Aquifer Name: Pouce Coupe Overburden Aquifer

Aquifer Number: 0598

Date of Mapping: February 10, 2023

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A. AQUIFER DESCRIPTION FOR AQUIFER 0598

A.1 CONCEPTUAL UNDERSTANDING OF HYDROSTRATIGRAPHY

A.1.1 AQUIFER EXTENTS

The aquifer is along the Pouce Coupé River and bound by the extent of the alluvial sediments to the east and west (Reimchen 1980). The boundaries are uncertain in the northeast, where they follow the provincial boundary, and south, as the aquifer likely extends further south (Lengyel et al. 2023, Figure 1). The aquifer extends across the provincial border but has been truncated to the provincial boundary for management reasons.

A.1.2 GEOLOGIC FORMATION (OVERLYING MATERIALS)

Based on Reimchen (1980) and borehole lithology, the alluvial deposits which form the aquifer consist of silt and sand. The aquifer is considered unconfined to semi-confined.

A.1.3 GEOLOGIC FORMATION (AQUIFER) – 1B UNCONFINED FLUVIAL

Sand, gravel, and silt associated with recent fluvial depositional environment.

A.1.4 VULNERABILITY

Depth to groundwater is shallow. The permeability of the aquifer has not been tested, but it is expected to be high based on the type of the dominant aquifer material (sand and gravel). Permeability of silt is expected to be moderate. The overall vulnerability of the aquifer to surface contamination has been qualitatively assessed to be high.

A.2 CONCEPTUAL UNDERSTANDING OF FLOW DYNAMICS

A.2.1 GROUNDWATER LEVELS AND FLOW DIRECTION

Static groundwater levels are shallow (0.6 to 2.1 m, LHC 2011). There are no active provincial observation wells or wells with artesian conditions within the extents of the aquifer.

The groundwater surface is interpreted to be a subdued representation of the topography based on regional interpolation of groundwater surface elevations. Groundwater is interpreted to flow primarily

towards the Pouce Coupé River with a north-easterly component corresponding to the regional slope of the river valley.

A.2.2 RECHARGE

Recharge to the aquifer could occur via distributed infiltration of precipitation and snowmelt as the aquifer is exposed at surface. The aquifer is inferred to be hydraulically connected to the Pouce Coupé River and therefore may be recharged by the Pouce Coupé and its smaller tributaries. However, the spatial and temporal understanding of these recharge pathways are uncertain and further investigation is required to evaluate these hydraulic connections.

A.2.3 POTENTIAL FOR HYDRAULIC CONNECTION

Groundwater is inferred to be hydraulically connected to the Pouce Coupé River and its tributaries. The aquifer may also be hydraulically connected with the underlying bedrock aquifer (0593) where intervening sediments are absent, thin, or permeable.

A.3 WATER MANAGEMENT

A.3.1 ADDITIONAL INFORMATION ON WATER USE AND MANAGEMENT

The yield, based on one well record, is 10.1 L/s, indicating high productivity. Groundwater is used for domestic purposes, based on the GWELLS database.

A.3.2 ADDITIONAL ASSESSMENTS OR MANAGEMENT ACTIONS

No water availability or water budget studies have been completed in the area.

A.4 AQUIFER REFERENCES

Geographic datasets from the BC Data Catalogue, accessed November 2022 https://data.gov.bc.ca/.

Lengyel, T., Deri-Takacs, J., Hinnell, A. C, & Clague, J. J. 2023. Kiskatinaw-Peace Aquifer Mapping and Hydrostratigraphic Characterization. Victoria, B.C.

LHC (Lowen Hydrogeology Consulting Ltd.) 2011. Aquifer Classification Mapping in the Peace River Region for the Montney Water Project. File No. 1026. June 2011.

Monahan, P.A., Levson, V.M., Hayes, B.J., Dorey, K, Mykula, Y, Brenner, R., Clarke, J., Galambos, B, Candy, C., Krumbiegel, C. & Calderwood, E. 2018. Mapping the Susceptibility to Amplification of Seismic Ground Motions in the Montney Play Area of Northeast British Columbia. Geoscience BC Report 2018-16.

Reimchen, T.H.F, 1980. Surficial Geology Dawson Creek; Geological Survey of Canada, Map 1467A, 1:250000 scale map.

A.5 REVISION HISTORY

Date	Version	Revision Class	Comments	Author
2011	1	Major	Initial mapping of aquifer	Lowen Hydrogeology Consulting Ltd. 2011.
02/10/2023	2	Minor	Aquifer boundaries updated to reflect aquifer extent based on alluvial sediments along Poucé Coupe River	Tibor Lengyel, M.Sc., P.Geo., Judit Deri-Takacs, Ph.D., Andrew Hinnell, Ph.D., P.Geo