

5.40 Pelly Crossing - Swimming Pool Water Supply System

Pelly Crossing, Yukon is where the North Klondike Highway crosses the Pelly River and is located about midway between Dawson and Whitehorse. The Pelly Crossing Swimming Pool has water supplied from the SFN water system and the summary included here is for information purposes only.

5.40.1 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.

5.40.2 Hydrogeology

Most wells in the Pelly Crossing Main Village area are completed at depths of 10 m to 17 m below ground within an unconfined sand and gravel aquifer consisting of floodplain alluvial sand and gravel deposits. The relatively shallow depth of the aquifer combined with the absence of confining material leaves this aquifer vulnerable to surficial sources of contamination (Tetra Tech 2006). A driller’s well log was not available for review for this well to confirm the sub-surface conditions at the swimming pool location.

The expected direction of groundwater flow is north to northwesterly (Tetra Tech 2004).

5.40.3 Well Summary

No well log for Well 5672 was available for review. The well construction and completion details are summarized below.

Table 5-103: Pelly Crossing Swimming Pool, Well 5672 Summary		
Well Construction Parameters	Details	Source
Date of construction	1984	Tetra Tech 2006 p.c. Nick Barnett 2017
Total well depth	Unknown	
Casing	6" (152 mm) ID Steel Casing	
Casing depth	Unknown	
Well screen	Unknown	
Static water level	Unknown	
Sanitary seal	No surface seal	
Wellhead completion	Split gasket cap, wooden enclosure, below ground well pit	
Wellhead stickup	Unknown	
Well rated capacity	Unknown	
Well GUDI status	Potentially GUDI	Based on well construction

Table 5-103: Pelly Crossing Swimming Pool, Well 5672 Summary

Well Construction Parameters	Details	Source
Well Construction Comments:	Well was likely not constructed to meet the Canadian Groundwater Association Well Construction Guidelines.	

5.40.4 Source Water Quality

Water quality results from June 2005 and August 2005 were reviewed by Tetra Tech as part of the SPDWSA. More recent results were not available for review. The key observations and comments noted by Tetra Tech are summarized as follows:

- The water quality results indicated that the water from Well 5672 is a calcium-bicarbonate type water with a pH of approximately 8.2;
- The hardness (as CaCO₃) was 181 mg/L and is considered very hard;
- The turbidity of the water from Well 5672 ranged from 1.29 NTU to 4.07 NTU. Health Canada recommends that groundwater sources provide water with turbidity less than 1.0 NTU and that water from GUDI sources have appropriate filtration and disinfection. Filtration is expected to achieve a turbidity level of 1.0 NTU for slow sand or diatomaceous earth filtration, 0.3 NTU for conventional direct filtration and 0.1 NTU for membrane filtration in 95% of samples between filter changes or per month with no measurements exceeding 3.0 NTU;
- The water quality results indicated that the water from Well 5672 meets the GCDWQ for all the parameters analyzed with the exception of turbidity, total and dissolved iron, and total and dissolved manganese:
 - The reported total iron concentrations, at 0.748 mg/L and 0.945 mg/L, exceed the GCDWQ AO of 0.3 mg/L. The reported dissolved iron concentration (0.104 mg/L), which is below the GCDWQ AO, indicates that most of the iron can be attributed to suspended solids;
 - The reported total manganese concentrations, at 0.452 mg/L and 0.5 mg/L, and the reported dissolved manganese concentration, at 0.437 mg/L, exceed the GCDWQ AO of 0.05 mg/L; and
- Review of chloride, nitrate and nitrite showed all three to be low and within the normal background ranges, suggesting that the aquifer was not under the influence of anthropogenic surface sources of nutrients or anions such as septic wastes at the time of sampling.

5.40.5 Water Treatment and Distribution

Table 5-104: Pelly Crossing Swimming Pool Water Treatment and Distribution Details

Item	Details	Source
Owner/Operator	Operated by Selkirk First Nation	
Water source	Groundwater	Tetra Tech 2006 p.c. Nick Barnett 2017
Number of wells serving the system	One (Well 5672)	
Treatment type	None	

Table 5-104: Pelly Crossing Swimming Pool Water Treatment and Distribution Details		
Item	Details	Source
Water users	Not in use**	
Delivery method	Not in use**	
Age of system/last known update	Unknown	

**Note: The swimming pool now has a connection to the SFN water treatment system, and the water well has been decommissioned. (p.c. Michael Fraser 2017).

5.40.6 Source Water Protection Planning

There is no source water protection planning in place for the Pelly Swimming Pool Well 5672, and Tetra Tech was not able to find any record of a GUDI assessment for this well however, as this system is no longer in use, SWPP or GUDI assessment here would not be warranted.

5.40.7 Water Supply Information Data Gaps

YG PMD has reviewed this summary and provided comments. To our knowledge, this system is accurate and up to date as of March 2017. Tetra Tech has not identified any data gaps.