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Dear Sir or Madam,

Please find following the results of three-dimensional (3D) inversion of transient audio-magnetotelluric (TAMT) data we collected in 2004 on a single profile over Body 122.

Thirty stations were collected on a single profile trending 322 degrees (Figure's 1 and 2). The 3D code assumes a right handed co-ordinate system of positive x to the North, positive y to the East and positive z downwards as per the geomagnetic convention. Therefore, the grid was rotated by 38 degrees and referenced to UTM (506822, 5905260) (Figure 3).

Shown in Figure 4 are the results of 3D inversion on the single profile covering Body 122 with kimberlite intersections indicated in white . The major features of the model are, from shallow to deep ;

- The upper 100 m of overburden appears to be split into two resistive layers, although most resistive in the upper 25 m. A relatively thin conductive layer from approximately 30 to 40 m depth separates the shallow resistive layer from a less resistive layer from 50 to 100 m depth. As is known from drilling, the upper 25 m of overburden consists of glacial sand, glacial clay is noted from 25 to 50 m depth and from 50 m to 100 m the overburden consists of glacial till. These overburden layers are reflected very well in the 3D TAMT inversion.
- Conductive marine shales of approximately  $3 \Omega m$  resistivity are seen at 100 m depth, extending to as deep as 220 m, especially at the North end of line.
- A resistive intrusion of approximately  $30 \ \Omega m$  resistivity cuts through the conductive shales between station locations -100 to + 200. The resistive intrusion corresponds to the shallow extension of Body 122.
- A fairly dramatic offset is seen at station location + 400 m, immediately to the North of the Body 122 shallow intrusion. North of station location + 400 resistive material is located at depths greater than 400 m while for station locations south of station location + 400 m it extends to as shallow as 250 m, implying a vertical offset of as much as 150 m.

Sincerely,

David Goldak, M.Sc., P.Eng.



Figure 1: Area Map

5906400-5906200-5906000-5905800-5905600-5905400-5905200-5905000-5904800-5904600-5904400-5904200-5904000-

FALC B122 3D Survey (NAD27, Zone 13)

505800 506000 506200 506400 506600 506800 507000 507200 507400 507600 507800

## B122 Rotated Grid 38 degree rotation angle Grid centre at station 15



Figure 3: 3D Inversion Grid





Figure 4: 3D Inversion Results