ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT: Tidewater Project Geophysics and Geology, Alice Arm area, Skeena Mining Division, British Columbia, Canada.
TOTAL COST: $ 22,110.00
AUTHOR(S): Locke B. Goldsmith, P. Eng., P. Geo.
SIGNATURE(S): L B Goldsmith
NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):
STATEMENT OF WORK EVENT NUMBER(S)/DATE(S):Events 5645954, April 16, 2017; 5659558, August 8, 2017
YEAR OF WORK: 2017
PROPERTY NAME: Tidewater
CLAIM NAME(S) (on which work was done): 1035539, 1035542, 1035546, 103547, 1035549, 1035550, 1035552, 1035553, 1035589, 1036388, 1036390, 1037068, 1043570, 1043571, 1043574, 1043576, 1043578, 1043580, 1043612, 1043613.
COMMODITIES SOUGHT: Gold, silver, molybdenum
MINERAL INVENTORY MINFILE NUMBER(S),IF KNOWN: 103P 111,
MINING DIVISION: Skeena
NTS / BCGS: NTS 103P/05E, 103P06W. BCGS 103P 043
LATITUDE: 55° 28’ 15"
LONGITUDE: 129° 31’ 20" (at centre of work)
UTM Zone: NAD 83 Zone 9N EASTING: 466900 NORTHING: 6146900
OWNER(S): Charles Hugh Maddin.
MAILING ADDRESS: 907-2222 Belleview Ave., West Vancouver, B.C V7V 1C7
OPERATOR(S) [who paid for the work]: Charles Hugh Maddin
MAILING ADDRESS: 907-2222 Belleview Ave., West Vancouver, B.C V7V 1C7
REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**): Jurassic Hazelton Group metavolcanics and Bowser Lake metasediments; Coast plutonic complex, quartz diorite. Eocene Alice Arm intrusives, quartz monzonite, quartz veins and veinlet stockworks with molybdenum. Gold, silver.
REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: ARIS: 00427, 06961, 07444, 08589, 17285, 17842, 29106, 30177.

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (in metric units)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Airborne geophysical interpretation	1,229 ha	All, as above	$4,170.00
***GEOPHYSICAL* (line-kilometres)**			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne Magnetic, Gravity Interpretation	1,229 ha	All, as above	$17,940.00
GEOCHEMICAL (number of samples analysed for …)			
Soil			
Silt			
Rock			
Other			
DRILLING (total metres, number of holes, size, storage location)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling / Assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale/area)			
PREPATORY / PHYSICAL			
Line/grid (km)			
Topo/Photogrammetric (scale, area)			
Legal Surveys (scale, area)			
Road, local access (km) / trail			
Trench (number/metres)			
Underground development (metres)			
Other			
		TOTAL COST	**$ 22,110.00**

BC Geological Survey
Assessment Report
36830

Tidewater Project
Geophysics and Geology

Alice Arm Area
Skeena Mining Division
Stewart, British Columbia, Canada

Tenures 1035539, 1035542, 1035546, et al

NTS 103P 05E, 103P 06W BCGS 103P 043
NAD83 Zone 9N 466900E 6146900N
Latitude 55° 28' 15" N Longitude 129° 31' 20" W

Prepared for

Granby Gold Ltd.

Charles Hugh Maddin
Owner and Operator

Event numbers
5645954
5659558

Locke B. Goldsmith, P.Eng., P.Geo.
Consulting Geologist

July 23, 2017

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1 INTRODUCTION

1.1 General

Raw data from a 2006 helicopter-borne magnetic survey were retrieved and reprocessed with current software programs. Notes from a previous reconnaissance geological investigation of the area were reinterpreted to suggest that a rhyolite flow or flows occur on the property near the stratigraphic top of the Hazelton Group. Work was done during the period of April 7 to 16, 2017.

1.2 Property Location

The Tidewater mineral claim group in the Alice Arm area held by Granby Gold Ltd is located approximately 130 km north of the city of Prince Rupert, 60 km southeast of the village of Stewart, includes the settlement of Alice Arm, and extends for 8 km to the southwest of Alice Arm.

1.3 Property Description

The Tidewater property comprises 20 mineral tenures, 100% owned by Charles Hugh Maddin, held in trust for Granby Gold Ltd., covering an area of approximately 1229 hectares. Claim status is summarized in Table 1.

Table 1. Mineral tenures

Tenure Number	Claim Name	Owner	Map Number	Issue Date	Good To Date	Area (ha)
1035539		116570 (100%)	103P043	2015/apr/18	2018/nov/02	110.02
1035542	Alice Arm	116570 (100%)	103P043	2015/apr/18	2018/nov/02	91.65
1035546	Alicer2	116570 (100%)	103P043	2015/apr/18	2018/nov/02	36.67
1035547	Tide Cariboo	116570 (100%)	103P043	2015/apr/18	2018/nov/02	18.33
1035549	Tide Cariboo 2	116570 (100%)	103P043	2015/apr/18	2018/nov/02	18.33
1035550	Alice3	116570 (100%)	103P043	2015/apr/18	2018/nov/02	18.33
1035552	Alice4	116570 (100%)	103P043	2015/apr/18	2018/nov/02	18.33
1035553	Tide Cariboo 3	116570 (100%)	103P043	2015/apr/18	2018/nov/02	18.33
1035589	Last Alice	116570 (100%)	103P043	2015/apr/20	2018/nov/02	18.33
1036388		116570 (100%)	103P043	2015/may/28	2018/nov/02	18.33
1036390	Alice Tip	116570 (100%)	103P043	2015/may/28	2018/nov/02	55.03
1037068		116570 (100%)	103P043	2015/jul/03	2018/nov/02	18.33
1043570	Alice W1	116570 (100%)	103P043	2015/apr/22	2018/nov/02	73.35
1043571	Alice South	116570 (100%)	103P043	2015/apr/22	2018/nov/02	330.18

1043574	Alice Mid W	116570 (100%)	103P043	2015/apr/18	2018/nov/02	55.01
1043576	Alice Mid E	116570 (100%)	103P043	2015/apr/18	2018/nov/02	55.01
1043578	Alice E1	116570 (100%)	103P043	2015/apr/18	2018/nov/02	18.34
1043580	Alice Fraction E	116570 (100%)	103P043	2016/apr/17	2018/nov/02	18.34
1043612		116570 (100%)	103P043	2016/apr/19	2018/nov/02	73.36
1043613	Alice Mid	116570 (100%)	103P043	2016/apr/19	2018/nov/02	165.06

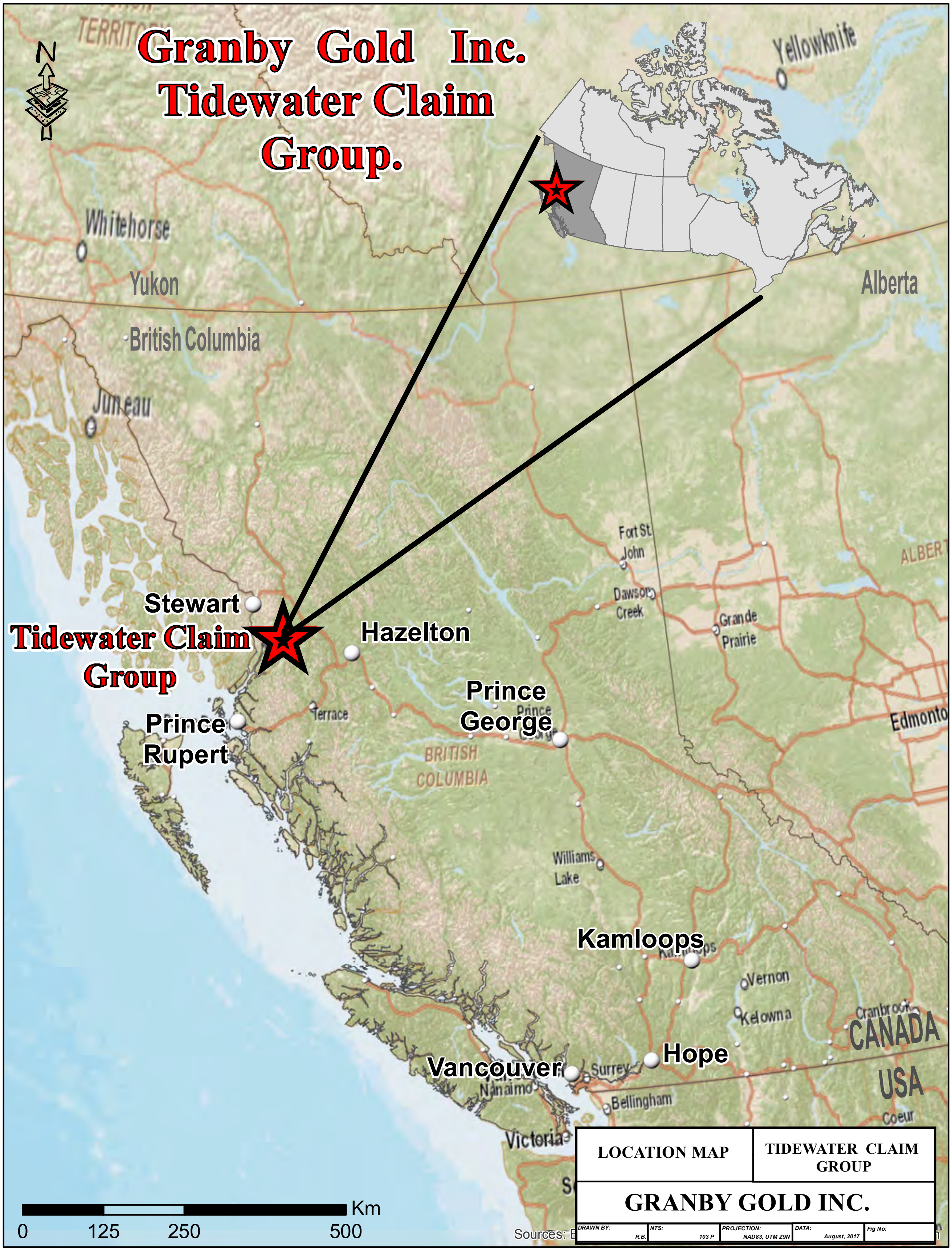

Fig 1. Location map

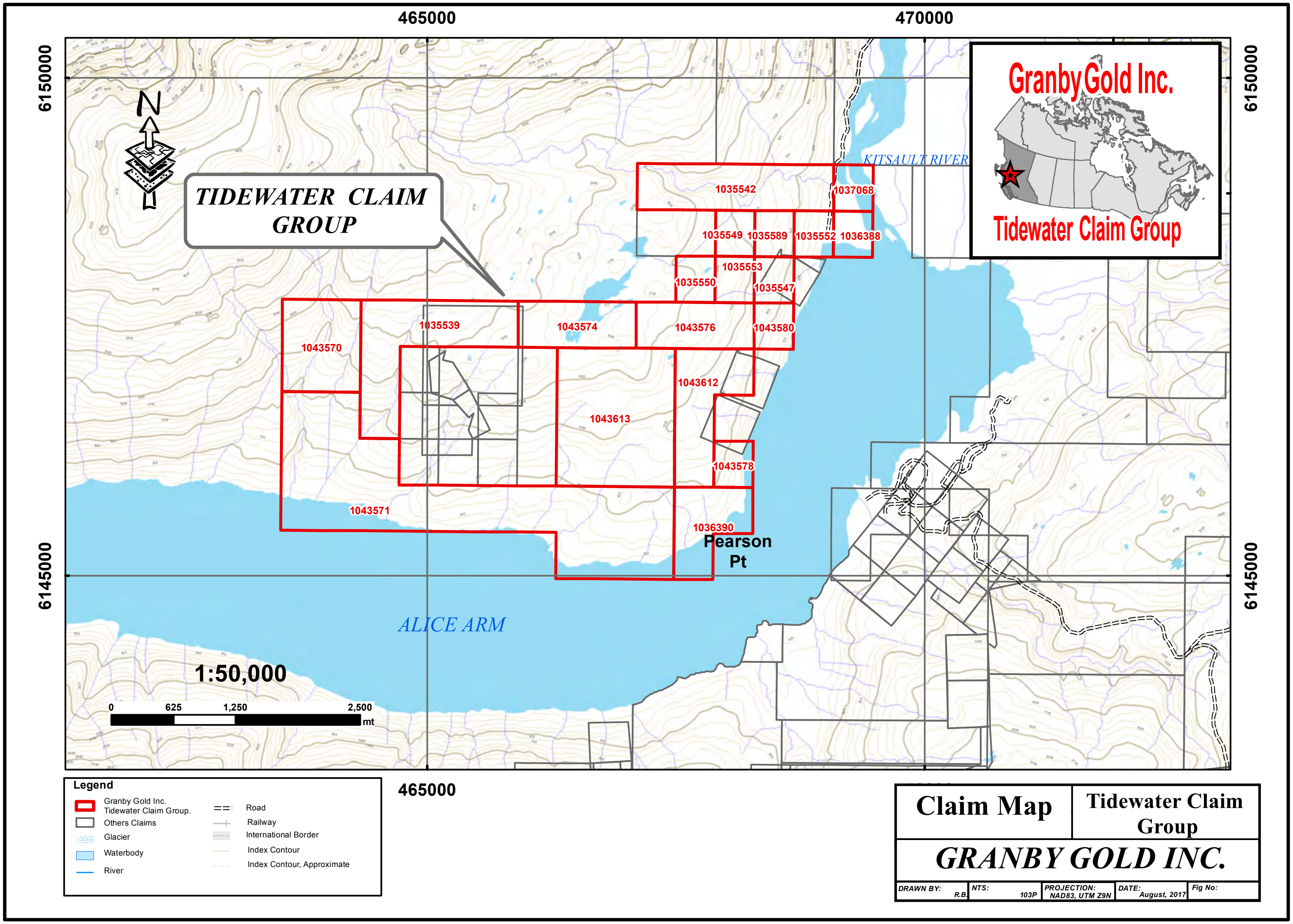

Fig 2. Claim map on topography

1.4 Physiography, Accessibility, Climate, Local Resources, and Infrastructure

Topography is rugged. Slopes rise steeply from sea level on Alice Arm to 620 metres in the northwest corner of the claims. The UTM Grid System used is NAD 83, Zone 9. Sparse forest cover in lower elevations consists mainly of stunted hemlock, alder, and yellow cedar. Forest fires in the 1940s and fallout from the Anyox smelter caused widespread damage to the original forests. Vegetation has begun to reclaim the old damaged areas and in some localities is dense hemlock and spruce.

The property is accessible by boat from Prince Rupert (3 hours), by floatplane from Prince Rupert, or by helicopter. Various helicopter operators maintain bases in Stewart, Terrace, and Prince Rupert.

Optimum conditions for an exploration program are between mid May and mid October. Heavy snow cover can still be still present in May at elevations above approximately 400 metres. Fog and shortened daylight hours cause difficult work conditions in October. Snow returns to the area by early November. The nearby town of Stewart receives an average of 1,046.0 mm of rain and 447.5 cm of snow annually. Daytime temperatures during the summer are near 20°C. Average winter temperatures for the area are between 0°C and -12°C.

Stewart (population 700) is located on Highway 37A, at the head of Portland Canal, 60 km to the north. Stewart has several restaurants and hotels, basic supplies, and is the closest settlement to the property with useful infrastructure. Heavy equipment and supplies may be brought by barge from Prince Rupert.

1.5 History of Property Exploration

Information in this section is reproduced from Fell and McGuigan, 2009. The Tidewater area has a history of exploration dating to 1916. The Tidewater deposit is located on the north side of Alice Arm Inlet, approximately 4 km southwest of Alice Arm. The occurrence is not within the claims that are the subject of this report. The mineralization at this deposit is characterized by a stockwork of high-grade quartz veins that resulted from the intrusion of a small quartz monzonite stock into the Bowser group sediments.

The earliest record of work on the Tidewater property was by the Molybdenum Mining and Reduction Company in 1916. This company began mining the Tidewater deposit and constructed a 100-ton/day flotation plant at tidewater and an aerial tramway (Stevenson, 1940). 383 tons of ore grading 1.6% MoS_2 were shipped from the mine from which 1368 pounds of molybdenite was recovered. Mining was suspended in the same year due to a drop in molybdenum prices.

The Tidewater deposit was purchased by the Dalhousie Mining Co. and mining resumed from 1930 to 1931. In 1931, Dalhousie Mining Co. constructed a 100-ton mill on the beach and an aerial tramway to the workings and drove the 330 m level adit (Allen and and LeBel, 1979). About 2700 tons of MoS_2 ore obtained from the highgrade quartz vein was processed.

In 1964 Canex Arial Exploration completed 547 m of underground diamond drilling in the 300 level at the Tidewater deposit. In 1965 Canex completed 291 m of surface diamond drilling in 5 holes in the Tidewater stock.

The Tidewater area was staked by R.M. Dunn in 1977. Assessment reports were filed in that year for rock sampling and later for bulk sampling by R.N. Tipman.

Amax of Canada Ltd. optioned the Tidewater property from Mr. Dunn, and in June 1979 completed a 6.3 line-km IP survey and 6.5 line-km magnetic survey. From September to November 1979 they completed 796 m of drilling in 3 holes. From May to June 1980 and additional 784.2 m in 5 holes of drilling was done. In 1980 AMAX terminated the option with Dunn. In 1981 AMAX reassayed selected samples of core for gold. One sample (#61007) returned 0.420 oz/t Au and 1.36 oz/t Ag but the exact location of the sample was uncertain (Sellmer, unpublished AMAX letter to Dunn, 1981).

Richmark Resources optioned the Tidewater property from Mr. Dunn in 1987. From July to August and October of 1987 they did soil sampling, prospecting, trenching, pitting, and reassaying pulps from 1979 and 1980 drill core and selected soil samples, in search of gold deposits that may have been overlooked during past exploration. From May to June 1988 Richmark drilled 611 m of BQ diameter core in four holes.

Richmark Resources completed a reserve estimate for the Tidewater deposit in December of 1987. An indicated reserve of 9 Mt at 0.06% Mo or 0.1% $MoS2$ is shown. This reserve estimate is not NI 43-101 compliant.

New Cantech Ventures Inc. was owner of the claims covering the Tidewater deposit in 2009, but was not active on the property.

As of July 2017, the claims that cover the Tidewater deposit are owned by Ronald R. Blusson.

2 GEOLOGY AND MINERALIZATION

2.1 Regional Geology and Stratigraphy

The regional and local geology of the area are shown on Figures 3 and 5. The area lies along the eastern margin of the Coast Plutonic Complex (CPC) in the Central Coast Belt of the Western Canadian Cordillera. Granby Gold's Tidewater property covers part of an assemblage of supracrustal and intrusive rocks that occur to the east of the eastern edge of the CPC.

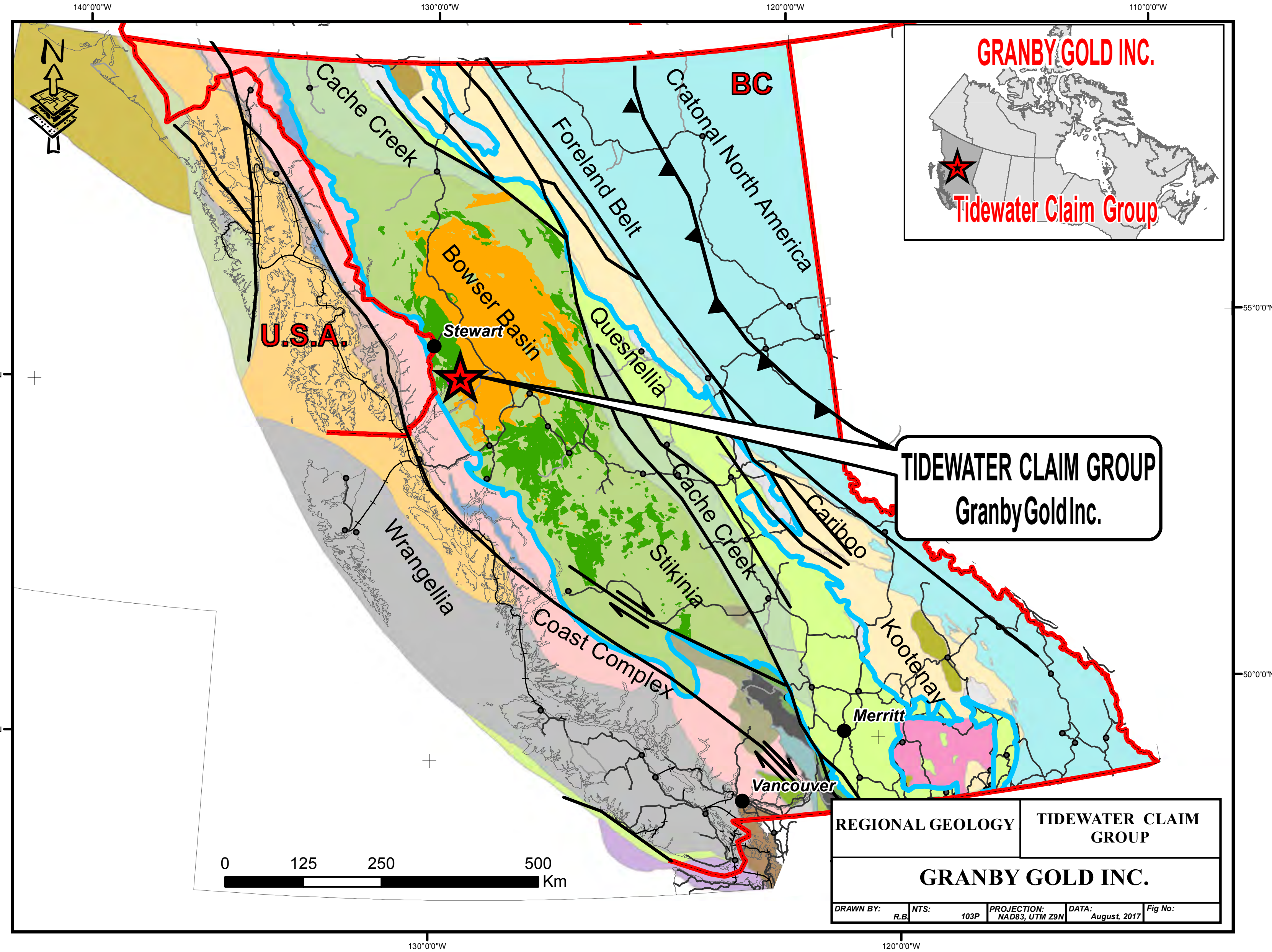

Fig 3. Regional geology

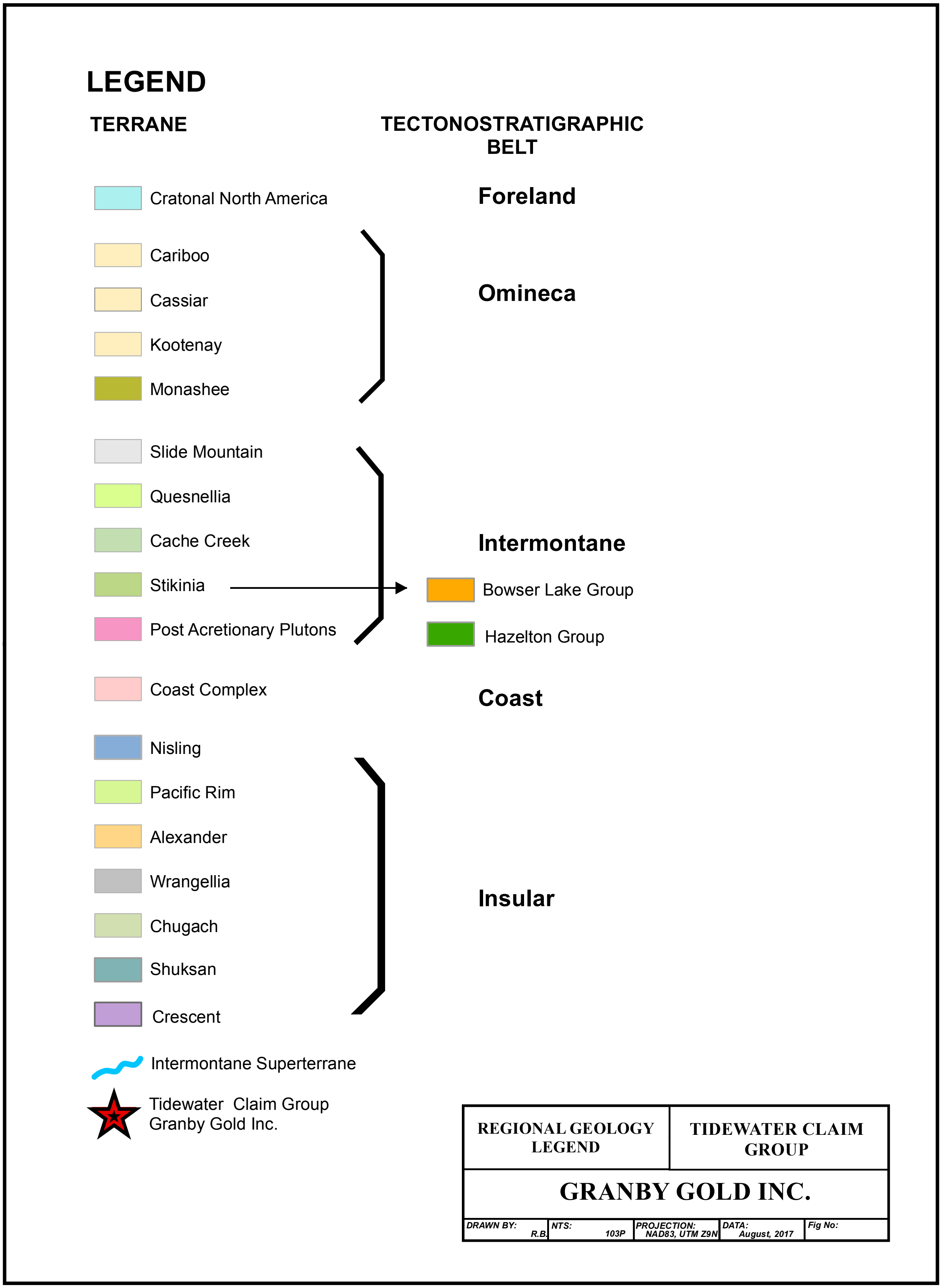

Fig 4. Regional geology legend

The area is mainly underlain by stratified and intrusive rocks of Lower to Middle Jurassic age that are part of the Stikine terrane (Stikinia), an arc terrane of oceanic affinity accreted to the North American continental margin in mid-Mesozoic time. Stikinia consists of mid- Paleozoic to Middle Jurassic oceanic volcano-sedimentary successions and coeval plutons that are commonly subdivided into Paleozoic, Triassic and Jurassic tectonic assemblages (Anderson 1993, fig. 3). Regionally, Hazelton Group rocks form a tholeiitic mafic volcanic sequence (Evenchick and McNicoll, 2002). Grove (1986) estimates that the Hazelton volcanic sequence has a maximum thickness of 3,000 m and consists mainly of massive flows (and dykes or sills) grading upward into pillowed flows with increasing amounts of pillow breccia and volcaniclastic material upward in the sequence. Volcanism terminates at the end of the Middle Jurassic with the onset of clastic sedimentation. Hazelton Group volcanics are overlain conformably by clastic strata of the Middle to Upper Jurassic Bowser Lake Group, a predominantly turbiditic overlap succession of interbedded argillite, laminated siltstone, and turbiditic greywacke, recording the accretion of Stikinia to western North America. The Bowser Lake Group occupies a broad regional paleo-basin to the east and northeast of the volcanic sequence, although this is a generalization because the sequence is folded and even locally overturned. Bowser Lake Group, along with fine grained Middle Jurassic clastic rocks of the uppermost Hazelton Group (Salmon River formation), outline several structural culminations marking the western consolidation of the North American margin that post-dated the accretion of Stikinia and that coincided in large part with the arrival of the more westerly Alexander and Wrangellia terranes (Evenchick 1991a,b). The crests of the culminations are typically underlain and upheld by the relatively resistant volcanic rocks of the Hazelton Group, and as such they correspond with many of the higher ranges and ice fields in the region.

Early Tertiary granitic intrusive rocks of the Coast Plutonic Complex underlie areas to the west and south of Alice Arm. CPC intrusive rocks consist mainly of granite, quartz monzonite, quartz monzodiorite and quartz diorite, and are relatively unaltered. Alice Arm Intrusions are coeval with or slightly postdate (Eocene) the waning of CPC emplacement.

2.2 Local Geology

The Alice Arm area is at the south end of the Stewart Complex *(Grove, 1972,* 1986). The area is underlain by the Jurassic, Hazelton Group metasediments and metavolcanics that are intruded by the Coast Range plutonic complex (Fig. 3).
In addition to the Coast Range intrusives, a number of other stocks and dykes that range in composition intrude the Hazelton Group. These include the Tidewater stock on the property and other Alice Arm-type intrusions in the area. The youngest rocks in the area are Pleistocene plateau basalts found just east of Alice Arm.

In the immediate vicinity of Alice Arm, the Alice Arm-type intrusions, including the Tidewater stock, host molybdenite. The other stocks in the area that host molybdenum mineralization are Roundy Creek, Ajax, Bell Molybdenum and Lime Creek (Kitsault).

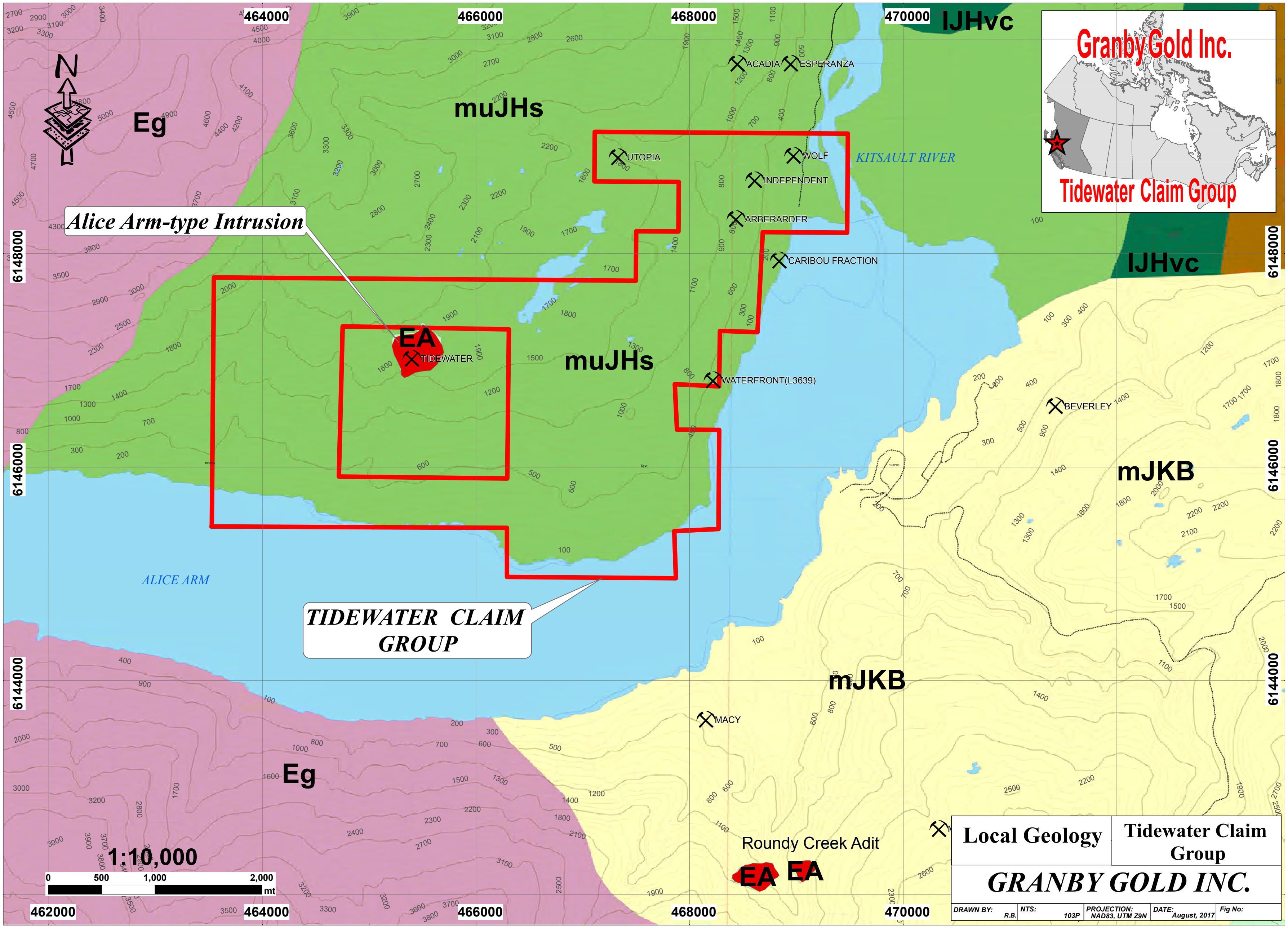

Fig 5. Local geology

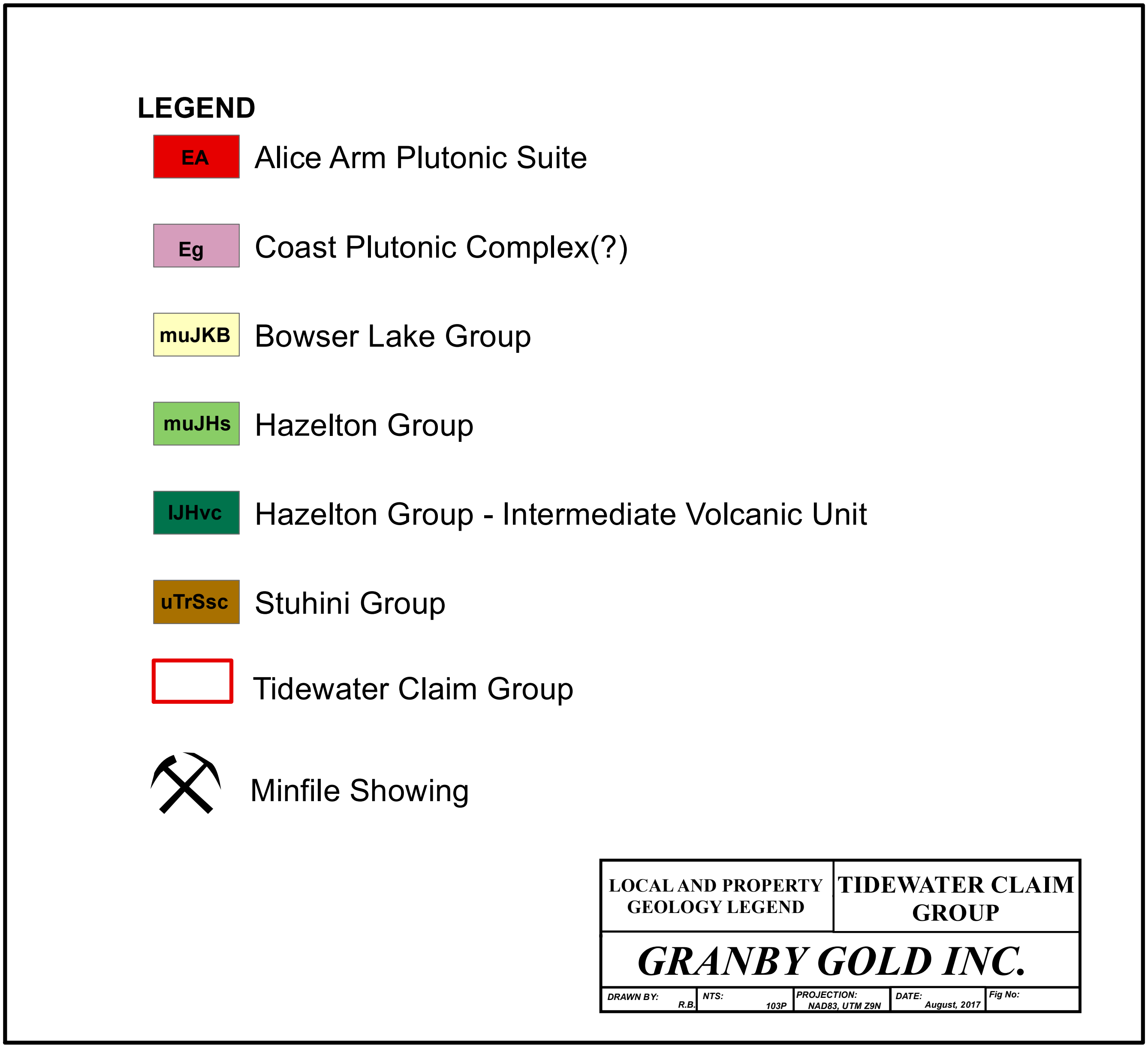

Fig 6. Local and property geology legend

2.3 Local Surficial Geology

Surficial geology (Figures 7 and 8) is composed of talus, glacial, and colluvial deposits.

Volcanic and granitic bedrock and rubble from bedrock (R) comprise the dominant exposures in the west and north of the area.

A thin (1 to 2 m) discontinuous till veneer (Tv) is present in the easterly-sloping highlands within the centre of the map area; bedrock is often exposed.

In the southern map area, a glaciomarine veneer (Mv) of massive silty clay with minor sand and granule gravel (1 to 2 m thickness) parallels the shoreline of Alice Arm. Also near the shore the glaciomarine deposit thickens (>2 m) to a blanket (Mb).

Colluvial deposits are composed of detritus from local bedrock, being bouldery gravel and poorly sorted matrix of sand and clay. Bedrock is often exposed in areas of discontinuous thin (1 to 2 m) colluvial veneer (Cv), generally in the mid to low elevations. Undivided colluvial sediments (Cu) occupy a small valley in the north part of the map area; these are a mixture of all older colluvial deposits.

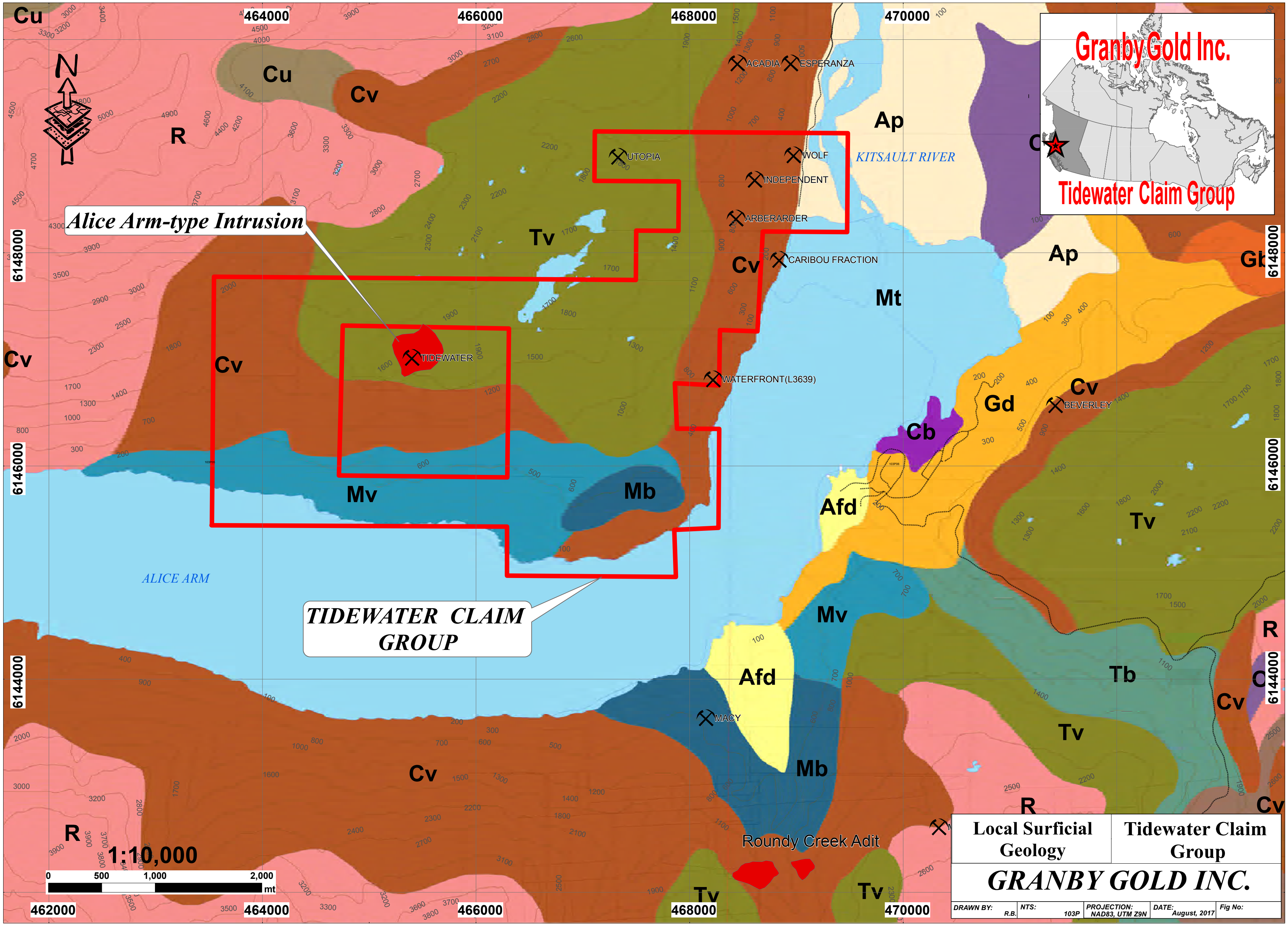

Fig 7. Local surficial geology

POST FRASER GLACIATION

Artificial Deposits:

m	***Made Land:*** *artificial fill and mine waste*

Organic Deposits:

O	***Organic Deposits:*** *peat and organic-rich silt; water saturated; formed predominantly by the accumulation of the plant material in bogs, fens, and swamps; thickness >2m*

Colluvial Deposits: bouldery gravel with clay to sand size matrix; loose, very poorly sorted, massive; dominated by subangular clasts of local bedrock; texture dependent on source sediments; forms by gravitacional processes such as debris flow, rockfall, earthflow and snow avalanche

Cb	***Colluvial Banket:*** *diamicton, generally found on valley floors; thickness >2m*
Ca	***Colluvial Apron:*** *bouldery diamicton; forms a talud apron or sheet at foot of steep slope; little or no vegetation where active; thickness >2m, thickening toward base of slope*
Cf	***Colluvial Fan:*** *bouldery diamicton with a sandy matrix; forms steep fan or cone shaped bodies at foot od steep bedrock, deposited by debris flow and rock avalanche; thickness up to 10m rear fan midpoint*
Cl	***Landslide Sediments:*** *bouldery diamicton; mainly silty clay if accompanied by earthflow symbol; hummcky terrain; little or no vegetation if recent; thickness 3-20m*
Cv	***Colluvial Veneer:*** *diamicton; takes form of underlaying surface; discontinuos cover with numerous areas of exposed bedrocks; thickness 1 to 2m*
Cu	***Undivided Colluvial Sediments:*** *mixture of colluvial blanket, apron, fan, landslide and veneer, which cannot be subdivided at this map scale; thickness > 2m*

Marine Deposits:

Mt	***Marine Tidal Flat:*** *silt and clay, forming tidal flat in brackish water at mouths of major rivers; thickness 2 to 10m*

Alluvial Deposits: gravel and sand, with minor silt; moderately to well sorted; clasts generally subrounded to well rounded; deposited by rivers either within channels or as overbank deposits

Ap	***Alluvial Plain:*** *gravel and sand; massive to stratified; moderately to well sorted; locally overlain by peat and organic-rich silt deposited in abandoned channels and on fllodplain surface; forms flat plains occupied by single or multiple channel rivers; inludes deltas at mouths of major rivers; thickness 2 to 10m, > 10m in deltaic settings*
Af	***Alluvial Fan:*** *diamicton, gravel and sand; matrix supported, massive to weakly stratified, poorly sorted; interbedded with moderately to well sorted, clast supported, bedded fluvial gravel and sand; forms fan shaped bodies where rivers enter larger valleys; deposited by debris flows and streams; thickness up to 10m at fan midpoint*
Afd	***Fan Delta:*** *diamicton, gravel and sand; massive to stratified; subaerial facies same as alluvial fans, subaqueous facies consisting of interbedded silt, clay, sand ans gravel; beach facies predominantly pebble-cobble gravel, with boulder concentration at high tide line, forms where alluvial fans meer marine water; thickness 3 to 15m*

GLACIAL DEPOSITS

Neoglacial Deposits: diamicton (till); grey massive, matrix supported; subangular to angular, striated granute to boufder sized clasts set in silty sand matrix; loose to slightly compact, commonly unweathered; formed by melt-out from ice and found surrounding modern alpine glacier and ice fileds; deposited during Holocene glaciation

Tnb	***Neoglacial Till Blanket:*** *till; locally forming fights of recessional moraines; thickness 2 to 40m*
Tnv	***Neoglacial Till Veneer:*** *till; discontinuous cover with numerous areas of exposed bedrock; tales form or underlying surface; thickness 1 to 2m*

FRASER GLACIATION (Wisconsinan)

PROGLACIAL DEPOSITS

Glaciolacustrine Deposits: laminated silt, clay and minor sand deposited in lakes ponded by glacial ice; sorted; dropstone common, macrofossils absent

Lb	***Glaciolacustrine Blanket:*** *silt, clay, minor sand; irregular or conforms to underlaying surface; thickness > 2m*

Glaciomarine Deposits: massive blue-grey or grey silty clay with minor silt, sand and granule gravel, rarely weakly laminated; locally containing dropstone; found in coastal areas below marine limit; coarser proximal deposits are horizontally bedded and well sorted; distal deposit are dominated by massive silty lay that is weathered to pale brown at the surface and may contain salt crusts; marine macrofossils area absent

Mb	***Glaciomarine Blanket:*** *massive silty clay with minor sand, silt and granule gravel; irregular surface; thickness >2m*
Mv	***Glaciomarine Veneer:*** *massive silty clay with minor sand, silt and granule gravel; discontinuous cover with numerous areas of exposed bedrock; takes form of underlaying surface; thickness 1 to 2m*

Galciofluvial Deposits: gravel, sand, minor silt and clay; poorly well sorted; deposited by meltwater flowing away from or in contact with glaciar ice; incluiding deltas graded to former sea levels; rarely faulted; clasts commonly rounded and of more local provenance than underlyng till

Gp	***Glaciofluvial Plain:*** *gravel and sand; massive to weakly horizontal bedded; forms flat surface; consist of former outwash plains; bogs commons on plain surface; thickness 2 to 50m*
Gd	***Glaciofluvial Delta:*** *gravel and sand and silt; poorly to moderately sorted, angular to well rounded clast; forming flat surfaces; deposited as proglacial marine deltas, often forming terminal regions of glacioafluvial braidplains; thickness up to 230 m*
Gb	***Glaciofluvial Blanket:*** *gravel and sand; massive to weakly horizontal bedded forms irregular surface; thickness 2 to 20m*
Gv	***Glaciofluvial Veneer:*** *gravel and sand; massive to vaguely horizontally bedded; discontinuous cover with large areas of exposed and locally, colluvial veneer; takes form of underlying surface; thickness 1 to 2m*
Gu	***Undivided Glaciofluvial Sediments:*** *glaciofluvial gravel and sand, with till and glaciolacustrine clay, undifferentiated at this scale of mapping; forms irregular or rolling terrain; thickness 2 to 20m*

GLACIAR DEPOSITS

Galciar Deposits: diamicton (till), granule to boulder size clasts in a silt to silty clay matrix; massive, very compac, very poorly sorted, with angular to subrounded striated clast; commonly blue- grey; dominant clast lithologies are Bowser Lake Group sandstone; siltstone and mudstone; deposited directly by glacial ice or by gravity flow from glacial ice

Tb	***Till Blanket:*** *till; conforms to and locally obscures underlying topography; thickness 2 to 20m*
Tv	***Till Veneer:*** *till, discountinouos cover with numerous areas of exposed bedrock and locally, colluvial veneer; takes form of underlying surface, thickness 1 to 2m*

BEDROCK

Holoceno

R1	*Basaltic flows, forming ridge and blocky valley till; little vegetation due to recent activity; thickness 3-15,*

Pre-Quaaternary

R	*Triassic- Jurassic volcanic and sedimentary bedrock of island arc origin, slightly metamorphosed, and Cretaceous igneous intrusions; includes minor colluvial and till veneer, but > 75% of units is bedrock*

Local and Property Surficial Geology Legend		TIDEWATER CLAIM GROUP		
GRANBY GOLD INC.				
DRAWN BY: R.B.	NTS: 103P	PROJECTION: NAD83, UTM Z9N	DATE: August, 2017	Fig No:

Fig 8. Local and property surficial geology legend

2.4 Mineralization

The property is located in the southeast part of a mineral-rich belt of Stikine terrane rocks that lies along the eastern flank of the Coast Mountains. The belt lies between the Iskut and Kitsault-Anyox areas and is centered on the town of Stewart (Figure 3). In spite of the rugged terrain inclement weather, and difficult access common to the region it has a long and successful history of mining and mineral exploration.

The Eskay Creek mine of Barrick Gold Corporation is an extremely rich and profitable Au-Ag deposit near the northern end of the belt. The Eskay Creek deposit is interpreted to have formed in an environment transitional between subaqueous hot springs and exhalative VMS, and the geologic setting for the deposits similar to that of the Granby Gold property. 'Transitional' Eskay Creek-type deposits are models for exploration on the property.

The regional metallogenic picture of the Iskut-Anyox belt suggests that potential also exists on the property for the occurrence of other deposit types. These include more typical VMS deposits (e.g., Anyox and Granduc: Cu-rich base metals), possible 'transitional-type' deposits variously interpreted as veins or exhalative (Dolly Varden (?) and Torbrit (?), both Ag-rich, precious and base metal veins (Premier, Big Missouri, Porter Idaho, Scottie Gold, Georgia River), porphyry-related (Red Mountain, Au; Kerr, Cu-Au), and shear-hosted deposits (Clone Au, Co). It should be noted that Tertiary intrusions in the belt may also be productive, as some of the vein deposits noted above (Porter Idaho, Georgie River) are likely Tertiary in age, and porphyry molybdenum deposits exist in the area (e.g., the Kitsault mine and the Ajax deposit).

3 PROPERTY GEOLOGY

Property geology (Figure 9) is shown with locations of rock specimens that were collected and documented in a previous program (Fell and McGuigan, 2009). Rock names have been added. The investigator at the time was unsure whether certain outcrops in the Hazelton Group should be mapped as felsic dykes or as rhyolite, and chose the former term. Based upon similarity between relative position in the regional geology and stratigraphy where rhyolite is present in the Salmon River Formation near the top of the Hazelton Group, and to the site on the Tidewater property where the stratigraphic level in the Hazelton is near the overlying Bowser Lake Group, rhyolite is used in this report as the preferred nomenclature. Appendix 1 contains a table with historic sample descriptions that are keyed to locations on Figures 9 and 10.

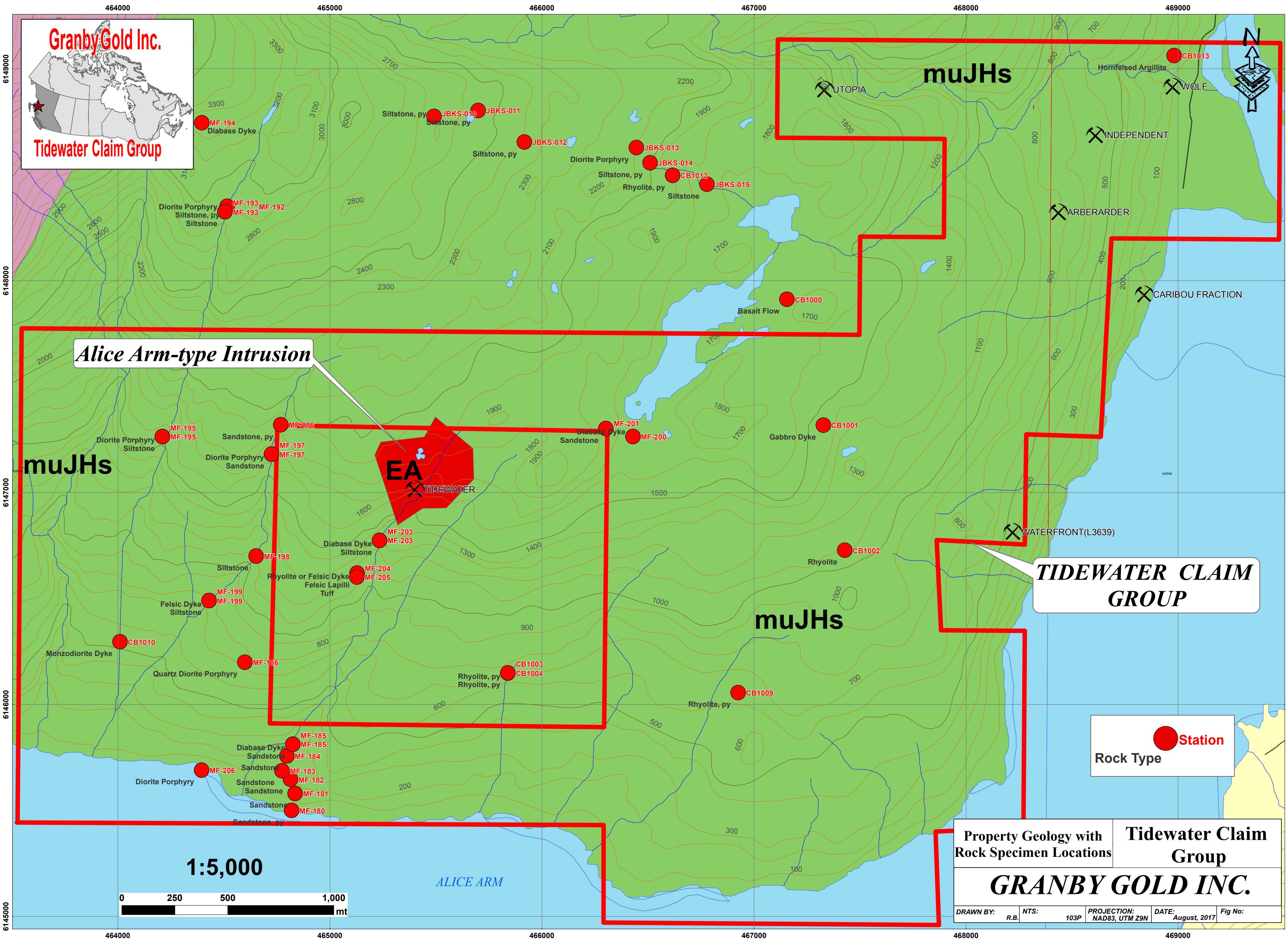

Fig 9. Property geology with rock specimen locations

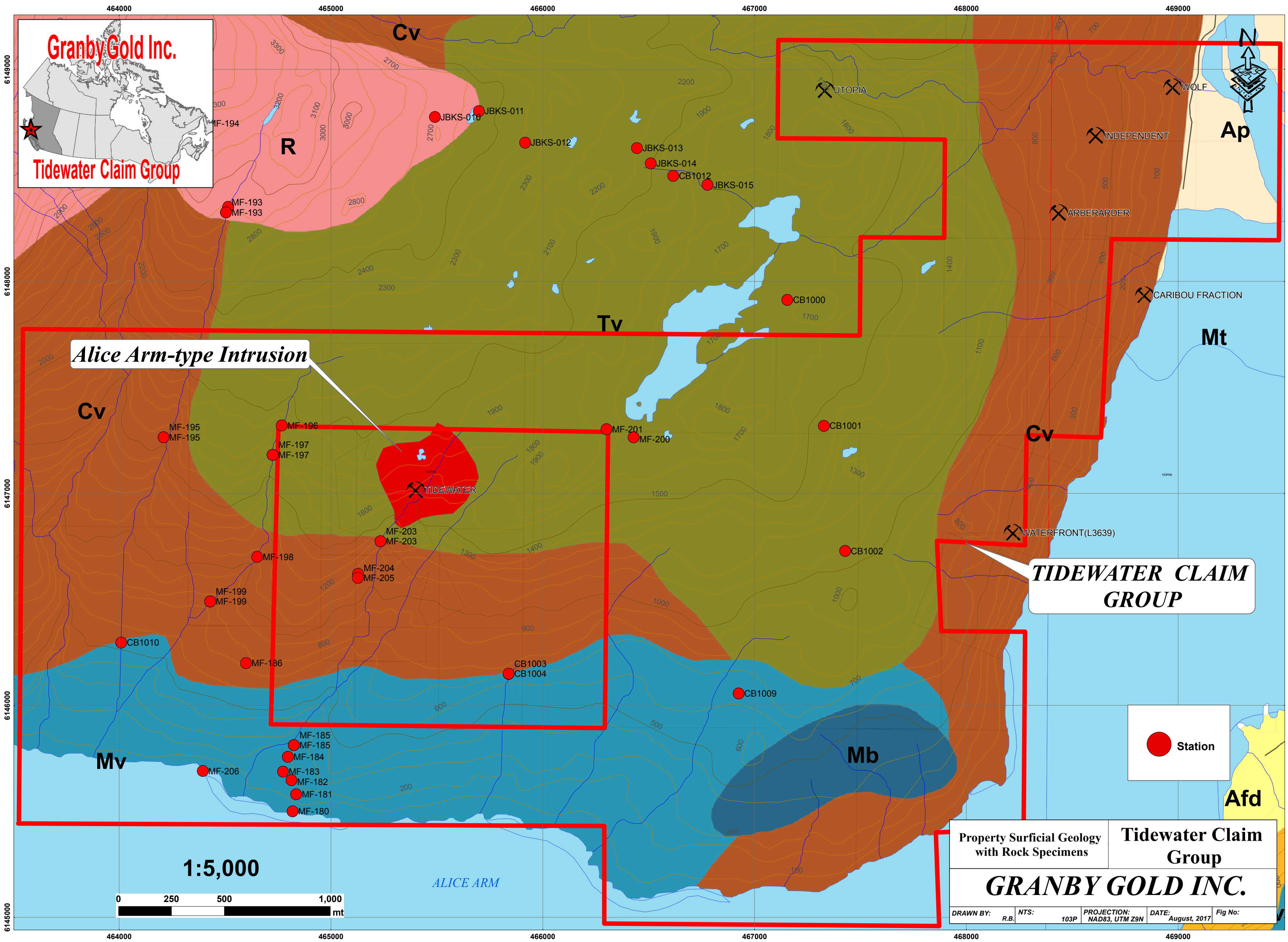

Fig 10. Property surficial geology with rock specimen locations

The property is underlain primarily by Lower to Middle Jurassic Hazelton Group metasediments consisting of argillite, siltstone, fine-grained sandstone, lesser greywacke, and tuff, with fine- grained disseminated syngenetic pyrite. Bedding attitudes strike west-northwest and dip to the north. Sediments have been hornfelsed around the Tidewater stock.

The Tidewater deposit is not within claims of the Granby Gold group. Composition of the Tidewater stock is quartz monzonite or granite, varying between quartz feldspar porphyry and a medium-grained hypidiomorphic silicic intrusive. Dimensions in plan are 250 by 400 m with the long axis oriented northeast, emplaced along a northeast fault system that was active during intrusion of the Coast Range batholith.

Basalt and andesite dykes postdate the Tidewater stock and strike northeast. Felsic and porphyritic granodiorite dykes strike northwest and crosscut the mafic dykes.

Rock specimen locations are shown on the Surficial Geology map for reference to bedrock lithologies that may have contributed metals to stream sediment samples that were collected for geochemical analyses.

Mineralization at the Tidewater deposit is characterized by a stockwork of quartz veins with molybdenite that resulted from the intrusion of a small quartz monzonite stock into the Hazelton Group metasediments.

Precious and base metal mineralization on the Granby Gold claims is hosted in altered zones, breccia and veinlet zones, and quartz veins within Hazelton Group metasediments.

4 GEOCHEMISTRY

Stream sediment, rock, and heavy mineral sample geochemical values from Fell and McGuigan (2009) are plotted on property geology (Figures 11 and 12) and property surficial geology maps (Figures 13 and 14).

In the northern claims two stream sediment samples contain elevated gold values. A sample near the Utopia occurrence, in an area covered by a discontinuous thin veneer of till, contains 315 ppb gold; neither a rock specimen nor a rock sample was collected at this location. Approximately 650 m to the east at a stream junction, a sample from an area covered by a thin colluvial veneer contains 430 ppb gold. At this location a rock sample contains 236 ppb gold; a rock description is not available. Two heavy mineral samples, one in the southwest corner and one in the northeast corner of the claims contain anomalous values of gold (1.45 and 4.77 ppm) and silver (2.01 and 2.24 ppm) respectively.

Geochemical values of molybdenum and copper are at background levels in all samples.

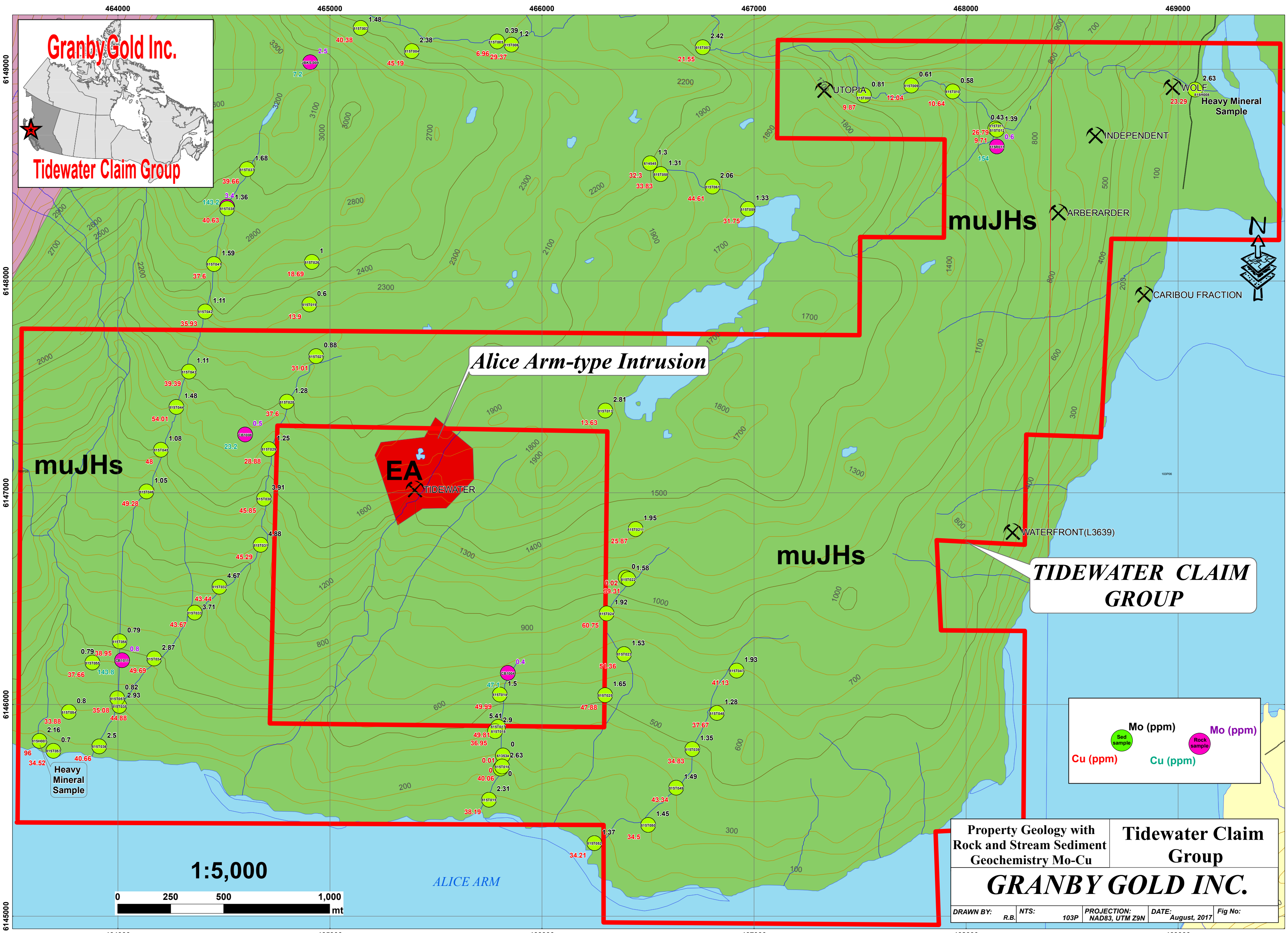

Fig 11. Property geology with rock and stream sediment geochemistry Cu-Mo

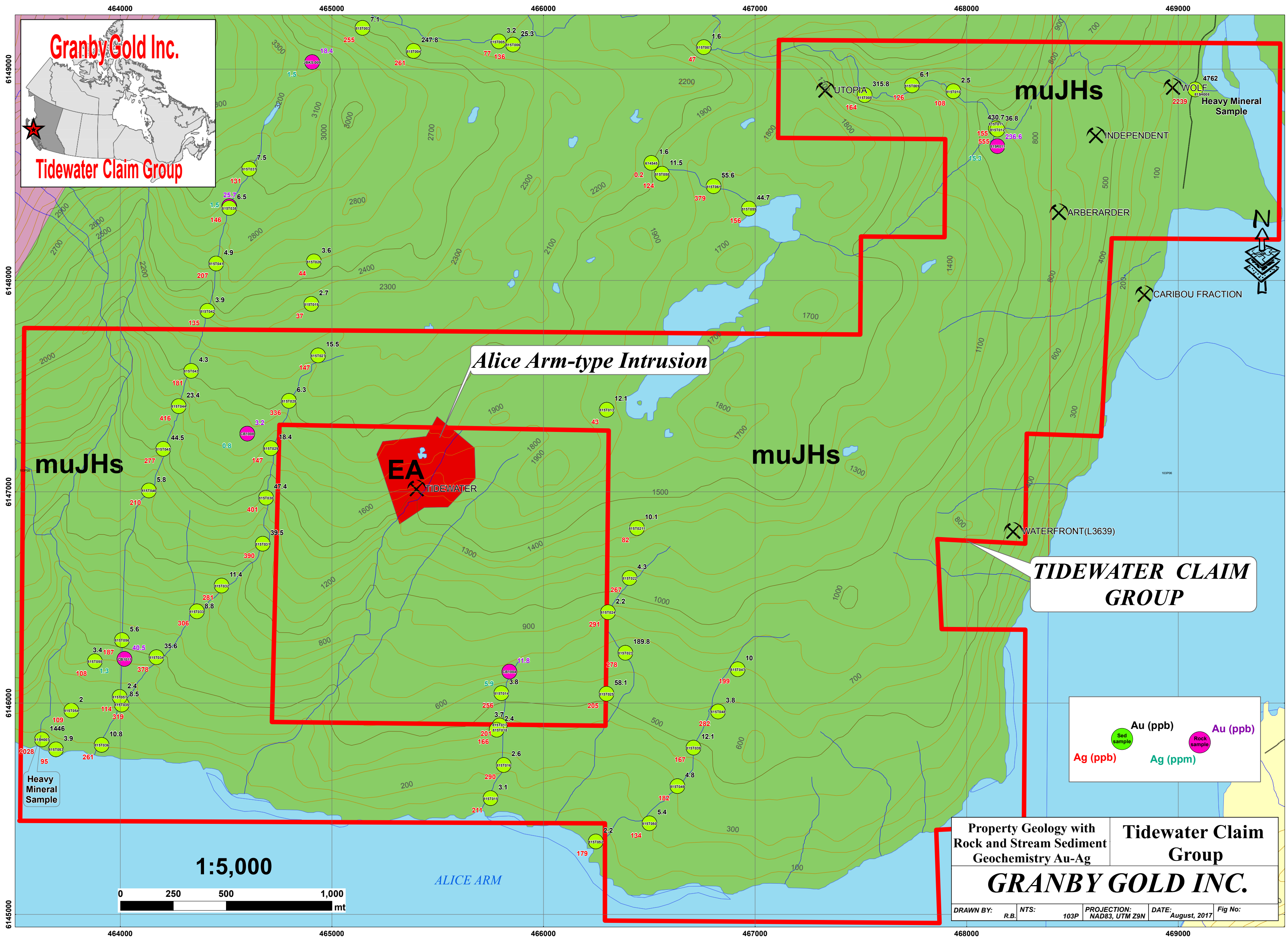

Fig 12. Property geology with rock and stream sediment geochemistry Au-Ag

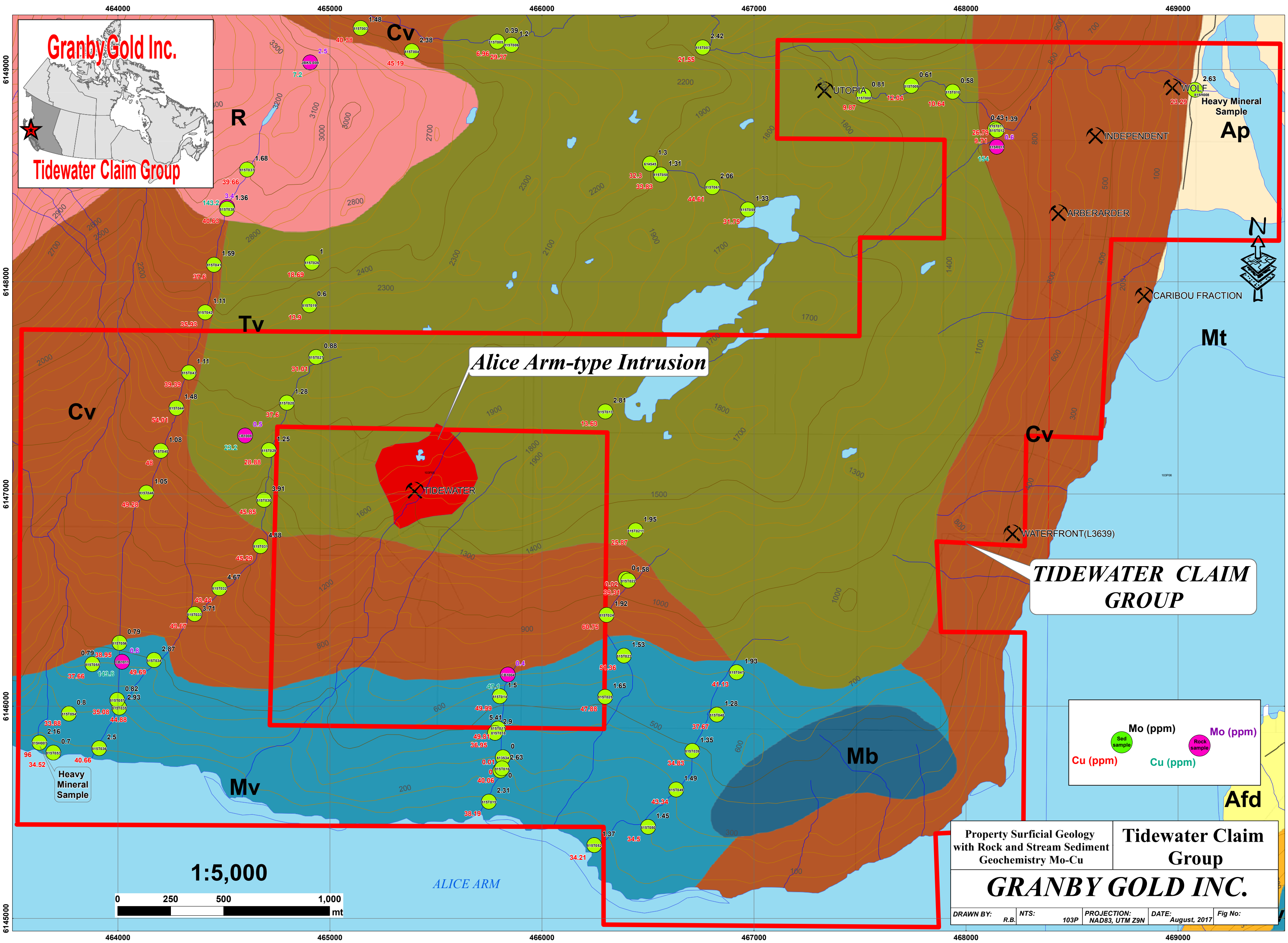

Fig 13. Property surficial geology with stream sediment geochemistry Mo-Cu

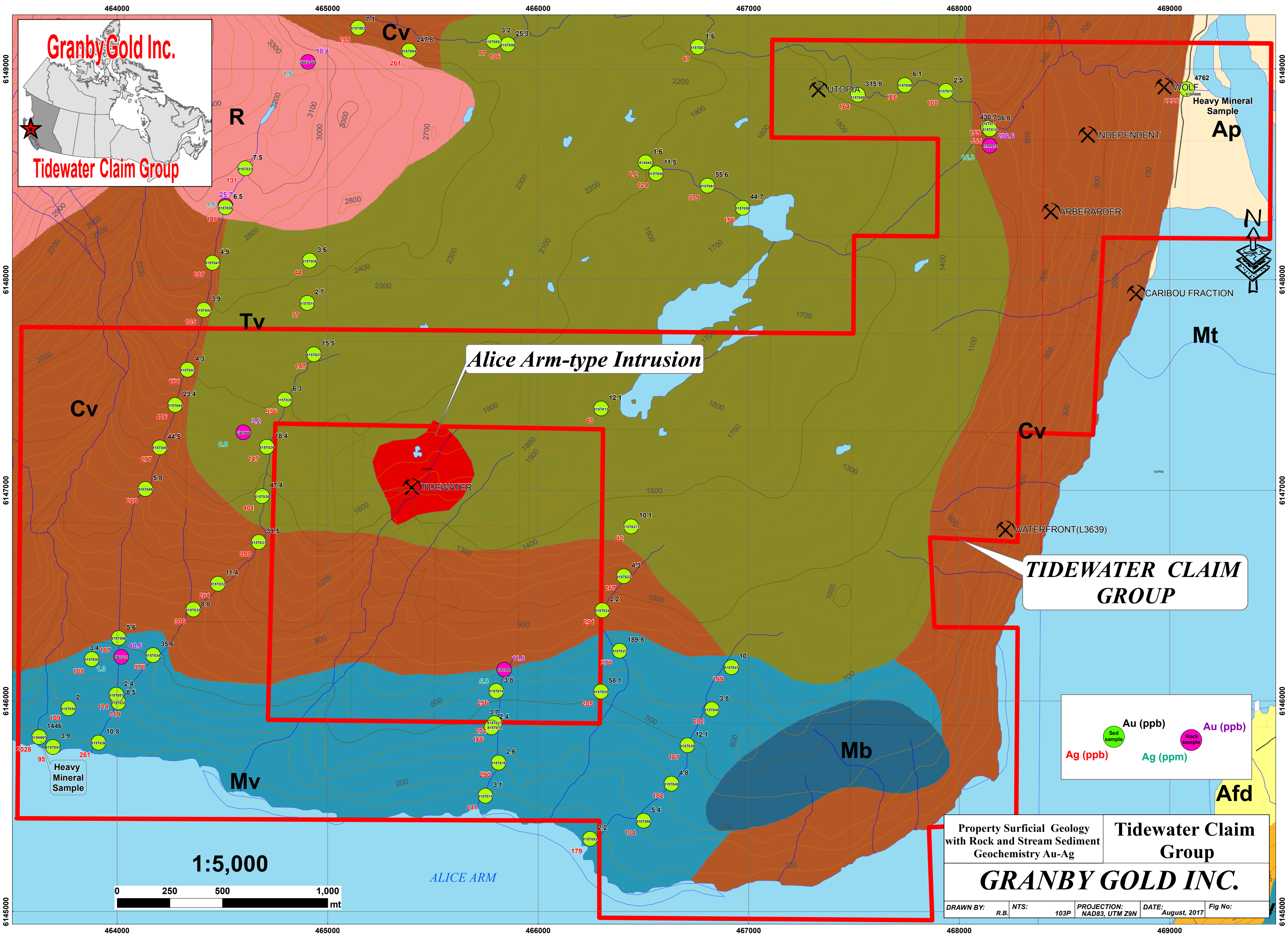

Fig 14. Property surficial geology with stream sediment geochemistry Au-Ag

5 GEOPHYSICS

5.1 Interpretation by Mira Geoscience

An interpretation of magnetic responses by Mira Geoscience is overlain on property geology (Figure 15).

In the north and the southeast sectors of the map, blue outlines mark areas of remanent magnetism. An arcuate red line defines the remanent magnetized trend. Magnetic characteristics are similar to rocks of the Coast Plutonic Complex and are considered to mark locations of granitic intrusions or recent basalt flows along an ESE-trending lineament.

Areas within green outlines represent, "... somewhat rounded magnetically 'quiet' features, which could represent intrusive bodies. A similar rounded, weakly magnetic feature correlates with the historic Kitsault deposit. Conducting further exploration in the vicinity of both these remanent magnetized and rounded magnetically 'quiet' zones is recommended" (Mira, 2017, p 28).

Alterations that are identifiable as related to the Tidewater intrusion are a zone of hornfels (dashed red line) and an inner zone of molybdenite enrichment.

Two broad distal alteration halos are interpreted around the Tidewater intrusion. The dashed purple outline concave southerly marks the outer limits of a core zone of quartz veining to the south. The diameter of the half-halo appears large in comparison to the size of the Tidewater intrusion. A dashed yellow line concave southerly near the south of the map area is interpreted to mark the outer (northern) limit of a zone of quartz-muscovite veining.

Comment: The broad halos may represent hydrothermal phyllic and potassic alterations around an intrusive larger than the Tidewater stock, centred to the south beneath Alice Arm. Emplacement of gold mineralization that is present near and exterior to the Tidewater stock might be related to precious metal mobilization into a phyllic zone around a larger porphyry intrusion.

5.2 Property Geology with Magnetics

Similar patterns of magnetic responses are present on each of the images. The Tidewater stock is in an area of low magnetic susceptibility where polarization of remnant magnetism is oriented at a different attitude to the polarization of regional magnetism. An ESE trend of discontinuous magnetic high-low pairs extends across the northern map area from the Coast Plutonic Complex on the west (Figures 16 to 21). Numerous parallel SSW magnetic lineaments cross the southern 2/3rds of the property, and reflect the SSW stream drainage system that is interrupted at the ESE trend. Certain mafic rock specimens appear to be on or near some magnetic highs

Total magnetic intensity (TMI) is inverted to represent a surface at 75 m depth (Fig 16). In the southeastern area of the claims, rhyolite is noted near two topographic highs with associated magnetic highs. Local attitude of bedding is approximately 310° 35° NE. The magnetic pattern may mark the nose of a fold with rhyolite or black Salmon River metasediments exposed at surface on each fold limb. In the NE corner of the property the Wolf, Independent, and Arberarder occurrences may be on this trend.

Figure 17 shows total magnetic intensity reduced to pole (RTP). In the southeastern area near the rhyolites the wishbone shape of a magnetic high is suggestive of the axial area of a fold structure.

The TMI reduced to pole (RTP) 1st vertical derivative image (Fig 18, 1VD)) accentuates rapid changes in magnetic intensity between rock units and across structures. In Figure 18 the ESE trend of broad magnetic high-low pairs of Figures 16 and 17 is displayed as smaller discrete pairs. At intersections with SSW-trending magnetic highs a dextral offset is noticeable across the ESE trend.

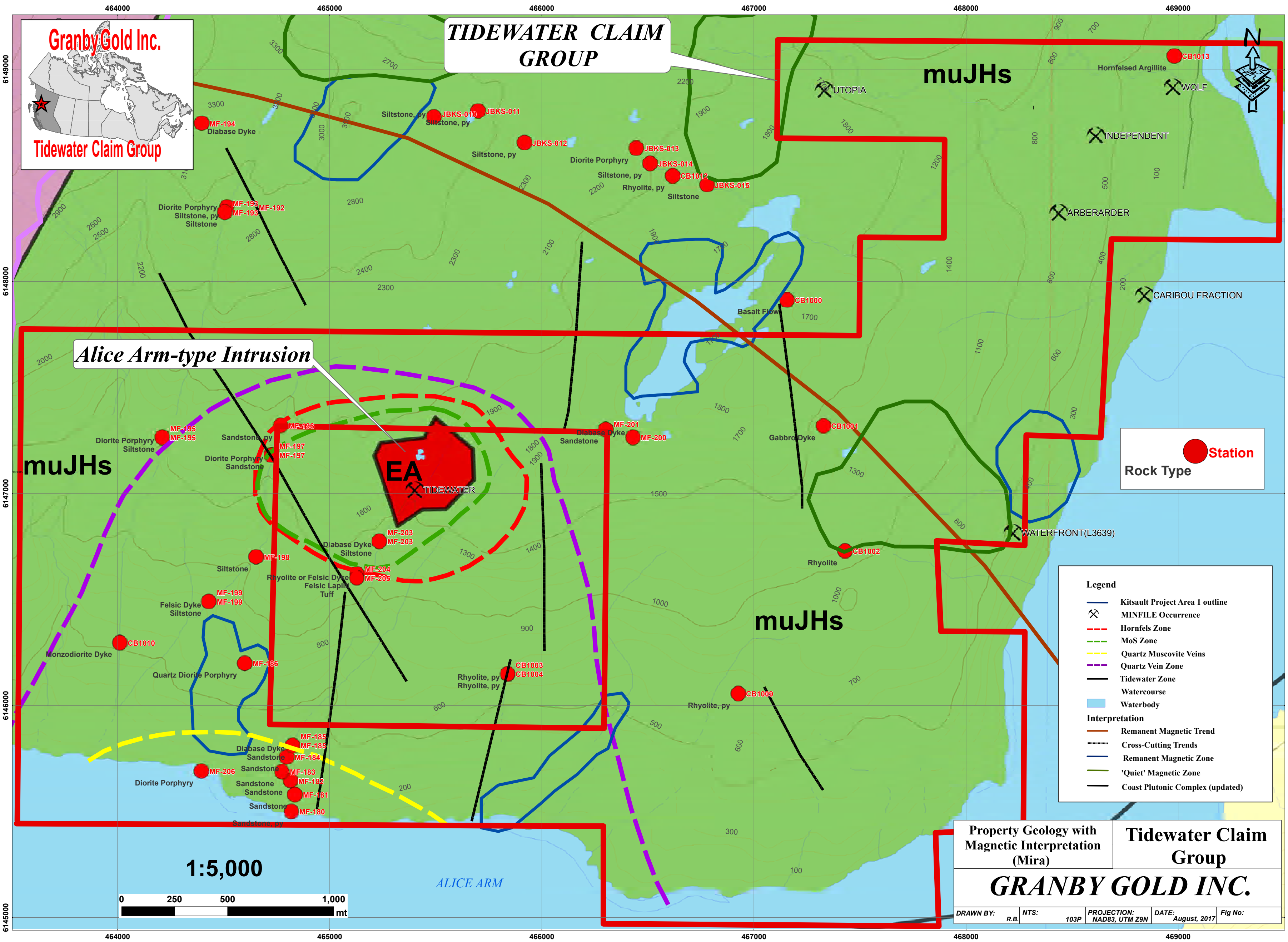

Fig 15. Property geology with magnetic interpretation (Mira)

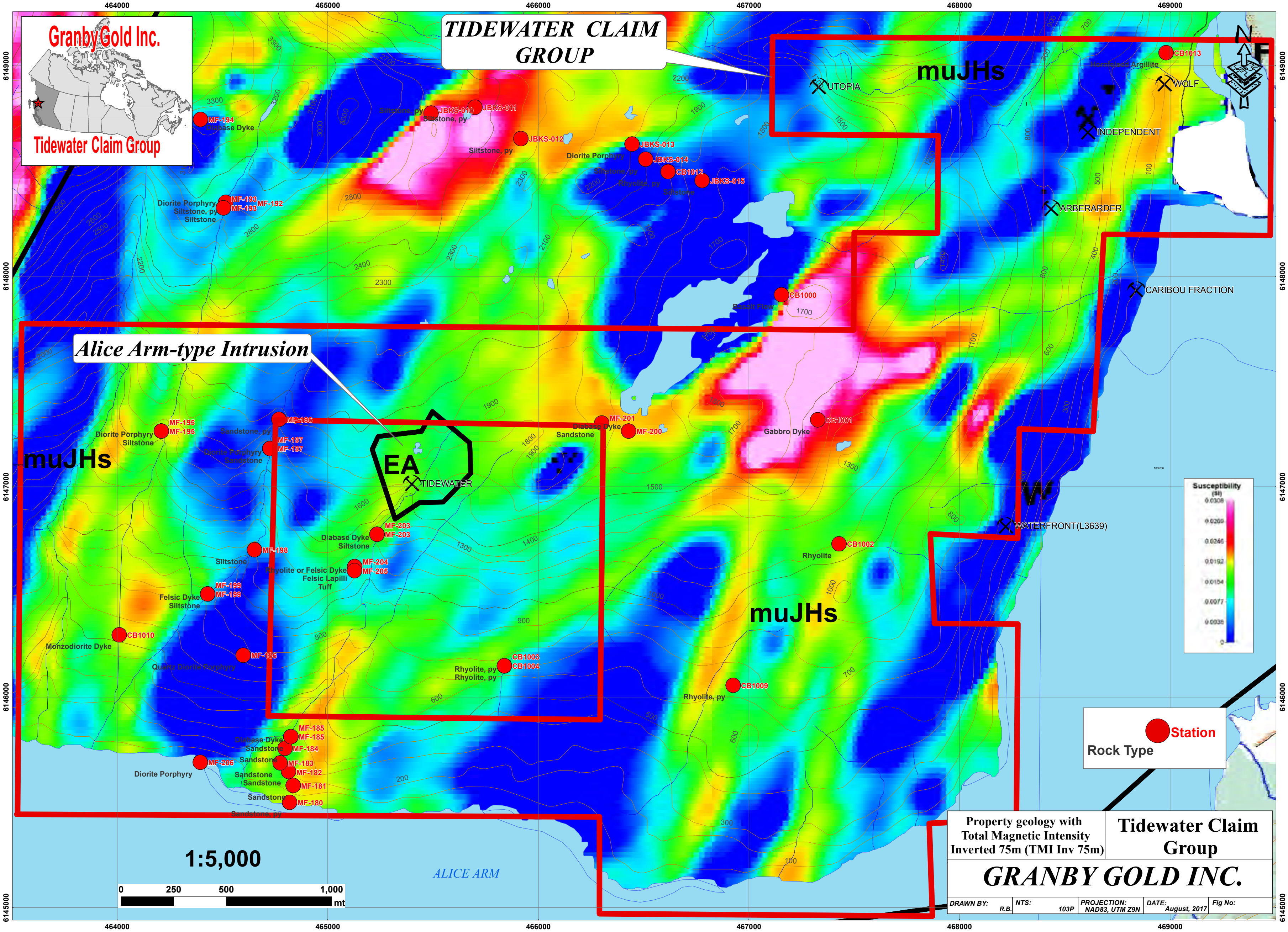

Fig 16. Property geology with total magnetic intensity inverted 75m (TMI Inv 75m)

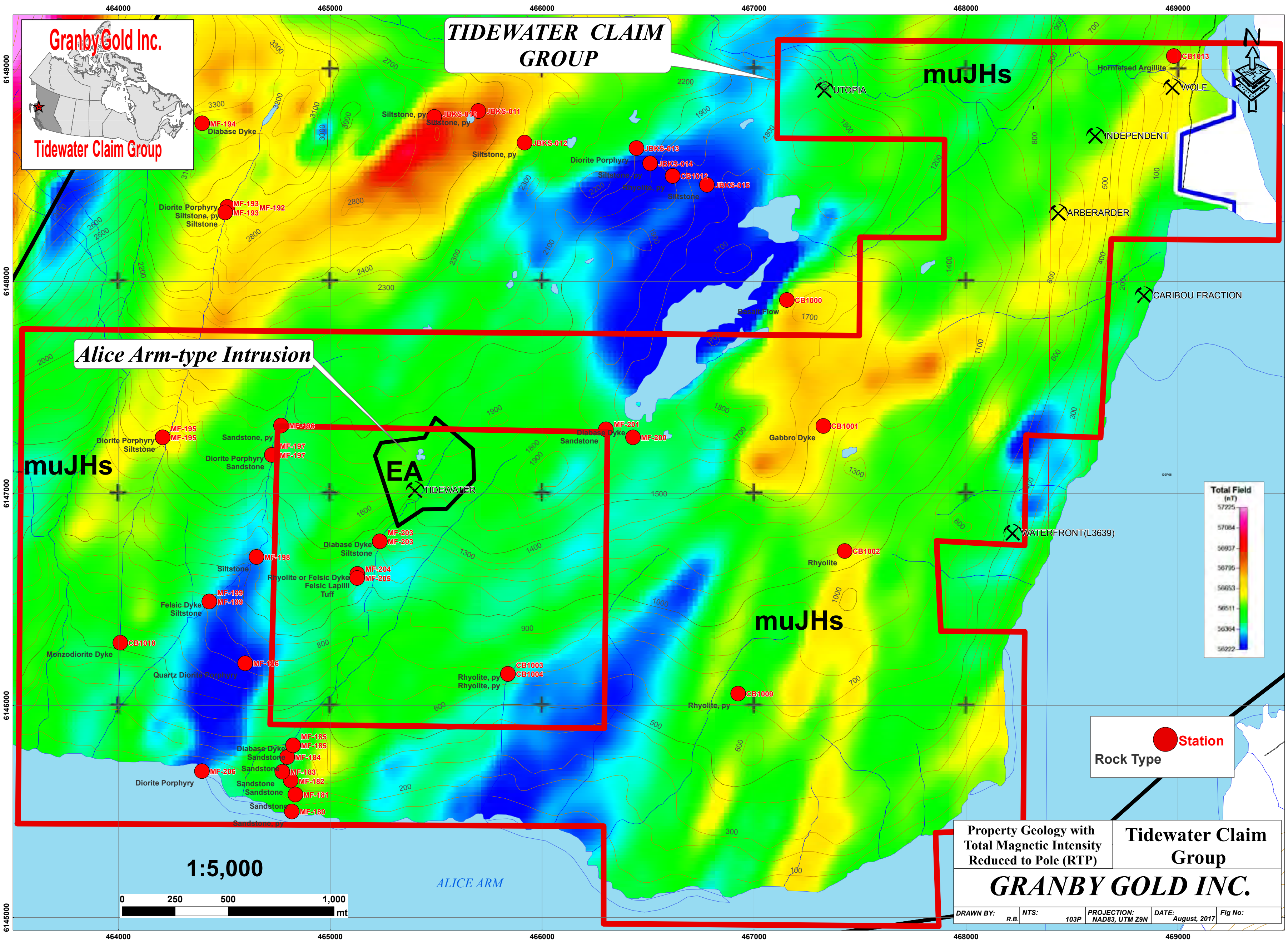

Fig 17. Property geology with total magnetic intensity reduced to pole (RTP)

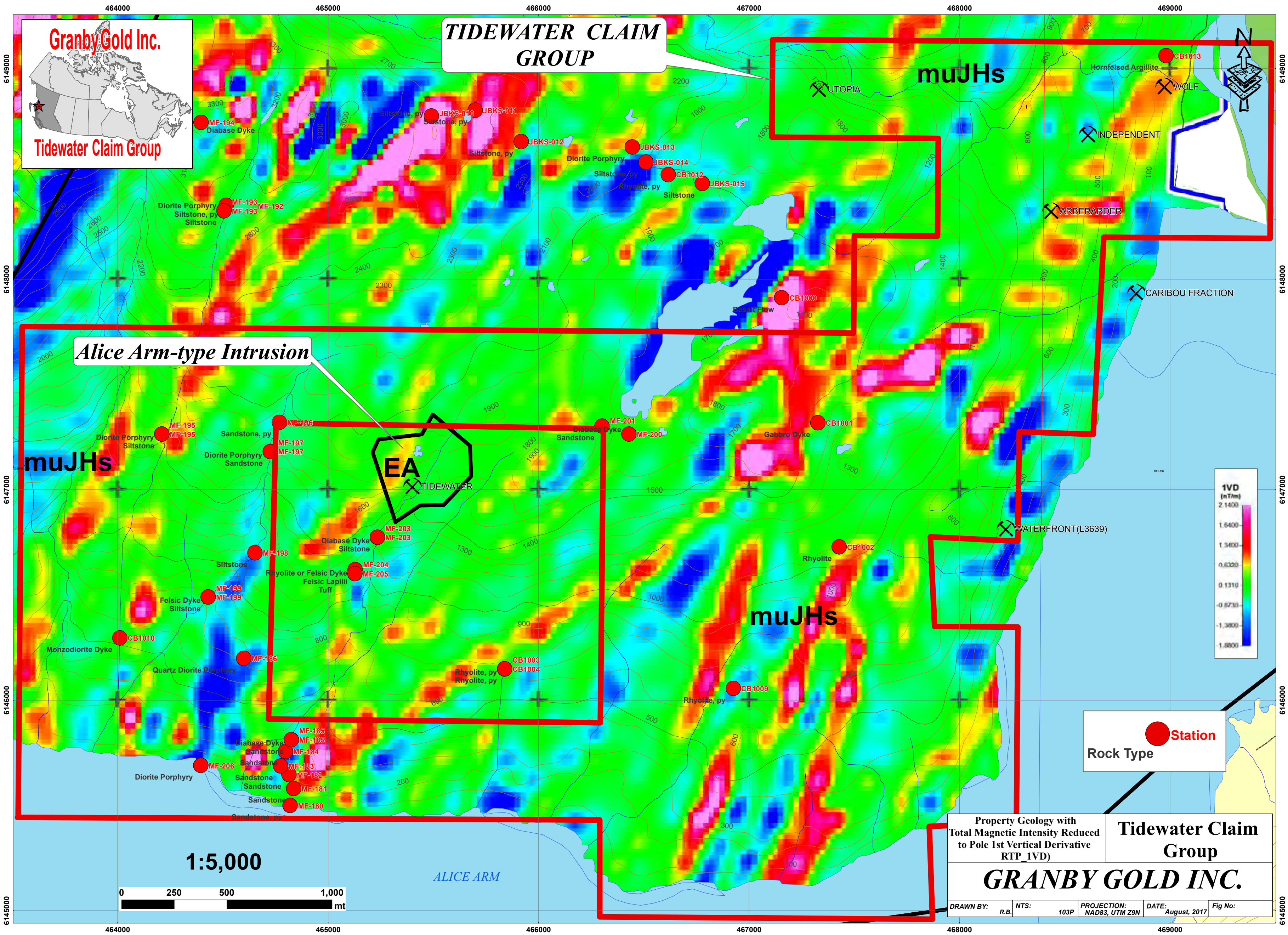

Fig 18. Property geology with TMI reduced to pole 1st vertical derivative (1VD)

5.3 Property Geology with Magnetics and Geochemistry

Streams that drain the area of the Tidewater intrusion were not sampled in the 2005 program. In the southern area of the property streams tend to be coincident with linear magnetic trends, suggestive of fracture zones as seen in the 1VD image of Figure 21.

Molybdenum and copper values are at background levels in all stream sediment, heavy mineral, and rock samples (Figures 19 to 21). Other than the association of streams / stream sediments with magnetic linears, anomalous geochemical patterns are not developed.

Two stream sediment and one rock sample from an easterly-flowing stream in the northeast corner of the property contain anomalous gold and silver values. One of the two stream sediments was collected near the Utopia occurrence. Magnetic responses are at background at these locations.

Near the Wolf occurrence a heavy mineral sample contains anomalous gold and silver. The sample location is near the mouth of the east-flowing stream that passes the Utopia and Wolf occurrences and at a road crossing. A SSW-trending magnetic high ends or is offset at the position of the stream beside the Wolf occurrence.

A heavy mineral sample in the southeast corner of the claims contains anomalous gold and silver. The sample appears to have been collected at the mouth of a stream from which no stream sediment samples have been collected. A magnetic high that suggests a relation to SSW fracturing is shown at and near the site in the 1VD image (Figure 24).

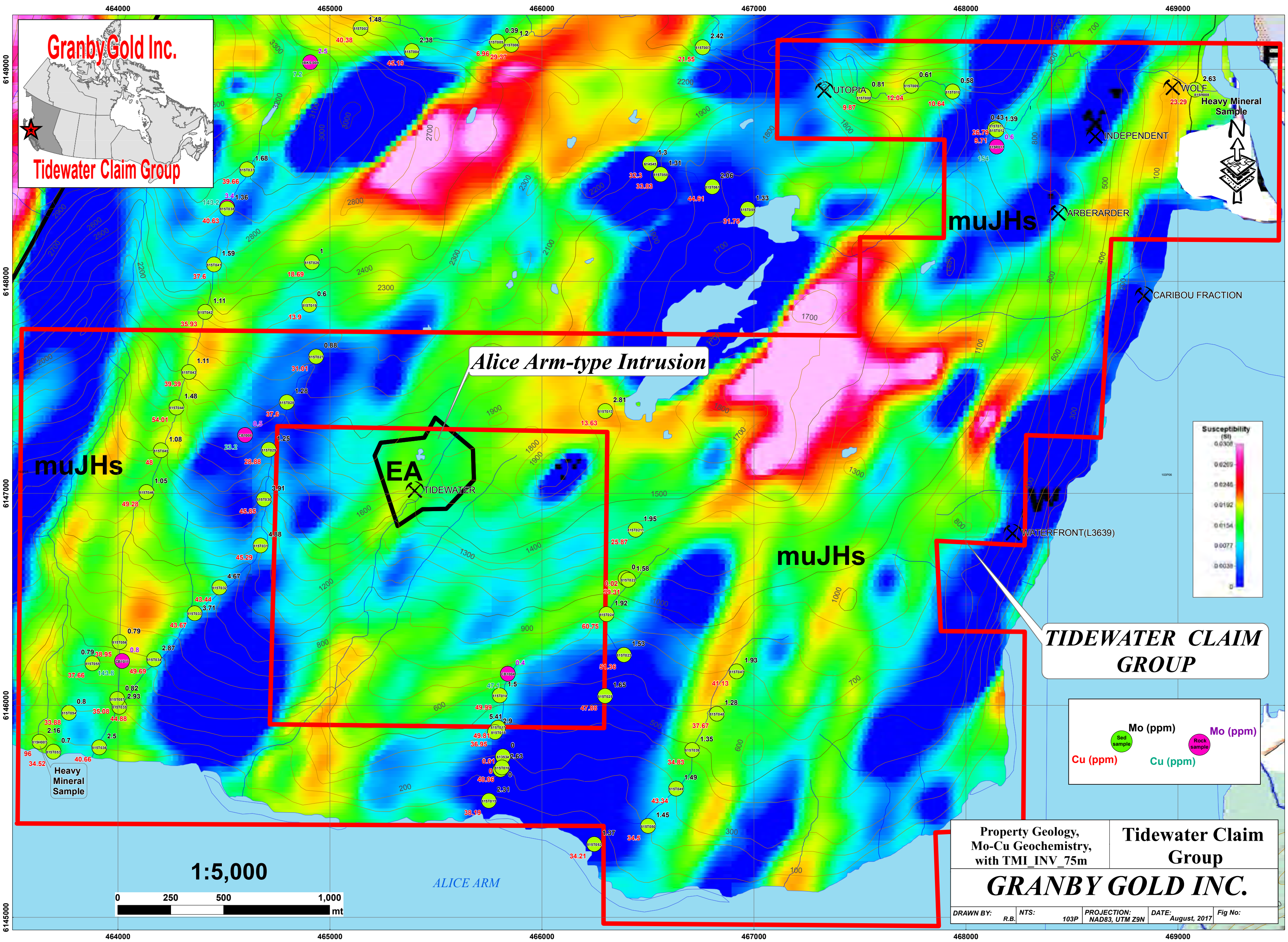

Fig 19. Property geology, Mo-Cu geochemistry with TMI Inv 75m (TMI Inv 75m)

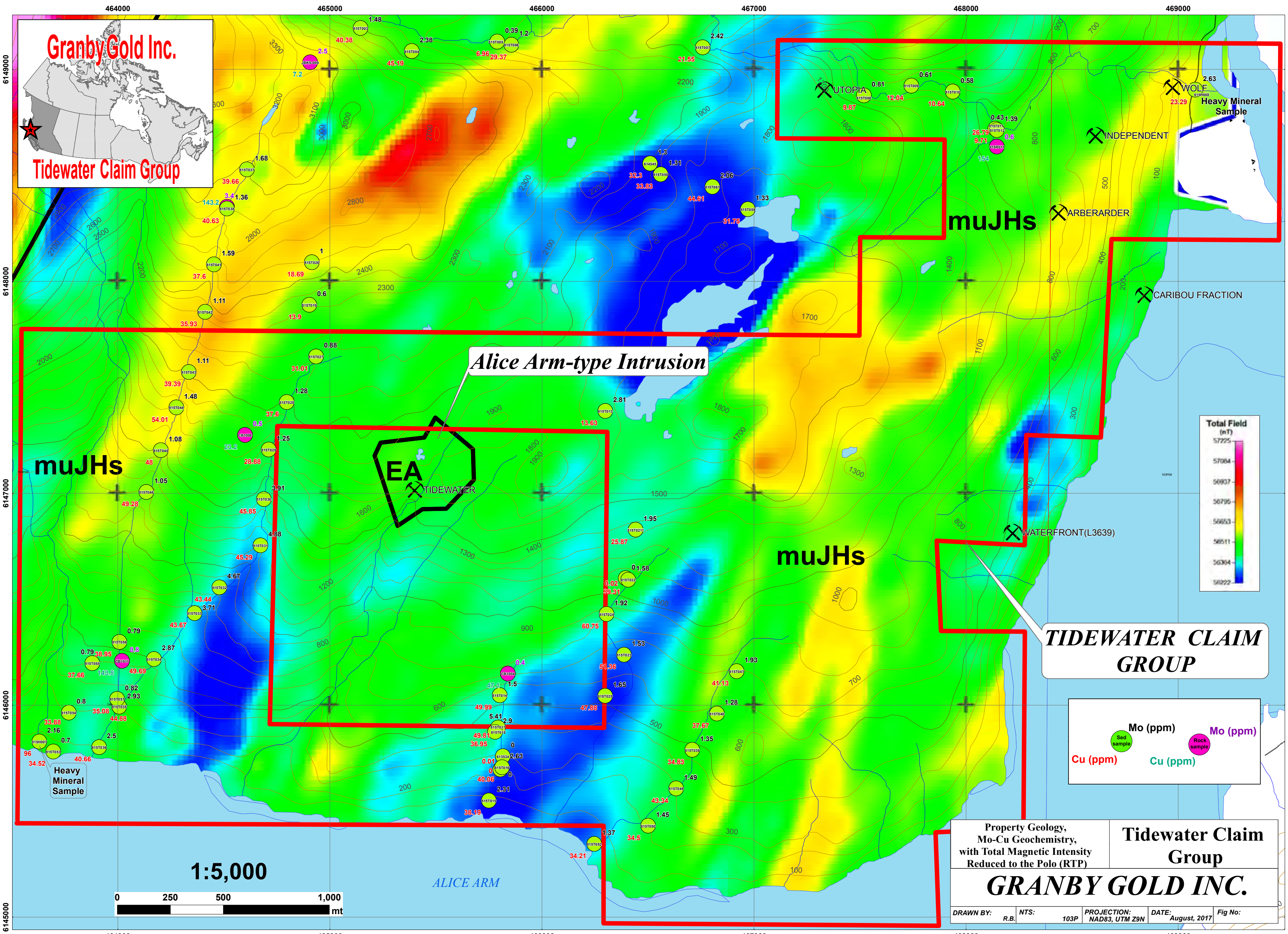

Fig 20. Property geology, Mo-Cu geochemistry with TMI reduced to pole (RTP)

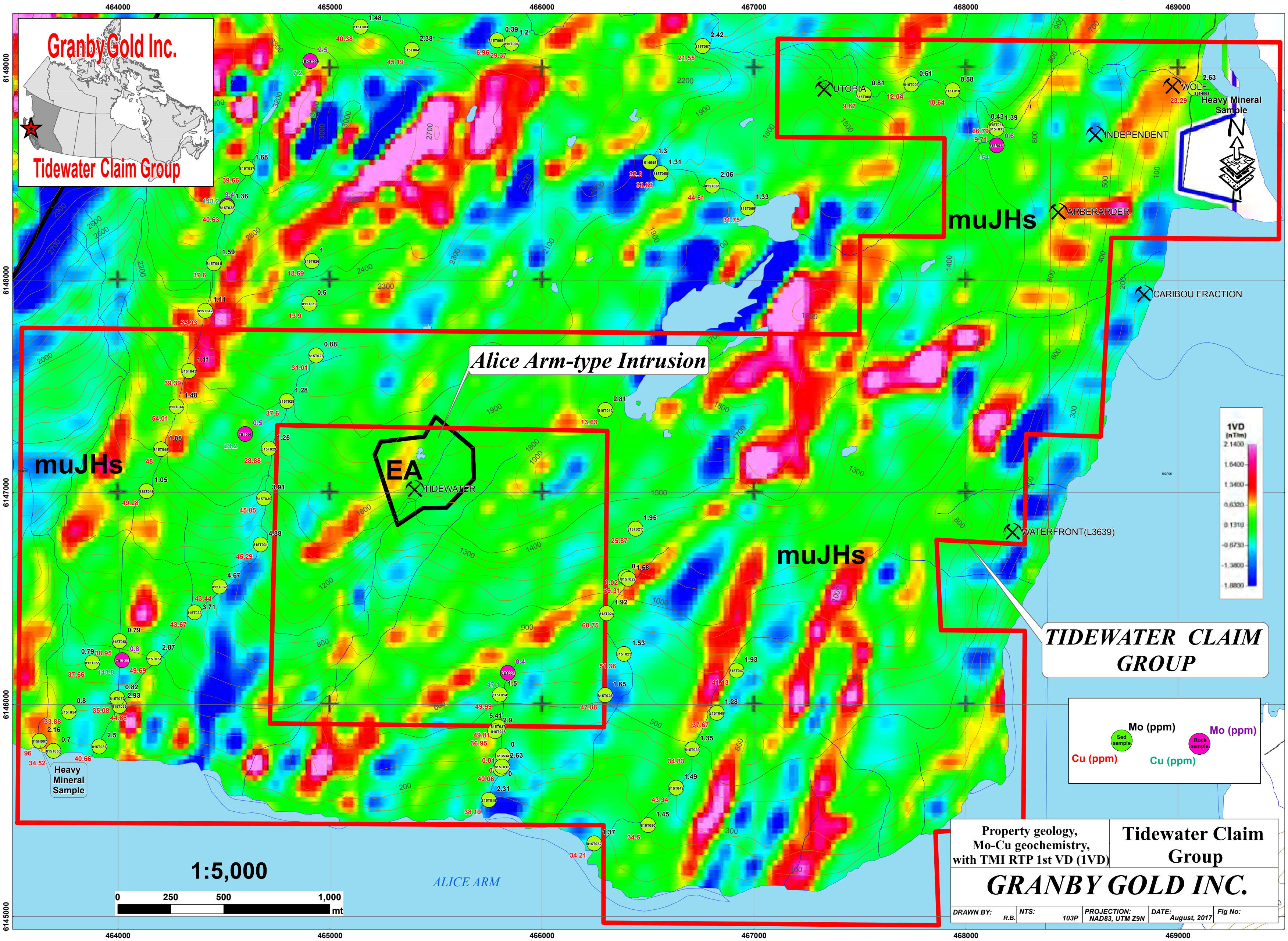

Fig 21. Property geology, Mo-Cu geochemistry with TMI RTP 1st VD (1VD)

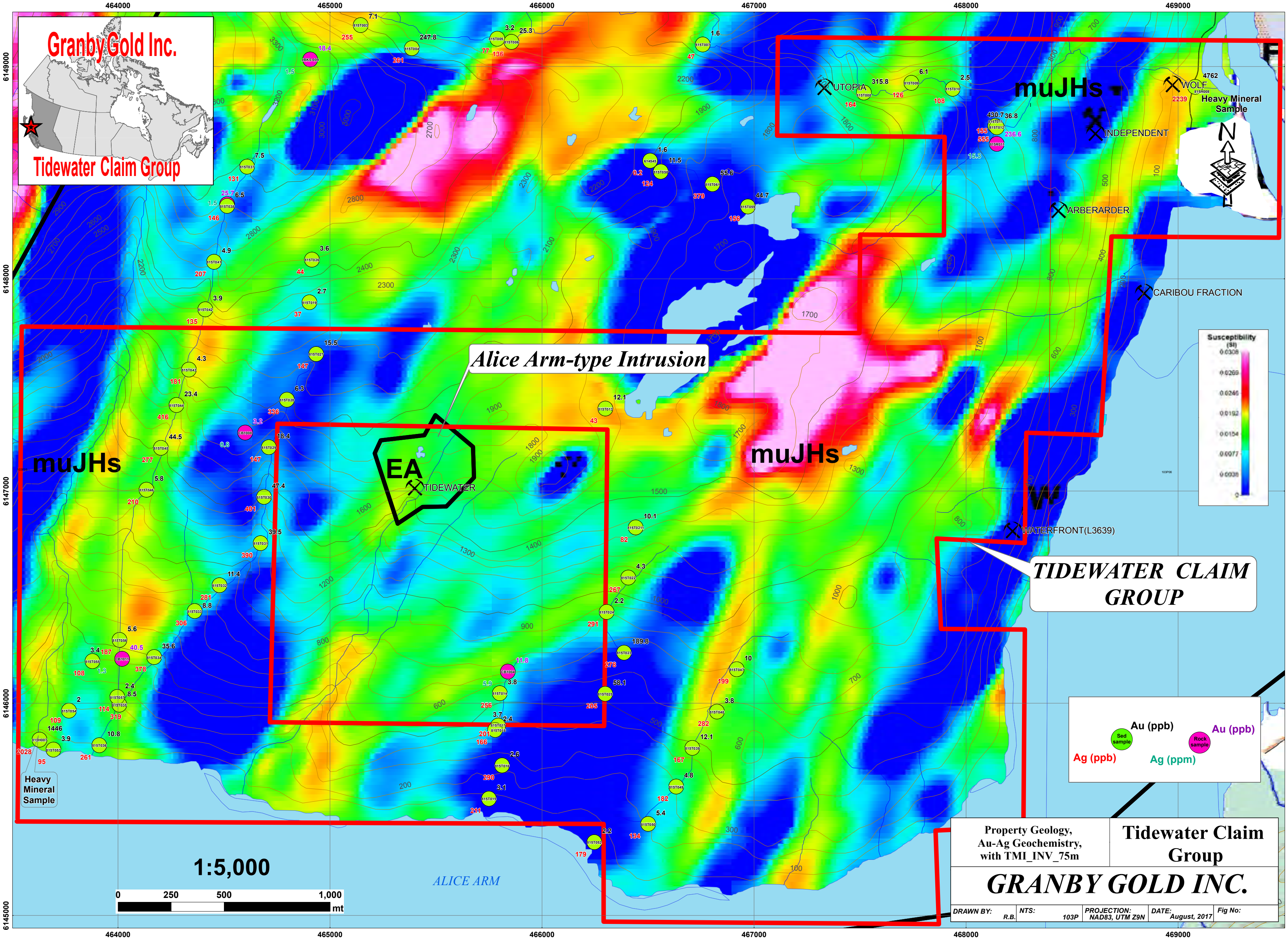

Fig 22. Property geology, Au-Ag geochemistry with TMI Inv 75m

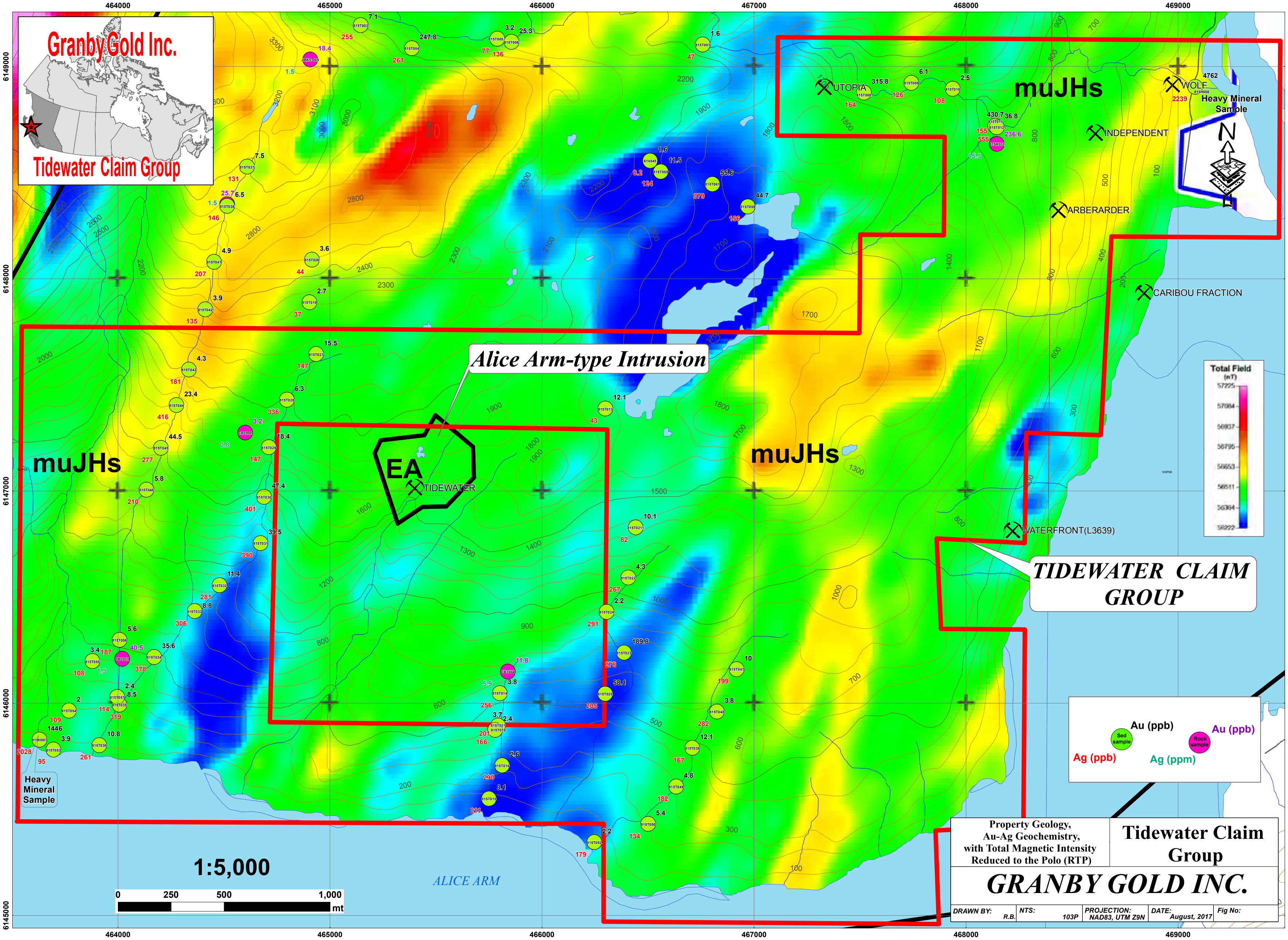

Fig 23. Property geology, Au-Ag geochemistry with TMI reduced to pole (RTP)

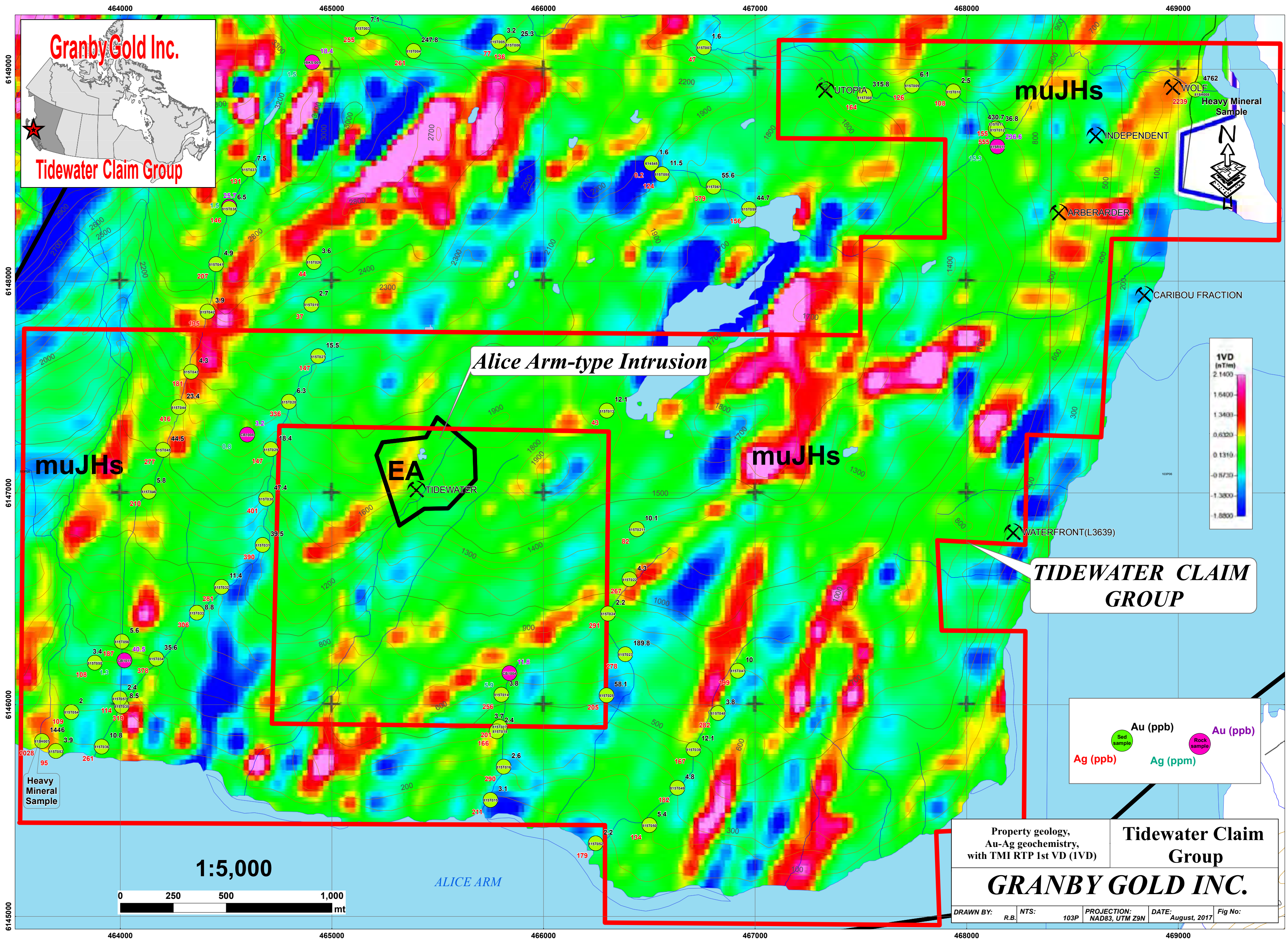

Fig 24. Property geology, Au-Ag geochemistry with TMI RTP 1st VD (1VD)

6 CONCLUSIONS

The Tidewater stock is without readily discernable magnetic characteristics in an area of low remnant magnetism.

Reinterpretation of airborne magnetic data has indicated two circular areas of quiet magnetism that could reflect Alice Arm -type stocks.

Phyllic and potassic porphyry copper-type alteration half-halos concave to the south encompass the Tidewater stock. Gold occurrences near the margin of the Tidewater stock may be in the ring of precious metals in a phyllic zone around a porphyry copper-type intrusive. The core of an intrusive larger and older than the Tidewater stock may be present under Alice Arm inlet.

Magnetic patterns in an area of rhyolite suggest folding that is typical of Salmon River strata and structure near the top if the Hazelton Group.

Magnetic linears mark ESE and SSW directions of fracturing, with the ESE trend being younger.

In the northeast corner of the property, precious metal occurrences (Wolf, Independent, Arberarder) may be associated with a SSW-trending magnetic high and an open fold structure in Salmon River sediments. Localization of mineralization at intersection of SSW and ESE fractures is a possibility.

7 RECOMMENDATIONS

The eastern part of the claims, extending between the rhyolite outcrops and the Wolf occurrence, should be geologically mapped. Object being to investigate Hazelton-Salmon River strata in relation to precious metal mineralization.

8 COST ESTIMATE

Cost is outlined for a 8-day field program, with 1 to 2 hours helicopter support daily, if done in conjunction with other exploration in the vicinity.

Geologist, assistant.

Helicopter, fuel, R&B for pilot.

R&B for tech crew.

Travel, vehicle, fuel.

Analyses

Supplies.

Report.

Contingencies @ 10%.

Total $ 46,000

Prices escalate rapidly. Cost of items to be estimated near the time of program initiation.

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10 ENGINEER'S AND GEOLOGIST'S CERTIFICATE

LOCKE B. GOLDSMITH, M.SC., P. GEO., P. ENG.

1. I, Locke B. Goldsmith, am a Registered Professional Engineer in the Provinces of Ontario and British Columbia, and a Registered Professional Geologist in the Province of British Columbia and the States of Oregon, Minnesota, and Wisconsin. My address is 601–150 24^{th} St., West Vancouver, B.C. My occupation is that of Consulting Geologist.

2. I have a Mining Technician Certificate from the Haileybury School of Mines, a B.Sc. (Honours) degree in Geology from Michigan Technological University, a M.Sc. degree in Geology from the University of British Columbia, and have done postgraduate study at Michigan Technological University and the University of Nevada. I am a member of the Society of Economic Geologists and the AIME.

3. I have been engaged in mining exploration for the past 59 years. I have conducted exploration programs and evaluations of mineral deposits worldwide.

4. I have written the report entitled, "Tidewater Project, Geophysics and Geology, Alice Arm Area, Skeena Mining Division, Stewart, British Columbia, Canada", dated July 23, 2017. The report is based on published and unpublished geological reports, maps, and data from an interpretation of airborne geophysics.

Respectfully submitted,

Vancouver, B.C
July 23, 2017

Locke B. Goldsmith, P.Eng., P.Geo.
Consulting Geologist

11 COST STATEMENT, 2017 PROGRAM

Personnel

L.B. Goldsmith,1/8 Apr 7, 1/8 8, ¼ 9, ¼ 10, ½ 11, ½ 12, 1/8 13, ¼ 15, ½ 16,total 2 ¼ days @ $1,180/day	2,430.00

Geophysics

Mira Geoscience, interpretation of airborne geophysics	17,940.00

Report

Electronic drafting, prints, scans, materials	1,740.00
Total	$ 22,110.00

Appendix 1 – Tidewater Project, Rock Sample Descriptions, 2009

Appendix 1 – Tidewater Project, rock specimen descriptions (after Fell and McGuigan, 2009)

Station	Easting (m)	Northing (m)	Rock Type	Mineralization	Description
CB1000	467155	6147912	Basalt Flow		Basalt, green, slightly porphyritic, slightly vesicular. Trace pyrite. Most of surrounding area is greywacke, volcanic sandstone and argillite.
CB1001	467327	6147318	Gabbro Dyke		Intrusive, gabbro. Medium-coarse grained. Appears to lie on top of large basalt flow outcrop.
CB1002	467428	6146728	Felsite Dyke	Trace Pyrite	Felsite dyke. Trace pyrite. Dip 54° southwest at contact with silty argillite on east edge, conformable to bedding. Strongly resembles rhyolite.
CB1003	465839	6146148	Felsite Dyke	Disseminatied Pyrite	Felsite dyke. Very similar to CB1002. 1% disseminated pyrite. Strike 325°, dip flat. At least 3m thick.
CB1004	465839	6146149	Felsite Dyke	Disseminatied Pyrite and Sphalerite	Felsite dyke. Same outcrop as CB1003. Rusty area has 0.7% sphalerite in pyritic fractures and also disseminated. 1.5% pyrite.
CB1009	466925	6146056	Felsite Dyke	Disseminatied Pyrite	Felsite dyke, 8-10m across, strong jointing at 310° and 10°. Local fractures contain to 5% pyrite. Probable strike of 320°.
CB1010	464010	6146296	Felsic Intrusive		Felsic intrusive dyke, possibly monzodiorite 5-8m wide. Apparent strike 320°, but is intruding faulted basalt-argillite contact. Second (?), much larger dyke of similar composition 50m downstream but feldspar porphyritic.
CB1012	466616	6148497	Felsite Dyke		Felsite sill 2m thick, dip 25° SE, pyrite 0.5%, strong sulphur odour. Appears to be twinned with another inaccessible sill 2m above this one, or is one large sill with large raft of argillite.
CB1013	468981	6149062	Altered – Undifferentiated	Pyrite Stringers	Hornfelsed argillite with 7% pyrite, 1% muscovite, and possible minor tourmaline in shear at contact with hornfelsed siltstone. Mineralization is primarily fracture-controlled.
JBKS-007	464304	6149847	Granodiorite Intrusive		A contact of a granitoid and a sequence of sedimentary rocks. Granitoid corresponds to a medium grained, hypidiomorphic, holocrystalline plutonic rock. This rock is composed by plagiolcase feldspar (80%), potassium feldspar (5%) and quartz (15%). Hornblende (10%) and biotite (5%) are the main accessory mineral phases. Accordingly, this rock is classified as a hornblende-biotite granodiorite. Rock is non magnetic. No evidence of either alteration or mineralization. Rock is fresh.
JBKS-008	464562	6149519	Siltstone		Exposure of a dark gray, very fine grained and silicified sedimentary rock. Fracture surfaces are coated with pyrite. Weakly magnetic.
JBKS-010	465491	6148775	Siltstone		Exposure of a laminated, dark gray, siliceous siltstone in thin to medium, tabular beds. Rock contains pyrite as very fine blebs or as very thin (less than 1 mm) discontinous veinlets, which in turn are cut by hair-like, barren quartz veins. Pyrite veinlets appear in two sets, one subparallel and other oblique to bedding. Immediately below the outcrop of

					sedimentary rock, there is an exposure of a dark gray, fine grained, equigranular, holocrystalline plutonic rock, composed predominantly of plagioclase feldspar as unique essential mineral and hornblende, the latter reaching 10 %, as the main accessory mineral. Rock is classified as a hornblendic diorite.
JBKS-011	465699	6148803	Siltstone		Exposure of a grayish, siliceous siltstone in medium (10 to 30 cm thick) and tabular beds. Uniformly distributed in rock is a mineral with a metallic luster, non-magnetic and acicular habit. Pyrite disseminations. Rock is magnetic.
JBKS-012	465917	6148654	Siltstone		Exposure of a dark gray, laminated and siliceous siltstone. Pyrite accumulations of coarser fractions constituting laminae.
JBKS-013	466445	6148628	Diorite Porphyry		Exposure of dark gray, dioritic porphyry. 10% of anhedral to subhedral, medium grained plagioclase phenocrysts are contained in a very fine grained, equigranular, grayish groundmass, which is composed by plagioclase feldspar and a mafic phase, probable hornblende. This rock varies to a microdiorite. Rock is magnetite-bearing and there are not evidences of hydrothermal alteration or mineralization.
JBKS-014	466510	6148556	Siltstone		Exposure of dark gray, siliceous siltstones in thin to medium tabular beds, and internally tend to be massive (no lamination). Rock is cut by barren, hair-like quartz veins. Pyrite is observed as isolated, rounded patches coating fracture surfaces. Few meters to the east, there is an outcrop of fine-grained, equigranular, dark gray and magnetic plutonic rock, classified as a microdiorite.
JBKS-015	466778	6148455	Siltstone		Exposure of a package of dark gray, siliceous and laminated siltstones in medium, tabular beds. Thin, hair-like quartz veins. No evidences of mineralization.
MF-180	464819	6145500	Sandstone	Disseminatied Pyrite	
MF-181	464836	6145580	Sandstone		Pink - grey coloured, fine-grained, thickly bedded (~30 cm) sediments.
MF-182	464814	6145647	Sandstone		Pink and grey coloured, medium-grained sandstone.
MF-183	464774	6145687	Sandstone		Pink to grey coloured, medium-grained sandstone.
MF-184	464797	6145757	Sandstone		Sandstone ridge. Pink - grey coloured. Fine-grain size. Massive texture.
MF-185	464825	6145812	Sandstone		Fine-grained, brown sandstone.
MF-185	464825	6145812	Diabase Dyke		Plagioclase phyric diabase dyke.
MF-186	464599	6146199	Diorite Porphyry		Grey, porphryitic intrusive. Plagioclase crystals up to 8 mm. 2 - 4 mm biotite books. Slender black crystals (augite?). Mag Susc: 0.22
MF-192	464515	6148351	Siltstone	Pyrite Stringers	Very fine-grained, black siltstone with thick (30 cm) beds
MF-193	464505	6148325	Siltstone		Very fine-grained, black, thickly bedded siltstone
MF-193	464505	6148325	Diorite Porphyry		Grey, fine-grained, hornblende and plagioclase porphyritic diorite dyke of 2m width. Mag Susc 0.43

MF-194	464396	6148745	Diabase Dyke		Medium-grained. Highly magnetic. Rep sample. Mag Susc: 23.5
MF-195	464210	6147264	Diorite Porphyry		Weakly porphyritic, very fine-grained, grey diorite porphyry. Mag Susc: 0.72
MF-195	464210	6147264	Siltstone		Fine-grained, black siltstone.
MF-196	464768	6147320	Sandstone	Trace Pyrite	Medium-grained, grey - black sandstone with 25 - 30 cm thick beds.
MF-197	464725	6147181	Sandstone		25 - 30 cm thick beds, black - grey coloured, medium-grained sandstone.
MF-197	464725	6147181	Diorite Porphyry		Light grey, feldspar and hornblende porphyritic diorite. Mag susc: 0.28
MF-198	464652	6146700	Siltstone		Black - grey coloured, very fine-grained siltstone. Mag Susc: 0.8.
MF-199	464430	6146490	Felsic Dyke		Very fine-grained, silica rich, white to pale grey felsite dyke. Mag Susc: 0.27
MF-199	464430	6146490	Siltstone	Trace Pyrite	Very fine-grained, black to grey siltstone.
MF-200	466429	6147264	Diabase Dyke		Plagioclase porphyritic, dark coloured, massive diabase dyke. Mag Susc: 35.0
MF-201	466301	6147302	Sandstone		Grey, medium-grained sandstone; Mag Susc: 0.28
MF-203	465234	6146774	Siltstone		Fine-grained, dark gray to black siltstone in 30 cm thick beds.
MF-203	465234	6146774	Diabase Dyke		Feldspar phyric, fine-grained, dark green, magnetite-bearing rock. Spherical voids are filled with chlorite/calcite. Contact with metasedimentary wall rock is planar sharp. 1.5 m thick. Mag Susc: 43.0
MF-204	465128	6146620	Felsic Lapilli Tuff		Ash to lapilli, felsic tuff with a flow-banding texture. Thin (few mm thick) bands. In some laminae, plagioclase phenocrysts are observed. Mag Susc: 1.07
MF-205	465127	6146601	Felsic Dyke		Siliceous, aphanitic to aplitic (?), 3 to 5 m thick dike intruding a sequence of fine-grained, blackish sedimentary rocks. Igneous rock internally is massive, intensely fractured. Contact with wall rocks tends to be planar sharp, although thin aphophyses are intruding sedimentary wall rock. Mag Susc: 0.19
MF-206	464395	6145690	Diorite Porphyry		Exposure of an intermediate igneous rock with a porphyritic texture. Medium grained, euhedral plagiolcase and biotite phenocrysts (up to few mm in size) are contained in a very fine-grained matrix composed predominantly of plagioclase feldspar and biotite. Quartz reaches 5 %. Biotite 7 %. Rock is magnetite-bearing. Classification: biotite-bearing quartz diorite porphyry. Rock looks relatively fresh and intensely fractured. Mag Susc: 3.32

Appendix 2 – Mira Geoscience: 3D Compilation and Magnetic Modelling, Tidewater Project, BC

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3D Data Compilation and Magnetic Modelling,

Tidewater Project, BC

Granby Gold Inc.

Project Number: 4649

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1. Introduction

1.1. Project Scope

The purpose of this project is to provide Granby Gold Inc. with three-dimensional (3D) compilation, integration, modelling, and interpretation of geoscientific data of their Tidewater Project located approximately 60 km southeast of the community of Stewart, BC.

1.2. Geologic Setting

The Tidewater Molybdenum deposit is a past producing molybdenum deposit found in the Alice Arm region of northwestern BC. The underlying geology within this area consists of sedimentary rocks of the Late Triassic Stuhini Group, the volcanic to sedimentary rocks of the middle to upper Jurassic Hazelton Group, and the sedimentary rocks of the Late Jurassic Bowser Lake Group as shown in Figure 1. These volcanic and sedimentary formations are bounded to the west by the plutonic rocks of the Eocene Coast Plutonic Complex. Several other molybdenum deposits are known in the area, including Kitsault, Roundy Creek, and Bell Moly. These deposits typically are associated with small quartz monzonite stocks of the Alice Arm intrusive suite.

Molybdenum mineralization at the Tidewater deposit is hosted in northeast trending quartz veins and stockwork within Hazelton Group argillite, siltstone, and greywackes. The deposit occurs on the southern margin of the Tidewater quartz monzonite stock, an intrusion belonging to the Alice Arm suite.

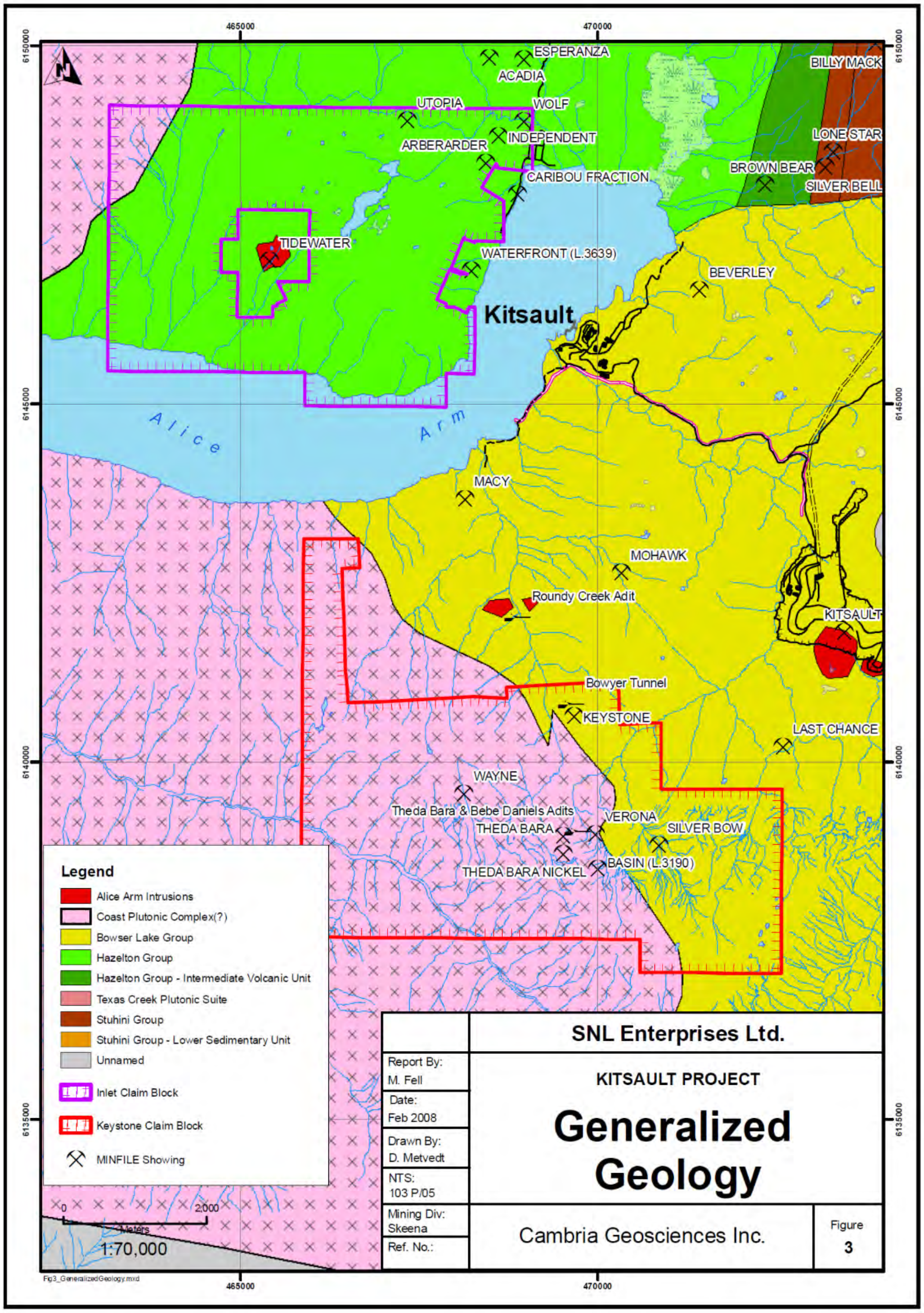

Figure 1. Generalized Geology map (Fell, 2009)

2. Data Compilation

All data provided by Granby Gold Inc. have been compiled and located in 3D space using the GOCAD geoscientific modelling software.

2.1. Coordinate System and Datum

All project data are compiled in NAD83 UTM Zone 9.

2.2. Public Records

Several documents have been retrieved from the Ministry of Energy and Mines databases consisting of ARIS, Bulletins, Property Files and Annual Reports detailed in Table 1, Table 2, Table 3 and Table 4 which provided geological information, maps and logs from the Tidewater property.

These documents help in furthering the geological understanding and improving the knowledge about historical exploration and mining efforts. Several maps listed below have been extracted and manually georeferenced;

- ARIS report #07966 Fig. 02. #08589 Fig. 03 and #17842 Fig. 04 for project geology, drilling locations and mine adit locations,
- Property Files #18386 and #18387 for the mine workings and geology.

Local MINFILE occurrences (BCGS, 2016) have also been retrieved and are shown in Figure 2.

Table 1: List of compiled ARIS documents from the Ministry of Energy and Mines.

ARIS #	Title	Author	Owner	Year	Work Type
00427	Report on Geological Survey Red No. 1 Claim Group	R. W. Stevenson	KENNCO Explorations, (Western) Limited	1962	Geological
06961A	Report on Prospecting Success and Molybdenum Claims	R. Dunn	R. Dunn	1978	Prospecting, Geochemical
06961B	Report on The Geology and Bulk Sampling Program Tide Claim Group	N.R. Tipman	R. Dunn	1978	Prospecting, Geochemical
07444	Induced Polarization/Resistivity and Magnetometer Surveys Tidewater Property	J.L. LeBel	AMAX Potash Limited	1979	Geophysical
07966	Report on Diamond Drilling Tidewater Mo Property	D. G. Allen	AMAX of Canada Ltd.	1980	Drilling
08589	Drilling Assessment Report Tidewater Property	P. N. McCarter, D. G. Allen	AMAX of Canada Ltd.	1980	Drilling, Geological
17285	Report on The Tidewater Property	J.L Lebel, E. O. McCrossan	Richmark Resources Ltd.	1988	Geochemical, Physical
17842	Report on The Tidewater Property	J.L Lebel, E. O. McCrossan	Richmark Resources Ltd.	1988	Drilling
29106	Report on a Helicopter-Borne Magnetic Gradiometer Survey Aeroquest Job #7053 Kitsault Project	M. Pozza	Cambria Geosciences Inc.	2007	Geophysical
30177	Phase One Exploration Program on the Keystone and Inlet Properties	M. Fell, P. McGuigan	SNL Enterprises Ltd.	2009	Geochemical

Table 2. List of compiled Property Files from the Ministry of Energy and Mines.

File #	Title	Author	Publisher	Year
18376	George Cross News Letter	n/a	n/a	1988
18377	Bulletin No.9 - British Columbia Department of Mines, p61-67	J. S. Stevenson	British Columbia Department of Mines	1940
18378	Geology and Geochemistry of the Alice Arm Molybdenum Deposit	J.R. Woodcock, N.C. Carter	Department of Mines and Petroleum Resources	1976
18379	Public Offering, and Report on the Tidewater Property	J.L Lebel	Richmark Resources Ltd.	1987
18380	(Holder)	n/a	n/a	n/a
18381	Plan Map of Workings, Vein Blocks and Structure - Tidewater Molybdenum	J. Mandy	n/a	1939
18382	Plan Map of Location and Trail with Section - Tidewater Molybdenum	J. Mandy	n/a	1939
18383	Plan Map of Creek Bed and Surface Showings with Section - Tidewater Molybdenum	J. Mandy	n/a	1939
18384	Plan Map of Workings and Sections - Tidewater Molybdenum	J. Mandy	n/a	1939
18385	Plan Maps of Workings - Tidewater Property Bulletin No.9 - British Columbia Department of Mines, p61-67	J. S. Stevenson	British Columbia Department of Mines	1940
18386	Sketch Map of Geology and Workings - Tidewater No. 2 Adit	n/a	n/a	1964
18387	Sketch Map of Veins and Workings - Tidewater No. 2 Adit	n/a	n/a	1964
18388	Geological Drill Hole Sections - Tidewater	n/a	n/a	1965
18389	Sketch Map of Drilling - Tidewater	n/a	n/a	1965

Table 3. List of compiled Annual Reports from the Ministry of Energy and Mines.

Title	Author	Publisher	Year
Annual Report for the Year Ending 31st December 1916	W. F. Robertson	Minister of Mines	1917
Annual Report for the Year Ending 31st December 1918	W. F. Robertson	Minister of Mines	1919
Annual Report for the Year Ending 31st December 1926	J. D. Galloway	Minister of Mines	1927
Annual Report for the Year Ending 31st December 1929	J. D. Galloway	Minister of Mines	1930
Annual Report for the Year Ending 31st December 1930	J. D. Galloway	Minister of Mines	1931
Annual Report for the Year Ending 31st December 1931	J. D. Galloway	Minister of Mines	1932
Annual Report for the Year Ending 31st December 1964	D. L. Brothers	Minister of Mines and Petroleum Resources	1965
Annual Report for the Year Ending 31st December 1965	D. L. Brothers	Minister of Mines and Petroleum Resources	1966

Table 4. List of compiled Bulletins from the Ministry of Energy and Mines.

Bulletin #	Title	Author	Publisher	Year
9	Molybdenum Deposits British Columbia	J. S. Stevenson	British Columbia Department of Mines	1940
64	Porphyry Copper and Molybdenum deposits. West - Central British Columbia	N. C. Carter	Ministry of Energy, Mines and Petroleum Resources	1981

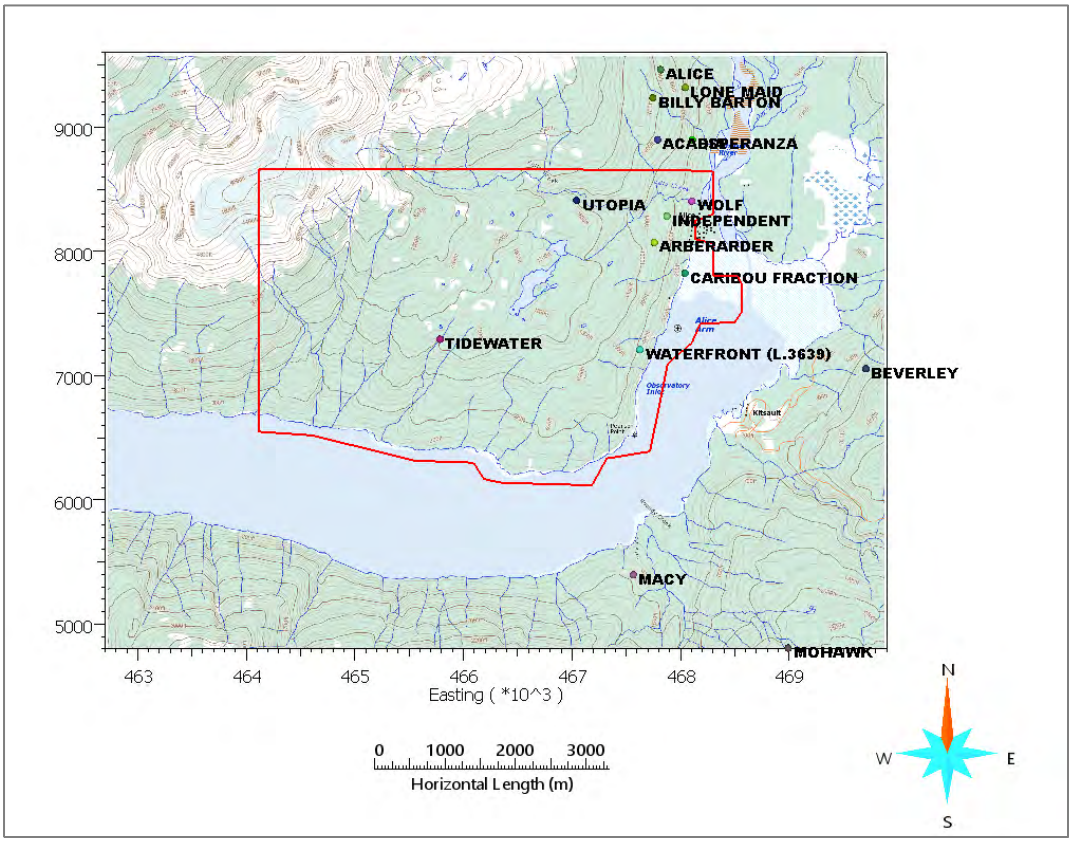

Figure 2: MINFILE occurrences and Aeroquest Kitsault Project Area 1 outlined with a red curve. Toporama map (NRCAN, 2013) used for background.

2.3. Geographic Data

For this project, various geographic datasets are required such as the topography and general topographic data.

The topography consists of the Canadian Digital Elevation Model (CDEM) (NRCAN, 2012) with a 0.75 arc seconds horizontal resolution in geographic coordinates (NAD83) resulting in a 17m horizontal resolution once reprojected to NAD83 UTM Zone 09N.

General topographic data such as the Toporama raster digital topographic reference maps (NRCAN, 2013) shown in Figure 2 and the associated CanVec vector digital topographic reference maps (NRCAN, 2016) have been retrieved to provide a better topographic background to this compilation project.

2.4. **Geological Data**

Geological information has been recovered from the British Columbia Geological Survey's British Columbia digital geology dataset (Cui et al., 2016) as shown in Figure 3, ARIS reports and Property Files both mentioned in section 2.2 Public Records.

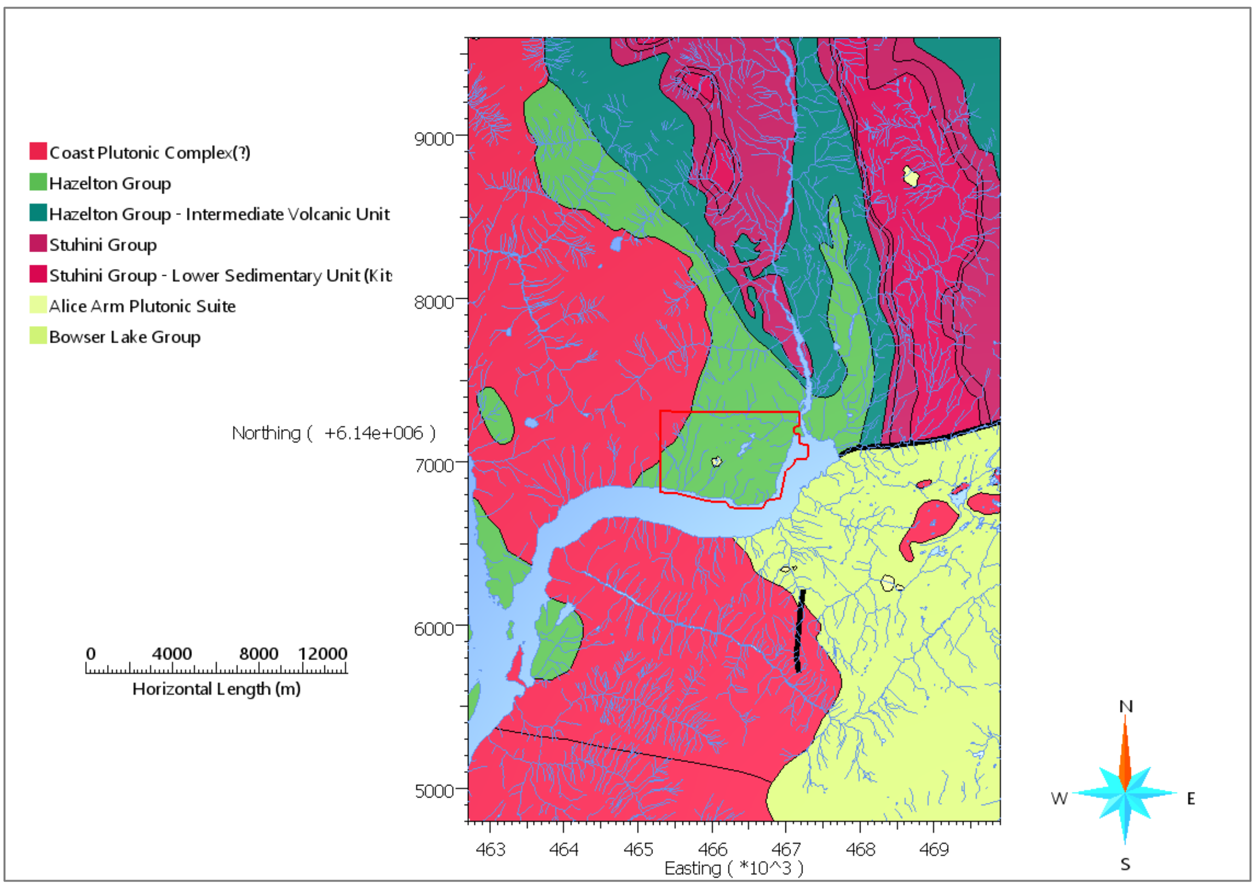

Figure 3: BC Digital Geology map (Cui et al., 2016) with CanVec watercourse and waterbodies (NRCAN 2016).

2.5. Geochemical Data

No geochemical data has been compiled during this project.

2.6. Drilling Data

Historical drilling locations and approximate depth and orientation have been retrieved from ARIS reports and Property Files mentioned in section 2.2 Public Records. Drill holes listed in Table 5 have been compiled in 3D for reference but geology logs are not imported.

Table 5. List of compiled drill holes from ARIS reports.

Hole ID	Year	ARIS #		Hole ID	Year	ARIS #
TW-64-1	7966	1964		TW-79-1	1979	7966
TW-64-2	7966	1964		TW-79-2	1979	7966
TW-64-3	7966	1964		TW-79-3	1979	7966
TW-64-4	7966	1964		TW-80-4	1980	8589
TW-64-5	7966	1964		TW-80-5	1980	8589
TW-64-6	7966	1964		TW-80-6	1980	8589
TW-64-7	7966	1964		TW-80-7	1980	8589
TW-65-1	7966	1965		TW-88-08	1988	17842
TW-65-2	7966	1965		TW-88-09	1988	17842
TW-65-3	7966	1965		TW-88-10	1988	17842
TW-65-4	7966	1965		TW-88-11	1988	17842
TW-65-5	7966	1965				

2.7. Mine Data

Details about the Tidewater mine workings were found in the Property Files and Bulletin No. 9 from the Ministry of Energy and Mines (Stevenson, 1940), and information from the map shown in Figure 4 has been extracted. The mine workings have been digitized and modelled in 3D as shown in Figure 5.

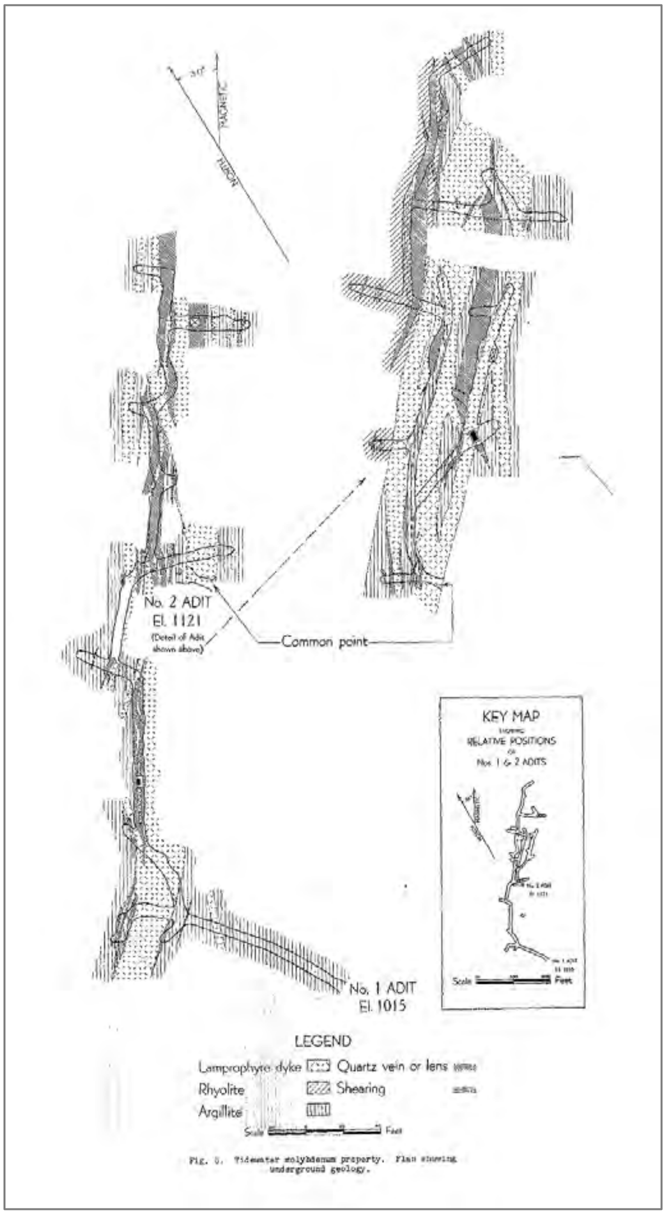

Figure 4: Tidewater mine workings and geology (Stevenson, 1940).

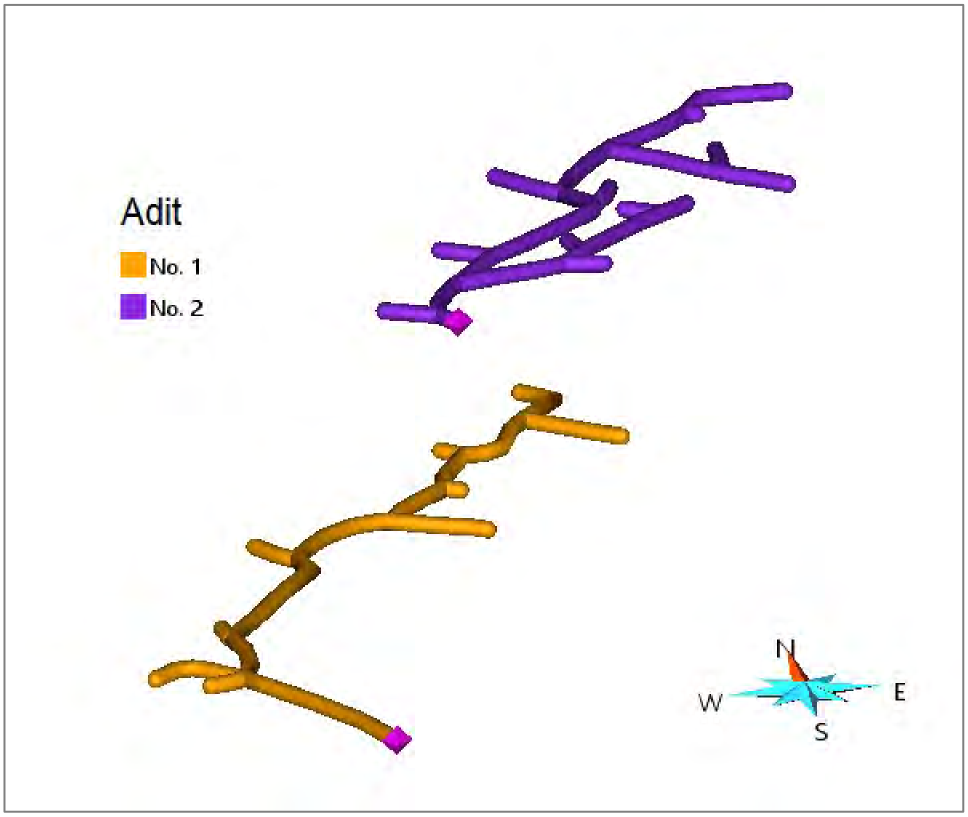

Figure 5: 3D view from the south of the Tidewater mine workings.

2.8. Rock Property Data

No rock property data has been compiled

2.9. Geophysical Data

The geophysical data consists of a HELIMAG tri-directional magnetic gradiometer survey; the Kitsault Project (Job #07053), carried out by Aeroquest Ltd. between October 27th and November 13th, 2006 (Pozza, 2007). The survey is divided into four blocks and only Area 1 block is used for the Tidewater modelling project. The Kitsault Project Area 1 survey parameters are detailed in Table 6. The system consists of a towed-bird which employs four optically pumped Cesium magnetometer sensors. Three sensors are configured in a tri-axial configuration at the rear of the bird and the fourth sensor is located in the nose of the bird to provide a longitudinal (horizontal) gradient measurement. The bird and sensor configuration are shown in Figure 6. The nominal bird terrain clearance is 50 m. The helicopter terrain clearance was recorded with a radar altimeter and the bird terrain clearance was computed from it using a constant aircraft-to-bird offset. The survey lines and gridded total magnetic intensity are shown in Figure 7.

Table 6. Kitsault Project Area 1 survey details.

Block Name	Line Spacing (m)	Line Direction (degree)	Survey Coverage (line-km)	Dates Flown
Area 1	100	90° (E-W)	1,823.5	October 28th – November 13th, 2006

The survey database has been compiled in 3D and the elevation of the magnetic gradiometer bird has been calculated as the sum of the CDEM elevation and the bird terrain clearance at each measurement location.

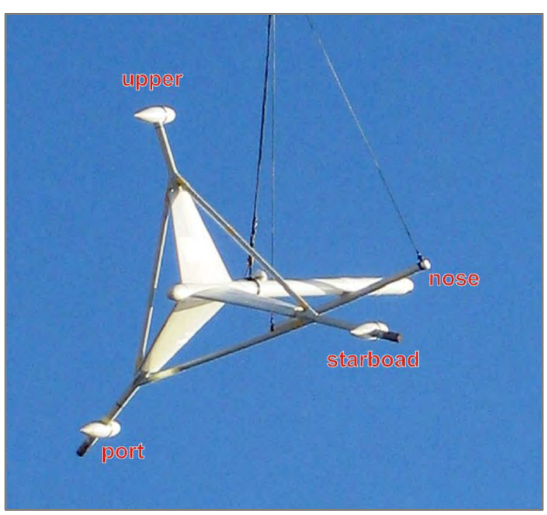

Figure 6: Aeroquest HELI-MAG magnetic gradiometer bird (Pozza, 2007)

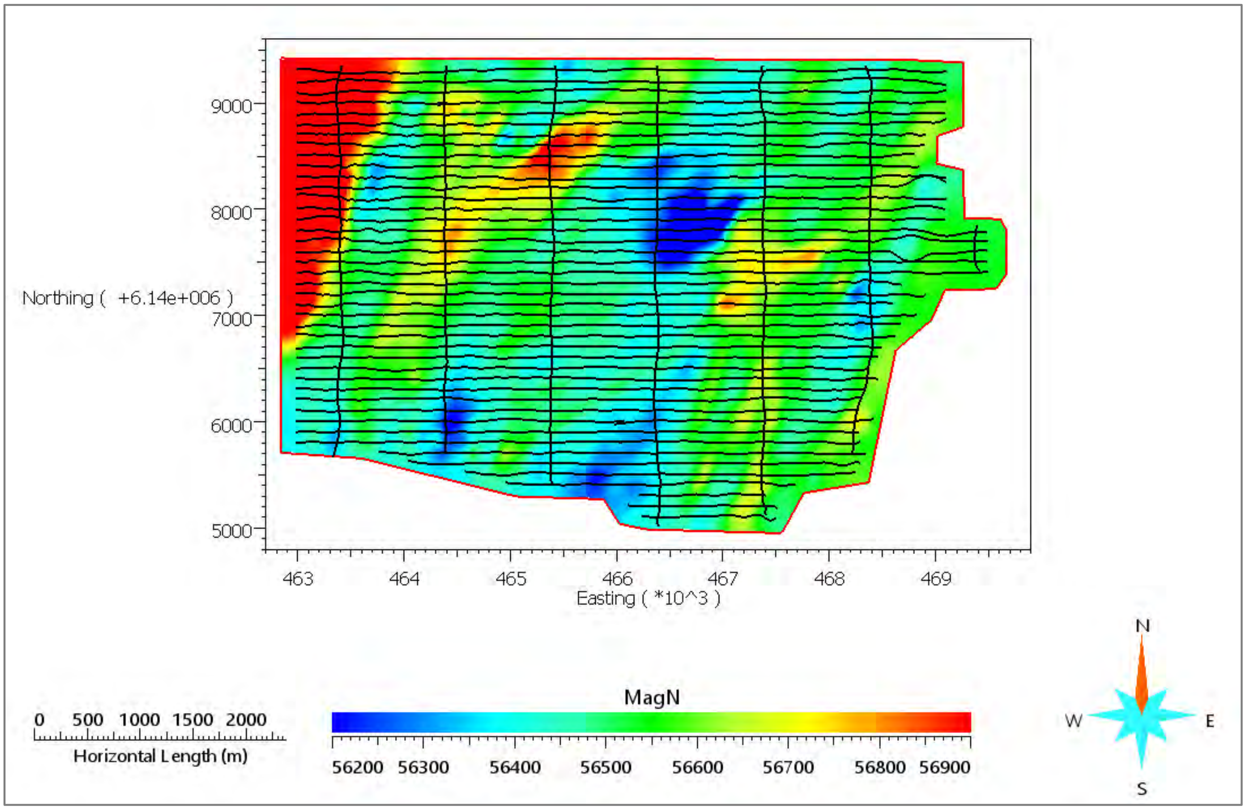

Figure 7: Kitsault Project magnetic gradiometer survey lines in black and gridded total magnetic intensity.

The ambient magnetic field parameters at the time of the survey shown in Table 7 have been estimated using the IGRF12 model.

The 200 m magnetic compilation from NRCAN has also been retrieved to provide regional context and is shown in Figure 8.

Table 7. IGRF parameters for Area 1.

Model	IGRF12	**Date**	November 11, 2006
Latitude	55.47330°	**Declination**	21.54°
Longitude	-129.54200°	**Inclination**	73.73°
Elevation	555m	**Total Intensity**	56,647.3nT

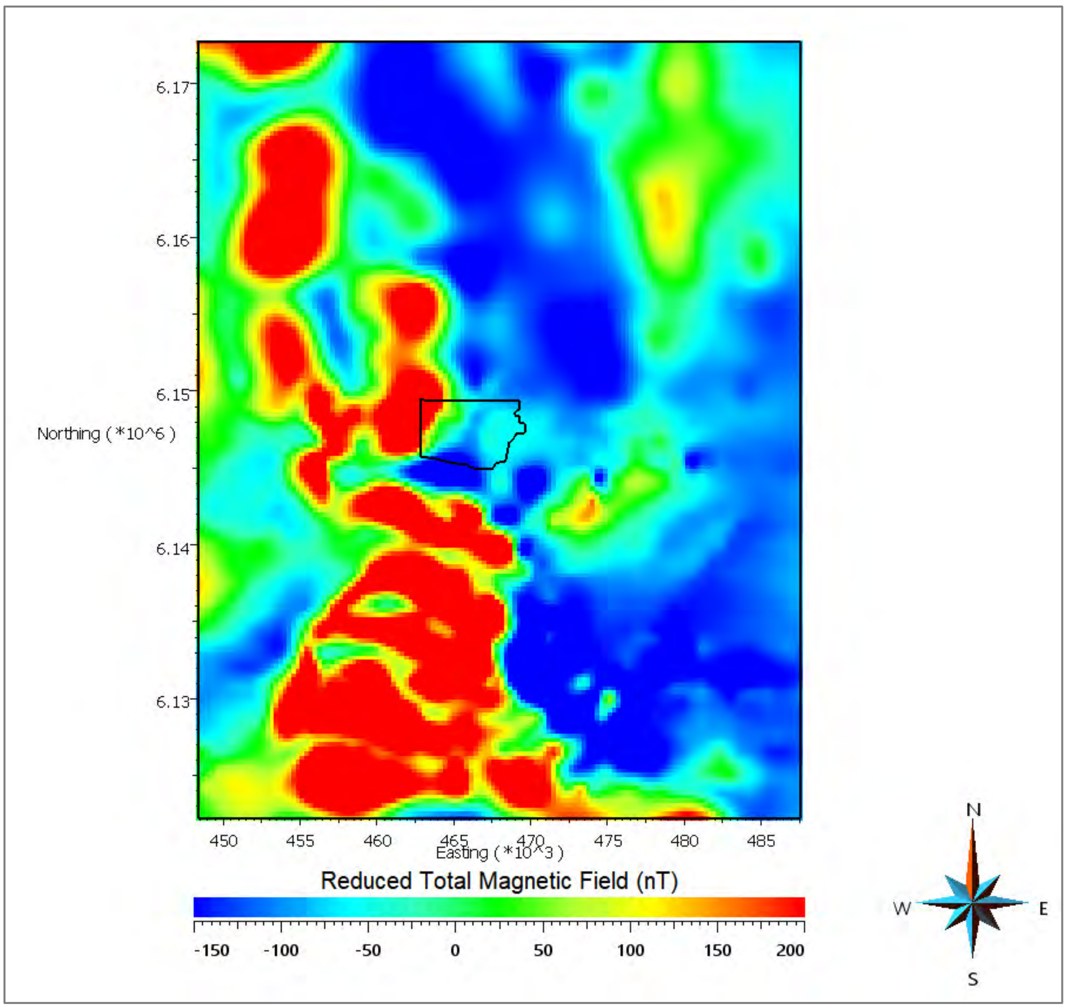

Figure 8: 200m magnetic compilation of reduced total magnetic field and Kitsault Project Area 1 survey outline shown with a black curve.

3. Geophysical Modelling and Interpretation

The Tidewater 2D and 3D modelling is done using the GOCAD Mining Suite and the VPmg software detailed in Appendix A.

3.1. 2D Magnetic Data Filtering and Interpretation

A series of filters have been applied to the gridded TMI data collected on the nose sensor of the bird and consists of:

- Reduction to the Pole (RTP) of TMI
- First Vertical Derivative (1VD) of RTP
- Total Horizontal Derivative (THD) of RTP
- Analytic Signal (AS) of RTP
- Tilt Derivative (Tilt) of RTP

These grids have been used for a lineament analysis aimed at identifying structures and geological contacts from the magnetic data. Lineaments have been manually digitized and attributed with a reliability index. The Tilt derivative of the RTP magnetic data is shown in Figure 9 and the interpreted lineaments with the associated azimuth rose diagram, and geological contacts are shown in Figure 10. The lineaments have been classified with a reliability index for which a high reliability consists of lineaments picked along obvious features (such as high Tilt anomalies), a moderate reliability for lineaments picked along anomaly breaks or edges, and low reliability for lineaments picked along subtle anomalies or edges. In the northwest corner, the contact between the Coast Plutonic Complex and Hazelton Group seems to be well defined and a possibly unmapped body is observed near the center of the southeast edge (see Figure 10).

Analysis of the orientation of the interpreted lineaments based on the azimuth rose diagram in Figure 10 and the azimuth histogram in Figure 11 shows that about 50% of the lineaments fall within two populations: [20°N; 40°N] accounts for 25.62% of the whole population, and [120°N; 140°N] accounts for 26.27% of the whole population.

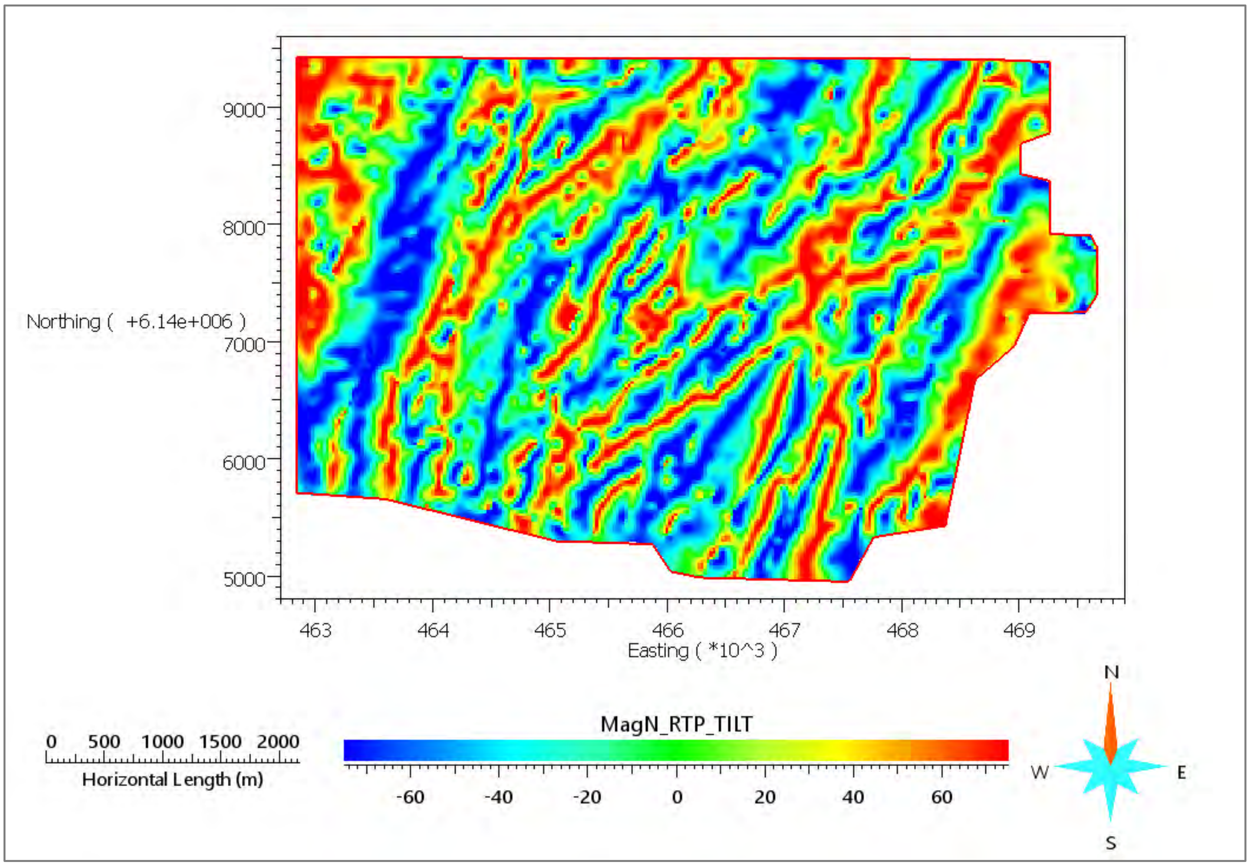

Figure 9: Tilt Derivative of RTP data.

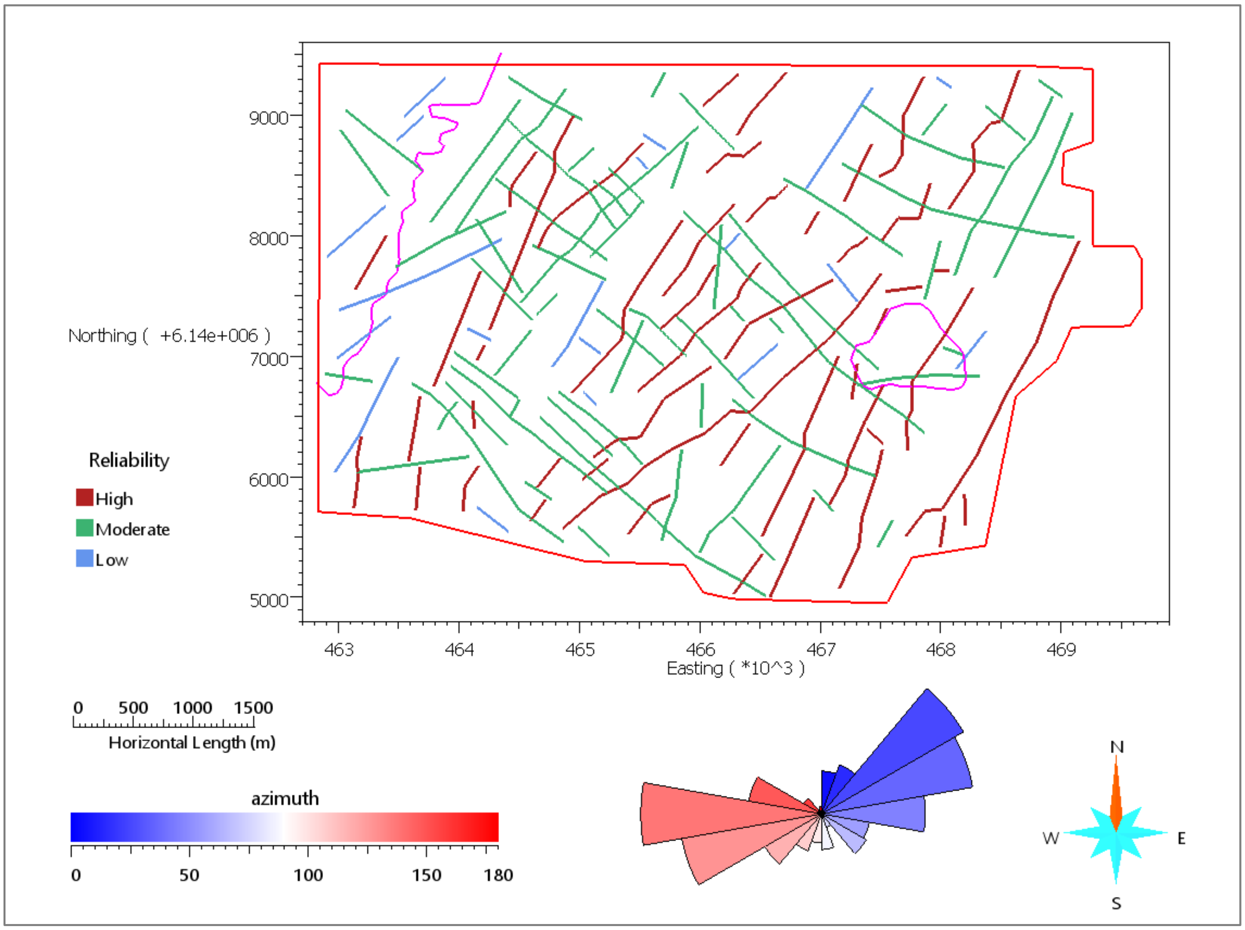

Figure 10: Interpreted magnetic lineaments with reliability index and associated azimuth rose diagram with interpreted geological contacts shown with purple lines.

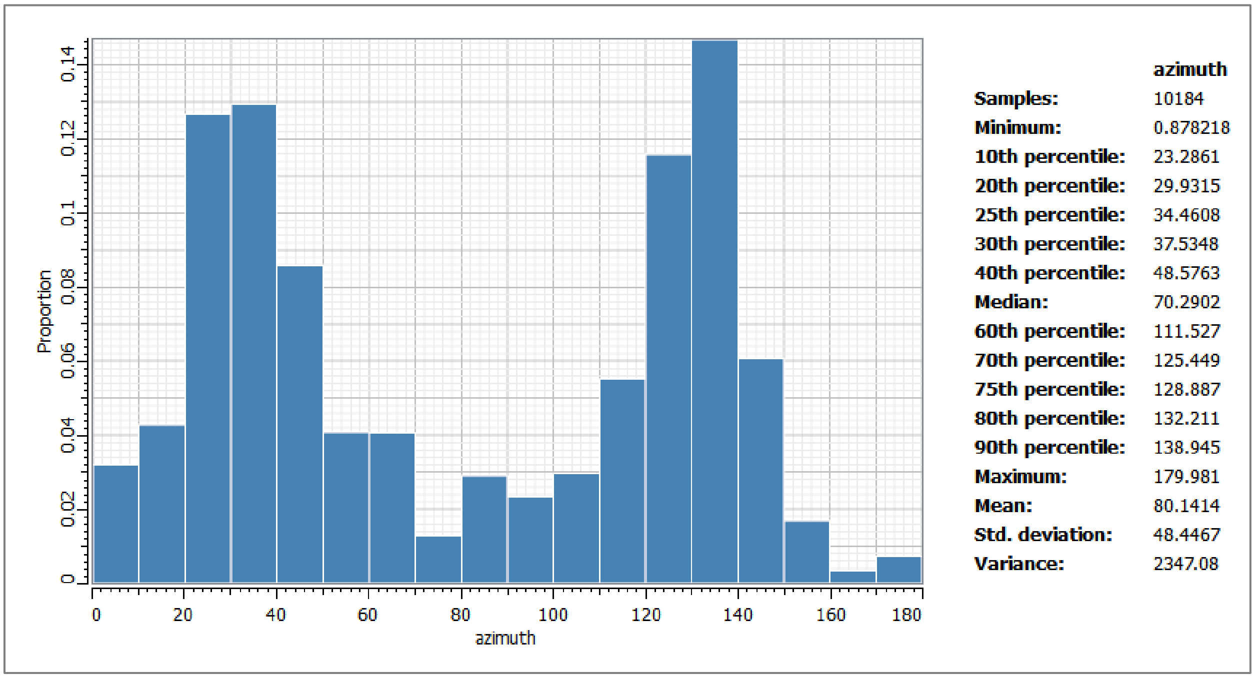

Figure 11: Interpreted magnetic lineaments azimuth histogram.

3.2. 3D Total Magnetic Intensity Modelling and Interpretation

The Kitsault Project Area 1 Total Magnetic Intensity (TMI) data from the nose sensor have been used in an unconstrained inversion to generate an underground 3D magnetic susceptibility distribution that best fits the data. Magnetic remanence and self-demagnetization effects are assumed to be negligible. The data uncertainty is set at 20 nT and the inversion was stopped having reached a 26.65 nT RMS misfit. The calculated, observed and residual data are shown in Figure 12.

The inversion had difficulties converging due to some magnetic low anomalies that exhibit characteristics of magnetically remanent bodies as the anomaly's poles are not aligned with the direction of the ambient magnetic field (21.54°N). These remanent anomalies are clearly observed in the residual data (Figure 12 C) with the low residual anomaly in the center and the two smaller low residuals along the southern edge of the survey. The assumption that remanent magnetization effects are negligible prevents the inversion from reasonably fitting the data and causes the creation of artefacts consisting of unrealistic zero magnetic susceptibility zones in the inverted model as shown in Figure 13. The magnetic susceptibility model nonetheless highlights interesting features away from the large zero magnetic susceptibility features that have just been described.

The northwest corner and southeast edge on either side of the group of low residuals shown in Figure 12 C are considered to be the most robust parts of the model. The northwest corner of the model seems to show the contact between the Coast Plutonic Complex and Hazelton Group, while a second deep anomaly is identified in the northeast survey area (Figure 14). The Tidewater stock is crossed by a shallow moderate magnetic susceptibility feature oriented ~22°N.

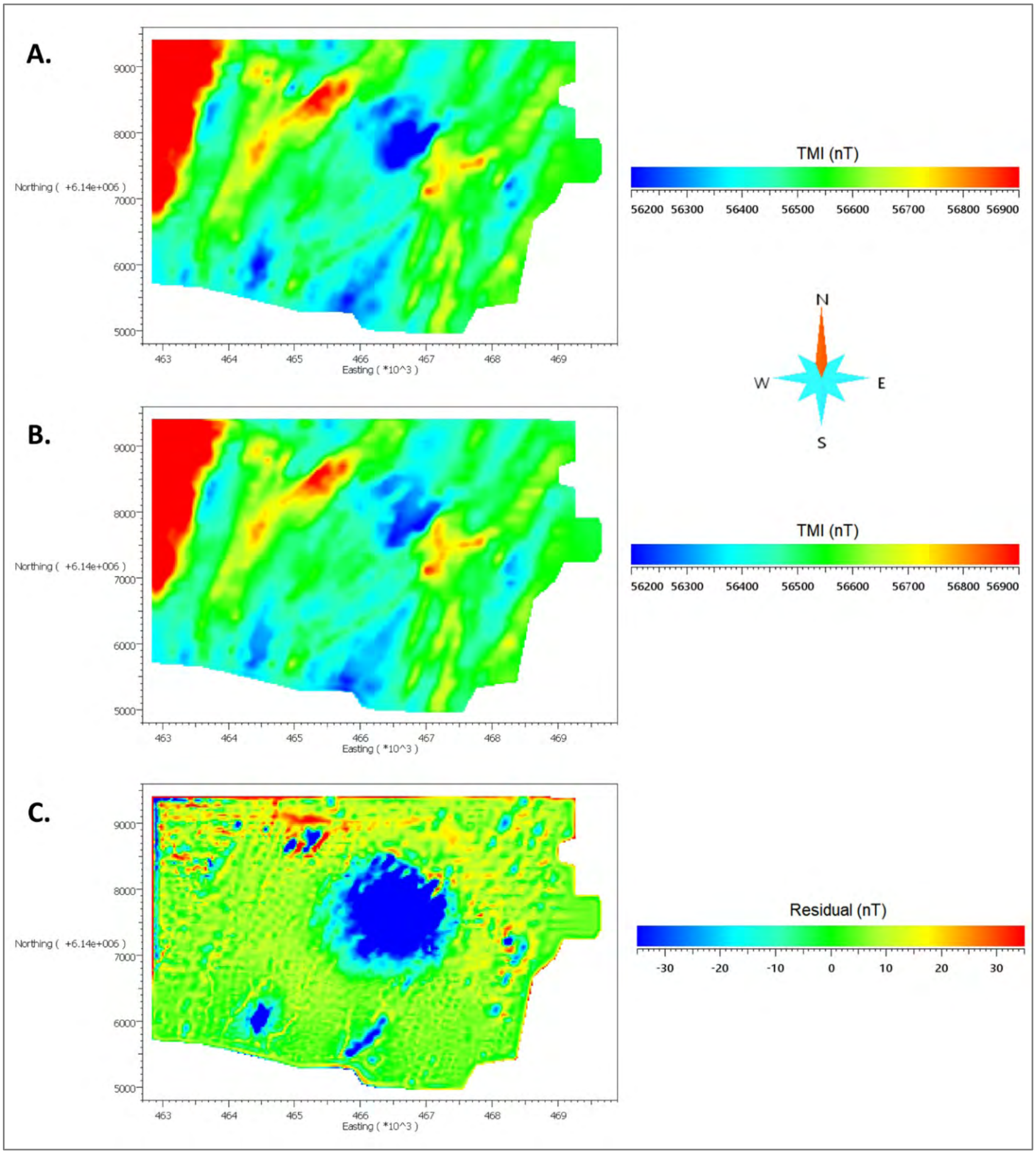

Figure 12: Observed (A), calculated (B) and residual (C) TMI data.

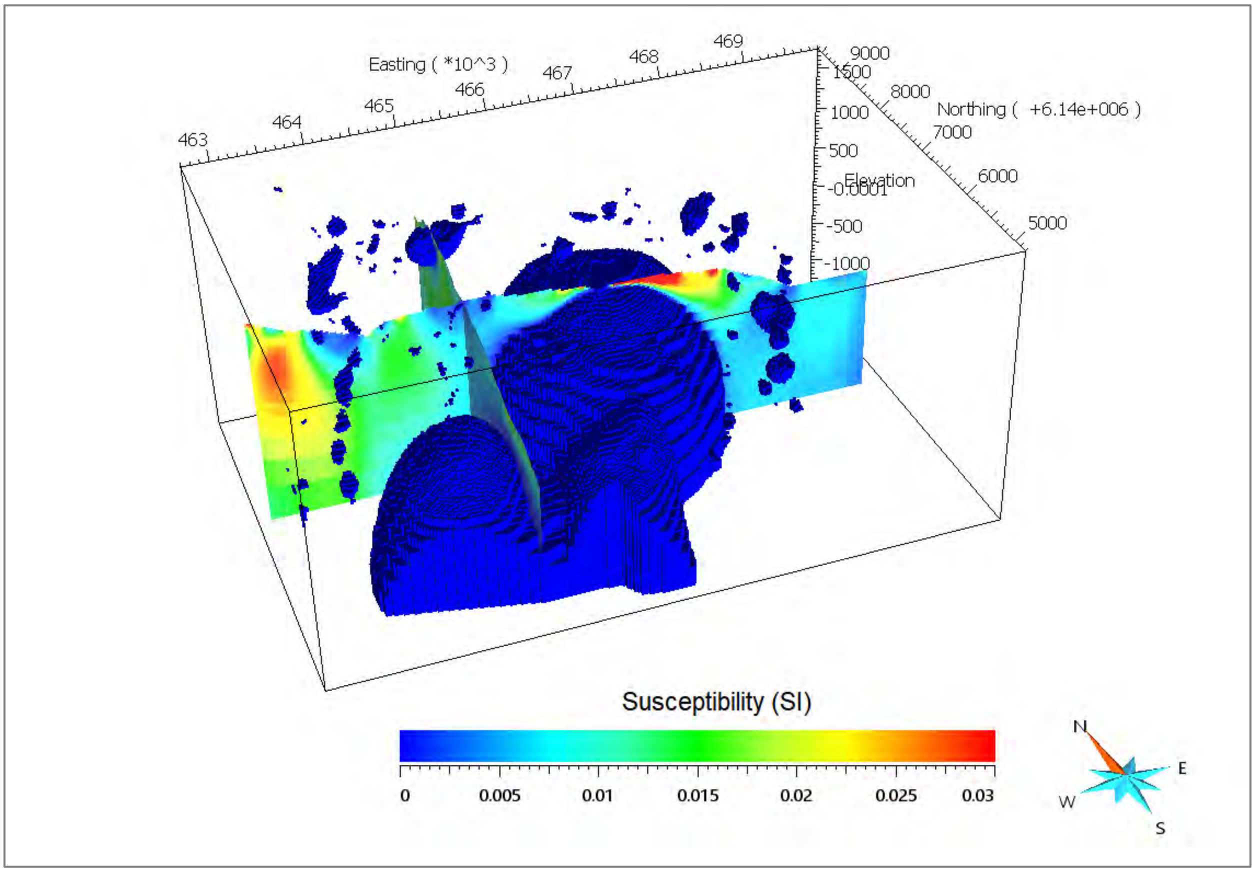

Figure 13: 3D view from the southwest of the inverted TMI model with zero magnetic susceptibility regions suggestive of zones affected by magnetic remanence modelling artefacts, E-W and N-S sections.

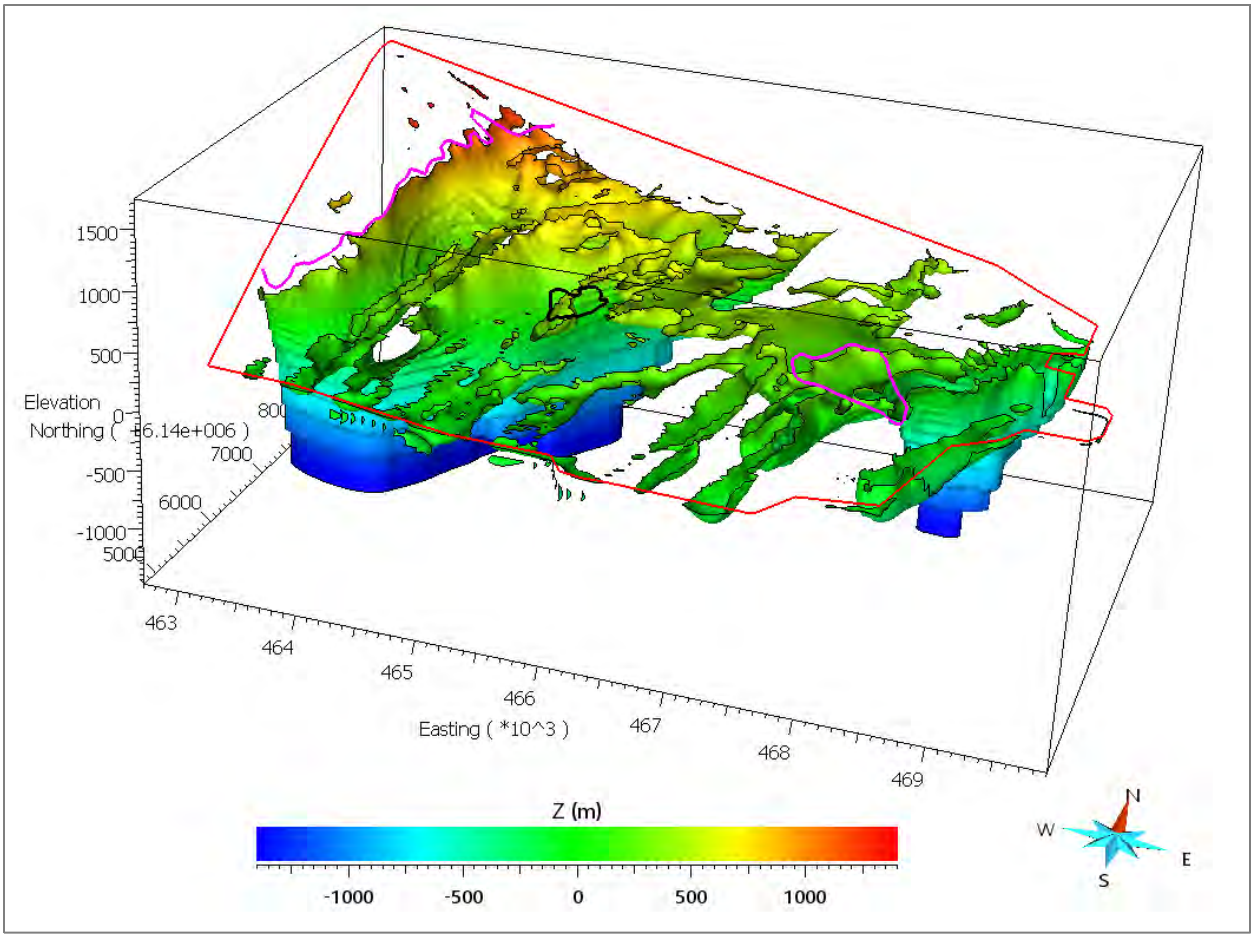

Figure 14: 3D view from the southeast of an isosurface at 0.01 SI extracted from the magnetic susceptibility model. The survey outline is shown with a red curve, the Tidewater stock with a thick black curve and the interpreted contacts with a fuchsia curve.

3.3. 3D Total Magnetic Gradient Modelling and Interpretation

The presence of magnetic remanence within the modelled area can be managed by inverting the Total Magnetic Gradient (TMG) or 3D analytic signal as it is independent of the remnant magnetization. Moreover, high quality TMG data are available as the differential gradients have been measured and not computed from the TMI data from a single sensor. The unconstrained TMG inversion generates an underground 3D magnetization distribution that best fits the data. To ease with interpretation, the inverted magnetization is converted to effective magnetic susceptibility using the relationship (1) below.

$$m = k_{eff} H_0 \qquad (1)$$

Where:

m: amplitude of the magnetization

k_{eff} : effective magnetic susceptibility

H_0 amplitude of the ambient magnetic field

The resulting model differs from a TMI inversion result because inverted features have a tendency of remaining shallow and the model generally highlights structures rather than contacts. The data uncertainty is set at 0.07 nT/m and the inversion stalled having reached a 0.13 nT/m RMS misfit that is judged satisfactory. The calculated, observed and residual data are shown in Figure 15, and slices through the effective magnetic susceptibility model are shown in Figure 16.

Analysis of the residual data in Figure 15 C shows that most of the extreme residual signal is left over the Coast Plutonic Complex and its contact area with the Hazelton Group but also along a WNW to ESE trend crossing the main remanent anomaly.

The effective magnetic susceptibility model highlights a series of NNW to SSE features within the Coast Plutonic Complex seen in Figure 17 that are not seen in the previous magnetic susceptibility model (see Figure 14). Structures bordering the Tidewater stock and the potentially unmapped body are also highlighted by this model as shown in Figure 17.

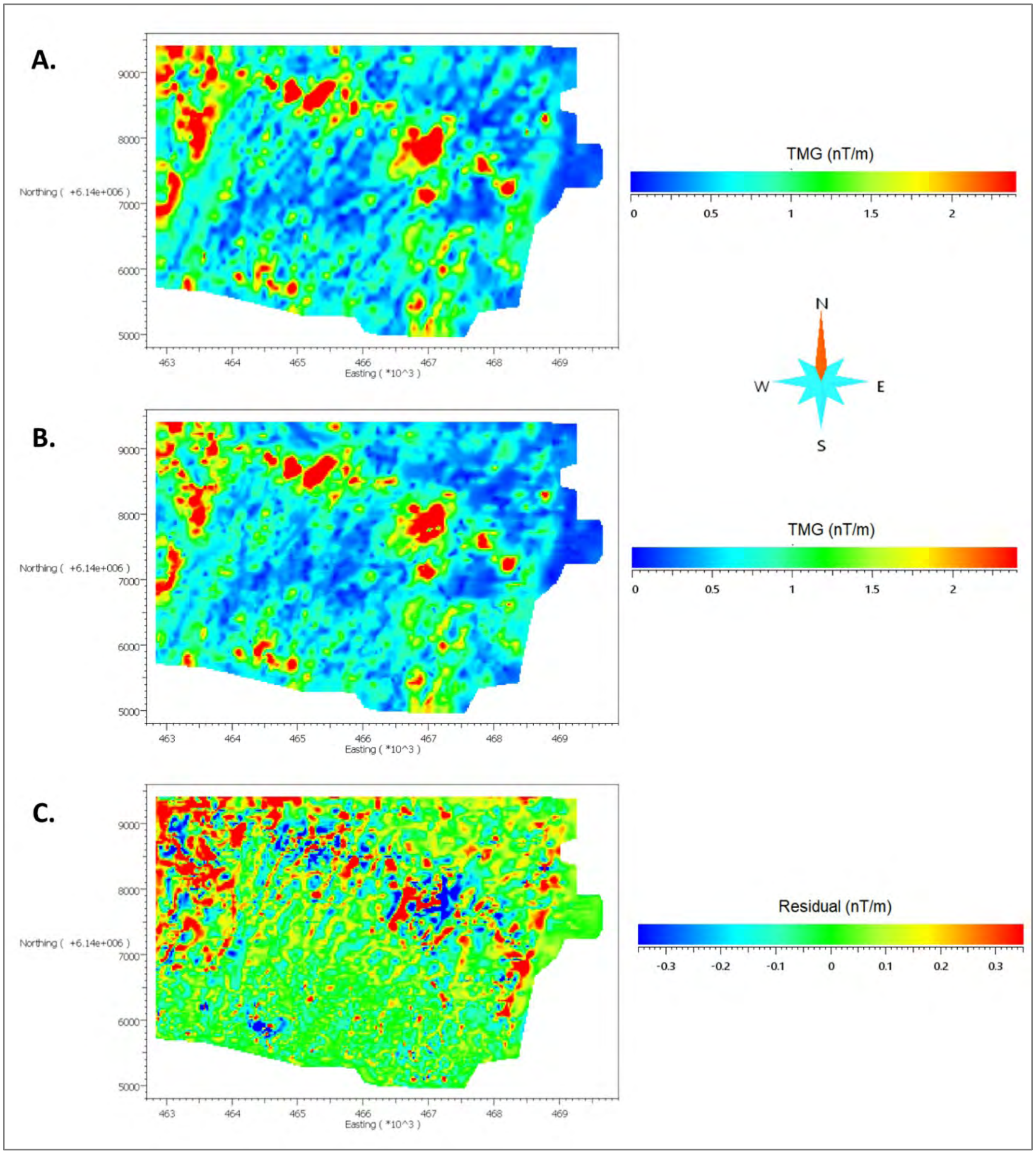

Figure 15: Observed (A), calculated (B) and residual (C) TMG data.

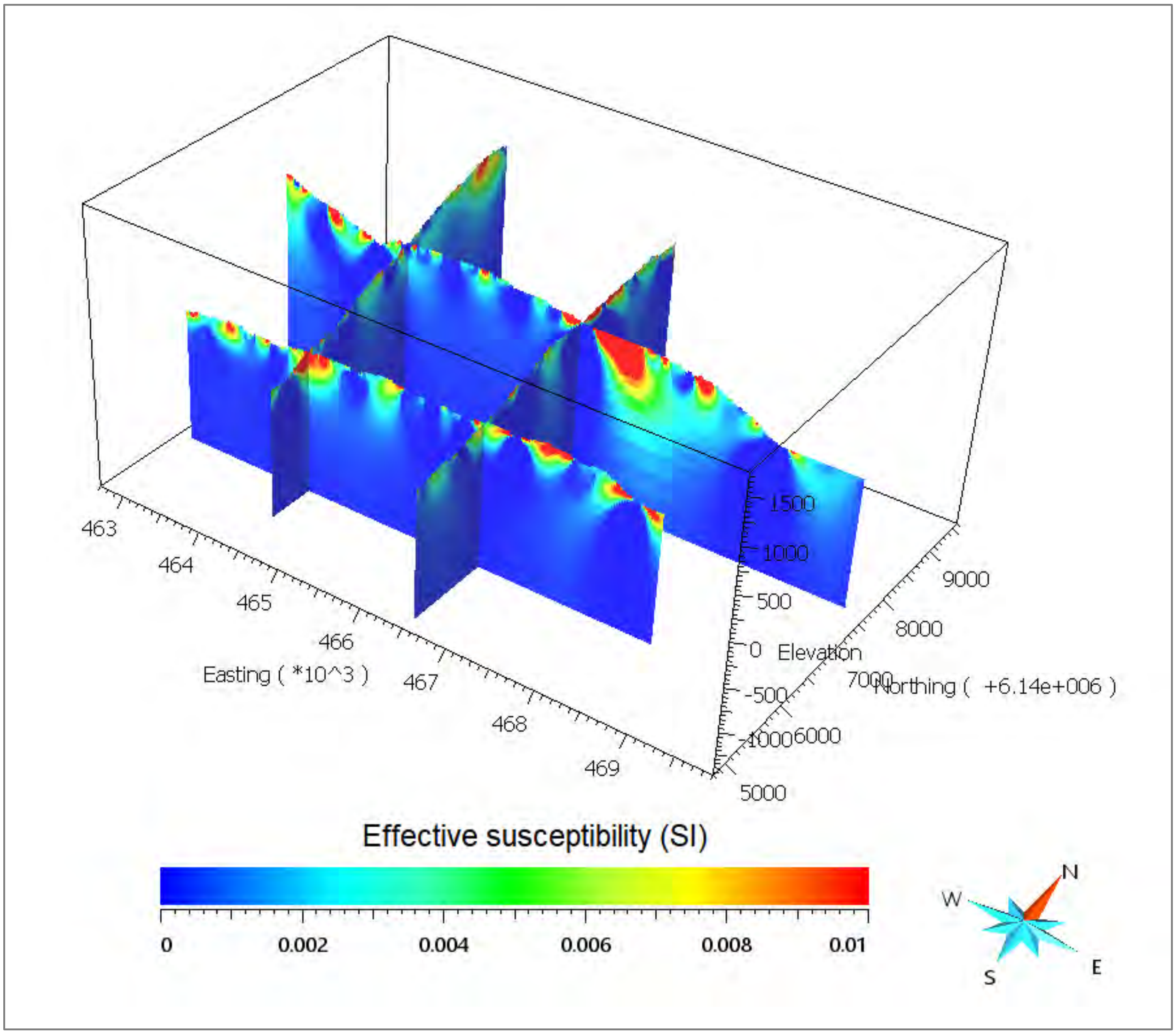

Figure 16: 3D view from the southeast of the inverted TMG model with E-W and N-S sections.

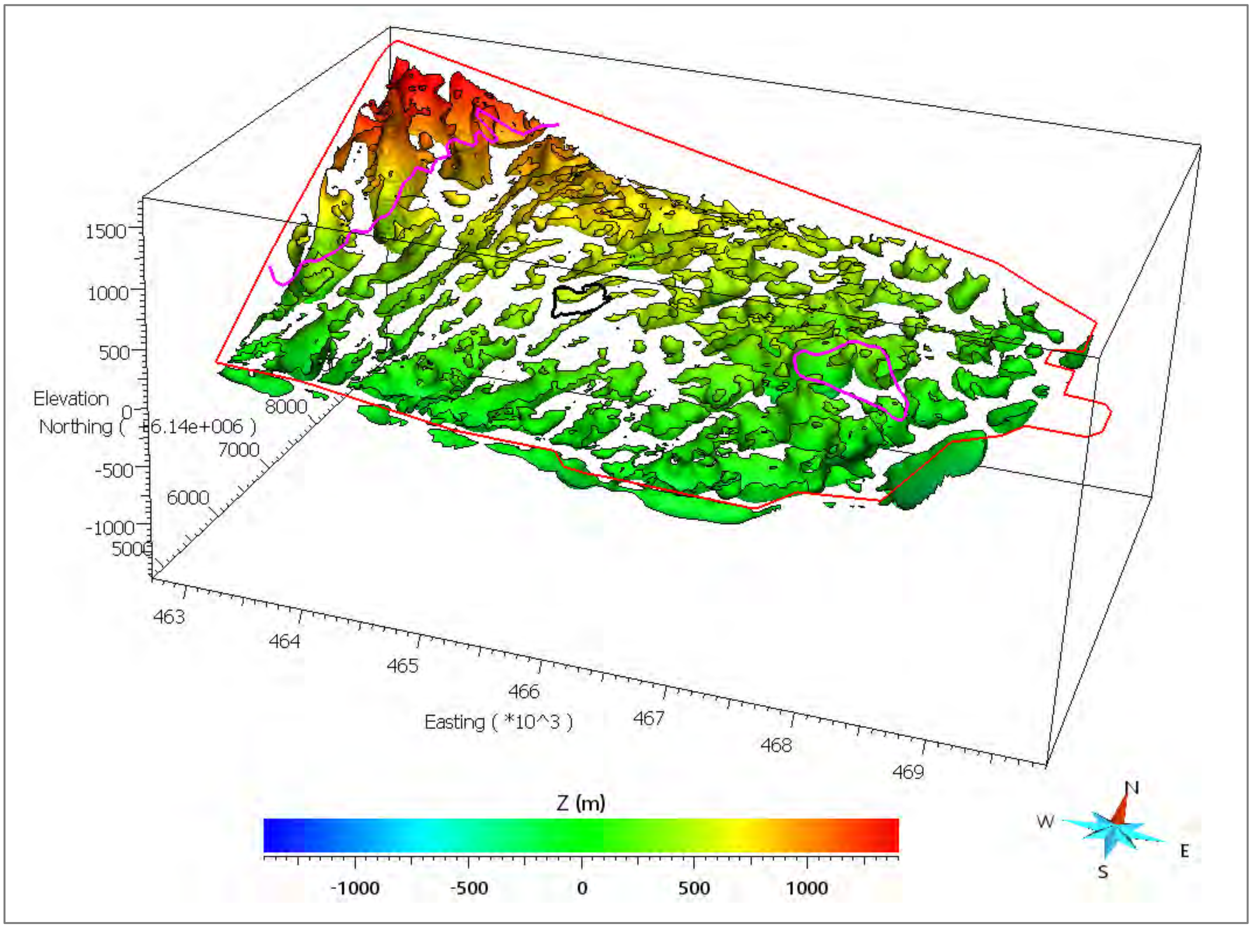

Figure 17: 3D view from the southeast of an isosurface at 0.004 SI extracted from the effective magnetic susceptibility model. The survey outline is shown with a red curve, the Tidewater stock with a thick black curve and the interpreted contacts with a fuchsia curve.

4. Geological Interpretation

The Tidewater magnetic data and 3D magnetic inversion results are analyzed in light of known geology and mineral occurrences in the area to identify geological features and structures of possible exploration interest on the property.

4.1. Magnetic Data Interpretation

Lineament analysis (methodology described in 3.1 2D Magnetic Data Filtering and Interpretation) provides a detailed interpretation of structure representing bedding, faults, and dykes that have caused a response in the magnetic data. This analysis highlights primarily northeasterly and northwesterly structural trends. A northeast trend is consistent with known vein trends at the Tidewater deposit. It is noted in previous reports (Carter, 1981) that molybdenum deposits in this area often occur at the intersection of northeast and northwest trending faults. Structural intersections can be identified in the lineament analysis and these interpretations could be followed up in the field, or overlain with other available geological and geochemical data to determine prospectivity. The main north-northwest structures that cross-cut the predominant northeast stratigraphy are shown in Figure 18.

The magnetic data also reveals some interesting larger scale structures on the property. A chain of apparently remanently magnetized features tracks southeast across the Tidewater property, and can continue to be traced in the magnetic data southward toward the past-producing Mohawk deposit (Figure 18). The individual remanently magnetized bodies along this trend are generally oriented northeast-southwest following the primary structural orientation in the area. These could possibly represent buried or unmapped intrusive bodies of a similar age or composition, or more likely may represent Quaternary basalt flows, similar to those known to occur about 8 km east of the Tidewater property overlying Bowser Lake Group sedimentary rocks. Bulletin #64 of the Ministry of Energy, Mines and Petroleum Resources (Carter, 1981) alludes to spatial relationships between recent volcanic flows and molybdenum deposits in this part of British Columbia. The interpretation is that these recent flows mark older structures which may have been previously exploited by intrusive rocks and mineralizing fluids. Adjacent to some of these remanently magnetic features there are somewhat rounded, magnetically 'quiet' features, which could represent intrusive bodies (Figure 18). A similar rounded, weakly magnetic feature correlates with the historic Kitsault deposit. Conducting further exploration in the vicinity of both these remanently magnetized and rounded magnetically 'quiet' zones is recommended.

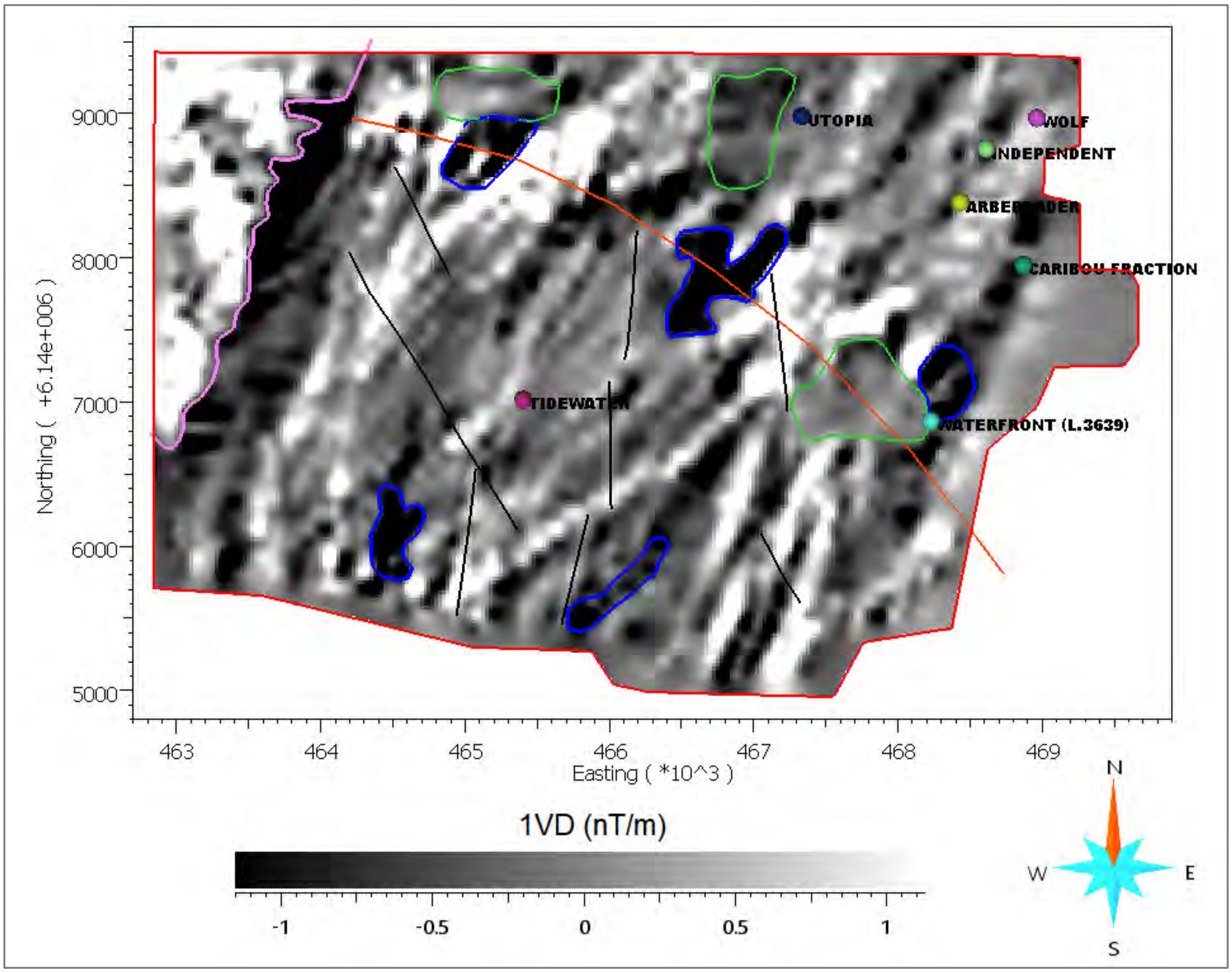

Figure 18: First vertical derivative of the RTP nose sensor magnetic data with MINFILE occurrences with interpreted features. The survey outline is shown with a red curve, the Coast Plutonic Complex contact with a pink curve, the remanently magnetized zones with blue curves, the remanently magnetized trend with orange curves, the magnetically quiet zones with green curves, and the main north-northwest structures with black curves.

4.1. Magnetic Inversion Interpretation

Due to magnetic remanence clearly affecting the magnetic data, two magnetic inversions have been completed. The first inversion is an unconstrained magnetic inversion, the second an unconstrained total magnetic gradient inversion of the total magnetic gradient

(3D analytic signal) data. These two inversions highlight different features. The unconstrained magnetic inversion of TMI data yields a model of the distribution of magnetic susceptibility within the ground, which can be linked to low or high magnetic susceptibility geological units. The unconstrained magnetic gradient inversion of TMG (3D analytic signal) data yields a model of magnetization expressed as effective magnetic susceptibility to ease with interpretation. This model better highlights structures and magnetic sources with a tendency of focusing on near surface features. This should be kept in mind when interpreting the two different inversion results and is highlighted by Figure 19 with the effective magnetic susceptibility isosurfaces (TMG inversion) showing more details where a large zero magnetic susceptibility anomaly (TMI inversion) is seen on the inverted model horizontal slice.

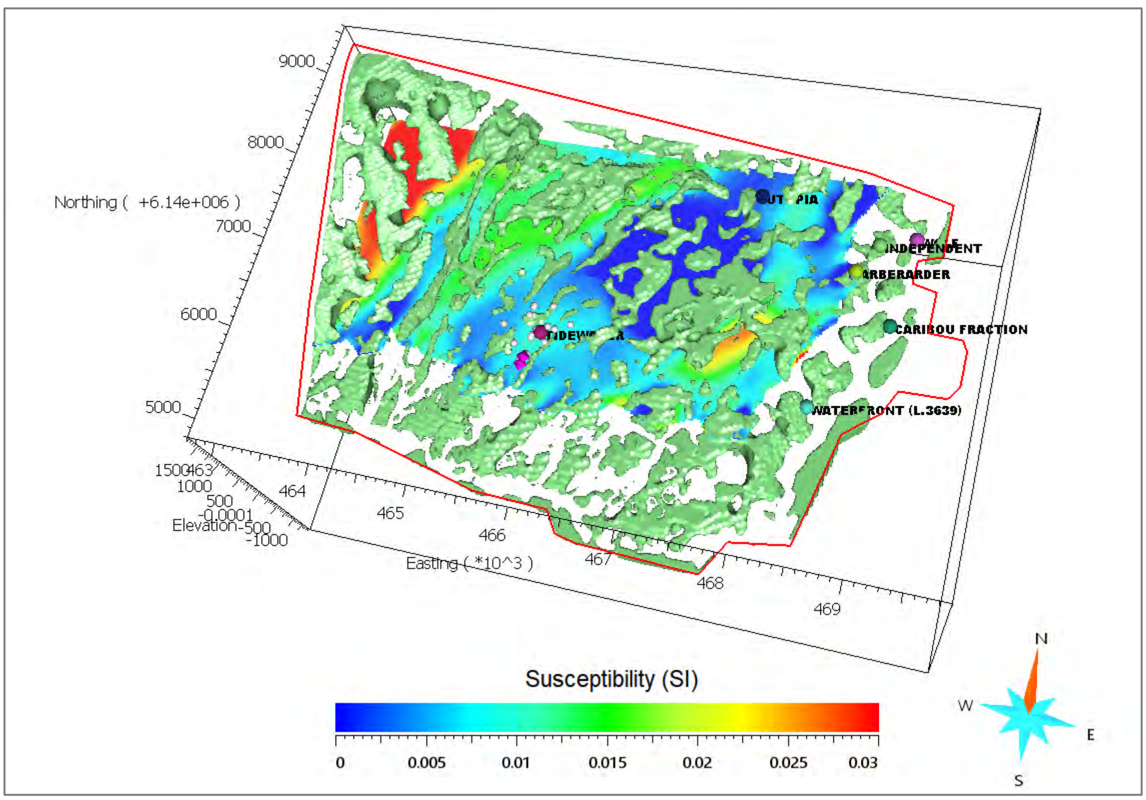

Figure 19: Horizontal slice through the magnetic susceptibility model at 262 m of elevation and isosurface from the effective magnetic susceptibility model at 0.004 SI. The survey outline is shown as a red curve and the MINFILE occurrences as spheres.

The unconstrained inversion shows a deep magnetically susceptible source in the west correlating with the Coast Plutonic Complex (Figure 20). The central model area is dominated by low magnetic susceptibility material consistent with the presence of Hazelton sedimentary rocks. Shallow high magnetic susceptibility anomalies within this central domain may represent pyrrhotite rich sedimentary stratigraphy according to the ARIS report #8589 (McCarter, 1980). Another deep magnetically susceptible body is modelled in the northeast part of the property underlying the Wolf, Independent, and Arberarder mineral occurrences. This high magnetic susceptibility body trends northeast and may represent a deep magnetic intrusive body. This magnetic body can also be seen in regional aeromagnetic data in Figure 21 around the Waterfront (L.3639) MINFILE occurrence.

Inversion of the 3D magnetic analytic signal overcomes the effect of magnetic remanence by modelling magnetization contrast expressed as effective magnetic susceptibility versus modelling magnetic susceptibility directly. Where it was previously not possible to extract any information from within and around the volume affected by magnetic remanence using straightforward magnetic inversion, by inverting the analytic signal data it is possible to identify the boundaries of these zones and some detail within them (Figure 19). The magnetic gradient inversion primarily highlights near-surface geology and structure. The cause of the magnetic contrasts may be the varying amounts of pyrrhotite in sedimentary rocks, the varying magnetite content in intrusive rocks, or zones of magnetic mineral destruction caused by fluid flow along faults or geological contacts. Relationships between magnetic data and geology can be further investigated or confirmed by comparing historical drilling results to inversion models. Rock samples may also be tested for magnetic susceptibility using hand held magnetic susceptibility meters.

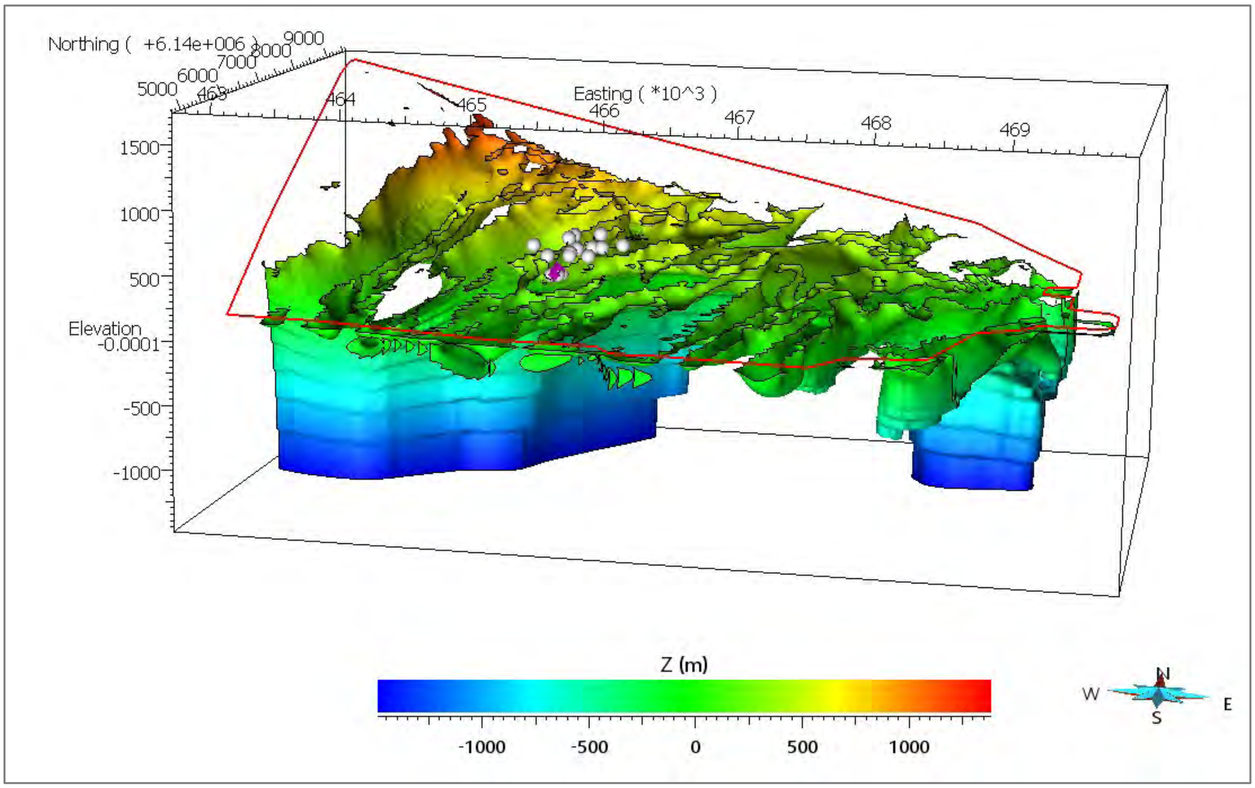

Figure 20: 3D view from the southeast of the isosurface at 0.08 SI from the magnetic susceptibility model with the drill hole collars shown as white spheres, the mine adits as fuchsia diamonds and the survey outline as a red curve.

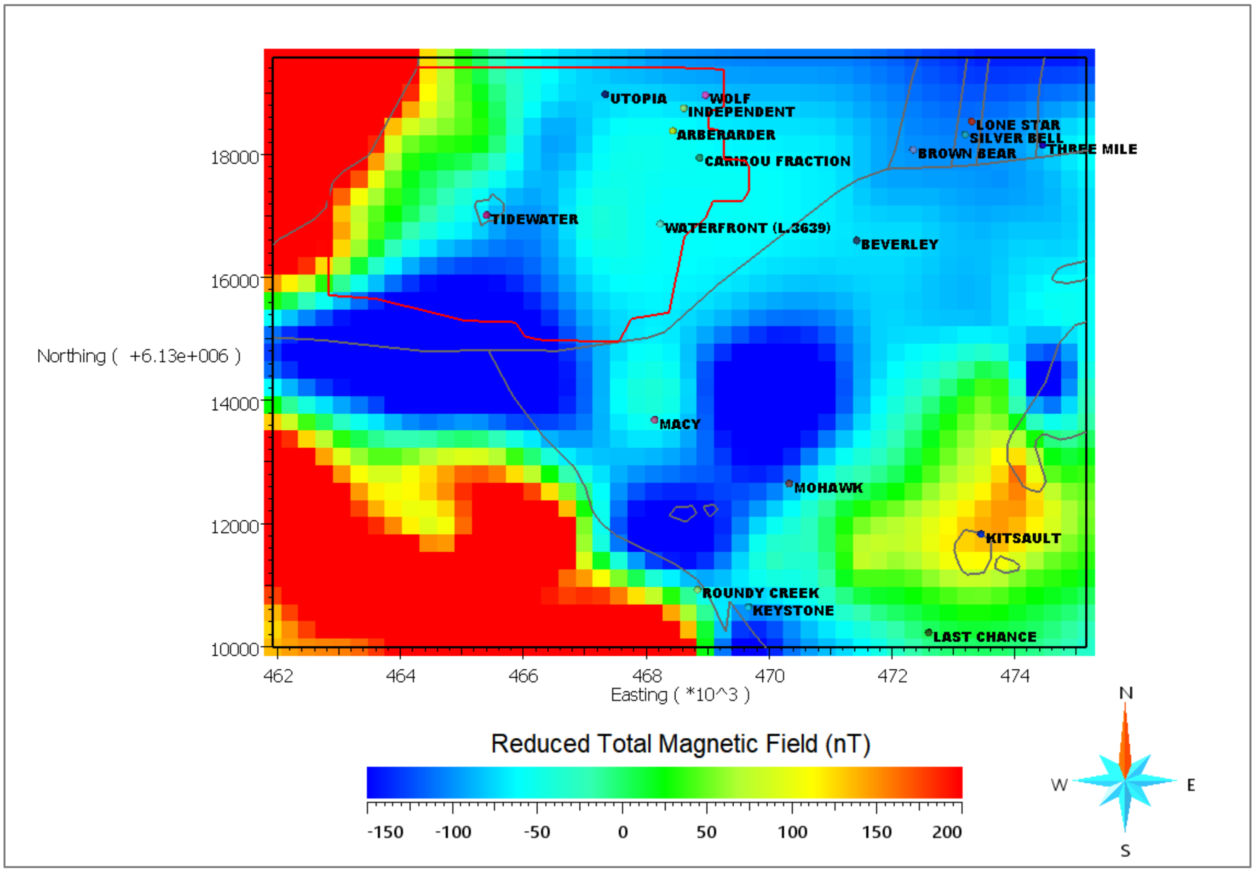

Figure 21: Reduced Total Field from the NRCAN 200 m magnetic compilation and MINFILE occurrences. A moderate magnetic anomaly underlies the Waterfront and Arberarder occurrences and may correlate with the deeper magnetic susceptibility anomaly modelled in the northeast project area.

5. Conclusions

The Tidewater project consists of three-dimensional (3D) compilation, integration, modelling, and interpretation of geoscientific data.

Several data streams are compiled and include public records (ARIS, Property Files, Ministry of Energy, Mines & Petroleum Resources publications), geographic datasets (CDEM, Toporama, CanVec), geological data (BC Digital Geology), and geophysical data (Aeroquest Kitsault Project, NRCAN magnetic compilation). These efforts provide valuable geological context and information to support the subsequent geophysical modelling and interpretation.

The first pass geophysical modelling helps in identifying structures and contacts to better the geological understanding of the area. Interpreted structures highlight some specific trends that correspond with and cross-cut the general stratigraphic trend. Potentially unmapped lithologies are also identified based on remanently magnetized anomalies and magnetically 'quiet' zones highlighted by interpreted structures.

The second stage of the geophysical modelling focuses on unconstrained inversions of the TMI and TMG (or 3D analytic signal) data. The unconstrained inversion of the TMI data produces a magnetic susceptibility model that helps in better identifying geological units such as the Coast Plutonic Complex and a deep magnetically susceptible body in the northeast underlying the Wolf, Independent, and Arberarder MINFILE occurrences. Unfortunately, this model is affected by remanently magnetized lithologies creating unrealistic low magnetic susceptibility features relegating interpretation to areas of the model away from these features. The unconstrained inversion of the TMG data is not affected by the magnetic remanence and produces an effective magnetic susceptibility model that focuses on shallow magnetic sources and structures. Observed magnetic susceptibility contrasts and anomalies may be related to the varying amounts of pyrrhotite in sedimentary rocks, the varying magnetite content in intrusive rocks, or zones of magnetic mineral destruction caused by fluid flow along faults or geological contacts.

6. Recommendations

Relationships between magnetic data and geology can be further investigated or confirmed by comparing historical drilling results to inversion models. Rock samples may also be tested for magnetic susceptibility using hand held magnetic susceptibility meters. Exploration efforts should focus in the vicinity of identified remanently magnetized features and adjacent rounded magnetically 'quiet' zones to further understand the geology and structures in place and could consist of:

- investigating on the ground identified structural intersections from the lineament analysis
- a geochemical survey to identify potential geochemical signatures, and
- a DCIP survey to potentially identify pyrite halos that commonly occur in association with molybdenum deposits,

implemented on a survey grid covering the extents of the mapped remanent and magnetically 'quiet' features.

A regional interpretation of the complete Kitsault Project magnetic dataset (Areas1, 2 & 4) in light of the findings of this report could help in better understanding the Alice Arm district geology and structure, and could lead to identification of new prospects.

7. List of Deliverables

Filename	Description	Format
4649_Tidewater_Magnetic_Modelling.pdf	Report	PDF
Maps		
Tidewater_MagRTP.tif	Reduced to the Pole TMI data	GeoTiff
Tidewater_MagRTP_1VD.tif	First Vertical Derivative of RTP data	GeoTiff
Tidewater_MagRTP_AS.tif	Analytic Signal of RTP data	GeoTiff
Tidewater_MagRTP_THD.tif	Total Horizontal Derivative of RTP data	GeoTiff
Tidewater_MagRTP_Tilt.tif	Tilt Derivative of RTP data	GeoTiff
Tidewater_MagSurvey.tif	Magnetic survey lines location	GeoTiff
Tidewater_Mag_Lineaments.tif	Magnetic lineaments interpretation	GeoTiff
Tidewater_Mag_TMI_Inv_75m_depth.tif	Magnetic susceptibility model 75m depth slice	GeoTiff
Tidewater_Mag_TMG_Inv_75m_depth.tif	Effective magnetic susceptibility model 75m depth slice	GeoTiff
Tidewater_Interpretation.tif	General interpretation	GeoTiff
Vector data		
Tidewater_Vector_data	Vector data used in GeoTiff maps	DXF Shapefile CSV
Grids		
TW__MagN_*ddd*.grd	Where *ddd* is RTP, RTP_1VD, RTP_AS, RTP_HDT, RTP_HDX, RTP_HDY, RTP_Tilt	Geosoft
TW__TMI_HTinv_sus_d*nnnn*m.grd	Where nnnn is the depth of the magnetic susceptibility model slice	Geosoft
TW__TMI_HTinv_sus_data_TMI*ttt*.grd	Where *ttt* is cal, obs and resid for calculated,	Geosoft

	observed and residual data	
TW__TMG_HTinv_sus_d*nnnn*m.grd	Where nnnn is the depth of the effective magnetic susceptibility model slice	Geosoft
TW__TMG_HTinv_sus_data_MTG*ttt*.grd	Where *ttt* is cal, obs and resid for calculated, observed and residual TMG data	Geosoft
Inverted models		
TW__UBC_magTMI_inv	Mesh, model and data files for the TMI inversion	UBC-GIF
TW__UBC_magTMG_inv	Mesh, model and data files for the TMG inversion	UBC-GIF
3D Compilations		
TideWater_Compilation_Mag_Modelling.sprj	3D compilation project	SKUA-GOCAD
TideWater_Compilation_Mag_Modelling.geoh5	3D compilation project	Geoscience ANALYST

8. Statement of Qualifications

To accompany the report titled: 3D Data Compilation and Magnetic Modelling, Tidewater Project, BC, dated effective September 14, 2017 (the Technical Report).

I, Thomas Campagne, M.Sc., P. Geo., residing in Vancouver, British Columbia, Canada, do hereby certify that:

1) I am a Consultant for Mira Geoscience Limited, with an office at Suite 512B, 409 Granville Street, Vancouver, British Columbia, V6C 1T2 Canada;
2) I graduated with a bachelor's degree in Earth, Universe and Environmental Sciences from the University of Strasbourg, France in 2006. I received a Master's degree in Geophysics from the School and Observatory of Earth Sciences (EOST), Strasbourg, France in 2008. I have practiced my profession continuously since 2008. I have nine years of experience working as a geophysicist in the natural resource industry exploring for mineral resources.
3) I am a Professional Geoscientist registered with Engineers and Geoscientists BC (EGBC), registration number 42956. EGBC has a defined and enforceable Code of Ethics which Thomas Campagne agrees to abide by.
4) I have personally reviewed the Technical Report and approve of its contents.
5) I am independent of Granby Gold Inc. holding no shares or other beneficial interest.
6) As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to ensure the Technical Report is not misleading.

Vancouver, B.C. Canada

(Signed and Sealed) "Thomas Campagne"

September 14, 2017

Thomas Campagne, M.Sc., P. Geo.
Consultant
Mira Geoscience Limited

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Stevenson, J. S., 1940. Bulletin #9, Molybdenum Deposits British Columbia, British Columbia Department of Mines

Appendix A: VPmg software

1. Overview

VPmg is a gravity, gravity gradient, magnetic, and magnetic gradient 3D modelling and inversion program developed by Fullagar Geophysics Pty Ltd (Fullagar et al, 2000; 2004; Fullagar & Pears, 2007; Fullagar et al, 2008).

In VPmg, the models are geological (categorical) insofar as each volume of the subsurface is assigned to a rock unit. The shape and property (density or susceptibility) of each unit can change during inversion, but its geological (or topological) identity is preserved. Geological contacts can be fixed (where pierced by a drill hole for example), bounded, or free to move during inversion. Bounds can be imposed on each unit's properties, and density or susceptibility measurements (on drill core samples or from downhole logs) are honoured during property inversion.

VPmg represents the sub-surface as a set of tightly-packed vertical rectangular prisms, which in plan view appear as a regular mesh or grid. Prism tops honour surface topography, and in its simplest form, internal contacts representing geological boundaries divide each prism into (usually elongated) cells. The vertical dimension of cells is arbitrary, implying that the vertical position of the geological boundaries is not "quantised" by vertical discretization. The internal contacts represent geological boundaries that collectively define the shape of geological units. The geological units can either be homogeneous, i.e. uniform in density or susceptibility, or fully heterogeneous. When considering property inversion, a geological unit can be discretized in different ways. In the first instance, the property of each vertical prism segment of a geological unit can be allowed to vary independently, thereby introducing a lateral property variation within the unit. Full 3D property variation is achieved by introducing vertical sub-celling within the selected units.

VPmg offers considerable flexibility during interpretation. The model complexity ranges from conventional (uniform density) terrain models, to discrete bodies in a uniform background, to layered stratigraphy on basement, to complex 3D models. Regional effects can be handled by constructing a regional model, based on a relatively large rectangular mesh. The regional model is in turn embedded in a uniform half-space. A local model, comprised of smaller prisms, can be embedded in a regional model. The local model parameters can be adjusted by inversion until the gravity, gravity gradient, TMI, or magnetic gradient data within the local model area are satisfied.

VPmg offers a variety of inversion styles: homogeneous unit property, contact geometry, and heterogeneous property. During property inversion, model contacts (geometry) are fixed. During contact geometry inversion, geological boundaries are altered while physical properties remain fixed. The user is able to easily switch from one inversion style to another.

GOCAD Mining Suite utilities developed by Mira Geoscience facilitate communication of model and data information to and from VPmg, and expedite assignment of drill hole constraints.

2. Model parameterization and inversion styles

In VPmg, the Earth is represented as a close packing of vertical prisms, each of which is divided into cells by horizontal boundaries that coincide with geological contacts (Figure B1). The tops of the prisms coincide with the topography. A rock type and a rock property (density or susceptibility) are assigned to every cell. For rank green fields, the same rock type is assigned to every cell, and the starting model degenerates into a homogeneous half-space for unconstrained inversion.

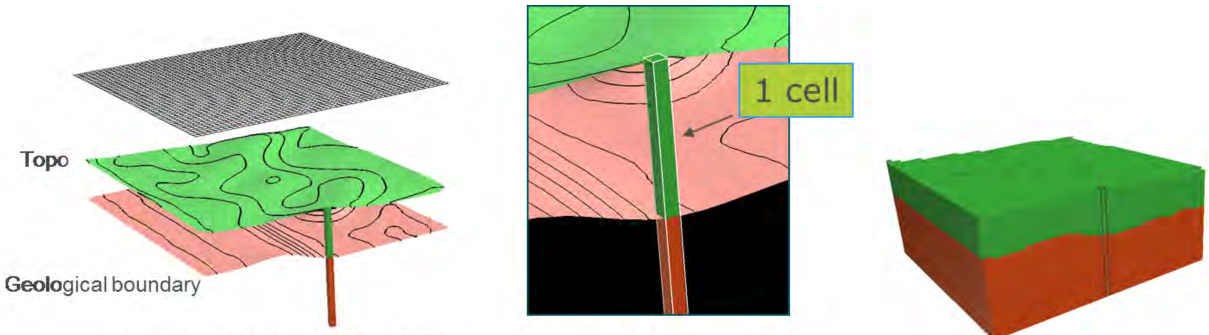

Figure B1: Illustration of VPmg model parameterisation for a simple 2-layer model comprising cover and basement.

Although a layered model is illustrated in Figure B1, this style of model parameterisation does not enforce a constant stratigraphy in all prisms and therefore supports full 3D geological complexities.

VPmg model parameterisation permits a wide variety of starting model options and 3 general inversion styles: homogeneous unit inversion, geometry inversion and heterogeneous property inversion. These inversion styles are illustrated schematically in Figure B2.

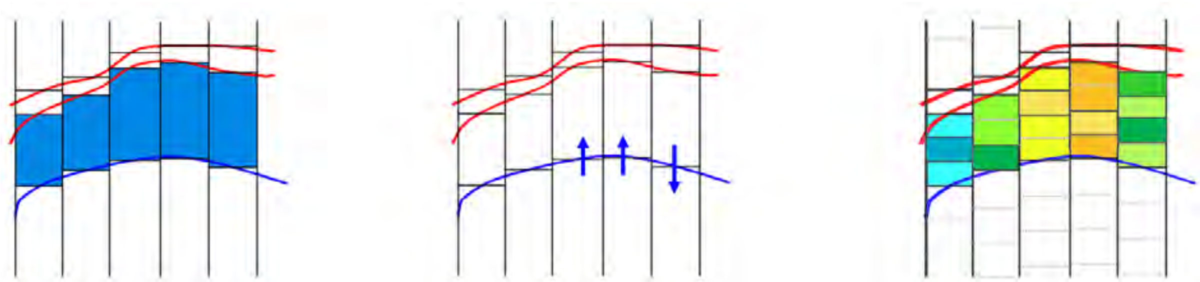

Figure B2: Schematic illustrations of VPmg inversion styles; homogeneous unit inversion (left), geometry inversion (centre) and heterogeneous property inversion (right).

Various inversion options are elaborated upon below.

Homogeneous unit property inversion

For a homogeneous unit property inversion, the starting model is comprised of geological units with uniform density or susceptibility. Inversion optimises the density or susceptibility of one or more units to improve the data fit to the entire data set. Upper and lower property bounds for each unit can be imposed during inversion.

Geometry inversion

Geometry inversion adjusts the elevation of geological boundaries. Geological boundaries can be designated as free or fixed (e.g. pierce by a drill hole), or could be bounded above (e.g. by the end of drill hole). If drill hole information is used to fix a geological boundary, changes to the model in the vicinity of the drill hole are also suppressed (as a measure to preserve consistency with the drill hole away the actual drill hole intersection).

Geometry inversion facilitates a variety of applications such as depth to basement modelling and refining the geological boundaries of a complex geological model. In the absence of a geological model, geometry inversion can assist, be implemented during preliminary interpretations by using a simple body (e.g. ellipsoid or rectangular slab) and geometry inversion will adjust the conceptual starting model to fit the data.

Heterogeneous unit property inversion

Geological domains can be discretized internally and heterogeneous unit property inversion can be performed. VPmg domains are intrinsically discretized laterally (by the vertical prism boundaries), and users can specify whether geological domains are also discretized vertically for heterogeneous property inversion. Vertical discretization is typically specified to be either a constants cell size, or a cell size expanding with depth. The vertical discretization settings can be different for each geological domain.

Heterogeneous unit inversion adjusts the property (density or susceptibility) variations within one or more geological domains (subject to imposed upper and lower property bounds) to produce a model with an improved fit between the observed and computed gravity and magnetic responses.

During inversion, cells can be designated as fixed if their property has been defined by downhole logging or core measurements. If drill hole physical property measurements are used as hard constraints, changes to the model in the neighbourhood of hard constraints are also suppressed (as for geometry inversion).

Individual weights can also be assigned to individual cells. For example, depth weighting constraints can be set to compensate for heightened sensitivity of model cells closer to the survey measurements.

Geologically unconstrained property inversion

Although VPmg is well-suited to geologically constrained inversion, in the absence of a geological model, unconstrained density or susceptibility inversion can be executed.

VPmg offers two styles of unconstrained property inversion; full 3D density or susceptibility inversion and apparent density or susceptibility inversion (both of which are heterogeneous property inversions). The VPmg apparent density and apparent susceptibility models comprise the 2D grid of tightly packed vertical prisms (elongated cells) with great depth extent (see Figure B1 but with no vertical divisions). A VPmg 3D unconstrained inversion adopts a similar model structure, but each vertical prism is divided into cells. For both these models, the same rock type identifier is simply assigned to every cell.

Apparent density and susceptibility inversions can be executed faster than full 3D unconstrained inversions. In the absence of a regional geological model, apparent density and susceptibility models provide an efficient means for explaining the regional scale potential field response. VPmg can literally incise a local geological model into the regional apparent density or susceptibility model during potential field modelling.

Geologically unconstrained geometry inversion

A style of unconstrained geometry inversion is also permitted using a scheme known as "geobody" inversion. Geobody inversion considers a simple 3 layered starting model. The middle layer is initially set to zero thickness and assigned a starting depth and density or susceptibility (upper and lower layers are generally assumed to be 0 SI or 0 g/cc). VPmg geometry inversion increases the thickness of the geobody to produce a volume of material that provides an improved fit with the observed data. This inversion style is illustrated schematically in Figure B3.

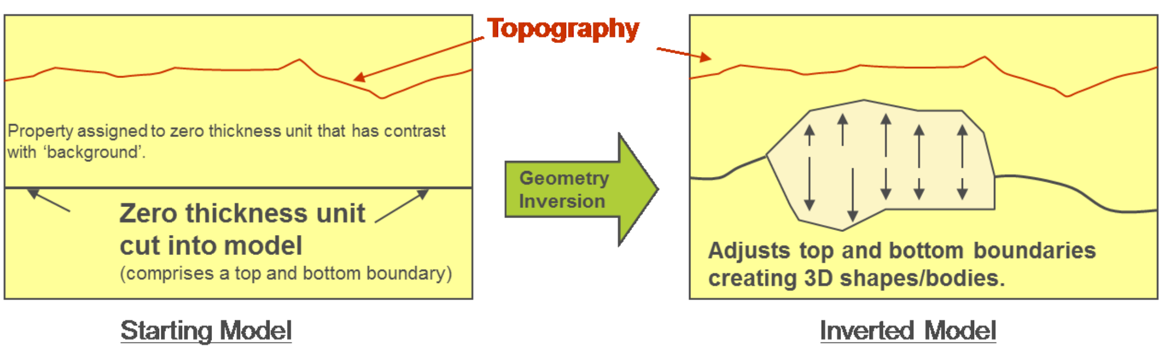

Figure B3: Schematic sections depicting the mechanics of a VPmg geobody style inversion.