Subject: Strada - Melancthon Annual Compliance Report 2023 - Comments
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Date: 2024-04-17, 12:23 p.m.
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Alicia,

As parts of this 2023 Annual Compliance Report may be included in the Strada Proposed Quarry Report, I am enclosing advance review comments. Many of these comments are repeated from previous communications.

2.1 Water Takings

Make it clear takings are from ponds and pond locations.

2.2 Monitoring Requirements

Table 1 Monitoring Details Notes (pg 4).

Does Strada propose to repair / replace malfunctioning or destroyed monitors including OW4C, OW 11 A and B , OW15B, OW17A and 17B , OW21A, OW22A, OW23A and others?

Are these and other wells needed to support the quarry application?

Note the monitoring well nomenclature in the last para on pg 4 and in last para on pg 5. The new 2023 deep 'Gasport' Monitors should have a separate designation, say 'D', if Strada is going to recognize Dirk's aquitard.

If Strada is still maintaining that Tavistock Till occurs on the north part of the overall property, then geotechnical sampling of the till characteristics in both the north, central and south part of the proposed quarry will be required especially if the till is proposed for recharge facilities or rehabilitation slope treatment.

3.2.1 Overburden

para 1 Please advise where the buried bedrock valley system is in the southeast portion of the site?

para 1 The dry overburden and permanent unsaturated conditions reported is

likely evidence of the absence of Tavistock Till.

3.2.2 Bedrock Till Contact / Groundwater Contours

Fig-4, Fig-5, Fig-8 and Fig-9 at face value all have major flows towards OW14A and OW16C in the east central part of Townhip Lot 13. Fig -4 and Fig-5 show only limited flow to the southeast. Fig-8 and Fig-9 show flow to the east not to the southeast.

Fig-8 is titled incorrectly as 'shallow' wells. Furthermore, on Fig-7 and 8 the deepest 'open hole' well in the enclosed Appendix C is OW7C with a base at 466 m asl. These monitor wells are intermediate depth in the context of Strada's 2023 deep Gasport wells. OW7C has a unique hydrograph in Appendix D. The 'C' wells used to plot Fig-8 and Fig-9 are all completed above Dirk's aquitard zone.

Table 3

The manual high and low elevations Table is misleading compared to relying on the Appendix D Hydrographs. For example, compare OW7C, which shows a manual range of about 488.6 to 492. m asl. This appears to be a table error. I have not checked the other entries against the Hydrographs.

3.2.3 Groundwater Quality

With regard to allocating Nitrate loading responsibility to neighbouring agricultural activities, you need to also consider shallow groundwater flow patterns. For OW9A your Fig-4 and Fig-5 show contrasting flow patterns. Again, are the Strada pits within the Pine or Boyne watersheds?

Your Sodium comment implies flow into the Strada site from County Road 17 versus your Fig-4.

Why is there no discussion of oil and grease and Hydrocarbons?

3.3 Surface Water Table 5

This Table is of limited use for the wetlands without absolute m asl elevations. Are the wetlands part of the groundwater system? The pond and wetland locations need to be illustrated on up to date orthophotos.

Why is there no discussion of oil and grease and hydrocarbons?

Where is the current wash source and sediment pond?

Figures

The Strada data should support one meter contouring. What contouring technology is being used?

There is no vertical datum statement on any of the Figures.

Have barometric corrections been applied to the water level monitoring data?

Fig-2 The Legend does not identify the active wells.

Fig-4 and Fig-5 There are no water level observation points along the 4th Line between OW13A and OW23A. The contours are most likely wrong in this area.

Fig-4 Why is OW10A water level omitted from this April 2023 contouring?

Fig-5 OW10A water level is shown as 487.13 m asl. Why is this value ignored in the contouring? Is this an error?

Fig 6 why is 4B flat? Is the monitor functioning?

Fig 7 A number of the hydrographs are flat including 20C, 21C, 22C and 23C. Why? Are these monitors functioning?

Fig-8 The Title is incorrect. These C wells should be described as intermediate depth not deep. Deep should be reserved for the Gasport wells.

Fig-8 and Fig-9 There is no water level data along the fourth line between OW13C and OW23C and between OW13C and OW3C. There is no water level data between OW18C and OW7C on the east side of Melancthon Pit 2. There is no water level data in the southwest corner of Melancthon Pit #2 (OW4).

These missing monitor locations are serious deficiencies with respect to establishing the on site hydraulic head across Dirk's aquitard for the proposed Strada Quarry.

Appendix C Well Construction Diagrams

The Well Construction Diagrams continue to carry Tavistock Till and Amabel Formation stratigraphic designations. If Tavistock Till designations are to be carried, supporting till geotechnical descriptions are required. The bedrock surface Amabel Formation designations were all incorrect at the time of drilling and more incorrect now. These classification errors must be attributed to the source and acknowledged.

Unexplained many of the diagrams have the year omitted from the drilling date.

Why is there no well construction diagram for OW12 and OW16?

No vertical datum is specified.

Appendix D Hydrographs

No vertical datum is specified.

Where is the precipitation data coming from?

Consistent vertical scales should be used for on site wells to facilitate visual comparison and data integration (say 475 to 505 m asl or at least the same water level vertical interval). Every hydrograph is a 'new day'.

For off site private well hydrographs use the same vertical intervals as on site wells. What is the source of the ground elevations? The depth of the private well and the correlated MECP Well Record # would make this data even more useful. Reading would be facilitated with the included address and a reference to location Fig-2.

Should surface water level data be included with the 2A series contour plots?

Appendix E Water Quality Results

Selected parameters, specifically Nitrates, Sodium, Oil and Grease etc, need to be visualized on maps (see Hunter earlier examples).

Widespread elevated Nitrates occasionally exceeding drinking water standards both on the site perimeters and at off site neighbour wells means that ANFO (Ammonium Nitrate / Fuel Oil) use as a blasting agent and groundwater residuals may become a Nitrate Drinking Water Quality exceedance issue. This issue was already identified by D. Sanford in a Town Hall public meeting and will need to be addressed by Strada.

Appendix F Domestic Water Monitoring

This section is poorly organized and appears to be repeating the Hydrographs in Appendix D and including additional ones from 2022. I suggest that all data for each private well be grouped by specific well owner separate from the on site data.

It is not possible to draw conclusions without well depths and base elevations.

The private WELLness Surveys are a very useful part of the integrated site / offsite monitoring program.

Conclusions:

Conclusions contained above will be summarized at a later date, in the context of, and after review of Strada additional proposed quarry information received last week.

Yours truly,

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