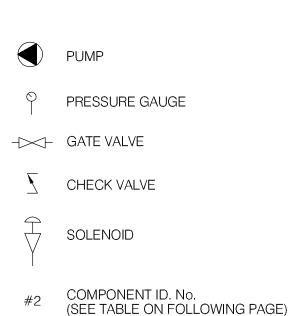
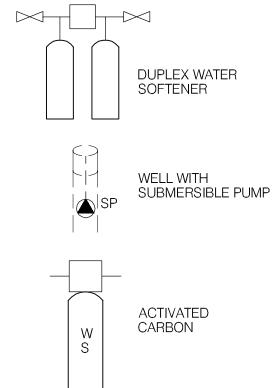


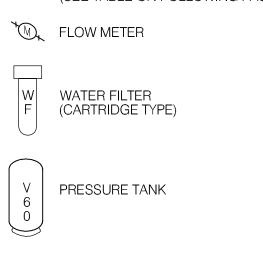
LEGEND





CHLORINE RESERVOIR AND

INJECTION PUMP



EBA Engineering Consultants Ltd.	PROJECT SMALL PUBLIC WATER SYSTEMS ASSESSMENT WESTERN REGION					
CLIENT Highways and Public Works Property Management Branch	SCHEMATIC SYSTEM LEGEND					
DATE APRIL 2006 DWN. JSB CHKD. RMM	FILE NO. 1260002 DRWG. LEGEND					

Western Region – Destruction Bay Firehall Building # 3172

DISTRIBUTION & TREATMENT SYSTEM DATA

Model
SKENCIO
50827
FSG-2
2"/0-100/1E



TABLE 3172-1: SUMMARY OF BACTERIOLOGICAL RESULTS

		Number of	Time Period	Any Positive	Fraction of	Time Period Any Positive Fraction of Any positive	Most Recent	Is Most
		Sampling	over which	over which Total Coliform	Positive	E.Coli results?	E.Coli results? Sampling Event Recent Result	Recent Result
		Events	Sampling	Results?	Total	(yes or no)	Available for	Positive?
			was Done	(yes or no)	Coliform		EBA Review	
					Results vs.			•
					Total			
					Sampling			
					Events			
Building #	Building # Building Name							
	Destruction Bay Fire	c	Sept-04 to	300	1/0	ç	16- lin-05	ç
3172 Hall	Hall	S)	Jun-05	yes	6/1	2	20100-01	2



Table 3172-2: Water Quality Results

I able	Quality	Results						
SOURCE:		3172 - Des Bay Fire Ha						
Location/ Resident	-	estruction B						
Address								
Treatment		None		000000				
Disinfection		None		G	CDWQ Crite	ria		
Source of Water		On-site wel						
			Additional					
Purpose of Sampling	Base Line	Base Line	Analytical					
Sample Location			,					
Date Sampled	19-Oct-05	16-Jun-05	28-Jul-05	Lower	Upper	Limit		
Physical Tests (ALS)				AO	MAC	AO		
Colour (CU)	>60	<5	<5.0			15		
Conductivity (uS/cm)		672	·					
Total Dissolved Solids	389	413				500		
Hardness CaCO3	308	312			oor, > 500 u			
рН	8.42	8.43		6.5		8.5		
Turbidity (NTU)	<u>53.5</u>	<u>11.0</u>	3.04	 	1	5		
UV Absorbance	L		0.077	ļ				
% UV Transmittance	ļ		83.8					
				ļ				
Dissolved Anions (ALS)	<u> </u>	25:						
Alkalinity-Total CaCO3	245	231	-	ļ		250		
Chloride Cl	6.1	1.04	-		1	250		
Fluoride F	0.31	0.327	<u> </u>	 	1.5			
Silicate SiO4	100	150				500		
Sulphate SO4	109 <0.01	150 <0.10			10	300		
Nitrate Nitrogen N Nitrite Nitrogen N	<0.01	<0.10	-		3.2			
Ammonia Nitrogen N	<0.003	~0.10	-	l	J.2			
Total Phosphate PO4								
rotar rospiate 101					<u> </u>			
Total Metals (ALS)					 			
Aluminum T-Al	< 0.005	< 0.010	-					
Antimony T-Sb	< 0.0002	<0.00050	-		0.006			
Arsenic T-As	0.0007	0.00081	-		0.025			
Barium T-Ba	0.022	< 0.020	-		1			
Boron T-B	1.48	1.14	-		5			
Cadmium T-Cd	< 0.00001	<0.00020	-		0.005			
Calcium T-Ca	<u> </u>	38.5	-		<u> </u>			
Chromium T-Cr	0.0017	<0.0020	-	ļ	0.05			
Copper T-Cu	<0.001	<0.0010	-	ļ	1			
Iron T-Fe	0.09	0.291	-	ļ		0.3		
Lead T-Pb	0.0007	<0.0010	<u>-</u>	 	0.01			
Magnesium T-Mg	0.000	52.4	-		 	0.05		
Manganese T-Mn	0.029	0.0479	-	ļ	0.001	0.05		
Mercury T-Hg	ł	<0.00020 5.37	-	 	0.001			
Potassium T-K Selenium T-Se		0.0026	-	 	0.01			
Sodium T-Na	31.3	30.9	-	 	0.01	200		
Uranium T-U	0.0008	0.00072	-	 	0.02			
Vanadium T-V	0.0000	0.000/2	-	 	0.02			
Zinc T-Zn	0.008	<0.050	-			5		
	1				1			
Organic Parameters	Ī .]					
Tannin and Lignin	<u> </u>		0.23					
Total Organic Carbon C			7.02					
Field Chemistry (EBA)					ļ			
ρН	.	ļ	8.60	6.5	<u> </u>	8.5		
TDS (ppm)	_	ļ	203	ļ		500		
EC (uS/cm)		ļ	620		ļ	ļ		
Temperature (°C)	 	 	13.9	 	_	ļ		
Free Available Chlorine	<u>. </u>	ļ	<u> </u>	<u></u>	<u> </u>	<u> </u>		

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)



• :

SMALL PUBLIC WATER SYSTEM ASSESSMENT

RTA: EBA Site Inspect		
pector: Ryan Marki	n, Luke Libel	Date July 28, 2005
WELL ID#	Owner	Location Description
3172	YTG	Destruction Bay FireHall
Well Location and Potent	ial Contaminant Sourc	ί
General location of well: Destruction Bay		sion, etc.)
		ber, name of owner and/, legal description,
GPS location: N 679	2050 E6179	56
Is there electric power?	Yes [□No
Is there outside water acc	ess? 🗆 Yes 🗵	No No
Does the well system have	⁄e:	•
15 or more service connecti Fire hall only	ons to a piped distributio	n system? If so how many
5 or more delivery sites or	a trucked distribution	system? If so how many
Nearest building, spec	cify fire Hall	· / ^
Distance from well to bu	ilding ~ 5 m	
If there is an effluent dis	•	n known? Yes No eld: Community Septic >60m
. Well location relative to	field: upslope	downslope lateral

EBA Engineering Consultants Ltd. Creating and Delivering Better Solutions
1. 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 \(\subseteq \text{No} \) Scrvice lines and main (likely) \(\frac{30 m}{30 m} \)
m. Is the well located within 300 m from a sewage lagoon or pit? Yes No value of No valu
n. Is the well located within 120 m from a solid waste site or dump, cemetery? Yes No waste site.
 Is the infrastructure protecting the wellhead, pumphouse, storage tank and/or water treatment plant designed and secured to prevent:
Unauthorized access by humans? \(\sqrt{Yes} \sqrt{No} \) Enclosure fastened shut with halls Access possible, Evidence of insects
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
Is the location known?
s. Are there any other known contaminant sources on the property?
Yes Do Describe
If yes, specify the source: \square dump \square sewage lagoon \square cemetery \square other
Potential Source 1: AST ; Distance from well to Potential Source 1: ~2 m Potential Source 2: Creek ; Distance from well to Potential Source 2: > 30 m Potential Source 3: AST Z ; Distance from well to Potential Source 3: 37 m Potential Source 4: Samp Cars ; Distance from well to Potential Source 4: ~ 20 m
t. Are there other wells on this property? Yes No
How many?

School vell @ ~ 26m

	Vell and Wellhead information:
a.	When was well installed? Year 1987 Month September
b.	Type: 🖾 drilled 🗆 dug 🗆 sand point 🗆 other
c.	Is there a drillers log for the well: Yes \text{No} No
d.	Is there a surface seal to 6 m ☐ Yes ☒ No ☐ unknown ☐ unlikely
e.	Surface casing:
f.	Well casing: Diameter 15 cm Material: □ steel □ plastic □ concrete
g. h.	Depth of well: 103 ft ☐ measured (if possible) ☐ reported ☑ from log Static water level below ground: 25 ft ☐ 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
	with slotted pipe in this own other
j.	(If bedrock) Does the well have a liner?
k.	If there is a well screen: length 3.5 ft slot size(s) 30 slot Location of screen: from 99.5 ft to 103 ft from log reported
1.	Is there a sump below the screen? \(\sum \) Yes \(\sum \) No \(\omega_N \) \(\lambda_N \)
m.	Is the well head: \square in pumphouse $\bigcap_{\rho \in \mathcal{P}}$ in pit \square pitless adaptor \square in a building
	in a wooden enclosure other, describe
n.	If the well head is located in a wooden enclosure,

3/11

	i. Is the well head below grade? describe in detail ~ 0.7 m below 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 Access possible								
	v. Does the well casing have a proper seal cap? 🔀 Yes 🗆 No								
	If no, describe condition Split gas ket cap								
<u>3. \</u>	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 \(\sum \) Yes \(\sum \) No								
	Explain (filtration, disinfection etc)								
4.	Aquifer Supplying This Well:								
a.	The aquifer is: ☐ bedrock ☒ granular sediment ☐ unknown								
	The aquifer is: bedrock granular sediment unknown Does water level and/or well capacity show seasonal fluctuation? Yes No								
b.	Does water level and/or well capacity show seasonal fluctuation? The Yes Does No Childhely								
b. <u>5.</u> a.	Does water level and/or well capacity show seasonal fluctuation? Yes No Childely Pump Installation:								
b. <u>5.</u> a.	Does water level and/or well capacity show seasonal fluctuation? Yes No Childely Pump Installation: Is the well equipped with a pump? yes No								
b. <u>5.</u> a.	Does water level and/or well capacity show seasonal fluctuation? Yes No Childely Pump Installation: Is the well equipped with a pump? yes No Type of pump: hand electric submersible jet								

	ting and Delivering Better Solutions
d.	Date installed: By:
	For submersible pump, depth of setting below surface
f.	Drop pipe for submersible pump: \square steel \bowtie plastic \bowtie ke by
g .	Pump delivers water to: Depressure tank elevated tank other
1.	Are there automatic pump controls: X Yes No
	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? X Yes \text{No} \text{No}
	If yes, describe: Insulation around piping - likely also heattrace
1.	Comments on pump installation:
6. C	Conclusions
	Comments on overall installation:
	The water has a very pungent sulphur smell.
b.R	ecommendations:
,	

	BA Engineering ating and Delivering Better S	-	Ltd.
	RTB: EBA Site Inspecti pector: BERT ALG		Date July 28/05
1115	pector. DERI ME	5135E 82	Date 1429 23/03
	WELL ID #	Owner	Location Description
	3172	YTG	D'BAY FIRE HALL.
6.	Water Treatment		•
a.	Is well water treated?	Yes No; Type o	f treatment:
	☐ chlorination ☐ in	on and or manganese rem	oval
b.			stem treated with chlorine or another treatment that is ion throughout the system?
	☐ Yes ☐ No	If so how	
c.	If treated with chlorine, is	s the free residual chlorine	concentration less than 0.2 mg/L
	☐ Yes ☐ No _	readin	g.
	Tested at		(location)
d.	Is testing for chlorine resid	dual concentration done a	the tap (eg. Kitchen faucet) or from representative
	points in a piped distributi	on system, including a po	int from tap at the end line
	☐ Yes ☑ No	If yes how oft	en?
e.	If the drinking water is b	eing transported by water	delivery truck does it have a minimum chlorine free
	residual of 0.4 mg/L a	t the time of fill. Yes	□ No
7.	Water Quality (observa		
a.	Does the water stain plur	mbing? Yes No No	slight severe
		brown 🗆 red	
b.	Does the water contain s	ediment? 🗆 Yes 🖼	No 🗆 occasional 🗆 constant
c.	Is there an unpleasant od	our? Yes	No Doccasional Doconstant No DH ₂ S DOther
		6/1	1

EBA Engineering Consultants Ltd. Creating and Delivering Better Solutions Is there an unpleasant taste? The DNo Dbrackish D Other đ. Is there a history of bad bacterial analyses? ☐ Yes e. Is there a chemical analysis? Yes □ No adequate incomplete f. Is there analysis of trihalomethanes (THMs) where the water source is a surface water supply or a well g. under the direct influence of surface water? \(\sigma\) Yes Is the drinking water tested daily with an accurate reading chlorine test kit capable of reading in the h. range 0 to 3.5 mg/L of free chlorine residual in increments of 0.1mg/L? Yes No unknown If yes is the test performed in accordance with manufactures directions? \(\subseteq \) Yes \(\subseteq \) No \(\subseteq \) unknown i. i. Is a record of the date, time name of person performing the test and results of the drinking water sample No No TANK AND PIPING DETAILS Tank Room Is there a water tank? Yes No Details: Fressure TANK. Where is it located? SouthenDD OF FIREHKU. 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: ____

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.	Co	n	cl	us	i	0	n	S
		_		_	•	_	_	-

a. Comments on overall installation:
THIS INSIDE INSTAURTION IS OF GOOD QUALITY
WORKMANSOND & MATERIAL.
HEAT TAPE 15' OLD DOES NOT MUST COOK
b. Recommendations:
INSTAUTRENT AS REDUIRED FOR INSTAUATIO
OF PROPORTIONAL CHLORINATOR, SHOCK
CHLORINATE COMPLETE SUSTEM AND PLIT CHLORINE
INJECTION Pump ONLINE: INSTITUTE REGULAR
ROSIDMA FROZ CHORINE TESTING
INSTITUTE BI-ANNUAL WELL MAINTENANCE
PROGRAM,



Field Report 107071011

Started 5. 20 ... 1985

Completed.0.c.t.......1985

PH. 633-3070 TELEX 036-8496 P.O. BOX 4391

	ITEH	ORSE, Y	YUKON	1.					
		DRESS			DESCRIPTION OF WORK		LOCATION OF WORK		
MUNICIPAL ENGINEERING			ENG	1Hmming	W/W	Fire			
	· · · · · · · · · · · · · · · · · · ·					Destr	veti	on li	304
					89-1A-36				
	ATION		17704		DESCRIPTION OF WORK	217	TI		1101100
FROM	TO	FURT	ATION	MOVE		DATE	FROM	TO	HOURS
					e on set up	sept.30	2.30	4:00	2.5
0	フ	5/	1+	77700	e va 307 0 70		4:00		
7	72	Si	<i>}</i>	62.	Clay				
72	98	TI							
98		G		Sand	some silt				
					screen Develop	∞t./	8:00	1	
		ļ		MO	ve off.	<u> </u>	2:30	3:00	0.5
· · · · · · · · · · · · · · · · ·		<u> </u>					·		
	 	-							
								 	
			-						
				<u></u>				<u> </u>	
									ļ
	<u> </u>	<u></u>					<u> </u>	<u> </u>	
Size				Remarks	:				
	type	3126	Type	, ,	"odex shoe (s	. `			
6 Feet	Inch	Feet	Inch	1-6	1 L	<u>ع)</u>			
		1660	THOI	30	slot				
99	6		 	7,	bit Pin				
	ļ		<u> </u>	8	risex K Pac	Ker			· · · · · · · · · · · · · · · · · · ·
	 	ļ	 	30	6Pm.				_
	├	 	 						
·	1-		 	Static	Leve1	Total Rig	Time		hrs.
				Ground		Total Sta			hrs.
	1			Top Of		Drilling			sacks
			1		SIGNATURES		######################################	···· <u> </u>	
MID	NIGHT	SUN			CLIEN	т	• • • • • • • •		••
					73.9				



Spill Report Information

Spill #	0334		
Jurisdiction	Yukon		
Community	Destruction Bay		
Address			
Highway			
Milepost			
Feature	Destruction Bay		¬ ·
Location and Cause	vent leak		
Latitude	61.25274646		
Longitude	-138.80244846		
Incident Date	9/26/2003 12:00:00 PM		
Lead Agency	Yukon Government - Environmen	ital Programs	
Other Agency			-
Company(s)	Yukon Electrical Company Ltd		:
Amount	500		
Units	Litres		
Quantity	Estimate		•
Release Description	Spilled		
Additional Quanitit			
Concentration Concentration Visit			
Concentration Unit	Liquid		
Phase			
Major Contaminan	Ulesel		
2nd Contaminant			
3rd Contaminant			
4th Contaminant			
Outcome	cleaned-up but soil had not been	n removed at time	e of report - no further



Spill Report Information

Spill #	9303
Jurisdiction	Yukon
Community	Destruction Bay
Address	
Highway	
Milepost	
Feature	Destruction Bay
Location and Cause	untreated sewage spilled due to mechanical failure - rubber coupling separated on the force main pipe elbow
Latitude	61.252546
Longitude	-138.800598
Incident Date	2/5/1993 2:30:00 PM
Lead Agency	Department of Indian Affairs and Northern Development
Other Agency	Yukon Government - Transportation
Company(s)	Community of Destruction Bay
Amount	37,800
Units	Litres
Quantity	Estimate
Release Description	Spilled
Additional Quanitit	
Concentration	
Concentration Unit	-
Phase	Liquid
Major Contaminant	Raw Sewage
2nd Contaminant	
3rd Contaminant	
4th Contaminant	
Outcome	effluent flowed over natural terrain and collected in a pond beside Kluane Lake - some collected, most frozed - to be excavated to



Spill Report Information

Spill #	9304
Jurisdiction	Yukon
Community	Destruction Bay
Address	
Highway	
Milepost	
Feature	Destruction Bay
Location and Cause	untreated sewage spilled due to mechanical failure - coupling/pipe separation again
Latitude	61.252546
Longitude	-138.800598
Incident Date	3/29/1993
Lead Agency	Department of Indian Affairs and Northern Development
Other Agency	Yukon Government - Transportation
Company(s)	Community of Destruction Bay
Amount	11340
Units	Litres
Quantity	Estimate
Release Description	Spilled
Additional Quanitit	
Concentration	
Concentration Unit	
Phase	Liquid
Major Contaminan	t Raw Sewage
2nd Contaminant	
3rd Contaminant	
3rd Contaminant 4th Contaminant	



Enforcement and Emergencies Section 91782 Alaska Highway, Whitehorse, YT Y1A 5B7 PH: 867.667.3400 FAX: 867.667.7962

Spill Report Information

Spill #	9515
Jurisdiction	Yukon
Community	Destruction Bay
Address	
Highway	
Milepost	
Feature	Destruction Bay
Location and Cause	pipeline sleeve broke 10m from final discharge - unknown cause for breakage
Latitude	61.248055555556
Longitude	-138.793888888889
Incident Date	5/12/1995
Lead Agency	Department of Indian Affairs and Northern Development
Other Agency	
Company(s)	YTG
Amount	180
Units	Litres
Quantity	Estimate
Release Description	pilled
Additional Quaniti	
Concentration	
Concentration Unit	1
Phase	Liquid
Major Contaminan	Raw Sewage
2nd Contaminant	
3rd Contaminant	
4th Contaminant	
Outcome	spill occurred sometime at the end of April 1995 - not reported to spill line - pipeline repaired - improvements to system to be made byt YTG



Spill Report Information

Spill #	9634
Jurisdiction	Yukon
Community	Destruction Bay
Address	
Highway	
Milepost	
Feature	Destruction Bay
Location and Cause	break in main sewer line
Latitude	61.248055555556
Longitude	-138.793888888889
Incident Date	6/12/1996
Lead Agency	Department of Indian Affairs and Northern Development
Other Agency	
Company(s)	YTG
Amount	
Units	
Quantity	Unknown
Release Description	
Additional Quanitit	
Concentration	
Concentration Unit	
Phase	Liquid
Major Contaminant	Raw Sewage
2nd Contaminant	
3rd Contaminant	
4th Contaminant	
Outcome	pump activated 3x per day - approx 500 ga each time but sewage doesn't reach lagoon - DIAND inspected - to be repaired - no risk to
	environment



Enforcement and Emergencies Section 91782 Alaska Highway, Whitehorse, YT Y1A 5B7 PH: 867.667.3400 FAX: 867.667.7962

Spill Report Information

Spill #	9649
Jurisdiction	Yukon
Community	Destruction Bay
Address	
Highway	
Milepost	
Feature	Destruction Bay
Location and Cause	leaking sewer line
Latitude	61.248055555556
Longitude	-138.793888888889
Incident Date	8/7/1996
Lead Agency	Department of Indian Affairs and Northern Development
Other Agency	
Company(s)	YTG
Amount	50
Units	Gallons (US, liquid)
Quantity	Estimate
Release Description	Leaked
Additional Quanitit	rate of spill reported at 1L/s
Concentration	
Concentration Unit	
Phase	Liquid
Major Contaminan	Raw Sewage
2nd Contaminant	
3rd Contaminant	
4th Contaminant	
Outcome	leak stopped 8/9/96 - line repaired by patching - Tony will take up with YTG on way back from site - no further information on file



Enforcement and Emergencies Section 91782 Alaska Highway, Whitehorse, YT Y1A 5B7 PH: 867.667.3400 FAX: 867.667.7962

Spill Report Information

Spill #	9672
Jurisdiction	Yukon
Community	Destruction Bay
Address	
Highway	
Milepost	
Feature	Destruction Bay
Location and Cause	leaking utilidor - similar to Spill No. 9649
Latitude	61.248055555556
Longitude	-138.793888888889
Incident Date	9/24/1996 2:30:00 PM
Lead Agency	Department of Indian Affairs and Northern Development
Other Agency	
Company(s)	YTG
Amount	
Units	
Quantity	Unknown
Release Description	Leaked
Additional Quanitii	
Concentration	
Concentration Unit	
Phase	Liquid
Major Contaminan	Raw Sewage
2nd Contaminant	
3rd Contaminant	
4th Contaminant	
Outcome	eduction truck needed to pump up before it enters creek - no further information on file



Photo 0610: 3172 Destruction Bay Fire Hall



Photo 0612: 3172 Wellhead in pit



Photo 0611: 3172 Above ground fuel storage tank (left), wellhead enclosure (right)



Photo 0613: 3172 Junk cars (centre), fire hall (right)







Photo 0122: 3172 Elevated water storage tank

Photo 0119: 3172 Pressure tank



EBA File: 1260002.003

