

## ASSESSMENT REPORT TITLE PAGE AND SUMMARY

**TITLE OF REPORT:** GEOLOCICAL INVESTIGATION REPORT on the **Titan PROPERTY** Atlin Mining Division, British Columbia, Canada

#### **TOTAL COST: \$8,500**

AUTHOR(S): John Buckle, P.Geo. SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): STATEMENT OF WORK EVENT NUMBER(S)/DATE(S): 5676317, 5703925

YEAR OF WORK: 2017 PROPERTY NAME: Titan CLAIM NAME(S) (on which work was done):

COMMODITIES SOUGHT: Gold, silver

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN:

 MINING DIVISION:

 NTS / BCGS:

 LATITUDE:
 59

 29\_'
 43\_"

 LONGITUDE:
 134\_\_\_\_°

 19\_\_\_'
 31\_\_\_\_" (at centre of work)

 UTM Zone:
 EASTING:
 538206

OWNER(S): DeCoors Mining Corp.

MAILING ADDRESS:

120-9847 Manchester Dr. Burnaby BC V3N 4P4

OPERATOR(S) [who paid for the work]:

MAILING ADDRESS:

REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**)

Wann River gneiss, Triassic, Late Jurassic, Cretaceous granodiorite, Coast and Cascades Belt,

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 08384, 10945, 13933, 15208, 19827, 21114, 28316, 27855, 30365, 33152, 34573

TYPE OF WORK	EXTENT OF WORK	ON WHICH CLAIMS	PROJECT COSTS
THIS REPORT	(in metric units)		APPORTIONED (incl. support)
GEOLOGICAL (scale, area) Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres) Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samp Soil	les analysed for)		
Silt			47.5
Rock	21 XRF	1048306	\$8,500
Other			
DRILLING (total metres, number Core	of holes, size, storage location)		
Non-core			
RELATED TECHNICAL Sampling / Assaying			
Petrographic			
Mineralographic Metallurgic			
PROSPECTING (scale/area) PREPATORY / PHYSICAL			
Line/grid (km)			
Topo/Photogrammetric (s	scale, area)		
Legal Surveys (scale, area			
Road, local access (km)/tr	ail		
Trench			
Underground developm	ent (metres)		
Other			
		TOTAL COST	\$8,500

# **GEOLOGICAL INVESTIGATION REPORT**

on the

# Titan PROPERTY

Atlin Mining Division British Columbia, Canada

Atlin

Location NAD 27: Latitude: 59 29 42 Longitude: 134 19 24 UTM: 8 538318 6595160

NAD 83: Latitude: 59 29 43 Longitude: 134 19 31 UTM: 8 538206 6595397

NTS: <u>104M08W</u>

BCGS: 104M049

WRITTEN FOR: DeCoors Mining Corp. 120-9847 Manchester Dr. Burnaby BC V3N 4P4

WRITTEN BY: John Buckle, P.Geo. Geological Solutions

DATED: April 6, 2018

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## SUMMARY

The Titan mineral property is located town of Atlin located 50 kilometres to the east kilometers east of the town of Atlin in northwestern British Columbia. The property comprises 7 claims totaling 2548.8098 hectares that are owned by DeCoors Mining Corp. This report describes the results of reconnaissance exploration program carried out on the Titan property in support of SOW 5676317. A total of twenty-one measurements were made with XRF of soils Seven rock samples taken and geologically examined. Access is by helicopter from Atlin or by boat from Taku Arm.

The Titan property hosts several gold-silver bearing quartz veins. The Titan Property is predominantly underlain by amphibolite gneiss, likely part of the Devonian to Permian Wann River assemblage

## INTRODUCTION

This report was commissioned by Mr. Peter Burjoski, of DeCoors Mining Corp. of P.O. Box 3173, Whitehorse, Yukon Y1A 6L3. DeCoors is the 100% owner of the property. The work done described in this report will be distributed over the combined claim block. This report is authored by John Buckle, P.Geo.

In the preparation of this report, information was obtained from British Columbia Government websites such as the Map Place (www.em.gov.bc.ca/mining/Geolsurv/MapPlace) and Mineral Titles Online (www.mtonline.gov.bc.ca) as well as the mineral assessment work reports from the Titan area that have been filed by various companies. The results of a geochemical survey carried out over the Titan area showings were also reviewed and incorporated into this report. These exploration results and the history of exploration on this property are discussed in section Exploration History of this report.

The Titan property was visited on August 20, 2017, during which time the geological setting of the Titan showing was reviewed. This property examination mainly comprised a reconnaissance style-mapping program to examine the Titan showing and a program of chip and grab sampling and XRF measurements on the Titan block. A total of 8 rock samples were collected, these results are not included in this report. Twenty one XRF measurements were made in and around the rock samples.

## PROPERTY DESCRIPTION AND LOCATION

The Titan Property is located in the northwestern corner of British Columbia (figure1), to the east of Atlin village, which is on the eastern shore of Atlin Lake. The property is located within the Atlin Mining Division in northwestern British Columbia. The claims cover an area of 2548.8098 hectares and are centered at latitude 59° 29' 43" and longitude 134° 19' 31" within NTS map sheets 104N 066, 067 and 068. The property is centred on UTM WGS84 co-ordinates zone 8 538206 east and 6595397 north. DeCoors Mining Corp. owns a 100% interest in the seven claim numbers 1048306, 1048307, 1051006, 1051007, 1059175, 1059176 and 1059177.



Map Center: 54.4781N 124.7082W

Figure 1 Location Map

Table 1 Table of Claim Numbers

Tenure Number	<u>Type</u>	Claim Name	<u>Good Until</u>	<u>Area</u> (ha)
<u>1048306</u>	Mineral	TITAN	20180715	1184.0359
<u>1048307</u>	Mineral	TITAN SHORE	20180715	115.1044
<u>1051006</u>	Mineral	TITAN LINK	20180715	65.7511
<u>1051007</u>	Mineral	TITAN CROWN	20180715	82.1867
<u>1059175</u>	Mineral	TITAN ORBIT	20190308	625.0739
<u>1059176</u>	Mineral	TITAN TOP	20190308	295.7498
<u>1059177</u>	Mineral	TITAN PLUG	20190308	180.908

Total Area: 2548.8098 ha



Figure 2 Claim Layout Map

# ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND

### PHYSIOGRAPHY

The climate is typical of northern British Columbia characterized by long winters and short summers. Winter conditions can be expected from October to April. A pleasant summer climate is characterized by average temperatures of 20°C and little precipitation. Total annual precipitation in Atlin is measured at 279.4 millimeters. The month of July receives 10 to 13 days with measurable precipitation. The mean annual precipitation is 60 cm. In January the mean daily temperature is minus 15° C, with 14 to 17 days with measurable precipitation as well as moderate snowfall.

## **EXPLORATION HISTORY**

Precious and base metal mineralization on White Moose Mountain was investigated soon after the discovery of Engineer mine in 1899. Tunnel driving and pitting was carried out on mineralized structures near the shore of Taku Arm and on the east flank of the mountain between 1905 and 1920.

United Keno Hill located eleven areas of vein mineralization were located during examination of the Fee property, some of which may represent continuations of the same vein. The best mineralized vein, exposure 1.1 m wide. Assays of two chip samples, two metres apart, across this width, averaged 0.45 oz Au/ton, 7.14 oz Ag/ton, 9.85% Pb, 0.05% Zn and 0.02% Cu.

In 1982 John R. Harvey owner of the Rupert claims selected a few rock samples as report by N.C. Carter, Ph.D. P.Eng. Samples returned anomalous values of silver and lead. The work was designed to verify the 5,300 samples collected by United Keno Hill Mines Limited in 1980 (Assessment Report 8384)

Harvey continued the work on the Rupert claims in 1985 to determine the mineralogy, alteration, and potential areal extent of the vein system known as the "G-Occurrence (Watson and Joy, 1980). This work concluded that comparing the geochemical signature over the "G" Occurrence with other areas to the south suggests that areas such as the multi-element anomaly east of the Fee glacier is an excellent exploration target.

In 1986 Rise Resources Ltd. optioned the Ice 1 claim and the 10 reverted Crown Grants covering the Rupert showings (Gonzalez, 1986). A two man field party followed up and confirmed the results of United Keno Hill Mines Limited after which the ground reverted back to Mr. J. Harvey.

Placer Dome's exploration work completed in 1989 consisted of establishing 23.3 km of grid, geological mapping, geochemical sampling, and geophysical surveying. Known mineral occurrences closely coincide with northwesterly trending VLF-EM conductors.

In 1990 Placer Dome noticed that the known mineral occurrences consist of mineralized quartz veins and shears variably hosted by Proterozoic to Cambrian schists and gneisses, and felsic to intermediate intrusive rocks, Cretaceous or younger in age. Intermediate to felsic dykes of probable Eocene age (Hulstein, 1990) are spatially associated with shears and mineralized quartz veins.

Exploration work on the property by Dennis Ouellette, late in the 2002 season, discovered a porphyrystyle molybdenum occurrence, known as the Titan Showing. The showing was recently exposed at the toe of a receding glacier.

Exploration work by Eagle Plains in 2007 and 2008 consisted of an airborne magnetic and radiometric geophysical survey, geochemical soil sampling along with geological mapping and prospecting traverses with associated rock sampling. These programs resulted in the delineation of multi element geochemical anomalies of Au, Ag, Pb, Zn and Cu in a zone 1.4 km long and 750 m wide in proximity to the Rupert/ Silver King and Rupert-L showings, along with open anomalies at edge of soil survey. Eagle Plans explored the Titan property again in 2013. Their work concluded that both the Buchan Creek and White Moose showing areas have very encouraging mineralization potential. The Buchan Creek showing is a high grade Au-Ag-Pb quartz vein system and the White Moose showings are a quartz vein system enriched in Ag-Pb-Cu-Zn.

### MINFILES

There are several minfiles describing the mineral showings that are now covered by the Titan block. There are two areas of interest. The central highland area in and around the Rupert showings and the coastal showing along the west shore of Taku Arm, these showings, known as White Moose group, are a series of vein deposits. The following are reprints of the MINFILES:



Figure 3 MIFILE Reports

The Buchan Creek showing is located on a north-facing slope about 1.0 kilometre southeast of Buchan Creek and 2.25 kilometres west of the west shore of Taku Arm. The vein consists of quartz which is locally vuggy, and contains disseminated and massive galena, chalcopyrite and minor malachite and azurite.

In 2011, the Buchan was reported to consist of a northwest-trending quartz vein, centered on a sheared portion of the vein. The vein is hosted by amphibolite gneiss, likely part of the Devonian to Permian Wann River assemblage, near the contact with metagranodiorite, likely belonging to the Early Jurassic Aishihik Suite. The vein is exposed in bedrock at one location only; here it is roughly 0.9 metres wide, centered on a 30-centimetre strongly sheared and brecciated section with roughly 15 per cent infilling of lightblue "steel" galena. The non-sheared quartz is also moderately fractured. The north-eastern margin of the vein lies in contact with fractured, limonitic and silicified aplite, with minor fracture controlled pyrite. Past sampling by Eagle Plains Resources in 2007, across the vein returned gold values to 8.0 grams per tonne; values to 0.5 gram per tonne gold were returned from the aplite (Assessment Report 33152).

Trenching in 1981 over a caved adit driven in the early 1900s revealed a pod shaped vein 21 metres long. The strike and dip varies from 125/80 southwest on the south end to 160/80 east on the north end. The adit is estimated to have been 25 to 30 metres long. A number of workings extend about 50 metres downhill from the outcrop.

Two 1.1 metre wide chip samples, taken 2 metres apart along the vein, averaged 15.43 grams per tonne gold, 244.8 grams per tonne silver, 9.85 per cent lead, 0.20 per cent copper and 0.05 per cent zinc (Assessment Report 8384). A grab sample taken in 1989 assayed 925 grams per tonne silver, 7.6 grams per tonne gold, 0.28 per cent copper, 74 per cent lead (this value is suspect), 0.086 per cent zinc (Fieldwork 1989, p. 194).

Three samples collected from the showing in 2011, assayed between 0.03 and 8.41 grams per tonne gold, 2.3 to greater than 300 grams per tonne silver, 0.011 to 0.3 per cent copper and 0.080 to 24.18 per cent

lead (Assessment Report 33152). Airborne magnetic lineaments and EM conductivity anomalies are spatially coincident with the Buchans showing and on-strike projections of the Buchans' vein system.

The White Moose-North showing is located on the west shore of Taku Arm south of Buchan Creek.

The area is underlain by amphibolitic gneiss and schist of the Devonian to Permian and older Boundary Ranges Metamorphic Suite.

An adit on the lakeshore was driven on the White Moose North vein containing chalcopyrite, bornite, galena and minor sphalerite and malachite (and possibly tetrahedrite). The vein strikes 140 degrees and dips 40 to 60 degrees northeast. The massive, white, locally vuggy quartz vein is 0.45 to 1.2 metres wide. Blocks of quartz containing up to 8 per cent sulphides occur in the dump.

A mineralized vein up to 12 centimetres in width occurs above the workings.

South of the adit a vein, 17 centimetres wide with 5 per cent sulphides, assayed trace gold, 0.34 gram per tonne silver, 0.13 per cent lead, 0.09 per cent zinc and 0.09 per cent copper (Assessment Report 8384).

The 2011 visit to the White Moose-North showing by Blue Gold Mining Inc. consisted of a helicopter assisted grab sampling of the dump that intersects the lake shore. Sample JBTIR094 comprised quartz vein material from the dump, with small massive sulphide lenses (chalcopyrite>galena) that assayed 14 grams per tonne silver, 0.09 per cent lead, 0.5 per cent copper and 0.13 per cent zinc (Assessment Report 33152). Reconnaissance mapping between the shaft and north showings encountered significant feldspar porphyry outcrop, indicative of significant igneous activity as a potential heat source for mineralization and/or a contributing factor to structural preparation.

All four of the White Moose showings do coincide spatially with significant magnetic breaks as revealed in the 2011 airborne geophysical survey.

Refer to Titan (104M 089) for details of a common (Titan) property work history.

The White Moose-Shaft showing, located on the west side of Taku Arm, is 600 metres south of the White Moose-North adit (104M 009).

The area is underlain by the Devonian to Permian an older Boundary Ranges Metamorphic Suite cut by a northwest trending rhyolitic dike. The contact with the Early Jurassic granodiorite of the Aishihik Plutonic Suite just to south.

The showing comprises two shafts, 35 metres apart. A 40 centimetre wide quartz vein on the side of one of the shafts appears to follow the rhyolite-schist contact.

A 27 centimetre chip sample across the vein contained 5 to 10 per cent fine-grained galena, 4 per cent pyrite, and minor chalcopyrite and malachite. This sample assayed 2.06 grams per tonne gold, 27.43 grams per tonne silver, 2.45 per cent lead and 0.01 per cent copper (Assessment Report 8384).

At Occurrence D, about 300 metres to the southeast, a 60 metre long trench and collapsed adit occur. No vein was exposed in outcrop but quartz float with minor malachite, pyrite, and galena was observed (Assessment Report 8384).

#### Work History

The White Moose showings were staked in about 1899 by Young, Johnson, and Grant, officials of the White Pass Railroad. Development work was carried on until 1902 when the property was acquired by a local Atlin syndicate; this group carried on development work until about 1904. In about 1913 the property, consisting of 8 claims, the Pansy, Rose, Buttercup, Calder, Primrose, Daisy, Merry, and Daffodil, was acquired by Messrs. Partridge and Egerton. Development work on the North vein consists of a shallow shaft and a drift adit. On the South vein two drift adits have been run in a short distance.

In 2011, Blue Gold Mining Inc described the White Moose Shaft showing as consisting of two 3 by 4 metre shafts (now caved in pits) - spaced 42 metre apart, along strike of the main north-northwest schistose foliation. Mineralized quartz vein material, in situ and from the shaft waste piles, have similar mineralization style and range of styles as material from the Moose B showing (104B 072). A total of 2 grab samples (N-shaft: BRTIR008; and S-shaft: JBTIR093) were collected and yielded the following values respectively: 19.7 and 66 grams per tonne silver Ag; 0.8 and 4.92 per cent lead; 0.25 per cent and 63 parts per million copper; and 0.34 and 2.13 per cent zinc. Relative to the Moose-B trench area, the main difference is that the Shaft quartz vein is conformable within the foliation of the host chlorite schist. Visible in the southern shaft is a micro-granite (or aplite) sill paralleling the main mineralized quartz vein, with very rusty and sericite altered chlorite schist hostrock separating the two intruded units. East of the southern shaft, feldspar porphyry and meta-siltite outcrops are notable, both within 25 metres of the shaft.

All four of the White Moose showings (104B 009, 010, 012, and 072) are reported to coincide spatially with significant magnetic breaks as revealed in the 2011 airborne geophysical survey that covered all the Titan property.

White Moose B In 2011, Blue Gold Mining Inc described the White Moose Shaft showing as consisting of two 3 by 4 metre shafts (now caved in pits) - spaced 42 metre apart, along strike of the main northnorthwest schistose foliation. Mineralized quartz vein material, in situ and from the shaft waste piles, have similar mineralization style and range of styles as material from the Moose B showing (104B 072). A total of 2 grab samples (N-shaft: BRTIR008; and S-shaft: JBTIR093) were collected and yielded the following values respectively: 19.7 and 66 grams per tonne silver Ag; 0.8 and 4.92 per cent lead; 0.25 per cent and 63 parts per million copper; and 0.34 and 2.13 per cent zinc. Relative to the Moose-B trench area, the main difference is that the Shaft quartz vein is conformable within the foliation of the host chlorite schist. Visible in the southern shaft is a micro-granite (or aplite) sill paralleling the main mineralized quartz vein, with very rusty and sericite altered chlorite schist hostrock separating the two intruded units. East of the southern shaft, feldspar porphyry and meta-siltite outcrops are notable, both within 25 metres of the shaft.

The Rupert North showing is located south of Buchan Creek. Two blast pits over a mineralized shear zone, quartz veins and altered rhyolite dikes occur about 100 metres apart.

The Rupert showings were probably discovered at around the turn of the century. Trenching, reported in 1913, located 5 mineralized quartz veins (104M 008). The Fee Group was staked to cover these showings in 1979 by United Keno Hill Mines Limited. They carried out extensive geological and geochemical surveys. In 1986, Rise Resources optioned the Ice 1 claim and the 10 crown grants comprising the Rupert Group. Rise Resources confirmed the soil anomalies discovered by United Keno Hill Mines Ltd. Placer Dome optioned the property in 1989 and conducted mapping, geochemical sampling and geophysical surveys. In 1990, trenching was done on this showing.

The region is at the eastern margin of the Coast Plutonic Complex adjacent to the Intermontane Belt. The Intermontane Belt is represented by strata of the Lower Jurassic Laberge Group and the Upper Triassic Stuhini Group. These link Mississippian and older Nisling Terrane units to the west with oceanic rocks of the Cache Creek Terrane.

The area is underlain by gneisses and schists of the Devonian to Permian and older Boundary Ranges Metamorphic Suite and Triassic or older Hale Mountain granodiorite. Cretaceous or younger rhyolite, andesite and basalt dikes intrude the older units (Sloko Group?). The Llewellyn fault is 10 kilometres to the northeast.

A 2 to 20 centimetre wide quartz vein within a 0.5 metre shear zone is vuggy, rusty, azurite-malachite stained and contains less than 1 per cent each of chalcopyrite, pyrite and galena. Adjacent to the shear zone, the hostrock contains a stockwork of unmineralized quartz veins.

A 0.5 metre chip sample (343962) across the veined and clay-altered schist/gneiss from the south pit assayed 5.4 grams per tonne gold and 30 grams per tonne silver (Assessment Report 19827).

The north pit exposes a weakly developed stockwork of quartz veins, containing up to 2 per cent pyrite and

galena within a rhyolite dike. A 1 metre chip sample (343961) of this material assayed 0.005 gram per tonne gold and 4 grams per tonne silver (Assessment Report 19827).

These veins may represent the northern extension of the Rupert vein system (104M 008).

Mapping, rock, soil and silt sampling at several of the Rupert Showings and integration with the latest 2007-2008 airborne geophysics has demonstrated a probable structural control on the mineralization there. The analysis suggests a strong association of mineral occurrences with NNW-trending magnetic lineations that clearly transect granodiorite/gneiss contacts at multiple locations.

The 2011 airborne magnetic and EM geophysical survey over the Titan property indicated a string of airborne magnetic and EM geophysical anomalies that can tentatively be traced along strike from the Buchan showing area (104M 035), as far as 2 kilometers to the south-southeast, where the geophysical anomaly lineament also overlaps with the historical Rupert I showing (104M 008).

The Hook showing is hosted in granodiorite of the Early Jurassic Aishihik Plutonic Suite. Panels of dark green amphibole gneiss and chloritic gneiss were noted.

The Hook showing was discovered in 2008. The 10 to 20 centimetre wide quartz vein comprised disseminated and blebby galena and pyrite. Epidote and chlorite alteration were notable along the vein margins and along a strong fracture. The 2008 quartz vein sample (JBTIR003) assayed 62 grams per tonne gold, 34 grams per tonne silver, 0.28 per cent lead and 0.23 per cent zinc (Assessment Report 30365).

2011 soil geochemical data indicates a relatively flat response for most elements, with the exception of gold, and to a minor extent copper and molybdenum. Quartz veining was discovered 400 to 500 metres on strike to the northwest of the Hook; however, none of the 5 samples collected there yielded significant values of gold or base metals.

The Rupert-L showing is located 35 kilometres southwest of Atlin on the west side of Taku Arm, Tagish Lake, just east of Fee Glacier.

The Rupert showings were probably discovered at around the turn of the century. Trenching, reported in 1913, located five mineralized quartz veins (Rupert-North, 104M 036). The Fee Group was staked to cover these showings in 1979 by United Keno Hill Mines Limited. They carried out extensive geological and geochemical surveys. In 1986, Rise Resources optioned the Ice 1 claim and the 10 Crown grants comprising the Rupert Group. Rise Resources confirmed the soil anomalies discovered by United Keno Hill Mines Ltd. Placer Dome optioned the property in 1989 and conducted mapping, geochemical sampling and geophysical surveys. The Occurrence L showing was located in 1989 as a geochemical anomaly and in 1990, trenching was conducted on this anomaly.

The region is at the eastern margin of the Coast Plutonic Complex adjacent to the Intermontane Belt. The Intermontane Belt is represented by strata of the Lower Jurassic Laberge Group and the Upper Triassic Stuhini Group. These link Mississippian and older Nisling Terrane units to the west with oceanic rocks of the Cache Creek Terrane.

The Rupert-L showing area is underlain by the Devonian to Permian and older Boundary Ranges Metamorphic Suite and the Triassic or older Hale Mountain granodiorite. Cretaceous or younger rhyolite, andesite and basalt dikes intrude the older units (Sloko Group?). The Llewellyn fault is 10 kilometres to the northeast.

A shear hosted quartz vein and associated alteration contains disseminated sulphides in a gangue of limonitic quartz and minor carbonate. Mineralization, in order of abundance, consists of pyrite, galena, pyrrhotite, chalcopyrite and sphalerite. The vein is hosted in gneiss/schist and is spatially associated with at least one felsic dike. The vein is 20 to 50 centimetres in true width and has a known strike length of 15 metres.

The best values were from samples of mineralized quartz vein and altered material from trenches. Assays

ranged from 0.045 to 0.220 gram per tonne gold, 4 to 29 grams per tonne silver, 0.0079 to 0.0096 per cent copper, 0.0400 to 0.2160 per cent lead and 0.1170 to 0.31 per cent zinc (Assessment Report 21114).

In 2006, Eagle Plains Resources Ltd. collected one rock sample near the Rupert-L showing and results from this sample were considerably lower grade than previously reported values.

The Titan showing occurs along the contact between the Upper Paleozoic Wann River Gneiss and the Eocene Sloko-Hyder Plutonic suite. The mineralization consists of massive, semi massive and disseminated molybdenite with associated chalcopyrite and pyrrhotite. It occurs as disseminations in the granite; inquartz veins in granite and metasedimentary rocks; and along the granite-metasedimentary contact.

The Titan showing, discovered in 2002, is a 1 by 2 metre zone of 5 per cent disseminated molybdenite with local high-grade zones of 20-30 per cent molybdenite over 50 by 50 centimetres. The high-grade mineralization is associated with quartz flooding and vuggy quartz. Away from the high-grade core, coarse molybdenite disseminations decrease into low grade molybdenite-chalcopyrite to barren pyrrhotite within about 1 to 1.5 metres. Chalcopyrite and malachite were also noted at the contact zone. Argillic alteration, sericitization and epidote alteration were observed up to 1 kilometre from the Titan showing.

Eight of the ten rock samples collected during a 2003 exploration program yielded values greater than 0.1 per cent molybdenum. Samples collected from the boulder field below the toe of the glacier assayed up to 1.877 per cent molybdenum, while samples from outcrop yielded up to 0.966 per cent molybdenum. Many samples were also anomalous in copper (up to 2873 parts per million), tungsten (up to 93.1 parts per million), and bismuth (up to 60.7 parts per million) (Assessment Report 27316).

The mineral exploration history of the area dates back to 1890s, when prospectors travelling over the Chilkoot Trail and across Bennett Lake to the Klondike Goldfields first started exploring the area. The early prospectors discovered a number of precious and base metal bearing veins on the north and east slope of White Moose Mountain known as the Rupert showings. In 1979, United Keno Hill Mines Ltd. (UKHM) staked the Fee claims to cover the Rupert showings in the area of the current Titan claims. UKHM carried out extensive geological and geochemical surveys in the showing area. In 1986, UKHM optioned the property to Rise Resources. Rise confirmed the soil geochemical anomalies but performed no further work. In 1989, the property was optioned to Placer Dome. Placer conducted mapping, geochemical sampling, geophysical surveys and trenching on the showings. Their program had limited success and the property was later allowed to lapse. During the period of this exploration activity, however, field crews noted that the ongoing retreat of glacial ice at the headwaters of Buchan Creek had begun to expose porphyry copper-molybdenum mineralization. Although fieldwork was directed toward assessing gold-silver vein potential, UKHM continued to hold the Fee claims until the late 1990s when the company was dissolved. In August 2002, an ex-UKHM geologist, D. Ouellette, staked the Titan claim and conducted a one-day field program confirming the highgrade nature of the molybdenum occurrences. Later that year the property was acquired by Eagle Plains Resources Ltd. In 2003, Eagle Plains Resources Ltd. optioned the Titan claims from D. Ouellette to explore a high-grade molybdenum showing. The 2003 fieldwork by Eagle Plains included prospecting, rock and soil sampling, an induced polarization (IP) ground geophysical survey and staking of additional claims to cover prospective stratigraphy. Prospecting in the area exposed by retreating glacial ice located massive to disseminated molybdenite in Cretaceous granodiorite boulders and in quartz veins within the granodiorite. By tracing the mineralized boulders upslope, molybdenum mineralization was located in place near the contact between metasediments and Cretaceous granodiorite. Two IP lines spaced 300 metres apart produced a strong anomaly that corresponds to the granite contact. However, the collection of the geophysical survey data was constrained in part by poor electrode contacts, particularly in the areas of highgrade boulders. In 2004, Kobex Resources Ltd. drilled three short core holes totalling 314 metres on the IP targets under an earn-in agreement with Eagle Plains Resources Ltd. The holes intersected disseminated pyrite, and a 0.2 metre interval of disseminated molybdenite and chalcopyrite. The geophysical targets tested by drilling in 2004 were located peripheral to the best observed mineralization. It is believed that the chargeability anomalies tested in drillholes T04001 and T04002 are likely related to disseminated pyrite. The resistivity feature tested by drillhole T04003 is likely the contact between the mafic gneiss and the underlying granite. The low grade molybdenum mineralization that was intersected in the drilling does not appear to be the same as that seen at the Titan showing and in the high grade boulder field. Kobex Resources Ltd. terminated its option agreement with Eagle Plains in December.

In 2005, Eagle Plains Resources Ltd. executed a letter of intent with Canadian Goldrush Corp. (CGC) whereby CGC could earn a 60 per cent interest from Eagle Plains in the Titan molybdenum project. Jasper Mining Corp. acquired the property in February through Canadian Goldrush Corporation.

In 2006, Eagle Plains Resources Ltd. verified the locations of the historic geochemistry grids and past trenching work at known mineral showings, and collected rock samples at the Fee Glacier (104M 037) and Rupert-L (104M 073) showings to confirm historic analytical results.

In 2007, exploration work on the Titan property included a 132 line-kilometre airborne geophysical survey for both aeromagnetics and radiometrics and a two week soil sampling program that expanded the historic soil grid. Geophysical interpretation identified six locations of interests on the Titan property, based on both radiometric and aeromagnetic data collected by the airborne geophysical survey. The one region of interest in the south end of the property is interesting as there is a direct correlation between aeromagnetic derived intersecting magnetic lineaments and strong radiometric anomalies high in Uranium/Thorium, Uranium/Potassium and Thorium/Potassium ratios. The five regions of interest in the northern end of the property are less distinct and only one has a correlation between magnetic lineaments and radiometric anomalies. The rest of the locations are based on radiometric anomalies alone. The soil sample grid that was completed by Placer Dome in 1989 and digitized by Bootleg Exploration, along with the infill and expansion of the grid during the 2007 exploration program consisting of an additional 740 samples, located many multi-element anomalies. There is a strong signature of gold, silver, lead, zinc, copper and arsenic found in the proximity of the Rupert/Silver King and Rupert-L showings. The anomalous area encompasses a maximum area of 1.4 kilometres long and 750 metres wide. In addition to this zone, there are further zones anomalous in cooper, lead and silver at the edge of the soil grid and open to the southeast, southwest and northeast. Furthermore, there is an anomalous trend of gold, lead, silver and copper values extending 300 metres to the north of the Buchans Showing.

In 2008, exploration work on the Titan property included a 195 line-kilometre airborne geophysical survey which included both magnetic and radiometric analysis and a 46 man-day field program of prospecting/mapping and collection of 27 rock samples, 53 stream-silt samples and 301 soil samples. Work on the property was carried out between July 21st and August 22nd, and was funded by option partner XO Gold. The 2008 traverses verified that mineralization at the Titan-Moly showing appears to be constrained to within 325 meters either side of the granite/gneiss contact. There are two structures that appear to have a pronounced fracture set (120/58) host to some of the mineralization oriented subparallel to the main granite/gneiss contact. The second structure is oriented almost perpendicular to the first at (220/65) and parallel to the cliff face that exposes the main showing. A new quartz vein discovery, 6 kilometres north of the Titan molybdenum showing on the same cross-structure (208/70), assayed 62 grams per tonne gold (Assessment Report 33152). A similar copper-rich quartz vein on (220/64) was also discovered 1 kilometre southeast of the main showing.

Mapping, rock, soil and silt sampling at several of the Rupert Showings and integration with the latest2007-2008 airborne geophysics has demonstrated a probable structural control on the mineralization there. The analysis suggests a strong association of mineral occurrences with north-northwest -trending magnetic lineations that clearly transect granodiorite/gneiss contacts at multiple locations.

IN 2010, Eagle Plains was notified by partner XO Gold Resources Ltd, that XO has terminated its option on the Titan property.

Prior to the 2011 field program Eagle Plains had completed an option agreement with Drexel Capital Corp on the Titan property. Drexel subsequently changed their name to Blue Gold Mining.

In 2011 Blue Gold Mining conducted an exploration program consisting of 23 field man-days that resulted in the collection of 38 rocks samples for assay, 22 rocks for petrophysical analysis, 4 stream-silt samples and 366 soil samples. Prior to the field program, an airborne electromagnetic and magnetic geophysical survey was completed by SkyTEM Airborne Surveys. The 424.9 line-kilometre survey was completed along idealized 100 m spaced flight-lines, at a nominal terrain clearance of 30 to 40 metres. The airborne survey was completed over the entire Titan property which included: Rupert (104M 008), White Moose-North (104M 009), White Moose-South (104M 010), White Moose-Shaft (104M 012), Buchan Creek (104M 035), Rupert-North (104M 036), Fee Glacier (104M 037), White Moose-B (104M 072), Rupert-L (104M 073) and Titan

#### (104M 089)

In 2012, Eagle Plains received notice from Blue Gold Mining (formerly Drexel Capital Corp.) that they were terminating the Titan Property Agreement and Option.



Figure 4 Aris Report Locations Titan Property

## **GEOLOGICAL SETTING**

Geology of the area, is dominated by northwest-trending belts of pre-Permian metasediments, and Mesozoic volcanics and deep-water clastic sediments that have all been intruded by Cretaceous granitoids of the Coast crystalline belt.

The area has long been recognized as part of an anomalous antimony-arsenic province hosting significant gold occurrences. This is reflected by lithogeochemical and regional stream sediment survey data presented on Map sheet 104M.

Proterozoic to Paleozoic metamorphics form a roughly 15 kilometre-wide belt that varies from upper amphibolite to greenschist grade. Typical rock types vary from schists and gneisses in the Boundary Ranges to pelites, semi-pelites, marbles, amphibolites, calc-silicates and minor quartzite in the Florence Range. Above are Paleozoic (?) to uppermost Triassic conglomerates with mainly Boundary Range metamorphic clasts.

The basal Upper Triassic Stuhini Group strata consist of Norian carbonates. Above are lapilli ash tuffs and tuffites overlain by conglomerates and associated sediments. The upper part consists of pyroxene-feldspar porphyry tuffs and breccias and feldspar-phyric tuffs.

Laberge strata are of Lower Jurassic age. The basal conglomerate gives way up section to argillites then siltstones and arenaceous wackes. Middle to Upper Jurassic (?) rocks are conglomerate, lapilli tuffs and balded feldspar porphyry flows. Upper Cretaceous Montana Mountain volcanics are intermediate to felsic pyroclastics and flows.

Pre-Cretaceous rocks are folded into upright to overturned, gently plunging folds.

Intrusive rocks have a long history in the area. The oldest intrusive rocks in the area are Paleozoic (?) to Triassic altered and deformed intrusive rocks that range from leuco-granite to quartz diorite.

Triassic (?) foliated granodiorite is followed by mid to Late Jurassic foliated porphyritic granodiorite to quartz monzonite, Cretaceous granodiorite, quartz monzonite, granite and diorite, then the Upper Cretaceous Coast Intrusions, which are mainly biotite hornblende granites with lesser granodiorite, quartz monzonite and diorite.

The rocks surrounding the property belong to the metamorphic terranes of the coast plutonic Complex (Coast and Cascades Belt). In this area, greenschist to amphibolite facies metamorphic rocks of pre-Mesozoic age dominate over granitic rocks. The Titan property lies entirely within these metamorphic rocks. Generally, the metamorphic rocks have a northwest trend that conforms to the regional structural pattern. Northwest trending folds are defined by a strongly developed foliation, these folds appear to be slightly overturned to the northeast. The metamorphic terrane is bounded on the northeast by a northwest striking vertical fault and on the southwest by a northwest striking reverse fault. Structurally, the terrane is characterized by compressional deformation which is similar in style and trend to the southwest bounding faults (Monger, 1975).

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### WORK DONE

A field crew of four flew from Atlin to the Titan property by Discovery Helicopter on August 20, 2017. The project was supervised by the author while the field team prospected the Titan showing. The crew's field geologist, Luke Wasylyshyn investigated rock outcrops and geological technician Matt Fraser made twenty-one measurements of rock and soil samples with a Niton XRF instrument. Seven rock samples were taken and twenty-one soils from the B horizon were measured with Niton XRF. The samples were analyzed with a handheld Thermo Scientific<sup>™</sup> Niton<sup>™</sup> XL3t XRF Analyzer manufactured by ThermoFisher Scientific. Field samples as they were taken and reanalyzed in Atlin after drying. Description and observations of veins and dikes as they were encountered in the field are described in table 2.

Name	Description	Zone	Easting	Northing	Altitude	Symbol
						Flag,
816	Luke sample	8 V	537657	6594378	1446 m	Red
						Flag,
817	Luke sample	8 V	537622	6594357	1452 m	Red
						Flag,
818	Luke sample	8 V	537628	6594347	1457 m	Red
						Flag,
819	Luke sample	8 V	537623	6594353	1454 m	Red
						Flag,
820	Luke sample	8 V	537616	6594367	1441 m	Red
						Flag,
821	Luke sample	8 V	538288	6593960	1429 m	Red
						Flag,
822	Luke sample	8 V	538315	6593926	1438 m	Red

#### Table 2 Geological Sample Coordinates

### Titan Field Notes – August 20, 2017

#### Waypoint 816

Float boulder of banded and tightly folded (Wann River?) gneiss. Gneissic banding is cross-cut by milky white bull quartz, with no sulphides or oxides.

Epidote veins cross-cut the gneiss-quartz contact highlight post-vein emplacement. No samples taken.



Figure 5 Sample 816 Wann River gneiss

Boulders such as this are present proximal to Buchan Creek veins described in WP 817-820 below.



Figure 6 Wann River gneiss with quartz vein

### Waypoint 817

### 537622 E 6594357 N

Vein – milky white bull quartz with infrequent cm-scale nodules of galena and minor pyrite. Surface of vein is weathered with rusty-red staining. Vein is approximately 1m with at 135/70\*.



Figure 8 Waypoint 817 and 818 bull quartz vein

Figure 7 Oxidized quartz vein

### Waypoint 818 537629 E 6594349 N

Location of sample taken from quartz vein described above (WP 817). Massive galena nodules ~10cm, up to 30% sulphide in samples.

Sample TI-BU1

# Waypoint 819

### 537625 E 6594353 N

Sample of float boulder found atop covered portion of quartz vein. Location of float indicates underlying vein as possible source of boulder. Boulder is milky white bull quartz with disseminated and nodulated galena-pyrite up to ~15%. Float boulder exhibits at times prominent green-blue staining (copper carbonate?)

#### Sample TI-BU2









Figure 9 Waypoint 819 quartz vein float



Figure 10 Quartz vein float waypoint 819 and 820

### Waypoint 820 537616 E 6594369 N

Photos above

Outcrop of quartz vein ~1m wide, milky white bull quartz containing minor disseminated pyrite and galena, green-blue (copper carbonate?) staining on weathered surface. Exposed for ~5m.

Sample TI-BU3

#### Waypoint 821

Thin quartz veins (~15cm) in banded gneiss/slate, concordant with banding and cleavage. Vein and banding are both folded into antiform – vein present before folding. Vein is milky white bull quartz with no sulphide and no oxide staining.

No sample

\*Difference in fluid source for pre-deformation veins is noted in absence of sulphide mineralization. Discordant veins (post-metamorphic) seem to carry sulphides.

### Photos:





Figure 11 Waypoint 821

#### Waypoint 822

Apparent shear surface with apparent mineral fiber lineation on cliff face. Strike/dip of cliff/shear face is 144/72 and showing apparent dextral sense of motion (NE-SE or SE-NE).



Figure 12 Waypoint 822 shear zone

**Photos:** 

## **XRF** Measurements

The field crew was certified for field operation of XRF instruments by NRCAN National Non-Destructive Testing Certification Body (NCB) CGSB 48.9712 Certification.

Portable XRF is used frequently in mining and exploration projects. The study of a large number of geological samples in this project shows that assay results from this method not only have high correlation with lab data, they complement the lab data and provide a fast and effective method for sample sorting, saving money and time. In addition, the geochemical anomalies of base and precious metals as well as light elements (such as S and AI) can be identified readily in real time onsite using portable XRF. (Somarin, A.K.)

The Niton analyzer, was used to provide lab-quality results in the field. The Niton allowed for high speed and sample throughput to ensure that samples which are sent to a laboratory are representative of the local geochemical values.

## CONCLUSIONS AND RECOMMENDATIONS

Locating quartz vein and gossan on the Titan is encouraging for hydrothermal alteration that may be associated with gold/silver alteration. The XRF anomalous copper and silver values at 537633 east and 6594342 north.

Follow-up surveys of MMI soil sampling is recommended. Geological mapping of the discovered quartz vein and its relationship to the Lewellyn fault would help to vector toward mineralization. A phase two follow-up should be an induced polarization geophysical survey over any anomalous geochemical zones discovered in the first phase reconnaissance geochemical and geological mapping surveys.

### PROPOSED PROGRAMS AND BUDGET

Geochemical survey with MMI over the Titan and White Moose showings.

This would require geochemical sampling at 50 meter intervals on lines one kilometer long on eight lines 100 meters apart. The proposed area should cover six square kilometers on Claim number 1048306, a block bounded by 536000 to 539000 east and 6592000 to 6594000. Geological mapping should cover the minimum of the same area with an emphasis on locating structural relationship of the showings with the Lewellyn fault zone. MMI sampling covering the White Moose showings along the shoreline of Taku Arm covering an area of approximately two square kilometers on Claim number 1048307.

### Estimated Budget

Table 3 Estimated Budget for follow-up

Work	Unit	rate		
MMI	Samples	Collection	Analysis	Total
	160	\$50	\$40	\$14,400
Geo.				
Map.	5 days	\$500/day		\$2 <i>,</i> 500
Helicopter	10 hours	\$1200/hour		\$12,000
	20 man-			
Support	days	\$150/man/day		\$3,000
Data proc.	4	\$500		\$2,000
Report	4	\$500		\$2,000
Total				\$35,900

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## CERTIFICATE OF AUTHOR

John Buckle, P. Geo Consulting Geoscientist

I, John Buckle, P. Geo. Do hereby certify that:

- 1. I am a consulting geoscientist with a B.Sc. from York University in Toronto in 1980 and Geological Tech. certificate from Sault College in Sault Ste. Marie in 1972.
- I am a member of the Association of Professional Engineers and Geoscientists of British Columbia, #31027.

- 3. I have worked continuously in mineral exploration for 43 years as an employee of a major mining company, an officer and director of junior mining companies and as an independent consultant.
- I am responsible for the report entitled Geological Investigation Report on the **Titan Property** , *Atlin Mining Division British Columbia, Canada* and dated April 6, 2018.

Signature of Author

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John Buckle, P.Geo.



# Affidavit of Expenses

Table 4 Affidavit of Expenses

Project	Man/day	Support\$150/man/day	Subtotal	Total
Support/mob	8	\$150	\$1,200.00	
Wages	4	\$350	\$1,400.00	
				\$2,600.00
Heli	hrs	\$/hr		
Titan	2	\$1,200		\$2,400
P.Geo.	Days	\$/Day		
Buckle	2	\$500	\$1,000.00	\$1,000.00
Report	4	\$500		\$2,000.00
Data Proc./drafting	1	\$500		\$500.00
TOTAL				\$8,500

Respectfully submitted,

John Brokel

John Buckle, P.Geo. Geological Solutions

April 6, 2018

## XRF Measurements

Table 5 XRF Measurements

Reading No	Time	Туре	Duration	Units	Sequence	Zone	Easting	Northing	SAMPLE	LOCATION	INSPECTOR	Flags	Мо	Mo Error	Zr	Zr Error
0.48	24/00/2017 11:40	TestAll Coo			Final	0.1/	527622	(504257	817 - "T1-	TITAN	Luba	0	0	22.0	0	20.72
948	24/08/2017 11:48	TestAll Geo	60	ppm	Finai	8 V	537622	6594357	BUIA"	IIIAN	LUKE	-8mm	0	23.8	0	39.73
949	24/08/2017 11:51	TestAll Geo	60	ppm	Final	8 V	537628	6594347	BU2A"	TITAN	Luke	-8mm	0	36.83	0	82.36
0.50	24/22/224744 52	<b>T</b> 14110					507000		818 - 'T1-					20.47		60 F.C
952	24/08/2017 11:58	TestAll Geo	60	ppm	Final	8 V	537628	6594347	BUZA"	IIIAN	LUKE	-8mm	0	28.47	0	60.56
947	24/08/2017 11:46	TestAll Geo	60	ppm	Final	8 V	537623	6594353	BU3A"	TITAN	Luke	-8mm	1.98	3.58	-4.66	3.08
									819-"'T1-							
946	24/08/2017 11:44	TestAll Geo	60	ppm	Final	8 V	537623	6594353	BU3A"	TITAN	Luke	-8mm	-9.54	4.89	-37.38	4.47
964	24/08/2017 12:25	TestAll Geo	60	ppm	Final	8 V	538315	6593926	822 - "'TO7B"	TITAN	Luke	-8mm	7.19	4.62	62.05	4.8
942	24/08/2017 11:38	TestAll Geo	60	ppm	Final	8 V	537387	6594128	T01	TITAN	Matt	-8mm	-1.7	4.03	129.73	6.13
961	24/08/2017 12:17	TestAll Geo	60	ppm	Final	8 V	537202	6593318	т02	TITAN	Matt	-8mm	-2.47	200000	0.07	200000
962	24/08/2017 12:19	TestAll Geo	60	ppm	Final	8 V	537182	6593177	T03	TITAN	Matt	-8mm	10.8	4.07	-3.46	2.64
963	24/08/2017 12:21	TestAll Geo	60	ppm	Final	8 V	537182	6593177	т03	TITAN	Matt	-8mm	14.1	4.77	-29.47	4.18
950	24/08/2017 11:53	TestAll Geo	60	ppm	Final	8 V	537019	6592689	T04	TITAN	Matt	-8mm	-1.07	3.85	4.02	3.42
951	24/08/2017 11:55	TestAll Geo	60	ppm	Final	8 V	537019	6592689	T04	TITAN	Matt	-8mm	6.52	4.5	4.02	3.58
943	24/08/2017 11:39	TestAll Geo	60	ppm	Final	8 V	536891	6592262	T05	TITAN	Matt	-8mm	2.26	200000	10.17	5.74
953	24/08/2017 12:00	TestAll Geo	60	ppm	Final	8 V	536890	6592253	T07	TITAN	Matt	-8mm	-1.17	4.1	9.08	3.73
954	24/08/2017 12:01	TestAll Geo	60	ppm	Final	8 V	536890	6592253	T07	TITAN	Matt	-8mm	-2.99	3.43	2.97	2.93
955	24/08/2017 12:04	TestAll Geo	60	ppm	Final	8 V	536894	6592255	T08	TITAN	Matt	-8mm	9.18	4.5	-0.4	2.84
944	24/08/2017 11:41	TestAll Geo	60	ppm	Final	8 V	536909	6592259	т09	TITAN	Matt	-8mm	9.61	4.96	253.88	7.96
945	24/08/2017 11:42	TestAll Geo	60	ppm	Final	8 V	536909	6592259	т09	TITAN	Matt	-8mm	-3.02	4.46	453.89	10.16
934	24/08/2017 11:24	TestAll Geo	60	ppm	Final	8 V	536912	6592249	T10	TITAN	Matt	-8mm	21.38	7.53	219.58	12.49
936	24/08/2017 11:26	TestAll Geo	60	ppm	Final	8 V	536912	6592249	T10	TITAN	Matt	-8mm	6.67	4.66	183.33	6.94
941	24/08/2017 11:35	TestAll Geo	60	ppm	Final	8 V	536912	6592249	T10	TITAN	Matt	-8mm	1.25	200000	92.68	6.23

Sr	Sr Error	U	U Error	Rb	Rb Error	Th	Th Error	Pb	Pb Error	Au	Au Error	Se	Se Error	As	As Error	Hg
0	27.42	-85.35	200000	0	60.06	-2562.41	200000	262100.39	19422.2	0	265.48	0	74.63	13305.52	1103.82	-164.86
0	60.47	-277.26	200000	0	126.92	-5224.63	200000	521176.84	55113.49	0	497.79	0	115.32	28320.88	2990.61	-333.59
0	44.91	-94.93	200000	0	94.3	-4359.94	200000	412024.53	37813.13	0	413.83	0	96.4	16885.57	1795.62	-498.33
1.32	1.83	0.05	4.41	3.94	2.24	5.48	13.48	2930.72	47.69	3.08	9.25	3.37	3.69	1073.23	39.87	2.84
-0.84	2.78	0.41	7	4.58	2.99	5.19	23.1	4394.14	82.28	-5.44	16.37	1.89	6.43	2470.55	74.16	-18.29
80.42	4.45	2.92	6.74	69.05	5.2	1.23	3.84	39.98	8.92	3.41	4.49	-1.21	2.14	10.96	5.57	3.14
73.66	4.34	-0.64	6.51	64.15	4.75	10.46	4.58	32.01	8.41	2.62	4.76	0.73	2.5	34.03	6.46	0.14
7.8	1.99	2.4	200000	12.74	2.66	5.05	200000	11.12	7.32	-3.98	200000	1.83	200000	3.74	200000	3.48
0.77	1.47	0.27	3.71	2.7	1.75	49.57	8.34	726.77	22.61	-1.1	4.69	2.28	2.48	31.97	16.17	2.85
1.57	2.16	-3.22	7.3	76.37	5.57	358.44	23.2	3957.37	60.75	0.53	9.73	-0.79	4.61	210.1	43.71	0.28
150.6	5.96	1.91	6.63	57.39	4.41	0.09	3.59	24.82	7.54	1.64	4.47	-0.26	2.31	9.71	5.14	1.79
175.72	6.33	-2.52	7.01	81.1	5.26	2.64	5.19	235.49	17.19	0.93	4.66	-1.99	2.18	41.31	10.81	4.81
448.21	15.2	-4.55	200000	260.64	11.94	7.13	200000	33.77	10.62	2.49	200000	6.95	4.96	7.84	200000	13.48
113.7	5.53	-1.79	9.14	157.36	7.97	3.62	4.67	44.88	9.81	1.01	4.86	-0.31	2.56	10.23	6.17	1.58
50.66	3.34	-3.3	7.88	162.7	6.81	0.89	3.75	36.97	7.65	1.47	3.9	-1.09	1.89	23.67	5.58	5.07
0.65	1.64	0.55	4.23	3.31	1.94	-0.17	6.01	406.93	19.47	0.69	5.13	0.66	2.55	49.23	14.5	2.26
82.41	4.57	6.92	8.47	131.28	6.85	15.08	4.98	-0.07	5.68	0.61	4.44	-1.11	2.33	5.28	4.2	0.76
74.77	4.37	10.03	9.48	170.01	7.69	27.28	5.88	0.27	6	-0.91	4.49	2.19	2.68	8.97	4.52	0.2
230.49	11.78	-0.86	200000	124.78	9.57	18.05	200000	-7.57	200000	-2.54	200000	-0.68	200000	14.92	7.69	5.75
135.81	5.56	6	7.24	81.85	5.2	7.79	4.15	-4.99	5.06	-0.7	4.15	0.46	2.31	28.64	5.65	1.11
153.98	6.91	-4.27	200000	69.27	5.3	4.77	200000	11.51	7.39	-0.7	200000	0.41	200000	42.98	7.46	4.13

Hg Error	Zn	Zn Error	w	W Error	Cu	Cu Error	Ni	Ni Error	Со	Co Error	Fe	Fe Error	Mn	Mn Error	Sb	Sb Error
200000	360.64	66.29	0	1055.26	532.47	108.47	0	114.83	0	168.5	5024.41	448.26	0	326.76	1374.21	223.87
200000	1403.1	179.61	0	1504.48	3013.86	347.86	0	257.29	0	285.84	19446.33	1697.63	0	326.07	2269.01	398.1
200000	0	137.66	1148.6	964	67785.24	4918.79	0	161.8	0	383.64	53273.41	3590.43	0	435.35	2207.91	339.42
6.29	42.21	12.84	9.31	41.59	2278.45	60.33	16.91	27.85	0.81	41.17	3755.19	124.44	27.58	36.17	267.23	33.35
17.41	-236.13	85.31	115.21	78.5	85932.48	1414.65	7.24	62.47	1.07	80.77	5516.35	218.5	383.8	102.13	155.05	41.46
5.34	643.7	30.04	-95.35	41.25	-9.26	15.27	2.39	29.55	-167.26	60.86	12405.12	399.23	4322.38	176.53	42.57	33.88
5.51	88.37	13.2	-42.09	42.03	43.89	18.41	30.51	33.92	174.2	122.04	38272.64	744.88	131.2	56.78	34.8	34.49
200000	14.94	10.82	-77.51	200000	-3.06	200000	1.88	200000	-6.03	200000	21458.76	534.15	103.97	80.22	0	49.34
4.52	163.3	14.15	-38.57	32.31	160.23	27.42	18.91	24.17	-53.76	24.91	1723.22	80.6	32.29	30.9	34.9	30.27
6.6	436.23	25.76	-51	44.77	24.24	17.91	41.61	33.12	-332.98	105.55	30931.71	611.4	196.64	61	38.85	35.22
5.39	4.78	7.6	-39.57	40.08	31.93	17.37	49.51	35.1	-544.41	185.39	79251.3	1246.83	98.98	67.73	0	47.69
5.54	10.72	8.35	-50.89	39.61	202.37	24.34	13.02	31.22	-94.31	114.12	37182.11	716.62	40.29	49.05	36.15	34.02
200000	29.61	14.03	-78.17	200000	93.97	37.83	-7.15	200000	87	200000	33983.85	800.05	347.87	108.24	0	54.3
6.24	46.18	11.44	-32.92	47.12	-24.71	16.42	26.93	34.64	-136.6	81.03	18841.58	484.59	528.29	76.49	0	58.86
4.8	246.32	17.62	-45.9	35.08	19.77	14.33	75.47	27.96	-496.74	108.34	41023.11	688.28	2523.98	127.68	0	30.62
5.77	506.17	26.72	-23.77	43.71	33.22	17.21	9.35	29.49	-324.03	99.04	31335.86	628.91	76.01	48.45	0	46.33
5.73	29.54	9.71	-14.65	43.09	-13.42	15.38	15.03	32.52	16.75	111.48	33992.38	686.2	442.15	72.43	0	48.93
5.63	38.83	10.28	-18.25	42.31	-15.78	15.1	-18.25	31.17	120.83	101.4	26977.5	567.76	330.94	66.65	46.58	33.64
200000	71.86	21.8	-107.76	200000	-41.94	200000	-9.82	200000	73.12	200000	33201.1	969.04	681.11	160.11	0	54.85
5.16	26.41	8.94	-50.82	38.81	-26.08	13.86	24.37	30.86	-79.31	96.98	28416.98	587.71	397.33	67.05	0	41.32
200000	83.12	15.82	-81.35	200000	293.83	41.26	60.05	44.13	-23.69	200000	57783.62	1077.25	557.14	112.3	0	57.57

Sn	Sn Error	Cd	Cd Error	Pd	Pd Error	Ag	Ag Error	Bal	Bal Error	Nb	Nb Error	Bi	Bi Error	Re	Re Error	Та
0	160.94	0	219.25	0	114.57	2022.17	307.94	712346.56	20826.34	0	18.37	0	366.66	0	1	0
0	291.72	0	328.16	0	168.29	3723.3	599.84	416368	60509.7	0	27.13	0	720.87	0	1	0
0	235.01	0	274.97	0	140.23	3117.32	464.62	441006.84	48072.89	0	22.07	0	588.77	0	1	0
0	21.97	0	40.71	0	21.36	0	42.32	987664.69	201.66	0	2.29	0	13.92	0	1	0
0	28.59	0	52	0	26.97	0	53.98	904453.75	1560.29	0	2.66	0	19.63	0	1	0
0	24.27	0	44.76	0	28.92	0	46.7	979129.94	306.41	5.97	3.48	0	5.17	0	1	0
0	25.46	0	45.82	0	33.68	0	47.7	959009.5	682.87	0	3.42	8.71	6.38	0	1	0
0	26.16	0	48.31	0	25.59	0	50.37	977616.13	425.34	0	2.71	0	5.88	0	1	0
0	21.91	0	55.06	75.78	54.13	70.66	50.47	995689.31	92.94	4.9	3.05	59.53	10.94	0	1	0
0	25.69	0	46.56	0	30.51	142.93	102.09	961977.94	627.48	0	2.7	422.16	28.49	0	1	0
0	25.24	0	45.58	0	32.99	0	55.92	920348.94	1175.68	0	2.73	0	4.58	0	1	0
0	24.86	0	45.18	0	32.11	0	68.13	961946.31	627.95	0	3.09	0	7.09	0	1	0
0	47.03	0	90.48	0	28.66	69.39	57.57	963642.81	719.75	0	4.96	0	14.07	0	1	0
0	26.06	0	47.84	0	26.16	0	50.07	978234.38	412.23	4.28	3.66	0	6.87	0	1	0
0	22.09	0	40.66	0	21.29	0	42.01	953693	670.27	0	2.22	0	6.93	0	1	0
0	24.05	0	44.5	0	24.65	0	46.49	967432.38	542.8	0	3.85	0	6.8	0	1	0
0	25.42	0	46.17	0	40.52	0	71.06	957867.69	706.16	19.73	3.85	18.68	7.62	0	1	0
0	24.41	0	44.52	0	23.44	0	46.24	961375.44	640.31	23.93	3.84	31.69	8.44	0	1	0
0	37.96	0	86.21	104.72	74.8	123.72	88.37	961549.38	939.77	20.7	5.7	20.52	11.13	0	1	0
0	24.24	0	44.35	0	25.63	0	46.07	968043.06	535.05	9.78	3.49	7.67	6.16	0	1	0
0	27.78	0	49.94	0	26.22	0	52.14	938424.63	1040.3	5.36	3.77	0	5.21	0	1	0

Ta Error	Hf	Hf Error	Cr	Cr Error	v	V Error	Ti	Ti Error
1	0	1	574.91	275.12	837.88	499.41	1520.79	794.31
1	0	1	1062.59	438.34	1007.61	724.89	2208.55	1163.93
1	0	1	0	477.77	770.95	596.65	1779.63	932.79
1	0	1	0	130.65	0	156.72	0	285.3
1	0	1	164.92	83.96	269.91	154.45	0	220.8
1	0	1	0	97.81	0	219.65	506.7	367.69
1	0	1	108.01	104.04	435	213.7	1485.25	386.19
1	0	1	0	105.96	0	247.04	774.61	406.19
1	0	1	0	87.62	0	164.79	0	319.28
1	0	1	210	104.87	0	241.08	898.66	346.88
1	0	1	0	114.69	0	135.63	0	231.28
1	0	1	0	152.87	0	248.07	0	338.11
1	0	1	0	113.35	314.7	241.01	757.99	417.08
1	0	1	0	98.81	367.08	236.65	1332.44	440.63
1	0	1	0	76.3	510.97	184.09	748.11	295.41
1	0	1	0	88.84	0	166.01	0	286.54
1	0	1	0	146.75	535.25	256.59	6435.75	599.44
1	0	1	300.39	120.11	862.36	286.49	9222.08	682.96
1	0	1	0	158.72	0	522.06	3615.71	714.67
1	0	1	114.99	101.18	0	197.91	2397	438.43
1	0	1	396.02	122.67	0	229.17	2025.83	408.67

# Sample Location Map



Figure 13 XRF Sample Location Map



