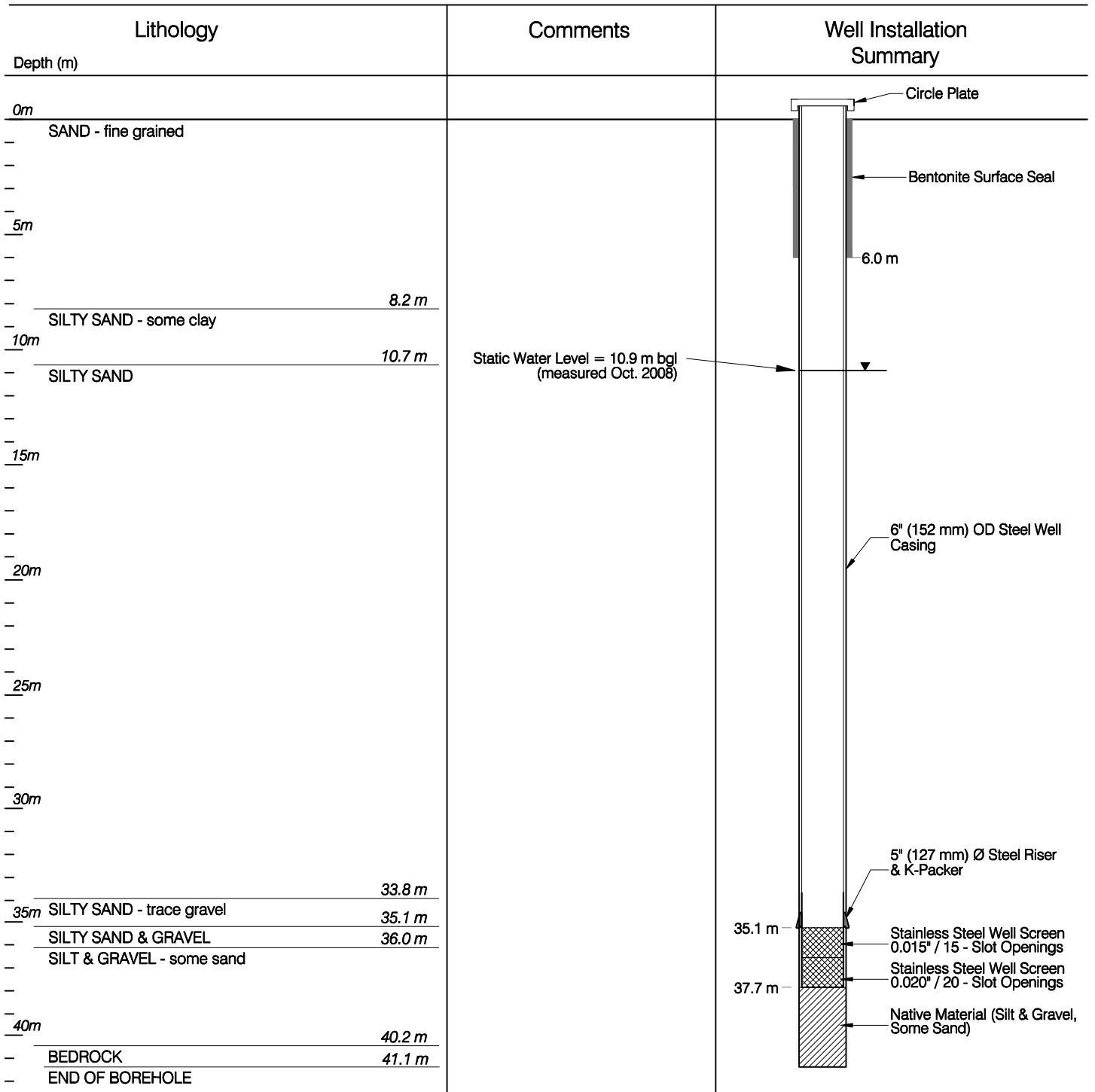


HYDROGEOLOGIC LOG

PURPOSE OF HOLE: Water Supply Well
 DRILLING METHOD: Air Rotary
 DRILLING DATE: 2008/10/09
 SCREEN INSTALLED: 35.1 - 37.7 m
 CONTRACTOR: Double D Drilling Ltd.

BOREHOLE NO. WELL 1439

CASING STICK UP: 1.0 m above grd.
 DEPTH TO STATIC: 10.9 m bgs
 DEPTH TO SCREEN (m): 35.1 m bgs



C:\Whitehorse\Data\0201\Drawings\Whitehorse\W231\W23101144 Golden Horn Fire Hall\W23101144 Figure 3.dwg [WELL GHFH-2] February 05, 2009 - 4:21 pm kbaczynk

CLIENT



**GOLDEN HORN FIRE HALL - WELL COMPLETION
 GOLDEN HORN, YUKON**

WELL LOG FOR WELL 1439

**EBA Engineering
 Consultants Ltd.**



PROJECT NO. W23101144	DWN KJT	CKD SK	REV 0
OFFICE EBA-WHSE	DATE January 2009		

Figure 3

WATER WELL DRILLERS FORM

Well ID:
To be assigned by Dept. Of Environment

INSTRUCTIONS FOR COMPLETING THE FORM

1. Additional information is provided at the bottom of this form on page 2.
2. Question can be directed to Water Resources at 867 667-3171.
3. All well construction measurements shall be reported to 0.1 m or 0.3 ft.
4. Please print clearly in blue or black ink.
5. Completion and submission of this form is the responsibility of the drilling contractor.
6. Please specify metric or imperial units for all measurements.

WELL LOCATION AND OWNER'S INFORMATION

A1 Well Name: KEVIN KEAN Optional (i.e. City Well No. 2)
FIREHALL

A2 Drilled For: First Name: KEVIN Last Name: SUMNER Company / Department / Organization: GOVERNMENT OF YUKON

A3 Street Address of Well Location:

A4 Town / Village / Area / Lot #: GOLDEN HORN FIREHALL

A5 UTM Coordinates (using handheld GPS): NAD 8 3 Zone 1

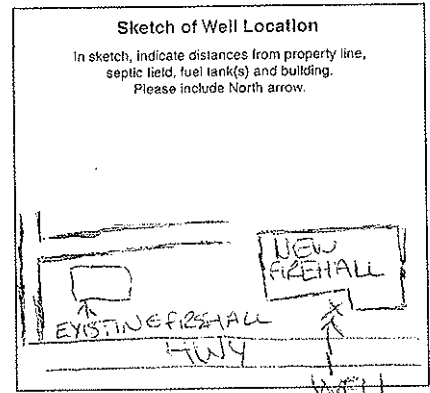
095061814 671181015
Easting Northing

A6 Elevation of Top of Casing: 73 m / ft ASL

A7 Accuracy of GPS: 26 +/- m / ft

A8 Purpose of Wells

- Domestic Test Well Irrigation Environmental (Quality)
 Commercial Municipal Observation - Water Level Other (please identify use)
 Industrial Agricultural Public/Recreational FIREHALL



LOG OF OVERBURDEN AND BEDROCK MATERIALS (All depths are below ground surface, circle appropriate units, use descriptors provided)

EXAMPLE ONLY		(brown, grey, green, black, reddish, beige, olive, yellowish)	CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS, BEDROCK	"trace" <10% (i.e. SILT trace gravel) "some" 10-20% (i.e. SAND some gravel) "silty / sandy / gravelly" 20-30% (i.e. silty SAND) "and sand" or "and gravel" 35-50%	MOISTURE: dry / moist / saturated (wet) HARDNESS: soft / hard / very hard	
		brown	SAND	trace gravel some silt	soft and saturated	
Depth (m / ft)	B2 From	B3 To	B4 General Colour	B5 Most Common Material	B6 Secondary Materials	B7 General Description
	0	27	BRN	FINE SAND		
	27	35	BRN/GY	SILTY SAND	SOME CLAY	
	35	111	GY	SILTY SAND		W/B @ 35
	111	115	GY	SILTY SAND	TRACE GRAVEL	VERY STICKY
	115	124	BRN/GY	FINE GRAVEL	TRACE COARSE GRAVEL	
					SOME FINE SAND	SILT, VERY DENSE MATERIAL
	124	132	BRN/GY	FINE-MED GRAVEL	CUT WATER	OFF @ 124 FT
	132	135	GRN	BEDROCK	GOOD FRACTURE	@ 134 BUT NO
					WATER INCREASE	

B8 Permafrost Encountered: NO YES If yes, indicated depth (m / ft): from to

WELL CONSTRUCTION (Continues on Page 2)

Date Well Completed: 20081906
Y Y Y Y M M D D

Example: 2005 01 31

C1 Drilling Method: Air Rotary (Conventional) Dug Other (please specify)
 Reverse Air Rotary Cable Tool
 Mud Rotary Auger (Hollow / Solid Stem)

C2 Well Type: In what geological material is the water producing zone located?
 OVERBURDEN BEDROCK

Casing (depth below ground surface, please circle appropriate units)

C3 Outside Diameter: 6 (cm / in)
 Steel Plastic Other
 C4 Casing Material
 C5 Casing Wall Thickness: 2.50 (cm / in)
 C6 Casing Depth to: 116.4 (m / ft)

C7 Other Comments Regarding Casing:

Surface / Environmental Seal (depth below ground surface, please circle appropriate units)

C8 Seal Material Type: 3/8" CEMENT (i.e. Bentonite)
 C9 Diameter of Seal: 4 (cm)
 C10 Seal Depth from: 19.5 (m)
 C11 Seal Depth to: 19.5 (m)
 C12 Volume Placed: 10 (m³)

Gravel Pack (depth below ground surface, please circle appropriate units)

C13 Gravel Pack: NO If yes, indicated depth (m / ft):
 YES from: to: Indicate diameter of material: (mm / inches) Material type: (i.e. silica)

Well Screen Information (depth below ground surface, please circle appropriate units)

C14 Outside Diameter: 5 (cm)
 C15 Screen Material: Stainless Steel Steel Plastic N/A Other:
 C16 Screen Type: Continuous Wire Wrap Louver Screen Perforated Slotted Open Hole
 C17 Depth from: 19.5 (m / ft)
 C18 Depth to: 19.5 (m / ft)
 Slot Size / Perforation Dia: 0.05 Thou. / mm / inches
 Screen 1: 19.5 (m / ft) 19.5 (m / ft) 0.05 Thou. / mm / inches
 Screen 2: (m / ft) (m / ft) Thou. / mm / inches
 Screen 3: (m / ft) (m / ft) Thou. / mm / inches
 C19 Screen Comments: PACKER RISER = 2 FT 0 IN. OVERALL LENGTH 10 FT 8 IN.

WELL DEVELOPMENT AND STATUS

D1 Well Developed by: Surge Block Water Jetting Air Jetting / Air Lifting Bailing Pumping Other:
 D2 Well Head Completion: Well House Pileless Adaptor WELD PLATE (m / ft) Well Pit (NOT PERMITTED) None (well not completed)
 D3 Well Head Stick-up (above ground surface): (ft) (Use negative if below grade)
 D4 Static Water Level (below top of casing): (m / ft) (Use negative if below grade)
 D5 Well Yield Estimate: 2 (Lps / gpm)
 D6 Final Well Status: Water Supply (in use) Stand by (Back-up) Observation Not in use Deepened Other: Abandoned (If well was abandoned, please give reason:) Dry Poor Quality Insufficient Yield Artesian conditions
 D7 Well Abandonment Status: Was the well properly decommissioned with bentonite grout? YES NO If YES, Indicate Date:
 D8 Method Used to Estimate Well Yield: Air Lifting Bailing Pumping Test (If test conducted, complete Pumping Test Record)

PUMPING TEST RECORD AND GROUNDWATER QUALITY

(All depths below ground, circle appropriate units)

E1 Pumping Test Information

Pumping Test Start Date: 20081008
 Static Water Level (SWL): 10.9 (m / ft)
 Pump Intake Set at: 35.5 (m / ft)
 Duration of pumping: 24 hrs min
 Final Water Level (FWL) at end of Pumping Test: 27.08 (m / ft)

RECOMMENDATIONS

Recomm. Pump Depth: 32 (m / ft)
 Recomm. Pumping Rate: 0.08 (Lps / gpm)
 If flowing, provide rate: N/A (Lps / gpm)

F1 Well Water Level Drawdown/Recovery DATA

Drawdown		Recovery	
Time (min)	Water Level (m / ft)	Time (min)	Water Level (m / ft)
0 (SWL)	10.9	0 (FWL)	27.08
1	11.28	1	26.77
2	11.45	2	26.45
3	11.61	3	26.15
4	11.76	4	25.86
5	11.90	5	25.57
10	12.49	10	24.21
15	12.96	15	23.00
20	13.36	20	21.93
25	13.76	25	20.97
30	13.99	30	20.10
40	14.44	40	18.61
50	14.80	50	17.38
60	15.26	60	16.37

G1 GROUNDWATER QUALITY

Field Data
 Date Measurements Taken: 20081009
 Electrical Conductivity: 581 uS
 pH: 7.40
 Temperature: 5.1 °C

Turbidity/Sand Content

Clear
 Slightly turbid/cloudy
 Moderately turbid/cloudy
 Turbid/cloudy
 Trace sand present
 No sand present

Groundwater Type

Salty
 Sulphur / Egg Odour
 Organic Taste / Odour
 Metallic Taste
 Other:

Well Disinfection

Was the well disinfected upon completion of the pump installation? YES NO

Briefly describe method of well disinfection.

100% bleach solution for 24 hrs

Bacteria Testing

Was a sample taken? YES NO If yes, indicate the name of the laboratory.
 Date Sample Taken: 20081009 EHS White

Chemical Analysis of Water

Was a sample taken? YES NO If yes, indicate the name of the laboratory.
 Date Sample Taken: 20081009 Bodycote

WELL CONTRACTOR

H1 Name of Contractor / Drilling Company: DOBBS DRILLING LTD
 H2 Name of Driller(s): COB STAVULCE
 H3 Address of Driller: WID # 06032-802
 Signature of Primary Driller: [Signature]
 Date Submitted to Dept. Of Environment:

CONSULTANT (If applicable)

I1 Company Name: EBA Engineering Consultants
 I2 Company Address: Calcutt Business Centre Unit
 I3 Report Reference: W23101144
 I4 Report Date: 210019011219

ADDITIONAL INSTRUCTIONS

Upon completing this form, please mail or fax it to:
 Water Resources Section (V-310), Department of Environment, Government of Yukon Box 2703, Whitehorse, Yukon, Canada Y1A 2C6
 Please feel free to contact us at:
 Phone: (867) 667-3171, Toll free (in Yukon): (1-800) 661-0408, local 3171)
 Fax: (867) 667-3195 E-mail: Water.Resources@gov.yk.ca

Personal information contained on this form is collected under the authority of the Access to Information and Protection of Privacy (ATIPPA) Act, Section 29 (c) and will be used to compile a public database of well and ground water information. For further information contact the Manager of Hydrology, Water Resources at (867) 667-3223, toll free within Yukon 1-800-661-0408 Ext 3223.

I have read the above clause and understand the purpose for collection of personal information.

Signature of Well Owner