

Date: May 23, 2014

File: 5465.00

To: Tania Steele
Licensing Clerk
Environmental Approvals Branch
123 Main Street
Ste. 160 Union Station
Winnipeg, Mb R3C 1A5

From: Rob Boswick, P. Eng.
Environmental Engineer
Environmental Approvals Branch
123 Main Street
Ste. 160 Union Station
Winnipeg, Mb R3C 1A5

Subject: Youth for Christ/Winnipeg Inc. – Camp Cedarwood – Material to Public Registries

Please distribute the attached material pertaining to the Youth for Christ/Winnipeg Inc. – Camp Cedarwood Environment Act Licence No. 3063 requirements for groundwater and surface water monitoring plans to the appropriate Public Registries.

Attached are:

1. Letter (1 page) from Environmental Approvals Branch to Water Science and Management Branch – Manitoba Conservation and Water Stewardship, dated May 22, 2014;
2. Letter (1 page) from Environmental Approvals Branch to Groundwater Management Section – Manitoba Conservation and Water Stewardship, dated May 22, 2014;
3. Letter (1page) w/ attachments (10 pages) from consultant to Environmental Approvals Branch, dated March 20, 2014;
4. Copy of page 8 of 10 of Environment Act Licence No. 3063 (1 page).

There are a total of 14 pages attached to this memo.

Thank you,

Rob Boswick
Attachments



Conservation and Water Stewardship
Environmental Stewardship Division
Environmental Approvals Branch
123 Main Street, Suite 160, Winnipeg, Manitoba R3C 1A5
T 204 945-8321 F 204 945-5229
www.gov.mb.ca/conservation/eal

File: 5465.00

May 22, 2014

Joy Kennedy
Water Science and Management Branch
Manitoba Conservation and Water Stewardship
160-123 Main Street
Winnipeg, MB R3C 1A5

Dear Ms. Kennedy:

Re: Groundwater and Surface Water Monitoring Plan Proposals – Youth for Christ/Winnipeg Inc. – Camp Cedarwood

In response to the requirements of Clauses 25 and 26 Environment Act Licence No. 3063 (Licence) issued to Youth for Christ/Winnipeg Inc. for the operation and maintenance of a wastewater management system at Camp Cedarwood, proposed groundwater and surface water monitoring plans have been submitted for consideration and approval.

Attached you will find a March 20, 2014 letter with attachments that provide information pertaining to the proposed groundwater and surface water monitoring plans. Also attached is a copy of the page of the Licence displaying the content Clauses 25 and 26 of the Licence.

Please review the surface water monitoring plan and provide any comments you may have. Your comments, if any, are requested by June 9, 2014.

If you have any questions, please contact me at 945-6030.

Yours truly,

Original Signed By

Robert Boswick, P. Eng.
Environmental Engineer

Attachment

- c. A.J. (Alf) Poetker, P. Eng. (letter only via email; apoetker@shaw.ca)
Don Labossiere, Director – Environmental Compliance and Enforcement, Manitoba
Conservation and Water Stewardship
Public Registries



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File: 5465.00

May 22, 2014

Graham Phipps, P. Geol.
Manager, Groundwater Management Section
Manitoba Conservation and Water Stewardship
200 Saulteaux Crescent
Winnipeg, MB R3J 3W3

Dear Mr. Phipps:

Re: Groundwater and Surface Water Monitoring Plan Proposals – Youth for Christ/Winnipeg Inc. – Camp Cedarwood

In response to the requirements of Clauses 25 and 26 Environment Act Licence No. 3063 (Licence) issued to Youth for Christ/Winnipeg Inc. for the operation and maintenance of a wastewater management system at Camp Cedarwood, proposed groundwater and surface water monitoring plans have been submitted for consideration and approval.

Attached you will find a March 20, 2014 letter with attachments that provide information pertaining to the proposed groundwater and surface water monitoring plans. Also attached is a copy of the page of the Licence displaying the content Clauses 25 and 26 of the Licence.

Please review the groundwater monitoring plan and provide any comments you may have. Your comments, if any, are requested by June 9, 2014.

If you have any questions, please contact me at 945-6030.

Yours truly,

Original Signed By

Robert Boswick, P. Eng.
Environmental Engineer

Attachment

- c. A.J. (Alf) Poetker, P. Eng. (letter only via email; apoetker@shaw.ca)
Don Labossiere, Director – Environmental Compliance and Enforcement, Manitoba
Conservation and Water Stewardship
Public Registries

Alfred J. Poetker, P. Eng.

Tracey Braun, M. Sc.,
Director, Environment Act
Environmental Approvals Branch
123 Main Street, Suite 160
Winnipeg MB R3C 1A5



March 20, 2014

Dear Ms. Braun:

RE: Environment Act Licence No. 3063; Youth For Christ /Winnipeg Inc.

In accordance with the requirement of Environment Act Licence No. 3063 and on behalf of the Licensee, Youth For Christ/Winnipeg Inc., I am herewith submitting a Groundwater Monitoring Plan and a Surface Water Monitoring Plan for your consideration and approval. Attached, please find the following documents:

Groundwater Monitoring Proposal:

- Camp Cedarwood Site Plan
- Groundwater Monitoring Well location plan
- Groundwater Monitoring Well Detail
- Proposed Groundwater Monitoring Plan (2 pages) and
- Monitoring Well Sampling Procedure

Surface Water Monitoring Proposal:

- Surface Water Quality Monitoring Locations Photo Plan
- Proposed Surface Water Monitoring Plan (2 pages) and
- Surface Water Sampling Procedure

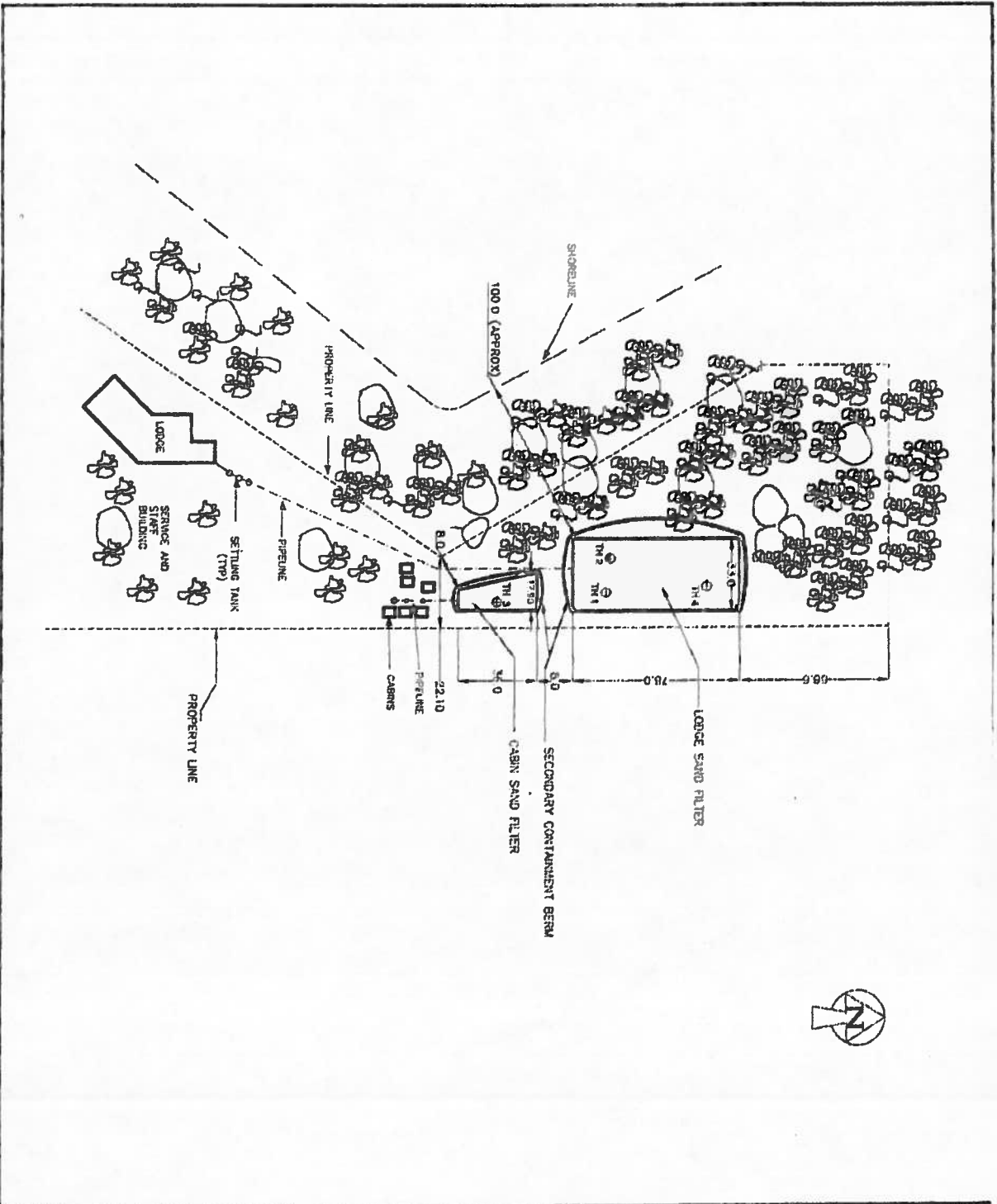
Any questions with regard to the proposed monitoring plans may be addressed to me for response.

Yours truly,

A handwritten signature in blue ink, appearing to read "Alfred J. Poetker".

A.J. (Alf) Poetker, P. Eng.

Copy: John Courtney



GENIVAR
 10 BARRETT WAY
 WASHINGTON, DC 20047-4550
 Tel: 202-241-1400
 Fax: 202-241-1494



NOT TO SCALE
 PROJECT: LEE ROBINSON
 WORK: WASTE MANAGEMENT
 DATE: 08/19/14

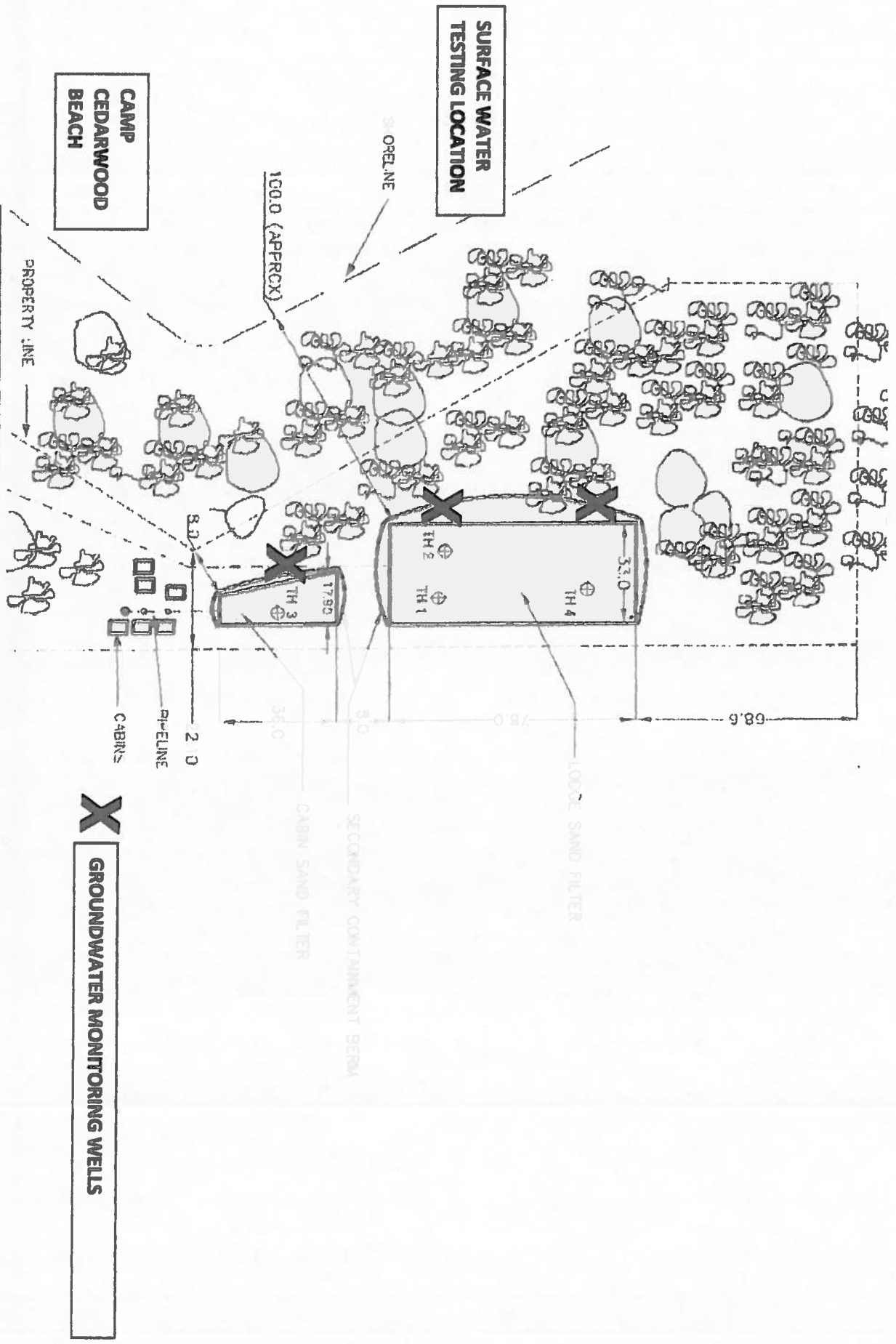
CAMP CEDARWOOD

DATE	DESCRIPTION	BY
08/19/14	ISSUED FOR CONSTRUCTION	GENIVAR
08/19/14	ISSUED FOR CONSTRUCTION	GENIVAR
08/19/14	ISSUED FOR CONSTRUCTION	GENIVAR

CAMP CEDARWOOD
 ON-SITE WASTE WATER
 MANAGEMENT SYSTEM
 CIVIL

NO.	DESCRIPTION	DATE	BY
001	ISSUED FOR CONSTRUCTION	08/19/14	GENIVAR
002	ISSUED FOR CONSTRUCTION	08/19/14	GENIVAR

CAMP CEDARWOOD WATER QUALITY MONITORING PLAN - February 2014



SURFACE WATER TESTING LOCATION

CAMP CEDARWOOD BEACH

X GROUNDWATER MONITORING WELLS

PROPERTY LINE

SHORELINE

100.0 (APPRX)

8.0

2.0

PIPELINE

CABINS

36.0

CABIN SAND FILTER

SECONDARY CONTAINMENT BERM

9.0

LOOSE SAND FILTER

TH 1

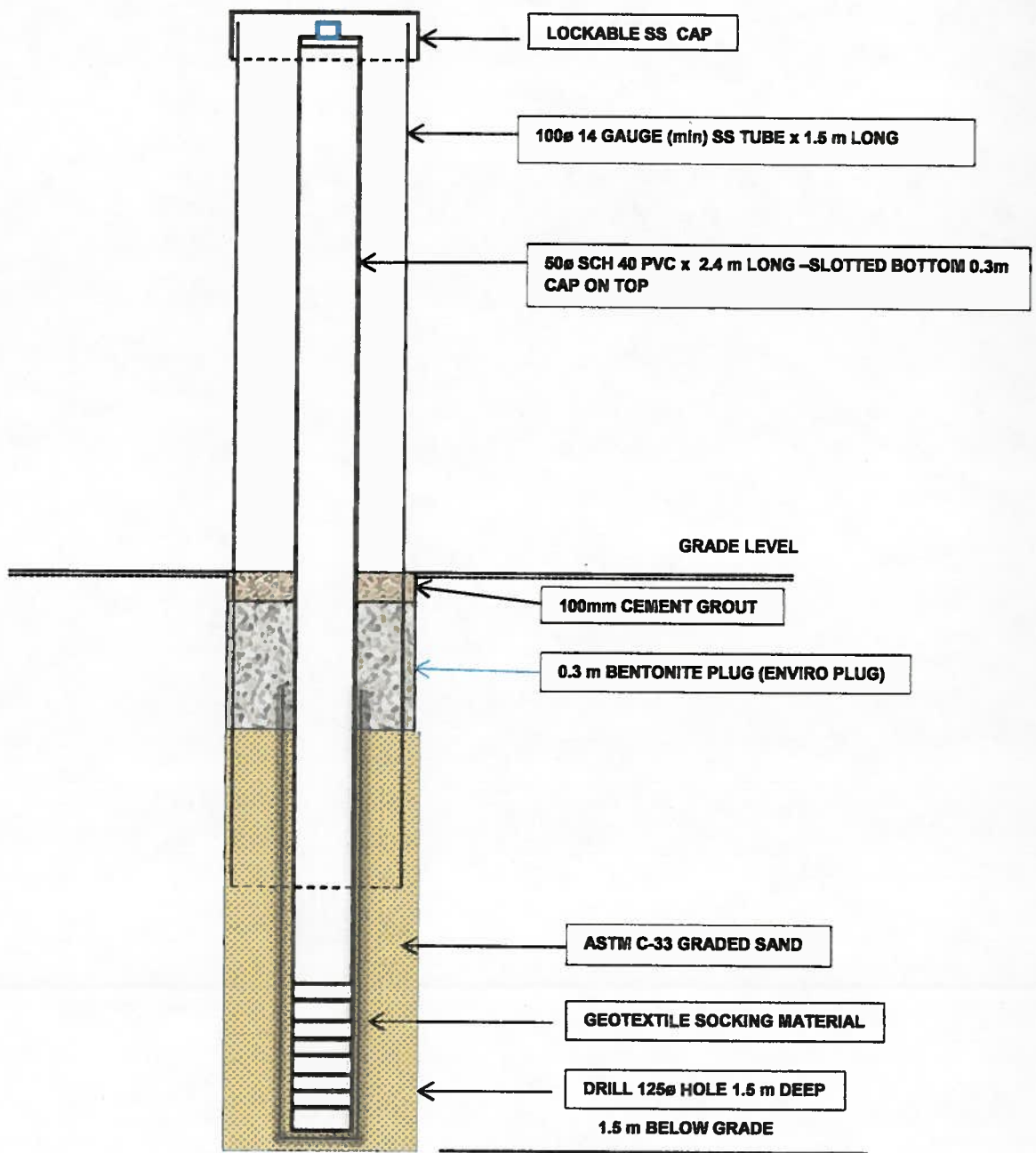
TH 2

TH 3

33.0

68.6

78.0



**CAMP CEDARWOOD ONSITE WASTEWATER SYSTEM
GROUNDWATER MONITORING WELL DETAIL**

PROPOSED GROUNDWATER MONITORING PLAN
Camp Cedarwood Onsite Wastewater Management System (OWMS)
Environment Act Licence No. 3063

Introduction

The proposed Camp Cedarwood OWMS consists of pretreatment in concrete settling tanks followed by effluent treatment and disposal in sand treatment filters and infiltration into the underlying native soil. It is around this disposal system that the groundwater monitoring system is to be installed.

Proposed Installation

The sand filters are to be installed on sloping ground, with declination toward the shore of Pinawa Bay, some 90 metres distant from the nearest edge of the filter body. Ground water, like surface water, moves downslope, in this case, toward Pinawa Bay, albeit at a much slower pace than surface water. Soil tests at the site indicate that the infiltration rate into the underlying soil is 8.31 litres/square metre/day. A reasonably uniform soil distribution in the area suggests that water movement in the soil would be expected to be similar throughout. Since the movement will be downslope, and since the area of concern is Pinawa Bay, it is proposed to install the monitoring wells downslope of the sand filters. At the infiltration rate as indicated, the lateral rate of flow in the soil would be approximately 0.83 centimetres per day.

The infiltration of surface water into soil and the flow through soil normally results in natural physical, chemical and biochemical processes purifying the water, such that water that accumulates in underground aquifers is normally safe to drink. Manitoba Regulation 83/2003, regulating onsite wastewater management systems requires minimum setbacks of 30 metres and 15 metres respectively between septic disposal fields and uncased wells and drilled, cased wells. The regulated minimum setback of a septic field from the property line is 8 metres. This is the setback that is proposed for the monitoring wells from the downslope edge of the proposed Cedarwood sand filters. It is expected that the impact of the infiltration from a disposal field will not extend beyond that threshold.

Two monitoring wells are proposed for the Lodge Sand Filter, located as shown by the Xs on the attached Water Quality Monitoring Plan diagram, about 20 metres from each end. The Cabin Sand Filter is proposed to have a single monitoring well, as shown, centred in the longitudinal direction. The monitoring wells will be 1.5 metres deep, in effect 1.5 metres or more below the base of the disposal field structure. The test holes showed that the clay content of the soil increases with depth, thus any groundwater in this area will be largely or entirely confined to this horizon. The attached Groundwater

Monitoring Well Detail shows the proposed construction of the wells. The bentonite plug and cement grout cap will prevent surface water intrusion into the well.

Proposed Monitoring

In accordance with the requirement of Article 25 of Environment Act Licence 3063:

- i) It is proposed to initiate testing of the groundwater before or immediately following the installation of the sand filters to establish the background water quality. Thereafter, it is proposed to sample the water in each of the wells once per year, in September, after the peak camping season. The proposed parameters for testing are Nitrate/Nitrite, Ammonia (NH₃), Chloride (Cl), electrical conductivity (EC) and CBOD₅. All the foregoing parameters, except CBOD₅ comprise the Manitoba Conservation testing requirement for monitoring wells around manure storage ponds, as does the requirement for annual testing. The CBOD₅ testing is proposed as this parameter is also an indicator of a potential contaminant in the groundwater that could be coming from the sand filter effluent.
- ii) It is proposed that, similar to Licence requirements for domestic lagoons and other wastewater treatment plants, the certified operator of the system will monitor, submit the samples to a certified laboratory, interpret the results in comparison with initial background characteristics, consult with the laboratory regarding deviations, and submit the results to the Manitoba Conservation Director or designate. Deviations will also be discussed with Manitoba Conservation officers and remedial action will be undertaken as required.
- iii) Groundwater monitoring will commence on completion of construction of the sand filters and prior to any wastewater effluent being discharged.
- iv) The strategies designed to allow the sand filters to remain in compliance with the Licence, related regulations and the Manitoba Water Quality Standards, Objectives and Guidelines are set forth in the text of the Design Report submitted with the Environment Act Proposal. The design is based on the design principles as found in Manitoba Regulation 83/2003 and supplementary Director's Variance documents published by Manitoba Conservation. Additionally, the operator for the system is certified in accordance with the Requirements of Manitoba Conservation and will be monitoring the system and reporting on a regular basis to the Director as required by Licence 3063.

Prepared by:

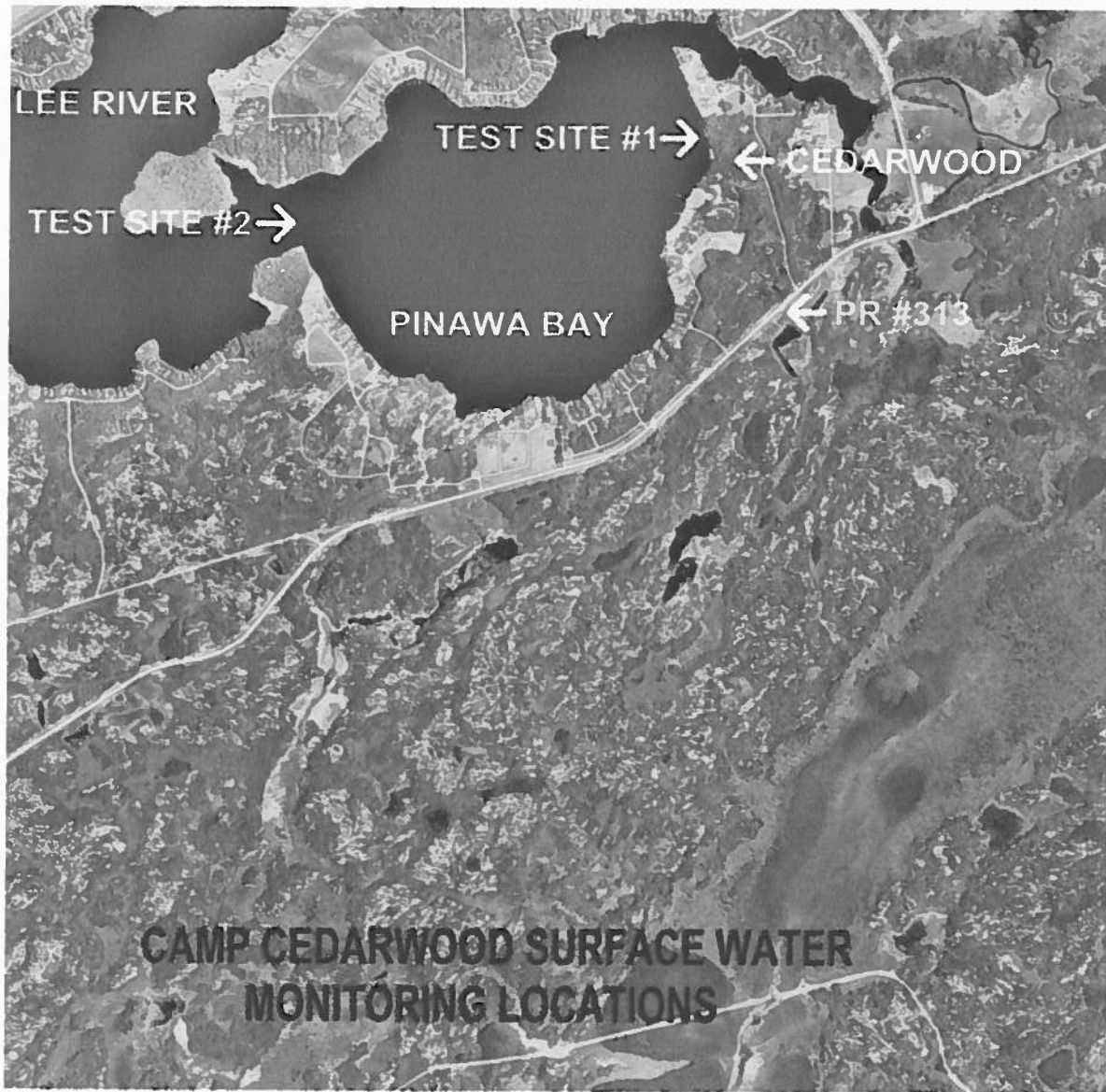
A.J. Poetker, P.Eng. (on behalf of the Licencee, Youth for Christ/Winnipeg Inc.)

February 2014

CAMP CEDARWOOD
ONSITE WASTEWATER MANAGEMENT SYSTEM
ENVIRONMENT ACT LICENCE 3063
MONITORING WELL SAMPLING PROCEDURE

1. Attach a thin nylon rope to the loop at the top end of the sampling bailer;
2. Fasten the nylon rope to the top of the casing of the monitoring well;
3. Measure the depth of the water from the top of the casing and record;
4. Drop the bailer into the water, allow it to fill, withdraw and empty the contents;
5. Repeat step 4 another two times;
6. Allow the water in the monitoring well to refill approximately to its original level;
7. Insert the bailer and withdraw a sample of water;
8. Fill the sample bottle and submit to a laboratory for testing;
9. Return the bailer into the monitoring well;
10. Have the sample tested for nitrate/nitrite nitrogen, ammonia nitrogen, conductivity, chloride and CBOD₅;
11. Report the results to the Director of Manitoba Conservation. *

* In the event that the monitoring well is dry to the full depth, report that fact to the Director.



SURFACE WATER QUALITY MONITORING PLAN

PER ENVIRONMENT ACT LICENCE 3063

PROPOSED SURFACE WATER MONITORING PLAN
Camp Cedarwood Onsite Wastewater Management System (OWMS)
Environment Act Licence No. 3063

Introduction

The proposed Camp Cedarwood OWMS consists of pretreatment in concrete settling tanks followed by effluent treatment and disposal in sand treatment filters and infiltration into the underlying native soil. The sand treatment filters and infiltration field are to be installed at an approximately 90 metre setback from the shore of Pinawa Bay. The surface water monitoring will establish the background water quality in Pinawa Bay in the vicinity and ensure that no contamination occurs in the surface water as a result of the proposed installation; or identify any impending threats of such contamination if a system failure were to occur so that the operator can take preventative action.

Proposed Wastewater System Installation

The sand filters are to be installed on sloping ground, with declination toward the shore of Pinawa Bay, some 90 metres distant from the nearest edge of the filter body. Surface water from the site of the installation will move downslope, in this case, toward Pinawa Bay. The area is covered with a mature stand of trees and much of the normal surface water runoff will be absorbed in the forest floor. In the event of a problem with the sand treatment filters in which effluent could make its way to the surface, the problem would be detected by virtue of the regular inspection and maintenance. The containment berm would also prevent any imminent migration of the water to the shore. Problems that may develop in the winter period would not be as easily detected, although after the peak summer operating period, the wastewater flows to the system decrease substantially and remain lower during the winter. Also, monitoring of the water table in and around the field would provide an early warning if a problem were developing in the filters and the disposal field.

Proposed Monitoring

In accordance with the requirement of Article 26 of Environment Act Licence 3063:

i) It is proposed to initiate testing of the surface water before the installation of the sand filters to establish the background water quality. Thereafter, it is proposed to sample the water in Pinawa Bay at two locations as shown on the attached Camp Cedarwood Surface Water Quality Monitoring Photo Plan. The first location is immediately north of the swimming beach for the camp, the second location is at the opening between Pinawa Bay and Lee River.

It is proposed that one test will be conducted at the start of the summer camping season

in early July. A second test will be conducted at the end of the summer camping season, end of August or early September. The proposed parameters for testing (per Licence 3063, Clause 26) are Nitrate/Nitrite, Ammonia (NH₃), TKN, Total Phosphorus, CBOD₅, Total Coliform and Fecal Coliform. With regard to the latter two parameters, Camp Cedarwood has tested for these in the beach area relative to swimmer safety and found them to be present. The primary source is suspected to be from the presence of waterfowl (Canada geese) and shorebirds. This will necessarily be a major consideration in the interpretation of the eventual results of the monitoring.

ii) It is proposed that, similar to Licence requirements for wastewater treatment systems, the certified operator of the system will monitor, submit the samples to a certified laboratory, interpret the results in comparison with initial background characteristics, consult with the laboratory regarding deviations, and submit the results to the Manitoba Conservation Director or designate. Deviations from background levels will also be discussed with Manitoba Conservation officers and remedial action will be undertaken as required.

iii) Surface water monitoring will commence prior to the construction of the sand filters so as to establish the background levels of the parameters being monitored.

iv) The strategies designed to allow the sand filters to remain in compliance with the Licence, related regulations and the Manitoba Water Quality Standards, Objectives and Guidelines are set forth in the text of the Design Report submitted with the Environment Act Proposal. The design is based on the design principles as found in Manitoba Regulation 83/2003 and supplementary Director's Variance documents published by Manitoba Conservation. Additionally, the operator for the system is certified in accordance with the Requirements of Manitoba Conservation and will be monitoring the system and reporting on a regular basis to the Director as required by Licence 3063.

Prepared by:

A.J. Poetker, P.Eng. (on behalf of the Licencee, Youth for Christ/Winnipeg Inc.)
February 2014

CAMP CEDARWOOD
ONSITE WASTEWATER MANAGEMENT SYSTEM
ENVIRONMENT ACT LICENCE 3063
Surface Water Sampling Procedure

Camp Shoreline at Pinawa Bay

1. Wade out to a water depth of 70 cm (mid-thigh), being careful to minimize disturbance of the bottom sediment;
2. Open the sample bottle in air. Do not touch the rim of the bottle or the interior or bottom edge of the cap;
3. Sweep the bottle down into the undisturbed water to about elbow depth and bring it up full;
4. Immediately place the cap on the bottle and seal securely; and
5. Submit the bottle(s) to a laboratory as soon as possible, preferably the same day, keeping it in an insulated cooler for transport. Refrigerate if kept on hand overnight.

Pinawa Bay at Outlet to Lee River

1. Sample from a boat or canoe about midway at the narrows between Pinawa Bay and Lee River;
2. Steps 2 to 5 as above.

Required Groundwater Monitoring Plan

25. The Licencee shall, within three months of the date of this Licence, submit to the Director for approval, an engineered groundwater monitoring plan relating to the engineered wastewater effluent disposal fields that:
- a) includes the installation and maintenance of piezometers to be installed around the engineered wastewater effluent disposal fields to monitor groundwater characteristics in the soils underlying the field; and
 - b) identifies:
 - i) how often and which groundwater characteristics will be monitored;
 - ii) who will monitor, interpret, and report the groundwater characteristics;
 - iii) when groundwater monitoring will commence; and,
 - iv) strategies designed to allow the engineered wastewater effluent disposal fields of the Development to remain in compliance with this Licence, related regulations, and the Manitoba Water Quality Standards, Objectives, and Guidelines.

Required Surface Water Quality Monitoring Plan

26. The Licencee shall, within three months of the date of the Licence, submit to the Director for approval, a surface water quality monitoring program for the Lee River and Pinawa Bay that:
- a) will be undertaken for at least the first six seasons of operation of the Development;
 - b) includes monitoring for:
 - i) nitrate – nitrite;
 - ii) total phosphorous;
 - iii) ammonia;
 - iv) Total Kjeldhal Nitrogen;
 - v) 5-day BOD;
 - vi) total coliform; and
 - vii) fecal coliform;
 - c) identifies:
 - i) how often and where the surface water quality will be monitored;
 - ii) who will monitor, interpret, and report the surface water characteristics;
 - iii) when the surface water monitoring will commence; and
 - iv) strategies designed to allow the Development to remain in compliance with this Licence, related regulations, and the Manitoba Water Quality Standards, Objectives, and Guidelines.