ENVIRONMENTAL DYNAMICS INC.
Natural Resource Consultants

July 19, 2005
Frank Patch, Project Manager
Assessment and Abandoned Mines Branch
Energy, Mines and Resources
Yukon Government
Box 2703, Whitehorse, Yukon, Y1A 2C6
Dear Frank:

## Re: Bathymetric Analysis of Mt. Nansen Tailings Pond.

As requested, we have carried out a bathymetric analysis of the Mt. Nansen tailings pond. Please find the details of our methodology and results outlined below. As you are aware, the bathymetry conducted was limited to the wetted area of the pond, which was significantly below what was judged to be the high water mark. Should an opportunity arise to conduct further bathymetric measurements during a higher water event, such work could compliment the results outlined below.

## Methods:

The wetted perimeter of the pond was captured via GPS, by walking said perimeter with the unit recording points. The high water perimeter was also captured this way; however, the exact location of this perimeter was estimated. Within the pond, bathymetric levels were established using a rod to measure the water depth at 124 locations, with each location recorded by GPS. These points within the wetted perimeter were used to generate a bathymetric map with Vertical Mapper software, which illustrated contours every 0.25 meters (see attached map). All perimeters and contours mapped are based on a water elevation of 2.73 m below the Benchmark point established by yourself on June $1^{\text {st }}, 2005$. To calculate water volumes, marked depth points were used to generate mean depths using the Vertical Mapper grid.

## Results:

The results of the measurements and analysis are illustrated in Table 1, as well as Figure 1 and the attached bathymetric map. We were able to come up with a formula that you can use to estimate the volume per particular water level (see Figure 1). Please note that this formula uses the water level below the established benchmark and that any results should be taken as estimate.

Table 1: Water levels and Corresponding Water Volumes of Tailings Pond.

| Water Level Below <br> Benchmark (m) | 1.775 | 2.73 | 2.93 | 3.18 | 3.43 | 3.68 | 3.93 | 4.18 | 4.43 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Water Level <br> Compared to July <br> $\mathbf{7 , 2 0 0 5}(\mathbf{m})$ | 0.955 | 0 | -0.2 | -0.45 | -0.7 | -0.95 | -1.2 | -1.45 | -1.7 |
| Volume $\mathbf{m}^{\mathbf{3}}$ ) | $\mathbf{1 5 5 , 7 3 9}$ | $\mathbf{4 3 , 8 6 7}$ | $\mathbf{3 7 , 5 2 4}$ | $\mathbf{3 0 , 3 2 8}$ | $\mathbf{2 2 , 7 9 3}$ | $\mathbf{1 7 , 1 2 1}$ | $\mathbf{1 1 , 8 1 5}$ | $\mathbf{6 , 8 8 1}$ | $\mathbf{3 , 1 2 6}$ |



Figure 1: Graph Illustrating Waters Levels with Corresponding Water Volumes of Tailings Pond.
If you have any questions or concerns regarding this project please let me know.

Yours truly,

## EDI ENVIRONMENTAL DYNAMICS INC.



## Pat Tobler

Vice President/Branch Manager
Attachment: Bathymetric Map of Tailings Pond based on July 7, 2005 water level ( 2.73 m below benchmark).


