

## 5.47 Teslin - School Water Supply System

Village of Teslin is located at km 1244 on the Alaska Highway in Yukon. The Teslin School water system is served by an approximately 45 m deep water well located in a pit enclosure approximately 4 m from the school. The water system supplies potable water to the school and is governed under the Sections 12.1 (a) and (b) and 17 of the Public Health and Safety Act and Section 5 of the Public Health Regulations (C.O. 1958/079, O.I.C. 2009/194), which require safety measures and inspection for water and water sources for systems that provide for human consumption.

### 5.47.1 Data Compilation Methodology

Tetra Tech approached stakeholders including water system operators and owners to let them know the project was in progress and to request their assistance in compiling the most complete data set possible. Through the process of compiling the data, Tetra Tech has had communication with YG PMD regarding all water systems they operate and/or maintain. YG PMD has provided review comments review comments and data for the compilation.

### 5.47.2 Hydrogeology

Two primary aquifers have been identified by Tetra Tech through studies in the Teslin area: a shallow unconfined aquifer and a deep confined aquifer. Based on topography and proximity to surface water, the groundwater flow direction in the vicinity of the Teslin School well is inferred to be west to south towards Teslin Lake.

### 5.47.3 Well Summary

A well log for the Teslin School well is included in the attached GIS map and database portion of this project. The following table summarizes available data for the water well.

Table 5-121: Teslin School, Well 4762 Summary		
Well Construction Parameters	Details	Source
Date of construction	The well was completed by Midnight Sun Drilling Co. Ltd. in March 1973	Well Log
Total well depth	45.4 m bgs	
Casing	5" (127 mm) ID Steel Casing	
Casing depth	43.7 m bgs	
Well screen	1.7 m 7 slot (0.18 mm) well screen from 43.7 m bgs to 45.4 m bgs.	
Static water level	14.4 m (June 16, 2005)	Tetra Tech 2006
Sanitary seal	No surface seal	Well Log
Wellhead completion	Well pit	Tetra Tech 2006
Wellhead stickup	1.4 m bgs	
Well rated capacity	0.95 L/s (12.5 IGPM) (estimated by the driller)	Well Log
Well GUDI status	Potentially GUDI	Based on well construction

Table 5-121: Teslin School, Well 4762 Summary		
Well Construction Parameters	Details	Source
Well Construction Comments:	Based on the wellhead completion and the lack of a surface seal, the well was not constructed to meet the Canadian Groundwater Association Well Construction Guidelines.	

### 5.47.4 Source Water Quality

As part of the SPDWSA review conducted in 2005, Tetra Tech reviewed available groundwater chemistry data and collected an additional sample to test for the identified parameters of concern. The observations made in 2005 are summarized below:

- The TDS concentration measured at the time of sampling was 550 mg/L, which is in excess of the GCDWQ AO of 500 mg/L;
- The total and dissolved arsenic concentrations, ranged from 0.00696 mg/L to 0.0074 mg/L on the dates sampled, are below the current GCDWQ MAC of 0.01 mg/L;
- All other parameters measured were below the applicable GCDWQ health-based and aesthetic objectives; and
- No elevated concentrations of indicator parameters were observed in the two sets of sample results.

### 5.47.5 Water Treatment and Distribution

Government of Yukon owns and operates the Teslin School water supply system. Water entering the school is treated through several processes prior to entering the distribution piping.

Table 5-122: Teslin School Water Treatment and Distribution Details		
Item	Details	Source
Owner/Operator	Government of Yukon	Tetra Tech 2006 p.c. Nick Barnett 2017
Water source	Groundwater	
Wells serving the system	Teslin School well	
Treatment type	Chlorine injection, cartridge filtration, activated carbon vessels, and water softener	
Water users	Teslin School	
Delivery method	Piped to the school	
Age of system/last known update	Unknown	

### 5.47.6 Source Water Protection Planning

There is no source water protection planning in place for the Teslin School Well 4762. Given the fact that the water supplies the Teslin School, source water protection planning here may be merited. An integrated SWPP that includes the Teslin Health Centre and Village of Teslin water supply wells would provide a comprehensive approach to protecting the groundwater resource in Teslin.

Potential sources of contamination in the vicinity of the wellhead were identified as part of the 2005 SPDWSA site review; these potential contaminant sources included the following:

- The Teslin community sewage system and service lines are possibly less than 30 m from the well;
- Several septic spills have been recorded in the community, and the proximity of the sewage system and lines presents a concern for potential from contamination by septic waste; and
- The well pit has been subject to flooding as evidenced by observed staining.

### 5.47.7 Water Supply Information Data Gaps

Tetra Tech has obtained review comments from YG PMD regarding the current status of this system and to our knowledge this summary is complete and accurate to March 2017. The following data gaps have been identified:

- There is no source water protection planning for this groundwater resource. Source water protection planning here could be incorporated into a greater Village of Teslin SWPP and provide comprehensive planning to protect the identified shallow and deep Teslin groundwater aquifers.