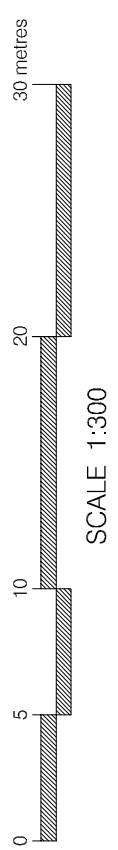


WELL 2575
 N 7102 116
 E 580 298
 DRILLERS REPORT
 NO.: n/a

DAWSON WILDLIFE
 OFFICE
 BLDG. #2575



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.

EBA Engineering Consultants Ltd.

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

CLIENT:
Yukon
 Highways and Public Works
 Property Management Branch

SMALL PUBLIC WATER SYSTEMS ASSESSMENT
 NORTHERN REGION

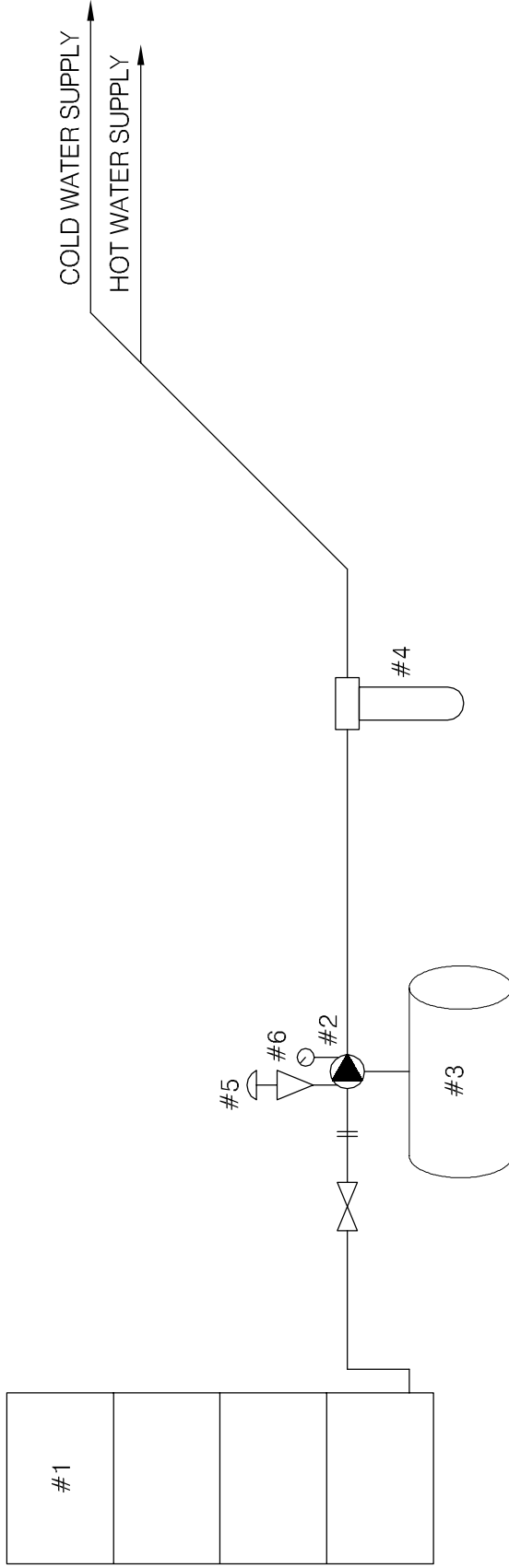
GOVERNMENT OF YUKON
 HIGHWAYS & PUBLIC WORKS

DAWSON WILDLIFE OFFICE
 BUILDING # 2575
 SITE LOCATION DIAGRAM
 WELL ID: 2575



REVISION ISSUE
 0

FIGURE No.
 FIGURE 2575-A

No.	ISSUED FOR CLIENT REVIEW	DESCRIPTION	DATE	APPROVED	REVISION
0					



DRAWING IS BASED UPON SCHEMATIC PROVIDED BY BERT ALBISSER OF AQUA TECH SUPPLIES AND SERVICES LTD.

	<p>PROJECT</p> <p>SMALL PUBLIC WATER SYSTEMS ASSESSMENT NORTHERN REGION</p>
<p>CLIENT</p> 	<p>TITLE</p> <p>WATER SYSTEM DISTRIBUTION/TREATMENT SCHEMATIC SYSTEM ID.: 2575 WILDLIFE OFFICE - DAWSON, YT.</p>
<p>DATE</p> <p>SEPT., 2005</p>	<p>FILE NO.</p> <p>1260002.004</p>
<p>DWN.</p> <p>JSB</p>	<p>CHKD.</p> <p>RMM</p>
<p>DWG.:</p> <p>FIGURE 2575-B</p>	

Northern Region – Dawson City Wildlife Office
Building # 2575

DISTRIBUTION & TREATMENT SYSTEM DATA

Item	Description	Manufacturer	Model	Part No.	Serial No.	Size
1	WATER STORAGE	N/A	FS VERTICAL			48" x 8' 600 GALLON
2	JET PUMP	MONARCH	MJC-50		4601	1/2 HP.
3	PRESSURE TANK	JET-RITE	JR44HS			8.5 GALLON
4	INLINE FILTER	RAINFRESH	10"			3/4" x 10"
5	PRESSURE SWITCH	SOMME D	FSG-2			2HP - 1/4 FT
6	PRESSURE GAUGE	MARSH	0-100 PSI			2" - 1/4" FIT
7						
8						
9						
10						

TABLE 2575 - 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?
2575	Dawson City Wildlife Office	8	Oct-04 to Jun-05	no	0/8	no	9-Jun-05	no



Table 2575 - 2: Water Quality Results

SOURCE:		Building 2575 - Dawson City Wildlife Office		GCDWQ Criteria					
Location/ Resident		Dawson City							
Address									
Treatment		N/A							
Disinfection		N/A							
Source of Water		Water Delivery							
Purpose of Sampling		Base Line	Additional Sampling						
Sample Location									
Date Sampled		8-Jun-05	N/A				Lower	Upper Limit	
Physical Tests (ALS)							AO	MAC	AO
Colour (CU)		<5.0				15			
Conductivity (uS/cm)		297							
Total Dissolved Solids		178				500			
Hardness CaCO3		145		AO >200 = poor, > 500 unacceptable ^A					
pH		7.9		6.5		8.5			
Turbidity (NTU)		0.65			1	5			
UV Absorbance									
% UV Transmittance									
Dissolved Anions (ALS)									
Alkalinity-Total CaCO3		105							
Chloride Cl		2.56				250			
Fluoride F		0.085			1.5				
Silicate SiO4									
Sulphate SO4		53.7				500			
Nitrate Nitrogen N		0.25			10				
Nitrite Nitrogen N		<0.10			3.4				
Ammonia Nitrogen N									
Total Phosphate PO4									
Total Metals (ALS)									
Aluminum T-Al		<0.010			0.1				
Antimony T-Sb		<0.00050			0.006				
Arsenic T-As		0.00013			0.025				
Barium T-Ba		0.079			1				
Boron T-B		<0.10			5				
Cadmium T-Cd		<0.00020			0.005				
Calcium T-Ca		39.7							
Chromium T-Cr		<0.0020			0.05				
Copper T-Cu		0.637			1				
Iron T-Fe		0.047				0.3			
Lead T-Pb		0.0023			0.01				
Magnesium T-Mg		11							
Manganese T-Mn		0.0212				0.05			
Mercury T-Hg		<0.00020			0.001				
Potassium T-K		0.73							
Selenium T-Se		<0.0010			0.01				
Sodium T-Na		2.2				200			
Uranium T-U		0.0007			0.02				
Vanadium T-V									
Zinc T-Zn		<0.050				5			
Field Chemistry (EBA)									
pH			7.88	6.5		8.5			
TDS (ppm)			146			500			
EC (uS/cm)			295						
Temperature (°C)			16.4						
Free Available Chlorine			0.19						

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: Ryan Martin, Luke Lebel

Date August 19, 2005

WELL ID #	Owner	Location Description
2575	YTG	Dawson City wildlife office

1. Well Location and Potential Contaminant Sources

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

Dawson City

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

Carlson Subdivision

c. GPS location: N 7102116 E 580298 elev 344m ± 9m

d. Is there electric power? Yes No

e. Is there outside water access? Yes No
From delivery water supply, not from well

f. Does the well system have:

15 or more service connections to a piped distribution system? If so how many _____

well is abandoned, no longer in use. System is on water delivery

5 or more delivery sites on a trucked distribution system? If so how many _____

g. Nearest building, specify wildlife office

h. Distance from well to building ~3m

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

j. Distance from well to nearest point of known field: septic holding tank at ~15m

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
unlikely

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

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
Unlocked enclosure

Entrance by animals? Yes No
Access possible. No cap. Evidence of mouse droppings and feathers

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

If yes, is it in use abandoned *unlikely*

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; Distance from well to Potential Source 1: ~9m

Potential Source 2: Dredge pond; Distance from well to Potential Source 2: ~65m

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 unknown Month _____
- b. Type: drilled dug sand point other _____
- c. Is there a drillers log for the well: Yes No
- d. Is there a surface seal to 6 m Yes No unknown unlikely
- e. Surface casing: Yes Diameter _____ No
- f. Well casing: Diameter 15cm Material: steel plastic concrete
- g. Depth of well: 9.375m bc ^{could be pump} measured (if possible) reported from log
- h. Static water level below ground: 7.180m bc
 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) _____
Location of screen: from _____ to _____ from log reported
- l. Is there a sump below the screen? Yes No unknown
- m. Is the well head: in pumphouse in pit pitless adaptor in a building
 in a wooden enclosure other, describe _____
- 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 No, ~0.7m above grade
- 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 Mouse droppings and feathers present
- v. Does the well casing have a proper seal cap? Yes No

If no, describe condition None present

3. Water Supplying This Well:

- a. By definition is the water from a surface water source or under the direct influence of surface water?
 Yes No farther investigation required.

If yes is there treatment or disinfection Yes No n/a

Explain (filtration, disinfection etc...) water from delivery is likely chlorinated at source

4. Aquifer Supplying This Well:

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

5. Pump Installation:

- a. Is the well equipped with a pump? yes No
possibly
- 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
home - not hooked up

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:

This system is currently on water delivery. There is an abandoned well on the property that is not properly sealed

b. Recommendations: _____

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PART B: EBA Site Inspection

Inspector: BERT ALBISSEL

Date AUG 19 / 05

WELL ID #	Owner	Location Description
<u>2575</u>	<u>YTG</u>	<u>DAWSON CITY WILDLIFE SHED CARLISLE SUB DIVISION</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 _____

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- 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: FIBRE GLASS SECTIONAL

Where is it located?

Comments: FURNACE 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: _____

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Overall Tank

What are the tank size and dimensions?

4' x 8' HIGH ROUND SECTIONAL

What material is the tank constructed of? FIBRE GLASS

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: CLOSED TANK, NO ACCESS

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:

THE INSTALLATION MEETS ALL REQUIREMENT WITH THE EXCEPTION OF ACCESS TO THE TANK FOR INSPECTION & CLEANING.

b. Recommendations:

INSTITUTE REGULAR SCHEDULED FREE CHLORINE TESTING & REPORTING. ASSURE TRUCK DELIVERY RESIDUAL IS 0.5 PPM FREE CHLORINE. INSTALL ACCESS TO TANK FOR INSPECTION & CLEANING. SOURCE FOR WATER DELIVERY SHOULD BE CITY OF DAWSON WATER SYSTEM.



Spill Report Information

Spill #	9122
Jurisdiction	Yukon
Community	Dawson City
Address	
Highway	
Milepost	
Feature	Dawson City
Location and Cause	Callison Bulk Plant - heavy equip lost control and collided with tanker - pushed it over 1.5m bank - ruptured
Latitude	64.0344444444444
Longitude	-139.364722222222
Incident Date	9/1/1991 2:00:00 PM
Lead Agency	Yukon Government - Public Safety
Other Agency	
Company(s)	Tesoro Canada
Amount	6800
Units	Litres
Quantity	Estimate
Release Description	Spilled
Additional Quantitit	
Concentration	
Concentration Unit	
Phase	Liquid
Major Contaminant	Diesel
2nd Contaminant	
3rd Contaminant	
4th Contaminant	
Outcome	accident not Tesoro's fault - most fuel recovered or pumped off - contaminated soil piled in yard - no immediate threat to environment or public safety



Spill Report Information

Spill #	9228
Jurisdiction	Yukon
Community	Dawson City
Address	
Highway	
Milepost	
Feature	Dawson City
Location and Cause	Callison Subdivision - Klondike Transport property - 500 ga storage tank being removed - tipped over and spilled residual oil
Latitude	64.0344444444444
Longitude	-139.364722222222
Incident Date	7/23/1992
Lead Agency	Environment Canada - Environmental Protection Service
Other Agency	
Company(s)	Petro Canada (McKenzie)
Amount	100
Units	Litres
Quantity	Estimate
Release Description	Spilled
Additional Quantitit	
Concentration	
Concentration Unit	
Phase	Liquid
Major Contaminant	Diesel
2nd Contaminant	
3rd Contaminant	
4th Contaminant	
Outcome	material to be removed to a suitable location for spreading



Spill Report Information

Spill #	9509
Jurisdiction	Yukon
Community	Dawson City
Address	
Highway	
Milepost	
Feature	Dawson City
Location and Cause	Callison Subdivision lot - line from truck pumping off fuel disconnected at camlock
Latitude	64.0344444444444
Longitude	-139.364722222222
Incident Date	4/18/1995 2:30:00 AM
Lead Agency	
Other Agency	
Company(s)	White Pass
Amount	200
Units	Litres
Quantity	Estimate
Release Description	Spilled
Additional Quantitit	
Concentration	
Concentration Unit	
Phase	Liquid
Major Contaminant	Furnace Oil
2nd Contaminant	
3rd Contaminant	
4th Contaminant	
Outcome	soaked up spill - removed contaminated material and burned at dumpsite



Spill Report Information

Spill #	9714
Jurisdiction	Yukon
Community	Dawson City
Address	
Highway	
Milepost	
Feature	Dawson City
Location and Cause	Callison Subdivision - 2nd approach from Whse - 1 block off highway on left - improper fuel storage and overfill of tanker truck
Latitude	64.0370706
Longitude	-139.35275575
Incident Date	4/21/1997
Lead Agency	Yukon Government - Renewable Resources
Other Agency	
Company(s)	North 60 Petroleum
Amount	
Units	
Quantity	Unknown
Release Description	
Additional Quantitit	
Concentration	
Concentration Unit	
Phase	Liquid
Major Contaminant	Hydrocarbons
2nd Contaminant	
3rd Contaminant	
4th Contaminant	
Outcome	Fire Chief in Dawson also reported on overfill of trucks and that there were pools of fuel on ground - no one responding - EC contacted YG-RR - YG-RR to start investigation



Spill Report Information

Spill #	9933
Jurisdiction	Yukon
Community	Dawson City
Address	
Highway	
Milepost	
Feature	Dawson City
Location and Cause	Callison Subdivision - John Van Every's yard - release of bulk storage tank contents
Latitude	64.0347
Longitude	-139.3649
Incident Date	8/15/1999
Lead Agency	Yukon Government - Environmental Programs
Other Agency	Environment Canada - Environmental Protection Service
Company(s)	Northern Cross (Yukon) Ltd.
Amount	8500
Units	Litres
Quantity	Estimate
Release Description	
Additional Quantit	200 L anhydrous ammonia
Concentration	3
Concentration Unit	%
Phase	Liquid
Major Contaminant	Brackish Water
2nd Contaminant	Calcium Chloride
3rd Contaminant	Anhydrous Ammonia
4th Contaminant	
Outcome	contaminant was released by sub-contractor without permission of Northern Cross - hazards not known - 2Km to Klondike River - shallow ground water - YG-EP investigating



Spill Report Information

Spill #	0144
Jurisdiction	Yukon
Community	Dawson City
Address	
Highway	
Milepost	
Feature	Dawson City
Location and Cause	Callison Subdivision - no further information on exact location - leaking truck out of Inuvik
Latitude	64.0347
Longitude	-139.3649
Incident Date	8/26/2001
Lead Agency	Yukon Government - Environmental Programs
Other Agency	
Company(s)	
Amount	50
Units	Gallons (US, liquid)
Quantity	Estimate
Release Description	Leaked
Additional Quantit	
Concentration	
Concentration Unit	
Phase	Liquid
Major Contaminant	Waste Oil
2nd Contaminant	
3rd Contaminant	
4th Contaminant	
Outcome	cleaned-up by Kluane Frieght Lines - overseen by Fire Dept - product in secure barrell to be shipped - no further information on file



Spill Report Information

Spill #	0211
Jurisdiction	Yukon
Community	Dawson City
Address	
Highway	
Milepost	
Feature	Dawson City
Location and Cause	Callison Subdivision - parked tanker trailer (Earl MacKenzie's) - vandalism - no further details on exact location
Latitude	64.03653782
Longitude	-139.34772962
Incident Date	5/5/2002 8:44:00 PM
Lead Agency	Yukon Government - Renewable Resources
Other Agency	
Company(s)	Earl MacKenzie
Amount	2000
Units	Litres
Quantity	Estimate
Release Description	Spilled
Additional Quantitit	
Concentration	
Concentration Unit	
Phase	Liquid
Major Contaminant	Diesel
2nd Contaminant	
3rd Contaminant	
4th Contaminant	
Outcome	fuel had not yet entered surface water - ran into ditch and through to culverts - YG-RR CO Tory Hunter responding - no further information on file



Spill Report Information

Spill #	0335
Jurisdiction	Yukon
Community	Dawson City
Address	
Highway	
Milepost	
Feature	Dawson City
Location and Cause	Callison Subdivision - Yukon Energy Substation - mechanical failure
Latitude	64.03767917
Longitude	-139.35259699
Incident Date	10/21/2003 2:30:00 PM
Lead Agency	Municipality - identified in Community
Other Agency	
Company(s)	Yukon Energy
Amount	100
Units	Litres
Quantity	Estimate
Release Description	Spilled
Additional Quantitit	
Concentration	
Concentration Unit	
Phase	Liquid
Major Contaminant	Hydraulic Oil
2nd Contaminant	
3rd Contaminant	
4th Contaminant	
Outcome	less than 100 L but more than 50 L - spill contained inside building - floor surface metal - absorbent pads used to clean up spill - no further information on file



Photo 077: 2575 Environmental office facing south.



Photo 075: 2575 Wellhead enclosure.



Photo 223: 2575 Jet pump, pump controls and inline filter.



Photo 225: 2575 Water storage tank.