

Subject: Strada - Pine River Baseflows - Meeting Follow Up.

From: Garry Hunter <ghunter@hunter-gis.com>

Date: 2025-03-07, 3:29 p.m.

To: Sean McFarland <smcfarland@GOLDER.com>

CC: Dirk Kassenaar <dirk@earthfx.com>, E J Wexler <ejw@earthfx.com>, Gabriel Bacca Cortes <gabrielbc@earthfx.com>, Grant Horan <ghoran@strada-aggregates.com>, Natalie Kotyck <info@ndact.ca>

BCC: Carl Cosack <cosack@zing-net.ca>, Kevin Powers <kevinp@campbellstrategies.com>

Sean,

Further to our discussions yesterday, I am enclosing four previously prepared Figures from our files:

1. Pine River at Larry's Place, this photo may be upstream of Tatham SW14 gauge. I need to walk Larry's property to SW14 to confirm.

2. Strada Dry Weather Stream Flow Monitoring Aug 15, 2024. Tatham appears to have mixed up SW14 and SW25 in their records (and in submissions). The MNRF Geohub stream locations are incorrect in this area. I have plotted the data where I think it is, with base flows logically increasing progressively downstream. Genivar dry weather flows have been added as available for visual comparison.

This Tatham data collected on a single dry weather day was intended to permit efficient partitioning of groundwater discharge by catchment and by Model Layer 4 (Guelph) and Model Layer 6 (Gasport). This partitioning was to be further enhanced with groundwater and surface flow Nitrate (as N) concentration for Model Layer 4 (agricultural contamination) and Model Layer 6 (pristine waters). We have used this data in our Feb 7, 2025 Alternative Site Plan to provide an independent rough estimate of Model Layer 4 and Model Layer 6 flow quantities into the proposed Quarry footprint.

Tatham although surveying most of my requested stream flow sites **left out three key stations required to permit partitioning of flows (SW26, SW27 and SW28)**. I subsequently added SW29 to the survey list to coincide with the NVCA 2008 Site 1 Hydrograph. **Strada (Tatham) has not responded to my request to survey these stations.** New data is now available as obvious in Dirk's presentation yesterday.

My experience with Tatham field data is that formal error trapping is always required. This due diligence does not appear to have been applied to the data presented by Dirk yesterday.

We first reported on the Tatham dry weather flows in Sept 2024. Strada (Earthfx) has

never responded to my requests for STRs at all the observed flow sites to more fully and fairly evaluate validation across the model domain.

3. Table HA.1.1 compares model virtual vs observed stream flows as reported by Genivar, Tatham and NVCA. These flows are all reported at 'face value' without modification consistent with the professional author originals. There is a consistency between Genivar and Tatham flow observations. Flows logically increase downstream. This data is the source of my conclusions with respect to Model virtual flow underestimates. I reject Dirk's disparaging of observed dry weather flow data vs the virtual model data at our meeting.

4. The NVCA Pine River Station 1 (Prince of Wales- Mulmur) mid July to mid October 2008 Daily Average Discharge and Calculated Base Flow demonstrates that flows are primarily groundwater origin with slowly declining flows for the period of record. Surface water inputs are modest as recorded in the two major spikes. Tatham has previously advised, which I accept, that they had to wait a length of time to obtain typical dry weather flow conditions in the summer of 2024.

These are not intermittent streams as frequently referenced in yesterday's meeting.

This hydrograph confirms the validity of the efficient single day flow observations from August to mid October to obtain a snap shot of typical flow conditions. The 'good news' is that there is not a need for widespread continuous flow observations (monitoring for monitoring's sake as frequently espoused by Strada's consultants).

We again request that Strada respond to our request of Dec 10, 2014 for additional strategic data.

Yours truly,

Garry T. Hunter M.A.Sc. P.Eng.
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Subject:Strada: Figures for Larry's Place

Date:Fri, 7 Mar 2025 10:43:42 -0500

From:Rachel Li <rli@hunter-gis.com>

To:'Garry Hunter' <ghunter@hunter-gis.com>

Hello Garry,

Three PDFs attached to this email as request.

Thank you,
Rachel

— Attachments: —

1 - PhotoCover.pdf	448 KB
13 - Fig HA 1.4 StreamFlowMonitor_20250117.pdf	4.5 MB
14 - Pine River Hydrograph and data-2008.pdf	460 KB
15 - Table HA 1.1 StreamFlowCompare_20241217.pdf	310 KB