AURORA GEOSCIENCES

NORTHERN GEOLOGICAL & GEOPHYSICAL CONSULTANTS

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MEMORANDUM

To: Mike Burke, Mike Maslowski
Golden Predator Canada Corp.

Date: February 24 , 2012

From: Louis Rosenthal, Dave Hildes
Aurora Geosciences Ltd.

Re: 2011 Sleeman IP survey – 3D Inversion

In the Fall of 2011, 19.7 km of induced polarization (IP) data were collected on the Sleeman Zone of the Brewery Creek project. This memorandum describes the data inversion steps taken to model the resistivity and induced polarization data provided in the field report, and makes recommendations based on the results of the inversion.

1) Data Inversion

The final resistivity and chargeability data were modeled using the DCIP3D inversion software developed by the University of British Columbia Geophysical Inversion Facility. This software package produces a geo-referenced chargeability (V/V) and conductivity (mS/m) model.

The inversions used the data from the final database provided with the field report. The DC inversions used the primary voltage normalized by the current as input and the IP inversions used dimensionless averaged IP as input. The dataset was rotated 30 degrees clockwise so that the lines were oriented east-west. This rotation decrease the size of the inversion mesh which improves the efficiency of the inversion.

DC inversion

Initially, the DC dataset was inverted with a coarse 25m mesh to provide a reasonable first model while minimizing computer time. This model was used as a starting point for the next stage of the inversion which used a finer 16 m mesh. The final inversion was weighted from the top down to discourage surface noise and was biased in the cross line direction to encourage continuity between lines. The final model required no additional smoothing and fit the data very closely. Some of the finer elements of the conductivity structure on L0N and L600N were not perfectly resolved but in general the fit is excellent. Stacked sections of the observed and predicted conductivity and a difference calculation plot are included in appendix A.

IP inversion

The sensitivity of the IP inversion was calculated using the final DC model. Different models were calculated using several combinations of initial and reference models. The best model used a reference model and initial model of 30 mV/V, used surface weighting to discourage spottiness and was biased in the cross line direction to encourage continuity between lines. The inversion was able to fit the data very closely however it had trouble resolve some fine structures of L1000N. Stacked sections of predicted and observed chargeability and a difference calculation are included in appendix A.

2) Processing

The padding cells were removed from the final models which were then imported into Oasis Montaj as 3D voxels. The voxels were rotated back into grid coordinates then re-gridded using a minimum curvature algorithm with 10 m cell size. These processed voxels are included with this report in various formats (Geosoft Voxels, AUTOCAD DXF and 3D PDF).

A difference voxel was created to analyse the depth of investigation of the survey and the robustness of the final model. This voxel compares inversions that were computed using different starting parameters. A 25% difference calculation showed the depth of investigation to be 200-300 metres for most of the survey, including the areas of high chargeability and conductivity where all the drill targets are located. The models did not agree within this tolerance in the north-eastern section of this survey, probably due to the low chargeabilities there. All proposed drillholes test anomalies that are robust to alternate starting and reference models.

3) Interpretation

A combination of cross-sections and isosurfaces is used to visualize and interpret the model. All figures in this report use a conductivity isosurface of 0.028 mS/m (pink) and a chargeability isosurface of 40 mV/V (red). Several anomalous areas were indentified by the inversion and it is split into five zones for discussion (figures 1 and 2).

A strong SE-NW trend dominates both the conductivity and chargeability models. To the east of the main trend are several small chargeability anomalies, including the known gold-bearing body (Zone A). This is interpreted as the contact between the gold-bearing quartz monzonite and metasediments as well as being a major conduit for fluid flow. The strike of this anomaly is aproximately Az 310. This main anomaly comprises Zones B & C and is discussed later in the report. Zone D is a parallel but distinct anomaly to the west of the main axis and Zone E is a large chargeable body that obliquely intersects the main axis. The gold bearing zone is to the NE of the major structural axis and located in the vicinity of the intersection of Zone E and the contact.

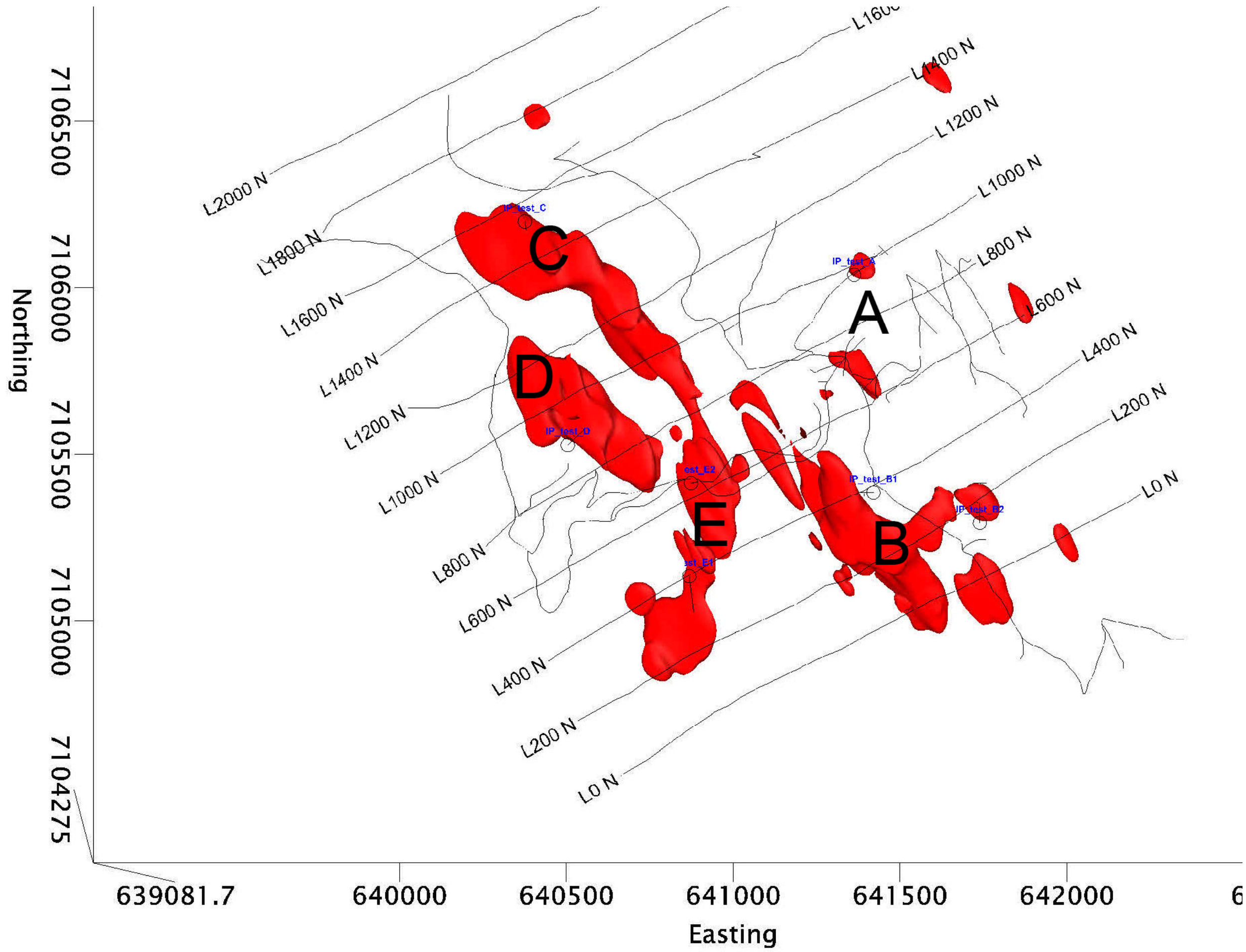

Figure 1: Top-view of the survey area with location of roads and test holes.

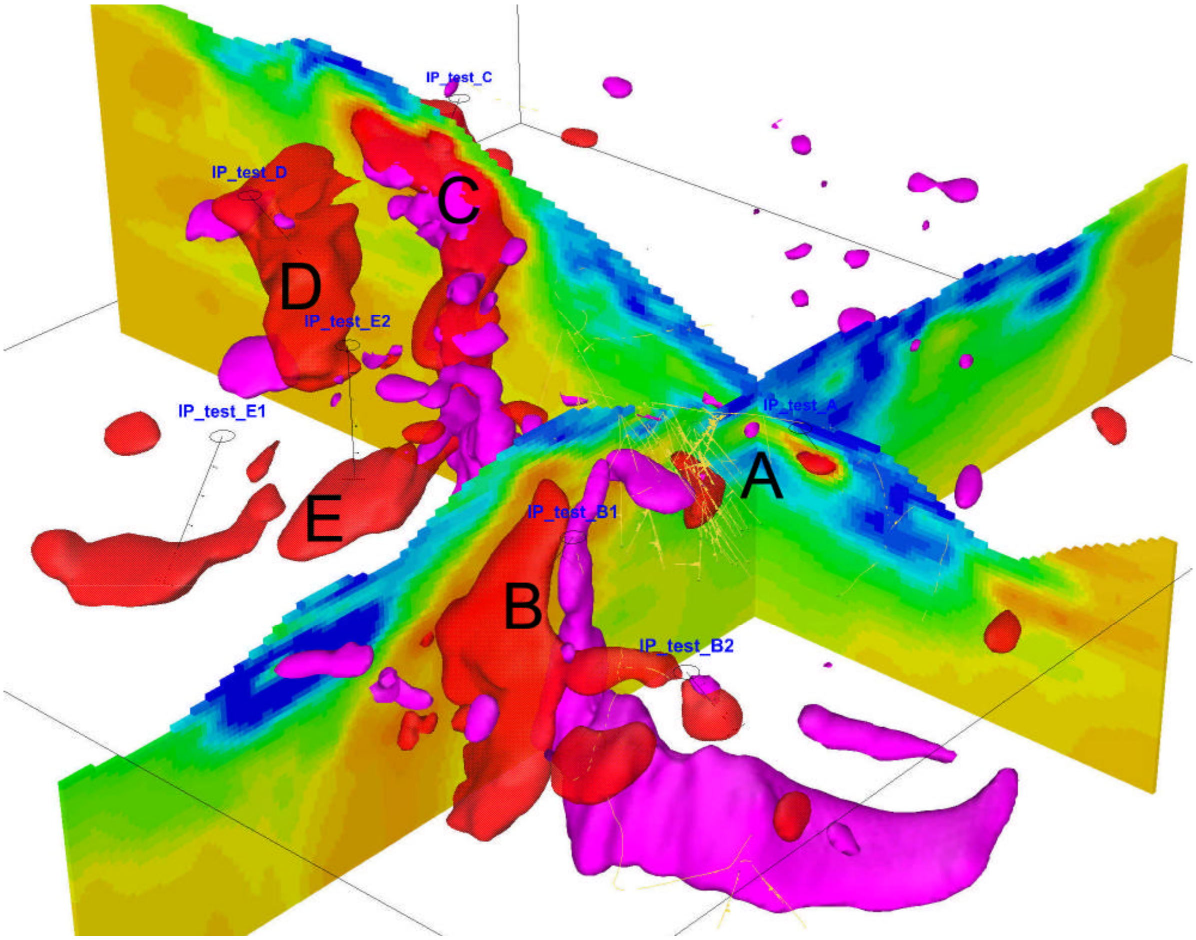

Figure 2: Overview of the inversion models looking to the northwest. The crossections are taken from the final IP model.

Zone ***A***

Zone A comprises the extensively drilled area where GPD has already discovered gold. It is situated northeast of the main axis of the trend and is offset approximately 200m. The chargeable and conductive bodies do no overlap here. The conductive body is horizontal and tabular in shape. It is closer to the main anomaly and could connect to conductive bodies described in Zone B and C. The drillholes going through the conductivity anomaly are generally barren.

The chargeable body strikes NE-SW is tabular and roughly horizontal. Unfortunately, the main gold-bearing zone is between survey lines so it was only partially resolved. There are a few smaller chargeability anomalies in the area. Drillhole IP_test_A tests one of these anomalies in Zone A which is also offset by a conductive body. This body is located 300m north of the main anomaly.

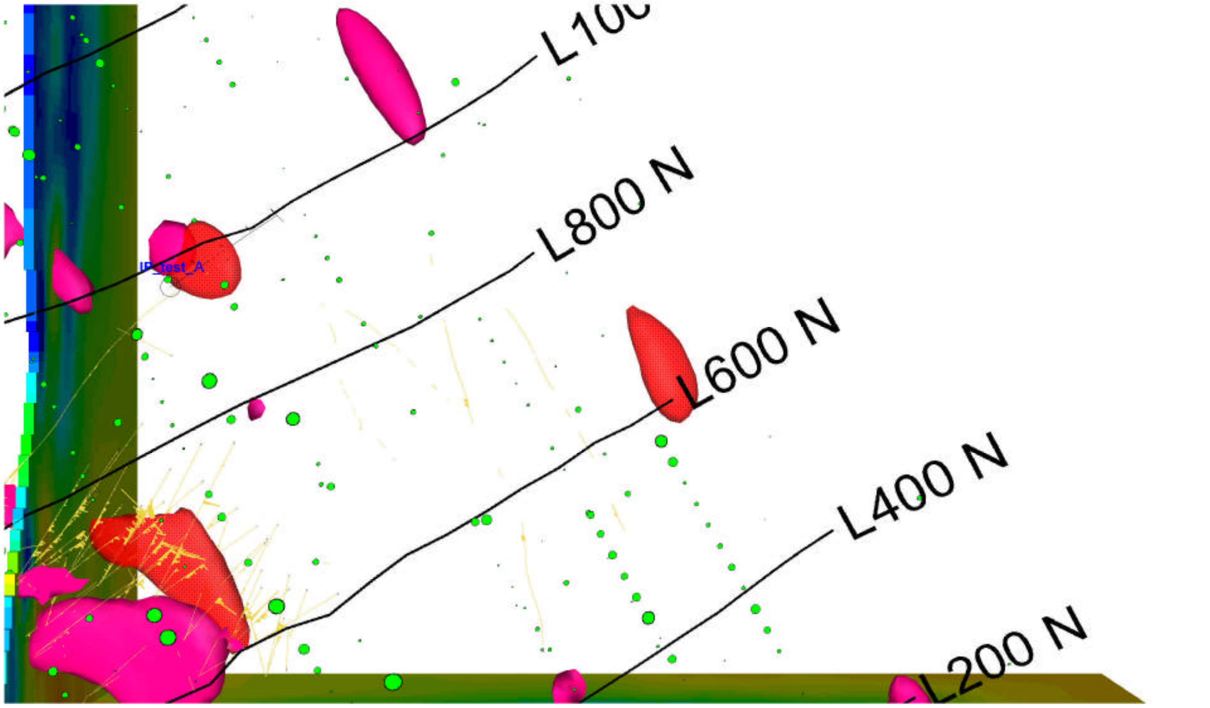

Figure 3: Top down view of Zone A and drillhole IP_test_A. Green circles are soil sample values and yellow profiles are gold values in existing drillholes.

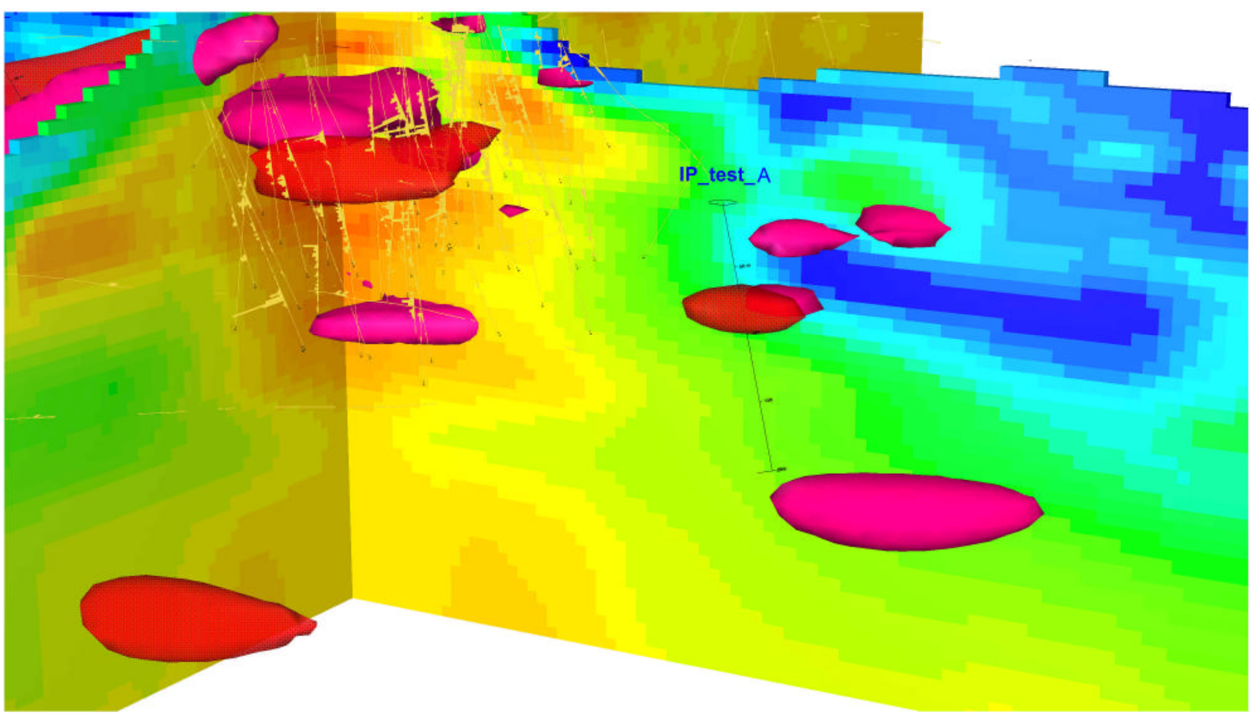

Figure 4: Zone A and drillhole IP_test_A. View is looking SW.

Zone B

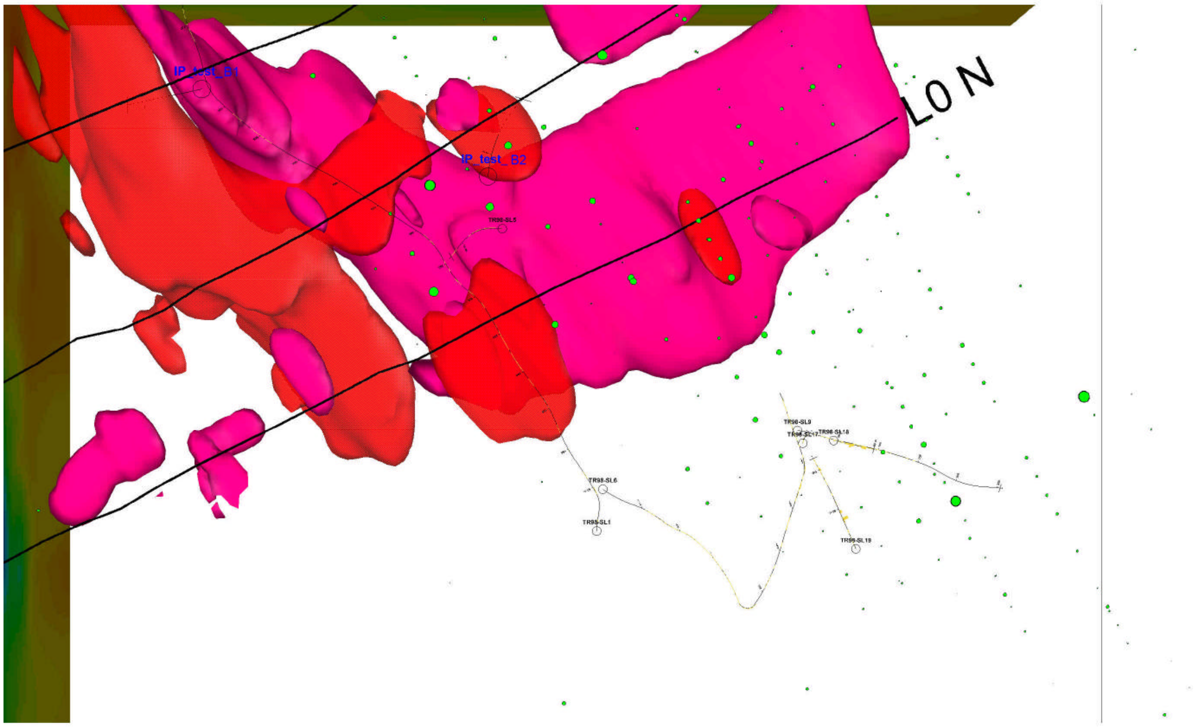

Figure 5: Top-down, view of Zone B and drillholes IP_test_B1 and IP_test_B2. Green circles are gold assays in soil samples.

This zone is situated in the south-west of the grid area and has not been drilled. Trench TR98-SL6 runs through the middle of this anomaly and there are some favourable geochemical results here. Zone B is considered a high priority target because it has a similar spatial relationship to the main axis as zone A. This zone contains large conductivity and chargeability anomalies that are spatially related, but do not overlap. The conductivity anomaly is modeled as being a tabular, horizontal E-W body under L0N which transitions to striking SE-NW and dipping almost vertically on L400N. The main chargeability anomaly parallels the conductive body to the west. It is roughly tabular in form and is buried approximately 60-100m below the surface. Drillhole IP_test_B1 is designed to test this part of the anomaly. There are also smaller chargeability anomalies on the east side of the conductive body, similarly to Zone A. One of these anomalies is tested by drillhole IP_test_B2.

Zone C

The southern extent of Zone C is near the center of the grid and It strikes SE-NW and continues beyond the edge of the survey area. It is generally buried approximately 60-100m below the surface. Spatially, Zone C and Zone B form a continous body but they are separate here because the geophysical signature of this Zone C is conductive and chargeable. It is interpreted to represent a contact between the quartz monzonite and metasediments and may have been a major conduit for mineralizing fluids. No trenches or drillholes have tested this anomaly. Drillhole IP_test_C tests this anomaly near its northern extent.

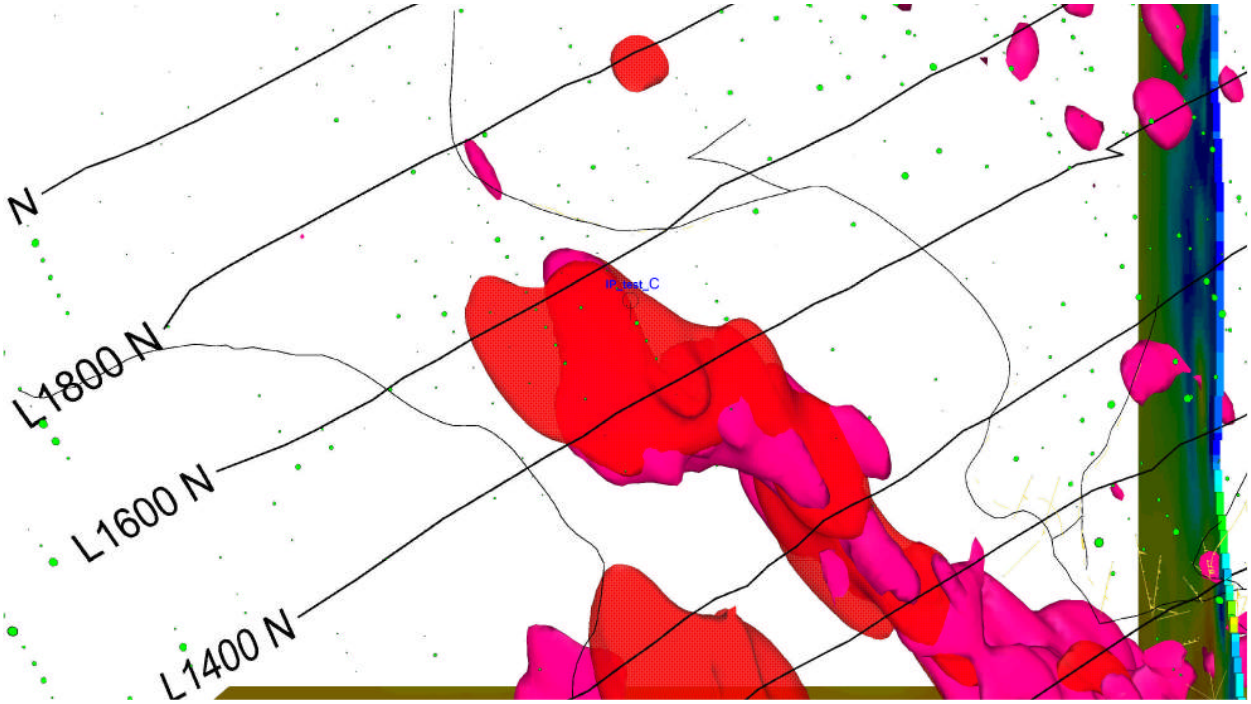

Figure 6: Topview of Zone C and drillhole IP_test_C.

Zone D

Zone D is a large chargeable body that is flanked by smaller conductive bodies to the east. The chargeable and conductive zones do not overlap they are both and are dipping NE. The strike of this anomaly parallels the strike of the contact and appears to truncate at the NNE trending structure defined by Zone E. It was detected on the west end of lines 800-1200N and is tested by drillhole IP_test_D.

Zone E

This zone strikes obliquely to the main trend and comprises a deeply buried, horizontally lying tabular body. It was detected on lines 0N, 200N and 400N was modelled as being approximately 200 metres below the surface. The strike of zone E is offset from Zone A, discordant with the strike of the dominant structure (Zone B&C) and truncates Zone D. This suggests dilational movement that would be favourable for mineralization and may have contributed to the known mineralization at Zone A.   There is no conductivity associated with the chargeable body. IP_test_E1 tests this anomaly at a similar distance from the main structure as the mineralization at Zone A, while IP_test_E2 tests Zone E closer at its projected intersection with Zone D.

4) Recommendations

The table below shows the collar and survey of the recommended drillholes. Care was taken to position as close as possible to existing infrastructure.

Hole_ID	Easting	Northing	Elevation	Azimuth	DIP	TD	Priority
IP_test_A	641370	7106030	702.6	45	-55	200	1
IP_test_B1	641430	7105390	795.7	270	-55	200	2
IP_test_B2	641740	7105300	720.83	0	-55	200	1
IP_test_C	640440	7106170	1008.1	180	-55	200	3
IP_test_D	640570	7105530	1072.27	40	-55	200	3
IP_test_E1	640900	7105150	884.48	180	-55	250	2
IP_test_E2	640910	7105420	944.3	0	-90	250	1

An additional IP line is also recommended. This IP line would be parallel to the main trend of the model and intersects the main gold bearing zone. If the origin of the gold-bearing fluid was the contact and conditions favoured precipitation of gold 200 metres to the NE of this contact, this additional data would sharply resolve the response of the anticipated zone.

5) Products

The following files are included with the digital versions of this report

\UBC	Final UBC models with mesh file
\3D PDF	3D PDF of Figure 2
\DXF	Final models in DXF format
\Voxel	Final models in voxel format
\Pred vs Obs	PDF of Predicted vs Observed Stacked sections
GPD-11581-YT - 3D Inversion Report.pdf	A copy of this report
IP Target Database	Database containing drill targets

Respectfully submitted,

AURORA GEOSCIENCES LTD.

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