



Ministry
of the
Environment

Ministère
de
l'Environnement

AMENDED CERTIFICATE OF APPROVAL
MUNICIPAL AND PRIVATE SEWAGE WORKS
NUMBER 6242-77KQH
Issue Date: October 16, 2007

Ontario

1029761 operating as Loon Lake Resort, and
1029761 operating as Loon Lake Resort
302 Quin-Mo-Lac Rd, R.R. # 5
Madock, Ontario
K0K 2K0

Site Location: Lot 12, Concession 11, Huntingdon
Lot 12, Concession 11
Centre Hastings Municipality, County of Hastings

You have applied in accordance with Section 53 of the Ontario Water Resources Act for approval of:

proposed sewage works for collection, treatment and subsurface disposal designed and operated at a maximum capacity of 36,000 L/d, replacing existing conventional sewage system to service facilities located at the Loon Lake Resort, as follows:

Sewage Collection System

Sewage collection system to service 161 trailers located at the Loon Lake Resort to be the Clearford Small Bore Sewer System (SBS™) consisting of :

Trailer Unit Clarifiers

- trailer units will be connected to clarifiers individually or as clusters; a 3,600 L clarifiers will be utilized for groups of 1 to 3 trailer units and 4,500 L clarifiers will be utilized for groups of 4 trailer units;

Facility Clarifiers

- one (1) two-compartment precast concrete 18,000 L clarifier to be installed for the Comfort Station; and
- one (1) two-compartment precast concrete 9,000 L clarifier to be installed for the Recreational Hall;

Pumping Stations

- two (2) precast concrete 900 mm dia pumping stations with an approximate depth of 2 m, each equipped with a high level alarm system, a duplex alternating pump system with each pump rated a a capacity of 60 L/min discharging effluent via a 38 mm dia forcemains connecting directly to gravity mains for conveyance to the wastewater treatment facility as described below;

Sanitary Mains and Laterals

- approximately 2,150 m of 75 and 100 mm dia HDPE DR 17 sanitary main, approximately 800 m of 75 mm dia HDPE DR 17 sanitary service laterals (69) and 21 system access points for periodic flushing to be installed;

Equalization Tanks

Two (2) equalization tanks installed side by side, each a single compartment precast concrete vented tank with capacity of 36,230 L, equipped with a high level alarm system, collecting raw sewage via the SBS™ collection system from all facilities at the resort and discharging sewage via pumping at a rate of approximately 1.5 m³/hr to a septic tank as described below;

Pre-Treatment/Settling Tank

one (1) two-compartment precast concrete pre-treatment/settling tank with a capacity of 27,200 L discharging to a treatment unit as described below;

Treatment System: Bergman Clean WSB

a three-chambered precast concrete treatment plant (Bergman Clean WSB) consisting of Bio-reactor 1 (minimum of 6,200 L capacity), Bio-reactor 2 (minimum of 6,100 L capacity) and bio-reactor 3 (minimum of 8,700 L capacity) all connected in series with gravity flow, having a sludge return line from the clarifier back to the pre-treatment/settling tank; aerators and moving bed media (Kaldness) will be placed in Bio-reactors 1 & 2; aeration to be provided by a single 1.8 KW air compressor located in a local control building and having a stand-by air compressor available at all times; final effluent to be discharged to a dosing chamber as described below;

Dosing Chamber

one (1) single-compartment precast concrete dosing chamber having a total capacity of 10,900 L equipped with a high level alarm system and two (2) alternating submersible pumps, each pump rated at a capacity of approximately of 150 L/min at a TDH of 5 m discharging a dosing capacity of 1,500 L within a maximum of 15 minutes to one cell of area bed at the time, as described below, via one of the two-50 mm dia forcemain approximately 350 m long;

Subsurface Disposal System: Area Bed

an area bed consisting of two (2) cells having a total basal stone area of 750 m² (375 m²) with a total length of 75 mm dia distribution piping of 720 m (360 m per cell), each cell consisting of fifteen (15) runs of 24 m long distribution pipes to be constructed in native soil having an estimated percolation time of T = 8 min/cm;

all in accordance with the following documents submitted to the *Ministry*:

1. Application for Approval of Municipal and Private Water and Sewage Works dated May 10, 2007.
2. Design Brief entitled: Loon Lake Resort Proposed Amendment to Existing Certificate of Approval for Proposed On-Site Sewage Disposal System, dated May 2007 prepared by Jagger Hims Limited Environmental Consulting Engineers.
3. Additional Design Information dated October 10, 2007 prepared by Jagger Hims Limited Environmental Consulting Engineers.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

"*Certificate*" means this entire certificate of approval document, issued in accordance with Section 53 of the *Act*, and includes any schedules;

"*Director*" means any *Ministry* employee appointed by the Minister pursuant to section 5 of the *Act*;

"*District Manager*" means the District Manager of the Belleville Area Office of the Ministry's Eastern Region; Office of the Ministry;

"*Licensed installer*" means a person who holds a licence under Article 2.12.3.1 of the Ontario Building Code;

"*Ministry*" means the Ontario Ministry of the Environment;

"*Owner*" means Loon Lake Resort and includes its successors and assignees; and

"*Professional Engineer*" means a person entitled to practice as a Professional Engineer in the Province of Ontario under a licence issued under the Professional Engineers Act;

"*Works*" means the sewage works described in the *Owner's* application, this *Certificate* and in the supporting documentation referred to herein, to the extent approved by this *Certificate*.

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL PROVISIONS

- (1) The *Owner* shall ensure that any person authorized to carry out work on or operate any aspect of the *Works* is notified of this *Certificate* and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
- (2) Except as otherwise provided by these Conditions, the *Owner* shall design, build, install, operate and maintain the *Works* in accordance with the description given in this *Certificate*, the application for approval of the works and the submitted supporting documents and plans and specifications as listed in this *Certificate*.
- (3) Where there is a conflict between a provision of any submitted document referred to in this *Certificate* and the Conditions of this *Certificate*, the Conditions in this *Certificate* shall take precedence, and where there is a conflict between the listed submitted documents, the document bearing the most recent date shall prevail.
- (4) Where there is a conflict between the listed submitted documents, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.
- (5) The requirements of this *Certificate* are severable. If any requirement of this *Certificate*, or the application of any requirement of this *Certificate* to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this certificate shall not be affected thereby.

2. EXPIRY OF APPROVAL

The approval issued by this *Certificate* will cease to apply to those parts of the *Works* which have not been constructed within five (5) years of the date of this *Certificate*.

3. CHANGE OF OWNER

- (1) The *Owner* shall notify the *District Manager* and the *Director*, in writing, of any of the following changes within 30 days of the change occurring:
 - (a) change of *Owner*;
 - (b) change of address of the *Owner*;
 - (c) change of partners where the *Owner* is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c.B17 shall be included in the notification to the *District Manager*;
 - (d) change of name of the corporation where the *Owner* is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Information Act, R.S.O. 1990, c. C39 shall be included in the notification to the *District Manager*;

- (2) In the event of any change in ownership of the *Works*, other than a change to a successor municipality, the *Owner* shall notify in writing the succeeding owner of the existence of this *Certificate*, and a copy of such notice shall be forwarded to the *District Manager* and the *Director*.

4. CONSTRUCTION

- (1) The *Owner* shall ensure that the construction of the works is supervised by a licensed installer or a Professional Engineer, as defined in the Professional Engineers Act.

(2) Upon construction of the works, the *Owner* shall prepare a statement, certified by a licensed installer or a Professional Engineer, that the *Works* are constructed in accordance with this *Certificate*, and upon request, shall make the written statement available for inspection by *Ministry* staff and staff of the local municipality.

(3) Upon construction of the *Works*, a set of as-built drawings showing the works “as constructed” shall be prepared. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be retained at the *Works* for the operational life of the *Works*.

5. MONITORING AND RECORDING

The *Owner* shall, upon commencement of operation of the *Works*, carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this *Certificate* are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.

(2) Samples shall be collected at the sampling points as specified below in tables, at the frequency specified, by means of the specified sample type and analyzed for each parameter listed and all results recorded.

Table 1 - Effluent Monitoring (on discharge from the Dosing Chamber, downstream of the WSB treatment plant)	
Frequency	three times in the operating season
Sample Type	Grab
Parameters	<i>CBOD</i> ₅ , Total Suspended Solids (TSS)

(3) The *Owner* shall collect water samples from the Snake Lake and Marsh Area during spring turnover, within two weeks after ice out when the temperature of the surface water is less than 10 degrees Celsius, one sample each year for the first three years of operation of the newly constructed sewage disposal system. These samples shall be analyzed for total phosphorus concentration and results data shall be forwarded to the District Manager of the Belleville District Office.

(4) The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:

- (a) the Ministry's Procedure F-10-1, “Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only), as amended from time to time by more recently published editions;
- (b) the publication "Standard Methods for the Examination of Water and Wastewater" (20th edition), as amended from time to time by more recently published editions; and
- (c) for any parameters not mentioned in the documents referenced in (a) and (b), the written approval of the *District Manager* shall be obtained prior to sampling.

(5) The measurement frequencies specified in subsection (2) in respect to any parameter are minimum requirements which may, be modified by the *District Manager* in writing from time to time.

(6) The *Owner* shall measure and record the daily sewage flow of effluent disposed of through the subsurface disposal system.

(7) The *Owner* shall retain for a minimum of three (3) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this *Certificate*.

(8) The *Owner* shall monitor and inspect an area bed on a regular basis.

6. EFFLUENT OBJECTIVES

(1) The Owner shall use best efforts to operate the works with the objectives that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent being discharged to the subsurface disposal system.

Table 2 - Effluent Objectives	
Effluent Parameter	Concentration Objective (milligrams per litre unless otherwise indicated)
<i>CBOD5</i>	10 mg/l
Total Suspended Solids	10 mg/l

7. OPERATION AND MAINTENANCE

(1) The *Owner* shall exercise due diligence in ensuring that, at all times, the *Works* and the related equipment and appurtenances used to achieve compliance with this *Certificate* are properly operated and maintained.

(2) The *Owner* shall prepare an operations manual prior to the commencement of operation of the sewage works, that includes, but not necessarily limited to, the following information:

- (a) operating procedures for routine operation of the *Works*;
- (b) inspection programs, including frequency of inspection, for the *Works* and the methods or tests employed to detect when maintenance is necessary;
- (c) repair and maintenance programs, including the frequency of repair and maintenance for the *Works*; copies of maintenance contracts for any routine inspections & pump-outs should be included for all the tanks and treatment units;
- (d) a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the *District Manager*; and
- (e) procedures for receiving, responding and recording public complaints, including recording any follow-up actions taken.

(3) The *Owner* shall maintain the operations manual current and retain a copy at the location of the *Works* for the operational life of the *Works*. Upon request, the *Owner* shall make the manual available to *Ministry* staff.

8. REPORTING

(1) One week prior to the start up of the operation of the *Works*, the *Owner* shall notify the *District Manager* (in writing) of the pending start up date.

(2) In addition to the obligations under Part X of the Environmental Protection Act, the *Owner* shall, within 10 working days of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, loss of any product, by-product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment, submit a full written report of the occurrence to the *District Manager* describing the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.

(3) The *Owner* shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to *Ministry* staff.

(4) The *Owner* shall prepare a performance report, on an annual basis, within thirty (30) days following the end of the

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period being reported upon, and submit the report to the *District Manager* following three (3) years of system operation, or earlier upon request. The first such report shall cover the first annual period following the commencement of operation of the *Works* and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

- (a) a description of any operating problems encountered and corrective actions taken;
- (b) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the *Works*;
- (c) a summary of any effluent quality assurance or control measures undertaken in the reporting period;
- (d) a summary and interpretation of all monitoring data as outlined in Condition 5, comparison to the effluent objectives as outlined in Condition 6 including an evaluation of impact to Snake Lake and Marsh Area as well as an overview of the success and adequacy of the *Works*;
- (e) a tabulation of the daily sewage flows;
- (f) a summary of any complaints received during the reporting period and any steps taken to address the complaints;
- (g) a summary of all spill or abnormal discharge events; and
- (h) any other information the *District Manager* requires from time to time.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the *Works* are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the *Certificate* and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the Owners their responsibility to notify any person they authorized to carry out work pursuant to this *Certificate* the existence of this *Certificate*.
2. Condition 2 is included to ensure that, when the *Works* are constructed, the *Works* will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.
3. Condition 3 is included to ensure that the *Ministry* records are kept accurate and current with respect to the approved works and to ensure that subsequent owners of the *Works* are made aware of the *Certificate* and continue to operate the *Works* in compliance with it.
4. Condition 4 is included to ensure that the works are constructed, and may be operated and maintained such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented.
5. Condition 5 is included to enable the *Owner* to evaluate and demonstrate the performance of the *Works*, on a continual basis, so that the *Works* are properly operated and maintained at a level which is consistent with the design objectives specified in the *Certificate* and that the *Works* does not cause any impairment to the receiving watercourse.
6. Condition 5(3) is included to ensure that the water samples are collected and analyzed for total phosphorus concentration during the spring periods of the first three years of operation in order to evaluate the analytical results and compare the results with the maximum allowable total phosphorus concentration of $<10\mu\text{g/L}$ to maintain high level of water quality in accordance with "Water Management, Goals, Policies, Objectives and Implementation Procedures of the Ministry of the Environment" latest edition. If the limit of $<10\mu\text{g/L}$ is exceeded the Owner shall consider implementing some phosphorus mitigation techniques on this property, ie. riparian buffer along the shoreline, minimize use of fertilizers, etc.;
7. Condition 6 is imposed to establish non-enforceable effluent quality objectives which the *Owner* is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action

proactively and voluntarily before environmental impairment occurs.

8. Condition 7 is included to require that the *Works* be properly operated, maintained, and equipped such that the environment is protected. As well, the inclusion of an operations manual, maintenance agreement with the manufacturer for the treatment process/technology and a complete set of "as constructed" drawings governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the owner and made available to the *Ministry*. Such a information is an integral part of the operation of the *Works*. Its compilation and use should assist the *Owner* in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for *Ministry* staff when reviewing the *Owner's* operation of the work.

9. Condition 8 is included to provide a performance record for future references, to ensure that the *Ministry* is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this *Certificate*, so that the *Ministry* can work with the *Owner* in resolving any problems in a timely manner.

This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 3235-4YRQT8 issued on September 20, 2001

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
2300 Yonge St., Suite 1700
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Director
Section 53, *Ontario Water Resources Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted sewage works are approved under Section 53 of the Ontario Water Resources Act.

DATED AT TORONTO this 16th day of October, 2007

Mohamed Dhalla, P.Eng.
Director
Section 53, *Ontario Water Resources Act*

BM/
c: District Manager, MOE Belleville

Barry West, Jagers Hims Limited