

## **8.0 BUILDING 5678: PELLY CROSSING FIRE HALL**

### **8.1 Description of Existing Water Supply System**

Building 5678, the Pelly Crossing Fire Hall, is currently serviced by a water supply system that delivers water from a 13.7 m deep well. The well is located in pit below grade approximately 2.5 m east of the fire hall. A site plan is provided as Figure 5678-A in Appendix A8. The coordinates of the wellhead, as measured by a handheld GPS device, were recorded as:

- UTM ZONE 8
- Northing: 6967043
- Easting: 420103

There is currently no treatment or disinfection of water supplying this system. There is a water storage tank present that is used for fire protection storage to facilitate fire truck filling, however, this tank is very difficult to access and was inaccessible during the water system assessment. A schematic detailing the water supply system is provided as Figure 5678-B in Appendix A8. Photos of the well and water system are also included at the back of this appendix.

### **8.2 Description of Existing Wastewater Systems**

There is an on-site sewage disposal system located off of the northwest corner of the building approximately 40 m from the well as indicated on Figure 5678-A.

### **8.3 Water Quality Results**

#### **8.3.1 Water Quality Results from Previous Sampling**

##### *Bacteriological*

Nine samples were collected from the Pelly Crossing Fire Hall water system between October 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 5678-1 in Appendix A8. One of nine samples for which results are provided tested positive for total coliform bacteria.

### *Potability*

Water samples were collected by YTG representatives from the Pelly Crossing Fire Hall water system 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 and results are summarized in Table 5678-2 in Appendix A8. EBA reviewed the analytical results for comparison with Canadian Drinking Water Quality Guidelines (CDWQG), to observe general water quality, to identify and recommend additional sampling and analytical, and to identify potential indicators of contamination.

- Turbidity at 3.1 NTU and 1.39 NTU was in both cases above the CDWQG MAC of 1.0 NTU;
- At 1.23 mg/L, the total iron concentration during the second sampling event was in exceedence of the CDWQG aesthetic objective of 0.3 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 from which this system receives its water supply is calcium-bicarbonate type with a pH of approximately 8.2; and,
- The hardness (as CaCO<sub>3</sub>) was 209 mg/L during the first sampling event and 189 mg/L during the second sampling event, and is considered very hard.

#### 8.3.2 Identification of Additional Analytical Testing Required

Additional analytical for the Pelly Crossing Fire Hall that was identified to be included during the water system assessments is detailed below:

- As turbidity had previously been in exceedence of CDWQG MAC, a sample was obtained to analyze for turbidity;
- Samples were collected for total and dissolved iron analysis to determine if elevated total iron could be attributed to elevated turbidity;
- UV absorbance and UV transmissivity, as well as tannins, to determine the potential for UV treatment as a disinfection option for this water system;
- Total organic carbon (TOC); and
- Measurements in the field for total dissolved solids, conductivity, pH, and temperature.

### *Additional Analytical Results*

A water sample obtained during the water system assessment on August 23 2005 was submitted to ALS Environmental in Vancouver BC for analysis of selected parameters. These results are summarized in Table 3440-2 in Appendix A8 and the laboratory reports are included in Appendix B. Significant observations are detailed below:

- Turbidity at 4.94 NTU was above the CDWQG MAC of 1.0 NTU;
- Total iron at 1.51 mg/L was above the CDWQG AO of 0.03 mg/L, however, the dissolved iron concentration was below the laboratory detection limit of 0.030 mg/L indicating that elevated iron can be attributed to elevated turbidity; and,
- Water quality results indicated no other exceedences of CDWQG MACs or aesthetic objectives.

#### 8.3.3 Indicators of Potential Contamination

Chloride, nitrate and nitrite concentrations can indicate impacts from surface water sources or septic waste. Chloride concentrations were low at the time of sampling and were within the normal background ranges for groundwater in the area. Nitrate and nitrite concentrations for this sample were also low and within the normal background range. These water quality results suggest that groundwater from this well was not being impacted by anthropogenic sources of nutrients or anions such as septic effluent at the time of sampling.

## 8.4 Conceptual Hydrogeology

The log for this well indicates that the well is completed at a depth of 13.7 m within an unconfined sand and gravel aquifer, a thin silt horizon is shown to exist from ground surface to 2.1 m below ground. The well log shows the static water level to be 10.4 m below ground. 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 limited presence of fine-grained material leaves this aquifer vulnerable to surficial sources of contamination. The expected direction of groundwater flow is northerly parallel to the Pelly River (EBA 2004).

## 8.5 Potential Contaminant Sources

Aside from an above ground storage tank which is located approximately 14 m from the well, no other potential contaminant sources within 30 m of the well were identified during the water system assessment.

### 8.5.1 Spills Records and Contaminated Sites Search Results

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

Another reported spill in 1998 occurred due to an open valve on a heating oil 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. Since the spill location is crossgradient from and a significant distance from the fire hall well, it is considered very unlikely that this would impact the water quality at this well.

## 8.6 Identified Water System Deficiencies and Associated Risk

### 8.6.1 High and Medium Risk Deficiencies

High and medium risk deficiencies observed during the site assessments and or through review of the available information for this water system are detailed below:

- Poor surface completion of the wellhead (located in a pit below grade, significant signs of mice and rodents in wellhead enclosure);
- There is no surface sanitary seal (grout or bentonite seal as required by the Canadian Groundwater Association's Guidelines for Water Well Construction);
- Completed at 13.7 m below grade, the well is considered a shallow well and is completed in a shallow unconfined aquifer making it vulnerable to surficial sources of contamination;
- The turbidity has been above the CDWQG MAC;

- 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 less than 15 m below grade) and does not meet the requirements of the Guidelines for Water Well Construction).
- The water storage tank and water system is not accessible for cleaning and maintenance; and,
- There is no treatment or disinfection system present.

#### 8.6.2 Low Risk Deficiencies

- The iron concentration has been reported above the CDWQG aesthetic objective;
- One out of nine samples collected for bacteriological analysis tested positive for total coliform bacteria, however, the most recent sample was negative.
- At the time of the water system assessment the pressure tank was waterlogged, causing the water pump to rapid cycle.

### 8.7 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 upgrades are recommended to mitigate immediate risk which are detailed below:

#### 8.7.1 Priority 1

The following recommendations are provided in order to mitigate deficiencies that are of immediate concern for the Pelly Crossing Fire Hall. Priority 1 remedial recommendations include:

- The well enclosure should be cleaned and disinfected (remove all fiberglass insulation, and mice excrement - use HEPA vacuum and proper protection to ensure that workers are not exposed to Hantavirus).
- A pitless adapter should be installed and the casing extended to at least 500 mm above the base of the well pit. Casing insulation could then be

installed and a localized near surface bentonite seal should be installed immediately around the wellhead.

- The well and water system should be super-chlorinated.
- Disinfection treatment consisting of filtration to 1 micron (absolute), and a UV system that is NSF/ANSI certified (or equivalent) should be installed for the domestic side of the system.
- A backflow preventer should be installed to inhibit backflow from the overhead fire storage tank to the domestic side of the water system. These are conceptual design recommendations based on the information available for planning and budgeting purposes. Engineering input will be required for final system specifications.

#### 8.7.2 Priority 2

The recommended solution to mitigate long-term risk (Priority 2) to the fire hall would be to connect the domestic water system 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.

The well system could be used as the primary water supply for fire protection, with the piped distribution system as the back-up supply. The system should be re-plumbed to separate the domestic water for the fire hall from the well-supplied fire protection water.

#### 8.7.3 Priority 3

If the existing well is maintained as a back-up firefighting supply, the pressure tank should be replaced during plumbing upgrades. Depending on the length of time until the piped system is available, this may be required sooner.

## 8.8 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.

### 8.8.1 Priority 1

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

- It would cost approximately **\$1,200** for materials and labour to complete the recommended well enclosure cleaning, interim wellhead upgrades and well and water system superchlorination.
- Disinfection treatment (filtration and UV) would cost approximately **\$3,000** including materials and labour.
- Supply and installation of a backflow prevention device between the fire fighting supply and the domestic supply would cost approximately **\$200** for materials and labour.

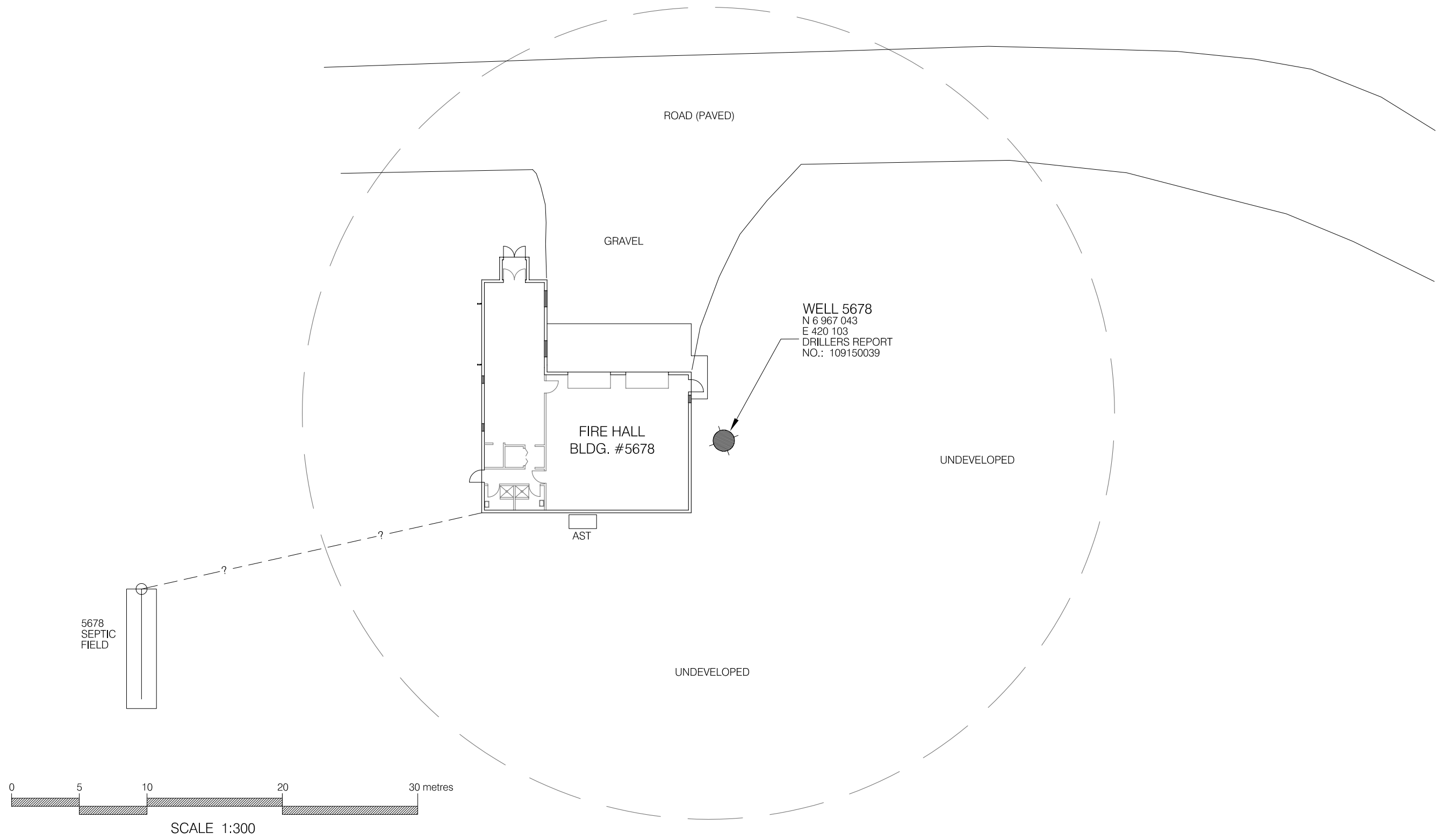
Therefore, it would likely cost approximately **\$4,400** to complete the recommended Priority 1 upgrades for the Pelly Crossing Fire Hall.

### 8.8.2 Priority 2

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

### 8.8.3 Priority 3


A replacement pressure tank would cost in the order of **\$600** installed.



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: AUG. 2005  
SCALE: AS SHOWN  
PROJECT No.: 1260002.003  
ACAD FILENAME: 003-WESTERN REGION

CLIENT:

  
Highways and Public Works  
Property Management Branch

SMALL PUBLIC WATER SYSTEMS ASSESSMENT  
WESTERN REGION

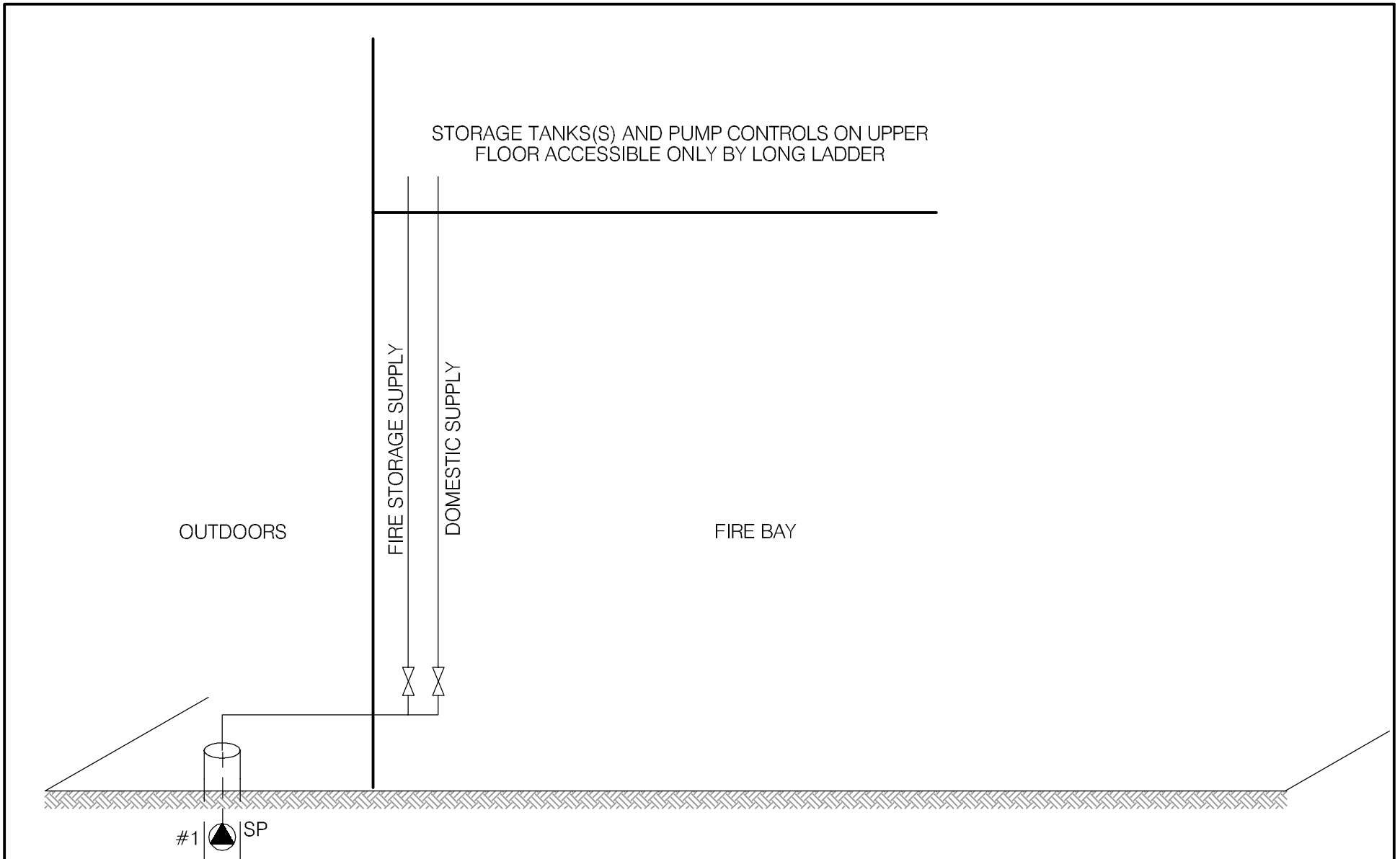
GOVERNMENT OF YUKON  
HIGHWAYS & PUBLIC WORKS

PELLY CROSSING FIRE HALL  
BUILDING # 5678  
SITE LOCATION DIAGRAM  
WELL ID: 5678



REVISION ISSUE  
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FIGURE No.  
FIGURE 5678-A





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

 <b>EBA Engineering Consultants Ltd.</b>		PROJECT SMALL PUBLIC WATER SYSTEMS ASSESSMENT NORTHERN REGION							
CLIENT 		TITLE WATER SYSTEM DISTRIBUTION/TREATMENT SCHEMATIC SYSTEM ID.: 5678 PELLY CROSSING FIRE HALL							
DATE	SEPT. 2005	DWN.	JSB	CHKD.	RMM	FILE NO.	1260002.004	DWG.:	FIGURE 5678-B

Northern Region – Pelly Crossing Firehall  
Building # 5678

Photo 102-0205  
102-0206

DISTRIBUTION & TREATMENT SYSTEM DATA

Item	Description	Manufacturer	Model	Part No.	Serial No.	Size
1	Sub Pump	GRUNDFOS	16507-8			4" - 3/4 Ho.
2	Pressure Tank	NOT ACCESSIBLE				
3	WATER STORAGE TANK	NOT ACCESSIBLE				
4	Pump Controls	NOT ACCESSIBLE.				
5						
6						
7						
8						
9						
10						

**TABLE 5678 - 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?
5678	Pelly Crossing Fire Hall	9	Oct-04 to Jun-05	yes	1/9	no	9-Jun-05	no



**Table 5678 - 2: Water Quality Results**

SOURCE:		Building 5678 - Fire Hall			GCDWQ Criteria		
Location/ Resident Address		Pelly Crossing					
Treatment		None					
Disinfection		None					
Source of Water		On-site well					
Purpose of Sampling		Base Line	Base Line	Additional Sampling			
Sample Location					Lower	Upper Limit	
Date Sampled		29-Sep-04	8-Jun-05	23-Aug-05	AO	MAC	AO
<b>Physical Tests (ALS)</b>							
Colour (CU)		9	<5.0				15
Conductivity (uS/cm)			414				
Total Dissolved Solids		222	235				500
Hardness CaCO3		209	189		AO >200 = poor, > 500 unacceptable <sup>A</sup>		
pH		8.11	8.2		6.5		8.5
Turbidity (NTU)		<b>3.1</b>	<b>1.39</b>	<b>4.94</b>		1	5
UV Absorbance				0.018			
% UV Transmittance				96.2			
<b>Dissolved Anions (ALS)</b>							
Alkalinity-Total CaCO3		175	155				
Chloride Cl		1.5	<0.50				250
Fluoride F		0.08	0.098			1.5	
Silicate SiO4							
Sulphate SO4		38.1	54.9				500
Nitrate Nitrogen N		0.5	<0.10			10	
Nitrite Nitrogen N		<0.05	<0.10			1	
Ammonia Nitrogen N							
Total Phosphate PO4							
<b>Total Metals (ALS)</b>							
Aluminum T-Al		<0.005	0.016			0.1	
Antimony T-Sb		<0.0002	<0.00050			0.006	
Arsenic T-As		0.0006	0.00036			0.025	
Barium T-Ba		0.081	0.078			1	
Boron T-B		0.003	<0.10			5	
Cadmium T-Cd		<0.00001	<0.00020			0.005	
Calcium T-Ca			53.6				
Chromium T-Cr		0.001	<0.0020			0.05	
Copper T-Cu		0.011	0.0235			1	
Iron T-Fe		<b>0.3</b>	<b>1.23</b>	<b>1.51</b>			0.3
Lead T-Pb		0.0002	<0.0010			0.01	
Magnesium T-Mg			13.5				
Manganese T-Mn		0.033	0.0353				0.05
Mercury T-Hg			<0.00020			0.001	
Potassium T-K			1.59				
Selenium T-Se			0.0033			0.01	
Sodium T-Na		3.1	3.4				200
Uranium T-U		0.0008	0.00089			0.02	
Vanadium T-V							
Zinc T-Zn		0.004	<0.050				5
<b>Dissolved Metals</b>							
Iron D-Fe				<0.030			0.3
<b>Organic Parameters</b>							
Tannin and Lignin				0.14			
Total Organic Carbon C				1.33			
<b>Field Chemistry (EBA)</b>							
pH				8.17	6.5		8.5
IDS (ppm)				178			500
EC (uS/cm)				362			
Temperature (°C)				8.4			
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)



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## SMALL PUBLIC WATER SYSTEM ASSESSMENT

### PART A: EBA Site Inspection

Inspector: KSI/RMM

Date August 23/2005

WELL ID #	Owner	Location Description
5678	YTG	Pelly Crossing Firehall

#### 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,

Pelly Crossing: Firehall

c. GPS location: DB E 420103 N 6967043 elev. 481m ±10m

d. Is there electric power?  Yes  No

\* 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 firehall

h. Distance from well to building 2.5m

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

j. Distance from well to nearest point of known field: \_\_\_\_\_

k. Well location relative to field:  upslope  downslope  lateral

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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

*significant mouse feces in well enclosure.*

p. Is well site subject to flooding?  Yes  No

q. Is the well site well drained?  Yes  No

*graded away from well head.*

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

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: 14m

Potential Source 2: \_\_\_\_\_; Distance from well to Potential Source 2: \_\_\_\_\_

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

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## 2. Well and Wellhead information:

- a. When was well installed? Year 1988 Month Sept 11
- 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" (152mm) Material:  steel  plastic  concrete
- g. Depth of well: 45'  measured (if possible)  reported  from log
- h. Static water level below ground: 34'  
 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 15 slot
- j. (If bedrock) Does the well have a liner?  yes  No  steel  plastic
- k. If there is a well screen: length 4' slot size(s) 15'  
Location of screen: from 41 to 45' 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 PWF pit enclosure.
- n. If the well head is located in a wooden enclosure,

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- i. Is the well head below grade? describe in detail Yes - 0.92 m - by
- 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 Yes - significant amounts of mouse feces
- 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 + distance to Pelly River. (*  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

### 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 \_\_\_\_\_ Model \_\_\_\_\_  
horsepower \_\_\_\_\_ capacity \_\_\_\_\_ voltage \_\_\_\_\_

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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: \_\_\_\_\_

l. Comments on pump installation: \_\_\_\_\_

\_\_\_\_\_

## **6. Conclusions**

a. Comments on overall installation:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. Recommendations: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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## PART B: EBA Site Inspection

Inspector: BERT ALBISER

Date AUG. 23/05

WELL ID #	Owner	Location Description
5678	YTG	FIRE HALL, PULLY CROSSING

### 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  H<sub>2</sub>S  Other \_\_\_\_\_

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- d. Is there an unpleasant taste?  Yes  No  brackish  Other \_\_\_\_\_
- e. Is there a history of bad bacterial analyses? <sup>?</sup>  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:

Where is it located?

Comments: \_\_\_\_\_

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: \_\_\_\_\_

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## ***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

**8. Conclusions**

a. Comments on overall installation:

THIS INSTALLATION IS NOT ACCEPTABLE. ACCESS TO THE WATER STORAGE TANKS & CONTROLS IS FOR EXPERIENCED CLIMBERS ONLY. THE PRESSURE TANK IS WATERLOGGED, WHICH CAUSES THE WELL PUMP TO RAPID CYCLE.

b. Recommendations:

INSTALL PROPER ACCESS TO THE WATER STORAGE AREA.  
INSTALL WATER TREATMENT AS REQUIRED FOR UV SYSTEM (NSF 55 CERTIFIED)  
INSTALL UV SYSTEM.





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**Enforcement and Emergencies Section**

91782 Alaska Highway, Whitehorse, YT Y1A 5B7

PH: 867.667.3400 FAX: 867.667.7962

**Spill Report Information**

<b>Spill #</b>	9840
<b>Jurisdiction</b>	Yukon
<b>Community</b>	Pelly Crossing
<b>Address</b>	
<b>Highway</b>	
<b>Milepost</b>	
<b>Feature</b>	Pelly Crossing
<b>Location and Cause</b>	Pelly Crossing School - valve opened intentionally on heating fuel tank - tank drained
<b>Latitude</b>	62.8181
<b>Longitude</b>	-136.5665
<b>Incident Date</b>	9/11/1998
<b>Lead Agency</b>	Yukon Government - Renewable Resources
<b>Other Agency</b>	
<b>Company(s)</b>	
<b>Amount</b>	
<b>Units</b>	
<b>Quantity</b>	Unknown
<b>Release Description</b>	
<b>Additional Quantitit</b>	
<b>Concentration</b>	
<b>Concentration Unit</b>	
<b>Phase</b>	Liquid
<b>Major Contaminant</b>	Fumace Oil
<b>2nd Contaminant</b>	
<b>3rd Contaminant</b>	
<b>4th Contaminant</b>	
<b>Outcome</b>	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



## Spill Report Information

<b>Spill #</b>	8621
<b>Jurisdiction</b>	Yukon
<b>Community</b>	Pelly Crossing
<b>Address</b>	
<b>Highway</b>	
<b>Milepost</b>	
<b>Feature</b>	Pelly Crossing
<b>Location and Cause</b>	overturned home heating fuel storage tank - garbage truck backed into supporting stand
<b>Latitude</b>	62.819543
<b>Longitude</b>	-136.569408
<b>Incident Date</b>	12/31/1986 2:00:00 PM
<b>Lead Agency</b>	Environment Canada - Environmental Protection Service
<b>Other Agency</b>	RCMP
<b>Company(s)</b>	Selkirk Indian Band
<b>Amount</b>	1890
<b>Units</b>	Litres
<b>Quantity</b>	Estimate
<b>Release Description</b>	Spilled
<b>Additional Quantitit</b>	
<b>Concentration</b>	
<b>Concentration Unit</b>	
<b>Phase</b>	Liquid
<b>Major Contaminant</b>	Furnace Oil
<b>2nd Contaminant</b>	
<b>3rd Contaminant</b>	
<b>4th Contaminant</b>	
<b>Outcome</b>	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



**Photo 405:** 5678 Pelly Crossing Fire hall. (looking west)



**Photo 402:** 5678 Well enclosure and wellhead.



**Photo 403:** 5678 On site AST on west side of building.



**Photo 406:** 5678 Septic system.