March 26, 2013

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Jane Bachman
Terrain Scientist
EDI Environmental Dynamics Inc.
3 - 478 Range Road
Whitehorse, YK Y1A 3A2

Dear Jane,

Re: Mt Nansen Senior Hydrology Review

Knight Piésold Ltd. (KPL) was retained by Environmental Dynamics Inc. (EDI) to provide senior review of data processing, analysis methods and results for the Mt. Nansen hydrology program. To this extent, it appears that EDI have followed accepted methods and procedures for field data collection and analysis. However, KPL was not directly involved with data collection or analysis, and as such cannot warrant that the data are free from error. Key tasks undertaken by KPL and our recommendations are summarized below.

Key tasks:
1. Review of field methods and procedures for consistency with standard practices.
2. Review of rating curves and hydrographs for consistency with site and regional datasets.
3. Review of reporting to ensure appropriate documentation and qualification of the datasets. KPL reviewed a March 4, 2013 draft version of the report and provided comments.

Recommendations:
1. The site has a very high monitoring density, but with a finite resource it appears that collecting data at a large number of sites may have taken precedence over collecting the highest quality data possible. Based on experience with hydrology data collection programs for engineering and environmental assessments associated with mining projects throughout British Columbia and Yukon Territory, it is generally more informative to collect high quality data at a few key locations rather than relatively low quality data at a large number of stations. Moving forward, a reduction in the number of gauging sites and an increase in the number of visits to each site should be considered.
2. Standard hydrometric monitoring procedures are best suited for measuring flows greater than approximately 0.1 m^3/s in stream systems with relatively uniform and stable morphologies. Often good quality data cannot be collected at a location of interest, and rather must be collected at a representative site. In line with recommendation #1, data collection activities should be focused on key locations where high quality measurements can be achieved.
3. Future discharge measurement activities should target the collection of high and low discharge values, which will help delineate the upper and lower ends of the respective rating curves. Currently, these portions of the curves are largely based on extrapolations of mid-range relationships between stage and discharge.

We trust that our recommendations and report review comments are suitable for your needs. If you have any questions or require additional assistance or information please contact the undersigned.

Yours truly,
KNIGHT PIESOLD LTD.

Signed:
Toby Perkins, P.Eng.
Senior Engineer

Approved:
Ken Brouwer, P.Eng.
President

/tjp