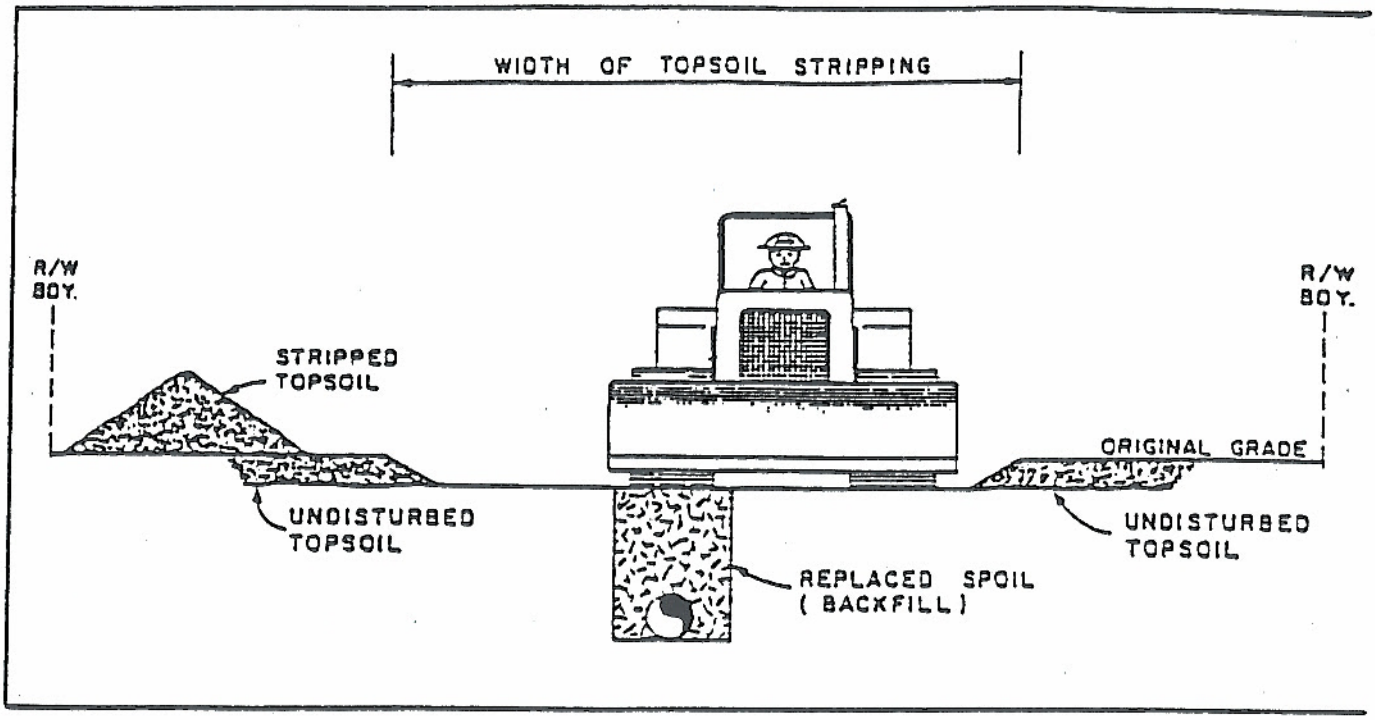
3. TRENCH BACKFILLED



4. TOPSOIL REPLACED

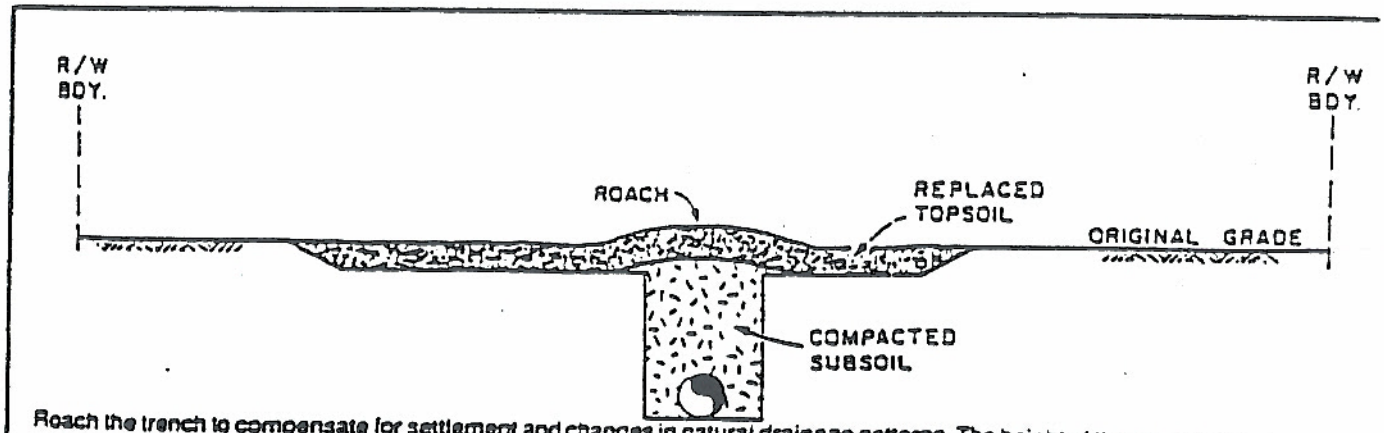
SEQUENCE OF TOPSOIL HANDLING

Figure 1



COMPACTION OF BACKFILL

Figure 2



Roach the trench to compensate for settlement and changes in natural drainage patterns. The height of the roach depends upon land use, the degree of compaction achieved.

ROACHING THE TRENCH

Figure 3