

7.0 BUILDING 5676: ELIZA VAN BIBBER SCHOOL

7.1 Description of Existing Water Supply System

Building 5676, the Eliza Van Bibber School, is currently serviced by a water supply system that delivers water from an approximately 15 m deep well. The well is located below grade in the mechanical room of the school. A site plan is provided as Figure 5676-A in Appendix A7. The coordinates of the wellhead, as measured by a handheld GPS device, were recorded as:

- UTM ZONE 8
- Northing: 6966932
- Easting: 419859

There is no treatment or disinfection for this system. A schematic detailing the water supply system is provided as Figure 5676-B in Appendix A7. Photos of the well and water system are also included at the back of this appendix.

7.2 Description of Existing Wastewater Systems

The septic system that serves the school is located on the east side of the building. The closest point of a on-site sewage disposal system (septic field) is approximately 35 m east of the well. A site plan showing the septic system is given by Figure 5676-A in Appendix A7.

There is also an on-site sewage disposal system on the adjacent teacherage property (Lot 1001). The in-ground septic disposal is approximately 24 m downgradient from the school's drinking water well, however, since it is less than 30 m from the well, it is contravention of the proposed Regulations.

7.3 Water Quality Results

7.3.1 Water Quality Results from Previous Sampling

Bacteriological

Ten samples were collected from the Eliza Van Bibber water system between June 2004 and June 2005 and were tested for total coliform and *E. Coli* by Yukon Environmental Health Services using the presence/absence test method. Results are tabulated in Table 5676-1 in Appendix A7. One sample out of the ten reported the

presence of total coliform bacteria; the most recent sample that was available for review (9th June 2005) was positive for total coliform bacteria. Follow up sampling should be completed immediately if it has not already been completed.

Potability

Water samples were collected from the Eliza Van Bibber School water system by YTG representatives on September 29, 2004 and June 8, 2005. The samples were submitted to Northwest Labs in Surrey BC and ALS Environmental in Vancouver BC for potability analyses. The results of these analyses are summarized in Table 5676-2 in Appendix A7. EBA reviewed the analytical results for comparison with Canadian Drinking Water Quality Guidelines (CDWQG) to observe general water quality, identify and recommend additional sampling and analytical, and to identify potential indicators of contamination.

- The first sampling event reported turbidity to be 1.0 NTU, which is equal to the CDWQG MAC. Subsequent sampling showed the turbidity below the MAC;
- The first sampling event reported the total iron concentration to be 0.35 mg/L, which is above the CDWQG aesthetic objective (AO) of 0.3 mg/L. The second sampling event, however, reported the iron concentration to be under 0.3 mg/L (the elevated iron in the previous sample was most likely due to elevated turbidity);
- At 0.611 mg/L during the first sampling event and 0.535 mg/L during the second sampling event, the manganese concentration was in exceedence of the CDWQG AO of 0.05 mg/L;
- The water quality results indicated that all other health based and aesthetic objectives were met for the parameters analyzed;
- The water quality results indicated that the groundwater is calcium-bicarbonate type with a pH of approximately 8.1; and,
- The hardness (as CaCO₃) was 191 mg/L during the first sampling event and 177 mg/L during the second sampling event, and is considered very hard.

7.3.2 Identification of Additional Analytical Testing Required

Additional analytical for the Eliza Van Bibber School that was identified to be included during the water system assessments is detailed below:

- Total and dissolved manganese to determine if previously reported manganese concentrations could be attributed to turbidity;
- UV absorbance and UV transmissivity, as well as tannins and lignin, to determine potential for UV treatment as a disinfection option for this water system;
- Total organic carbon (TOC);
- Extractable Petroleum Hydrocarbon (EPH) to determine any impacts from a reported fuel spill in the vicinity of the wellhead; and,
- Measurements in the field for total dissolved solids, conductivity, pH, and temperature.

Additional Analytical Results

A water sample was obtained during the water system assessment on August 23 2005, and was submitted to ALS Environmental in Vancouver BC for analysis. These results are summarized in Table 3440-2 in Appendix A7 and the laboratory reports are included in Appendix B. Significant observations are detailed below:

- Analytic results for Extractable Petroleum Hydrocarbons (EPH) were below laboratory detection limits;
- Total and dissolved manganese at 0.595 and 0.588 mg/L respectively are in exceedence of CDWQG aesthetic objectives. Similar total and dissolved concentrations indicate that the elevated manganese is not attributed to turbidity; and
- Water quality analysis indicated no other exceedences of CDWQG MACs or aesthetic objectives.

7.3.3 Indicators of Potential Contamination

Chloride, nitrate and nitrite concentrations can indicate impacts from surface water sources or septic waste. Chloride concentrations were low and are within the normal background ranges for groundwater in the area. Nitrate and nitrite concentrations for this sample are also low and within the normal background range for this area. These water quality results do not suggest that septic effluent indicators such as chloride, nitrate or nitrite are impacting the aquifer.

7.4 Conceptual Hydrogeology

The log for this well indicates that the well is completed at a depth of about 15.2 m within a sand and gravel aquifer. The well log shows the static water level to be approximately 6.7 m below ground with no fine-grained soils overlying the aquifer. The Pelly Crossing Village area is situated on the inside bend of the Pelly River, most wells in the Pelly Crossing Village area obtain their water from an unconfined aquifer consisting of floodplain alluvial sand and gravel deposits. The relatively shallow depth of the aquifer combined with the absence of confining material leaves this aquifer vulnerable to surficial sources of contamination. The expected direction of groundwater flow is north to northwesterly (EBA 2004).

7.5 Potential Contaminant Sources

Details and photographs of potential contaminant sources observed during the site investigation are compiled in Appendix A7. Potential contaminant sources within 30 m of the wellhead are:

- A septic field at 25 m;
- An indoor fuel storage tank at 5 m;
- An above ground double walled fuel storage tank (AST) at 8 m; and,
- A roof drain and possible sump discharge area approximately 10 m northwest of well.

7.5.1 Spills Records and Contaminated Sites Search Results

It was reported by Environment Canada that a fuel spill occurred in 1986 due to a overturned residential fuel tank owned by Selkirk First Nation resulting in the release of 2000 L of furnace oil to the subsurface. Removal of contaminated soil was recommended, however, it is unclear whether this was completed. The spill site is located approximately 500 m upgradient of the subject well, and is considered to be a low risk.

Another reported spill occurred in 1998 when an unknown quantity of heating oil leaked from an open valve on the heating fuel tank located at the Eliza Van Bibber School. Removal of contaminated soil was recommended by Environment Canada, however, it is unknown if this was completed. Screening for Extractable Petroleum

Hydrocarbons (EPH) during this assessment did not identify detectable concentrations.

7.6 Identified Water System Deficiencies and Associated Risk

7.6.1 High and Medium Risk Deficiencies

High and medium risk deficiencies that were identified during this study include:

- There is no surface sanitary seal (grout or bentonite seal as required by the Canadian Groundwater Association's Guidelines for Water Well Construction);
- The well is completed within an unconfined aquifer;
- The well is located within 30 m of potential contaminant sources including an on-site sewage disposal system (septic field) and an above ground fuel storage tank (AST), and spill reports detail a fuel spill at the site of unknown quantity at the AST in 1998;
- A recent sample taken for bacteriological analysis tested positive for total coliform bacteria;
- By definition of the Draft Yukon GUDI Assessment Guideline, the well is potentially under the direct influence of surface water because it is a vulnerable type (unconfined aquifer with a production zone that is less than 15 m below grade) and does not meet the requirements of the Guidelines for Water Well Construction); and,
- There is no treatment or disinfection system present.

7.6.2 Low Risk Deficiencies

- Poor surface completion of the wellhead (does not extend above grade, though it does extend approximately 800 mm above the floor of the school's basement and there is a sump in the basement);
- The well is located within 30 m of an indoor fuel storage tank;
- The manganese concentration has consistently been in exceedence of the CDWQG aesthetic objective; and,
- The iron concentration has previously been in exceedence of the CDWQG aesthetic objective.

7.7 Mitigative Options for Deficiencies

Mitigative options were developed to address the deficiencies identified in the previous section. Deficiencies are categorized by recommended level of priority (with Priority 1 being most critical).

Recommendations are made in consideration of the fact that a piped distribution system with water sourced from a community well located in Willow Creek area of Pelly Crossing will likely be installed by the Selkirk First Nation in 2006 or 2007. In the interim, however, some water system upgrades are recommended to mitigate risk and are detailed in the following sections.

7.7.1 Priority 1

Follow-up sampling for total coliform and *E. coli* should be completed immediately if it has not already been completed.

The following recommendations are provided in order to mitigate deficiencies that are of immediate concern for the School's water system. Priority 1 remedial recommendations include:

- The well and water system should be super-chlorinated.
- Disinfection treatment consisting of filtration to 1 micron (absolute), and a proportional feed chlorination system with retention tanks and appurtenances (or equivalent disinfection system) should be installed to ensure disinfection of the water supplied to the school. The benefit of the chlorination system is that it would provide residual capacity within the piped system to inactivate viruses and bacteria. These are conceptual design recommendations based on the information available for planning and budgeting purposes. Engineering input will be required for final system specifications.

7.7.2 Priority 2

The recommended solution to mitigate long-term risk (Priority 2) to the Eliza Van Bibber School would be to connect to the proposed piped distribution system as soon as this system is available. The community well that will be the source of water for the piped distribution system is constructed in accordance with applicable guidelines; offers better wellhead protection; and is completed within a deeper aquifer that is less vulnerable to surficial sources of contamination. Furthermore, the community well and piped distribution system will be operated and maintained by others as a Public Drinking Water Supply with chlorine disinfection and routine monitoring and sampling as required by regulation.

We understand that there would be a monthly service fee charged by the Selkirk First Nation for providing, operating and maintaining the piped water supply.

The proposed piped system will be a low flow and low pressure and will not provide sufficient capacity for fire protection. It is therefore, recommended that consideration be given to utilizing the well for fire protection only, upon connection to a community water supply.

7.7.3 Priority 3

No Priority 3 upgrades are required, as Priority 1 and 2 upgrades would mitigate all observed risks.

7.8 Cost Estimates for Mitigative Options

Engineering costs for mitigative options are estimated to be 20% of construction costs, and would include inspection and completion reporting. The costs for materials and labour (not including engineering) are provided in the sections below. An additional contingency allowance of 20% is suggested for budgetary purposes.

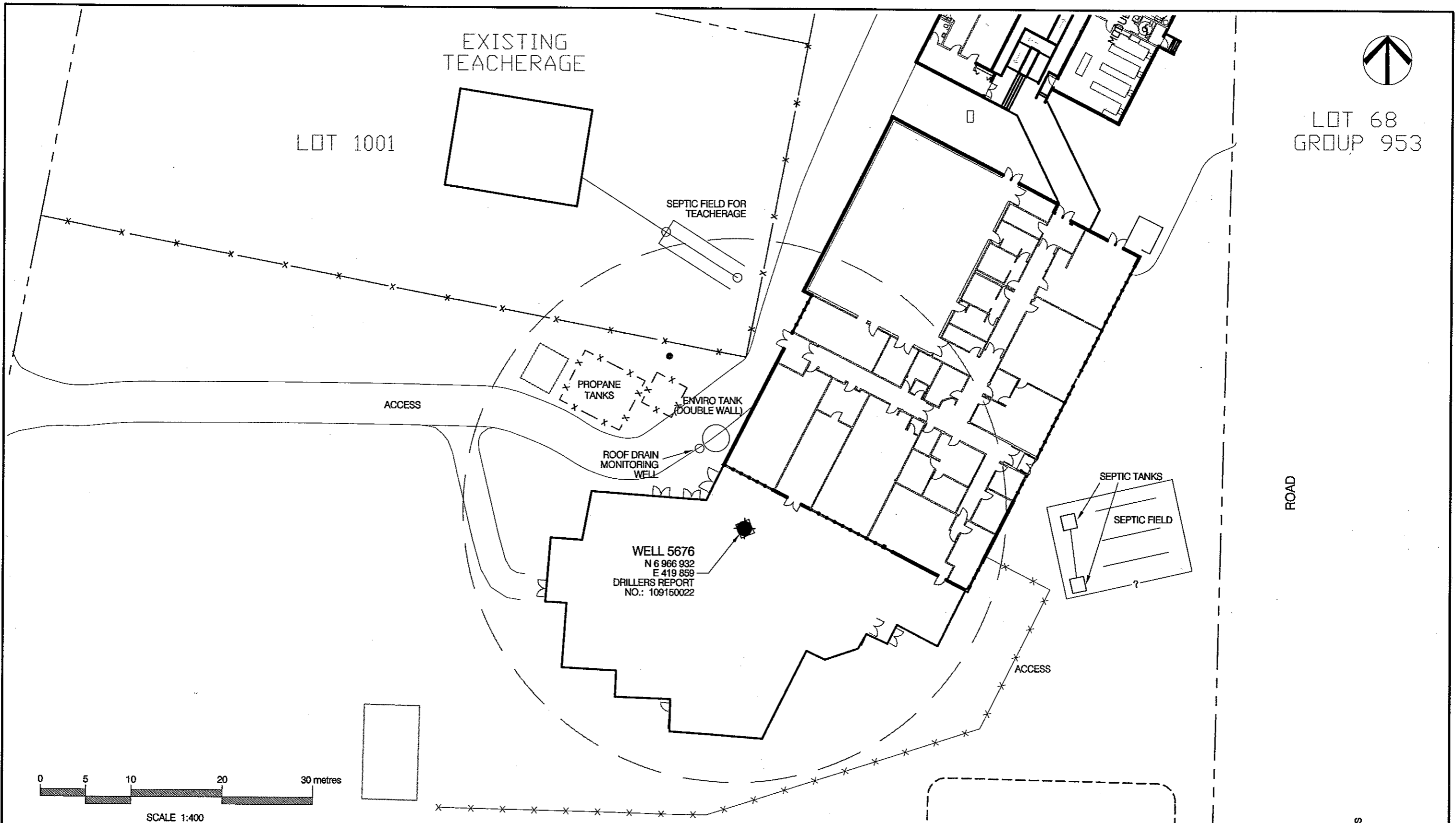
7.8.1 Priority 1

The estimated costs for the recommended Priority 1 upgrades are detailed below:


- It would cost approximately **\$200** for materials and labour to complete the recommended well and water system superchlorination.
- A commercial duplex filtration system with stainless steel filter canisters would cost in the order of **\$2,500** installed.
- A proportional feed chlorination system with retention tanks and other appurtenances would cost approximately **\$9,000** installed.

7.8.2 Priority 2

It would cost approximately **\$4,000** for materials and labour to connect the school to the proposed community water main, assuming a 30 m service connection (freeze-protected underground service piping) and some inside plumbing modifications.




NOTES:
 1. UTM COORDINATES OBTAINED WITH A HAND HELD GPS USING NAD83 SYSTEM AND ARE CONSIDERED TO BE ACCURATE TO 10.0 m, APPROXIMATELY.

 30 m RADIUS FROM WATER WELL FOR CONSIDERATION OF PROXIMITY TO POTENTIAL CONTAMINANT SOURCES.

No.	DESCRIPTION	DATE	APPROVED
0	ISSUED FOR CLIENT REVIEW	DD/MM/YY	XXX
	REVISION		

EBA Engineering Consultants Ltd.

DESIGNED BY: R. MARTIN
 DRAWN BY: J. BUYCK
 DATE: SEPT. 2005
 SCALE: AS SHOWN
 PROJECT No.: 1260002.004
 ACAD FILENAME: 004-NORTHERN REGION

CLIENT:

 Highways and Public Works
 Property Management Branch

SMALL PUBLIC WATER SYSTEMS ASSESSMENT
 NORTHERN REGION

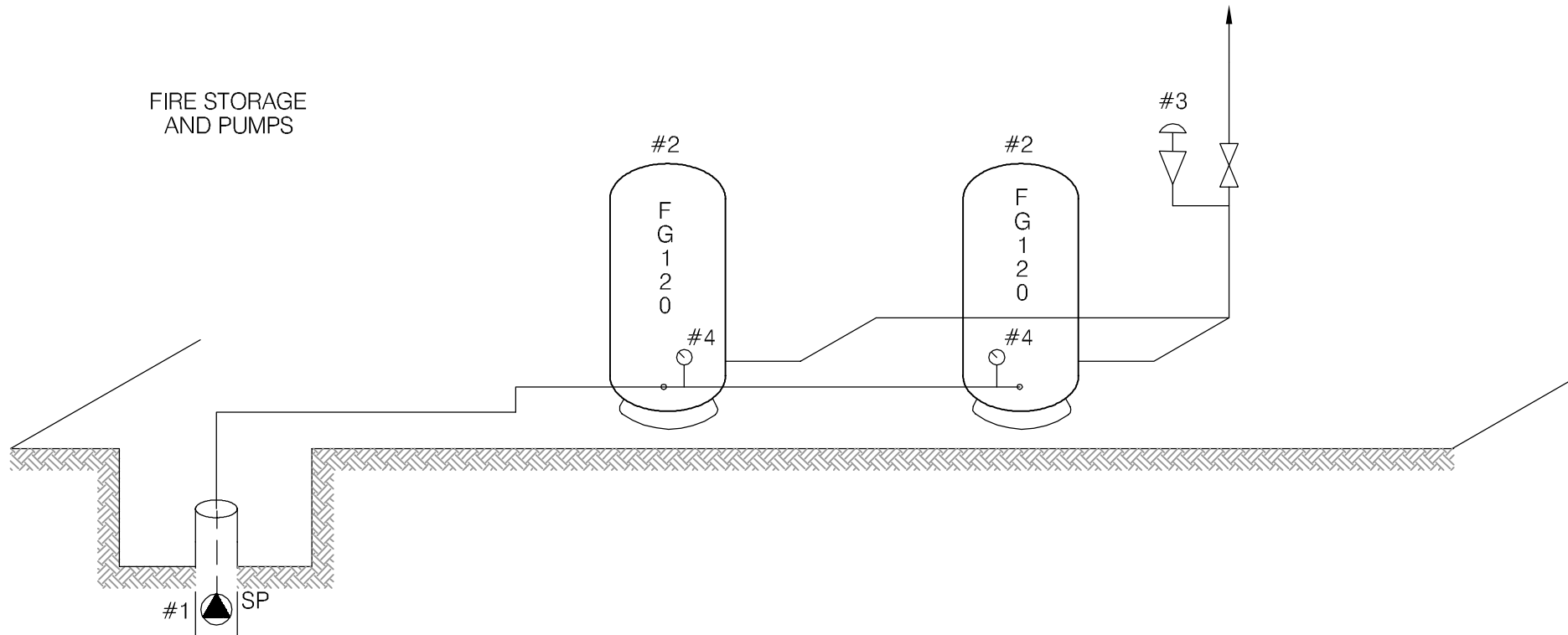
GOVERNMENT OF YUKON
 HIGHWAYS & PUBLIC WORKS

PELLY CROSSING SCHOOL
 BUILDING # 5676
 SITE LOCATION DIAGRAM
 WELL ID: 5676

REVISION ISSUE
 0

FIGURE No.
 FIGURE 5676-A

FIRE STORAGE
AND PUMPS



SCHEMATIC PRODUCED BY BERT ALBISSER OF AQUA TECH SUPPLIES AND SERVICES LTD.



EBA Engineering Consultants Ltd.

PROJECT

SMALL PUBLIC WATER SYSTEMS ASSESSMENT
NORTHERN REGION

CLIENT



TITLE

WATER SYSTEM DISTRIBUTION/TREATMENT
SCHEMATIC SYSTEM ID.: 5676
ELIZA VAN BIBBER SCHOOL - PELLY CROSSING, YT.

DATE SEPT. 2005

DWN. JSB

CHKD. RMM

FILE NO. 1260002.004

DWG.: FIGURE 5676-B

Northern Region – Eliza Van Bibber School
Building # 5676

Photo 102-203
102-204

DISTRIBUTION & TREATMENT SYSTEM DATA

Item	Description	Manufacturer	Model	Part No.	Serial No.	Size
1	Sub Pump	N/A.	PNLA	CCT 32-34		
2	PRESSURE TANK	STA-CHARGE	FG-120	KZ		
3	PRESSURE SWITCH	SQUARE D	GSG-2			5HP - 1/4" FIPT
4	PRESSURE GAUGE	WINTERS	O-160			4" - 1/4 FIPT
5						
6						
7						
8						
9						
10						

TABLE 5676 - 1: SUMMARY OF BACTERIOLOGICAL RESULTS

Building #	Building Name	Number of Sampling Events	Time Period over which Sampling was Done	Any Positive Total Coliform Results? (yes or no)	Fraction of Positive Total Coliform Results vs. Total Sampling Events	Any positive E.Coli results? (yes or no)	Most Recent Sampling Event Available for EBA Review	Is Most Recent Result Positive?
5676	Eliza Van Bibber School	10	Jun-04 to Jun-05	yes	1/10	no	9-Jun-05	yes



Table 5676 - 2: Water Quality Results

SOURCE:		Building 5676 - Eliza Van Bibber School			GCDWQ Criteria		
Location/ Resident		Pelly Crossing					
Address							
Treatment		None					
Disinfection		None					
Source of Water		On-site well					
Purpose of Sampling		Base Line	Base Line	Additional Sampling			
Sample Location							
Date Sampled		29-Sep-04	8-Jun-05	23-Aug-05	Lower	Upper Limit	
Physical Tests (ALS)					AO	MAC	AO
Colour (CU)		12	7.1				15
Conductivity (uS/cm)			402				8.5
Total Dissolved Solids		208	226				500
Hardness CaCO3		191	177		AO >200 = poor, > 500 unacceptable ^A		
pH		8.1	8.17		6.5		
Turbidity (NTU)		1.0	0.33			1	5
UV Absorbance				0.0800			
% UV Transmittance				96.2			
Dissolved Anions (ALS)							
Alkalinity-Total CaCO3		179	176				
Chloride Cl		0.9	0.61				250
Fluoride F		0.1	0.114			1.5	
Silicate SiO4							
Sulphate SO4		26.4	33.5				500
Nitrate Nitrogen N		<0.1	<0.10			10	
Nitrite Nitrogen N		<0.05	<0.10			1	
Ammonia Nitrogen N							
Total Phosphate PO4							
Total Metals (ALS)							
Aluminum T-Al		<0.005	<0.010			0.1	
Antimony T-Sb		<0.0002	<0.00050			0.006	
Arsenic T-As		0.0013	0.00119			0.025	
Barium T-Ba		0.124	0.108			1	
Boron T-B		0.004	<0.10			5	
Cadmium T-Cd		<0.00001	<0.00020			0.005	
Calcium T-Ca			50.5				
Chromium T-Cr		0.001	<0.0020			0.05	
Copper T-Cu			0.001			1	
Iron T-Fe		0.35	0.198				0.3
Lead T-Pb		<0.0001	0.0017			0.01	
Magnesium T-Mg			12.3				
Manganese T-Mn		0.611	0.535	0.595			0.05
Mercury T-Hg			<0.00020			0.001	
Potassium T-K			2.29				
Selenium T-Se			<0.0010			0.01	
Sodium T-Na		4.2	4.7				200
Uranium T-U		0.0007	0.00066			0.02	
Vanadium T-V							
Zinc T-Zn		0.002	<0.050				5
Dissolved Metals							
Manganese D-Mn				0.588			0.05
Organic Parameters							
Tannin and Lignin				0.29			
Total Organic Carbon C				4.02			
Extractable Hydrocarbons							
EPH10-19				<0.30			
EPH19-32				<1.0			
Field Chemistry (EBA)							
pH				7.98	6.5		8.5
TDS (ppm)				175			500
EC (uS/cm)				354			
Temperature (°C)				10.4			
Free Available Chlorine							

Notes:

A. Guidelines indicated for hardness are not CDWQG, rather they are general aesthetic guidelines
 - exceedences are indicated in yellow highlighting.

Italics, and underline indicates exceedence of proposed MAC (ie. arsenic)

Bold with Yellow highlighting indicates exceedence of CDWQG Aesthetic Objective (AO)

Bold Underline with Yellow highlighting indicates exceedence of CDWQG MAC

Results are expressed as milligrams per litre except for pH and Colour (CU)

Conductivity (umhos/cm), Temperature (°C) and Turbidity (NTU)

< = Less than the detection limit indicated.

AO = Aesthetic Objective

MAC = Maximum Acceptable Concentration (Health Based)



EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

SMALL PUBLIC WATER SYSTEM ASSESSMENT

PART A: EBA Site Inspector

Inspector: KSI/RMM

Date August 23/05

WELL ID #	Owner	Location Description
5676	YTG	Eliza Van Bibber School

1. Well Location and Potential Contaminant Sources

a. General location of well: (Community, Subdivision, etc.)

Pelly Crossing // 462 Klondike Highway

b. Specific location: (Road or street, Building number, name of owner and/, legal description,

Eliza Van Bibber School.

c. GPS location: DB E 419857 N 6966932 elev 478m

d. Is there electric power? Yes No

GPS Waypoint 5676

e. Is there outside water access? Yes No

f. Does the well system have:

15 or more service connections to a piped distribution system? If so how many No

5 or more delivery sites on a trucked distribution system? If so how many No

g. Nearest building, specify Inside building

h. Distance from well to building Inside building

i. If there is an effluent disposal field, is its location known? Yes No

j. Distance from well to nearest point of known field: <30m (25m)

k. Well location relative to field: upslope downslope lateral

EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

l. Is there any part of a sewage disposal system(s) or other potential sources of pollution that may pose a health and safety risk within 30 m? Yes No

m. Is the well located within 300 m from a sewage lagoon or pit? Yes No

n. Is the well located within 120 m from a solid waste site or dump, cemetery? Yes No

o. Is the infrastructure protecting the wellhead, pumphouse, storage tank and/or water treatment plant designed and secured to prevent:

Unauthorized access by humans? Yes No Entrance by animals? Yes No

p. Is well site subject to flooding? Yes No

q. Is the well site well drained? Yes No

r. Is there a buried fuel tank on the property? Yes No *unlikely.*

If yes, is it in use abandoned

Is the location known? Yes No

Distance from the well to known buried tank _____

s. Are there any other known contaminant sources on the property?

Yes No Describe _____

If yes, specify the source: dump sewage lagoon cemetery other

Potential Source 1: AST #1; Distance from well to Potential Source 1: 5m (inside)

Potential Source 2: AST #2; Distance from well to Potential Source 2: 8m. 15000L double wall enviro tank.

Potential Source 3: _____; Distance from well to Potential Source 3: _____

Potential Source 4: _____; Distance from well to Potential Source 4: _____

t. Are there other wells on this property? Yes No

How many? _____ in use abandoned require proper sealing

EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

2. Well and Wellhead information:

- a. When was well installed? Year 1982 Month August 19
- b. Type: drilled dug sand point other _____
- c. Is there a drillers log for the well: Yes No MSD
- d. Is there a surface seal to 6 m Yes No unknown unlikely
- e. Surface casing: Yes Diameter _____ No
- f. Well casing: Diameter 6" Material: steel plastic concrete
- g. Depth of well: 50' measured (if possible) reported from log
- h. Static water level below ground: 22'
 measured (if possible) reported from log flowing
- i. (If granular) Is the well completed: open end casing with a well screen
 with slotted pipe unknown other _____
- j. (If bedrock) Does the well have a liner? yes No steel plastic
- k. If there is a well screen: length ? slot size(s) 15
Location of screen: from ? to _____ from log reported
- l. Is there a sump below the screen? Yes No
- m. Is the well head: in pumphouse in pit pitless adaptor in a building
 in a wooden enclosure other, describe basement of school.
- n. If the well head is located in a wooden enclosure,

EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

- i. Is the well head below grade? describe in detail Yes - see diagram.
- ii. Are there signs of ponding on the enclosure(e.g. water stains, etc.)? Yes No
- iii. Is the wellhead enclosed by fiberglass insulations? Yes No
- iv. Any evidence of rodents? Specify No
- v. Does the well casing have a proper seal cap? Yes No
If no, describe condition Split gasket cap.

3. Water Supplying This Well:

- a. By definition is the water from a surface water source or under the direct influence of surface water?
no surface seal Yes No farther investigation required.
If yes is there treatment or disinfection Yes No
Explain (filtration, disinfection etc...) _____

4. Aquifer Supplying This Well:

- a. The aquifer is: bedrock granular sediment unknown
- b. Does water level and/or well capacity show seasonal fluctuation? Yes No w Pelly River

5. Pump Installation:

- a. Is the well equipped with a pump? yes No
- b. Type of pump: hand electric submersible jet
 shallow well centrifugal other, _____
- c. Description: Manufacturer PNLA Model ?
horsepower 1 1/2 - 1 capacity _____ voltage _____

EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

d. Date installed: _____ ? _____ By: _____

e. For submersible pump, depth of setting below surface _____

f. Drop pipe for submersible pump: steel plastic

g. Pump delivers water to: pressure tank elevated tank other

h. Are there automatic pump controls: Yes No

i. Is there provision for taking water samples before water reaches storage? Yes No

j. Is there a water meter on the system? Yes No

k. Is the pump and piping protected from freezing? Yes No

If yes, describe: inside building

l. Comments on pump installation: _____

6. Conclusions

a. Comments on overall installation:

b. Recommendations: _____

EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

PART B: EBA Site Inspection

Inspector: BERT ALBISSEK

Date AUG. 23/05

WELL ID #	Owner	Location Description
<u>5676</u>	<u>YTG</u>	<u>SCHOOL, PELLY CROSSING.</u>

6. Water Treatment

a. Is well water treated? Yes No; Type of treatment:

chlorination iron and or manganese removal other _____

b. Is water entering plumbing or piped distribution system treated with chlorine or another treatment that is as effective as chlorine used to achieve disinfection throughout the system?

Yes No If so how _____

c. If treated with chlorine, is the free residual chlorine concentration less than 0.2 mg/L

Yes No _____ reading.

Tested at _____ (location)

d. Is testing for chlorine residual concentration done at the tap (eg. Kitchen faucet) or from representative points in a piped distribution system, including a point from tap at the end line

Yes No If yes how often? _____

e. If the drinking water is being transported by water delivery truck does it have a minimum chlorine free residual of 0.4 mg/L at the time of fill. Yes No

7. Water Quality (observations):

a. Does the water stain plumbing? yes No slight severe

Type of stain: brown red black

b. Does the water contain sediment? Yes No occasional constant

c. Is there an unpleasant odour? Yes No H₂S Other _____

EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

- d. Is there an unpleasant taste? Yes No brackish Other _____
- e. Is there a history of bad bacterial analyses? Yes No
- f. Is there a chemical analysis? Yes No adequate incomplete
- g. Is there analysis of trihalomethanes (THMs) where the water source is a surface water supply or a well under the direct influence of surface water? Yes No
- h. Is the drinking water tested daily with an accurate reading chlorine test kit capable of reading in the range 0 to 3.5 mg/L of free chlorine residual in increments of 0.1mg/L? Yes No unknown
- i. If yes is the test performed in accordance with manufactures directions? Yes No unknown
- j. Is a record of the date, time, name of person performing the test and results of the drinking water sample kept? Yes No

TANK AND PIPING DETAILS

Tank Room

Is there a water tank? Yes No Details: PRESSURE TANKS

Where is it located?
Comments: BOILER ROOM

Is the room in which the water tank is located heated to maintain an optimum temperature of 4°C for stored water?

YES NO
Comments: _____

Are there windows in the add-on that may allow direct sunlight onto the water holding tank? YES

NO

Comments: _____

Are there other heat sources near the tank? YES NO

Comments: _____

Is there waterproof flooring with a sealed base to contain spills? YES NO

Comments: _____

EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

Overall Tank

What are the tank size and dimensions?

What material is the tank constructed of? _____

Is tank and associated piping constructed of safe materials (i.e. CSA approved and material that does not affect the taste of the water)? YES NO

Comments: _____

Tank Inlet, Outlet and Lid

Is there adequate access on the tank for cleaning (i.e. min 15" access lid)? YES NO

Does the lid have a tight seal and is it watertight when closed? YES NO

Does the tank have an overflow or high level whistle? YES NO

Is the water tank drain accessible? YES NO

WATER TANK AND WATER QUALITY CONDITION

Are there signs of staining or biofouling? YES NO

Comments: _____

Is there any sediment or scum in bottom of tank? YES NO

Comments: _____

Is there any odour associated with the water or tank? YES NO

Have there been any bacteriological analyses conducted previously? YES NO

Does the tank appear that it has been cleaned recently? YES NO

Are the tanks easily assessed for the purpose of cleaning and disinfection? YES NO

EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

8. Conclusions

a. Comments on overall installation:

THIS IS A PROFESSIONAL INSTALLATION

b. Recommendations:

INSTALL PROPORTIONAL CHLORINATION SYSTEM.



Field Report (109150022)

Started... Aug... 19... 19... 82

Completed... Aug... 19... 19... 82

NAME AND ADDRESS OF CLIENT	DESCRIPTION OF WORK	LOCATION OF WORK
YTG? M... PELLY School	W/W	PELLY

FORMATION LOG			DESCRIPTION OF WORK	TIME			
FROM	TO	FORMATION		DATE	FROM	TO	HOURS
			MOVE MOVE TO SCHOOL-SETUP	Aug 19	1:30	2:00	
0'	50'	SAND & GRAVEL	Pull out - SET SCREEN	"	2:00	3:30	
			DEVELOPE	"	3:30	4:00	
			Pull out - LOAD - WELD ON CAP	"	4:00	5:30	
			WASH TRUCKS - (Thought we was done)	"	5:30	6:00	
				"	6:00	7:00	5 1/2
DEVELOPED TO APPROX 35 G.P.M.							

rd. of Casing & Pipe				Remarks:
Size	Type	Size	Type	
Feet	Inch	Feet	Inch	46' - 219 WALL 6" CASING
				1 - 6" DRIVE SHOE
				1 - 15 SLOT SCREEN
				1 - LEAD PACKER
				1 - 5 3/4 BIT PIN BOTTOM
				1 - 2' RISER PIPE
				Static Level 22'
				Ground Level
				Top Of Casing
				Total Rig Time hrs.
				Total Standby hrs.
				Drilling Mud sacks

SIGNATURES

MIDNIGHT SUN.....
TITLE.....

CLIENT.....
TITLE.....



Spill Report Information

Spill #	8621
Jurisdiction	Yukon
Community	Pelly Crossing
Address	
Highway	
Milepost	
Feature	Pelly Crossing
Location and Cause	overturned home heating fuel storage tank - garbage truck backed into supporting stand
Latitude	62.819543
Longitude	-136.569408
Incident Date	12/31/1986 2:00:00 PM
Lead Agency	Environment Canada - Environmental Protection Service
Other Agency	RCMP
Company(s)	Selkirk Indian Band
Amount	1890
Units	Litres
Quantity	Estimate
Release Description	Spilled
Additional Quantit	
Concentration	
Concentration Unit	
Phase	Liquid
Major Contaminant	Furnace Oil
2nd Contaminant	
3rd Contaminant	
4th Contaminant	
Outcome	fuel spilled onto frozen ground and snow/ice cover - fuel was flushed with water and dispersed over a wider area - band advised to remove cont snow



Spill Report Information

Spill #	9840
Jurisdiction	Yukon
Community	Pelly Crossing
Address	
Highway	
Milepost	
Feature	Pelly Crossing
Location and Cause	Pelly Crossing School - valve opened intentionally on heating fuel tank - tank drained
Latitude	62.8181
Longitude	-136.5665
Incident Date	9/11/1998
Lead Agency	Yukon Government - Renewable Resources
Other Agency	
Company(s)	
Amount	
Units	
Quantity	Unknown
Release Description	
Additional Quantitit	
Concentration	
Concentration Unit	
Phase	Liquid
Major Contaminant	Furnace Oil
2nd Contaminant	
3rd Contaminant	
4th Contaminant	
Outcome	spill to ground - near community well - soil excavated - EC suggested taking contaminated soil to dump and spreading out on tarps - no further information on file



Photo 203: 5676 Wellhead.



Photo 204: 5676 Water System. (pump controls and pressure tanks)



Photo 400: 5676 Eliza Van Bibber School's septic system.



Photo 399: 5676 Monitoring well for rock pit drain.