August 24, 2017

Mr. Douglas Hill
Regional Director, Mining Operations, EPD
400, 640 Borland Street
Williams Lake, British Columbia
V2G 4T1

Dear Douglas Hill,

Re: POLIS review of the Hullcar Aquifer

The purpose of this memo is to respond to your request to summarize the available information regarding the state of the Hullcar aquifer, and to provide additional path-forward guidance. The context for this memo is the recently announced review of the Hullcar Aquifer by POLIS, with the stated “end goal of ensuring agricultural practices are consistent with the provision and protection of clean, safe drinking water.”

The review should include the Golder Associates Ltd. (2017) report commissioned by the Ministry of Environment (ENV). That report is the most comprehensive hydrogeological study of that aquifer, and was published earlier this year. It summarized publically available information at the time of writing, which included, among other information:

- Responses to Pollution Abatement Orders (PAO) and Pollution Protection Orders (PPO) issued by ENV, some of which include of hydrogeologic studies;
- Report on Professional Opinion by Western Water Associates Ltd;
- FLNRO ambient water quality monitoring network; and,
- FLNRO Observation Well Network.

Golder (2017) identified a number of data gaps and uncertainties that could be addressed through additional field investigations and construction of a numerical groundwater model.

Recommendations

Golder’s main recommendation was to develop a numerical groundwater model of the aquifer. As discussed, I support that recommendation, noting that several precursor data sets are required and could be obtained through field investigations. Those recommended field investigations include:

- Conduct additional water level monitoring across the Hullcar Valley to understand groundwater flow under natural conditions and during irrigation season;
- Install additional wells for water level and water quality sampling;
- Gain a better understanding of groundwater-surface water interactions by installing surface water gauges along Deep Creek;
• Water quality sampling for a more detailed suite of parameters; and,
• Field verification well survey.

In addition, LiDAR would greatly improve on the existing 20 m topographic contours and assist in future numerical model development through understanding surface water drainage patterns, benchmark historical water level measurements, and provide accurate elevations of surface water and other features.

The numerical groundwater model could also help manage other future objectives in the valley including water management and licensing decisions in the valley. Existing non-domestic groundwater users are required to apply for a license to use groundwater. To date there have been very few groundwater license applications originating from the Hullcar Valley, and Golder’s report indicates irrigation use in the aquifer is potentially out of balance with the volume of water recharging the aquifer.

Please contact me directly at 250-260-4641 if any clarification is required.

Regards,

David Thomson, M.Sc., P.Geo.
Regional Hydrogeologist, Groundwater Science, South Area

Cc:  Andy Oetter, Director, Authorizations, Thompson Okanagan Region, FLNRO
     Mike Toews, P.Ag., Authorizations Manager, FLNRO
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