

Environment Act Licence Loi sur l'environnement Licence

Manitoba
Conservation
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Manitoba



Licence No./Licence n° 1940 RR

Issue Date/Date de délivrance November 1, 1994

Revised/ Révisé: April 26, 1995

Revised/ Révisé: January 15, 2002

IN ACCORDANCE WITH THE MANITOBA ENVIRONMENT ACT (C.S.M. 1991/125)
THIS LICENCE IS ISSUED PURSUANT TO SECTIONS 11(1) AND 14(2) OF:

THE RURAL MUNICIPALITY OF HANOVER "the licensee"

for the construction and operation of a Development being an expanded and modified wastewater treatment facility serving the Village of Grunthal, comprised of a new aeration cell, primary cell and secondary cell integrated in series by forcemain with the Village of Grunthal's original 2-cell wastewater treatment lagoon converted to a secondary cell, all located in portions of NW 1/4 20-5-5E, SW 1/4 20-5-5E and SE 1/4 20-5-5E, R.M. of Hanover, with the release of treated effluent directed into Sarto Creek, in accordance with:

- the Proposal dated June 15, 1994;
 - supplementary information provided on October 5, 1994;
 - subsequent design changes submitted in respect of the Proposal;
 - conditional use authorizations issued by the Director on January 8, 1997 and October 6, 2000; and
 - an alteration request from the R.M. of Hanover, dated July 10, 2001,
- subject to the following specifications, terms and conditions:

DEFINITIONS

In this Licence

“**accredited laboratory**” means an analytical facility accredited by the Standard Council of Canada (SCC) or accredited by another accrediting agency recognized by Manitoba Conservation to be equivalent to the SCC, or able to demonstrate, upon request, that it has 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, or otherwise approved by the Minister;

“**aeration cell**” means a cell of a wastewater treatment lagoon system in which mechanical or diffused-air aeration is used to supplement the oxygen supply for treatment purposes;

“**affected area**” means a geographical area, excluding the property of the Development;

“**approved**” means approved by the Minister in writing;

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

“**cut-off**” means a vertical or slanted trench filled with compacted clay, or a wall constructed from compacted clay;

“**day**” means any consecutive 24-hour period;

“**Director**” means a person so designated pursuant to The Environment Act;

“**effluent**” means treated wastewater flowing or pumped out of the Development into the environment;

“**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 5 days at a temperature of 20 °C;

“**high water mark**” means the line on the interior surface of a lagoon cell which is normally reached when the cell is at the maximum allowable liquid level;

“**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;

“**industrial use agreement**” means a signed agreement between an industry and a municipality to discharge industrial wastewater into a specified municipal wastewater collection and treatment system;

“**industrial wastewater**” means liquids derived from an industry which have come in contact with substances used in or derived from an industrial process, or cooling water directly or indirectly associated with an industrial process, or any combination thereof;

“**influent**” means water, wastewater or other liquid flowing into a wastewater treatment facility;

“**lift station #1**” means the wastewater pumping station shown in Appendix 'A' attached to this licence;

“**low water mark**” means the line on the interior surface of a lagoon cell which is normally reached when the cell is discharged;

“**mg/L**” means milligrams per litre;

“**MPN index**” means the most probable number of coliform organisms in a given volume of wastewater or effluent which, in accordance with statistical theory, would yield the observed test result with the greatest frequency;

“odour nuisance” means a continuous or repeated odour, smell or aroma in an affected area, which is offensive, obnoxious, troublesome, annoying, unpleasant or disagreeable to a person:

- (a) residing in an affected area;
- (b) working in an affected area; or
- (c) present at a location in an affected area which is normally open to the members of the public;

if the odour, smell or aroma

- (d) is the subject of at least 5 written complaints, received by the Director in a form satisfactory to the Director within a 90-day period, from 5 different persons falling within clauses (a), (b) or (c), who do not live in the same household; or
- (e) is the subject of at least one written complaint, received by the Director in a form satisfactory to the Director, from a person falling within clauses (a), (b) or (c), and the Director is of the opinion that if the odour, smell or aroma had occurred in a more densely populated area there would have been at least 5 written complaints received within a 90-day period from 5 different persons who do not live in the same household;

“primary cell” means the first in a series of cells making up a wastewater treatment lagoon system which receives untreated or pretreated wastewater;

“rip rap” means small, broken stones or boulders placed compactly or irregularly on dykes or similar embankments for protection of earthen surfaces against the wave action or current of liquids;

“secondary cell” means a cell of a wastewater treatment lagoon system which receives partially treated wastewater from the primary cell;

“septage” means the sludge produced in individual on-site sewage disposal systems such as septic tanks;

“sewage” means all wastewater except industrial wastewater;

“sludge” means accumulated solid material containing large amounts of entrained water, which has separated from wastewater;

“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 Federation;

“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 liquids containing pollutants, as defined in The Environment Act, originating from domestic, commercial or industrial sources, which are designated for discharge into the environment; and

“wastewater treatment lagoon” means an impoundment consisting of a series of lagoon cells into which wastewater is discharged for storage and for treatment by natural oxidation.

GENERAL SPECIFICATIONS

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. Notwithstanding any of the following 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, handling, treatment, and 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; and
 - (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.
2. The Licencee shall, unless otherwise specified in this Licence:
 - (a) carry out all preservations and analyses of liquid samples in accordance with the methods prescribed in the Standard Methods for the Examination of Water and Wastewater or in accordance with equivalent preservation and analytical methodologies acceptable to the Director; and
 - (b) ensure that all analytical determinations are undertaken by an accredited laboratory.
3. The Licencee shall report all the information requested through the provisions of this Licence in a manner and form acceptable to the Director.

CONSTRUCTION SPECIFICATIONS

4. The Licencee shall, prior to the construction of the dykes for the new wastewater treatment aeration, primary and secondary cells:
 - (a) remove all organic topsoil from the area where the dykes will be constructed; or
 - (b) remove all organic material for a depth of 0.3 metres and a width of 3.0 metres from the area where the cut-off will be built.
5. The Licencee shall construct and maintain the new wastewater treatment aeration, primary and secondary cells:
 - (a) with a continuous liner under all interior surfaces of the cells in accordance with the following specifications:
 - (i) the liner shall be constructed of clay;
 - (ii) the liner shall be at least 1.0 metre in thickness;
 - (iii) the liner shall have a hydraulic conductivity of 1×10^{-7} centimetres per second or less; and
 - (iv) the liner shall be constructed to an elevation of 4.5 metres above the floor elevation of the aeration cell, and 2.5 metres above the floor elevation of the primary and secondary cells; and
 - (b) with any cut-off in the dykes of the wastewater treatment lagoon cells being in accordance with the following specifications:
 - (i) the cut-off shall be constructed of clay which has been mechanically compacted;
 - (ii) the cut-off shall be at least 1.0 metre in thickness;
 - (iii) the cut-off shall have a hydraulic conductivity of 1×10^{-7} centimetres per second or less;
 - (iv) the cut-off shall be lowered into the underlying clay liner a minimum of 0.3 metres; and
 - (v) the cut-off shall be constructed to an elevation of 4.5 metres above the floor elevation of the aeration cell, and 2.5 metres above the floor elevation of the primary and secondary cells.
6. The Licencee shall, in using the Village of Grunthal's original 2-cell wastewater treatment lagoon in series with the newly constructed wastewater treatment facility for additional secondary treatment and wastewater storage purposes, ensure that:
 - (a) the wastewater transfer is only undertaken for the purposes of ensuring compliance with sub-clauses 13(e) or 15(a) of this Licence; and
 - (b) the groundwater monitoring well system at the Village of Grunthal's original 2-cell wastewater treatment lagoon is refined and monitored to the extent as specified in writing to the Licencee by the Director.
7. The Licencee shall, upon the written request of the Director, demonstrate the degree of conformity of any of the clay liners of any of the earthen cells associated with the complete Development to the criteria specified in Clause 5 of this Licence.

8. The Licencee shall construct and maintain an all-weather access road and a sewage and septage dumping station for truck hauled sewage and septage, with the dumping facility having an inclined splash ramp with a flat, smooth and hard surface that can be easily washed free of solids.
9. The Licencee shall:
 - (a) install and maintain a fence around the new and existing lagoon cells of the Development to control access; and
 - (b) erect and maintain warning signs along the fence indicating the nature of the facility and advising against trespassing, with each side of the new and existing facilities provided with at least one or more such signs not separated by no more than 150 metres as measured along the perimeter length of the

OPERATING LIMITS, TERMS AND CONDITIONS

10. The Licencee shall direct all wastewater generated within the Village of Grunthal into the Development, except for such categories of wastewater which are restricted by an industrial use agreement or which are approved by licence permit, regulation or by the Director to be disposed of by alternative means and/or at alternative locations.
11. The Licencee shall:
 - (a) not accept any industrial wastewater into the Development, unless the industry wishing to discharge the industrial wastewater has first entered into an industrial use agreement with the Licencee, whereby such an agreement would specify and limit the quality, quantity and timing of discharges into the wastewater collection system, and would require the industry to advise the Licencee of any subsequent changes to these parameters;
 - (b) not enter into an industrial agreement with an industry whereby the quality, quantity or timing of discharges from such an industry is likely to cause an exceedance of the design hydraulic and/or organic loading capability of the Development, or is likely to cause periodic upsets of the said system; and
 - (c) ensure to enforce any industrial use agreement which is being violated.
12. The Licencee shall deposit all wastewater, which is directed towards the Development, only into the aeration cell of this Development, unless otherwise authorized by the Director.
13. The Licencee shall operate and maintain the Development in such a manner that:
 - (a) the hydraulic loading on the aeration cell does not exceed:
 - (i) a total of 112,700 cubic metres from the 1st day of November of any year to the 15th day of June of the following year, as determined from wastewater flow rate measurements taken at lift station #1; or

- (ii) a total of 115,000 cubic metres from the 1st day of November of any year to the 15th day of June of the following year, as determined from wastewater flow rate measurements taken at lift station #1 combined with the volumes of hauled wastewater deposited into the aeration cell;
 - (b) the organic loading on the aeration cell, as indicated by the five-day biochemical oxygen demand, does not exceed:
 - (i) a five consecutive day arithmetic average of 325 kilograms per day, as determined from wastewater flow rate measurements and flow proportioned composite samples taken of the wastewater at lift station #1 over 24-hour periods;
 - (ii) a five consecutive day arithmetic average of 331 kilograms per day, as determined from combined loading from lift station #1 and hauled wastewater deposited into the aeration cell; unless otherwise approved by the Director;
 - (c) the organic loading on the primary cell, as indicated by the five-day biochemical oxygen demand, does not exceed 56 kilograms per hectare (on liquid surface area at 1.5 metres depth) per day;
 - (d) 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 aeration cells and;
 - (e) the combined depth of wastewater and settled solids:
 - (i) does not exceed 3.5 metres in the aeration cell;
 - (ii) does not exceed 1.5 metres in the primary or secondary cells; and
 - (iii) is not drawn down to less than 0.75 metres in the primary cell.
14. The Licencee shall discharge effluent from the Development into the environment only through either or both of the final discharge points, being the end-of-pipe of the effluent discharge pipe from the existing facility, and the end-of-pipe of the effluent discharge pipe from the secondary cell of the new facility, shown in Appendix 'A' attached to this Licence, unless otherwise re-designated in writing by the Director.
15. The Licencee shall not discharge any effluent from the Development into the environment:
- (a) during the calendar period extending from the first day of November in any year up to and including the fifteenth day of June in the following year;
 - (b) at a discharge rate which is likely to cause, or contribute to, the flooding of any private or public land downstream of the discharge point;
 - (c) if the quality of the effluent is such that in any grab sample taken of the effluent:
 - (i) the five-day biochemical oxygen demand is greater than 30 milligrams per litre;
 - (ii) the fecal coliform content of the effluent, as indicated by the MPN index, is greater than 200 per 100 millilitres of sample;
 - (iii) the total coliform content of the effluent, as indicated by the MPN index, is greater than 1500 per 100 millilitres of sample;
 - (iv) the chlorine residual content is greater than 0.1 milligrams per litre;

- (v) the total ammonia content of the effluent, expressed as nitrogen, is greater than 10.0 milligrams per litre; or
 - (vi) the total phosphorous content is greater than 5.0 milligrams per litre.
16. The Licencee shall not deposit into the environment any sludge, which may be withdrawn from the Development in the course of its operation, other than to a site already licensed or permitted to accept such material or to a proposed site approved by the Director.
17. The Licencee shall not cause or permit an odour nuisance to be created as a result of the construction, operation or alteration of the Development, and shall take such steps as the Director may require to eliminate or mitigate an odour nuisance.
18. If in the opinion of the Director, significant erosion of the interior surfaces of the dykes is occurring or has occurred in the course of the operation of the Development, the Licencee shall make such repairs and/or place rip rap on the interior dyke surfaces from 0.6 metres above the high water mark to 0.6 metres below the low water mark to protect the dykes from wave action to the degree satisfactory to the Director.

MONITORING AND REPORTING

19. The Licencee shall:
- (a) install and maintain a flow measuring device, satisfactory to the Director, at lift station #1, which is:
 - (i) capable of measuring the pumped volume of wastewater to within an accuracy of ± 5 percent, and is re-calibrated annually or at the request of an Environment Officer; and
 - (ii) capable of activating a flow-proportional wastewater composite sampling device;or such device as constitutes a reasonable substitute to the requirements of Sub-clause 20(a) of this Licence, which is satisfactory to the Director;
 - (b) make the flow measuring device accessible to an Environment Officer upon request;
 - (c) continuously measure the quantity of wastewater being pumped to the aeration cell of the Development; and
 - (d) in each month of each year determine and record (in cubic metres) the total quantity of

- (b) at least twice a year, once in April and once in October:
- (i) obtain daily 24-hour flow-proportioned composite samples over 5 consecutive days of the wastewater being directed to the aeration cell;
 - (ii) obtain one grab sample, on each of same 5 consecutive days, of the wastewater being directed from the aeration cell to the primary cell via the transfer control structure; and
 - (iii) record the daily volumes of wastewater pumped to the aeration cell over the same 24-hour composite sampling periods on each of the same 5 consecutive days;
- and
- (c) analyze the obtained samples for the following parameters:
- (i) five-day biochemical oxygen demand;
 - (ii) total nitrogen (kjeldhal and nitrate+nitrite nitrogen); and
 - (iii) total phosphorous.
21. The Licencee shall initiate and maintain a daily record of each hauled truck of wastewater, sewage and/or septage which is dumped into the aeration cell, including: the volume of each truck load, the name of the hauler, and the source and nature of the contents.
22. The Licencee shall, during periods in which effluent from the Development is being discharged into the environment:
- (a) collect one set of grab samples of the effluent at the final discharge point upon initiating a discharge event and then again subsequently every 30,000 cubic metres of effluent released from the final discharge point in the duration of the discharge period;
 - (b) analyze each set of samples for the following parameters:

(i) pH	expressed as pH units;
(ii) field temperature	expressed as degrees Celsius;
(iii) conductivity	expressed as microsiemens per centimetre;
(iv) total alkalinity	expressed as mg/L of CaCO ₃ ;
(v) 5-day biochemical oxygen demand	expressed as mg/L;
(vi) total suspended solids	expressed as mg/L;
(vii) total dissolved solids	expressed as mg/L;
(viii) total kjeldhal nitrogen	expressed as mg/L of nitrogen;
(ix) nitrate-nitrite nitrogen	expressed as mg/L of nitrogen;
(x) total ammonia	expressed as mg/L of nitrogen;
(xi) total phosphorous	expressed as mg/L;
(xii) dissolved phosphorous	expressed as mg/L;
(xiii) calcium	expressed as mg/L;
(xiv) magnesium	expressed as mg/L;
(xv) sodium	expressed as mg/L;
(xvi) chloride	expressed as mg/L;
(xvii) sulphate	expressed as mg/L;
(xviii) total chlorine residual *	expressed as mg/L;
(xvix) total coliform content	expressed as MPN/100 ml of sample; and
(xx) fecal coliform content	expressed as MPN/100 ml of sample;

(* only if chlorine has been used during effluent treatment)

and

- (c) determine daily, and record, the amount of effluent discharged from the final discharge point into the environment by means of a method of measurement satisfactory to the Director, and record whether or not chlorine was used for disinfection.
23. The Licencee shall undertake to monitor the actual impact of discharged effluent from the Development on the water quality of Sarto Creek, Joubert Creek and the Post River for a minimum of three years, commencing with the first occurrence of effluent release from the Development, by monitoring the ambient and fully mixed conditions in the said streams at such locations, for such information, during such periods and at such frequencies as will be outlined by the Director.
24. The Licencee shall report the results of the analyses and/or information required to be determined and recorded pursuant to Clauses 19 to 23 (inclusive) to the Director within 60 days of the end of the month during which the samples were taken or the required determinations were made, as the case may be.
25. The Licencee shall:
- (a) annually inspect the aeration system and make any necessary repairs;
 - (b) maintain an ongoing record of the most recent 5 years of inspection dates, observations, maintenance and repairs; and
 - (c) make this record available to an Environment Officer upon request.
26. The Licencee shall, in the event of a physical or mechanical breakdown of the wastewater collection and/or treatment system:
- (a) notify the Director as soon as possible and identify the repairs required to the wastewater collection and/or treatment system; and
 - (b) undertake the repairs as soon as possible and, if applicable, in accordance with any written instructions from the Director.
27. The Licencee shall:
- (a) investigate and quantify the extent of infiltration and extraneous flows entering the Village of Grunthal's sewage collection system, during wet and dry climatic periods;
 - (b) provide quarterly progress reports to the Director;
 - (c) on or before November 30, 2002, submit a final report to the Director, for approval, outlining the extent and the results of the investigation, any required remedial work, and a plan and schedule for undertaking the required remedial work; and
 - (d) implement the plan in accordance with the approved plan.

REVIEW OR REVOCATION

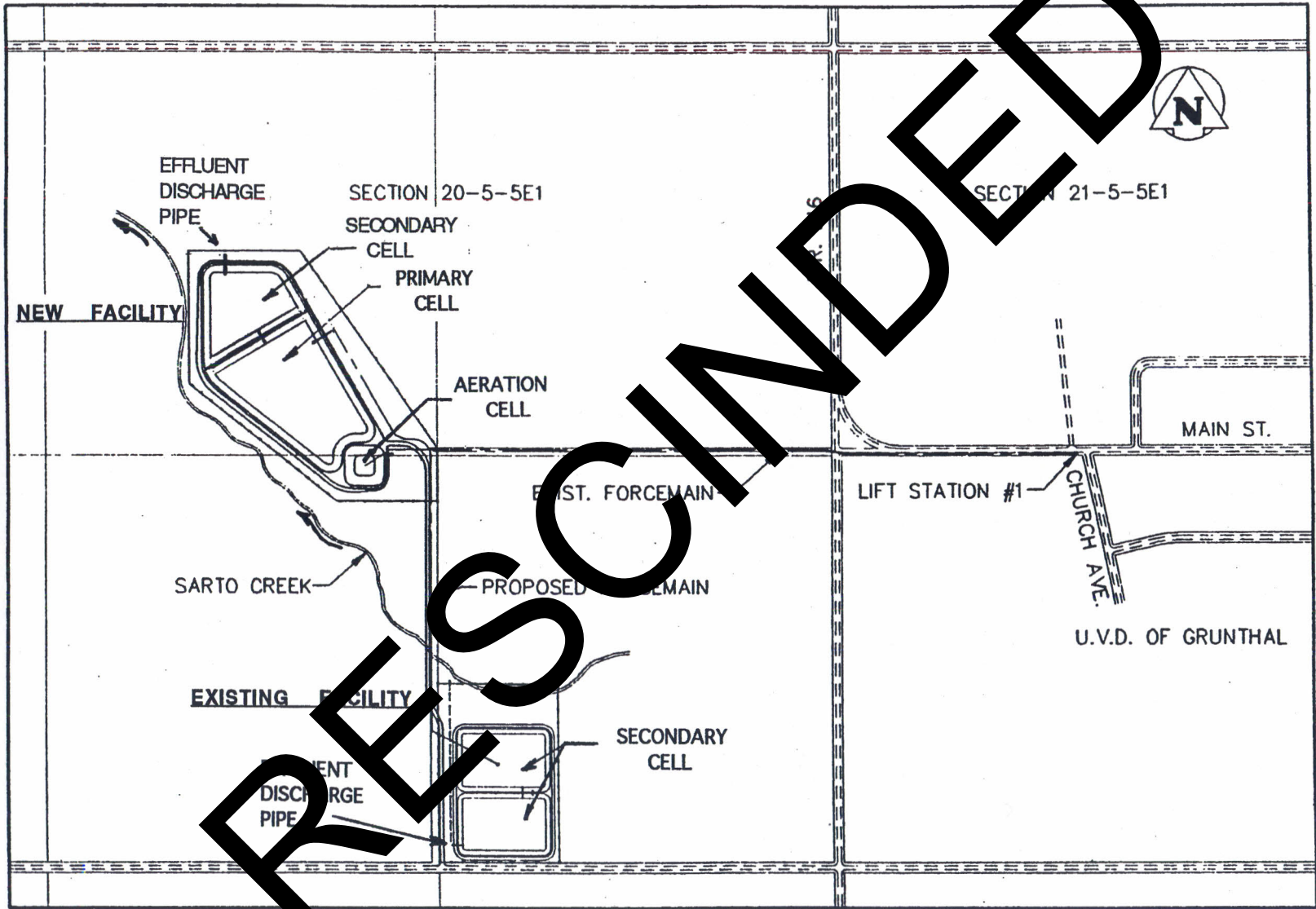
- A. This Licence replaces Environment Act Licence No. 1940 R which is hereby rescinded.
- B. If, in the opinion of the Director, the Licencee has exceeded or is exceeding or has or is failing to meet the specifications, limits, terms, or conditions set out in this Licence, the Director may, temporarily or permanently, revoke this Licence.
- C. If, 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 Frachan, P. Eng.
Director
Environment Act

File: 935.1

RESCINDED



LOCATION PLAN
N.T.S.

APPENDIX 'A'