Environment Act Licence

Manitoba Environment

Licence No. 2093

Issue Date August 22, 1995

In accordance with the Manitoba Environment Act (C.C.S.M. c. E125)

THIS LICENCE IS ISSUED TO:

AGASSIZ IRRIGATION ASSOCIATION INCORPORATED:
"the Licencee"

for the construction and operation of the Development being fifteen water storage dugouts and related intake and outlet works for irrigation water supply in various locations on the Hespeler, North Rosenheim, South Rosenheim, and Buffalo drains and Buffalo Creek in the Rural Municipalities of Rhineland and Stanley, subject to the following specifications, limits, terms and conditions:

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

1. The Licencee shall construct and operate the Development in accordance with The Environment Act Proposal dated May 17, 1995 and the supplementary information submitted to Manitoba Environment on July 27, 1995, except as otherwise required by this Licence.

2. The Licencee shall ensure that no construction occurs at the S15 site in SW 32-2-3W unless specific written authorization has been received from the Director. The Licencee shall provide, at the time of application for approval to construct a dugout and related works at this site, letters from affected landowners indicating their agreement with proposed design details.

3. The Licencee shall submit, for the approval of the Director, detailed construction plans prepared by a professional engineer for each site prior to beginning construction at each site.

4. The Licencee shall consult with regional staff of Manitoba Natural Resources in the design of the engineered works of the Development. Design features included as a result of these consultations shall be noted on the detailed construction plans.

5. The Licencee shall incorporate recommendations of Manitoba Highways and Transportation in the design of works at the E8A site in SW 10-1-4W, the S14 site in SE 2-2-3W and the S11b site in SE 26-1-3W.

6. The Licencee shall not undertake construction activities at any site until that site has been examined by staff of the Historic Resources Branch. The Licencee shall follow the directions of the Historic Resources Branch respecting archaeological resources found at any site.

7. The Licencee shall obtain authorization from the Manitoba Water Resources Branch for works undertaken on Provincial Waterways.

8. The Licencee shall not undertake construction activities which may result in siltation or sediment deposition on or immediately adjacent to waterways between April 1 and June 15 of any year.

9. The Licencee shall ensure that measures are taken during the construction of the Development to minimize the deposition of sediment in waterways.

10. The Licencee shall plant dykes, stream banks and other areas disturbed by the construction of the Development with varieties of native or domestic grass and forb mixes. Species chosen shall be capable of rapid revegetation.

11. The Licencee shall submit "as built" drawings of each component of the Development to the Director following construction.

12. The Licencee shall ensure that the capacity of pumps used to divert water into the Development does not exceed 0.75 m^3/s at each site with a storage capacity less than 125 cubic decametres. Pumping capacity shall not exceed 1.5 m^3/s at sites with storage capacities of 125 to 313 cubic decametres, and pumping capacities shall not exceed 2.25 m^3/s at sites with storage capacities greater than 313 cubic decametres.

13. The Licencee shall ensure that minimum instream flows are maintained in each waterway below the diversion points of the Development at all times while water is being diverted into the Development. These minimum instream flows (including allowances for domestic use as noted) shall be:

- Hespeler Drain: 0.36 m^3/s below the S15 site in SW 32-2-3W
- Rosenheim Drain: 0.18 m^3/s (including 0.05 m^3/s domestic) below the S16 site in NE 5-2-3W
- Buffalo Drain: 0.09 m^3/s (including 0.05 m^3/s domestic) below the S14 site in SE 2-2-3W
- Buffalo Creek: 0.40 m^3/s below the S11F site in SE 29-1-2W

Prior written approval from the Director shall be required to reduce these flows.

14. The Licencee shall ensure that buried pipelines which are installed on cultivated land or land in its natural state are installed in accordance with the methodology illustrated in Figures 1 to 3, attached to this Licence.

15. The Licencee shall monitor instream flows, seepage from reservoirs, and land impacts as proposed. All data shall be forwarded to Manitoba Environment, Manitoba Natural Resources, the Prairie Farm Rehabilitation Administration and the Department of Fisheries and Oceans. Data required on an annual basis shall be submitted prior to March 1 of the following year.

16. The Licencee, shall, at the request of the Director, prepare and implement a remediation plan to address seepage from the Development if monitoring results indicate that seepage losses substantially exceed anticipated amounts.

17. The Licencee shall on a daily basis monitor streamflows, diversion rates and pumping durations when dugout filling is occurring. Dugout water levels and pumping rates and durations shall be monitored when water is being used from the dugouts. An annual report on this operating data for each dugout shall be provided to Manitoba Environment, Manitoba Natural Resources, the Prairie Farm Rehabilitation Administration and the Department of Fisheries and Oceans. This report shall be submitted prior to March 1 of the following year.

18. The Licencee shall ensure that all used oil products and other regulated hazardous wastes generated by the machinery used in the construction and operation of the Development are collected and disposed of in accordance with applicable Manitoba Environment and legislative requirements.

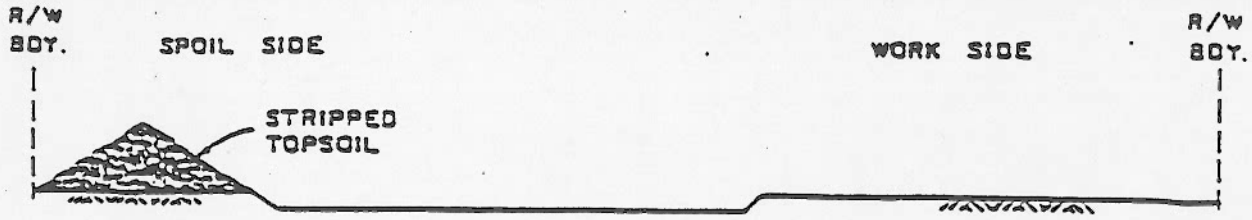
19. The Licencee shall ensure that fuel storage areas established for the construction and operation of the Development shall comply with the requirements of ***Manitoba Regulation 97/88R*** respecting ***Storage and Handling of Gasoline and Associated Products.***

REVOCATION

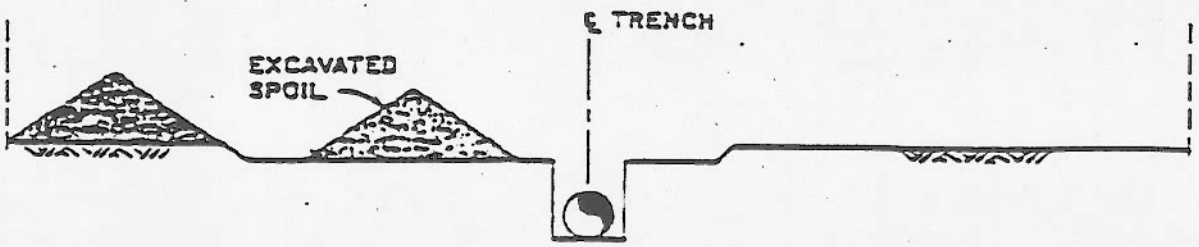
If, in the opinion of the Director, the Licencee has exceeded or is exceeding the limits, or has not complied or is not complying with the specifications, terms or conditions set out herein, the Director may revoke this Licence either temporarily or permanently.

Larry Strachan, P. Eng.
Director
Environment Act

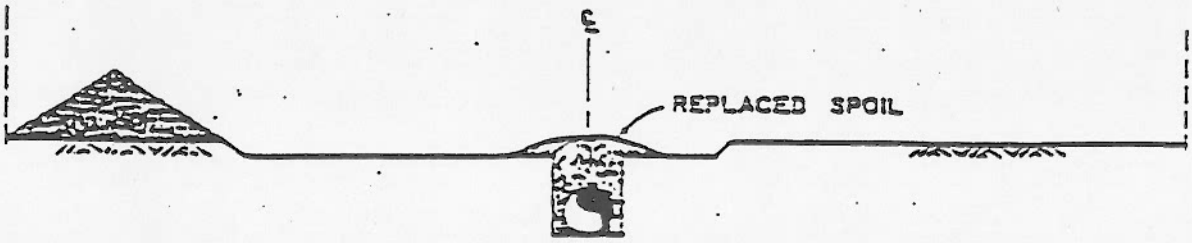
File No: 3636.20



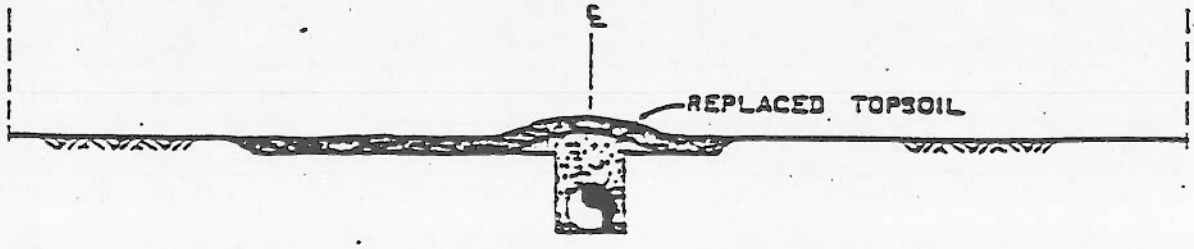
1. TOPSOIL STRIPPED
N.T.S.



2. TRENCH EXCAVATED
N.T.S.



3. TRENCH BACKFILLED
N.T.S.



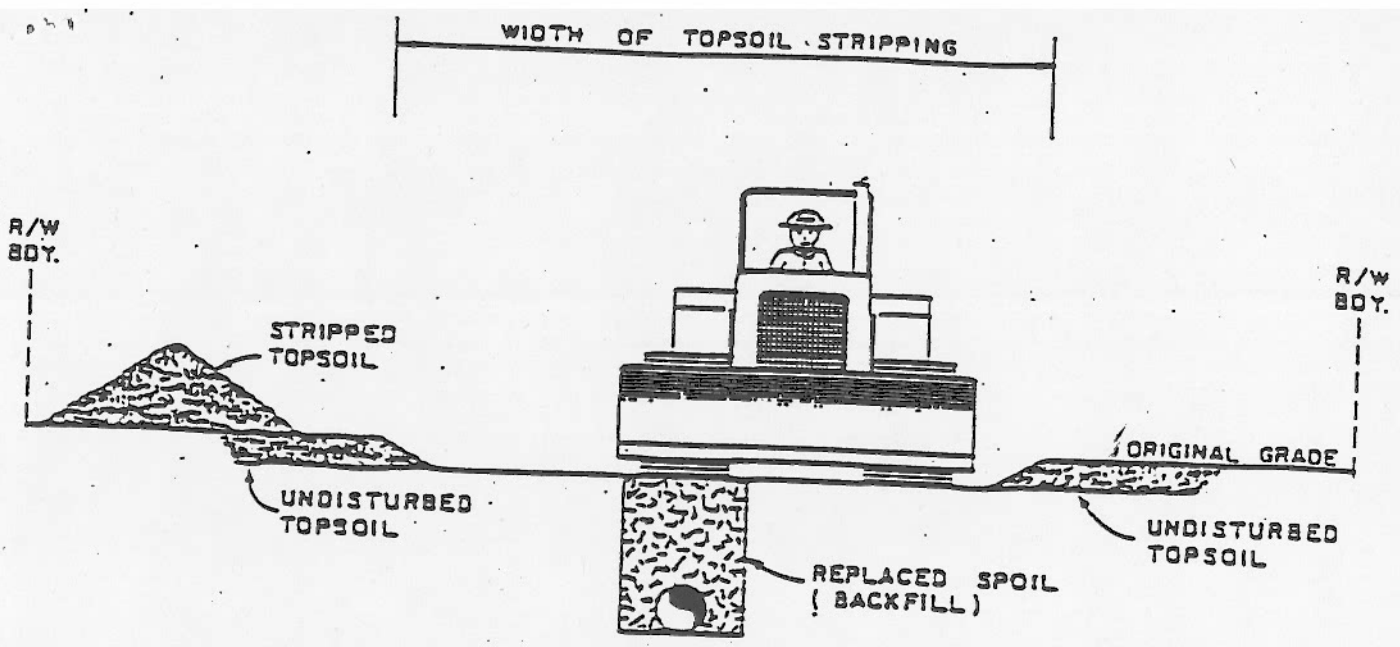
4. TOPSOIL REPLACED
N.T.S.

SEQUENCE OF TOPSOIL HANDLING

FIGURE 1

9/87

To Environment Act Licence No. 2093



PROFILE

N.T.S.

Notes:

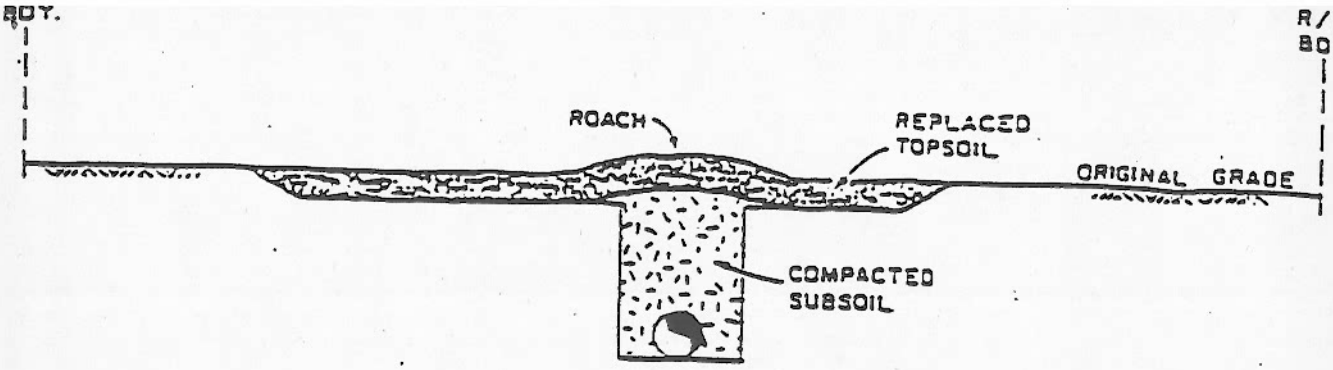
1. Except in rocky or muskeg areas, compact the backfilled subsoil to minimize settlement. The degree of compaction which can be achieved is limited by soil type, frost and moisture content, depth of cover, pipe strength and insulation, and other factors. Typically, compaction is achieved by a few passes with a crawler tractor. In special cases such as irrigated fields and open cut road crossings, 100% compaction is desirable and requires special equipment and compaction in multiple lifts.
2. Dispose of excess subsoil in locations satisfactory to the landowner and in a manner which will prevent mixing with topsoil.

COMPACTION OF BACKFILL

FIGURE 2

To Environment Act Licence No. 2093

9/87



PROFILE

N.T.S.

Notes

1. 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, and soil frost. Frozen soils require higher roaches than non-frozen soils. In agricultural lands, including forested lands in the yellow area, the roach should be low and wide (unfrozen case) to facilitate topsoil replacement. A higher roach is acceptable on forested land provided drainage and wildlife are unaffected. Typical values for roaching of representative soil types are presented below. The higher numbers in the range represent the worst case (frozen or clods).

Type of Backfill	Swell Coefficient (r)
blasted rock	.00 - .05
sand & gravel	.05 - .10
sand	.08 - .15
silty sand	.10 - .15
silt	.10 - .20
clay	.10 - .25
organic (muskeg)	.50 - 1.00

$R = r \times D$ where R = height of roach
r = swell coefficient
D = depth of trench

2. Leave periodic gaps in roach (e.g., 250 m), at all obvious drainage courses and at trench breakers ~~(Dwgs. No. 12-3a and -3b)~~ to allow for surface run-off. These gaps may require maintenance the following year to fill in settled areas.
3. Replace topsoil evenly after trench has settled or has been compacted.

Source: Formula adapted from Transcanada Pipelines, 1979.

ROACHING THE TRENCH

FIGURE 3

9/87

To Environment Act Licence No. 2093