



# Yukon Observation Well Network

2022 Narrative Report



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## Executive Summary

The Yukon Observation Well Network (YOWN) is a groundwater monitoring program operated by the Government of Yukon's, Water Resources Branch (WRB) and is used to monitor groundwater levels and groundwater quality across the territory through the traditional territories of 14 First Nations. The purpose of YOWN is to strengthen understanding of local and regional hydrogeological processes across the Yukon with a focus on understanding fundamental behaviour of groundwater in aquifers underlying communities.

The current network evolved out of the Yukon-wide Long-Term Groundwater Monitoring Program which started in 2001 and focused on short-term and long-term trends in groundwater in areas where infrastructure is present. As a part of the vision set out in the 2014 Yukon Water Strategy and Action Plan (Government of Yukon), the network was renamed the Yukon Observation Well Network (YOWN) and the program scope broadened to increasing our understanding of groundwater across the territory. YOWN has grown from nine wells in 2014 to 65 wells as of March 31, 2023.

Groundwater level, temperature, and conductivity are recorded hourly by dataloggers installed in each YOWN well. YOWN wells are visited approximately every six months to visually assess the well condition, download logger data, and to collect manual water level measurements using a water level meter. Thirty-three YOWN wells are sampled by WRB with frequency determined on a site-by-site basis and the remaining YOWN wells are sampled twice annually by partner agencies.

Out of 28 wells in the observation network with sufficient data quantity and quality for analysis, 75% (21 out of 28) showed higher maximum groundwater levels in 2022 than at any time in their record. These high groundwater levels likely result from the higher-than-average snowpack observed in much of the Yukon for the past three consecutive years.

This report:

- Acknowledges those who have made YOWN possible (Acknowledgements),
- Discusses the vision, mission, purpose, and objectives of YOWN (Chapter 1),
- Provides metadata on all active and inactive YOWN wells (Chapter 2, Appendices 1-2),
- Summarizes key changes made to YOWN since its creation (Chapter 3),
- Details the methods used to monitor YOWN wells (Chapter 4), and
- Directs readers to the results of YOWN monitoring and provides a short summary of yearly observed groundwater level observations (Chapter 5).

## Acknowledgements

We are indebted to the late Richard Janowicz, who created the Yukon-wide Long Term Groundwater Monitoring Program in 2001, and to John Miller, who evolved and expanded that program to become the Yukon Observation Well Network (YOWN). This report and the operation of YOWN has benefited from the valuable input of many organizations. In particular, we gratefully acknowledge the contributions of Yukon Parks Branch, the Site Assessment and Remediation Unit (SARU), Highway and Public Works (HPW), Department of Community Services (CS). Use of their wells and their insight into the history of the wells has been immensely valuable for the expansion of YOWN. We also gratefully acknowledge John Spoelstra and Greg Bickerton (Environment and Climate Change Canada) for analyzing samples for artificial sweeteners and stable water isotopes and the Department of Geoscience at University of Calgary for conducting isotopic and dissolved gas analyses for the network and including our wells in an environmental baseline study. In addition, the Champagne and Aishihik First Nations (CAFN), White River First Nation (WRFN), Kluane First Nation (KFN), Little Salmon/Carmacks First Nation (LS/CFN), Liard First Nation (LFN), Dena Kayeh Institute (DKI), Teslin Tlingit Council (TTC), City of Whitehorse, Village of Teslin, Town of Watson Lake, and Northern Cross and EFLO Energy Yukon Ltd. have made significant contributions to the expansion and operation of YOWN.

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# 1 Introduction

## Context

Groundwater is the most abundant form of water in the Yukon and is a critical component of our natural environment. Approximately 97% of Yukoners rely on groundwater for potable water. Ecosystems similarly depend on groundwater, which maintains water levels, regulates temperatures, and delivers nutrients to surface water bodies (lakes, ponds, streams, rivers, etc.).

The Yukon Observation Well Network (YOWN) was created in response to the 2014 Yukon Water Strategy and Action Plan, which called for a formalized groundwater monitoring program and an improved understanding of groundwater across the territory. The network was adapted from the Yukon-wide Long Term Groundwater Monitoring Program, which began in 2001 with the installation of one observation well in the Wolf Creek drainage basin. The following describes the vision, mission, purpose, and objectives of YOWN.

## Vision

Trusted, reliable, timely hydrogeological data that informs groundwater-related decision-making in the Yukon.

## Mission

To generate and share groundwater level and baseline groundwater chemistry data to support effective stewardship of groundwater and associated ecosystems.

## Purpose

The purpose of YOWN is to strengthen understanding of local and regional hydrogeological processes across the Yukon with a focus on understanding fundamental behaviour in aquifers underlying communities.

These hydrogeological processes include:

- Recharge and discharge mechanisms, rates, and timings;
- Groundwater-surface water interactions, including water table responses to high surface water events;
- Overall controls on background groundwater quality; and
- Responses to the effects of climate change, including permafrost degradation.

We are strengthening understanding of these hydrogeological processes by:

- Long-term, continuous monitoring of hydraulic head, conductivity, and temperature;
- Discrete sampling to establish background groundwater quality;
- Vertical temperature profiling; and
- Aquifer testing.

## Network Objectives

YOWN wells are designed to generate data to accomplish one or more of the following objectives:

- Characterize fundamental hydrogeological behaviour in:
  - mapped aquifers,
  - unmapped aquifers near communities;
- Support interpretations of groundwater-surface water interactions near gauged surface water bodies; and
- Monitor background hydrogeologic conditions in:
  - Areas identified by First Nation partners,
  - Transboundary watersheds,
  - Current and future residential areas, and/or
  - Pristine areas.



## 2 YOWN Wells

A summary of active YOWN wells is shown in Table 1, below. YOWN wells are assigned four-digit station IDs based on when they were added to the network. The first two digits of the ID are based on the year the well was added to YOWN and the final two digits are based on the order in which the well was added in that year. For example, the Grizzly Valley Well (YOWN-1504) was the fourth well added to YOWN in 2015. Observation wells are named according to their location. Figure 1 shows the location of active YOWN wells. Additional metadata (including coordinates) for active YOWN wells are included in Appendix A. Limited metadata for deactivated YOWN wells are included in Appendix B.

**Table 1 – Active YOWN wells**

Well ID	Well Name	Well Owner	Nearest Community
YOWN-0101	Wolf Creek	YG, Environment, Water Resources Branch	Whitehorse
YOWN-0804	Selkirk	City of Whitehorse	Whitehorse
YOWN-1101	McRae Creeks	YG, Environment, Water Resources Branch	Whitehorse
YOWN-1401	Eagle Plains Camp	Northern Cross Ltd. Yukon	Dawson City
YOWN-1502	Marsh Lake CG - Well 2	Yukon Parks	Whitehorse
YOWN-1504	Grizzly Valley	YG, Environment, Water Resources Branch	Whitehorse
YOWN-1505	Deep Creek	YG, Environment, Water Resources Branch	Whitehorse
YOWN-1506	Million Dollar Falls CG	Yukon Parks	Haines Junction
YOWN-1515	Kusawa CG - Well 2	Yukon Parks	Mendenhall
YOWN-1603	Johnson Lake CG - Well 1	Yukon Parks	Faro
YOWN-1604	Pine Lake CG	Yukon Parks	Haines Junction
YOWN-1609	Yukon River CG	Yukon Parks	Dawson City
YOWN-1703	Champagne (CAFN-MW-01)	YG, Environment, Water Resources Branch	Champagne
YOWN-1704	Champagne (CAFN-MW-02)	YG, Environment, Water Resources Branch	Champagne
YOWN-1705	Champagne (CAFN-MW-03)	YG, Environment, Water Resources Branch	Champagne
YOWN-1706	Yukon University 1	YG, Environment, Water Resources Branch	Whitehorse
YOWN-1801	Takhini Research Forest	YG, Environment, Water Resources Branch	Whitehorse
YOWN-1802	Kluane Harvest Camp	Kluane First Nation	Burwash Landing
YOWN-1803	West Dawson	YG, Environment, Water Resources Branch	Dawson City
YOWN-1901	Tagish SWDF	YG, Environment, SARU	Tagish
YOWN-1902	Marsh Lake SWDF	YG, Environment, SARU	Whitehorse
YOWN-1903	Mt. Lorne SWDF	YG, Environment, SARU	Whitehorse
YOWN-1904	Braeburn SWDF	YG, Environment, SARU	Braeburn
YOWN-1905	Deep Creek SWDF	YG, Environment, SARU	Whitehorse
YOWN-1906	Quigley SWDF	City of Dawson	Dawson City
YOWN-1907	Mayo SWDF	Village of Mayo	Mayo
YOWN-1908	Stewart Crossing SWDF	YG, Environment, SARU	Stewart Crossing
YOWN-1909	Pelly Crossing SWDF	YG, Environment, SARU	Pelly Crossing
YOWN-1910	Wellgreen Campsite	YG, Environment, SARU	Burwash Landing
YOWN-1911	Beaver Creek SWDF	YG, Environment, SARU	Beaver Creek
YOWN-1912	Horsecamp Hill SWDF	YG, Environment, SARU	Beaver Creek
YOWN-1913	Burwash Landing SWDF	YG, Environment, SARU	Burwash Landing

Well ID	Well Name	Well Owner	Nearest Community
YOWN-1914	Silver City SWDF	YG, Environment, SARU	Haines Junction
YOWN-1915	Old Crow Sewage Lagoon	YG, Community Services	Old Crow
YOWN-1916	Swift River SWDF	YG, Highway and Public Works	Swift River
YOWN-1918	Eagle Plains SWDF	YG, Highway and Public Works	Dawson City
YOWN-1919	Haines Junction SWDF	Village of Haines Junction	Haines Junction
YOWN-1920	Champagne SWDF	YG, Environment, SARU	Champagne
YOWN-1921	Drury Creek SWDF	YG, Highway and Public Works	Faro
YOWN-1922	Ross River SWDF	YG, Environment, SARU	Ross River
YOWN-1923	Watson Lake SWDF	Town of Watson Lake	Watson Lake
YOWN-1924	Canyon Creek SWDF	YG, Environment, SARU	Haines Junction
YOWN-1925	Carmacks SWDF	Village of Carmacks	Carmacks
YOWN-1926	Johnson's Crossing SWDF	YG, Environment, SARU	Johnson's Crossing
YOWN-1927	Upper Liard SWDF Well 1	YG, Environment, SARU	Watson Lake
YOWN-1928	Faro SWDF	Town of Faro	Faro
YOWN-1930D	Cowley Creek Deep	YG, Environment, Water Resources Branch	Whitehorse
YOWN-1930S	Cowley Creek Shallow	YG, Environment, Water Resources Branch	Whitehorse
YOWN-2001	Upper Liard SWDF Well 2	YG, Environment, SARU	Watson Lake
YOWN-2002	Ogilvie HPW Camp	YG, Highway and Public Works	Dawson City
YOWN-2003	Teslin SWDF	Village of Teslin	Teslin
YOWN-2004	Old Crow SWDF	YG, Environment, SARU	Old Crow
YOWN-2005	Dempster Hwy Sewage Lagoon	YG, Community Services	Dawson City
YOWN-2006D	Carmacks Playground Deep	YG, Environment, Water Resources Branch	Carmacks
YOWN-2006S	Carmacks Playground Shallow	YG, Environment, Water Resources Branch	Carmacks
YOWN-2201S	Army Beach Well 1 Shallow	YG, Environment, Water Resources Branch	Whitehorse
YOWN-2201D	Army Beach Well 1 Deep	YG, Environment, Water Resources Branch	Whitehorse
YOWN-2202	Army Beach Well 2	YG, Environment, Water Resources Branch	Whitehorse
YOWN-2203	Army Beach Well 3	YG, Environment, Water Resources Branch	Whitehorse
YOWN-2204	Army Beach Well 4	YG, Environment, Water Resources Branch	Whitehorse
YOWN-2205	Army Beach Well 5	YG, Environment, Water Resources Branch	Whitehorse
YOWN-2206	Teslin Hwy Pullout	YG, Environment, Water Resources Branch	Teslin
YOWN-2207S	Village of Teslin Compound/Shallow	YG, Environment, Water Resources Branch	Teslin
YOWN-2207D	Village of Teslin Compound/Deep	YG, Environment, Water Resources Branch	Teslin
YOWN-2208	Watson Lake Hwy Pullout	YG, Environment, Water Resources Branch	Watson Lake
YOWN-2209S	Watson Lake Playground Shallow	YG, Environment, Water Resources Branch	Watson Lake
YOWN-2209D	Watson Lake Playground Deep	YG, Environment, Water Resources Branch	Watson Lake

Well records (including borehole logs and associated reports) for YOWN wells can be viewed or downloaded using the [Yukon Water Well Registry](#) (YWWR). The YWWR was established by the Yukon Government and is a database and map of borehole logs and hydrogeological information in the territory. The database allows users to search for water well records across the territory and identify where known wells are located. The YWWR allows users to learn about

aquifer and groundwater characteristics and generate statistics on well depth, static water level, and estimated yield.

In addition to the YWWR, the [Yukon Water Data Catalogue](#) web mapping application allows users to search for surface water and groundwater monitoring stations across the territory. To see all YOWN stations, users can filter sites by “Network Source” and select “Yukon Observation Well Network”.

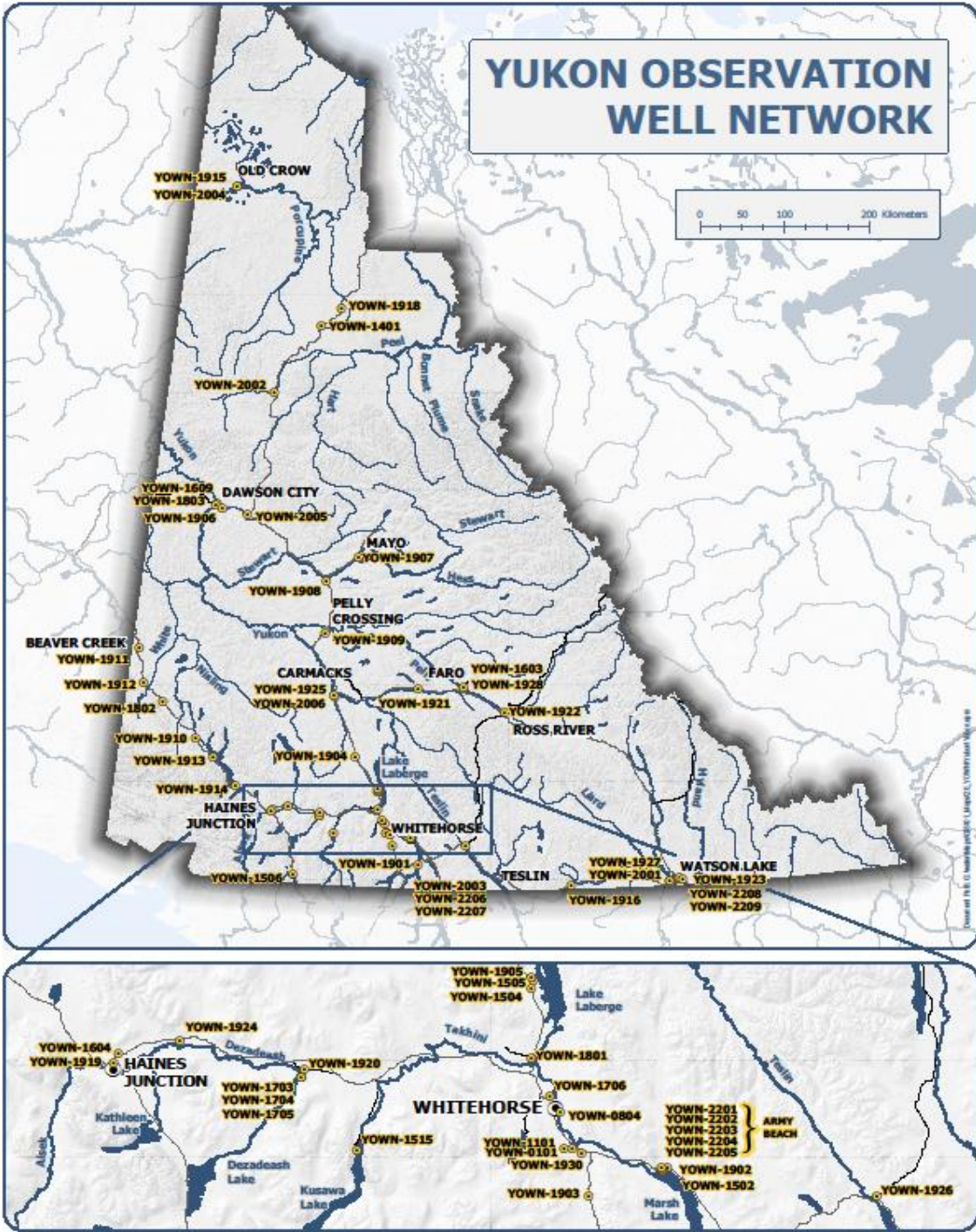


Figure 1 - Locations of active YOWN wells

### 3 Summary of annual activities

Table 2, below, summarizes well activations and deactivations since YOWN began. What follows the table is a description of significant changes to the network and the methods used to monitor YOWN wells and process YOWN data since YOWN was unofficially inaugurated in 2001.

**Table 2 –YOWN well activations and deactivations**

Year	Wells activated			Wells deactivated	Total # of active wells		
	Commissioned by WRB	#	Adopted			#	
2001	YOWN-0101	1		0	1		
2002		0		0	1		
2003		0		0	1		
2004		0		0	1		
2005		0		0	1		
2006		0		0	1		
2007		0		0	1		
2008		0	YOWN-0801, YOWN-0802, YOWN-0803, YOWN-0804, YOWN-0805	5	0	6	
2009		0		0	0	6	
2010		0		0	0	6	
2011		0	YOWN-1101	1	0	7	
2012		0		0	0	7	
2013		0	YOWN-1301	1	0	8	
2014		0	YOWN-1401	1	0	9	
2015		0	YOWN-1501, YOWN-1502, YOWN-1503, YOWN-1504, YOWN-1505, YOWN-1506, YOWN-1507, YOWN-1508, YOWN-1509, YOWN-1510, YOWN-1511, YOWN-1512, YOWN-1513, YOWN-1514, YOWN-1515	15	0	24	
2016		0	YOWN-1601, YOWN-1602, YOWN-1603, YOWN-1604, YOWN-1605, YOWN-1606, YOWN-1607, YOWN-1608, YOWN-1609, YOWN-1610, YOWN-1611, YOWN-1612, YOWN-1613, YOWN-1614	14	YOWN-1601	1	37
2017	YOWN-1703, YOWN-1704, YOWN-1705, YOWN-1706	4	YOWN-1701, YOWN-1702	2		0	43
2018	YOWN-1801, YOWN-1802, YOWN-1803	3		0		0	46

Year	Wells activated				Wells deactivated	#	Total # of active wells
	Commissioned by WRB	#	Adopted	#			
2019	YOWN-1930S, YOWN-1930D	2	YOWN-1901, YOWN-1902, YOWN-1903, YOWN-1904, YOWN-1905, YOWN-1906, YOWN-1907, YOWN-1908, YOWN-1909, YOWN-1910, YOWN-1911, YOWN-1912, YOWN-1913, YOWN-1914, YOWN-1915, YOWN-1916, YOWN-1917, YOWN-1918, YOWN-1919, YOWN-1920, YOWN-1921, YOWN-1922, YOWN-1923, YOWN-1924, YOWN-1925, YOWN-1926, YOWN-1927, YOWN-1928, YOWN-1929	29	YOWN-0801, YOWN-0802, YOWN-0803, YOWN-0805, YOWN-1301, YOWN-1501, YOWN-1503, YOWN-1507, YOWN-1508, YOWN-1509, YOWN-1510, YOWN-1511, YOWN-1512, YOWN-1513, YOWN-1514, YOWN-1602, YOWN-1605, YOWN-1606, YOWN-1607, YOWN-1608, YOWN-1609, YOWN-1610, YOWN-1611, YOWN-1612, YOWN-1613, YOWN-1614, YOWN-1701, YOWN-1702, YOWN-1929	29	48
2020	YOWN-2006S, YOWN-2006D	2	YOWN-2001, YOWN-2002, YOWN-2003, YOWN-2004, YOWN-2005	5	YOWN-1917	1	54
2021		0		0		0	54
2022	YOWN-2201S, YOWN-2201D, YOWN-2202, YOWN-2203, YOWN-2204, YOWN-2205, YOWN-2206, YOWN-2207S, YOWN-2207D, YOWN-2208, YOWN-2209S, YOWN-2209D	12		0	YOWN-1801	1	65

## 2001

The Yukon-wide Long-Term Groundwater Monitoring Program started in 2001 and included one well in the Wolf Creek subdivision of Whitehorse (YOWN-0101). Monitoring involved recording groundwater level and temperature at six-hour intervals.

## 2008

Five observation wells were adopted to the network: two within the Whitehorse city limits (YOWN-0801 in Whitehorse Copper and YOWN-0804 in Selkirk), one in Faro (YOWN-0802), one in Dawson (YOWN-0803), and one in Watson Lake (YOWN-0805), bringing the total number of YOWN wells to six.

## 2011

A seventh well was adopted to the network: YOWN-1101 at McRae Creeks (Whitehorse).

## 2013

An eighth well was adopted in Beaver Creek (YOWN-1301).

## 2014

The program was renamed the Yukon Observation Well Network (YOWN) when a formal groundwater program was added to the Water Resources Branch and the network objective expanded to include the understanding of groundwater across the territory. A ninth well was adopted at Eagle Plains on the Dempster Highway (YOWN-1401).

## 2015

Fifteen wells were added to YOWN, including eleven wells adopted in Yukon Parks' campgrounds and recreation sites, two test wells adopted in the Grizzly Valley and Deep Creek subdivisions north of Whitehorse (YOWN-1504 and YOWN-1505, respectively), a well adopted in the village of Champagne near the community center and playground (YOWN-1503), and a former drinking water well adopted at the Kotaneelee gas plant (YOWN-1507). These additions increased the total number of YOWN wells to 24.

## 2016

YOWN methodology was updated to include routine groundwater quality sampling and management of the chemistry data in EQWin (an environmental data management software package).

Fourteen wells were added to YOWN, including twelve wells adopted in Yukon Parks' campgrounds, day use areas, and recreation sites; a well adopted in Faro (YOWN-1602); and a well adopted at the Former Wellgreen Mill and Tailings site (YOWN-1614). One well (YOWN-1601) was added and deactivated to the network within the year. This well is located on private property and was removed from the network due to limitations associated with accessing the well. These changes increased the total number of YOWN wells to 37.

## 2017

Six wells were added to YOWN: two wells adopted in campgrounds (YOWN-1701 and YOWN-1702); three wells commissioned by WRB in partnership with the Champagne and Aishihik First Nations, south of the Village of Champagne, near Champagne Creek (YOWN-1703, YOWN-1704, and YOWN-1705); and one commissioned by WRB at Yukon University (YOWN-1706), bringing the total number of YOWN wells to 43.

## 2018

Three wells were added to YOWN: one well was commissioned by WRB in partnership with the Yukon Government's Department of Energy, Mines and Resources' Agricultural Branch at the Takhini Research Forest (YOWN-1801); one well was commissioned in partnership with Kluane First Nation (YOWN-1802); and one well was commissioned by WRB in West Dawson (YOWN-1803). A fourth well was drilled in partnership with YukonU but was not instrumented by WRB; rather, it is used by YukonU for teaching purposes. These additions increased the total number of YOWN wells to 46.

## 2019

YOWN methodology was updated to ensure that all YOWN wells are instrumented with loggers that record hourly fluctuations in groundwater level, temperature, and conductivity. Prior to 2019, the recording interval was every six hours and not all the loggers installed in YOWN wells were capable of measuring conductivity.

Furthermore, YOWN methodology was updated to include only monitoring wells with available borehole stratigraphy and well construction details. 29 wells that did not meet these criteria were deactivated.

29 existing monitoring wells that met these criteria were adopted to YOWN and significantly increased the network's geographic coverage. 26 of these wells are located upgradient of Solid Waste and Disposal Facilities (SWDFs), one of these wells is located at the Former Wellgreen Mill and Tailings site (YOWN-1910), and one is located at the Old Crow sewage lagoon (YOWN-1915).

Two wells (YOWN-1930S and YOWN-1930D), completed in the same borehole, were commissioned by WRB in the Cowley Creek neighbourhood of Whitehorse. These are the first nested wells included in YOWN. Nested wells enable, among other things, calculation of vertical hydraulic gradients, evaluation of vertical groundwater flow directions and magnitudes, and assessment of groundwater quality at distinct depths at a single location.

These changes increased the total number of YOWN wells to 48.

## 2020

Seven monitoring wells were added to YOWN in 2020. Five existing wells were adopted to YOWN, including three wells at SWDFs (YOWN-2001, YOWN-2003, YOWN-2004), one well at Highways and Public Works' Ogilvie maintenance camp (YOWN-2002), and one well at Community Services' Dempster Highway km 3.9 sewage pit (YOWN-2005).



Nested wells (YOWN-2006S and YOWN-2006D) were commissioned by WRB in Carmacks. These wells were drilled to support the Carmacks aquifer mapping project and are the first wells that were commissioned both to support aquifer mapping (by generating stratigraphic data) and long-term monitoring (by forming part of YOWN).

One well (YOWN-1917) was deactivated because the well typically had insufficient groundwater to sample.

These changes increased the total number of YOWN wells to 54.

Temperature-depth profiles were generated for four YOWN wells: YOWN-1504 (Grizzly Valley), YOWN-1505 (Deep Creek), YOWN-1801 (Takhini Research Forest), and YOWN-1803 (West Dawson).

A research project titled, “Geogenic contamination of groundwater resources in subarctic regions,” led by the University of Saskatchewan and McMaster University, and funded by Global Water Futures was initiated. The project has involved sampling various active and deactivated YOWN wells and has analyzed various parameters that are not part of the routine suite of analytes for YOWN wells.

## 2021

Standard operating procedures were written to ensure consistent data collection, processing, analysis, and publication methodology across the network. Protocols created and implemented this year included:

- Instrument calibration and deployment protocols for YSI water chemistry meters and Solinst dataloggers,
- Groundwater sampling methodology,
- Data processing documentation encompassing data conventions, input and verification procedures, and post-input grading and publication,
- Use of ECCC barometers for barometric compensation in place of dedicated wellhead units, and
- Use of R scripts to facilitate all post-field procedures.

An RTK unit was also procured by the WRB during 2021, and 3 wells were surveyed for elevation above the CGVD2013 datum.

No wells were added to YOWN or deactivated in 2021.

2022

Six wells (including a nested well) were commissioned by WRB at Army Beach, to support interpretations of groundwater-surface water interactions, in particular during high water events in Marsh Lake. Three monitoring wells (including a nested well) were commissioned by WRB in Teslin, and three monitoring wells (including a nested well) were commissioned by WRB in Watson Lake, as part of Aquifer Mapping projects in those communities. These additions increased the total number of YOWN wells to 65.

## 4 Methods

### 4.1 Groundwater level monitoring

#### 4.1.1 Field methods

Groundwater level, temperature, and conductivity are recorded hourly on the hour by Solinst Levelloggers installed within the water column of each well. For wells that are outside of a 100 km radius from ECCC climate data stations (YOWN-1401 (Eagle Plains Camp) and YOWN-2002 (Ogilvie HPW Camp)), a Solinst Barologger measures atmospheric pressure at the same interval as the Levellogger.

YOWN wells are visited approximately every six months to visually assess the well condition, download Levellogger and/or Barologger data, and to collect manual water level measurements using a water level meter. These measurements are used to correct Levellogger measurements and provide reference points, such as the top of casing (TOC).

A Quality Assurance/Quality Control measure was implemented in 2019, entailing calibration of LTC loggers approximately every six months. These calibrations include specific conductance using 1,413  $\mu\text{S}/\text{cm}$  standard point calibration solution and verification of temperature using a laboratory-grade digital thermometer. During site visits, loggers are removed, downloaded, and replaced with recently calibrated loggers. Logger calibrations are conducted following procedures outlined in internal guidance documents, available upon request.

#### 4.1.2 Data assessment

Raw water level data are subject to several adjustments before being added to the network database, following internally developed guidance documents. Aquarius Time Series software is used to correct raw groundwater level data for the influence of barometric (atmospheric) pressure variations (recorded by Barologgers). Additional corrections are carried out if compensated data differs significantly from manual water level measurements. The final data are presented as a measurement of the depth to groundwater in meters below ground surface (m bgs). Grading criteria are applied to all groundwater level data and are published alongside the data.

Compensated and corrected data are collected from Aquarius using R scripts for chart publication and further QA/QC checks.

Datalogger installation depth varies between YOWN sites and may vary over time at the same site due to changes in instrumentation such as switching from Kevlar cord to direct read cables. These changes may result in changes in temperature and conductivity and should be considered when reviewing the data. Methods to account for sensor drift over time, such as periodic calibrations and data corrections, are implemented in the data processing workflow.

## 4.2 Groundwater quality monitoring

Groundwater quality monitoring is conducted following the Protocol No. 7 (Groundwater monitoring Well Installation, Sampling and Decommissioning) of the Yukon Protocol for the Contaminated Site Regulation under the Environment Act. Network wells.

### 4.2.1 Field Methods

Table 3 lists the sampling frequency and agency responsible for sampling each active YOWN well.

**Table 3 – Sampling frequency and agency responsible for sampling active YOWN wells**

<i>Well ID</i>	<b>Sampling Frequency</b>	<b>Sampled by</b>
YOWN-0101	Twice a year	Water Resources Branch
YOWN-0804	Twice a year	City of Whitehorse
YOWN-1101	Twice a year	Water Resources Branch
YOWN-1401	Twice a year	Water Resources Branch
YOWN-1502	Twice a year	Water Resources Branch
YOWN-1504	Twice a year	Water Resources Branch
YOWN-1505	Twice a year	Water Resources Branch
YOWN-1506	Twice a year	Water Resources Branch
YOWN-1515	Twice a year	Water Resources Branch
YOWN-1603	Twice a year	Water Resources Branch
YOWN-1604	Twice a year	Water Resources Branch
YOWN-1609	Twice a year	Water Resources Branch
YOWN-1703	Twice a year	Water Resources Branch
YOWN-1704	Twice a year	Water Resources Branch
YOWN-1705	Twice a year	Water Resources Branch
YOWN-1706	As needed for teaching purposes, by Yukon U.	Water Resources Branch
YOWN-1801	Will be deactivated	Water Resources Branch
YOWN-1802	Twice a year	Water Resources Branch
YOWN-1803	Twice a year	Water Resources Branch
YOWN-1901	Twice a year	Consultant on behalf of CS-SARU
YOWN-1902	Twice a year	Consultant on behalf of CS-SARU
YOWN-1903	Twice a year	Consultant on behalf of CS-SARU
YOWN-1904	Twice a year	Consultant on behalf of CS-SARU
YOWN-1905	Twice a year	Consultant on behalf of CS-SARU

YOWN-1906	Twice a year	Consultant on behalf of CS-SARU
YOWN-1907	Twice a year	Consultant on behalf of CS-SARU
YOWN-1908	Twice a year	Consultant on behalf of CS-SARU
YOWN-1909	Twice a year	Consultant on behalf of CS-SARU
YOWN-1910	Twice a year	Consultant on behalf of CS-SARU
YOWN-1911	Twice a year	Consultant on behalf of CS-SARU
YOWN-1912	Twice a year	Consultant on behalf of CS-SARU
YOWN-1913	Twice a year	Consultant on behalf of CS-SARU
YOWN-1914	Twice a year	Consultant on behalf of CS-SARU
YOWN-1915	Twice a year	Consultant on behalf of CS-SARU
YOWN-1916	Twice a year	Consultant on behalf of CS-SARU
YOWN-1918	Twice a year	Consultant on behalf of CS-SARU
YOWN-1919	Twice a year	Consultant on behalf of CS-SARU
YOWN-1920	Twice a year	Consultant on behalf of CS-SARU
YOWN-1921	Twice a year	Consultant on behalf of CS-SARU
YOWN-1922	Twice a year	Consultant on behalf of CS-SARU
YOWN-1923	Twice a year	Consultant on behalf of CS-SARU
YOWN-1924	Twice a year	Consultant on behalf of CS-SARU
YOWN-1925	Twice a year	Consultant on behalf of CS-SARU
YOWN-1926	Twice a year	Consultant on behalf of CS-SARU
YOWN-1927	Twice a year	Consultant on behalf of CS-SARU
YOWN-1928	Twice a year	Consultant on behalf of CS-SARU
YOWN-1930D	Twice a year	Water Resources Branch
YOWN-1930S	Twice a year	Water Resources Branch
YOWN-2001	Twice a year	Consultant on behalf of CS-SARU
YOWN-2002	Twice a year	Consultant on behalf of CS-SARU
YOWN-2003	Twice a year	Consultant on behalf of CS-SARU
YOWN-2004	Twice a year	Consultant on behalf of CS-SARU
YOWN-2005	Twice a year	Consultant on behalf of CS-SARU
YOWN-2006D	Twice a year	Water Resources Branch
YOWN-2006S	Twice a year	Water Resources Branch
YOWN-2201S	Twice a year	Water Resources Branch
YOWN-2201D	Twice a year	Water Resources Branch
YOWN-2202	Twice a year	Water Resources Branch
YOWN-2203	Twice a year	Water Resources Branch
YOWN-2204	Twice a year	Water Resources Branch
YOWN-2205	Twice a year	Water Resources Branch
YOWN-2206	Twice a year	Water Resources Branch
YOWN-2207S	Twice a year	Water Resources Branch
YOWN-2207D	Twice a year	Water Resources Branch
YOWN-2208	Twice a year	Water Resources Branch
YOWN-2209S	Twice a year	Water Resources Branch
YOWN-2209D	Twice a year	Water Resources Branch

CS – Government of Yukon / Community Services

SARU – Government of Yukon / Site assessment and Remediation Unit

Thirty two YOWN wells are sampled twice annually by a third party environmental consultant, on behalf of YG's Site Assessment and Remediation Unit (SARU), one well is sampled twice

annually by the City of Whitehorse (YOWN-0804), and one well (YOWN-1706) is sampled by Yukon University on an irregular basis for teaching purposes. Analytical data collected by other parties will be shared with WRB and uploaded into WRB's EQWin database in 2023.

The remaining YOWN wells are sampled twice annually (on an approximate six-month basis) by WRB. Methods used for purging and collecting samples from these wells vary based on method suitability and access constraints, following Yukon Environment's groundwater sampling Protocol 7 (Yukon Environment, 2019). Monitoring wells with a 2" (5cm) diameter are sampled using Geotech™ Geosub 2 Stainless Steel submersible pumps, Geotech Peristaltic Pumps or Spectra Field-Pro Peristaltic Pumps. Monitoring wells with a 6" (15 cm) diameter are sampled using Grundfos™ RediFlo2 submersible pumps or Geotech™ Geosub 2 Stainless Steel submersible pumps. Pending the results of a network evaluation to be carried out in 2023, some wells may be reduced to a 5-year sampling schedule depending on availability and quality of past data, regional context, and preliminary trend analyses.

Waterra Hydrolift pumps equipped with Waterra tubing and D-25 foot-valves and surge blocks were used for developing the newly installed 5 cm diameter wells in 2019, 2020, and 2022.

The two active campground drinking water wells (YOWN-1701 and YOWN-1702) were sampled using the existing hand pump prior to their removal from the network in 2021 and 2022 respectively.

Prior to sample collection, wells are purged until three well volumes are removed or until in situ parameters become stable. Temperature, pH, electrical conductivity, oxidation reduction potential, turbidity, and dissolved oxygen concentration are measured after every 20 L of purging, using a flow-through cell and an YSI™ ProDSS multi-parameter water quality Sonde to monitor parameter stability. HydraSleeve™ discrete interval samplers are used when purging is not possible because of equipment (generator or pump) failure at the time of the sampling event. Samples collected via HydraSleeve™ are taken directly from the screened interval of the well.

When recovery is sufficient to allow for sampling, samples are collected and placed in laboratory supplied bottles and stored in an ice-chilled cooler until delivered to the lab within the specified holding times. Samples are submitted to the laboratory accompanied by chain of custody documentation. Samples for dissolved constituent analysis (i.e. dissolved metals and dissolved organic carbon) are filtered in the field using lab-supplied 0.45 µm filters. Samples are preserved in-field as per laboratory specifications. Exova Laboratory of Surrey, BC conducted the YOWN water quality assays from program initiation until 2017; CARO Analytics of Richmond, BC conducted the YOWN water quality assays from 2018 to 2020; Bureau Veritas Laboratory

conducted the YOWN water quality assays from 2020 to March 2022, and ALS conducted the YOWN water quality assays from March 2022 to present.

Samples are analyzed for the following analytes:

- Conventional parameters: pH, specific conductivity, hardness, alkalinity, total dissolved solids (TDS), total suspended solids (TSS), total organic carbon (TOC), dissolved organic carbon (DOC), total inorganic carbon (TIC), and dissolved inorganic carbon (DIC);
- Major ions: bicarbonate, bromide, calcium, carbonate, chloride, fluoride, hydroxide, magnesium, potassium, sodium, and sulphate;
- Nutrients: nitrate, nitrite, nitrate + nitrite, total ammonia, total Kjeldahl nitrogen, total nitrogen, total phosphorus, dissolved phosphorus, and dissolved phosphorus as phosphate;
- Dissolved metals: aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, calcium, cesium, chromium, cobalt, copper, iron, lead, lithium, magnesium, manganese, mercury, molybdenum, nickel, phosphorus, potassium, rubidium, selenium, silicon, silver, sodium, strontium, sulfur, tellurium, thallium, thorium, tin, titanium, tungsten, uranium, vanadium, zinc, and zirconium.
- Stable water isotopes: deuterium and oxygen-18; and
- Artificial sweeteners: acesulfame, cyclamate, saccharin, sucralose, and, occasionally, sulfamate.

Samples for isotopic and dissolved gas analysis were collected from select wells in 2016, 2017, and 2018. These samples were collected as part of a study led by the University of Calgary and funded by the Natural Sciences and Engineering Research Council of Canada (NSERC). The study aimed to develop baseline testing approaches for assessing potential environmental impacts of oil and gas development. These samples were analyzed for the following analytes:

- Radiological parameters: actinium228, bismuth212, bismuth214, lead210, lead211, lead212, lead214, potassium40, radium223, radium226, radium228, radon219, thallium208, thorium227, thorium228, thorium230, thorium234, and uranium235;
- Environmental isotopes: carbon-13 in dissolved inorganic carbon, oxygen-18 in sulphate, oxygen-18 and deuterium in water, and sulphur-34 in sulphate; and
- Dissolved gases: oxygen, nitrogen, methane, ethane, propane and higher n-alkanes.

## 5 Results

### 5.1 Stratigraphy and well construction details

Well records (including borehole logs and associated reports) for YOWN wells can be viewed or downloaded using the [Yukon Water Well Registry](#).

The areal extents of mapped aquifers can be viewed on the [Yukon Water Well Registry](#). Aquifer fact sheets and aquifer mapping project final reports can also be downloaded from the [Yukon Water Well Registry](#).

### 5.2 Groundwater level

A hydrograph for each YOWN well can be accessed online on the [Yukon Water Data Catalogue](#) using the interactive map viewer, or directly via Yukon Government's File Transfer Service located at the following web address: <https://ftp-env-public.gov.yk.ca/WR/YOWN/>. The hydrographs show how daily mean groundwater levels for the current monitoring year compare with historical minimum, mean, and maximum daily groundwater levels.

Annual field data measurements (including depth to groundwater, total well depth, well casing stickup (i.e. the portion of the well casing that extends above the ground surface), groundwater temperature, dissolved oxygen concentrations, specific conductance, pH, oxidation-reduction potential and turbidity) can be made available upon request by contacting the Water Resources Branch.

### 5.3 Groundwater quality

Summaries of laboratory analytical results and laboratory certificates will be made available online via the Water Data Catalogue in 2023. Laboratory analytical results can be made available upon request by contacting the Water Resources Branch.

Temperature-depth profiles can similarly be made available upon request by contacting the Water Resources Branch.

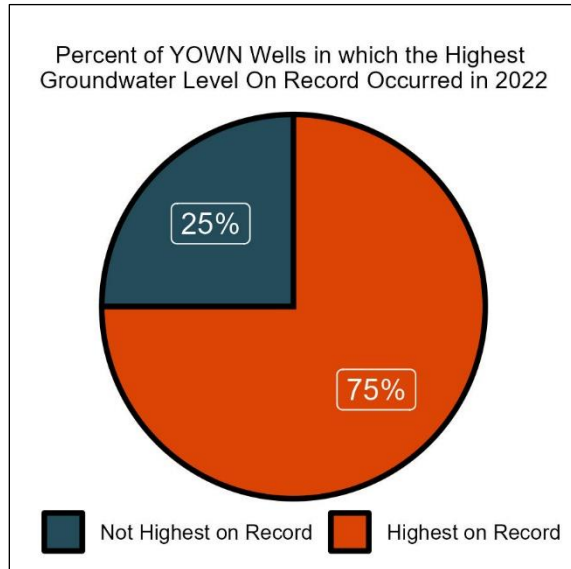


## 6 Discussion

### 6.1 Water Levels

Out of 28 wells with sufficient data quantity and quality for analysis, 75% (21 out of 28) showed higher maximum groundwater levels in 2022 than at any time in their record (Figure 2). The observed groundwater table rise appears to be a regional phenomenon, not limited to one part of the territory. Certain wells, particularly those with longer periods of record (beginning earlier than 2016), showed 2022 groundwater levels approaching but not exceeding their historical max which occurred in 2016. These high groundwater levels in 2022 likely result from the higher-than-average snowpack observed in much of the Yukon for the past three consecutive years. There has been a significant increase in the peak snow water equivalent at several snow survey sites monitored throughout the Yukon and neighbouring jurisdictions. These findings were also published in the 2023 State of the Environment Report (SOER) which can be found at Yukon.ca

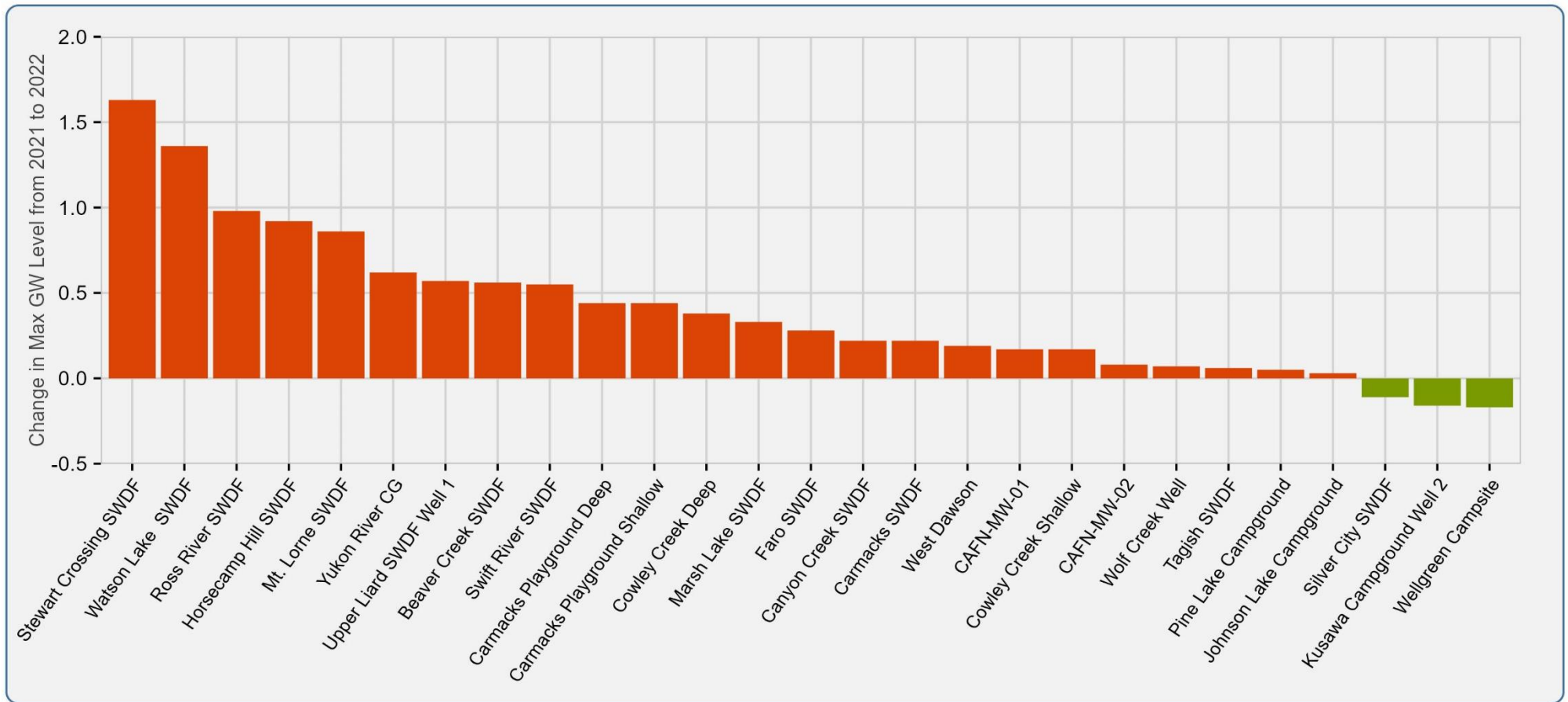
Between 2021 and 2022, the years with above-average snowpack, most wells saw an increase in maximum groundwater level. However, three wells showed a decrease in maximum water level, the cause of which is not yet known (Figure 3). These consecutive years of high groundwater levels are a likely contributor to the flooding observed in several Yukon communities in 2022.



**Figure 2 - Percentage of YOWN Wells in Which the Historical Maximum Groundwater Level was Observed in 2022**

## Change in Maximum Groundwater Levels (2021-2022)

All YOWN wells with sufficient data quality and quantity for analysis



Plot generated: 2023-02-07  
Yukon Observation Well Network

DISCLAIMER: Yukon Government accepts no liability for the accuracy, availability, suitability, reliability, usability, completeness, or timeliness of data.  
For information regarding data grades, please contact the Water Resources Branch

Figure 3 - Change in Maximum Groundwater Level Between 2021 and 2022

Analysis of groundwater level changes on a network-wide basis is limited by the following factors:

- Short period of records for most YOWN wells,
- Data gaps caused by equipment failure, and
- Inconsistent data quality due to instrument drift and infrequent field errors.

Up to 2018, most of the monitoring wells were added to YOWN on an opportunistic basis; therefore, there is a lack of available information for some wells (i.e. borehole logs, geology, aquifer properties, etc.) that limits the interpretation and application of the water level data, such as for hydrogeological modelling purposes. However, these data can be used to assess long-term trends or abnormalities at specific locations.

## 6.2 Water Quality

Detailed analysis of water chemistry is currently underway, with results available in 2023. All parameters are compared to the relevant guidelines, with exceedances noted.

## 7 Summary and Conclusions

The Yukon Observation Well Network (YOWN) is a network of groundwater wells monitored by the Yukon Government Water Resources Branch (WRB) for continuous groundwater level data and discrete aqueous geochemistry. This network commenced operation in 2001 with a single well and grew to encompass 65 wells as of March 31, 2023. These wells are dispersed throughout the territory allowing assessments of groundwater levels in most Yukon communities, and spatial coverage improves every year as wells are drilled or adopted into the network.

## 8 References

Government of Yukon. (2014). Yukon Water Strategy and Action Plan.

Government of Yukon Department of Environment (2019). – Groundwater Monitoring Well Installation, Sampling, and Decommissioning

# APPENDIX A

## Summary of Active YOWN Wells

## A.1 YOWN-0101

<b>Well Name:</b> Wolf Creek Well	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Feb. 2001; May 2001	<b>Easting (m):</b> 502041
<b>Yukon Water Well Registry ID:</b> 204100382	<b>Northing (m):</b> 6719006
<b>Well Depth (m bTOC):</b> 48.8	<b>Well Diameter (cm):</b> 15.24
<b>Well Elevation (masl):</b> 749.00	<b>Period of Record:</b> 2001 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Basalt	<b>Aquifer subtype:</b> 6b
<b>Aquifer thickness:</b> A.5 m	<b>Likely degree of aquifer confinement:</b> Semi-confined (BH)
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 330 m to Wolf Creek; 1.6 km to Yukon River	
<b>Distance Nearest Active Hydrometric Station:</b> 16.3 km (Yukon River at Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 16 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> The Wolf Creek well is located on Dawson Road in the Wolf Creek subdivision, approximately 14 km south of downtown Whitehorse. It is an open-hole observation well with an estimated production capacity of 0.6 L/s (Driller's Log).</p> <p><b>Surficial Geology Data:</b> The well is located within glaciofluvial outwash plain (gravel/sand) (Lipovsky, 2022 - Greater Whitehorse, 1:20k, in prep.) and installed in basalt, similar to the McRae Creeks well (YOWN-1101), located approximately 2.4 km to the west, and the Whitehorse Copper well (YOWN-0801) located approximately 2.8 km to the northwest.</p>	

## A.2 YOWN-0804

<b>Well Name:</b> Selkirk Well	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Oct. 1997/ June 2008	<b>Easting (m):</b> 576185
<b>Yukon Water Well Registry ID:</b> 204110174	<b>Northing (m):</b> 7104243
<b>Well Depth (m bTOC):</b> 63.1	<b>Well Diameter (cm):</b> 15.24
<b>Well Elevation (masl):</b> 638.00	<b>Period of Record:</b> 2008 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Gravelly Sand	<b>Aquifer subtype:</b> 1b
<b>Aquifer thickness:</b> 0.6 m	<b>Likely degree of aquifer confinement:</b> Semi-confined (BH)
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 350 m to Yukon River	
<b>Distance to Nearest Active Hydrometric Station:</b> 4.4 km (Yukon River at Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 4 km	
<b>Other identification codes:</b> TH1-97 (City of Whitehorse)	

**Well Description:** The Selkirk well is situated in Riverdale, near the end of Selkirk Street. The well can be found 100 m off the road, with an orange pipe extending two meters from the top in order to be identified in the foliage. The City of Whitehorse also uses this well in their groundwater monitoring program. Stratigraphic information for other monitoring wells installed in this area is not currently available.

**Surficial Geology Data:** The well is located within Yukon River terrace (thick sand/gravel) (Lipovsky, 2022 - Greater Whitehorse, 1:20k, in prep).

### A.3 YOWN-1101

<b>Well Name:</b> McRae Creeks Well	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> June 2011	<b>Easting (m):</b> 499626
<b>Yukon Water Well Registry ID:</b> 204110124	<b>Northing (m):</b> 6718968
<b>Well Depth (m bTOC):</b> 33.5	<b>Well Diameter (cm):</b> 15.24
<b>Well Elevation (masl):</b> 787.00	<b>Period of Record:</b> 2011 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Till and Basalt	<b>Aquifer subtype:</b> 6b
<b>Aquifer thickness:</b> 4 m	<b>Likely degree of aquifer confinement:</b> Semi-confined (BH)
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 175 m to McRae Creek; 3.0 km to Yukon River	
<b>Distance to Nearest Active Hydrometric Station:</b> 15.5 km (Yukon River at Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 15 km	
<b>Other identification codes:</b> BH77-4 (YWWR)	
<p><b>Well Description:</b> The McRae Creeks Well is located 1 km west of the Wolf Creek subdivision. The well has an estimated production rate of 0.75 L/s. The well is installed in basalt, similar to the Wolf Creek well (YOWN-0101) located approximately 2.4 km to the east.</p> <p><b>Surficial Geology Data:</b> The well is located within glaciofluvial terrace (thin gravel/sand) overlying bedrock (granodiorite) (Lipovsky, 2022 - Greater Whitehorse, 1:20k, in prep).</p>	

### A.4 YOWN-1401

<b>Well Name:</b> Eagle Plains Well	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Oct. 2011/ March 2014	<b>Easting (m):</b> 398625
<b>Yukon Water Well Registry ID:</b> 809030001	<b>Northing (m):</b> 7335447
<b>Well Depth (m bTOC):</b> 45.00	<b>Well Diameter (cm):</b> 15.24
<b>Well Elevation (masl):</b> 607.00	<b>Period of Record:</b> 2014 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Clay	<b>Aquifer subtype:</b> UNK/ 6b



<b>Aquifer thickness:</b> 15 m	<b>Likely degree of aquifer confinement:</b> Semi-confined (BH)
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> Approximately 5 km to Eagle River	
<b>Distance to Nearest Active Hydrometric Station:</b> 43.1 km (Eagle River at Dempster Hwy. bridge)	
<b>Name of and Distance to Nearest Climate Station:</b> Rock River; 106 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> The Eagle Plains well was installed in the Northern Cross Camp on the Dempster Highway, km 325. The well is an open hole with no screen and is installed in bedrock, which was encountered at 3.9 m bgs. No other YOWN monitoring wells are located in this area.</p> <p><b>Surficial Geology Data:</b> East of Eagle Plain and the Mackenzie Corridor region, Precambrian rocks of the Canadian Shield craton are exposed. The Shield in this region of northern Canada consists of intensely deformed metamorphic and intrusive rocks of Archean and Proterozoic age overlain in part by weakly deformed Neoproterozoic (Helikian) sedimentary rocks. Various discrete Archean crustal blocks are separated by Proterozoic orogenic rocks. This tectonic collage of Precambrian rock is divided into a series of discrete basement domains differentiated on the basis of geological, geochronological, geochemical and geophysical criteria (Hoffman, 1987, 1989; Ross et al., 1994).</p>	

## A.5 YOWN-1502

<b>Well Name:</b> Marsh Lake Campground Well	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> June 1980 /Nov. 2015	<b>Easting (m):</b> 530423
<b>Yukon Water Well Registry ID:</b> 204090019	<b>Northing (m):</b> 6713679
<b>Well Depth (m bTOC):</b> 52.86	<b>Well Diameter (cm):</b> 15.24
<b>Well Elevation (masl):</b> 661.00	<b>Period of Record:</b> 2015 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Till - Clay/Silt	<b>Aquifer subtype:</b> 4b
<b>Aquifer thickness:</b> 6m	<b>Likely degree of aquifer confinement:</b> Confined (BH)
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> Approximately 70 m to Marsh Lake	
<b>Distance to Nearest Active Hydrometric Station:</b> 5.4 km (Marsh Lake near Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 41 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> The Marsh Lake Campground well is located in the campground across from a cooking shelter and beside a wood storage box. This well has an estimated production rate of 0.76 L/s (Driller's log). The soil stratigraphy consist of cobbles, gravel and clay. The well appears to be installed in clay, as an open hole. Field well depth measurements (52.8 m bTOC) do not match the borehole log information (101.8 m bTOC), suggesting that the well walls have sloughed.</p> <p><b>Surficial Geology Data:</b> The well is located within Aeolian sand dunes (~5 m thick) overlying ~30+m glaciolacustrine silt/clay (Lipovsky, 2022 - Greater Whitehorse, 1:20k, in prep).</p>	

## A.6 YOWN-1504

<b>Well Name:</b> Grizzly Valley	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Aug. 2012/ July 2015	<b>Easting (m):</b> 487803
<b>Yukon Water Well Registry ID:</b> 204140384	<b>Northing (m):</b> 6768194
<b>Well Depth (m bTOC):</b> 101.50	<b>Well Diameter (cm):</b> 10.16
<b>Well Elevation (masl):</b> 739.00	<b>Period of Record:</b> 2015 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Bedrock	<b>Aquifer subtype:</b> 1c
<b>Aquifer thickness:</b> 20 m	<b>Likely degree of aquifer confinement:</b> Semi-confined (BH)
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 2.7 km to Lake Labarge	
<b>Distance Nearest Active Hydrometric Station:</b> 35 km (Yukon River at Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 22 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> The Grizzly Valley well is located at the entrance to the Grizzly Lake subdivision in the Takhini Valley region. The hydraulic conductivity was reported to be <math>2.8 \times 10^{-5}</math> m/s. The well was drilled in an attempt to select a suitable site for a bulk truck fill station to supply residents of the Ta'an Kwäch'än Council, Horse Creek, Grizzly Valley and Deep Creek areas. The water quality at this well was deemed unsuitable for domestic purposes due to hardness and exceedances of aesthetic objectives. The well was abandoned and later acquired by Water Resource Branch of Environment Yukon.</p> <p><b>Surficial Geology Data:</b> The southern Yukon has undergone several episodes of glaciation, the most recent being the Quaternary McConnell glaciation. The surficial materials at the site are primarily of glacial origin consisting predominantly of fine grained morainal till. Surficial sediments surrounding the site vary from morainal tills, glacial fluvial and alluvial morainal deposits. Underlying the glacial sediments at the site is bedrock described as the Laberge Group, consisting of Jurassic interbedded siltstone, sandstone and mudstone with minor volcanics. It can be assumed that during the McConnell glaciation as the glaciers advanced, sediment in the area was eroded and various glacier features were created in the surficial materials and the bedrock. During the retreat of the glaciers sediment in the form of till was deposited, specifically in areas of low elevation (EBA, 2011).</p>	

## A.7 YOWN-1505

<b>Well Name:</b> Deep Creek Well	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Aug. 2012/ July 2015	<b>Easting (m):</b> 488393
<b>Yukon Water Well Registry ID:</b> 204140308	<b>Northing (m):</b> 6770798
<b>Well Depth (m bTOC):</b> 101.5	<b>Well Diameter (cm):</b> 10.16
<b>Well Elevation (masl):</b> 644.00	<b>Period of Record:</b> 2015 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Bedrock	<b>Aquifer subtype:</b> 1c
<b>Aquifer thickness:</b> 20 m	<b>Likely degree of aquifer confinement:</b> Semi-confined (BH)
<b>Hydraulic properties of aquifer:</b> Not yet determined	

<b>Distance to surface water:</b> 440 m to Lake Laberge
<b>Distance to Nearest Active Hydrometric Station:</b> 37.5 km (Yukon River at Whitehorse)
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 24 km
<b>Other identification codes:</b> n/a
<p><b>Well Description:</b> The Deep Creek well is located in the Deep Creek area of Lake Laberge subdivision. The well was installed for a bulk truck fill station to supply citizens of the Ta'an Kwäch'än Council, in the Horse Creek, Grizzly Valley and Deep Creek areas. The water quality at this well was deemed unsuitable for domestic purposes due to hardness and exceedances of aesthetic objectives. The hydraulic conductivity was reported to be <math>5.6 \times 10^{-7}</math> m/s.</p> <p><b>Surficial Geology Data:</b> The southern Yukon has undergone several episodes of glaciation, the most recent being the Quaternary McConnell glaciation. The surficial materials at the site are primarily of glacial origin consisting predominantly of fine grained morainal till. Surficial sediments surrounding the site vary from morainal tills, glacial fluvial and alluvial morainal deposits. Underlying the glacial sediments at the site is bedrock described as the Laberge Group, consisting of Jurassic interbedded siltstone, sandstone and mudstone with minor volcanics. It can be assumed that during the McConnell glaciation as the glaciers advanced, sediment in the area was eroded and various glacier features were created in the surficial materials and the bedrock. During the retreat of the glaciers sediment in the form of till was deposited, specifically in areas of low elevation (EBA, 2011).</p>

## A.8 YOWN-1506

<b>Well Name:</b> Million Dollar Falls Campground Well	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> June 1981/ Aug. 2015	<b>Easting (m):</b> 396502
<b>Yukon Water Well Registry ID:</b> 1010200011	<b>Northing (m):</b> 6653076
<b>Well Depth (m bTOC):</b> 16.65	<b>Well Diameter (cm):</b> 15.24
<b>Well Elevation (masl):</b> 714.00	<b>Period of Record:</b> 2015 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Till / Sandstone /Conglomerates	<b>Aquifer subtype:</b> 1b
<b>Aquifer thickness:</b> 0.9 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 0.21 km to Takhanne River; approximately 1.9 km to Tatshenshini River	
<b>Distance Nearest Active Hydrometric Station:</b> 1.1 km (Takhanne River at km 167 Haines Hwy.)	
<b>Name of and Distance to Nearest Climate Station:</b> Haines Junction; 82 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> Borehole stratigraphy indicates a silt/sand/gravel unit overlaying sandstone/conglomerates. Field well depth measurements (16.65 m bTOC) do not match the borehole log information (195 m bTOC), suggesting that the well walls have sloughed.</p> <p><b>Surficial Geology Data:</b> The well is located within till and/or ice-contact glaciofluvial deposits (muddy sand and gravel) (Rampton &amp; Paradis, 1982, Frederick Lake, GSC Map 15-1981, 1:100k).</p>	

## A.9 YOWN-1515

<b>Well Name</b> Kusawa Campground Well-2	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Nov. 1979/ Sept. 2015	<b>Easting (m):</b> 437427
<b>Yukon Water Well Registry ID:</b> 101090001	<b>Northing (m):</b> 6716054
<b>Well Depth (m bTOC):</b> 12.55	<b>Well Diameter (cm):</b> 15.24
<b>Well Elevation (masl):</b> 691.00	<b>Period of Record:</b> 2015 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Gravel	<b>Aquifer subtype:</b> 1b
<b>Aquifer thickness:</b> 5.7 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> Approximately 130 m to Kusawa Lake; 350 m to unnamed creek	
<b>Distance to Nearest Active Hydrometric Station:</b> 37.7 km (Takhini River near Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Takhini River Ranch; 52 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> This well is located in the southern loop of the Kusawa Campground near the entrance sign. The well is installed in a gravel/sand unit. It has a 1.2 m screen, with the bottom of the screen installed at 12.5 m bTOC.</p> <p><b>Surficial Geology Data:</b> Glaciofluvial silts, sands, and gravel deposits are abundant at the lower elevations (680 – 1000 masl.) and throughout the valley floors. The relative coarseness of these sedimentary 37 deposits allows for stable well-drained surfaces. Glaciolacustrine deposits of fine sand, silts, and clays are dominant at lake level (GeoProcess NTS115A 2002; Lowey 2002). Glacial, glaciofluvial, colluvial, and fluvial processes have contributed to the formation of the rugged topography found in the Kusawa Valley. Kames, kame terraces, and kettles are located north of the Kusawa Lake outlet. Steep rock outcrops are dominant at high elevations above 1500 masl. Thin ground moraine or colluvial deposits which are comprised of cobbly, boulder diamicton may also be found throughout the basin. Slopes are susceptible to creep and solifluction from permafrost effects. Gullying, and under extreme circumstances, avalanches and rockslides may occur. Streamlined or crested moraine deposits of sand and gravel cover the mid elevation slopes (1000 – 1500 masl.) in the region of active glacier cover. Permafrost may also be present at these elevations and is extremely susceptible to creep and thermokarst (Gilbert, 2004).</p>	

## A.10 YOWN-1603

<b>Well Name:</b> Johnson Lake Campground	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> June 1988/ May 2016	<b>Easting (m):</b> 583935
<b>Yukon Water Well Registry ID:</b> 211030014	<b>Northing (m):</b> 6898287
<b>Well Depth (m bTOC):</b> 26.30	<b>Well Diameter (cm):</b> 15.24
<b>Well Elevation (masl):</b> 692.00	<b>Period of Record:</b> 2016 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand/Gravel	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 15 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> Approximately 80 m to Johnson Lake and 6.9 km to Pelly River	

<b>Distance to Nearest Active Hydrometric Station:</b> 1.6 km (Pelly River below Vangorda Creek)
<b>Name of and Distance to Nearest Climate Station:</b> Faro Airport; 0.5 km
<b>Other identification codes:</b> n/a
<p><b>Well Description:</b> This well is located in Johnson Lake Campground near the boat launch, in very close proximity to active outhouses. The borehole log indicates a sand/gravel (till) unit overlaying sandstone/conglomerate. There is no information regarding screen installation; it is possible that the well is installed as an open hole in bedrock below 19 m bgs. The soil stratigraphy description is similar to the stratigraphy encountered at YOWN-1701, located approximately 0.3 km to the east.</p> <p><b>Surficial Geology Data:</b> The southern Yukon, including the Faro area, has undergone several episodes of glaciation, the most recent being the Quaternary McConnell glaciation. During that period, sediments such as glacial till, glaciofluvial, and glaciolacustrine sediments were deposited, especially in low elevation areas such as the Pelly River Valley, located downgradient of the Site.</p> <p>The Faro area is mapped as being underlain primarily by till and alluvium, with minor glaciolacustrine sediments of Quaternary origin. Ablation till, colluvial glacial debris, morainal deposits, and bedrock exposures are found at higher elevations in the mountains to the northeast of the Site.</p> <p>Surficial geology maps published by the Yukon Geological Survey (YGS) indicate natural surficial materials at the Site are part a glaciofluvial complex of outwash, glaciolacustrine, and minor till deposits, deposited in an ice contact environment. Deposits are poorly to well sorted; sand and gravel with minor silt and clay; greater than 5 m thick. Kame and kettle topography is associated with this setting (Jackson, 1993).</p>

## A.11 YOWN-1604

<b>Well Name:</b> Pine Lake Campground	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> June 1989/ July 2016	<b>Easting (m):</b> 364623
<b>Yukon Water Well Registry ID:</b> 101130006	<b>Northing (m):</b> 6743126
<b>Well Depth (m bTOC):</b> 112.80	<b>Well Diameter (cm):</b> 15.24
<b>Well Elevation (masl):</b> 651.00	<b>Period of Record:</b> 2016 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Till / Bedrock	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 110 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 130 m to Pine Lake; 5.5 km to Dezadeash River	
<b>Distance to Nearest Active Hydrometric Station:</b> 5.9 km (Dezadeash River at Haines Junction)	
<b>Name of and Distance to Nearest Climate Station:</b> Haines Junction; 6 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> This well is located in the Pine Lake Campground near the entrance and pay-station. It is in close proximity to an active outhouse. Soil stratigraphy consist of a sand/gravel/clay (till) unit overlaying bedrock at 13.4 m bgs. There is no information on the screen installation; the well is assumed to be installed as an open hole in bedrock to 112.8 m bTOC.</p> <p><b>Surficial Geology Data:</b> The well is located within thin (~2m) glaciolacustrine silt/clay overlying thick (35m) till overlying bedrock (Rampton &amp; Paradis, 1982, Pine Lake, GSC Map 16-1981, 1:100k - PL to map in summer 2022).</p>	

## A.12 YOWN-1609

<b>Well Name:</b> Yukon River Campground	<b>UTM Zone:</b> 7
<b>Installation/Activation Dates:</b> Oct. 1975/ Sept. 2016	<b>Easting (m):</b> 576164
<b>Yukon Water Well Registry ID:</b> 802030038	<b>Northing (m):</b> 7106431
<b>Well Depth (m bTOC):</b> 6.20	<b>Well Diameter (cm):</b> 15.24
<b>Well Elevation (masl):</b> 619.00	<b>Period of Record:</b> 2016 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Gravel	<b>Aquifer subtype:</b> 1b
<b>Aquifer thickness:</b> >3 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 20 m (Yukon River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 0.9 km (Yukon River at Dawson)	
<b>Name of and Distance to Nearest Climate Station:</b> Dawson Airport; 15 km	
<b>Other identification codes:</b>	
<p><b>Well Description:</b> This well is located in the Yukon River Campground approximately 50 m west of the Yukon River, across from the playground. The top of casing is flush with the concrete pad, with a well seal installed on top. The borehole stratigraphy is described as silty sand/gravel unit (till); the screen is installed from 9.1 m bTOC to 10.6 m bTOC.</p> <p><b>Surficial Geology Data:</b> The well is located within glaciofluvial terrace (17-35 ft thick) overlying bedrock (McKenna &amp; Lipovsky, 2014, Dawson, YGS OF 2014-12, 1:25k).</p>	

## A.13 YOWN-1703

<b>Well Name:</b> Champagne (CAFN-MW-01)	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> March 2017	<b>Easting (m):</b> 419799
<b>Yukon Water Well Registry ID:</b> 101160007	<b>Northing (m):</b> 6737852
<b>Well Depth (m bTOC):</b> 18.60	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 694.00	<b>Period of Record:</b> 2017 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand	<b>Aquifer subtype:</b> 1b
<b>Aquifer thickness:</b> 30 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 0.8 km (Dezadeash River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 54 km (Ibex River near Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Otter Falls NCPC; 43 km	
<b>Other identification codes:</b> n/a	

**Well Description:** This well is located south of the Village of Champagne, near Champagne Creek. The well is installed in an unconfined aquifer. The stratigraphy consists of glacial till overlaid by alluvium and a layer of Aeolian sand.

**Surficial Geology Data:** The well is located within Aeolian sand dunes/loess overlying glaciolacustrine silt/sand/clay (Rampton & Paradis, 1982, Taye Lake, GSC Map 14-1981, 1:100k).

#### A.14 YOWN-1704

<b>Well Name:</b> Champagne (CAFN-MW-02)	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> March 2017	<b>Easting (m):</b> 419832
<b>Yukon Water Well Registry ID:</b> 101160008	<b>Northing (m):</b> 6737804
<b>Well Depth (m bTOC):</b> 10.65	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 695.00	<b>Period of Record:</b> 2017 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand	<b>Aquifer subtype:</b> 1b
<b>Aquifer thickness:</b> 30 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 0.8 km (Dezadeash River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 54 km (Ibex River near Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Otter Falls NCPC; 43 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> This well is located south of the Village of Champagne, near Champagne Creek. The well is installed in an unconfined aquifer. The stratigraphy consists of glacial till overlaid by alluvium and a layer of Aeolian sand.</p> <p><b>Surficial Geology Data:</b> The well is located within Aeolian sand dunes/loess overlying glaciolacustrine silt/sand/clay (Rampton &amp; Paradis, 1982, Taye Lake, GSC Map 14-1981, 1:100k).</p>	

#### A.15 YOWN-1705

<b>Well Name:</b> Champagne (CAFN-MW-03)	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> March 2017	<b>Easting (m):</b> 419765
<b>Yukon Water Well Registry ID:</b> 101160009	<b>Northing (m):</b> 6737855
<b>Well Depth (m bTOC):</b> 9.30	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 696.00	<b>Period of Record:</b> 2017 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand/ Silty sand	<b>Aquifer subtype:</b> 1b
<b>Aquifer thickness:</b> 30 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	

<b>Distance to surface water:</b> 0.8 km (Dezadeash River)
<b>Distance to Nearest Active Hydrometric Station:</b> 54 km (Ibex River near Whitehorse)
<b>Name of and Distance to Nearest Climate Station:</b> Otter Falls NCPC; 43 km
<b>Other identification codes:</b> n/a
 <b>Well Description:</b> This well is located south of the Village of Champagne, near Champagne Creek. The well is installed in an unconfined aquifer. The stratigraphy consists of glacial till overlaid by alluvium and a layer of aeolian sand. <b>Surficial Geology Data:</b> The well is located within Aeolian sand dunes/loess overlying glaciolacustrine silt/sand/clay (Rampton & Paradis, 1982, Teye Lake, GSC Map 14-1981, 1:100k).

## A.16 YOWN-1706

<b>Well Name:</b> Yukon College #1	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Oct. 2017/ March 2017	<b>Easting (m):</b> 494719
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6735147
<b>Well Depth (m bTOC):</b> 54.50	<b>Well Diameter (cm):</b> 15.24
<b>Well Elevation (masl):</b> 708.00	<b>Period of Record:</b> 2017 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Gravel	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 15 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 1.5 km (Yukon River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 2 km (Yukon River at Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 2 km	
<b>Other identification codes:</b> n/a	
 <b>Well Description:</b> This well is located at the end of the College Drive, in the parking area located north of the T-Wing building. <b>Surficial Geology Data:</b> The well is located within 54m+ glaciofluvial gravel/sand, hummocky ice-contact deposit (Lipovsky, 2022 - Greater Whitehorse, 1:20k, in prep).	

## A.17 YOWN-1801

<b>Well Name:</b> Takhini Research Forest	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> March 2018/ Oct. 2018	<b>Easting (m):</b> 488670
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6746781
<b>Well Depth (m bTOC):</b> 73.365	<b>Well Diameter (cm):</b> 15.24
<b>Well Elevation (masl):</b> 665.00	<b>Period of Record:</b> 2018 – Present



<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Gravel and Sand	<b>Aquifer subtype:</b> 1a
<b>Aquifer thickness:</b>	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 1.3 km (Yukon River); 0.8 km (Takhini River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 14.7 km (Yukon River at Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 15 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> This well is located at the Takhini Research Forest as a backup well for agricultural irrigation, however, it is not in use. The well is currently instrumented and monitored by WRB.</p> <p><b>Surficial Geology Data:</b> The well is located within 2-7m Aeolian silty sand blanket overlying 30-50m glaciolacustrine overlying till (Lipovsky, 2022 - Greater Whitehorse, 1:20k, in prep).</p>	

## A.18 YOWN-1802

<b>Well Name:</b> Kluane Harvest Camp	<b>UTM Zone:</b> 7
<b>Installation/Activation Dates:</b> March 2018	<b>Easting (m):</b> 545225
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6858086
<b>Well Depth (m bTOC):</b> 17.910	<b>Well Diameter (cm):</b> 15.24
<b>Well Elevation (masl):</b> 703.00	<b>Period of Record:</b> 2018 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sandy Gravel	<b>Aquifer subtype:</b> 1c
<b>Aquifer thickness:</b> 10 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 85 m (Koidern River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 26.7 km White River at km 1881.6 on Alaska Hwy)	
<b>Name of and Distance to Nearest Climate Station:</b> Beaver Creek Airport; 73 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> This well is located at the Kluane Harvest Camp, approximately 630 m southeast of the Lake Creek Campground. The well was drilled to serve as a drinking water supply well for KFN; however, the well is currently not in use and it is instrumented and monitored by WRB.</p> <p><b>Surficial Geology Data:</b> The well is located within fluvial terrace (gravel, sand and mud; with permafrost) (Rampton, 1979, Generc River, GSC Map 7-1978, 1:100k).</p>	

## A.19 YOWN-1803

<b>Well Name:</b> West Dawson	<b>UTM Zone:</b> 7
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<b>Installation/Activation Dates:</b> June 2018	<b>Easting (m):</b> 574873
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 7106071
<b>Well Depth (m bTOC):</b> 60.500	<b>Well Diameter (cm):</b> 15.24
<b>Well Elevation (masl):</b> 456.00	<b>Period of Record:</b> 2018 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Bedrock	<b>Aquifer subtype:</b> 3
<b>Aquifer thickness:</b> 20 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 1.4 km (Yukon River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 2 km (Yukon River at Dawson)	
<b>Name of and Distance to Nearest Climate Station:</b> Dawson Airport; 16 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> This well is located adjacent to the Top Of The World Highway, approximately 2.56 km up from the Yukon River ferry crossing. The well was drilled to offer a baseline info for potential subdivision development in West Dawson. The well is currently instrumented and monitored by WRB.</p> <p><b>Surficial Geology Data:</b> McConnell (late Wisconsin/late Pleistocene) glaciofluvial deposits are expressed as the lowest terraces above the recent (Holocene) fluvial sediments. They are found along the Klondike and Yukon rivers and are commonly covered by a veneer of organic deposits. (Surficial Geology, Dawson Region, Yukon Parts of NTS 1150/14 &amp;15 and 116B/1, 2, 3 &amp; 4 1:25 000 scale; Karen M .McKenna and Panya S. Lipovsky)</p>	

## A.20 YOWN-1901

<b>Well Name:</b> Tagish SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> August 2010/ March 2019	<b>Easting (m):</b> 539109
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6682171
<b>Well Depth (m bTOC):</b> 15.130	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 674.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand	<b>Aquifer subtype:</b> 1b
<b>Aquifer thickness:</b> 5 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Hvorslev : $2.5 \times 10^{-04}$ Bouwer & Rice : $1.7 \times 10^{-04}$	
<b>Distance to surface water:</b> 1.2 km (Tagish River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 13.6 km (Tagish lake at 10 mile Rd.)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 67 km	
<b>Other identification codes:</b> Tagish SWDF-MW01	

**Well Description:** This well was installed as part of a hydrogeological assessment program completed for the Solid Waste Disposal Facilities (SWDF) across Yukon. Tagish SWDF is located 65 km south east of Whitehorse and just off the Tagish Road. The well is currently instrumented and monitored by WRB.

**Surficial Geology Data:** The Tagish regional surficial geology are described as Quaternary aged deposits - unconsolidated silt, sand and gravel of glacial, fluvial, Aeolian and lacustrine origins; minor volcanic ash. These deposits are mapped as being locally continuous to the north, west and south of the Site and generally limited in extent by outcropping bedrock. Directly beneath the site the sediments are described as clay, silt and sand; 5 to 10 m thick and sand; less than 1 m thick. To the east of the Site, the quaternary sediments are mapped as gravel, sand and silt; 5 to 10 m thick.

## A.21 YOWN-1902

<b>Well Name:</b> Marsh Lake SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> May 1998/ Dec. 2019	<b>Easting (m):</b> 518011
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6673171
<b>Well Depth (m bTOC):</b> 15.590	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 673.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> >5 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 800 m (Marsh Lake)	
<b>Distance to Nearest Active Hydrometric Station:</b> 5.4 km (Marsh Lake near Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 41 km	
<b>Other identification codes:</b> MW26	
<p><b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. Marsh Lake SWDF is located at km 1492 on the Alaska Hwy, approximately 50 km of Whitehorse. The well is not within the Marsh Lake SWDF fenced area; access to the well is via the forestry road that splits to the west from the site access road. The well is currently instrumented and monitored by WRB.</p> <p><b>Surficial Geology Data:</b> The surface deposits in this ecoregion are associated with the most recent Cordilleran glaciations, the McConnell, believed to have covered the south and central Yukon between 26,500 and 10,000 years ago. Glacial till, often gullied, covers most mid-elevation slopes mixed with colluvial fans or aprons. The general composition of the till matrix in the region, noted by Jackson (1994), indicates a wide range of sand content (20—70%), silt (20—80%), and usually a lower clay content (5—30%). Glaciofluvial sand and gravel terraces flank the valley sides while pitted or hummocky deposits of sand and gravel line the bottom of some valleys. These deposits are free of permafrost and have stable surfaces. (Rostad et. al., 1977; Morison and McKenna, 1981; Klasen and Morison, 1987; Morison and Klasen, 1991; Mougeot and Smith, 1992 and 1994).</p>	

## A.22 YOWN-1903

<b>Well Name:</b> Mt. Lorne SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Oct. 2010/ Aug. 2019	<b>Easting (m):</b> 507650
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6704613

<b>Well Depth (m bTOC):</b> 21.200	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 768.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> >3 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined – limited water volume	
<b>Distance to surface water:</b> 2.1 km (Cowley Lake)	
<b>Distance to Nearest Active Hydrometric Station:</b> 27.9 km (Marsh Lake near Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 31 km	
<b>Other identification codes:</b> Mount Lorne SWDF-MW03	
<p><b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. Mt. Lorne SWDF is located at kilometer 143.2 of the South Klondike Hwy, approximately 30 km southeast of Whitehorse; and 15 km south of the Alaska Highway and 35 km north of the community of Carcross. The well is currently instrumented and monitored by WRB.</p> <p><b>Surficial Geology Data:</b> Sediments deposited directly by glacier ice without modification by any other agent of transportation. General Description: till can be transported beneath, beside, on, within and in front of a glacier. The mineralogical, textural, structural and topographic characteristics of till deposits are highly variable and depend upon both the source of material incorporated by the glacier and the mode of deposition. In general, till consists of well compacted to non-compacted material that is non-stratified and contains a heterogeneous mixture of particle sizes, commonly in a matrix of sand, silt and clay. (Geoscience Map 2005-7 Surficial Geology of Whitehorse (NTS 105D/11), Yukon (1:50 000 scale) by J.D. Bond, S.R. Morison and K. McKenna)</p>	

### A.23 YOWN-1904

<b>Well Name:</b> Braeburn SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> July 2012/ May 2019	<b>Easting (m):</b> 459490
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6811540
<b>Well Depth (m bTOC):</b> 65.220	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 761.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Bedrock	<b>Aquifer subtype:</b>
<b>Aquifer thickness:</b> 55 m	<b>Likely degree of aquifer confinement:</b> Partially confined
<b>Hydraulic properties of aquifer:</b> Bouwer-Rice : $6 \times 10^{-6}$	
<b>Distance to surface water:</b> 1.7 km (Braeburn Lake)	
<b>Distance to Nearest Active Hydrometric Station:</b> 48.8 km (Lake Laberge near Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Takhini River Ranch; 55 km	
<b>Other identification codes:</b> Braeburn-MW12-01	

**Well Description:** This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. Braeburn SWDF is accessed by a gravel road located off the west side of the Klondike Hwy at km 276, approximately 95 km north of Whitehorse and 80 km south of Carmacks. The well is currently instrumented and monitored by WRB.

**Surficial Geology Data:** Surficial geology maps published by the Yukon Geological Survey (YGS) indicate natural surficial material is representative of glacial outwash plain and terraced glaciofluvial material deposited directly by glacial ice and meltwater, respectively. In general, deposits consist of well compacted to non-compacted material that contains a mixture of sediment particle sizes, and is commonly in a matrix of gravel, sand and silt, supporting cobbles and boulders. The thickness of the unconsolidated sediments was estimated by Klassen (1978) to be between 5 m and 50 m.

## A.24 YOWN-1905

<b>Well Name:</b> Deep Creek SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Sep. 2010/ May 2019	<b>Easting (m):</b> 487607
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6772099
<b>Well Depth (m bTOC):</b> 14.604	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 686.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Silty Sand	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 3m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Hvorslev : $4.8 \times 10^{-06}$ Bouwer & Rice $6.8 \times 10^{-06}$	
<b>Distance to surface water:</b> 0.7 km (Lake Laberge)	
<b>Distance to Nearest Active Hydrometric Station:</b> 1.8 km (Lake Laberge near Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 24 km	
<b>Other identification codes:</b> Deep Creek SWDF-MW02	
<b>Well Description:</b> Deep Creek SWDF is located 40 km north of Whitehorse, just off the Deep Creek Road. The site is located at 695 masl on flat terrain. The well is currently instrumented and monitored by WRB.	
<b>Surficial Geology Data:</b> The southern Yukon, including the Deep Creek area, has undergone several episodes of glaciation, the most recent being the Quaternary McConnell glaciation (Geological Survey of Canada, 1985). The surficial materials at the site are primarily of glacial origin consisting predominantly of fine grained morainal till. Surficial sediments surrounding the site vary from morainal tills, glacial fluvial and alluvial morainal deposits. Underlying the glacial sediments at the site is bedrock described as the Laberge Group, consisting of Jurassic interbedded siltstone, sandstone and mudstone with minor volcanics.	

## A.25 YOWN-1906

<b>Well Name:</b> Quigley SWDF	<b>UTM Zone:</b> 7
<b>Installation/Activation Dates:</b> July 2017/ May 2019	<b>Easting (m):</b> 583212
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 7101592
<b>Well Depth (m bTOC):</b> 6.110	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 341.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand / Gravel	<b>Aquifer subtype:</b> 1b

<b>Aquifer thickness:</b> >3 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 1.5 km (Klondike River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 5.6 km (Klondike River above Bonanza Creek)	
<b>Name of and Distance to Nearest Climate Station:</b> Dawson Airport; 9 km	
<b>Other identification codes:</b> Quigley LTF-MW03-09	
<p><b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. The Quigley SWDF is located on the southern side of Klondike Valley, approximately 5 km east of Dawson City. The Site is accessed by Callison Road, south of Klondike Hwy. The well is located outside of the SWDF, adjacent to Callison Road.</p> <p><b>Surficial Geology Data:</b> A relatively consistent sequence of Quigley Gulch gravels at surface, overlying frozen or unfrozen organic rich silt, known as “Black Muck”, overlying alluvial gravels of the Klondike river, referred as “pay gravel”, overlying bedrock (AECOM, 2010).</p>	

## A.26 YOWN-1907

<b>Well Name:</b> Mayo SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> July 2012/ June 2019	<b>Easting (m):</b> 453631
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 7054777
<b>Well Depth (m bTOC):</b> 34.900	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 532.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Silty Sand	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 2 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Bouwer-Rice : $5 \times 10^{-6}$	
<b>Distance to surface water:</b> 0.9 km (Mayo River); 1.6 km (Stewart River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 3.6 km (Stewart River at Mayo)	
<b>Name of and Distance to Nearest Climate Station:</b> Mayo Airport; 3 km	
<b>Other identification codes:</b> Mayo SWDF-MW12-02	
<p><b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. The site is accessed by a 150 m gravel road north off the silver Trail Hwy, approximately 4,2 km northwest of the Village of Mayo. The facility is at an elevation of approximately 533 masl and lies within the Mayo and Stewart watersheds.</p> <p><b>Surficial Geology Data:</b> The Mayo area is mapped as being underlain primarily glaciofluvial, alluvial and lacustrine plain sediments of quaternary origin. Ablation till, colluvial glacial debris, morainal deposits, and bedrock exposures are found at higher elevations in the mountains to the north and west of the Site. Surficial geology maps published by the Yukon Geological Survey (YGS) indicate natural surficial materials at the Site are characteristic of gently sloping glaciofluvial plain deposits. In general, deposits consist of well compacted to non-compacted sediments that are primarily gravel, with some sand, and a thin veneer of silt or fine sand. The thickness of the unconsolidated sediments was estimated to be between 2 and 50 m thick (Hughes, 1979).</p>	

## A.27 YOWN-1908

<b>Well Name:</b> Stewart Crossing SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> July 2012/ June 2019	<b>Easting (m):</b> 416955
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 7024491
<b>Well Depth (m bTOC):</b> 32.380	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 555.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Bedrock	<b>Aquifer subtype:</b> 6b /UNK
<b>Aquifer thickness:</b> 16 m	<b>Likely degree of aquifer confinement:</b> Partially confined
<b>Hydraulic properties of aquifer:</b> Bouwer-Rice : $6 \times 10^{-6}$	
<b>Distance to surface water:</b> 2.3 km (Stewart River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 57 km (Pelly River at Pelly Crossing)	
<b>Name of and Distance to Nearest Climate Station:</b> Mayo Airport; 50 km	
<b>Other identification codes:</b> SWDF-MW12-01	
<p><b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. Stewart Crossing SWDF is accessed off the west side of the Klondike Hwy. at km 535, approximately 250 km north of Whitehorse and 4.6 km south of Stewart Crossing. The site is at an elevation of approximately 550 masl and lies within the Crooked Creek and Stewart River watersheds.</p> <p><b>Surficial Geology Data:</b> During the last glaciation (~200 kya), sediments such as glacial till, glaciofluvial, and glaciolacustrine sediments were deposited, especially in low elevation areas such as the Stewart River Valley, located downgradient of the Site, and the Tintina Trench. The Stewart Crossing area is mapped as being underlain primarily by moraine deposits, alluvium, and glaciofluvial deposits of Quaternary origin. Ablation till, colluvial glacial debris, morainal deposits, and bedrock exposures are found at higher elevations in the mountains surrounding the Site. Surficial geology maps published by the Yukon Geological Survey indicate natural surficial materials at the Facility are gently sloping moraine till deposits. In general, deposits consist of well compacted to non-compacted sediments comprised of mixed rock fragments, mud (silt and clay), and sand (Hughes, 1983). The thickness of the unconsolidated sediments was found to be approximately 0 - 2 m thick at the Site.</p>	

## A.28 YOWN-1909

<b>Well Name:</b> Pelly Crossing SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> July 2012/ June 2019	<b>Easting (m):</b> 418394
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6961202
<b>Well Depth (m bTOC):</b> 13.640	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 555.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Silty Sand, Gavel & Clay	<b>Aquifer subtype:</b> 4b
<b>Aquifer thickness:</b> 10 m	<b>Likely degree of aquifer confinement:</b> Partially confined
<b>Hydraulic properties of aquifer:</b> Bouwer-Rice : $4 \times 10^{-6}$	

<b>Distance to surface water:</b> 4.2 km (Pelly River)
<b>Distance to Nearest Active Hydrometric Station:</b> 6.5 km (Pelly River at Pelly Crossing)
<b>Name of and Distance to Nearest Climate Station:</b> Pelly Ranch; 37 km
<b>Other identification codes:</b> Pelly Crossing SWDF-MW12-01
<p><b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. Pelly Crossing SWDF is accessed by a gravel road off the east side of the Klondike Hwy., at km 464 (282 km north of Whitehorse). The site is an elevation of approximately 565 masl and lies within Mica Creek and Pelly River watersheds.</p> <p><b>Surficial Geology Data:</b> The southern Yukon, including the Pelly Crossing area, has undergone several episodes of glaciation, the most recent being the Quaternary McConnell Glaciation. During that period, sediments such as glacial till and glaciofluvial and glaciolacustrine sediments were deposited, especially in low elevation areas such as the Pelly River Valley where the SWDF facility is located. The Pelly Crossing area is mapped as being underlain primarily by glaciofluvial deposits, alluvium, and aeolian deposits of Quaternary origin. Rock outcrops, colluvial glacial debris, morainal deposits, and bedrock exposures are found in the higher elevation areas. Surficial geology maps published by the Yukon Geological Survey indicate natural surficial materials at the Facility are gently sloping aeolian deposits. In general, deposits consist of well compacted to non-compacted sediments that are primarily well sorted massive sand. This is inconsistent with the layered silt and sand, with minor clay and gravel, deposits encountered during drilling at the Site.</p>

## A.29 YOWN-1910

<b>Well Name:</b> Welgreen Campsite	<b>UTM Zone:</b> 7
<b>Installation/Activation Dates:</b> Aug. 2016/ June 2019	<b>Easting (m):</b> 589595
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6820423
<b>Well Depth (m bTOC):</b> 9.079	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 796.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 8 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 1.0 km (Kluane River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 16.8 km (Kluane River at outlet of Kluane Lake)	
<b>Name of and Distance to Nearest Climate Station:</b> Burwash Airport; 22 km	
<b>Other identification codes:</b> MW-16-01	
<p><b>Well Description:</b> Welgreen Campsite is located approximately 125 km northwest of Haines Junction along the Alaska Hwy. at km 1728 and south of the Quill Creek Road. The former mining site includes the remaining mill foundations, tailings pond and dam, and largely undisturbed vegetated areas. The well is currently instrumented and monitored by WRB.</p> <p><b>Surficial Geology Data:</b> The regional surficial geology is described as blanket glacial sediments (GSC, 2014), with the 2019 field program identifying 0.5 to 2 m of sand and gravel fill material making up the Millsite pad and access roads, overlaying organics, variable sand layers and silty/clay Till. The Tailings Pond is located in a former creek and waterbody system and the underlying material below the tailings consist of organics and interbedded layers of silt, sand and silt, and clay. Downstream of the Tailings Dam there is silt with sand and</p>	



locally sourced granular alluvial materials overlying decomposed wood and organic soils. Close to the spillway channel, the surficial material is sand with gravel overlaying layers of silt with sand and silt and clay.

### A.30 YOWN-1911

<b>Well Name:</b> Beaver Creek SWDF	<b>UTM Zone:</b> 7
<b>Installation/Activation Dates:</b> June 2012/ June 2019	<b>Easting (m):</b> 508267
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6921255
<b>Well Depth (m bTOC):</b> 12.395	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 639.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand / Gravel	<b>Aquifer subtype:</b> 1c
<b>Aquifer thickness:</b> 3.5 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Bouwer-Rice : $1 \times 10^{-3}$	
<b>Distance to surface water:</b> 1.5 km (Beaver Creek)	
<b>Distance to Nearest Active Hydrometric Station:</b> 50.5 km (White River at km 1881.6 on Alaska Hwy)	
<b>Name of and Distance to Nearest Climate Station:</b> Beaver Creek Airport; 2 km	
<b>Other identification codes:</b> Beaver Creek SWDF-MW12-03	
<p><b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. Beaver Creek SWDF is located at km 1875 of the Alaska Hwy. approximately 4 km north of the community of Beaver Creek. The site is accessed by a 900 m gravel road off the east side of the Alaska Hwy. The site is at an elevation of approximately 640 masl and lies within a large flat glacial outwash plain between Beaver Creek and Snag Creek; the site topography is gently undulating.</p> <p><b>Surficial Geology Data:</b> Surficial geology maps published by the Yukon Geological Survey (YGS) indicate natural surficial materials are representative of glaciofluvial outwash plain deposits influenced by modern permafrost. In general, deposits consist of well compacted to non-compacted material that is non-stratified and contains a heterogeneous mixture of particle sizes, commonly in a matrix of gravel, with minor sand, cobbles and boulders and a thin veneer of silt and peat. The thickness of the unconsolidated sediments was estimated to be between 13 m and 60 m by (Rampton, 1977).</p>	

### A.31 YOWN-1912

<b>Well Name:</b> Horsecamp Hill SWDF	<b>UTM Zone:</b> 7
<b>Installation/Activation Dates:</b> June 2012/ June 2019	<b>Easting (m):</b> 519564
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6879534
<b>Well Depth (m bTOC):</b> 17.990	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 716.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 3.5 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Freeze & Cherry : $10^{-3}$	

<b>Distance to surface water:</b> 5.2 km (White River)
<b>Distance to Nearest Active Hydrometric Station:</b> 7.5 km (White River at km 1881.6 on Alaska Hwy)
<b>Name of and Distance to Nearest Climate Station:</b> Beaver Creek Airport; 42 km
<b>Other identification codes:</b> Horse Camp SWDF-MW12-01
<p><b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. Horsecamp Hill SWDF is located at km 1875 on Alaska Hwy, approximately 55 km south of the community of Beaver Creek. Site access is via a 150 m gravel road off the east side of Alaska Hwy. The site is at an elevation of approximately 720 masl and lies within White River watershed. Site topography is characteristic of glacial outwash plain and lateral moraine deposits.</p> <p><b>Surficial Geology Data:</b> The Horsecamp Hill area is mapped as being underlain primarily by unconsolidated till and glaciofluvial deposits of Quaternary origin, with modern alluvial deposits associated with low lying areas adjacent to Horsecamp Hill. Ablation till, colluvial glacial debris, morainal deposits and bedrock exposures are found at higher elevations near the Site.</p> <p>Surficial geology maps published by the Yukon Geological Survey (YGS) indicate natural surficial materials are representative of glaciofluvial outwash plain material deposited by glacial meltwater, and influenced by modern permafrost. In general, deposits consist of well compacted to non-compacted material that is non-stratified and contains a heterogeneous mixture of particle sizes; commonly in a matrix of gravel, with minor sand, cobbles and boulders and thin veneer of silt and peat. The thickness of the unconsolidated sediments was estimated to be between 13 m and 60 m (Rampton, 1977).</p>

### A.32 YOWN-1913

<b>Well Name:</b> Burwash Landing SWDF	<b>UTM Zone:</b> 7
<b>Installation/Activation Dates:</b> June 2012/ June 2019	<b>Easting (m):</b> 613292
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6798794
<b>Well Depth (m bTOC):</b> 21.090	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 805.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand / Gravel	<b>Aquifer subtype:</b> 3
<b>Aquifer thickness:</b> 5.5 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Bouwer-Rice : $2 \times 10^{-4}$	
<b>Distance to surface water:</b> 1.0 km (Kluane Lake)	
<b>Distance to Nearest Active Hydrometric Station:</b> 16 km (Kluane River at outlet of Kluane Lake)	
<b>Name of and Distance to Nearest Climate Station:</b> Burwash Airport; 10 km	
<b>Other identification codes:</b> Burwash Landing SWDF-BH12-03	
<p><b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. Burwash Landing SWDF is located approximately 128 km northwest of Haines Junction. The site is accessed by a gravel road off the east side of the Alaska Hwy at km 1750. The facility is generally flat and lies at an elevation of approximately 800 masl within the Kluane Lake watershed.</p> <p><b>Surficial Geology Data:</b> The Burwash Landing area is mapped as being underlain primarily by moraine deposits, alluvium, and glaciofluvial deposits of Quaternary origin. Ablation till, colluvial glacial debris, morainal deposits, and bedrock exposures are found at higher elevations in the mountains to the southwest of the Site.</p>	

Surficial geology maps published by the Yukon Geological Survey (YGS) indicate natural surficial materials are gently sloping alluvial fan deposits and hummocky kame and kettle deposits influenced by modern permafrost. In general, deposits consist of well compacted to non-compacted sediments that are primarily gravel, with some sand, and a thin veneer of silt and peat. The thickness of the unconsolidated sediments was estimated to be between 3 and 60 m thick (Rampton, 1977).

### A.33 YOWN-1914

<b>Well Name:</b> Silver City SWDF	<b>UTM Zone:</b> 7
<b>Installation/Activation Dates:</b> June 2012/ June 2019	<b>Easting (m):</b> 644193
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6768262
<b>Well Depth (m bTOC):</b> 13.110	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 811.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand / Bedrock	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 3.5 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Bouwer-Rice : $5 \times 10^{-7}$	
<b>Distance to surface water:</b> 3.8 km (Kluane Lake)	
<b>Distance to Nearest Active Hydrometric Station:</b> 10.1 km (Kluane Lake near Burwash Landing)	
<b>Name of and Distance to Nearest Climate Station:</b> Haines Junction; 10 km	
<b>Other identification codes:</b> SS-MW12-01	
<p><b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. Silver City SWDF is accessed by a gravel road off the north side of the Alaska Hwy. at km 1693, approximately 50 km east of the community of Destruction bay and 215 km northwest of Whitehorse. The facility is at an elevation of approximately 880 masl and lies within the Silver Creek watershed (part of the Kluane Lake watershed).</p> <p><b>Surficial Geology Data:</b> The Silver City area is mapped as being underlain primarily by moraine deposits, alluvial deposits, and glaciofluvial deposits of Quaternary origin. Ablation till, colluvial glacial debris, morainal deposits and bedrock exposures are found at higher elevations in the mountains to the southwest of the Site. Surficial geology maps published by the Yukon Geological Survey (YGS) indicate natural surficial materials are representative of hummocky kame and kettle deposits. In general, the kame and kettle deposits consist of primarily gravel with some sand, and are between 13 and 60 m thick. Aggregate mining at the Site has resulted in an altered landscape that does not conform to the original topography. A majority of vegetation has been removed and gravel is exposed throughout the property. Bordering the Site to the east are gently rolling glaciofluvial outwash plain deposits, and to the west are alluvial fan deposits (Rampton, 1977).</p>	

### A.34 YOWN-1915

<b>Well Name:</b> Old Crow Sewage Lagoon	<b>UTM Zone:</b> 7
<b>Installation/Activation Dates:</b> Sep. 2016/ June 2019	<b>Easting (m):</b> 548266
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 7495352
<b>Well Depth (m bTOC):</b> 3.400	<b>Well Diameter (cm):</b> 5

<b>Well Elevation (masl):</b> 245.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand and Gravel (Fill)	<b>Aquifer subtype:</b> 3
<b>Aquifer thickness:</b> 0.6 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 0.3 km (Porcupine River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 1.4 km (Porcupine River below Old Crow River)	
<b>Name of and Distance to Nearest Climate Station:</b> Old Crow Airport; 1 km	
<b>Other identification codes:</b> BH07	
<p><b>Well Description:</b> The well is currently instrumented and monitored by WRB. The lagoon is located approximately 0.65 km northwest of the Old Crow airport; the site is accessed by a driveway at the west end. The area around the sewage lagoon as well as most of the community of Old Crow is largely underlain by permafrost. The area adjacent to the sewage lagoon is wetland that is regularly inundated.</p> <p><b>Surficial Geology Data:</b> Surficial geology in the town of Old Crow is expected to be representative of a fluvial geological setting with characteristics of a meandering river. Meandering channels migrate laterally across the valley bottom by erosion at the outside meander bend, leaving behind a typical deposition sequence on the inside meander bend. A typical sequence can be described by fine-grained sediments forming levee deposits and spilling into the adjacent floodplain. Underlying these deposits are silt and sand, occasionally gravel, deposited in point bars on the inside meander bend. Underlying these deposits are coarse to medium sand deposited in the former channel that overlie lag gravels eroded from the migrating channel. All or part of this sequence repeats with each pass of the meander (Nichols, 2013).</p> <p>The regional hydrogeology is governed primarily by permafrost conditions and surface topography. Supra-permafrost water flows along the surface of the interface between the thawed, active layer and the frozen permafrost and is recharged directly from the surface or thawing permafrost. Supra-permafrost water may exist year round where unfrozen ground is deep above permafrost (Williams and Waller, 1963) and may become confined in response to the active layer freezing from the surface towards the permafrost table, once air temperatures returns to freezing. In the flat lowlands of the Old Crow Basin, flow of supra-permafrost water will be slow or stagnant in response to the low hydraulic gradients created by the comparatively level surface of the permafrost, which governs the flow within the active layer.</p>	

### A.35 YOWN-1916

<b>Well Name:</b> Swift River SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> May 2012/ Aug. 2019	<b>Easting (m):</b> 386788
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6657592
<b>Well Depth (m bTOC):</b> 10.955	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 1013.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Bedrock	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 7 m	<b>Likely degree of aquifer confinement:</b> Partially confined
<b>Hydraulic properties of aquifer:</b> Bouwer-Rice : $3.5 \times 10^{-7}$	
<b>Distance to surface water:</b> 0.9 km (Swift River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 62.1 km (Morely River at km 1251 on Alaska Hwy)	

<b>Name of and Distance to Nearest Climate Station:</b> Teslin; 96 km
<b>Other identification codes:</b> Swift River SWDF-MW12-03
<b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. The site is accessed by a 260 m gravel road, north of km 1,126.7 of the Alaska Highway in the southeast part of the Yukon Territory, approximately 150 km west of the town of Watson Lake and approximately 10 km northeast of the Swift River Highway Maintenance Camp. The site area is general flat, with the surrounding area sloped to the southeast, towards the Swift River.
<b>Surficial Geology Data:</b> The Swift River area is mapped as being underlain primarily by unconsolidated till and glaciofluvial deposits of Quaternary origin, with modern alluvial deposits associated with low-lying areas adjacent to the Swift River. Ablation till, colluvial glacial debris, and bedrock exposures are found at higher elevations near the Site. Surficial geology maps published by the Yukon Geological Survey (YGS) indicate natural surficial materials are representative of ablation till and glaciofluvial material deposited directly by glacial ice or melt water, respectfully. In general, deposits consist of well compacted to non-compacted material that is non-stratified and contains a heterogeneous mixture of particle sizes, commonly in a matrix of gravel, sand, and silt supporting cobbles and boulders. The thickness of the unconsolidated sediments was estimated by Klassen (1978) to be between 5 m and 30 m.

### A.36 YOWN-1918

<b>Well Name:</b> Eagle Plains SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Oct. 2015/ Sep. 2019	<b>Easting (m):</b> 422126
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 7357847
<b>Well Depth (m bTOC):</b> 4.964	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 754	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Bedrock	<b>Aquifer subtype:</b>
<b>Aquifer thickness:</b> 0.3 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Bouwer-Rice : $7 \times 10^{-7}$	
<b>Distance to surface water:</b> 9.7 km (Eagle River); 1.5 km (un-named creek)	
<b>Distance to Nearest Active Hydrometric Station:</b> 12.7 km (Eagle River at Dempster Hwy bridge)	
<b>Name of and Distance to Nearest Climate Station:</b> Rock River; 74 km	
<b>Other identification codes:</b> Eagle Plains SWF-MW01	
<b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. The Eagle Plains SWDF is located approximately 407 km north of the City of Dawson and 4 km south of the Eagle Plains Motel on Dempster Highway. The site is located in a region with continuous permafrost of significant thickness (>100 m).	
<b>Surficial Geology Data:</b> The site is located within the Eagle Plains ecoregion which forms part of the Taiga Cordillera ecozone. This ecoregion is situated within the continuous permafrost zone. The active layer with seasonal freeze/thaw cycles typically varies from 20 to 90 cm in undisturbed areas (Yukon Ecoregions Working Group, 2004). Soils at the site generally consists of a shallow layer of organics overlaying sand and gravel, which overlays bedrock – sandstone (EBA, 2016).	

### A.37 YOWN-1919

<b>Well Name:</b> Haines Junction SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Oct. 2010/ Sep. 2019	<b>Easting (m):</b> 363116
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6740207
<b>Well Depth (m bTOC):</b> 37.860	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 635.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Silt and Sand	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 1.7 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Bouwer-Rice : $4.1 \times 10^{-07}$ Hvorslev : $4.7 \times 10^{-07}$	
<b>Distance to surface water:</b> 2.9 km (Dezadeash River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 2.9 km (Dezadeash River at Haines Junction)	
<b>Name of and Distance to Nearest Climate Station:</b> Haines Junction Airport; 4 km	
<b>Other identification codes:</b> Haines Junction SWDF-MW01	
<p><b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. The site is located 175 km west of Whitehorse, approximately 200 m off the Alaska Highway and 2 km north of the center of the Haines Junction community. The site is located at about 630 masl on relatively flat terrain; in general, the land slopes to the south towards Haines Junction and the Dezadeash River.</p> <p><b>Surficial Geology Data:</b> Quaternary aged deposits exist within river, mountain and glacial valleys and depressions. The community of Haines Junction is situated within a lacustrine plain, just north of the fluvial floodplain of the Dezadeash River (Muller, 1967). Surrounding Haines Junction, and along the valleys to the northeast, northwest and southeast of the community, the surficial deposits consist of glaciofluvial outwash gravels. Southwest of Haines Junction, towards the Auriol Range, the surficial deposits consist of diamicton ground moraine at the Auriol foothills, and a mixture of gravelly glacial kame deposits, till covered slopes and gravelly glaciofluvial or fluvial fans on the slopes of the mountains. At least three major glaciers have advanced through the Shakwak Valley, covering what is now the Haines Junction community. These glaciers deposited clay rich tills upon retreating. There have also been several episodes in which the Haines Junction region has been covered by lakes (Glacial Lake Champagne and Lake Alsek) that deposited further thick sequences of clay and silt.</p>	

### A.38 YOWN-1920

<b>Well Name:</b> Champagne SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Oct. 2010/ Sep. 2019	<b>Easting (m):</b> 420589
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6740306
<b>Well Depth (m bTOC):</b> 15.590	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 730.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand and Silt	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 1.0 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Bouwer-Rice : $1.31 \times 10^{-06}$ Hvorslev : $2.03 \times 10^{-06}$	

<b>Distance to surface water:</b> 1.5 km (Dezadeash River)
<b>Distance to Nearest Active Hydrometric Station:</b> 53.5 km (Ibex River near Whitehorse)
<b>Name of and Distance to Nearest Climate Station:</b> Otter Falls NCPC; 42 km
<b>Other identification codes:</b> Champagne SWDF-MW03
<b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. The site is located approximately 75 km west of Whitehorse, on the Champagne Access Road. The community of Champagne is located approximately 1.2 km to the west of the site. The site is located at an elevation of approximately 728 masl on relatively flat terrain; Dezadeash River is located 1.5 km to the west/southwest.
<b>Surficial Geology Data:</b> The southern Yukon, including the Champagne area, has undergone several episodes of glaciation, the most recent being the Quaternary McConnell glaciation. The surficial materials at the Site are primarily of Pleistocene origin consisting predominantly of fine grained till and lacustrine silt of unknown thickness. Underlying the overburden sediments at the Site is bedrock described as Coast intrusions, consisting of Mesozoic granodiorite, quartz diorite and granite (GSC, 1957). During the retreat of the glaciers in the late Pleistocene, sediment in the form of till was deposited in areas such as Champagne. Throughout the retreat of the glaciers an extinct glacial lake called Glacial Lake Champagne formed in the Champagne area depositing some of lacustrine sediments observed.

### A.39 YOWN-1921

<b>Well Name:</b> Drury Creek SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> July 2012/ Sep. 2019	<b>Easting (m):</b> 530960
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6896737
<b>Well Depth (m bTOC):</b> 9.095	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 669.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Silt / Bedrock	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 2.8 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Bouwer-Rice : $1 \times 10^{-5}$	
<b>Distance to surface water:</b> 0.3 km (Little Salmon Lake)	
<b>Distance to Nearest Active Hydrometric Station:</b> 0.9 km (Drury Creek at km 469 on Robert Campbell Hwy)	
<b>Name of and Distance to Nearest Climate Station:</b> Faro; 53 km	
<b>Other identification codes:</b> Drury Creek SWDF-MW12-01	
<b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. The site is located approximately 110 km east of the Village of Carmacks and 47 km west of Faro, on the north side of the Robert Campbell Highway.	
<b>Surficial Geology Data:</b> The southern Yukon, including the Drury Creek area, has undergone several episodes of glaciation, the most recent being the Quaternary McConnell glaciation. During that period, sediments such as glacial till and glaciofluvial and glaciolacustrine sediments were deposited, especially in low elevation areas such as the Magundy River Valley, where the Site is located.	
The Drury Creek area is mapped as being underlain primarily by till and colluvial apron sediments of Quaternary origin, and modern alluvial plain and lacustrine sediments associated with Magundy River and Little Salmon Lake respectively. Bedrock exposures are found at higher elevations in the mountains to the	

northeast of the Site. Surficial geology maps published by the YGS indicate natural surficial materials at the Site consist of colluvial apron and glaciofluvial delta sediments. Deposits are poorly to well sorted sand and gravel with minor silt, and range from 1 m to greater than 5 m in thickness (Ward and Jackson, 1993).

#### A.40 YOWN-1922

<b>Well Name:</b> Ross River SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> July 2012/ Sep. 2019	<b>Easting (m):</b> 633906
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6872652
<b>Well Depth (m bTOC):</b> 4.370	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 759.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sandy Silt	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 1.4 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Bouwer-Rice : $3 \times 10^{-8}$	
<b>Distance to surface water:</b> 2.3 km (Pelly River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 3.6 km (Ross River at Ross River)	
<b>Name of and Distance to Nearest Climate Station:</b> Faro; 56 km	
<b>Other identification codes:</b> Ross River SWDF - MW12-01	
<p><b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. The site is accessed by a gravel road off the east side of the Canol Road, approximately 10 km north of the Robert Campbell Highway and 240 km east of the Village of Carmacks. The site is at an elevation of approximately 740 masl, within the Pelly River watershed. The regional hydraulic gradient at the site is expected to follow the regional topography, which slopes north, towards Pelly River.</p> <p><b>Surficial Geology Data:</b> The southern Yukon, including the Ross River area, has undergone several episodes of glaciation, the most recent being the Quaternary McConnell glaciation. During that period, sediments such as glacial till and glaciofluvial and glaciolacustrine sediments were deposited, especially in low elevation areas such as the Pelly River Valley, located downgradient of the Site.</p> <p>The Ross River area is mapped as being underlain primarily by till and alluvium, with minor glaciolacustrine sediments of Quaternary origin. Ablation till, colluvial glacial debris, morainal deposits, and bedrock exposures are found at higher elevations in the mountains to the southwest of the Site.</p> <p>Surficial geology maps published by the Yukon Geological Survey indicate natural surficial materials at the Facility are flat to gently sloping glaciolacustrine plain and blanketed till deposits conforming closely to the bedrock topography. In general the glaciolacustrine sediments consist of silt and fine sand with minor clay, and are greater than 5 m thick. Till blanket sediments consist of a silty sandy matrix containing gravel, cobbles, and minor boulders, and are greater than 1 m thick (Jackson, 1981-1982).</p>	

#### A.41 YOWN-1923

<b>Well Name:</b> Watson Lake SWDF	<b>UTM Zone:</b> 9
<b>Installation/Activation Dates:</b> May 2012/ Oct. 2019	<b>Easting (m):</b> 514236
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6659104
<b>Well Depth (m bTOC):</b> 23.810	<b>Well Diameter (cm):</b> 5



<b>Well Elevation (masl):</b> 715.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand / Gravel and Bedrock	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 3.1 m	<b>Likely degree of aquifer confinement:</b> Partially confined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 0.8 km (un-named creek draining into Watson Lake)	
<b>Distance to Nearest Active Hydrometric Station:</b> 9.3 km (Liard River at Upper Crossing)	
<b>Name of and Distance to Nearest Climate Station:</b> Watson Lake Airport; 7 km	
<b>Other identification codes:</b> Watson Lake SWDF-BH12-01	
<p><b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. The site access is located at km 1,022 of the Alaska Highway, approximately 1.5 km west of the Town of Watson Lake. The site is generally flat, at an elevation of approximately 715 masl. The regional topography slopes south towards Liard River.</p> <p><b>Surficial Geology Data:</b> Surficial geology at the Facility reported by YGS (Lipovsky and others, 2005) consists of a blanket of anthropogenic material overlying a till blanket and bedrock. This is consistent with the results of drilling at the Facility where shallow subsurface material consists of fill, and glacially-derived silt and sand underlain by basalt flows (EBA, 2018). The deeper surficial material encountered at the Facility consists of mixed sand and gravel sit some silt intervals overlying bedrock. Surficial materials surrounding the landfill consist of gently sloping till blankets and glaciofluvial material occurring in planar, gently sloping, undulating and hummocky landforms.</p>	

#### A.42 YOWN-1924

<b>Well Name:</b> Canyon Creek SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> June 2012/ Sep. 2019	<b>Easting (m):</b> 382870
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6748007
<b>Well Depth (m bTOC):</b> 33.870	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 671.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 3.4 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Hazen : $1 \times 10^{-4}$	
<b>Distance to surface water:</b> 1.5 km (Dezadeash River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 22.3 km (Dezadeash River at Haines Junction)	
<b>Name of and Distance to Nearest Climate Station:</b> Otter Falls NCPC; 21 km	
<b>Other identification codes:</b> Canyon Creek SWDF - MW18-04	

**Well Description:** This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. The site is located approximately 130 km west of Whitehorse and 25 km east of Haines Junction. Access to the site is by a gravel road approximately 400 m off the south side of Alaska Hwy at km 1,609. The site is at an elevation of approximately 675 masl and lies within the Dezadeash watershed, which is part of the larger Takhini River watershed in a gently sloping glaciolacustrine plain.

**Surficial Geology Data:** Surficial geology maps published by the Yukon Geological Survey indicate natural surficial materials are representative of flat to gently sloping glaciolacustrine deposits. In general, these deposits consist of primarily silt with some clay and minor sand, and range from 2 to 70 m in thickness (Rampton and Paradis, 1979). Sediments at the Site have been reworked and mixed with buried waste.

### A.43 YOWN-1925

<b>Well Name:</b> Carmacks SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Nov. 2002/ Oct. 2019	<b>Easting (m):</b> 432790
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6883151
<b>Well Depth (m bTOC):</b> 7.165	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 896.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Yukon River	
<b>Aquifer Material:</b> Sand and Gravel	<b>Aquifer subtype:</b> 3
<b>Aquifer thickness:</b> 0.8 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 0.4 km (Nordenskiold River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 2.3 km (Yukon River at Carmacks)	
<b>Name of and Distance to Nearest Climate Station:</b> Carmacks; 7 km	
<b>Other identification codes:</b> Carmacks SWDF-MW02	
<p><b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. The site is within the boundaries of the Village of Carmacks approximately 1 km south of the village core on the North Klondike Highway. The Site is at the base of a glaciofluvial terrace in the Nordenskiold River Valley near the confluence of the Nordenskiold and Yukon Rivers. The primary groundwater flow direction in the vicinity of the site is northeast, towards Yukon River.</p> <p><b>Surficial Geology Data:</b> The surficial geology at the Site comprises of floodplain sediments which have been described by Jackson (2000) as horizontally stratified gravel and sand with minor to extensive lacustrine fine sand and organic sediments which are subject to flooding due to summer and spring ice-jam. These sediments range in thickness between 1 and 5 m. They are likely underlain at the Site location by the nearby glaciofluvial terrace sediments, which comprise “gravel, sand, minor silt and diamicton cut by flights of terraces” and range between 1 and more than 10 m in thickness, or the glaciofluvial plain sediments described as “coarse gravel, sand and minor silt deposited along former glacial stream”.</p>	

### A.44 YOWN-1926

<b>Well Name:</b> Johnson's Crossing SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> May 2012/ Oct. 2019	<b>Easting (m):</b> 594241

<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6707644
<b>Well Depth (m bTOC):</b> 91.000	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 774.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand and Gravel	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 6.0 m	<b>Likely degree of aquifer confinement:</b> Partially confined
<b>Hydraulic properties of aquifer:</b> Bouwer-Rice : $1 \times 10^{-3}$	
<b>Distance to surface water:</b> 1.1 km (Teslin River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 35 km (Sidney Creek at km 46 on south Canol Road)	
<b>Name of and Distance to Nearest Climate Station:</b> Teslin Airport; 47 km	
<b>Other identification codes:</b> Johnson's Crossing SWDF-MW12-01	
<p><b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. The site is accessed by a gravel road, off the east side of the Alaska Highway at km 1,295, approximately 128 km east of Whitehorse and 500 m north of the bridge of Johnson's Crossing. The facility is at an elevation of approximately 770 masl and lies within the Judas Creek and Marsh Lake watersheds. Local surficial geology is flat terrace deposits of glaciofluvial origin; the regional hydraulic gradient is expected to be to the southwest, towards Teslin River.</p> <p><b>Surficial Geology Data:</b> The southern Yukon, including the Johnson's Crossing area, has undergone several episodes of glaciation, the most recent being the Quaternary McConnell glaciation. During that period, sediments such as glacial till, glaciofluvial sediments, and glaciolacustrine sediments were deposited, especially in low elevation areas such as the Teslin River Valley, located downgradient of the Site. The Johnson's Crossing area is mapped as being underlain primarily by till, colluvium, and glaciofluvial outwash sediments of Quaternary origin, with modern lacustrine and fluvial sediments at lower elevations associated with the Teslin River and Teslin Lake. Ablation till, colluvial glacial debris, morainal deposits, and bedrock exposures are found at higher elevations in the mountains to the surrounding the Site. Surficial geology maps published by the Yukon Geological Survey (YGS) indicate natural surficial materials at the Site are terrace deposits of glaciofluvial origin, consisting silt, sand, and gravel. Deposits range from 5 m to approximately 50 m in thickness.</p>	

#### A.45 YOWN-1927

<b>Well Name:</b> Upper Liard SWDF1	<b>UTM Zone:</b> 9
<b>Installation/Activation Dates:</b> Oct. 1999/ Oct. 2019	<b>Easting (m):</b> 502870
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6657435
<b>Well Depth (m bTOC):</b> 17.575	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 641.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 1.3 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 2.4 km (Liard River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 2.3 km (Liard River at Upper Crossing)	
<b>Name of and Distance to Nearest Climate Station:</b> Watson Lake Airport; 10 km	

<b>Other identification codes:</b> UL-MW01
<b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. The site is located on Alaska Hwy. approximately 2 km west of the community of Upper Liard, and less than 20 km west of the Town of Watson Lake. The site is located within the Liard Basin and the Liard River is located approximately 2 km to the east. The site is at an elevation of approximately 640 masl.
<b>Surficial Geology Data:</b> The Upper Liard Solid Waste facility is situated on an approximately 30 m thick sequence of sand deposited in a glaciofluvial sedimentary environment (Hunt, 1994). Rivers associated with retreating glaciers have left a relatively homogeneous deposit of sand with consistent grain-size and minor gravel. The sand deposit forms terraces or ridges reflective of the various river banks as the glacial rivers receded. The Albert Creek flows across the glaciofluvial sand deposit and has deposited some colluvial material in the current creek bed and the adjacent areas during high water. The solid waste facility is bounded to the north by a terrace ridge. Beyond the terrace to the north, there are stagnant ice deposits with mixed grain size ranging from silt to gravel.

#### A.46 YOWN-1928

<b>Well Name:</b> Faro SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> July 2012/ Nov. 2019	<b>Easting (m):</b> 584575
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6901641
<b>Well Depth (m bTOC):</b> 16.920	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 697.00	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 2.4 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Bouwer-Rice : $2 \times 10^{-4}$	
<b>Distance to surface water:</b> 1.3 km (Pelly River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 1.8 km (Pelly River below Vangorda Creek)	
<b>Name of and Distance to Nearest Climate Station:</b> Faro; 3 km	
<b>Other identification codes:</b> Faro SWDF-MW12-04	
<b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. The site is accessed by a gravel road off the east side of Mitchell Road, approximately 9.3 km north of Robert Campbell Highway, and 180 km east of the Village of Carmacks. The facility has an elevation of approximately 700 masl and lies within the Pelly River watershed. The regional hydraulic gradient near the site is expected to follow the regional topography, which slopes south, towards Pelly River.	
<b>Surficial Geology Data:</b> The southern Yukon, including the Faro area, has undergone several episodes of glaciation, the most recent being the Quaternary McConnell glaciation. During that period, sediments such as glacial till, glaciofluvial, and glaciolacustrine sediments were deposited, especially in low elevation areas such as the Pelly River Valley, located downgradient of the Site.	
The Faro area is mapped as being underlain primarily by till and alluvium, with minor glaciolacustrine sediments of Quaternary origin. Ablation till, colluvial glacial debris, morainal deposits, and bedrock exposures are found at higher elevations in the mountains to the northeast of the Site.	
Surficial geology maps published by the Yukon Geological Survey (YGS) indicate natural surficial materials at the Site are part a glaciofluvial complex of outwash, glaciolacustrine, and minor till deposits, deposited in an	

ice contact environment. Deposits are poorly to well sorted; sand and gravel with minor silt and clay; greater than 5 m thick. Kame and kettle topography is associated with this setting (Jackson, 1993).

#### A.47 YOWN-1930

<b>Well Name:</b> Cowley Creek (S & D)	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Dec. 2019/ May 2020	<b>Easting (m):</b> 505039
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6717467
<b>Well Depth (m bTOC):</b> 13.145 (S); 46.130 (D)	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 722.00 (D & S)	<b>Period of Record:</b> 2019 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand/Gravel	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 7.7 m	<b>Likely degree of aquifer confinement:</b> Partially confined (D)
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 3.2 km (Yukon River); 160 m (Cowley Creek)	
<b>Distance to Nearest Active Hydrometric Station:</b> 18.9 km (Yukon River at Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 19 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> This well was installed in December 2019 as a nested well (a shallow and a deep monitoring wells installed in the same borehole) in the Cowley Creek subdivision of Whitehorse. The well is located on the north side of the Salmon Trail, approximately 1 km south of the Alaska Highway and 100 m west of Cowley Creek. The well is currently instrumented and monitored by WRB. The site elevation is approximately 720 masl and lies within the Yukon River watershed. The regional hydraulic gradient near the site is expected to follow the regional topography, which slopes north, towards Yukon River.</p> <p><b>Surficial Geology Data:</b> The dominant surface materials in the surrounding Cowley Creek subdivision area comprise thick packages of glaciofluvial sand and gravel that were deposited by meltwater draining the receding glaciers. In many locations in the Cowley Creek area, the glaciofluvial materials are underlain by a thick (20+ m) sequence of fine-grained (fine sand, silt and clay) glaciolacustrine materials. These glacial lake bottom sediments were deposited in Glacial Lake Laberge, which occupied the Yukon River valley up to 716 m elevation. Incision of these materials in the Yukon River valley has also caused a regional reduction in base level throughout the Holocene. Basal till in the vicinity typically comprises a dense, nearly impermeable, diamict with a sandy silt matrix and a wide range of coarse fragment characteristics (size, lithology, and rounding). Basal till on the order of 10–15 m thick was commonly encountered in nearby water wells (Greater Whitehorse area permafrost characterization L.-P. Roy, F. Calmels, C. Laurent and N. Vogt Yukon University P.S. Lipovsky and J. Humphries Yukon Geological Survey, 2021)</p>	

## A.48 YOWN-2001

<b>Well Name:</b> Upper Liard SWDF2	<b>UTM Zone:</b> 9
<b>Installation/Activation Dates:</b> Oct. 1999/ March 2020	<b>Easting (m):</b> 503001
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6657354
<b>Well Depth (m bTOC):</b> 13.650	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 641.00	<b>Period of Record:</b> 2020 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 3.0 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 1.8 km (Liard River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 2.2 km (Liard River at Upper Crossing)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 19 km	
<b>Other identification codes:</b> UL-MW02	
<p><b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. The site is located on Alaska Hwy. approximately 2 km west of the community of Upper Liard, and less than 20 km west of the Town of Watson Lake. The site is located within the Liard Basin and the Liard River is located approximately 2 km to the east. The site is at an elevation of approximately 640 masl.</p> <p><b>Surficial Geology Data:</b> The Upper Liard Solid Waste facility is situated on an approximately 30 m thick sequence of sand deposited in a glaciofluvial sedimentary environment (Hunt, 1994). Rivers associated with retreating glaciers have left a relatively homogeneous deposit of sand with consistent grain-size and minor gravel. The sand deposit forms terraces or ridges reflective of the various river banks as the glacial rivers receded. The Albert Creek flows across the glaciofluvial sand deposit and has deposited some colluvial material in the current creek bed and the adjacent areas during high water. The solid waste facility is bounded to the north by a terrace ridge. Beyond the terrace to the north, there are stagnant ice deposits with mixed grain size ranging from silt to gravel.</p>	

## A.49 YOWN-2002

<b>Well Name:</b> Ogilvie Highway Maintenance Camp	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Sep. 2017/ March 2020	<b>Easting (m):</b> 625241
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 7251269
<b>Well Depth (m bTOC):</b> 5.400	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 594.00	<b>Period of Record:</b> 2020 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Crushed Bedrock, Sand and Gravel	<b>Aquifer subtype:</b> 6b
<b>Aquifer thickness:</b> 1.4 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 150 m (Ogilvie River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 0.5 km (Ogilvie River at km 197.9 on Dempster Hwy)	
<b>Name of and Distance to Nearest Climate Station:</b> Dawson Airport; 150 km	

<b>Other identification codes:</b> Ogilvie Highway Camp - 17MW05
<b>Well Description:</b> The camp site is located at km 196 on Dempster Highway, west of the confluence of Engineer Creek with Ogilvie River. Site access is via the Dempster Highway from the northeast. The regional groundwater flow direction is expected to be towards the Ogilvie River or in the direction of river flow (southwest to northeast) in the soils immediately adjacent to the river. The well is currently instrumented and monitored by WRB.
<b>Surficial Geology Data:</b> The oldest rocks in the map area belong to the pre-570 million year old Wernecke Supergroup. They are composed of Quartet Group slaty argillite and quartzite; Gillespie Lake Group siliceous dolomite, siltstone and quartzite; and Tindir Group shale, limestone and dolomite. This package is unconformably overlain by 530-390 million year old unnamed limestone and dolomite and Road River Group black shale and limestone; Michell Formation black shale, limestone and dolomite; and Ogilvie Formation limestone; which is unconformably overlain by 375-255 million year old Canol Formation black shale, McCann Hill chert, Nation River Formation mudstone and conglomerate; Ford Lake shale, chert and limestone; Hart River Formation limestone, dolomite and chert; Ettrain Formation limestone, sandstone and conglomerate; Jungle Creek Formation conglomerate, sandstone, mudstone, limestone and shale; and Tahkandit Formation limestone and chert. These rocks are unconformably overlain by 240-130 million year old black calcareous shale and limestone, and Kingak Formation shale and siltstone. (OGILVIE RIVER MAP AREA N.T.S. 116F (E1/2) and 116G)

## A.50 YOWN-2003

<b>Well Name:</b> Teslin SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Nov. 2008/ March 2020	<b>Easting (m):</b> 628878
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6670288
<b>Well Depth (m bTOC):</b> 10.510	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 802.00	<b>Period of Record:</b> 2020 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Bedrock	<b>Aquifer subtype:</b> 6b
<b>Aquifer thickness:</b> 5.4 m	<b>Likely degree of aquifer confinement:</b> Partially confined
<b>Hydraulic properties of aquifer:</b> Lefranc : $2.18 \times 10^{-5}$	
<b>Distance to surface water:</b> 1.3 km (Teslin Lake)	
<b>Distance to Nearest Active Hydrometric Station:</b> 1.9 km (Teslin Lake at Teslin)	
<b>Name of and Distance to Nearest Climate Station:</b> Teslin; 4 km	
<b>Other identification codes:</b> Teslin SWF-MW01	
<b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well was installed approximately 270 m south-southeast of the SWDF, in a forested area. The site is located approximately 3 km east of the Village core at Mile 802 (Km 1291) Alaska Highway. The Site is on the slope of a ridge near the confluence of the Nisutlin Bay and the Teslin Lake. The well was instrumented in March 2019, however, in March 2020 it was noted that the well is seasonally dry. This well is currently deactivated and not instrumented or monitored by WRB.	
<b>Surficial Geology Data:</b> The surface deposits are associated with the most recent Cordilleran ice sheet, the McConnell glaciers, believed to have covered south and central Yukon between 26,500 and 10,000 years ago. In some valleys, benches of glaciofluvial sand and gravel flank the low elevation slopes. Glaciofluvial sand and gravel of variable thickness and composition are found in Teslin River and Squanga Creek valleys. These	

deposits are mostly free of permafrost, commonly have stable surfaces. During deglaciation, large volumes of meltwater were dammed in some valleys and formed large glacial lakes. Beachlines, lake bottom sediments, and modern lakes are now found in many of these valleys. Teslin Lake, Little Atlin and Atlin Lakes, as well as the Nisutlin River valley and the Red River valley north of Fish Lake are bordered by glaciolacustrine silt and clay deposits which can be as thick as 15 m. They commonly contain massive ice bodies and are prone to retrogressive thaw slide and thermokarst degradation when disturbed either by river erosion, forest fires, or other changes in surface conditions. (GEOPROCESS FILE SUMMARY REPORT TESLIN MAP AREA N.T.S. 105C)

## A.51 YOWN-2004

<b>Well Name:</b> Old Crow SWDF	<b>UTM Zone:</b> 7
<b>Installation/Activation Dates:</b> Sep. 2014/ July 2020	<b>Easting (m):</b> 548043
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 7495290
<b>Well Depth (m bTOC):</b> 10.680	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 250.00	<b>Period of Record:</b> 2020 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand and Gravel	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 7.4 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Hvorslev : $7 \times 10^{-5}$	
<b>Distance to surface water:</b> 130 m (Porcupine River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 1.6 km (Porcupine River below Old Crow River)	
<b>Name of and Distance to Nearest Climate Station:</b> Old Crow Airport; 1 km	
<b>Other identification codes:</b> Old Crow SWDF-MW04 / 14MWSWM-4	

**Well Description:** This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The well is currently instrumented and monitored by WRB. The facility is located approximately 700 m northwest of the Old Crow Airport airstrip, occupying approximately 1 ha. The site is located just over 100 km north of the Arctic Circle, immediately downstream of the confluence of the Porcupine River and the Old Crow River. The regional groundwater flow system is confined beneath permafrost. Hydraulic gradients in the confined unit are upward. During warmer months, a shallow seasonal groundwater flow system (comprising supra-permafrost water) develops within the shallow layer near ground surface that thaws.

**Surficial Geology Data:** Surficial geology in the town of Old Crow is expected to be representative of a fluvial geological setting with characteristics of a meandering river. Meandering channels migrate laterally across the valley bottom by erosion at the outside meander bend, leaving behind a typical deposition sequence on the inside meander bend. A typical sequence can be described by fine-grained sediments forming levee deposits and spilling into the adjacent floodplain. Underlying these deposits are silt and sand, occasionally gravel, deposited in point bars on the inside meander bend. Underlying these deposits are coarse to medium sand deposited in the former channel that overlie lag gravels eroded from the migrating channel. All or part of this sequence repeats with each pass of the meander (Nichols, 2013).

The regional hydrogeology is governed primarily by permafrost conditions and surface topography. Supra-permafrost water flows along the surface of the interface between the thawed, active layer and the frozen permafrost and is recharged directly from the surface or thawing permafrost. Supra-permafrost water may exist year round where unfrozen ground is deep above permafrost (Williams and Waller, 1963) and may become confined in response to the active layer freezing from the surface towards the permafrost table, once



air temperatures returns to freezing. In the flat lowlands of the Old Crow Basin, flow of supra-permafrost water will be slow or stagnant in response to the low hydraulic gradients created by the comparatively level surface of the permafrost, which governs the flow within the active layer.

## A.52 YOWN-2005

<b>Well Name:</b> Dempster Hwy Sewage Lagoon	<b>UTM Zone:</b> 7
<b>Installation/Activation Dates:</b> Nov. 2013/ March 2020	<b>Easting (m):</b> 613858
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 7098151
<b>Well Depth (m bTOC):</b> 20.495	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 480.00	<b>Period of Record:</b> 2020 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand and Gravel	<b>Aquifer subtype:</b> 1c
<b>Aquifer thickness:</b> 2.2 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Hvorslev : $7 \times 10^{-4}$	
<b>Distance to surface water:</b> 1.5 km (North Klondike River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 3.9 km (North Klondike River near the mouth)	
<b>Name of and Distance to Nearest Climate Station:</b> Dawson Airport; 24 km	
<b>Other identification codes:</b> Dempster Highway Sewage Pit - 19MW03D	
<b>Well Description:</b> The site is located approximately 44 km east of Dawson City, at km 3.9 of Dempster Highway. The inferred groundwater flow direction is southwest across the site toward the North Klondike River, located approximately 1.5 km to the southeast. The well is located west of the site access road, before the site gate. The well is currently instrumented and monitored by WRB.	
<b>Surficial Geology Data:</b> Surficial geology at the site is described as glacio-fluvial plain with sand and gravel soils deposited as proglacial sediments by glacial meltwaters (EBA, 2000 and EBA, 2001). Based on soil conditions observed by EBA during the drilling program, the materials beneath the site observed at depths from 0 m bgs to about 15-19 m bgs generally consist of a sand and gravel material. Below the layer of sand and gravel, the soil consists mostly of silt with minor clay and sand content to depths of around 21 m bgs. This is followed by sand containing some silts and then a silty sand at 23 m bgs.	

## A.53 YOWN-2006

<b>Well Name:</b> Carmacks Playground	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Nov. 2020	<b>Easting (m):</b> 431770
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6885652
<b>Well Depth (m bTOC):</b> 70.030 (D); 29.730 (S)	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 530.14 (D) 529.86 (S)	<b>Period of Record:</b> 2020 – Present
<b>Aquifer Name:</b> Yukon River	
<b>Aquifer Material:</b> Sand and Gravel	<b>Aquifer subtype:</b> 1a
<b>Aquifer thickness:</b> 6.2 m	<b>Likely degree of aquifer confinement:</b> Partially confined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 30 m (Yukon River)	
<b>Distance to Nearest Active Hydrometric Station:</b> 1.8 km (Yukon River at Carmacks)	

<b>Name of and Distance to Nearest Climate Station:</b> Carmacks; 7 km
<b>Other identification codes:</b> n/a
<p><b>Well Description:</b> This well was installed in November 2020 as a nested well (a shallow and a deep monitoring wells installed in the same borehole) in the Village of Carmacks. The well is located east of the playground on River Drive, approximately 2.2 km west of the Carmacks bridge over the Yukon River. The Yukon River is located approximately 30 m northeast of the wells. The well is currently instrumented and monitored by WRB. The site elevation is approximately 518 masl.</p> <p><b>Surficial Geology Data:</b> The Carmacks area has been subject to many periods of glaciation during the Quaternary (last 2.65 million years). The earliest glaciations occurred prior to 200,000 years ago and were more extensive than later glaciations. Surficial materials related to these glaciations are largely eroded, and modern surficial sediments are associated with the penultimate Reid Glaciation (~140,000 years ago) and the most recent McConnell Glaciation that occurred during the global Last Glacial Maximum (LGM) ~20,000 years ago. Exposure of unconsolidated Quaternary deposits in the vicinity of Carmacks are primarily associated with glaciation during the LGM. Generally, unconsolidated deposits are thickest in the main valleys associated with Tagé Cho and Tsáwnjik Tagé. (Aquifer mapping - Village of Carmacks, Yukon; Government of Yukon / Water Resources Branch, 2021)</p>

#### A.54 YOWN-2201

<b>Well Name:</b> Army Beach Well 1 (S & D)	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Feb. 2022/ May 2022	<b>Easting (m):</b> 529582
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6713147
<b>Well Depth (m bTOC):</b> 11.230 (D); 5.520 (S)	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 658.95 (D & S)	<b>Period of Record:</b> 2022 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand and Gravel	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 8.5 m (D); 2.4 m (S)	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> Approximately 55 m to Marsh Lake	
<b>Distance to Nearest Active Hydrometric Station:</b> 5.3 km (Marsh Lake near Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 40 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> This well was installed in February 2022 as a nested well (a shallow and a deep monitoring wells installed in the same borehole) in the Army Beach Subdivision, approximately 37 km east of Whitehorse. The well is located at the south end of Taylor Way; Marsh Lake is located approximately 55 m southeast of the well. The well is currently instrumented and monitored by WRB.</p> <p><b>Surficial Geology Data:</b> Organic material overlaying thick (&gt;35m) fine-grained (sand/silt/clay) glacial lake sediments, and numerous former glacial lake shorelines/beach ridges (Lipovsky, P., 2022). At the climax of the McConnell Glaciation, a continuous carapace of ice covered southern and eastern Yukon. Ice thickness over the city of Whitehorse exceeded 1350 m during glacial maximum. (Bond, J., 2004. Late Wisconsinan McConnell glaciation of the Whitehorse map area (105D), Yukon. In: Yukon Exploration and Geology 2003, D.S. Emond and L.L. Lewis (eds.), Yukon Geological Survey, p. 73-88.)</p>	

## A.55 YOWN-2202

<b>Well Name:</b> Army Beach Well 2	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Feb. 2022/ May 2022	<b>Easting (m):</b> 529509
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6713168
<b>Well Depth (m bTOC):</b> 11.230 (D); 5.520 (S)	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 658.16	<b>Period of Record:</b> 2022 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand and Gravel	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 4.1 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 170 m (Marsh Lake)	
<b>Distance to Nearest Active Hydrometric Station:</b> 5.3 km (Marsh Lake near Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 40 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> This well was installed in February 2022 in the Army Beach Subdivision, approximately 37 km east of Whitehorse. The well is located adjacent to Taylor Way; Marsh Lake is located approximately 170 m southeast of the well. The well is currently instrumented and monitored by WRB.</p> <p><b>Surficial Geology Data:</b> Organic material overlaying thick (&gt;35m) fine-grained (sand/silt/clay) glacial lake sediments, and numerous former glacial lake shorelines/beach ridges (Lipovsky, P., 2022). At the climax of the McConnell Glaciation, a continuous carapace of ice covered southern and eastern Yukon. Ice thickness over the city of Whitehorse exceeded 1350 m during glacial maximum. (Bond, J., 2004. Late Wisconsinan McConnell glaciation of the Whitehorse map area (105D), Yukon. In: Yukon Exploration and Geology 2003, D.S. Emond and L.L. Lewis (eds.), Yukon Geological Survey, p. 73-88.).</p>	

## A.56 YOWN-2203

<b>Well Name:</b> Army Beach Well 3	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Feb. 2022/ May 2022	<b>Easting (m):</b> 529537
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6713307
<b>Well Depth (m bTOC):</b> 11.230 (D); 5.520 (S)	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 659.07	<b>Period of Record:</b> 2022 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand and Gravel	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 3.9 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 170 m (Marsh Lake)	
<b>Distance to Nearest Active Hydrometric Station:</b> 5.3 km (Marsh Lake near Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 40 km	
<b>Other identification codes:</b> n/a	

**Well Description:** This well was installed in February 2022 in the Army Beach Subdivision, approximately 37 km east of Whitehorse. The well is located adjacent to Taylor Way; Marsh Lake is located approximately 170 m southeast of the well. The well is currently instrumented and monitored by WRB.

**Surficial Geology Data:** Organic material overlaying thick (>35m) fine-grained (sand/silt/clay) glacial lake sediments, and numerous former glacial lake shorelines/beach ridges (Lipovsky, P., 2022). At the climax of the McConnell Glaciation, a continuous carapace of ice covered southern and eastern Yukon. Ice thickness over the city of Whitehorse exceeded 1350 m during glacial maximum. (Bond, J., 2004. Late Wisconsinan McConnell glaciation of the Whitehorse map area (105D), Yukon. In: Yukon Exploration and Geology 2003, D.S. Emond and L.L. Lewis (eds.), Yukon Geological Survey, p. 73-88.).

## A.57 YOWN-2204

<b>Well Name:</b> Army Beach Well 4	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Feb. 2022/ May 2022	<b>Easting (m):</b> 529420
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6713549
<b>Well Depth (m bTOC):</b> 11.230 (D); 5.520 (S)	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 660.49	<b>Period of Record:</b> 2022 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand and Gravel	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 2.6 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 460 m (Marsh Lake)	
<b>Distance to Nearest Active Hydrometric Station:</b> 5.3 km (Marsh Lake near Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 40 km	
<b>Other identification codes:</b> n/a	
<b>Well Description:</b> This well was installed in February 2022 in the Army Beach Subdivision, approximately 37 km east of Whitehorse. The well is located adjacent to Taylor Way; Marsh Lake is located approximately 460 m southeast of the well. The well is currently instrumented and monitored by WRB.	
<b>Surficial Geology Data:</b> Organic material overlaying thick (>35m) fine-grained (sand/silt/clay) glacial lake sediments, and numerous former glacial lake shorelines/beach ridges (Lipovsky, P., 2022). At the climax of the McConnell Glaciation, a continuous carapace of ice covered southern and eastern Yukon. Ice thickness over the city of Whitehorse exceeded 1350 m during glacial maximum. (Bond, J., 2004. Late Wisconsinan McConnell glaciation of the Whitehorse map area (105D), Yukon. In: Yukon Exploration and Geology 2003, D.S. Emond and L.L. Lewis (eds.), Yukon Geological Survey, p. 73-88.).	

## A.58 YOWN-2205

<b>Well Name:</b> Army Beach Well 5	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> Feb. 2022/ May 2022	<b>Easting (m):</b> 529135
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6714050
<b>Well Depth (m bTOC):</b> 11.230 (D); 5.520 (S)	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 661.08	<b>Period of Record:</b> 2022 – Present

<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand and Gravel	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 4.2 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 970 m (Marsh Lake)	
<b>Distance to Nearest Active Hydrometric Station:</b> 5.3 km (Marsh Lake near Whitehorse)	
<b>Name of and Distance to Nearest Climate Station:</b> Whitehorse Airport; 40 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> This well was installed in February 2022 in the Army Beach Subdivision, approximately 37 km east of Whitehorse. The well is located adjacent to Taylor Way; Marsh Lake is located approximately 970 m southeast of the well. Alaska Hwy. is located approximately 55 m to the north. The well is currently instrumented and monitored by WRB.</p> <p><b>Surficial Geology Data:</b> Organic material overlaying thick (&gt;35m) fine-grained (sand/silt/clay) glacial lake sediments, and numerous former glacial lake shorelines/beach ridges (Lipovsky, P., 2022). At the climax of the McConnell Glaciation, a continuous carapace of ice covered southern and eastern Yukon. Ice thickness over the city of Whitehorse exceeded 1350 m during glacial maximum. (Bond, J., 2004. Late Wisconsinan McConnell glaciation of the Whitehorse map area (105D), Yukon. In: Yukon Exploration and Geology 2003, D.S. Emond and L.L. Lewis (eds.), Yukon Geological Survey, p. 73-88.).</p>	

## A.59 YOWN-2206

<b>Well Name:</b> Teslin Highway Pullout	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> May 2022; June 2022	<b>Easting (m):</b> 623988
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6672936
<b>Well Depth (m bTOC):</b> 17.990	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 689	<b>Period of Record:</b> 2022 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand and Gravel	<b>Aquifer subtype:</b> 3
<b>Aquifer thickness:</b> 13 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 70 m (Teslin Lake)	
<b>Distance to Nearest Active Hydrometric Station:</b> : 1.9 km (Teslin Lake at Teslin)	
<b>Name of and Distance to Nearest Climate Station:</b> Teslin; 2 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> This well was installed in May 2022 at the highway pullout, approximately 2.5 km west of Teslin core area. The well is located approximately 60 m north of Teslin Lake. The well is currently instrumented and monitored by WRB.</p> <p><b>Surficial Geology Data:</b> Till; silty to sandy matrix; 1 to 30 m thick. Lodgement and ablation till. Gently irregular to strongly irregular bedrock controlled topography blanketed by till. Till forms a nearly continuous blanket over benches along the sides of large valleys and gentle mountain slopes (Morison S. R. and Klassen, R. W.; Geological Survey of Canada, 1987 - Map 1891 A, Teslin Surficial Geology / Yukon Territory / Scale 1:25,000)</p>	

## A.60 YOWN-2207

<b>Well Name:</b> Village of Teslin Compound (S/D)	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> May 2022; June 2022	<b>Easting (m):</b> 624180
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6673562
<b>Well Depth (m bTOC):</b> 5.718 (S); 44.144 (D)	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 715	<b>Period of Record:</b> 2022 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Silty Sand and Gravel	<b>Aquifer subtype:</b> 3
<b>Aquifer thickness:</b> 3.1 m (S); 22 m (D)	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 700 m (Teslin Lake)	
<b>Distance to Nearest Active Hydrometric Station:</b> : 2.0 km (Teslin Lake at Teslin)	
<b>Name of and Distance to Nearest Climate Station:</b> Teslin; 2 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> This well was installed in May 2022 at the highway pullout, approximately 2.5 km west of Teslin core area. The well is located approximately 60 m north of Teslin Lake. The well is currently instrumented and monitored by WRB.</p> <p><b>Surficial Geology Data:</b> Till; silty to sandy matrix; 1 to 30 m thick. Lodgement and ablation till. Gently irregular to strongly irregular bedrock controlled topography blanketed by till. Till forms a nearly continuous blanket over benches along the sides of large valleys and gentle mountain slopes (Morison S. R. and Klassen, R. W.; Geological Survey of Canada, 1987 - Map 1891 A, Teslin Surficial Geology / Yukon Territory / Scale 1:25,000)</p>	

## A.61 YOWN-2208

<b>Well Name:</b> Watson Lake Highway Pullout	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> May 2022; June 2022	<b>Easting (m):</b> 514535
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6661055
<b>Well Depth (m bTOC):</b> 7.890	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 704	<b>Period of Record:</b> 2022 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand and Gravel	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 4.1 m	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 1.3 m (Watson Lake)	
<b>Distance to Nearest Active Hydrometric Station:</b> 10.1 km (Liard River at Upper Crossing)	
<b>Name of and Distance to Nearest Climate Station:</b> Watson Lake Airport; 5.7 km	
<b>Other identification codes:</b> n/a	

**Well Description:** This well was installed in May 2022 at the approximately km. 3.2 on Robert Campbell Highway pullout. The well is located approximately 1.3 km east of the Watson Lake. The well is currently instrumented and monitored by WRB.

**Surficial Geology Data:** Glaciofluvial – materials that exhibit clear evidence of having been deposited by glacial meltwater streams either directly in front of, or in contact with, glacier ice. Materials typically range from non-sorted and nonbedded gravel made up of a wide range of particle sizes, to moderately to well sorted, stratified gravel; flow tills may occur in some deposits. Hummocky or irregular terrain may be present and is indicative of collapse of material due to melting of supporting ice. Include pitted outwash plains, kames and eskers (Lipovsky, P.S., McKenna, K. and Huscroft, C.A., 2005. Surficial Geology of Watson Lake (NTS 105A/2), Yukon (1:50 000 scale). Yukon Geological Survey, Energy, Mines and Resources, Yukon Government).

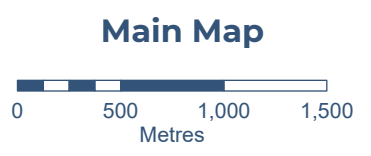
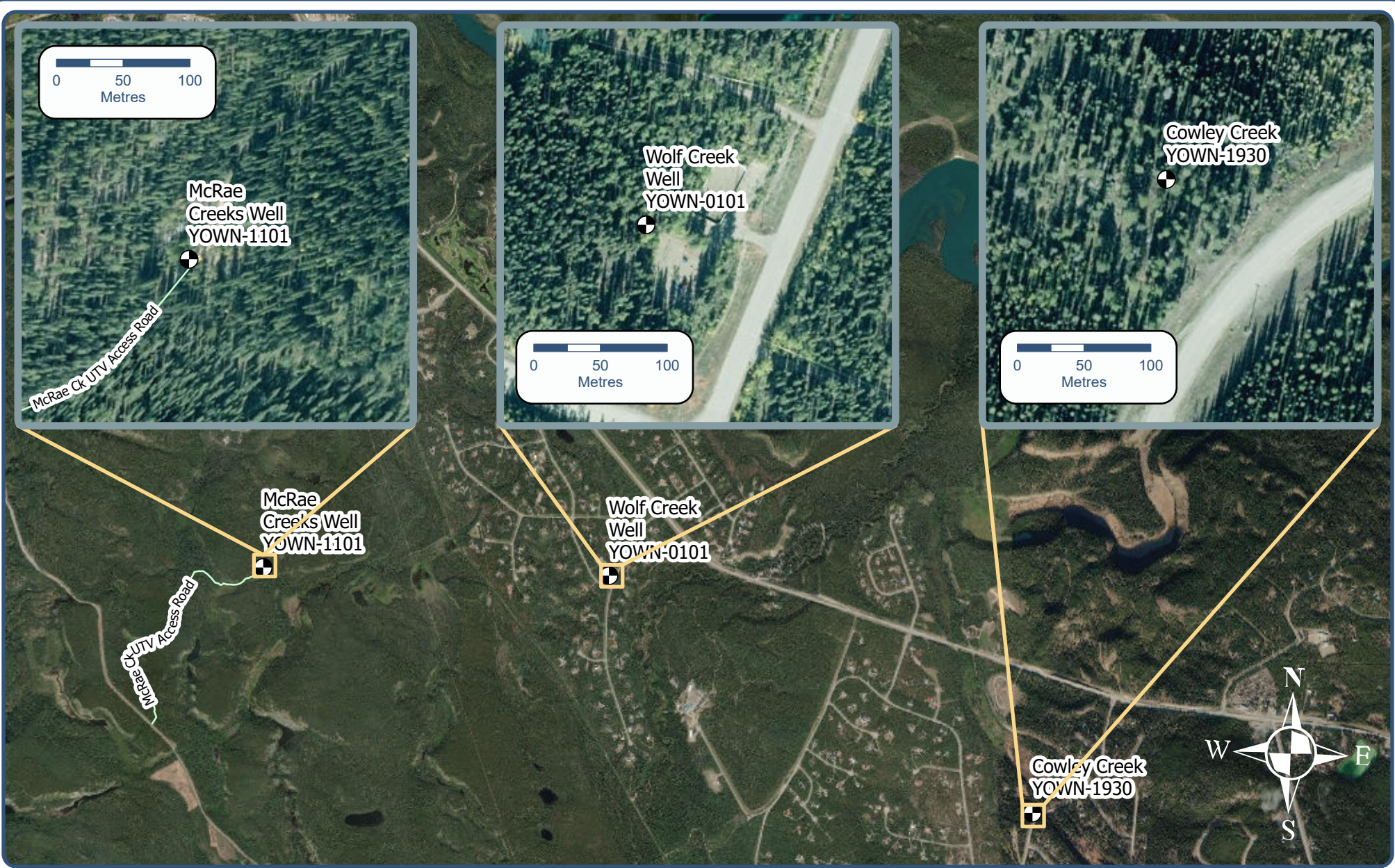
## A.62 YOWN-2209

<b>Well Name:</b> Watson Lake Playground (S/D)	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b> May 2022; June 2022	<b>Easting (m):</b> 518790
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6658234
<b>Well Depth (m bTOC):</b> 14.065 (S); 51.215 (D)	<b>Well Diameter (cm):</b> 5
<b>Well Elevation (masl):</b> 691	<b>Period of Record:</b> 2022 – Present
<b>Aquifer Name:</b> Unnamed	
<b>Aquifer Material:</b> Sand and Gravel	<b>Aquifer subtype:</b> 4a
<b>Aquifer thickness:</b> 10.3 m (S); 47.5 m (D)	<b>Likely degree of aquifer confinement:</b> Unconfined
<b>Hydraulic properties of aquifer:</b> Not yet determined	
<b>Distance to surface water:</b> 0.3 km (Hour Lake)	
<b>Distance to Nearest Active Hydrometric Station:</b> 13.5 km (Liard River at Upper Crossing)	
<b>Name of and Distance to Nearest Climate Station:</b> Watson Lake Airport; 10.6 km	
<b>Other identification codes:</b> n/a	
<p><b>Well Description:</b> This well was installed in May 2022 at the playground located on Woodland Crescent, on the east part of the Town of Watson Lake. Second Wye Lake is located approximately 450 west of the well; Hour Lake is located approximately 300 m south of the well. The well is currently instrumented and monitored by WRB.</p> <p><b>Surficial Geology Data:</b> Glaciofluvial – materials that exhibit clear evidence of having been deposited by glacial meltwater streams either directly in front of, or in contact with, glacier ice. Materials typically range from non-sorted and nonbedded gravel made up of a wide range of particle sizes, to moderately to well sorted, stratified gravel; flow tills may occur in some deposits. Hummocky or irregular terrain may be present and is indicative of collapse of material due to melting of supporting ice. Include pitted outwash plains, kames and eskers (Lipovsky, P.S., McKenna, K. and Huscroft, C.A., 2005. Surficial Geology of Watson Lake (NTS 105A/2), Yukon (1:50 000 scale). Yukon Geological Survey, Energy, Mines and Resources, Yukon Government).</p>	

# APPENDIX B

## YOWN Maps





YOWN Wells

**Access:** 0101 & 1930: Truck  
1101: UTV trail

**Key:** YOWN

**Gate:** NA

## YOWN-0101, 1101, 1930

YOWN-0101 (Wolk Ck)  
YOWN-1101 (McRae Ck)  
YOWN-1930 (Cowley Ck)

AUGUST 2022

Spatial Reference  
Name: NAD 1983 Yukon Albers. Projection: Albers  
Map Units: Meter

\\Env-fs\env-data\corp\water\Maps\GIS\01\_Maps\20\_YOWN\YOWN Master.aprx modified on: August 25, 2022 11:06 AM by cmfische



**Main Map**



 YOWN Wells

**Access:** Truck, via Nisutlin Dr.

**Key:** City of Whjتهhorse

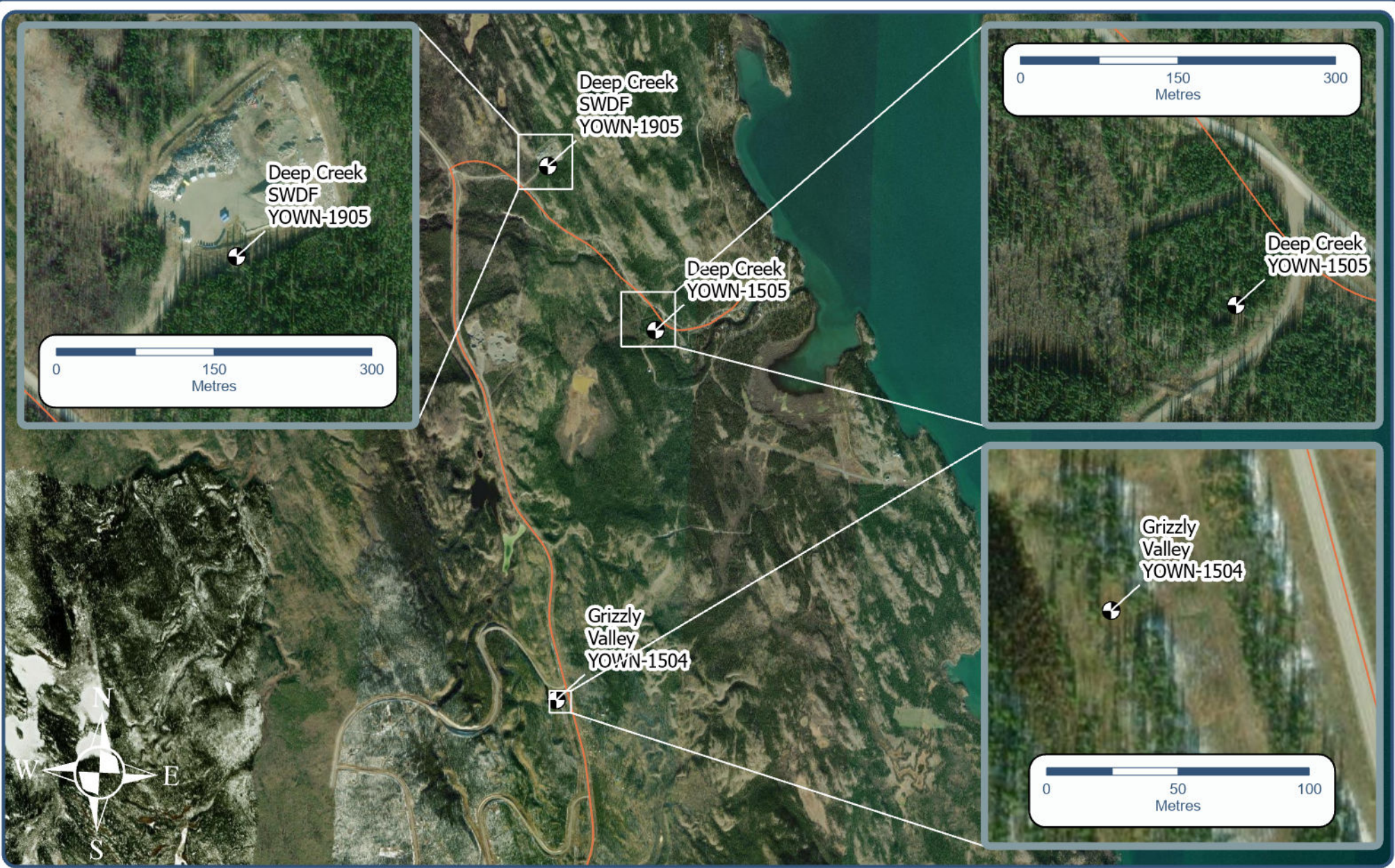
**Gate:** NA

**YOWN-0804 - Selkirk**

AUGUST 2022

Spatial Reference  
Name: NAD 1983 Yukon Albers. Projection: Albers  
Map Units: Meter

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**Main Map**



YOWN Wells

**Access:** 1504 & 1505: 4x4 Truck  
1905: Truck

**Key:** 1504 & 1505: YOWN  
1905: SARU

**Gate:** NA

**YOWN-1504, 1505, 1905**

YOWN-1504 Grizzly Valley  
YOWN-1505 Deep Creek  
YOWN-1905 Deep Creek SWDF

DECEMBER 2023

Spatial Reference  
Name: NAD 1983 Yukon Albers. Projection: Albers  
Map Units: Meter

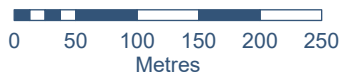
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Million Dollar  
Falls Campground  
YOWN-1506



### Main Map



 YOWN Wells

**Access:** Truck  
**Key:** YOWN  
**Gate:** Yukon Campgrounds

## YOWN-1506

Million Dollar Falls Campground

AUGUST 2022

Spatial Reference  
Name: NAD 1983 Yukon Albers. Projection: Albers  
Map Units: Meter

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**Main Map**



YOWN Wells

**Access:** Truck  
**Key:** YOWN  
**Gate:** Yukon Campgrounds

**YO WN-1515**

Kusawa Campground (Well 2)

AUGUST 2022

Spatial Reference  
 Name: NAD 1983 Yukon Albers. Projection: Albers  
 Map Units: Meter

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**Main Map**



 YOWN Wells

**Access:** Truck  
**Key:** YOWN  
**Gate:** Yukon Campgrounds

**YOWN-1603**

Johnson Lake Campground Well 1

AUGUST 2022

Spatial Reference  
 Name: NAD 1983 Yukon Albers. Projection: Albers  
 Map Units: Meter

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Pine Lake  
Campground  
YOWN-1604



**Main Map**



 YOWN Wells

**Access:** Truck  
**Key:** YOWN  
**Gate:** Yukon Campgrounds

**YOWN-1604**

Pine Lake Campground

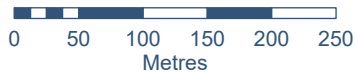
AUGUST 2022

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Map Units: Meter

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**Main Map**



 YOWN Wells

**Access:** Truck  
**Key:** YOWN  
**Gate:** Yukon Campgrounds

**YOWN-1609**

Yukon River Campground

AUGUST 2022

Spatial Reference  
Name: NAD 1983 Yukon Albers. Projection: Albers  
Map Units: Meter

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**Main Map**



- Access Roads
- ⊕ YOWN Wells
- Access:** 4x4 Truck
- Key:** YOWN
- Gate:** NA

**YOWN-1703, 1704, 1705**

YOWN-1703 CAFN-MW-02 S  
 YOWN-1704 CAFN-MW-03  
 YOWN-1705 CAFN-MW-01 D

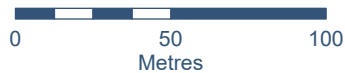
AUGUST 2022

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 Map Units: Meter

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**Main Map**



 YOWN Wells

**Access:** Truck  
**Key:** YOWN  
**Gate:** NA

**YOWN-1706 Yukon University Well 1**

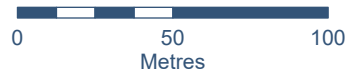
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SEPTEMBER 2022



**Main Map**



YOWN Wells

**Access:** Truck

**Key:** YOWN

**Gate:** Kluane Harvest Camp

**YOWN-1802  
Kluane Harvest Camp**

Spatial Reference  
Name: NAD 1983 Yukon Albers. Projection: Albers  
Map Units: Meter

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SEPTEMBER 2022



**Main Map**



 YOWN Wells

**Access:** Truck  
**Key:** YOWN  
**Gate:** NA

**YOWN-1803  
 West Dawson**

SEPTEMBER 2022

Spatial Reference  
 Name: NAD 1983 Yukon Albers. Projection: Albers  
 Map Units: Meter

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**Main Map**



YOWN Wells

**Access:** Truck

**Key:** SARU

**Gate:** SWDF Gate

**YOWN-1901  
Tagish SWDF**

Spatial Reference  
Name: NAD 1983 Yukon Albers. Projection: Albers  
Map Units: Meter

SEPTEMBER 2022

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**Main Map**



YOWN Wells

**Access:** Truck

**Key:** SARU

**Gate:** Forestry

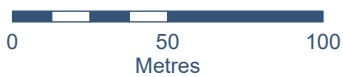
**YOWN-1902  
Marsh Lake SWDF**

Spatial Reference  
Name: NAD 1983 Yukon Albers. Projection: Albers  
Map Units: Meter

SEPTEMBER 2022



**Main Map**



 YOWN Wells

**Access:** Truck  
**Key:** SARU  
**Gate:** SARU

**YOWN-1903  
 Mt. Lorne SWDF**

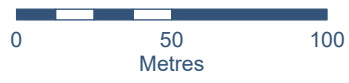
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SEPTEMBER 2022

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**Main Map**



 YOWN Wells

**Access:** Truck  
**Key:** SARU  
**Gate:** NA

**YOWN-1904  
Braeburn SWDF**

Spatial Reference  
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Map Units: Meter

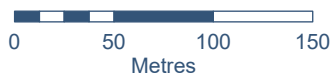
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SEPTEMBER 2022





**Main Map**



 YOWN Wells

**Access:** Truck

**Key:** SARU

**Gate:** NA

**YOWN-1906  
Quigley SWDF**

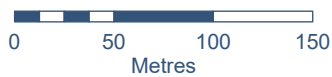
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Map Units: Meter

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### Main Map



 YOWN Wells

**Access:** Truck  
**Key:** Mayo SWDF  
**Gate:** Mayo SWDF

## YOWN-1907 Mayo SWDF

SEPTEMBER 2022

Spatial Reference  
Name: NAD 1983 Yukon Albers. Projection: Albers  
Map Units: Meter

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Main Map



 YOWN Wells

Access: Truck  
Key: SARU  
Gate: NA

YOWN-1908  
Stewart Crossing SWDF

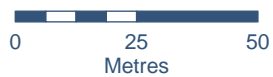
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AUGUST 2023



Main Map



 YOWN Wells

Access: Truck  
Key: SARU  
Gate: NA

YOWN-1909  
Pelly Crossing SWDF

AUGUST 2023

Spatial Reference  
Name: NAD 1983 Yukon Albers. Projection: Albers  
Map Units: Meter

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Welgreen  
Campsite  
YOWN-1910



**Main Map**



 YOWN Wells

**Access:** Truck  
**Key:** SARU  
**Gate:** NA

**YOWN-1910  
Wellgreen Campsite**

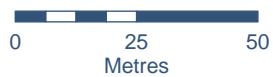
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SEPTEMBER 2022

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Main Map



 YOWN Wells

Access: Truck  
Key: SARU  
Gate: SWDF

YOWN-1911  
Beaver Creek SWDF

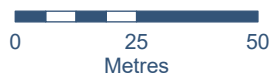
AUGUST 2023

Spatial Reference  
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Map Units: Meter

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**Main Map**



 YOWN Wells

**Access:** Truck  
**Key:** SARU  
**Gate:** SWDF

**YOWN-1912  
 Horsecamp Hill SWDF**

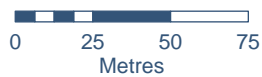
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SEPTEMBER 2022

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Main Map



 YOWN Wells

Access: Truck  
 Key: SARU  
 Gate: SWDF

YOWN-1913  
 Burwash Landing SWDF

Spatial Reference  
 Name: NAD 1983 Yukon Albers. Projection: Albers  
 Map Units: Meter

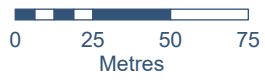
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AUGUST 2023





Main Map



YOWN Wells

Access: Truck  
Key: SARU  
Gate: SWDF

YOWN-1914  
Silver City SWDF

SEPTEMBER 2022

Spatial Reference  
Name: NAD 1983 Yukon Albers. Projection: Albers  
Map Units: Meter

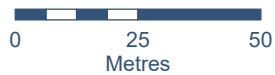
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Old Crow  
Sewage Lagoon  
YOWN-1915



**Main Map**



 YOWN Wells

**Access:** Truck  
**Key:** SARU  
**Gate:** SWDF

**YOWN-1915  
Old Crow Sewage Lagoon**

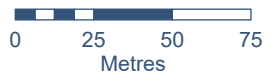
SEPTEMBER 2022

Spatial Reference  
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Map Units: Meter

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**Main Map**



 YOWN Wells

**Access:** Truck  
**Key:** SARU  
**Gate:** SWDF

**YOWN-1916**  
**Swift River SWDF**

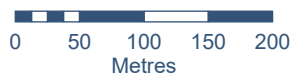
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Map Units: Meter

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SEPTEMBER 2022



**Main Map**



 YOWN Wells

**Access:** Truck

**Key:** SARU

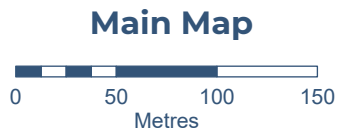
**Gate:** SWDF

**YOWN-1918  
Eagle Plains SWDF**

SEPTEMBER 2022

Spatial Reference  
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Map Units: Meter

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YOWN Wells

**Access:** Truck  
**Key:** Haines Junction SWDF  
**Gate:** Haines Junction SWDF

# YOWN-1919 Haines Junction SWDF

SEPTEMBER 2022

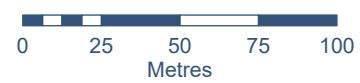
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 Map Units: Meter  
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Champagne  
SWDF  
YOWN-1920



### Main Map



 YOWN Wells

**Access:** Truck  
**Key:** SARU  
**Gate:** SWDF

## YOWN-1920 Champagne SWDF

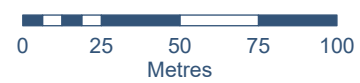
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Map Units: Meter

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**Main Map**



 YOWN Wells

**Access:** Truck  
**Key:** SARU  
**Gate:** SWDF

**YOWN-1921**  
**Drury Creek SWDF**

SEPTEMBER 2022

Spatial Reference  
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Map Units: Meter

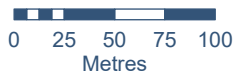
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Ross River  
SWDF  
YOWN-1922



### Main Map



 YOWN Wells

**Access:** Truck

**Key:** SARU

**Gate:** SWDF

## YOWN-1922 Ross River SWDF

SEPTEMBER 2022

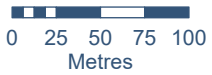
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Map Units: Meter

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**Main Map**



 YOWN Wells

**Access:** Truck  
**Key:** Watson Lake SWDF  
**Gate:** Watson Lake SWDF

**YOWN-1923  
Watson Lake SWDF**

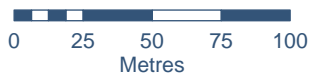
SEPTEMBER 2022

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Map Units: Meter

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Main Map



 YOWN Wells

Access: Truck  
Key: SARU  
Gate: NA

YOWN-1924  
Canyon Creek SWDF

AUGUST 2023

Spatial Reference  
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Map Units: Meter

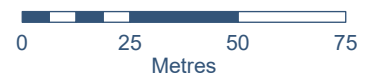
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Carmacks SWDF  
YOWN-1925



### Main Map



 YOWN Wells

**Access:** Truck  
**Key:** SARU  
**Gate:** NA

## YOWN-1925 Carmacks SWDF

Spatial Reference  
Name: NAD 1983 Yukon Albers. Projection: Albers  
Map Units: Meter

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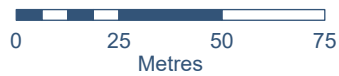
SEPTEMBER 2022



Johnson's  
Crossing SWDF  
YOWN-1926



### Main Map



 YOWN Wells

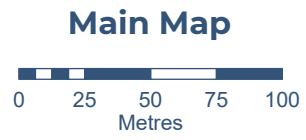
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**Key:** SARU  
**Gate:** SWDF


## YOWN-1926 Johnson's Crossing SWDF

SEPTEMBER 2022

Spatial Reference  
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Map Units: Meter

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 YOWN Wells

**Access:** Truck  
**Key:** SARU  
**Gate:** SWDF

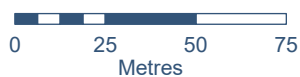
**YOWN-1922, -2001  
 Upper Liard SWDF**

Spatial Reference  
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 Map Units: Meter  
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SEPTEMBER 2022



**Main Map**



 YOWN Wells

**Access:** Truck  
**Key:** Faro SWDF  
**Gate:** Faro SWDF

**YOWN-1928  
 Faro SWDF**

SEPTEMBER 2022

Spatial Reference  
 Name: NAD 1983 Yukon Albers. Projection: Albers  
 Map Units: Meter

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Cowley Creek  
YOWN-1930



**Main Map**



 YOWN Wells

**Access:** Truck  
**Key:** YOWN  
**Gate:** NA

**YOWN-1930 S/D  
Cowley Creek**

SEPTEMBER 2022

Spatial Reference  
Name: NAD 1983 Yukon Albers. Projection: Albers  
Map Units: Meter

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Ogilvie  
HPW Camp  
YOWN-2002



Main Map



 YOWN Wells

Access: Truck  
Key: SARU  
Gate: HPW Camp

YOWN-2002  
Ogilvie HPW Camp

Spatial Reference  
Name: NAD 1983 Yukon Albers. Projection: Albers  
Map Units: Meter

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AUGUST 2023





Teslin SWDF  
YOWN-2003



### Main Map



 YOWN Wells

**Access:** ATV

**Key:** SARU

**Gate:** Teslin SWDF

## YOWN-2003 Teslin SWDF

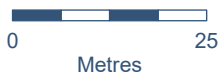
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SEPTEMBER 2022



**Main Map**



 YOWN Wells

**Access:** ATV

**Key:** SARU

**Gate:** SWDF

**YOWN-2004  
Old Crow SWDF**

SEPTEMBER 2022

Spatial Reference  
Name: NAD 1983 Yukon Albers. Projection: Albers  
Map Units: Meter


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Dempster Hwy  
Sewage Lagoon  
YOWN-2005



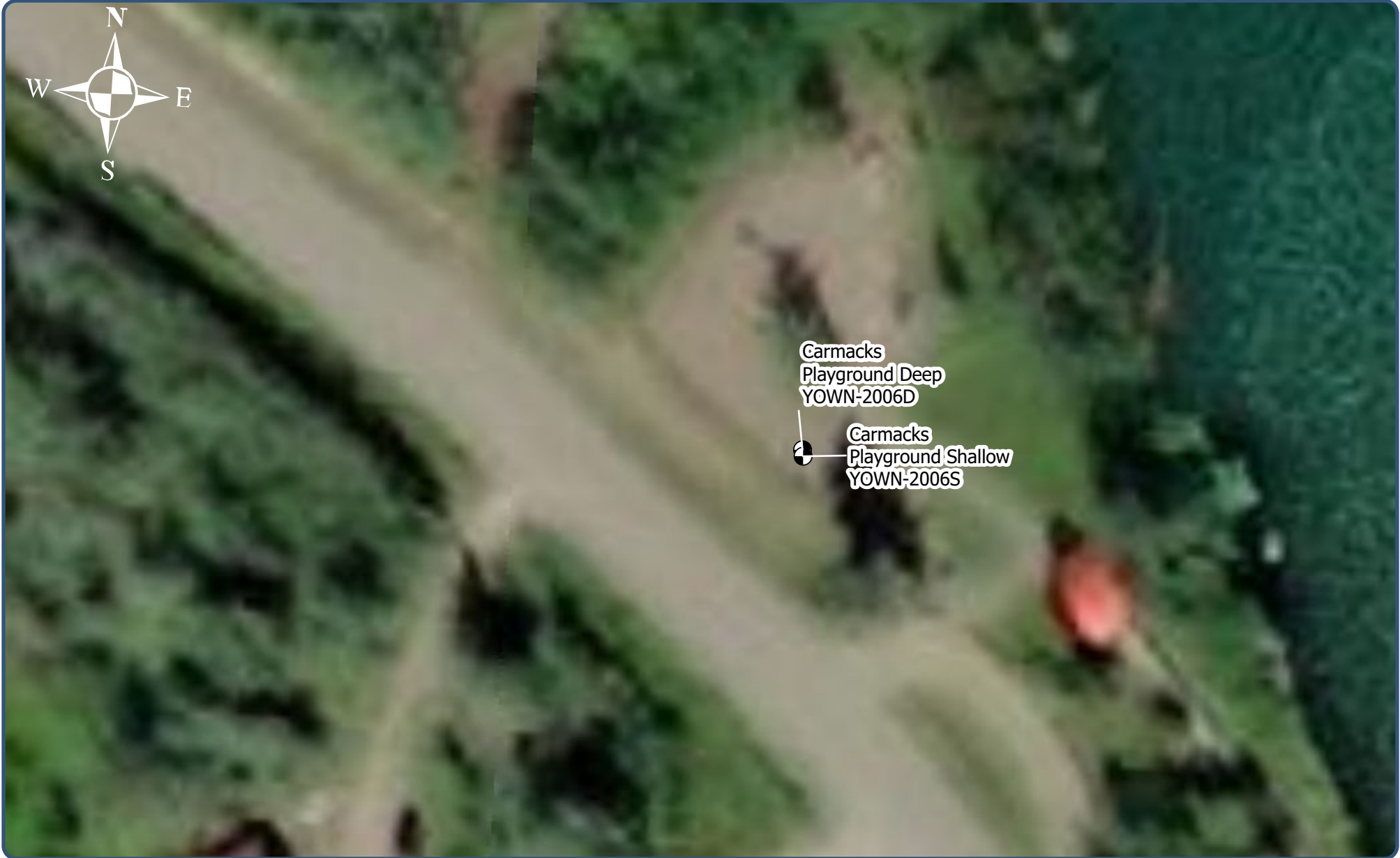
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0 25  
Metres

 YOWN Wells  
**Access:** Truck  
**Key:** SARU  
**Gate:** NA

**YOWN-2005**  
**Dempster Hwy**  
**Sewage Lagoon**

SEPTEMBER 2022

Spatial Reference  
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Map Units: Meter  
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**Main Map**



YOWN Wells

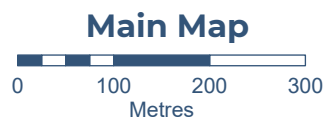
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**YOWN-2006 S/D  
Carmacks Playground**

Spatial Reference  
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Map Units: Meter

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SEPTEMBER 2022



YOWN Wells

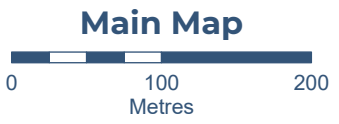
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**Key:** YOWN  
**Gate:** NA

**YOWN-2201. -2202, -2203,  
 -2204, -2205  
 Army Beach**

SEPTEMBER 2022

Spatial Reference  
 Name: NAD 1983 Yukon Albers. Projection: Albers  
 Map Units: Meter

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YOWN Wells

**Access:** Truck  
**Key:** YOWN  
**Gate:** NA

## YOWN-2206, -2207 Teslin

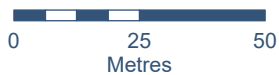
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SEPTEMBER 2022



**Main Map**



YOWN Wells

**Access:** Truck  
**Key:** YOWN  
**Gate:** NA

**YOWN-2209**  
**Watson Lake Playground**

Spatial Reference  
 Name: NAD 1983 Yukon Albers. Projection: Albers  
 Map Units: Meter

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SEPTEMBER 2022

# APPENDIX C

## Summary of Inactive YOWN Wells



A total of 28 monitoring wells were deactivated and removed from the YOWN between 2019 and 2022, due to missing borehole logs associated with these wells. In addition, two wells (YOWN-1701 at Johnson Lake Campground and YOWN-1702 at Congdon Creek Campground) were drinking water wells with pumping system affixed, that prevented WRB from instrumenting them; well YOWN-1611 at Tagish Campground is flowing artesian and was welded shut. Monitoring well YOWN-1917 at Teslin Solid Waste Disposal Facility was observed to be seasonally dry.

For more information on these wells, visit the Yukon Water Well Registry:

(<https://yukon.maps.arcgis.com/apps/webappviewer/index.html?id=51322dfb133d42c4ad184fee9986048b>); and Yukon Water Data

Catalogue:(<https://yukon.maps.arcgis.com/apps/webappviewer/index.html?id=2365a4c0b8744f34be7f1451a38493d2>).

### C.1 YOWN-0801

<b>Well Name:</b> Whitehorse Copper Well	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b>	<b>Easting (m):</b> 499520
<b>Yukon Water Well Registry ID:</b> 204110124	<b>Northing (m):</b> 6720685
<b>Well Depth (m bTOC):</b> 27.4	<b>Aquifer Material:</b> Basalt
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2008 - 2018
<b>Well Description:</b> The Whitehorse Copper well was instrumented in 2008. The well is located on private property on Serac Court in the Whitehorse Copper subdivision, approximately 11 km from downtown Whitehorse. In 2019 the well started to be actively used for water supply and therefore removed from YOWN. The well is installed in basalt, similar to the McRae Creeks well (YOWN-1101), located approximately 1.7 km to the southwest, and the Wolf Creek well (YOWN-0101) located approximately 2.9 km to the southeast.	

### C.2 YOWN-0802

<b>Well Name:</b> Faro Well	<b>UTM Zone:</b> 8
<b>Well Log Available:</b> No	<b>Easting (m):</b> 584759
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6899941
<b>Well Depth (m bTOC):</b> 9.02	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2008 - 2018
<b>Well Description:</b> The Faro Well is located approximately six km south of the town of Faro, near the community water supply wells. There is no stratigraphic information for this well. The closest YOWN well is Johnson Lake Campground Well-2 (YOWN-1701), which is installed in a gravel/sand unit overlaying bedrock. YOWN-1701 is located approximately 1.6 km to the south.	

### C.3 YOWN-0803

<b>Well Name:</b> Dawson Well	<b>UTM Zone:</b> 7
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<b>Well Log Available:</b> No	<b>Easting (m):</b> 576185
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 7104243
<b>Well Depth (m bTOC):</b> 9.61	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2008 - 2018
<b>Well Description:</b> The Dawson Well is located at the Dawson Waste Water Treatment Plant in Dawson City, Yukon. There is no information on stratigraphy and well screen installation for this monitoring well.	

#### C.4 YOWN-0805

<b>Well Name:</b> Watson Lake Well	<b>UTM Zone:</b> 4
<b>Installation/Activation Dates:</b>	<b>Easting (m):</b> 516875
<b>Yukon Water Well Registry ID:</b> 201020003	<b>Northing (m):</b> 6658980
<b>Well Depth (m bTOC):</b> 12.20	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 11.40	<b>Period of Record:</b> 2008 - 2018
<b>Well Description:</b> The Watson Lake well was installed in 1963 on 6 <sup>th</sup> St North in Watson Lake. The well is located near Lot 6, block 22 at Watson Lake Way. There is no information on borehole stratigraphy, only well screen installation details. Watson Lake Campground well #2 (YOWN-1512), located approximately 7.2 km to the northwest, is installed in a clay/silt/gravel unit.	

#### C.5 YOWN-1301

<b>Well Name:</b> Beaver Creek Well	<b>UTM Zone:</b> 7
<b>Well Log Available:</b> No	<b>Easting (m):</b> 506153
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6916405
<b>Well Depth (m bTOC):</b> 17.15	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2013 - 2018
<b>Well Description:</b> The Beaver Creek well is located behind the Mary Jane Blair Keteneje Wellness Center in Beaver Creek, Yukon. This well was previously used by the White River First Nation until the well was transferred to YG. There is no information on stratigraphy and well screen installation for this monitoring well and no other YOWN wells are located in this area.	

#### C.6 YOWN-1501

<b>Well Name:</b> Marsh Lake Recreation Site Well	<b>UTM Zone:</b> 8
<b>Well Log Available:</b> No	<b>Easting (m):</b> 530165
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6713778
<b>Well Depth (m bTOC):</b> 2.46	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2015 - 2018
<b>Well Description:</b> The Marsh Lake Recreation Site well is located in the Marsh Lake Campground day use area. The well was drilled in 1980 by Midnight Sun Drilling Company Ltd. The well was added to the YOWN	

program in 2015 by converting an existing water well to a groundwater monitoring well. The well appears to be silted based on the shallow depth and limited volume of groundwater.

## C.7 YOWN-1503

<b>Well Name:</b> Champagne Well	<b>UTM Zone:</b> 8
<b>Well Log Available:</b> No	<b>Easting (m):</b> 419537
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6739581
<b>Well Depth (m bTOC):</b> 17.90	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2015 - 2018
<b>Well Description:</b> The Champagne well is located in the village of Champagne near the community center and playground. This well is fitted with a custom cap due its semi-circle shape at the top of the casing. Monitoring wells YOWN-1703, YOWN-1704 and YOWN-1705 are located approximately 1.7 km to the south and installed to similar depth; these wells are installed in a coarse sand and gravel unit.	

## C.8 YOWN-1507

<b>Well Name:</b> Kotaneelee Gas Plant Well	<b>UTM Zone:</b> 10
<b>Well Log Available:</b> No	<b>Easting (m):</b> 441306
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6664889
<b>Well Depth (m bTOC):</b> 5.93	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2015 - 2018
<b>Well Description:</b> The Kotaneelee Gas Plant well is located in the south-east Yukon at the former Kotaneelee Gas Plant. The well was used for drinking water when the plant was in operation and has since been used in the YOWN. There is no information on soil stratigraphy and well screen installation; no other YOWN wells are located in this area.	

## C.9 YOWN-1508

<b>Well Name:</b> Nahanni Range Road CG Well	<b>UTM Zone:</b> 9
<b>Well Log Available:</b> No	<b>Easting (m):</b> 538804
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6793104
<b>Well Depth (m bTOC):</b> 18.30	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2015 - 2018
<b>Well Description:</b> This well is located in the Nahanni Range Road Campground in southeast Yukon. There is no information on soil stratigraphy and well screen installation; no other YOWN wells are located in this area.	

## C.10 YOWN-1509

<b>Well Name:</b> Simpson Lake Campground Well-1	<b>UTM Zone:</b> 9
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<b>Well Log Available:</b> No	<b>Easting (m):</b> 487465
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6726905
<b>Well Depth (m bTOC):</b> Unknown	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2015 - 2018
<b>Well Description:</b> This well is an active drinking water well used in the Simpson Lake Campground located on the Robert Campbell Highway. This well is not equipped with data loggers and is only used for testing water quality. There is no information on soil stratigraphy and well screen installation. No other YOWN wells are located in this area.	

### C.11 YOWN-1510

<b>Well Name:</b> Simpson Lake Campground Well-2	<b>UTM Zone:</b> 9
<b>Well Log Available:</b> No	<b>Easting (m):</b> 487389
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6726938
<b>Well Depth (m bTOC):</b> 21.75	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2015 - 2018
<b>Well Description:</b> This well is located in the Simpson Lake Campground near the cook shelter and boat launch. This well was instrumented in August 2015. There is no information on soil stratigraphy and well screen installation. No other YOWN wells are located in this area.	

### C.12 YOWN-1511

<b>Well Name:</b> Watson Lake Campground Well-1	<b>UTM Zone:</b> 9
<b>Well Log Available:</b> No	<b>Easting (m):</b> 511040
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6661751
<b>Well Depth (m bTOC):</b> Unknown	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2015 - 2018
<b>Well Description:</b> This well is located in the Watson Lake Campground in a small shed previously used to fill drinking water tanks. There is no information on soil stratigraphy. Watson Lake Campground well #2 (YOWN-1512), located approximately 0.9 km to the northwest, is installed in a clay/silt/gravel unit.	

### C.13 YOWN-1512

<b>Well Name:</b> Watson Lake Campground Well-2	<b>UTM Zone:</b> 9
<b>Installation/Activation Dates:</b>	<b>Easting (m):</b> 510263
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6662148
<b>Well Depth (m bTOC):</b> Unknown	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2015 - 2018

**Well Description:** This well is an active drinking water well in the Watson Lake Campground. This well is not equipped with data loggers and is only used for testing water quality. There is no information on soil stratigraphy. No other YOWN wells with known soil stratigraphy are present in this area.

## C.14 YOWN-1513

<b>Well Name:</b> Big Creek Campground Well	<b>UTM Zone:</b> 9
<b>Well Log Available:</b> No	<b>Easting (m):</b> 460852
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6669348
<b>Well Depth (m bTOC):</b> Unknown	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2015 - 2018
<b>Well Description:</b> This well is an active drinking water well in Big Creek Campground. This well is not equipped with data loggers and is only used for testing water quality. There is no information on soil stratigraphy. No other YOWN wells with known soil stratigraphy are present in this area.	

## C.15 YOWN-1514

<b>Well Name:</b> Kusawa Campground Well-1	<b>UTM Zone:</b> 8
<b>Well Log Available:</b> No	<b>Easting (m):</b> 437275
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6717195
<b>Well Depth (m bTOC):</b> 20.60	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2015 - 2018
<b>Well Description:</b> This well is located in the northern region of the Kusawa Campground near the playground and beach. There is no information on soil stratigraphy. The closest YOWN well is the Kusawa Campground Well-2 (YOWN-1515), which is located approximately 1.1 km to the south and installed in a gravel/sand unit.	

## C.16 YOWN-1602

<b>Well Name:</b> Faro Observation Well	<b>UTM Zone:</b> 8
<b>Well Log Available:</b> No	<b>Easting (m):</b> 584769
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6899944
<b>Well Depth (m bTOC):</b> 6.25	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 2.54	<b>Period of Record:</b> 2016 - 2018
<b>Well Description:</b> The Faro Observation Well is located approximately 3 m away from YOWN-0802, near the community water supply wells south of Faro. There is no information on soil stratigraphy. The closest YOWN well is Johnson Lake Campground Well-2 (YOWN-1701), which is located approximately 1.6 km to the south and installed in a gravel/sand unit overlaying bedrock.	

## C.17 YOWN-1605

<b>Well Name:</b> Pine Lake Day Use Area	<b>UTM Zone:</b> 8
<b>Well Log Available:</b> No	<b>Easting (m):</b> 364792
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6743226
<b>Well Depth (m bTOC):</b> 31.5	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2016 - 2018
<p><b>Well Description:</b> This well is located on the beach in the day use area of Pine Lake Campground, approximately 10 m from the lake. This well is flowing artesian (i.e. the water level exceeds the level of the ground surface); however, the water level is slow to recover and has not been observed to exceed the top of casing. A controlled cap is not currently installed. There is no information on soil stratigraphy. The closest YOWN well is the Pine Lake Campground Well (YOWN-1604), which is located approximately 0.2 km to the southwest and is installed in a till unit overlaying bedrock.</p>	

## C.18 YOWN-1606

<b>Well Name:</b> Snag Campground	<b>UTM Zone:</b> 7
<b>Well Log Available:</b> No	<b>Easting (m):</b> 516516
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6900970
<b>Well Depth (m bTOC):</b> 6.68 (frozen/ permafrost)	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2016 - 2018
<p><b>Well Description:</b> This well is located in the Snag Campground, approximately 20 km south of Beaver Creek. The well was instrumented in meltwater perched on top of a frozen water column. Consequently, the loggers were not installed in the true water column and continuous water level, water temperature or conductivity measurements are not usable. Additionally, no water quality samples were able to be collected, but in-situ parameters were recorded.</p>	

## C.19 YOWN-1607

<b>Well Name:</b> Lake Creek Campground	<b>UTM Zone:</b> 7
<b>Well Log Available:</b> No	<b>Easting (m):</b> 544547
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6858323
<b>Well Depth (m bTOC):</b> 9.61	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2016 - 2018
<p><b>Well Description:</b> This well is located in the Lake Creek Campground, approximately 20 m east of the creek and 25 m north of the campground kitchen. There is no information on soil stratigraphy and screen installation. The closest YOWN well is Kluane Harvest Camp well (YOWN-1802), which is located approximately 0.8 km to the southeast and installed in a sand/silt/gravel unit.</p>	

## C.20 YOWN-1608

<b>Well Name:</b> Klondike Campground	<b>UTM Zone:</b> 7
<b>Well Log Available:</b> No	<b>Easting (m):</b> 592192
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 7104158
<b>Well Depth (m bTOC):</b> 3.80	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2016 - 2018
<p><b>Well Description:</b> This well is located in the Klondike campground near the playground area by the entrance. This well is a dug open hole well without a stickup (the top of casing is flush with the concrete pad). Based on the shallow depth of the well, it is possible that the well is silted; no representative groundwater is observed (very limited volume, and turbid; possible rain and/or melted snow).</p>	

## C.21 YOWN-1610

<b>Well Name:</b> Judas Creek Campground	<b>UTM Zone:</b> 8
<b>Well Log Available:</b> No	<b>Easting (m):</b> 548085
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6695163
<b>Well Depth (m bTOC):</b> 13.20	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2016 - 2018
<p><b>Well Description:</b> This well is located in an abandoned campground near Judas Creek. There is no information on soil stratigraphy and screen installation. The closest YOWN well with an available borehole log is the Marsh Lake Campground well (YOWN-1502), which is located approximately 25.6 km to the northwest and installed in a cobble, gravel and clay unit.</p>	

## C.22 YOWN-1611

<b>Well Name:</b> Tagish Campground	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b>	<b>Easting (m):</b> 540932
<b>Yukon Water Well Registry ID:</b> 204080022	<b>Northing (m):</b> 6686909
<b>Well Depth (m bTOC):</b> 105.20	<b>Aquifer Material:</b> Gravel/Sand/Silt
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2016 – Present
<p><b>Well Description:</b> This well is located in the Tagish Campground, approximately 0.3 km east of the Tagish River. This well is flowing artesian and is welded shut. It is not instrumented, so no water level or temperature measurements are available. The well is installed in a gravel/sand/silt unit overlaid by a clay unit.</p>	

## C.23 YOWN-1612

<b>Well Name:</b> Morely Lake Recreation Site	<b>UTM Zone:</b> 8
<b>Well Log Available:</b> No	<b>Easting (m):</b> 659649
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6655686

<b>Well Depth (m bTOC):</b> Unknown	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2016 - 2018
<b>Well Description:</b> This well is located in in the Morely Lake Recreation Site approximately 100 m south of the Morely River. This well was used as a drinking water well. The pump handle was removed to prevent water consumption due to various exceedances of the GCDWQ guidelines. The well is not instrumented, therefore no water level or temperature measurements are available. There are no other YOWN monitoring wells located in this area.	

## C.24 YOWN-1613

<b>Well Name:</b> Watson Lake Campground -3	<b>UTM Zone:</b> 9
<b>Well Log Available:</b> No	<b>Easting (m):</b> 510173
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6662092
<b>Well Depth (m bTOC):</b> 19.40	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2016 - 2018
<b>Well Description:</b> This well is located in the Watson Lake Campground. The top of casing is flush with the concrete pad and capped with a well seal. This well is not instrumented. There is no information on soil stratigraphy. No other YOWN wells with known soil stratigraphy are present in this area.	

## C.25 YOWN-1614

<b>Well Name:</b> Wellgreen	<b>UTM Zone:</b> 7
<b>Well Log Available:</b> No	<b>Easting (m):</b> 589530
<b>Yukon Water Well Registry ID:</b> N/A	<b>Northing (m):</b> 6820455
<b>Well Depth (m bTOC):</b> >100	<b>Aquifer Material:</b> Unknown
<b>Well Diameter (cm):</b> 28	<b>Period of Record:</b> 2016 - 2016
<b>Well Description:</b> This well is located south of the site office and the site access road, in the southeast quadrant of the cleared area (the former Mill site). There are no other YOWN monitoring wells located in this area. Other monitoring wells installed in this area by others are relatively shallow (14 m bTOC) and installed in a silty clay/sand/gravel unit.	

## C.26 YOWN-1701

<b>Well Name:</b> Johnson Lake CG Well-2	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b>	<b>Easting (m):</b> 584165
<b>Yukon Water Well Registry ID:</b> 211030015	<b>Northing (m):</b> 6898252
<b>Well Depth (m bTOC):</b> 24.40	<b>Aquifer Material:</b> Sand/Gravel
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2017 – Present
<b>Well Description:</b> This well is located in Johnson Lake Campground approximately 75 m north of the shoreline. The well was used as a drinking water well but the pump handle was removed to prevent use due	



to metal concentrations exceeding the CSR-AW. The borehole log indicates a sand/gravel (till) unit overlaying sandstone/ conglomerate. There is no information regarding the screen installation; it is possible the well was installed as an open hole in bedrock below 21 m bgs. The soil stratigraphy description is similar to stratigraphy encountered at YOWN-1603, located approximately 0.3 km to the west.

## C.27 YOWN-1702

<b>Well Name:</b> Congdon Creek CG Well-3	<b>UTM Zone:</b> 7
<b>Installation/Activation Dates:</b>	<b>Easting (m):</b> 631951
<b>Yukon Water Well Registry ID:</b> 107020001	<b>Northing (m):</b> 6782275
<b>Well Depth (m bTOC):</b> 18.3	<b>Aquifer Material:</b> Silty Sand/ Gravel
<b>Well Diameter (cm):</b> 15.24	<b>Period of Record:</b> 2017 – Present
<b>Well Description:</b> This well is located in Congdon Creek Campground, approximately 45 m south of the campground kitchen. The well is an active drinking water well, and the well is not instrumented. The well is installed in a sand/gravel/silt unit with the screen installed in gravel. There are no other YOWN wells in this area.	

## C.28 YOWN-1917

<b>Well Name:</b> Teslin SWDF	<b>UTM Zone:</b> 8
<b>Installation/Activation Dates:</b>	<b>Easting (m):</b> 628878
<b>Yukon Water Well Registry ID:</b> TBA	<b>Northing (m):</b> 6670288
<b>Well Depth (m bTOC):</b> 6.615	<b>Aquifer Material:</b> Bedrock
<b>Well Diameter (cm):</b> 5	<b>Period of Record:</b> 2019 - 2020
<b>Well Description:</b> This well was installed as part of a hydrogeological assessment program completed for the SWDFs across Yukon. The site is located approximately 3 km east of the Village core at Mile 802 (Km 1291) Alaska Highway. The Site is on the slope of a ridge near the confluence of the Nisutlin Bay and the Teslin Lake. The well was instrumented in March 2019, however, in March 2020 it was noted that the well is seasonally dry. This well is currently deactivated and not instrumented or monitored by WRC.	