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# UPDATED MINERAL RESOURCE ESTIMATE FOR THE GOLIATH GOLD PROJECT, KENORA MINING DIVISION, NORTHWESTERN ONTARIO

**FOR**

**TREASURY METALS INC.**

**UTM 532,441 m E 5,511,624 m N**
**NAD83 Zone 15N**

**NI-43-101 & 43-101F1**
**TECHNICAL REPORT**

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**P&E Mining Consultants Inc.**
**Report 356**

**Effective Date: July 1, 2019**
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# 1.0 SUMMARY

The following report was prepared to provide a National Instrument ("NI") 43-101 Technical Report and Updated Mineral Resource Estimate for Treasury Metals Inc. ("Treasury") on the gold mineralization contained in the Goliath Gold Project in the Kenora Mining Division of northwestern Ontario, Canada. This report has an effective date of July 1, 2019. This report also summarizes Treasury's Preliminary Economic Assessment ("PEA") with an effective date of February 02, 2017 (Global Canada Geosciences Ltd. (CSA Global), 2017).

The Goliath Gold Project ("Project") is located 20 kilometres east of the City of Dryden, north western Ontario, within the Townships of Zealand and Hartman in the Kenora Mining Division. The Goliath Property ("Property") is centred at approximately UTM 532441 m E and 5511624 m N NAD83 Zone 15N; 49°45'22" N, 92°32'58" W. The Goliath Project consists of 242 contiguous single cell mining claims and 30 boundary cell mining claims (272 claim units for 4,064 hectares), 19 patented land parcels (approximately 920 hectares) with a total area of approximately 4,984 hectares. The Goliath Gold Project is held 100% by Treasury subject to certain royalties on some of the parcels.

The Property benefits from excellent access from the Trans-Canada Highway 17 and close proximity to the City of Dryden. A range of equipment, supplies and services required for mining development is available in Dryden.

The Property is located in the Canadian Shield at an average elevation of 390 m above sea level with maximum relief of 30 to 40 m. The Project area climate is typical of a northern continental boreal climate with warm summers and cold winters.

The Goliath Gold Deposit was discovered by Teck Exploration Ltd. in 1990 based on drilling anomalous surface grab samples. Between 1990 and 1998, Teck drilled 349 holes and the program culminated in 1998 with an underground development program. A 275 m long ramp was driven to access the Main Zone and a total of 220 m of drifting was completed along the Main Zone at an approximate vertical depth of 35 m. A 2,355 tonne bulk sample was shipped to the St. Andrews Goldfields' mill near Timmins, Ontario for custom milling in the fall of 1999. The custom milled bulk sample had a head grade of 5.63 g/t Au and 15.28 g/t Ag as calculated by St. Andrew Goldfields. The gold recovery was calculated at 96.83% and silver at 38.0%.

Since acquiring the Property in 2008, Treasury has completed extensive exploration including geological mapping, diamond drilling, trenching, airborne (EM/mag) and ground geophysical (IP) surveys, downhole geophysical surveys, mobile metal ion ("MMI") soil surveys, metallurgical testing, resource estimation and environmental studies. A total of 170,135 m has been drilled by Treasury on the Property since 2008 including 501 newly collared holes, 30 re-entry holes and four (4) wedge holes. Treasury has advanced environmental and socio-economic studies including a submission of an Environmental Impact Statement ("EIS") to the Canadian Environmental Assessment Agency ("CEAA") for review.

The Goliath Gold Project is located in the Archean Eagle-Wabigoon-Manitou greenstone belt in the Wabigoon Subprovince of the Superior Province. Rocks in the area of the Goliath Deposit have been grouped into the Thunder Lake assemblage of predominantly meta-sedimentary rocks, and the Thunder River mafic metavolcanic rocks. The Thunder Lake assemblage underlies the majority of the Project area and comprises quartz-porphyritic felsic to intermediate metavolcanic rocks represented by biotite gneiss, mica schist, quartz-porphyritic mica schist, a variety of metasedimentary rocks and minor amphibolite rocks. Within the Thunder Lake assemblage, a unit dominated by felsic metavolcanic rocks is conformably inter-layered with wacke-siltstone and hosts the majority of gold mineralization at Goliath. All of the rocks have been subjected to folding and moderate to intense shearing with local hydrothermal alteration, quartz veining and sulphide mineralisation. In the immediate area of the Deposit, a 100 to 150 m thick unit of intensely deformed and variably altered felsic, fine to medium grained, quartz-feldspar-sericite schist (“MSS”) and biotite-quartz-feldspar-sericite schist (“BMS”) with minor metasedimentary rocks (“MSED”) hosts the most significant gold concentrations in the Main and C Zones of the Deposit.

Native gold and silver (electrum) are associated with finely disseminated sulphides, coarse grained pyrite and very narrow light grey translucent “ribbon” quartz veining. The main sulphide phases are pyrite, sphalerite, galena, pyrrhotite, minor chalcopyrite and arsenopyrite and dark grey needles of stibnite. The alteration consists of primarily sericitization and silicification in association with the gold mineralization. Chloritization is visible in metamorphosed and altered mafic rocks in the area. Rare flakes of aquamarine green fuchsite occur in the strongly altered sericite alteration and in association with high-grade gold.

At Goliath, the gold-bearing zones strike from 090° to 072° with dips that are consistently 72°-78° south or southeast. The mineralised zones are tabular composite units defined on the basis of moderate to strongly altered rock units, anomalous to strongly elevated gold concentrations, and increased sulphide content and are concordant to the local stratigraphic units. In the Goliath Gold Deposit, high grade gold mineralization occurs in shoots with relatively short strike-lengths (up to 50 meters) that plunge steeply to the west. The main area of gold, silver and sulphide mineralisation and alteration occurs up to a maximum drill-tested vertical depth of ~805 metres, over a drill-tested strike-length of approximately 2,300 metres within the current defined resource area. Gold mineralized zones remain open at depth.

Although originally described as a shear-hosted mesothermal gold deposit, Treasury favours a hybrid deposit model with early gold-rich volcanogenic sulphide mineralization overprinted by subsequent deformation and alteration events contributing further concentration and/or remobilizing of both precious and base metals. These deformation and alteration events focused metals into high grade westward plunging shoots.

Treasury implemented and monitored a thorough quality assurance/quality control program (“QA/QC” or “QC”) for the diamond drilling and sampling undertaken at the Goliath Gold Project from 2008-2014. QC protocol included the insertion of QC samples into every batch sent for analysis. QC samples included certified reference materials, blanks and duplicates. The Goliath Gold Project was visited by Mr. Antoine Yassa, P.Geo., of P&E and an independent Qualified Person in terms of NI43-101, on August 13, 2014 and June 24 to 26, 2015. An independent verification sampling program was conducted by Mr. Yassa at that time. Based upon the evaluation of the QA/QC program undertaken by Treasury, as well as P&E’s due diligence sampling, it is P&E’s opinion that the results are suitable for use in the current Mineral Resource Estimate.

The Goliath Gold mineralization has been tested in several metallurgical campaigns beginning with the 1998 bulk sample. Testwork has generally returned high gold extractions, indicating excellent amenability to conventional direct cyanidation processing, with or without gravity concentration.

This Mineral Resource Estimate for the current study was undertaken by Yungang Wu, P.Geo., Eugene Puritch, P.Eng. and Antoine Yassa, P.Geo. of P&E Mining Consultants Inc. of Brampton, Ontario, all independent Qualified Persons in terms of NI 43-101, from information and data supplied by Treasury Metals. The effective date of this Mineral Resource Estimate is July 1, 2019.

All drilling and assay data were provided in the form of Excel data files by Treasury. The Gems database for this Mineral Resource Estimate, constructed by P&E, consisted of 811 core holes totalling 257,540 metres with 104,316 Au assays and 58,848 Ag assays. Verification of Au assay database records was performed by P&E against original laboratory electronically issued certificates from Activation Laboratories, Thunder Bay and Accurassay Laboratories (“Accurassay”), Thunder Bay.

Based on the previous resource estimate performed by A.C.A Howe International Ltd. in 2011, P&E predetermined to construct two individual sets of mineralization wireframes for potential open pit mining and underground mining above and below 150 m elevation respectively, which were overlapped from surface to 150 m elevation. Mineralization domains were defined by continuous mineralized structures, lithology along strike and down dip, and assay intervals equal to or greater than 0.35 g/t AuEq for the potential open pit mining area, and 1.9 g/t AuEq for the potential underground mining area. The formula applied for AuEq was AuEq=Au+(Ag/82.68) based on trailing average Au and Ag prices of US$1,397 and US$22.93 respectively, and 95% recovery for Au and 70% recovery for Ag.

Eleven mineralization zone wireframes for the open pit resource and eight wireframes for the underground resource were constructed for the Mineral Resource Estimate. The wireframes were created from successive sectional polylines on east facing oriented vertical sections with 25 m spacing. Minimum constrained sample length for interpretation was 2.0 m. The average constrained sample length was 1.06 m. In order to regularize the assay sampling intervals for grade interpolation, a one metre compositing length was selected for the drill hole intervals. The composites were calculated for Au and Ag over 1.0 m lengths starting at the first point of intersection between assay data hole and hanging wall of the 3-D zonal constraint. The compositing process was halted upon exit from the footwall of the aforementioned constraint.

Grade capping was investigated on the 1.0 m composite values in the database within the constraining domains to ensure that the possible influence of erratic high values did not bias the database. Gold and silver composite Log-normal histograms were generated for each mineralized zone and gold and silver grade capping values for open pit and underground resource were estimated on a zone by zone basis. The majority of the zones were capped. A semi-variography study was performed as a guide to determining a grade interpolation search strategy. Omni, along strike, down dip and across dip semi-variograms were attempted for each zone using capped composites. Continuity ellipses based on the observed ranges were subsequently generated and used as the basis for estimation search ranges, distance weighting calculations and mineral resource classification criteria. Anisotropy was modeled based on an average strike direction of 080° and -70° South dip.

A total of 517 bulk density measurements from 147 drill holes were provided by Treasury. A bulk density model was interpolated with the Nearest Neighbour interpolation method using bulk density measurements.

The Goliath resource block model was constructed using Geovia Gems V6.7.1 modelling software. The block model consists of separate model attributes for estimated grade, rock type, percent, bulk density and classification. Block dimensions were 5 m x 5 m x 2.5 m for both open pit and underground models. The Au grade blocks of the Main and C Zones were interpolated with Ordinary Kriging while all other zones were interpolated with Inverse Distance Cubed ("$1/d^3$") based on the variogram performance. The Ag grade blocks of all zones were interpolated with Inverse Distance Cubed ($1/d^3$). The Au equivalent blocks ("AuEq") were determined using formula AuEq = Au + (Ag/82.68). The Mineral Resources were classified as Measured, Indicated and Inferred based on the geological interpretation, semi-variogram performance and drill hole spacing. The Measured Mineral Resources were classified for the blocks interpolated by the grade interpolation Pass I which used at least 5 composites from a minimum of three drill holes; Indicated Mineral Resources were defined for the blocks interpolated by the grade interpolation Pass II, which used at least three (3) composites from a minimum of two holes; and Inferred Mineral Resources were categorized for all remaining grade populated blocks within the mineralized domains.

The Mineral Resource Estimate was derived from applying an AuEq cut-off grade to the block model and reporting the resulting tonnes and grade for potentially mineable areas. Based on estimated operating costs and gold and silver recoveries, a trailing average gold price of US$1,397/oz, silver price of US$22.93/oz and an exchange rate of US$0.94=C$1.00, in-pit and underground cut-offs were 0.35 g/t AuEq and 1.90 g/t AuEq respectively. Near-surface resources are constrained within an optimized conceptual pit-shell that utilized Measured, Indicated and Inferred Mineral Resources. Underground Mineral Resources are reported outside of the pit shell.

The resulting Mineral Resource Estimate is tabulated in Table 1.1. P&E considers that the gold and silver mineralization of Goliath is potentially amenable to Open Pit and underground ("UG") extraction.

| **TABLE 1.1**<br>**MINERAL RESOURCE ESTIMATE(1-8)** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Area** | **Classification** | **Cut-off AuEq (g/t)** | **Tonnes (kt)** | **Au (g/t)** | **Contained Au (koz)** | **Ag (g/t)** | **Contained Ag (koz)** | **AuEq (g/t)** | **Contained AuEq (koz)** |
| In Pit | Measured | 0.4 | 762 | 1.91 | 47 | 8.86 | 217 | 1.99 | 49 |
| | Indicated | 0.4 | 11,849 | 1.37 | 522 | 5.47 | 2,083 | 1.42 | 541 |
| | Meas + Ind | 0.4 | 12,611 | 1.40 | 569 | 5.67 | 2,300 | 1.45 | 590 |
| | Inferred | 0.4 | 595 | 1.05 | 20 | 2.63 | 50 | 1.08 | 21 |
| Underground | Measured | 1.9 | 163 | 6.42 | 34 | 25.81 | 135 | 6.65 | 35 |
| | Indicated | 1.9 | 3,429 | 5.34 | 589 | 16.64 | 1,834 | 5.49 | 605 |
| | Meas + Ind | 1.9 | 3,591 | 5.39 | 623 | 17.05 | 1,969 | 5.54 | 640 |
| | Inferred | 1.9 | 1,414 | 4.43 | 201 | 11.42 | 519 | 4.53 | 206 |
| **Total** | Measured | 0.4+1.9 | 925 | 2.70 | 80 | 11.84 | 352 | 2.81 | 83 |
| | Indicated | 0.4+1.9 | 15,277 | 2.26 | 1,111 | 7.98 | 3,917 | 2.33 | 1,146 |
| | Meas + Ind | 0.4+1.9 | 16,202 | 2.29 | 1,192 | 8.20 | 4,269 | 2.36 | 1,230 |
| | Inferred | 0.4+1.9 | 2,009 | 3.43 | 222 | 8.81 | 569 | 3.51 | 227 |

(1) *Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability.*
(2) *The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*
(3) *The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.*
(4) *The Mineral Resources in this press release were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.*
(5) *The mined tonnage by historical underground drifts was not removed as the amount was insignificant to this Mineral Resource Estimate.*
(6) *A gold price of US$1,275/oz and silver price of US$16.50/oz based on the June 30, 2019 three-year trailing average prices and an exchange rate of US$1.00=Cdn0.77 were utilized in the AuEq cut-off grade calculations of 0.40 g/t AuEq for Open Pit and 1.90 g/t AuEq for Underground Mineral Resources.*
(5) *Open Pit mining costs were assumed at C$3.45/t for mineralized material, C$3.30/t for waste rock and C$2.00/t for overburden, while Underground mining costs were assumed at C$77.00/t, with process costs of C$18.15/t, G&A of C$2.86/t, and process recoveries of 95.5% for gold and 62.6% for silver.*
(6) *The Au:Ag ratio used for AuEq was 112.17.*
(7) *A bulk density model averaged 2.78 t/m$^3$ for mineralized material.*
(8) *Totals in the table may not sum due to rounding.*

With the Federal EA in the final phases work and spending will be limited for these purposes. We recommend that the company continue with provincial permitting activities in development towards a construction decision. It is also recommended that the company proceed towards advanced engineering studies and the completion of a Pre-Feasibility level study. Costs for the outstanding work to be completed have been estimated for their respective areas as follows:

A budget for the recommended work program is summarized in Table 1.2.

**TABLE 1.2**
**PROPOSED WORK BUDGET**

| **Work Description** | **Total Cost (C$)** |
|---|---|
| Prefeasibility Engineering studies | 600,000 |
| Environmental Work | 750,000 |
| **Total** | **1,350,000** |

# 2.0 INTRODUCTION AND TERMS OF REFERENCE

## 2.1 TERMS OF REFERENCE

The information, conclusions and recommendations contained herein are based on a review of the diamond drill hole database, other digital and hard copy data, geological reports, maps, miscellaneous technical papers, company letters, memoranda and other information made available by Treasury, discussions with representatives and consultants of Treasury who are familiar with the Project and the area in general as well as various published geological reports and other public and private information as listed in References of this Report. P&E has assumed that all of the information and technical documents reviewed are accurate and complete in all material aspects. P&E has reviewed the land tenure for unpatented claims on the MNDM's MLAS website and for leases and patented land based on work conducted by the Claim Group but has not independently verified the legal status or ownership of the property or the underlying agreements.

This report was prepared at the request of Mr. Greg Walter, B.Sc. (Geology), MBA, President & CEO of Treasury. Treasury is a Toronto based, publicly held company trading on the Toronto Stock Exchange ("TSX") under the symbol of "TML", with its corporate offices at:

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This report has an effective date of July 1, 2019. Mr. Antoine Yassa, P.Geo. of P&E, a Qualified Person under the regulations of NI 43-101, conducted a site visit to the Project on June 24 to 27, 2015. Yungang Wu, P.Geo. of P&E, a Qualified Person under the regulations of NI 43-101 conducted site visits on April 23 to April 24, 2018 and September 20 to September 21, 2018. Independent verification sampling program was conducted by Mr. Yassa and Mr. Wu.

The Goliath Project is located in the Kenora Mining Division of northwestern Ontario. The Project lies about 20 kilometres east of the City of Dryden, 125 kilometres east of the City of Kenora, and 325 kilometres northwest of the port City of Thunder Bay, Ontario, Canada.

Section 20 of this report was prepared by Mark Wheeler, P.Eng., Director, Project of Treasury, acting as Qualified Person as defined by NI 43-101, who takes responsibility for those sections of the report as outlined in the "Certificate of Author" attached to this report. He also coauthored Sections 25 and 26.

## 2.2 SOURCES OF INFORMATION

The information, conclusions and recommendations contained herein are based on a review of the diamond drill hole database, other digital and hard copy data, geological reports, maps, miscellaneous technical papers, company letters, memoranda and other information made available by Treasury, discussions with representatives and consultants of Treasury who are familiar with the Project and the area in general as well as various published geological reports and other public and private information as listed in References of this Report. P&E has assumed that all of the information and technical documents reviewed are accurate and complete in all material aspects. P&E has reviewed the land tenure on the Ontario's Ministry of Energy, Northern Development and Mines' ("MNDM") Mining Lands Administration System ("MLAS") website but has not independently verified the legal status or ownership of the Property or the underlying agreements.

The present Technical Report is prepared in accordance with the requirements of National Instrument 43-101 ("NI 43-101") and in compliance with Form NI 43-101F1 of the Ontario Securities Commission ("OSC") and the Canadian Securities Administrators ("CSA"). The Mineral Resource Estimate is prepared in compliance with the CIM Definitions and Standards on Mineral Resources and Mineral Reserves that are in force as of the effective date of this report.

## 2.3 UNITS AND CURRENCY

Unless otherwise stated all units used in this report are metric. Gold assay values ("Au") are reported in grams of metal per tonne ("g/t Au") unless ounces per ton ("oz/t Au") are specifically stated. The C$ is used throughout this report unless the US$ is specifically stated. At the time of this report the rate of exchange between the US$ and the C$ is 1 US$ = 1.25 C$.

The following list shows the meaning of the abbreviations for technical terms used throughout the text of this report.

| Abbreviation | Meaning |
|---|---|
| "$1/d^2$" | inverse distance squared |
| "$1/d^3$" | inverse distance cubed |
| "3-D" | three dimensional |
| "A.C.A. Howe" | A.C.A. Howe International Limited |
| "Accurassay" | Accurassay Laboratories |
| "ADIS" | Automated Digital Imaging System |
| "Ag" | silver |
| "ALGD" | Archaean Lode Gold Deposits |
| "As" | arsenic |
| "ATVs" | all-terrain vehicles |
| "Au" | gold |
| "AuEq" | gold equivalent |
| "BECI" | Balch Exploration Consulting Inc. |
| "BIF" | banded iron formation |
| "BMS" | biotite-quartz-feldspar-sericite metasedimentary schist |
| "BS" | biotite schist |
| "C$" | Canadian dollar(s) |
| "CCC" | Continental Caretech Corporation |
| "CCIC" | Caracle Creek International Consulting Inc. |
| "CEAA" | Canadian Environmental Assessment Agency |
| "CIM" | Canadian Institute of Mining, Metallurgy and Petroleum |

| | |
|---|---|
| "CIL" | carbon in leach circuit |
| "CIP" | carbon in pulp |
| "cm" | centimetre(s) |
| "Corona" | Corona Gold Corporation |
| "CRM" | certified reference material |
| "CSA" | Canadian Securities Administrators |
| "CSA Global" | CSA Global Canada Geosciences Ltd. |
| "CVG" | calculated vertical gradient |
| "DCIP" | direct current induced polarization |
| "DDH" | diamond drill hole |
| "DEM" | Digital Elevation Model |
| "Downing Drilling" | George Downing Estate Drilling Ltd. |
| "EA" | environmental assessment |
| "EAC" | Eastern Alteration corridor |
| "EIS" | environmental impact statement |
| "EM" | electromagnetic survey |
| "g/t" | grams per tonne |
| "G&T" | G&T Metallurgical Services |
| "ha" | hectare(s) |
| "Hg" | mercury |
| "HRAM" | High Resolution Aeromagnetic Survey |
| "ICP" | inductively coupled plasma spectrometry |
| "$ID^3$" | Inverse Distance Cubed |
| "IESO" | Independent Electricity System Operator |
| "IGRF" | International Geomagnetic Reference Model |
| "ILC" | International Lithium Corp. |
| "IP/RES" | induced polarization / resistivity survey |
| "JVX" | JVX Geophysical Surveys and Consulting |
| "km" | kilometre(s) |
| "kWh | kilowatt/hour |
| "Laramide" | Laramide Resources Ltd. |
| "m" | metre(s) |
| "M" | million(s) |
| "Ma" | millions of years |
| "mag" | magnetometer survey |
| "MS" | mass spectrometry |
| "MSS" | muscovite-sericite schist |
| "MSED" | metasedimentary rocks |
| "MLAS" | Mining Lands Administration System |
| "MMI" | mobile metal ion |
| "MNDM" | Ministry of Energy, Northern Development and Mines (Ontario) |
| "MNRF" | Ministry of Natural Resources and Forestry (Ontario) |
| "MPS" | MPH Ventures Corp. |
| "NAD" | North American Datum |
| "NI" | National Instrument (Canada) |
| "NN" | Nearest Neighbour |
| "NSR" | net smelter royalty |
| "NTS" | National Topographic System |

| | |
|---|---|
| “OES” | optical emission spectrometry |
| “OK” | Ordinary Kriging |
| “OMNRF” | Ontario Ministry of Natural Resources and Forestry |
| “OP” | Open Pit |
| “OSC” | Ontario Securities Commission |
| “oz” | ounce |
| “Pb” | lead |
| “P&E” | P&E Mining Consultants Inc. |
| “PEA” | preliminary economic assessment |
| “Project” | Goliath Gold Project |
| “Property” | Goliath Property |
| “QA/QC” | quality assurance/quality control |
| “QC” | quality control |
| “QMS” | quality management system |
| “Report” | technical report and updated mineral resource estimate |
| “RQD” | Rock-quality designation |
| “SCIP” | sample core induced polarization |
| “SEM” | scanning electron microscope |
| “SG” | specific gravity |
| “SGS” | SGS Minerals Services |
| “SMC” | SAG Mill Comminution |
| “t” | metric tonne(s) |
| “TDB” | take down back |
| “Teck” | Teck Exploration Ltd. |
| “the Agency” | the Canadian Environmental Assessment Agency |
| “the Company” | Treasury Metals Inc. |
| “Treasury” | Treasury Metals Inc. |
| “TSX” | Toronto Stock Exchange |
| “UG” | underground |
| “US$” | US dollar(s) |
| “UTM” | Universal Transverse Mercator grid system |
| “VG” | visible gold |
| “VLF-EM” | very low frequency electro magnetic survey |
| “VMS” | volcanogenic massive sulphide |
| “Zn” | zinc |

## 3.0 RELIANCE ON OTHER EXPERTS

P&E has assumed, and relied on the fact, that all the information and existing technical documents listed in the References section of this report are accurate and complete in all material aspects. While P&E has carefully reviewed all the available information presented to us, we cannot guarantee its accuracy and completeness. P&E reserves the right, but will not be obligated to revise the report and conclusions if additional information becomes known to us subsequent to the date of this report.

Copies of the tenure documents, operating licenses, permits, and work contracts were not reviewed. Information relating to tenure for unpatented claims was reviewed by means of the public information available through Ontario's Ministry of Energy, Northern Development and Mines' ("MNDM") Mining Lands Administration System (MLAS) online application. P&E has relied upon this public information, as well as tenure information from Treasury and work done by The Claim Group for leases and patented claims and has not undertaken an independent detailed legal verification of title and ownership of the Goliath Project claims. P&E has not verified the legality of any underlying agreement(s) that may exist concerning the licenses or other agreement(s) between third parties but has relied on, and believes it has a reasonable basis to rely upon Treasury to have conducted the proper legal due diligence.

A draft copy of the report has been reviewed for factual errors by Treasury. Any changes made as a result of these reviews did not involve any alteration to the conclusions made. Hence, the statement and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are not false and misleading at the date of this report.

# 4.0 PROPERTY DESCRIPTION AND LOCATION

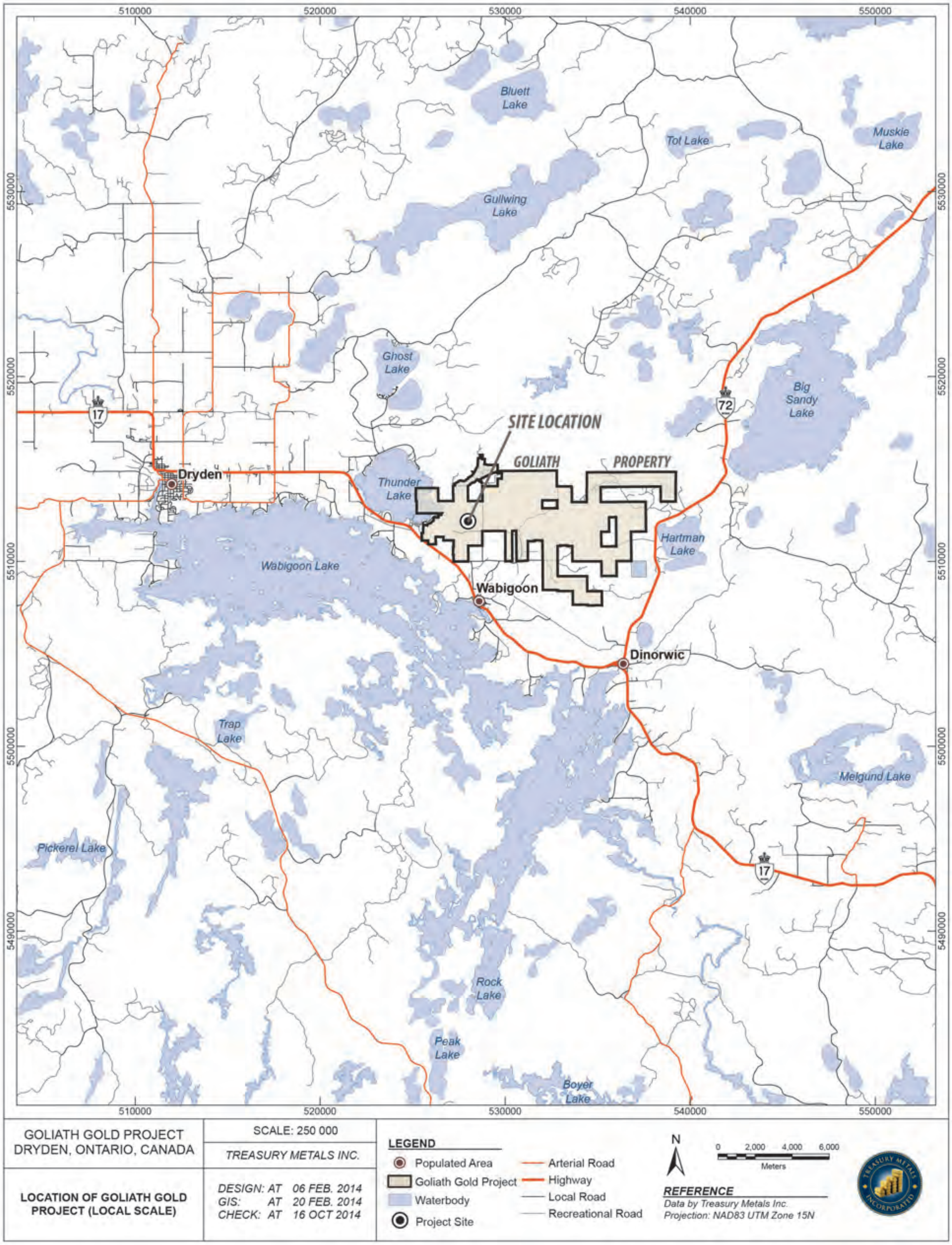
## 4.1 PROPERTY LOCATION

The Goliath Project is located in the Kenora Mining Division in north-western Ontario, 20 kilometres east of the City of Dryden, 145 kilometres east of the City of Kenora, and 325 kilometres northwest of the port City of Thunder Bay (Figure 4.1 and Figure 4.2). The area is covered by National Topographic System ("NTS") map sheets 52F/09, 10, 15 and 16 and straddles Zealand and Hartman townships. The Property is centred at approximately 532,441 m E and 5,511,624 m N UTM NAD83 Zone 15N; 49°45'22" N, 92°32'58" W.

**FIGURE 4.1 PROPERTY LOCATION MAP**


***Source:*** *www.treasurymetals.com*

## **FIGURE 4.2 PROPERTY ACCESS MAP**




***Source:*** *www.treasurymetals.com*

## 4.2 PROPERTY DESCRIPTION

The Goliath Project consists of 242 contiguous single cell mining claims and 30 boundary cell mining claims (272 claim units – 4,064 hectares), 19 patented land parcels (approximately 920 hectares) as detailed in Appendix J. The total area of the claim group is approximately 4,984 hectares (approximately 50 $km^2$) covering portions of Hartman and Zealand townships east of the City of Dryden, Kenora Mining Division (Figure 4.3). All claims are currently active and in good standing with Ontario's MNDM.

The Goliath Project comprises two historic properties that are now consolidated: the larger Thunder Lake Property, purchased from Teck and Corona and the Laramide Property. The land acquisition agreements are described in Section 4.2. The Goliath Project has been expanded from its original size through:

- Additional staking and acquisition of 21 unpatented mining claims (131 units – 2,096 hectares);

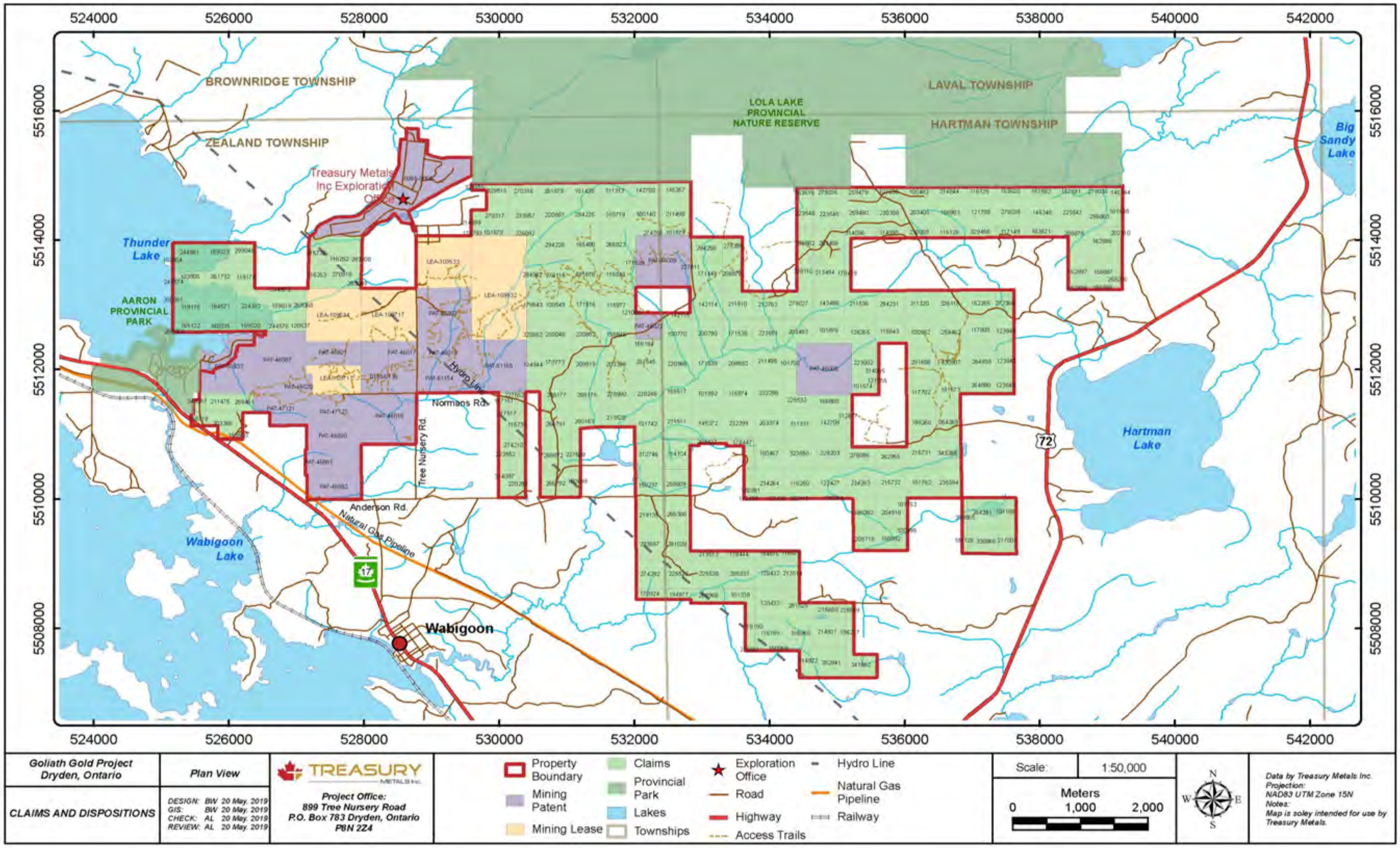
- An option agreement pursuant to which Treasury has the right to acquire a 100% interest in the mining rights (only) of certain patented lands (the Brisson Property – 40.8711 hectares) located immediately west and contiguous to the Goliath Project;

- The acquisition of a 100% interest in the surface and mineral rights of a parcel of private land (Ontario Ministry of Natural Resources and Forestry Tree Nursery) totalling 117.492 Ha; and

- In addition, in 2011, Treasury made final payment on an option to purchase a 16 ha surface rights only patent within the Project area (LeClerc - Parcel 34303).

The Project is held 100% by the Company, subject to certain underlying royalties and payment obligations on 13 of the 19 patented land parcels, totalling approximately $103,500 per year. The option on one patented land parcel to earn in 100% as described for the Brisson Mineral Property (Section 4.3.3) was completed in March of 2011.

**FIGURE 4.3 CLAIMS AND MINING LEASES OF THE GOLIATH PROPERTY**




***Source:*** *Treasury Metals (2019)*

| **TABLE 4.1 OPTIONS AND ROYALTY OBLIGATIONS, PATENTED LAND PARCELS, GOLIATH PROJECT** | | | | | |
|---|---|---|---|---|---|
| **Party** | **Parcel ID** | **Advance Royalty (Per Year)** | **Due Date** | **Option Amount** | **NSR (%)** |
| Lundmark[1] | 41941 | CAD$50,000 ** | January 1 | - | 2.0 |
| Collins[1] | 17395 | - | - | - | 2.0 |
| Sheridan[1] | 21374 | - | - | - | 1.0 |
| Johnson[1] | 15401 | - | - | - | 2.0 |
| Hudak[1] | 21609 | US$3,500 * | January 1 | - | 2.0 |
| Fraser[1] | 15395 | CAD$50,000 | January 1 | - | 2.0 |
| Delk[2] | 24724 | - | - | - | 2.5 |
| Davenport[2] | 19088 | - | - | - | 2.0 |
| Jones[3] | 41215 | - | - | - | 2.5 |
| Nemeth[2] | 6556 | - | - | - | 2.0 |
| Sterling[4] | 4822 | - | - | - | 2.0 |
| Medlee [4] | 21553 | - | - | - | 2.5 |
| Schultz[4] | 13492 | - | - | - | 2.0 |
| Brisson | 23R2434 | - | - | C$45,000** | - |
| **Total C$** | | **$100,000** | | **$45,000** | |
| **Total US$** | | **$3,500** | | | |

** subject to withholding tax;*
*** Option is complete and property purchase (surface rights) closed March 31st, 2011.*
*(1) Thunder Lake West; (2) Thunder Lake East; (3) Jones Property, (4) Laramide Property.*

The Project is bound by two provincial parks: Lola Lake Nature Reserve located at the northern boundary; and Aaron Provincial Park at the western boundary on the south shore of Thunder Lake was designated a nature reserve class park in 1985, whereas Aaron is a serviced recreation-class park operated in co-operation with the City of Dryden.

Treasury warrants that it possesses all permits required to execute exploration activities it has undertaken to date on the Property. Treasury is conducting ongoing community consultations including discussions with the local First Nation communities. In a press release dated March 20, 2019, Treasury announced the signing of an Engagement Agreement with Wabuskang First Nation. The agreement will allow the community to understand the impact of the project and allow the Company to better understand the Community's viewpoints during project development.

## 4.3 PROPERTY PURCHASE TRANSACTION

Treasury Metals Inc., a former subsidiary of Laramide Resources Ltd. ("Laramide"), was "spun-out" of Laramide as a dividend to Laramide's shareholders. Treasury was listed and began trading on the Toronto Stock Exchange ("TSX") exchange on August 19th, 2008 under the trade symbol "TML".

### 4.3.1 Thunder Lake Property

Laramide closed its purchase transaction of the Thunder Lake Property as of October 2007 (Laramide Press Release: October 4, 2007). Laramide purchased, through its former wholly owned subsidiary, Divine Lake Exploration Corp. (now "Treasury Metals Inc."), 100% of Corona's (82%) and Teck's (18%) respective interests in the Thunder Lake Property. On closing, Corona received from Laramide a cash consideration of $5,000,000 and under the terms of the agreement Corona received from Laramide aggregate cash payments of $10,000,000 and a 10% interest in Treasury after it became a public company. Teck received cash consideration of approximately $1,137,299 at closing and received from Laramide aggregate cash payment of $2,274,598 and a 2.27% interest in Treasury. The balance of consideration for the Properties was payable as follows:

- Cash payment of $6,137,229 sixty (60) days after the closing date;
- Cash payment of $6,137,229 one hundred and twenty (120) days after the closing date; and
- 12.27% of the common shares of Treasury issued and outstanding on completion of a transaction pursuant to which Treasury becomes a public company.

Treasury announced in an August 26, 2008 press release that it had completed the final installment of the purchase price to Corona and Teck-Cominco pursuant to the purchase agreement. In accordance with the 2007 Purchase Agreement, Corona and Teck shall receive, for no additional consideration, that number of common shares sufficient for each of Corona and Teck to maintain their respective percentage interest in the Company of 10% and 2.27% until such time as the Company receives aggregate proceeds from the insurance of common shares of $7.5 million. This threshold has been reached. Laramide and Treasury have met all of the obligations to Teck and Corona.

### 4.3.2 Laramide Property

As part of the spin-out of Treasury, Laramide transferred to Treasury its Goliath Property (herein referred to as the Laramide Property) and certain of Laramide's other non-uranium assets. As of May 2010, Laramide held approximately 13.7% of the issued and outstanding Treasury common shares. Treasury owns 100% of the Laramide Property subject to royalties as detailed in Table 4.1.

### 4.3.3 2009 Property Expansion

In 2009, the Goliath Project was expanded from its original size through the combined staking and acquisition of 18 unpatented mining claims and the signing of an option agreement pursuant to which Treasury has the right to acquire a 100% interest in the mining rights (only) of certain patented lands (the Brisson Property) contiguous to the Goliath Gold Project.

### 4.3.4 Unpatented Mining Claims

In 2009, the Company acquired and/or staked 18 additional unpatented mining claims (111 units) totalling 1,776 hectares. These 18 additional claims are located in the Hartman and Zealand townships. The claims are listed in Appendix J.

### 4.3.5 2009 Brisson Property

On December 11, 2009 the Company entered into an option agreement to acquire a 100% interest in the mining rights (only) of certain patented lands (40.8711 ha) from Edward Henry Brisson (the Brisson Property) located immediately west and contiguous to the Goliath Gold Project. Under the terms of the agreement, the Company made option payments totalling $100,000 and issued common shares of the Company equal to $100,000 based on the market price of the date issue. The property purchase (surface rights) was completed on March 31st, 2011.

### 4.3.6 2010-2011 Property Expansion

In 2010 and 2011 the Goliath Project was further expanded through the staking of three (3) unpatented mining claims; the final option payment and acquisition of a 100% interest in the surface rights (only) patent of LeClerc (Parcel 34303, 16.59 ha) and; the acquisition of a 100% interest in the surface and mineral rights of the historic Dryden Tree Nursery (101 ha).

### 4.3.7 Unpatented Mining Claims

In 2011, the Company staked three (3) additional unpatented mining claims (20 units) totalling 320 hectares in Hartman township.

### 4.3.8 Dryden Tree Nursery Area

On November 5, 2010, the Company acquired a 100% interest in the surface and mineral rights of certain private lands (117.492 ha) formerly known as the Dryden Tree Nursery located immediately northwest and contiguous to the Goliath Gold Project.

## 4.4 ADDITIONAL SURFACE RIGHTS

On April 12, 2011, the Company completed the final payment on the option to purchase the LeClerc surface rights (only) patent (Parcel 34303, 16.59 ha) located immediately east of the Thunder Lake Deposit within the Goliath Gold Project area.

## 4.5 2014 MINING LEASES

Effective 1 October 2014, a total of 11 of Treasury's unpatented mining claims were converted to three 21-year mining leases which expire on 30 September 2035.

Mining Lease 109532 has mining and surface rights covering 131.523 ha in N1/2 Lot 4 Con 4 and S1/2 Lot 4 Con 5 of Zealand Township and comprises all of mining claims K1119541, 1119542, K1119547, K1119548, K1119549, K1119550, K1119559 and K1119560, being all that land and land under water.

Mining Lease 109533 has mining rights only covering 65.559 ha in Lot 5 Con 5, of Zealand Township and comprises all of mining claims K1145301 and K3017938, being all that land and land under water.

Mining Lease 109534 has mining rights only covering 63.940 ha in Lot 7, Con 4 of Zealand Township and comprises of all of mining claim K1145300, being all that land and land under water.

## 4.6 ESTABLISHING MINERAL RIGHTS IN ONTARIO

In Ontario, Crown lands were available to licensed prospectors for the purposes of mineral exploration prior to 2018. A licensed prospector would first stake an unpatented mining claim to gain the exclusive right to prospect on Crown land. Claim staking was governed by the Ontario Mining Act and is administered through the Provincial Mining Recorder and Mining Lands offices of the MNDMF (MNDM).

An unpatented mining claim was a square or rectangular area of open Crown land or Crown mineral rights that a licensed prospector marks out with a series of claim posts and blazed lines. Mining claims were staked either in a single unit or in a block consisting of several single units. In un-surveyed territory, a single unit claim was laid out to form a 16 hectare (40 acre) square with boundary lines running 400 metres (1,320 feet) astronomic north, south, east and west. Multiples of single units, up to a maximum of 16 units (256 hectares), could be staked with only a perimeter boundary as one block claim but were staked in a square or rectangular configuration.

On January 8, 2018, traditional claim staking came to an end and the Mining Lands Administration System (MLAS) was updated to include two types of claims, cell claims and boundary claims. A cell claim was created at conversion when there was one or more legacy claims in a cell held by the same owner. A boundary claim was made when there were multiple legacy claims in cell held by different holders.

A claim remains valid as long as the claim holder properly completes and files the assessment work as required by the Mining Act and the Minister approves the assessment work. A claim holder is not required to complete any assessment work within the first year of recording a mining claim. In order to keep an unpatented mining claim current the mining claim holder must perform $400 worth of approved assessment work per mining claim unit, per year; immediately following the initial staking date, the claim holder has two (2) years to file one year worth of assessment work. Claims are forfeited if the assessment work is not completed.

A claimholder may prospect or carry out mineral exploration on the land under the claim. However, the land covered by these claims must be converted to leases before any development work or mining can be performed. Mining leases are issued for twenty-one year terms and may be renewed for further 21-year periods. Leases can be issued for surface and mining rights, mining rights only or surface rights only. Once issued, the lessee pays an annual rent to the province. Furthermore, prior to bringing a mine into production, the lessee must comply with all applicable federal and provincial legislation.

## 4.7 ENVIRONMENTAL LIABILITY

P&E is not aware of any environmental liabilities associated with the Goliath Property.

As part of the Federal Environmental Assessment ("EA") process, the Canadian Environmental Assessment Agency ("CEAA") accepted the Company's submissions on March 14, 2019, and resumes the federally legislated timeline to approve the EA and register a decision. CEAA has undergone an extensive technical review of the draft documentation.

Under the EA process, the remaining legislated timeline includes a formal review along with a 30-day final public comment period on a draft EA Report and potential conditions of approval, and up to 60 days for a ministerial decision at which point the federal government renders a decision notice.

# 5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

## 5.1 ACCESS

The Goliath Gold Property is located 20 km east of the City of Dryden and is accessible from the Trans-Canada Highway and by various secondary all weather gravel roads that extend north of the town of Wabigoon (Figure 4.3).

To access the Property, drive 18 km east from Dryden on Trans-Canada Highway 17 turning east onto a gravel road called Anderson Road for a distance of 1.7 km. Then turn north on Tree Nursery Road which runs along the north-south boundary of Zealand and Harman Townships for a distance of 1.6 km. At Norman Road, turn west for 1,100 m arriving at the Property gate where the Goliath Gold Deposit is located. Four-wheel drive and all-terrain vehicles ("ATVs") can be used to access more remote parts of the Property via old logging roads and drill access trails during the summer months and through the use of snow machines in the winter. Anderson Road and Tree Nursery Road are unpaved and maintained by the local services board based in the Village of Wabigoon allowing access all year round. Treasury Metals maintains and plows the last 1.0 km of Tree Nursery Road during the winter months.

## 5.2 CLIMATE

The Project area is typical of a northern continental boreal climate with warm summers and cold winters. Summer temperatures can reach an average high of 23.9°C during the month of July with winter temperatures coldest during the month of January with average temperatures of -23.3°C. Mean annual precipitation at the Project site is 705 mm of which between 20% to 24% falls as snow (Treasury Metals Inc., 2015). Fieldwork can be completed year-round. However, geological mapping and field sampling programs are best completed between April and October. Ground geophysical and diamond drilling programs are preferred between the months of November and March during winter freezing conditions, which allows for improved access for heavy machinery such as diamond drill rigs into wet lowland areas of the Property.

## 5.3 LOCAL RESOURCES AND INFRASTRUCTURE

All major industrial services and supplies are available in the town of Dryden, which is the second largest city in the Kenora District of northwestern Ontario and has a population of 7,617 people (2011 Statistics Canada Census). The local economy is based on the forestry, mixed farming and tourism industries. Domtar Incorporated, which owns the Dryden full bleach market pulp mill, is the major employer in the area having approximately 380 direct employees and around 250 contract loggers supporting the operations. This mill ceased paper manufacturing in November, 2008 which resulted in some job losses. The Project is located about 325 km northwest of the port City of Thunder Bay, which is a major economic centre along the Trans-Canada Highway and at the northwest head of the St. Lawrence Seaway (Lake Superior). There is a small airport nearby that is serviced daily by Bearskin Airlines with flights originating from the City of Thunder Bay.

Although the closest centre of active mining operation is currently in the Red Lake area, located 155 km northwest of the Project site, northwestern Ontario generally possesses the necessary labour and infrastructure to support new exploration and mining operations.

Existing power infrastructure includes the 115 kV and 230 Hydro One M2D line that cuts diagonally across the Project property (Figure 4.2). Hydro One and the Independent Electricity System Operator (“IESO”) serve as the permitting and distribution contacts within Ontario. There is a main Trans-Canada natural gas pipeline that runs parallel to and north of Trans-Canada Highway 17 and crosses portions of the Property. This pipeline provides natural gas for the Dryden area which is distributed by Union Gas. However, at this time, the main Trans-Canada line does not provide gas directly to the Project site, or local home owners in the immediate vicinity. The Canadian Pacific Railway line is located approximately 2.0 km to the southwest of the Property and runs parallel to Trans-Canada Highway 17 along the north shore of Wabigoon Lake.

The area surrounding the Goliath Gold Deposit consists of a mixture of abandoned homesteads and residential dwellings. Most of the properties associated with the Project have been acquired by the Company by means of private purchase agreements. Treasury currently owns 737.26 ha of land of which it holds just the “surface rights” or combined “mineral plus surface rights”. At this time, Treasury holds sufficient surface rights necessary for any potential future mining operations including tailings storage, overburden, waste and ore stockpile areas and effluent treatment and processing plants. Treasury owns four houses along Norman Road; two are condemned and two are used to accommodate geologists and contractors while working on site and are situated 1,100 m from the locked gate to the main Goliath Deposit. The former Ontario Ministry of Natural Resources and Forestry (“OMNRF”) tree nursery facility, located at the end of Tree Nursery Road just north of the Deposit, was sold to Treasury in November 2010 and currently operates as the Project office and as a warehousing facility.

## 5.4 PHYSIOGRAPHY

The Project area is located in the Ontario Canadian Shield in the Lake Wabigoon Ecoregion that is typified by extensive wetlands and boreal forests. Locally, the claim package area is covered by 62% forest, 21% water, 9% developed land, 8% wetland and <1% barren land (Treasury Metals Incorporated, 2015). This region is characterized by a range of forest types (mixed forest 25%, spruce forest 24% and coniferous forest 14% and open water 24%). Typical tree species include trembling aspen, balsam poplar, spruces, white birch and willows with some 270 vascular plant species that have been identified in the region.

Archean bedrock is overlain by a discontinuous mantle of Quaternary surficial deposits. Three main terrain types dominate the landscape: rolling glaciolacustrine plains composed of varved clay and bedrock knobs; rolling rocky uplands of bedrock which may be bare or thinly covered with patches of till and/or varved clay; and complex, moraine-like features commonly capped with beach sand and gravel. Extensive plains of glaciofluvial outwash make up almost 70% of the overburden (as sandy glacial till) overlying the Goliath Project area. Alluvial terrain is mainly organic and accounts for the abundance of peat and swampy areas in the low-lying poorly drained areas of Hartman Township (Roed, 1980; Wetherup, 2008).

Maximum relief is about 30 to 40 metres and occurs in the area of Lot 3 Concession IV of Zealand Township. The topography is typical of this portion of the Canadian Shield and is that of a dissected plateau sloping gently south and east toward Wabigoon Lake and Thunder Lake. The area is located close to the drainage divide between the two watersheds and most drainage basins are limited to fairly small streams and rivers. As a result of glacial erosion and deposition, the drainage pattern became disrupted and consequently there are numerous small lakes, ponds and swamps. The Eastern portion of the Property, east of the hydro line, consists of sandy overburden of moderate thickness. Vegetation in this area consists of spruce and jack pine forest alternating with muskeg or alders in the lowland areas (Steward, 1996). As for the western portion of the Property, it is relatively flat and is overlain by a veneer of varved clay ranging in thickness from 1 to 20 m in thickness. Secondary growth vegetation predominates consisting of balsam and poplar with thick undergrowth of scrub and balsam, Manitoba maple and alders (Steward, 1996). Well exposed east-west hills and outcrops are located in the south part of the Property and are well exposed locally just east of Tree Nursery Road between Norman Road and the former OMNRF Tree Nursery facility. Overall, surface outcrop exposure throughout the Property is limited to less than 5% of the total area.

## 6.0 HISTORY

### 6.1 HISTORIC EXPLORATION

The first gold mining on record in the region was in Van Horne Township in the early 1900's with very limited gold production from auriferous veining in biotite schist within the regional Wabigoon Fault system. Sporadic exploration was carried out along the belt throughout the 1900's with only limited documentation of exploration activity conducted on the Property.

The earliest known government report covering the larger Dryden-Sioux Lookout belt is the Ontario Department of Mines Report and geology map by Satterly (1941). Ministry of Northern Development and Mines ("MNDM") geologist Gary Beakhouse has written a number of reports covering the geology of the region and the Western Superior Province (Beakhouse 2003: Beakhouse, 2002; Beakhouse, 2001; Beakhouse 2000 and Beakhouse, 1995). Reconnaissance lake sediment geochemistry and detailed airborne geophysical surveys are also available for the Thunder Lake and surrounding areas (Hornbrook and Fisk, 1989; Ontario Geological Survey, 1987).

According to Page (1991), the first reference to exploration work conducted on the Property describes an "interesting contact between amphibolite, laminated gray gneisses, and beds of mica-tourmaline schists on Sheridan Option legacy claim SV200. There is no record of any other work on the Property until the mid-1950s. In 1956-57, Compton-Wabigoon conducted geological mapping, magnetometer surveys and the completion of two diamond drill holes totalling 458 m to explore the mineral potential of the major iron formation unit located in Lots 1-4, Concession V and VI along the northern boundary of the Property.

Also in 1956, G.L. Pidgeon completed surface work and one shallow drill hole (drilled south) testing a sphalerite showing in the south half of Lot 6, Concession IV (Fraser Option legacy claim 0134). The showing and drill collar was located in the field by Teck but subsequent surface sampling of sphalerite-rich mineralization did not return any significant gold values (best 10 ppb). Teck determined that the drill hole attempted to test the showing down-dip on the mineralization. This showing had been previously sampled by Satterly in 1941 with similar negative results (Page, 1991).

Algoma Steel Corp. Ltd. conducted geological mapping and drilled five holes totalling 304 m from 1966 to 1968. This program was concentrated on the main iron formation focused in the same area as Compton-Wabigoon's work ten years earlier (Page, 1991). Inco completed ground surveys and one drill hole (52 m) in the vicinity of Teck grid coordinates L18E, 4+00E. Teck could not locate the drill site in the field and no assays were reported in the drill log. However, the hole is located within 50 m of a strong linear (>1,000 m) VLF-EM conductor which Teck believes was the probable drill target.

Historically, three major mining companies conducted exploration work on the Property from 1989 to 1999 (last field work 1998). These are Teck Exploration Ltd. ("Teck"), Corona Gold Corporation ("Corona") and Laramide Resources Ltd. ("Laramide"). At that time, the Property held by all three companies covered more than 1,300 hectares. Teck held the majority of the

Property and all of the surface exposure of the Thunder Lake Gold Deposit (Goliath Gold Deposit).

The exploration history on the Property is described in a number of technical reports prepared for Treasury which is summarized below (Roy et al., 2012; Roy and Trinder, 2011; Roy and Trinder, 2008; Wetherup and Kelso, 2008). All of the exploration work completed from 1989 to 1998 by Teck, Corona and Laramide is summarized on Table 6.1. The reader is directed to Section 6.3 (Historical Drilling) for details regarding the historical diamond drilling programs. It should be noted that there was no activity on the Property between the end of 1999 and the commencement of Treasury's exploration activities in 2008.

### 6.1.1 Teck Exploration Ltd.

Major exploration and resource development work at Goliath was undertaken by Teck from 1989 to 1999 on what was then called the "Thunder Lake Property". During this period, the Property was divided into two properties called "Thunder Lake East" and "Thunder Lake West". The Property was optioned to Corona, previously called Continental Caretech Corporation ("CCC"), in which CCC could earn an interest in the project under terms of an initial agreement dated January 3, 1994. Corona funded the exploration work from 1994 to 1999 but Teck remained the project operator both designing and running all field exploration activities.

The total exploration expenditures spent on the Property from 1989 to 1999 by Teck and Teck-Corona is approximately $9.7 million (Page et. al., 1999a; Page et. al., 1999b; Page and Waqué, 1999; Page and Waqué, 1998).

### 6.1.2 1989 to 1993 Teck Exploration Work

It wasn't until 1989 that reconnaissance exploration work by Teck, in search of Hemlo-type gold mineralization in the region as part of their "Quest Project", identified a large weakly altered felsic rock unit containing sporadic anomalous values in gold, silver, zinc and lead extending through parts of Lots 3 through 8 of Concession IV in Zealand Township. Grab assays averaging 2.98 g/t Au, 24.7 g/t Ag, 1.20% Zn and 0.43% Pb were reported by Page (1991). Weakly altered quartz-eye felsic rock (Muscovite-Sericite Schist Unit?) returned an assay of 630 ppb Au.

This discovery was followed by land acquisition and exploratory work by Teck. The Goliath Gold Deposit (Main Zone) was discovered by Teck hole TL1 in the fall of 1990, which drove all of the resource definition and exploration work on the Property throughout the 1990s. Hole TL1 intersected multiple horizons of gold mineralization with intersections of 1.5 g/t over 22.2 m, 0.9 g/t over 11.6 m and 17.5 g/t over 2.6 m.

**TABLE 6.1**
**HISTORY OF EXPLORATION WORK ON THE GOLIATH (THUNDER LAKE) PROPERTY**

| Year | Company and Work Locations | Work Completed |
|---|---|---|
| **1990 – 1993 Teck Exploration Ltd. (Teck)** | | |
| 1990 | Thunder Lake West | Reconnaissance Exploration, |
| | Thunder Lake West | Line cutting (104.7 line-km), geological mapping of exploration grid |
| | Thunder Lake West | Geological mapping and prospecting |
| | Thunder Lake West | 122 grab and chip samples collected (32 sent for whole rock) |
| | Thunder Lake West | 11 petrographic samples completed, one outcrop stripped |
| | Independent Exploration Services | Ground magnetic, VLF-EM survey (entire grid), 31.8 line-km IP |
| | SAGAX Geophysique Inc. | 31.8 line-km of IP |
| | SAGAX Geophysique Inc. | Diamond Drilling Program – 7 holes (TL1 to TL7)<br>TL1 Goliath Discovery Hole |
| 1991 | Thunder Lake West | Diamond Drilling Program – 17 holes (TL8 to TL24) |
| 1992 | Thunder Lake West | Diamond Drilling Program – 22 holes (TL25 to TL37) |
| 1993 | Thunder Lake West | Diamond Drilling Program – 10 holes (TC-1 to TC-10) |
| | Thunder Lake West | Property optioned to Corona Gold Corporation (funding exploration) |
| **1994 – 1999 Teck-Corona (Teck Operator)** | | |
| 1994 | Teck-Corona (Teck Operator) | Diamond Drill Program – 69 holes (TL44 to TL110, 5 wedges) |
| | Teck-Corona | Re-logging core of previous holes, 12 Whole Rock Samples |
| | Teck-Corona | Re-examination of existing surface exposures. |
| 1995 | Teck-Corona | Diamond Drilling Program – 25 holes (TL-111 to TL127, 8 wedges) |
| | Teck-Corona | Lithogeochemical Survey (10 rock samples) |
| 1996 | Teck-Corona | Diamond Drilling Program – Re-logging 3 holes<br>51 holes (TL128 to TL142, 13 wedges; TLE11 to TLE33) |
| | Teck-Corona | Resource Estimate Completed |
| | Teck-Corona | Mechanical Stripping, chip and channel sampling, mapping |
| | Teck-Corona | August - (1 Outcrop area, legacy claim K1106349) |
| | Teck-Corona | Geological Mapping (1:5,000), 22 trenches/Sampling No. 1 Shoot (Main Zone) |
| | Teck-Corona | No. 1 Shoot - 200 kg Bulk Sample (Preliminary Metallurgical Testing) |
| | Teck-Corona | Prepared 1st Resource Estimate* |
| | Teck-Corona | Geochemical Analyses of core and surface Samples |

| TABLE 6.1<br>HISTORY OF EXPLORATION WORK ON THE GOLIATH (THUNDER LAKE) PROPERTY | | |
|---|---|---|
| **Year** | **Company and Work Locations** | **Work Completed** |
| 1997 | Teck-Corona | Diamond Drilling Program – 65 holes (TL143 to TL206, 1 wedge) |
| | Teck-Corona | Baseline Environmental Studies, updated Resource Estimate* |
| | Teck-Corona | Preliminary Underground Program (No.1 and No. 2 Shoots) Designed |
| 1998 | Teck-Corona | Diamond Drilling Program – 71 holes (TL207 to TL277) |
| | J.S. Redpath Limited | Underground Development – ramp and drifting |
| | Lakefield Research Ltd., Stock Mine Mill | Exploration, face sampling, bulk sampling, metallurgical testing |
| | NAR Environmental Consultants | Portal Remediation Work |
| | NAR Environmental Consultants | Updated "Inferred" Resource Estimate* |
| | Corona Gold Corporation (Jones Lot) | Diamond Drilling Program – 12 holes (Main Zone) |
| 1999 | St. Andrews Goldfields for Teck | 2,226 t bulk sample sent by Teck to Stock Mill – Custom Mill Testing |
| **Laramide Property** | | |
| 1994 | Laramide Resources Ltd. | Exploration Grid, Geological Mapping |
| | Laramide Resources Ltd. | Ground Geophysics (Magnetic/IP) |
| 1996 | Laramide Resources Ltd. | 9 Trenches and 10 pits (mapping and sampling) |
| | Laramide Resources Ltd. | Diamond Drilling – 8 holes (G1 to G8) testing the Main Zone at depth |

***** *Non-NI 43-101 Compliant Mineral Resource Estimate*

In 1990, Teck completed a major exploration program consisting of establishing a 104.7 line-km exploration grid across the Property, geological mapping and prospecting/sampling, completing ground magnetic, induced polarization ("IP") and VLF-EM surveys and a seven-hole diamond drilling program between May to November, 1990 (Page, 1991). The exploration grid was cut in May and June 1990 with 8.5 line-km of baseline and 96.2 line-km of cross lines at 100 m spacing's (25 m stations) cut perpendicular to the strike of the stratigraphy. The base line was run east-west along Norman Road (formally Nelson Road). Geological mapping and prospecting/sampling was then completed during the months of July and August with 122 grab and chip samples being collected. Samples were analyzed for gold and multi-elements and 32 samples were selected for whole rock lithogeochemistry. Eleven samples were submitted for petrographic analyses. A VLF-EM and magnetic survey was also completed over the entire grid by Independent Exploration Services Limited identifying over 130 anomalies on the Property, some of which were anticipated to be graphitic in origin. A 31.8 line-km IP survey was also conducted by SAGAX Geophysique Inc. with a maximum vertical depth of around 80 m. All seven holes were drilled to test chargeability anomalies. One outcrop was stripped using a bulldozer (on line L15+80W, 2+25N).

It was determined that there was a positive correlation between gold content and the presence of sphalerite and galena but the highest gold assays were generally associated with siliceous intervals containing only 1-3% zinc and 0.1 to 1.5% lead. At that time, visible gold was found to be extremely rare.

The whole rock geochemistry indicated that the felsic schists (muscovite-sericite schist) generally represent the altered equivalents of massive to gneissic felsic (volcanic?) rocks and are moderately enriched in silica and potassium, moderately to strongly depleted in sodium and strongly depleted in calcium and magnesium.

Drilling programs were completed in each of the next three years (1991, 1992 and 1993) with the completion of an additional 49 drill holes focused on evaluating the resource potential of the main gold deposit.

### 6.1.3 1994 to 1999 Teck-Corona Exploration Work

Exploration activities conducted from 1994 to 1999 consisted of seven diamond drilling programs, re-logging and sampling of previously drill holes, mechanical stripping (22 trenches), chip and channel sampling and mapping, geological mapping (1:5,000 scale), baseline environmental studies, underground development work, bulk sampling, metallurgical testing, site remediation work, custom mill testing and mineral resource estimation(s).

A suite of ten (10) lithogeochemical samples were collected in September, 1995 on legacy claims 1106349 and 1106351 in the southwestern portion of the Property (Page, 1995b). These consisted of six samples of meta-sedimentary rocks (biotite-quartz meta-greywackes) with minor argillite and the remaining samples consisted of amphibolite rocks interpreted to metamorphosed mafic volcanic rocks. All samples were shipped to X-Ray Assay Laboratories for major and trace element analyses. None of the rock samples were found to have been subjected to significant alteration as there was no evidence of Na, K, or Ca enrichment or depletions and none contained any significant gold or base metal values.

In August, 1996, some mechanical stripping and sampling was completed in the northern part of legacy claim K1106349 East of East Thunder Lake Road to expose the source of an IP anomaly identified by previous Teck ground geophysical surveys (Waqué, 1996). The new exposure was chipped, channel sampled and geologically mapped. At the contact of meta-greywacke with amphibolite is two 15 cm wide sulphide mineralized zones containing 2-3% disseminated pyrite that was believed to have been the source of the IP anomaly. No significant gold mineralization or alteration was identified from the sampling and mapping program.

Teck completed a program of geological mapping, trenching, channel sampling and the completion of 6,596 m of diamond drilling from May 14, 1996 to November 4, 1996 (Stewart et al, 1997). This program was undertaken to better define the alteration corridor east of the resource area, to trench the Main Zone in the No. 1 Shoot area to determine controls on the gold mineralization and obtain a bulk sample, to drill test the Main Zone at depths below previous drilling and to test footwall zones by deepening selected holes.

Geological mapping at a scale of 1:5,000 was concentrated mainly in the eastern portion of the Property and 15 of the existing trenches were re-examined and chip/channel sampled. A total of 130 rock samples were collected and sent for analyses. Geological mapping and sampling identified new favourable target areas for gold mineralization in the eastern half of the Property. The geology of the area was re-interpreted and the existing geology map was updated.

A trench located on grid line L8+50W was excavated measuring 50 m long by 7.0 m wide and 3.0 to 7.0 m deep exposing the bedrock over the No. 1 Shoot. The trench was mapped and a total of 48 channel samples and two chip samples were taken and analyzed for gold and multi-elements. A bulk sample of approximately 200 kg was also blasted from the No. 1 Shoot for preliminary metallurgical testing (Stewart et al, 1997).

A total of 115 samples from 60 drill holes were collected primarily from the Main Zone for geochemical analyses. Additional samples were also collected from surface outcrops enlarging the surface sample database to include 500 samples in total (Stewart et al, 1997). Overall, this work indicated that higher gold values correlate with increases in lead (Pb), zinc (Zn), silver (Ag), mercury (Hg), $SiO_2$ and $SiO_2/Al_2O_3$ concentrations in the Main Zone. It was also determined that zinc and lead concentrations decrease across the zone from west to east and that mercury is a good indicator to define the alteration corridor and that the alteration zone remained untested east of the deposit for an additional strike length of at least 2,800 m.

In 1997, a baseline environmental study (water, flora and fauna) was commissioned by Teck and preliminary engineering plans and cost estimates for an underground program, including permitting, was also completed. The environmental work was completed by NAR Environmental Consultants (Sudbury, Ontario). Initial baseline water quality and biological surveys were completed in 1997 and water sampling was continued in 1998 (Page et al., 1999b).

An underground exploration and bulk sampling program, including metallurgical testing, was completed in 1998 (see Section 6.1.4 for details). After the underground work was completed the portal was sealed and the area was contoured, reseeded and fully remediated in late 1999. That same year, a custom milling testing program was also completed (see Section 6.1.5).

Work on the project was suspended by the end of 1999 largely due to the lower than expected gold grade and tonnage for the resource estimate and due to a downturn in the Mining Industry when gold prices dropped below US$300 per ounce. The Property was put on care and maintenance until economic circumstances changed to justify additional work to upgrade the inferred gold resource to possible minable reserve categories (Page et. al, 1999a).

### 6.1.4 Underground Development and Bulk Sampling Program

In 1998, Teck completed an underground exploration and bulk sampling program at a cost of $1,929,071. This entire underground program, from surface site preparation through final closure plan, was completed between May 15 and September 15, 1998. This program was initiated for the following reasons (Page et. al, 1999b; Emdin, 1998):

- To determine the nature and continuity of gold mineralization in the Main Zone;

- To obtain a bulk sample of the Main Zone mineralization for gold and metallurgical analyses;

- To determine what structures controlled the high grade shoots within the Main Zone by geological mapping; and

- To establish the true grade of the gold mineralization.

The underground work contract was awarded to J.S. Redpath Limited of North Bay, Ontario. A 27 m long inclined trench provided a nine-meter high outcrop face suitable for the construction of a portal collar. A decline was prepared at a grade of 15% with the portal located just north of Norman Road and the north boundary of the Laramide Property (Figure 6.1). The decline was 4.0 m high by 4.5 m wide and approximately 275 m in length extending 25 m past the Main Zone mineralized structure (Roy et. al, 2012). A total of 220 m of drifting (3.0 m by 3.0 m cross section) was completed along the Main Zone (exposing Shoots 1 and 2) extending both east and west of the decline at an approximate vertical depth of 35 m (-38 m floor elevation) for a total of 496 m of underground development. A total of 23,035 tonnes of rock was excavated.

**FIGURE 6.1 PORTAL/DECLINE DEVELOPMENT ACCESS TO MAIN ZONE GOLD MINERALIZATION OF THE THUNDER LAKE GOLD DEPOSIT**

***Source**: Treasury (2015)*

Geological mapping was undertaken of all drift, slash faces and backs and chip sampling of all drift and slash faces were completed at two elevations (Page et. al, 1999b). Muck and slash round samples were also taken and analysed for gold. A 400 tonne “take down back” (“TDB”) for small test-mining was also collected. Four bulk samples from the Main Zone (No. 1 and No. 2 shoots) totalling 2,375 tonnes and consisting of sampling muck, drift, slash and TDB material grading > 3.0 g/t Au were collected from the underground workings and processed through a crushing plant, reduced in volume through a sampling tower, and representative splits processed and analyzed for gold content at Lakefield Research Ltd. The reader is directed to Section 13.0, Mineral Processing and Metallurgical Testing for a discussion of results regarding this underground bulk sampling program.

### 6.1.5 Custom Milling of Bulk Sample

A 2,355 tonne bulk sample was shipped to the St. Andrews Goldfields’ mill near Timmins, Ontario for custom milling in the fall of 1999 (Jobin-Bevans, 2007). The custom milling sample returned averaged recoveries of 5.63 g/t Au and 15.28 g/t Ag as calculated by St. Andrew Goldfields. The gold recovery was calculated at 96.83% and silver at 38.0%. According to Jobin-Bevans (2007), there was some disagreement as to the total recovery reported by St. Andrew Goldfields and at that time assays of the mill feed were being reviewed by the Corona-Teck Joint Venture. Initial evaluation of the mill feed samples by an independent umpire apparently indicated that the number of ounces would increase but the resolution of this dispute is not known at this time. The reader is directed to Section 13.0, Mineral Processing and Metallurgical Testing for further details regarding this custom milling program.

## 6.2 LARAMIDE RESOURCES LTD. EXPLORATION

The gold mineralized zone established by Teck/Corona, a zone dipping 70 to 80° south, was projected to extend onto the northern part of the Laramide Property at an approximate depth of 800 m below surface. During 1994, the Laramide Property, then consisting of Parcels 4822 and 21553 covering an area of 109.5 hectares south of the Goliath Gold Deposit, was geologically mapped and a ground magnetic/IP survey was completed (Table 6.1). Teck/Corona’s work had already established that zones associated with gold mineralization on their property were responsive to IP survey methods. These exploration activities have been described in detail by Hogg (2002, 1996). To facilitate this work, a north-south exploration grid was cut with a base line established along Norman Road (formally Nelson Road) and north-south oriented grid lines were cut at a line spacing of 100 meters. The baseline was established along the same road used for Teck’s baseline.

The near surface ground geophysical survey completed by Rayan Exploration Ltd. identified three (3) zones of high to moderate chargeability:

- The Northern property boundary anomaly;
- The Eastern property anomaly, 250 m south of the base line; and
- The Southern anomaly located approximately 400 m south of the base line.

In 1996, nine (9) trenches and ten (10) pits were excavated and some surface sampling was completed. Trench No. 2 and No. 4 exposed weakly mineralized zones hosted in biotite schist. In Trench No. 2, a narrow zone of quartz veined and pyritized biotite schist returned 480 ppb Au.

A graphitic shear identified at the contact between biotite schist and mafic volcanic rocks was mapped in Trench No. 8 explaining the high IP chargeability anomaly that extends across the property 400 m south of the base line. Eight (8) diamond drill holes were also completed; seven of these holes being collared along the north boundary of the property. The reader is referred to Section 6.3 (Historical Drilling) for a discussion of the drill program results.

According to Hogg (2002), the exploration work indicated that the degree of silicification and frequency of occurrence of gold mineralization on the property increased to the north. However, no economically significant gold grades were reported.

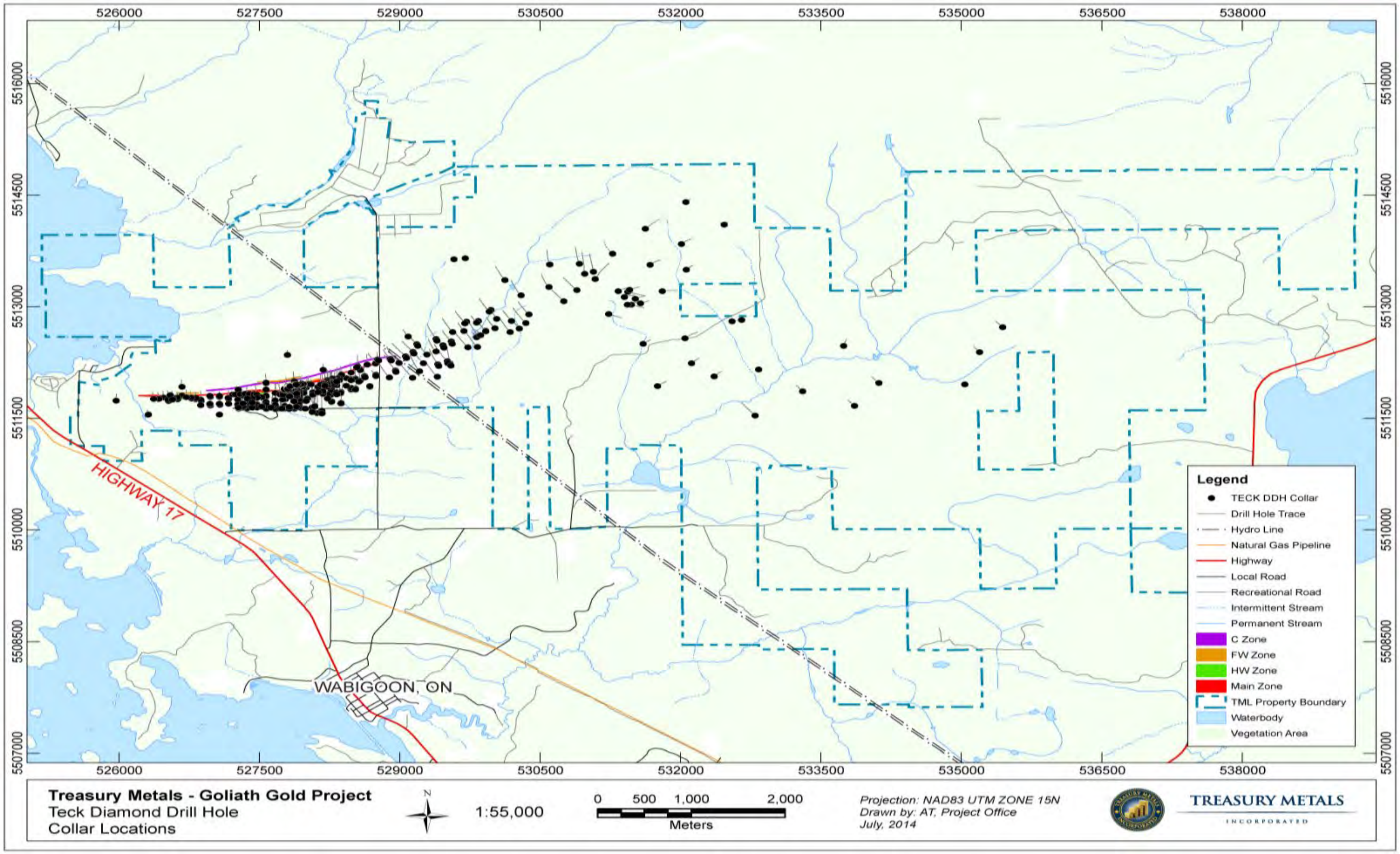
In June, 2002, Laramide acquired a third Parcel of land 13492 covering 57 hectares to the south giving them a contiguous land package totalling 166.5 hectares in Zealand Township. During the following period of depressed gold prices no further work was carried out although the option agreements were kept in place and claims maintained in good standing. The Teck Property was later acquired by Laramide in which Treasury was originally a subsidiary company until becoming its own publicly listed company on the Toronto Stock Exchange ("TSX") on August 19, 2008.

## 6.3 HISTORICAL DRILLING

### 6.3.1 Teck Exploration Ltd.

A total of 13 drilling campaigns were undertaken by Teck and Teck-Corona over an eight year period from 1990 to 1998. During this period, 340 diamond drill holes were completed for a total of 97,514 m of drilling (Table 6.2, Figure 6.2 and Appendix A). The ten highest gold grade intercepts for the diamond drilling programs are presented on Table 6.3. Table 6.4 tabulates the 20 best drill hole intercepts over lengths of 1.5 m with gold assay returns of greater than 10 g/t Au.

**FIGURE 6.2 TECK AND TECK-CORONA DIAMOND DRILL HOLE LOCATION MAP, THUNDER LAKE PROPERTY**




***Source:*** *Treasury (2014)*

**TABLE 6. 2**
**1990 TO 1998 TECK AND TECK-CORONA DIAMOND DRILLING PROGRAMS**

| Drill Program | Year | Holes | Dates Drilled | Hole Numbers | Meters Drilled |
|---|---|---|---|---|---|
| 1 | 1990 | 7 | October 28, 1990 to November 30, 1990 | TL1 to TL7 | 1,096 |
| 2 | 1991 | 17 | April 18, 1991 to May 15, 1991 | TL8 to TL24 | 3,368 |
| 3 | 1992 | 13 | May 13, 1992 to June 30, 1992 | TL25 to TL37 | 4,373 |
| 4 | 1992 | 9 | October 16, 1992 to November 23, 1992 | TL38 to TL43 | 3,800 |
| | | | | TL43W1 to TL43W3 | |
| 5 | 1993 | 10 | August 14, 1993 to September 10, 1993 | TC-1 to TC-10 | 1,747 |
| 6 | 1994 | 72 | January 18, 1994 to November 16, 1994 | TL44 to TL110 | 15,998 |
| | | | | TL44W1 to TL44W3 | |
| | | | | TL88W, TL96W | |
| 7 | 1995 | 14 | January 27, 1995 to February 27, 1995 | TL111 to TL124 | 1,814 |
| 8 | | 11 | November 28, 1995 to December 25, 1995 | TL125 to TL127 | 5,668 |
| | | | | TL125W1, TL125W2 | |
| | | | | TL126W1 to TL126W3 | |
| | | | | TL127W1 to TL127W3 | |
| 9 | 1996 | 18 | January 7, 1996 to February 8, 1996 | TL128 to TL132 | 6,250 |
| | | | | TL128W1 to TL128W3 | |
| | | | | TL129W1 to TL129W3 | |
| | | | | TLE11 to TLE17 | |
| 10 | 1996 | 33 | June 12, 1996 to October 31, 1996 | TL133 to TL142 | 14,598 |
| | | | | TL133W1 to TL133W3 | |
| | | | | TL136W1, TL136W2 | |
| | | | | TL137W1, TL137W2 | |
| | | | | TLE18 to TLE33 | |
| 11 | 1997 | 65 | January 15, 1997 to December 31, 1997 | TL143 to TL206 | 23,232 |
| | | | | TL170W1 | |
| 12 | 1998 | 6 | May 19, 1998 to July 1, 1998 | TL207 to TL212 | 2,831 |
| 13 | | 65 | September 3, 1998 to December 5, 1998 | TL213 to TL277 | 12,739 |
| **Total** | | **340** | | | **97,514** |

***Source:*** *Treasury 2015*

| TABLE 6.3<br>TEN HIGHEST TECK MAIN ZONE GOLD GRADE DRILL HOLE INTERCEPTS | | | | |
|---|---|---|---|---|
| **Hole Number** | **From (m)** | **To (m)** | **Au (g/t)** | **Length (m)** |
| TL151 | 450.2 | 452.0 | 128.20 | 1.8 |
| TL125 | 421.8 | 423.3 | 126.30 | 1.5 |
| TL144 | 70.0 | 71.0 | 118.35 | 1.0 |
| TL044 | 543.4 | 544.9 | 109.50 | 1.5 |
| TL127W1 | 504.9 | 505.4 | 86.51 | 0.5 |
| TL045 | 41.0 | 44.0 | 70.53 | 3.0 |
| TL046 | 73.8 | 77.8 | 68.11 | 4.0 |
| TL059 | 20.5 | 22.5 | 63.90 | 2.0 |
| TL048 | 161.8 | 165.3 | 32.70 | 3.5 |
| TL049 | 178.0 | 186.5 | 21.17 | 8.5 |

***Source:*** *Treasury 2015*

| TABLE 6.4<br>TWENTY BEST TECK DRILL HOLE INTERCEPTS<br>(1.5 M & >10.0 G/T AU) | | | | |
|---|---|---|---|---|
| **Hole Number** | **From (m)** | **To (m)** | **Au (g/t)** | **Zone** |
| TL151 | 450.50 | 452.00 | 128.20 | East |
| TL125 | 421.80 | 423.30 | 126.30 | Main |
| TL44 | 543.40 | 544.90 | 109.50 | Main |
| TL0984 | 67.50 | 69.00 | 58.09 | Main |
| TL118 | 87.20 | 88.70 | 53.24 | Main |
| TL10100 | 312.00 | 313.50 | 48.99 | Main |
| TL77 | 64.00 | 65.50 | 45.55 | Main |
| TL208 | 532.50 | 534.00 | 45.37 | Main |
| TL180-13RE | 150.00 | 151.50 | 44.29 | East |
| TL23 | 129.30 | 130.80 | 41.17 | West |
| TL114 | 60.20 | 61.70 | 31.16 | Main |
| TL129W3 | 466.70 | 468.20 | 26.84 | Main |
| TL13316 | 157.50 | 159.00 | 25.50 | C Zone |
| TL147 | 189.50 | 191.00 | 24.67 | East |
| TL128 | 402.00 | 403.50 | 21.38 | Main |
| TL1098 | 279.00 | 280.50 | 21.04 | C Zone (?) |
| TL117 | 66.70 | 68.20 | 19.08 | HW |
| TL0970 | 84.00 | 85.50 | 18.82 | Main |
| TL0984 | 69.00 | 70.50 | 17.10 | Main |
| TL73 | 25.00 | 26.50 | 17.00 | Main |

***Source:*** *Treasury 2015*

Several different drilling companies were used including Bradley Bros. Limited, Forage St. Lambert Ltd., Boart Longyear Inc. and St. Lambert Drilling Co. Ltd. Drill core size was predominantly BQ in the early years (1990 to 1996) and NQ in the later years. A majority of the drill logs record that the casing was left in the hole upon completion and the hole was capped. Downhole surveys for azimuth and dip were taken normally at 50 m intervals using initially Wel-Nav single shoot instruments and in the latter years using a Sperry-Sun Single Shot downhole instrument supplemented by acid tests when necessary. Usually, the first reading was taken immediately below the casing to ensure the hole was on course. Transit surveys of all drill hole casings within the resource area was completed by W.J. Bowman Ltd.

Upon the daily receipt of the drill core at the coreshack, the core was logged, marked and tagged for assay by the geologist. The samples were then sawn in half using a Target masonry saw with a 14” diamond blade. All samples were shipped to the primary laboratory by Gardwine and Porter transport firms. The primary laboratory used was TSL Laboratories of Saskatoon, Saskatchewan with XRAL Laboratories and Interteck Testing Services used for assay verification work or whole rock analyses.

At this time, all historical drill core is currently in long-term storage at Treasury’s core farm located on the former tree nursery site where the Company now operates its field exploration office. The core is in very poor shape and Treasury was not able to resample the core as part of its resource evaluation work.

The highlights of the various drilling programs completed by Teck during the 1990s have been summarized below.

### 6.3.2 1990 to 1993 Teck Drilling Programs

Teck’s very first diamond drilling program on the Thunder Lake Deposit commenced October 28, 1990 to November 30, 1990 with the completion of seven BQ holes (TL1 to TL7) totalling 1,096 m. The discovery hole (TL1) on the Main Zone of the deposit intersected three significant zones of polymetallic disseminated sulphide mineralization containing gold (Page, 1991):

- Zone A returned 2.23 g/t Au, 18.9 g/t Au, 0.63% Zn over 6.1 m (80.0 to 86.1 m) including 5.25 g/t Au, 16.8 g/t Ag, 0.28% Zn over 1.9 m;
- Zone B intersected 0.97 g/t Au over 10.4 m (107.4 to 117.8 m) in a pyritic alteration zone; and
- Zone C assayed 7.99 g/t Au, 16.5 g/t Ag and 0.61% Zn over 6.1 m (196.7 to 202.8 m) including 17.49 g/t Au, 33.6 g/t Ag and 0.42% Zn over 2.6 m.

This hole was drilled to test a “high priority” IP chargeability anomaly determining that this exploration method was very useful in defining potential future drill targets within and on-strike with the Goliath Gold Deposit.

Following this discovery, much of the remaining historic exploration on the Thunder Lake Property centered on diamond drilling programs with the most drilling having been completed in the area north of the Laramide Property in the Thunder Lake West portion; there was minimal drilling on the Thunder Lake East portion in Hartman Township.

Teck completed 17 BQ diamond drill holes for a total of 3,368 m in 1991. These holes were numbered TL8 to TL24 and were completed during the months of April and May, 1991. Hole TL9 intersected an isolated high of 45.96 g/t Au over a sample length of 0.5 m (44.8 to 45.3 m) in a section of biotite-muscovite schist in the Main Zone. Holes TL21 and TL23, drilled on the same drill section, intersected three sections of high grade gold mineralization. Hole TL21 returned 10.44 g/t Au over 1.5 m of core (99.5 to 101.0 m) with an occurrence of visible gold hosted in muscovite-sericite schist of the C Zone. Hole TL23 intersected 41.17 g/t Au over 1.5 m (129.3 to 130.8 m) in a Hanging Wall Zone of meta-sedimentary rocks and 33.64 g/t Au over 2.1 m (162.1 to 162.6 m) with visible electrum in the Main Zone biotite-muscovite schist.

Two diamond drilling programs were completed in 1992 with Phase I initiated during the months of May and June and Phase two in the Fall in October and November. A total of 22 BQ holes were drilled (TL25 to TL43) and three wedges were turned off of hole TL43 (TL43W1, TL43W2 and TL43W3) for a total of 8,173 m of diamond drilling. Drill hole TL39 was abandoned due to excessive flattening of the hole and restarted as new hole TL39A. The best gold assay returns are as follows:

- TL27: 16.27 g/t Au over a core length of 9.0 m (124.0 to 133.0 m) including 33.51 g/t Au and 42.5 g/t Ag over 4.0 m (129.0 to 133.0 m). Mineralization occurs in the Main Zone hosted in muscovite-sericite schist (MSS) with visible gold noted;

- TL28: 4.61 g/t Au over 6.0 m (435.4 to 441.4 m) including 12.60 g/t Au and 27.0 g/t Ag over a sample length of 1.0 m in the C Zone hosted in a MSS unit containing sphalerite, pyrite and galena mineralization; and

- T29: 10.67 g/t Au over a sample length of 8.9 m (248.4 to 257.3 m) in the Main Zone MSS unit containing visible gold, sphalerite and galena.

In 1993, 10 BQ diamond drill holes totalling 1,747 m were drilled to test a series of ground IP geophysical anomalies located in the extreme eastern portion of the Property in Hart Township (east of UTM 532400E). The holes were numbered TC1 to TC10. Hole TC6 was a failed hole ending at 135 m and no samples were taken for assay. None of the holes returned any significant gold assays (all less than 0.09 g/t Au). However, many of the IP anomalies were attributed to either the presence of graphite, elevated pyritized rocks or sulphide iron rich metasedimentary rocks.

#### 6.3.2.1 1994 Teck-Corona Drill Program

In 1994 a total of 72 diamond drill holes totalling 15,998 m, including five wedge holes and 1abandoned hole, were completed as well as re-logging and sampling of earlier drill holes, a re-examination of surface exposures and metallic screen fire assaying of most core intersections through the Main Zone (Page, 1995a). These drill holes were numbered TL44 to TL110, TL44W1 to W3, TL88W and TL96W and were drilled using both NQ and BQ size rods.

Teck completed a 4,846 m diamond drilling program from January to February 1994. A total of 34 holes were drilled of which 20 were NQ and 14 were BQ sized core numbered TL44 to TL77. Twelve (12) samples were collected from hole TL44 and dispatched to X-Ray Laboratories in Don Mills, Ontario for whole rock analyses. The best gold assay intersections were obtained from the Main Zone (A Zone) and the most significant drill hole intersection was from TL49 that returned 21.2 g/t Au over a sample length of 8.5 m from 178.0 to 186.5 m. The better auriferous intersections in the Main Zone were characterized by (Page, 1994):

- Quartz-sericite schist host rock;
- Rocks containing 1 to 5% disseminated pyrite with local concentrations of 5-20% pyrite;
- Trace to locally 3-5% disseminated and stringer sphalerite accompanied by lesser amounts of galena (trace to 2%), chalcopyrite (trace to 1%) and rare occurrences of arsenopyrite;
- Intense silicification containing 5-25% total sulphides; and
- Rare pinpoint to mm grains of native gold and electrum.

Pulp metallic screen fire assaying determined that there were significant nugget effects present in the deposit reflected in both the assay results and the observed distribution of native gold and electrum (Page, 1995a). Roughly two-thirds (64%) of the 210 samples revealed gold assay results that compared well between the 30 gm fire assay and pulp metallic methods. Just over one-tenth (12%) of the samples returned initial assays much larger than the pulp metallic and around one-quarter (24%) of the samples yielded pulp metallic gold assays much larger than the initial gold fire assay results. It was determined that, although more expensive, utilizing pulp metallic screen fire assaying proved to be most useful in defining the overall character and geometry of the deposit.

Highlights of gold assay returns from the remaining holes drilled in 1994 include holes:

- TL80: 3.53 g/t Au over a core length of 5.6 m (174.7 to 180.3 m) including 10.50 g/t Au over a sample length of 1.5 m (178.8 to 180.3 m);
- TL81: 5.67 g/t Au over 13.2 m (215.0 to 228.2 m);
- TL82: 18.89 g/t Au over 3.7 m (266.5 to 270.2 m);
- TL84: 3.54 g/t Au over 11.0 m (48.4 to 59.4 m);
- TL96: 3.29 g/t Au over 5.4 m (375.4 to 380.8 m); and
- TL44W3: 5.64 g/t over 7.9 m (535.5 to 543.4 m).

### 6.3.2.2 1995 Teck-Corona Drill Program

Fourteen (14) BQ holes totalling 1,814 m, numbered TL111 to TL124, were completed in the early part of 1995. These holes were drilled to delineate a shallow gold reserve in the "West Alteration Zone" (TL11 to TL117) to vertical depths of around 80 m and to partially define the west and east edges of the No. 2 Shoot to depths of -50 to -85 m (TL119, TL120) and west edge of the No. 1 Shoot (TL121, TL122 to a vertical depths of -140 m and -110 m, respectively). Holes TL114, TL117 and TL118 were abandoned prematurely due to drilling difficulties (Stewart, 1995).

Hole TL114 intersected the Main Zone returning 15.81 g/t Au over a core length of 3.0 m (60.2 to 63.2 m) and hole TL118 returned a Hanging Wall/Main Zone intersection of 53.24 g/t Au over a core length of 1.5 m (87.2 to 88.7 m).

### 6.3.2.3 1996 Teck-Corona Drill Program

A winter drilling was program completed from November 1995 to February 1996. A total of eight (8) deep BQ holes, numbered TL125 to TL132, were drilled for a total of 4,142 m to test the Main Zone at a vertical depth of between 400 m and 500 m to the east and west of the No. 1 and No. 2 Shoot area (Stewart, 1996).

Drilling resulted in extending the Main Zone in the area of the "West Alteration Zone" in the main deposit to a vertical depth of around 450 m. Hole TL-129 intersected the Main Zone from 433.5 m to 474.0 m (a 40.5 m core length) with grades of up to 16.96 g/t Au over 2.0 m (452.5 to 454.5 m) and 15.47 g/t Au over a sample length of 1.0 m (470.0 to 471.0 m). The Main Zone in the area of the "East Alteration Zone" was extended to a vertical depth of approximately 500 m. Hole TL125 defined the zone over a core length of 23.9 m with the best assay of 87.15 g/t Au over a sample length of 1.5 m (421.8 to 423.3 m).

During the winter program, seven (7) BQ holes were drilled (TLE11 to TLE17) for a total of 1,126 m. These were regional exploration holes in the eastern portion of the Property, an area called Thunder Creek East, to test a series of both IP and VLF-EM anomalies. Most of these holes encountered amphibolite, garnet amphibolite, and meta-sedimentary rocks (argillites, conglomerates, greywacke and chert-magnetic bearing iron formation). Geophysical target anomalies were attributed to the presence of graphite and elevated sulphides in the metasedimentary rocks. The best drill hole TLE15 intersected 11.60 g/t Au over a core length of 4.2 m (119.4 to 123.6 m) including 46.74 g/t Au over 1.0 m (122.6 to 123.6 m). Hole TLE16 returned 3.58 g/t Au over a sample length of 1.0 m (57.2 to 58.2 m).

A second phase of diamond drilling was completed from June to the end of October 1996. Ten NQ holes, numbered TL133 to TL142, 20 BQ wedges in 7 holes (2-3 wedges per hole) and nine (9) previous drill holes were extended for a cumulative total of 1,482 m (Stewart et al, 1997). There was also a program of partial re-logging of holes TL41, TL42 and TL59.

The most significant results of the Phase II drilling program was the intersection of high-grade gold mineralization in hole TL141 and two additional intersections of lower grade mineralization at the eastern and depth extent of the resource areas (holes TL135 and TL136). Hole TL141 encountered two Main Zone intersections returning 3.18 g/t Au over a core length of 12.8 m (334.2 to 347.0 m) at a vertical depth of 315 m, including 25.3 g/t Au over 1.0 m (334.2 to 335.2 m) and 6.1 g/t Au over 1.0 m (342.2 to 343.2 m), and 28.87 g/t Au over a core length of 3.5 m (357.1 to 360.6 m) at a vertical depth of 330 m including 50.2 g/t Au over a sample length of 2.0 m (358.6 to 360.6 m). In addition, the East Alteration Zone was extended eastward for another 150 m and to a vertical depth of 550 m.

Sixteen (16) exploration holes (BQ) were drilled in the eastern portion of the Property to follow-up the high grade gold intersection by hole TLE15 earlier that year and to test additional IP and VLF-EM anomalies as well as local stratigraphy. These holes were numbered TLE18 to TLE33 totalling 3,359 m. Drilling encountered predominantly amphibolite and metasedimentary rocks (greywacke, biotite schist, mafic schist, graphitic argillites, some iron formation and garnetiferous metasedimentary rocks) some of which were intruded by quartz-feldspar and feldspar porphyry bodies. Hole TLE18 returned 2.38 g/t Au over 0.8 m (81.4 to 82.2 m) and hole TLE27 assayed 1.94 g/t Au over a core length of 1.0 m (168 to 169 m). In each case, gold mineralization was hosted in amphibolite rocks containing elevated sulphides including sphalerite.

#### 6.3.2.4 1997 Teck-Corona Drill Program

A 64 hole diamond drilling program was completed between January 15, 1997 to December 31, 1997 (Page and Waqué, 1998). The holes, numbered TL143 to TL206, totalled 23,232 m of NQ drilling. Reconnaissance (step-out) drilling program following the eastern extension of the Thunder Lake alteration corridor, east of the deposit, included the completion of 13 drill holes covering 1,400 m of strike length. Drilling east of the resource area was disappointing with only geochemically anomalous gold values being intersected over significant to narrow widths. The best assay intersection was obtained from drill hole TL95 that returned 2.01 g/t Au over a core length of 1.2 m (77.9 to 79.1 m).

The majority of the drilling consisted of resource exploration and delineation of the No. 3 Shoot (formally called the “East Alteration Zone”) in the eastern resource area and the West Alteration Zone. A total of 44 new drill holes (and one wedge cut) were completed within the resource area. Nine drill holes defined the high to moderate grade portion of the No. 3 Shoot: TL144, 145, 150, 151, 174, 175, 176, 180 and TL181 (Page and Waqué, 1998). Hole TL151 returned 9.49 g/t Au over a sample length of 23.3 m (432.9 to 456.2 m) and hole TL144 intersected 11.81 g/t Au over a core length of 10.5 m (69.0 to 79.5 m).

Seven short holes drilled in the area of the No. 1 and No. 2 Shoots confirmed the presence of a “dead zone” between the shoots and erratic gold distribution within the No. 2 Shoot. Hole TL190 intersected the best gold intersection returning 26.04 g/t Au over a sample length of 2.3 m (52.2 to 54.5 m). Closely-spaced definition drilling at 12.5 m centers in the area confirmed some nugget effects in both the No. 1 and No. 2 shoots (Page and Waqué, 1998). For example, higher grade intersections in the No. 2 Shoot did not appear to correlate well beyond two or three drill holes. The No. 1 Shoot demonstrated better grade continuity both along strike and down dip.

#### 6.3.2.5 1998 Teck-Corona Drill Program

In 1998, a total of 71 BQ diamond drill holes totalling 15,570 m numbered TL207 to TL277 were completed in a two-phased program. Previous diamond drilling programs focused on defining gold mineralization within the Main Zone alteration corridor over a strike length of about 1,800 m to vertical depths of 400 m to 500 m with only a few holes to depths of 700 m to 800 m below surface. Drilling had consisted mostly of closely-spaced (25 m centers) shallow holes for resource definition, multiple wedge cuts to evaluate nugget effects, widely-spaced deeper drilling and reconnaissance drill holes located up to 1,500 m east of the main resource deposit (Page et al., 1999a)

The 1998 drilling program consisted of in-fill definition drilling plus reconnaissance surface diamond drilling and was completed from (1) May 19, 1998 to July 1, 1998 and (2) September 3, 1998 to December 5, 1998. Drilling was dispersed over a large area of the Property and included 25 closely-spaced (25 m to 50 m centers) in-fill holes within the gold resource area, three holes in the western portion of the Property, 4 deep holes and 7 shallow holes in the area adjacent (east) of the gold resource, and 21 reconnaissance to 100 m spaced in-fill holes covering an additional 2,000 m of strike length in the eastern portion of the Property.

In the resource area, twenty-three (23) holes tested the No. 3 Shoot (Main Zone) and two holes tested for the up-dip extension of the C Zone. The C Zone holes (TL249 and TL251) returned only anomalous gold values. Four intersections of greater than 3.0 g/t Au over 3.0 m were returned from the No. 3 Shoot drilling (Holes TL225, TL234, TL238 and TL244). The best values obtained was from hole TL234 that returned 51.52 g/t Au over a sample length of 1.3 m (71.6 to 72.9 m) and hole TL225 intersecting 8.93 g/t Au over 2.0 m (70.5 to 72.5 m) confirming the “Inferred” gold resource in that area.

Drill holes located west and east, and less than 1,000 m along strike of the resources did not return any significant intersections. Hole TL212 returned 1.33 g/t Au over a core length of 5.5 m (219.0 to 224.5 m) in strongly altered Main Zone rocks.

Fifteen (15) holes totalling 3,737 m were drilled to test the alteration corridor over an additional 1,100 m strike length from grid line L14+00 E to L25+00E. These widely spaced reconnaissance and infill drill holes returned anomalous gold values with rare assays exceeding 3.0 g/t Au. Hole TL271 returned 17.36 g/t Au and 754.5 g/t Ag over a core length of 1.6 m from 59.2 to 60.8 m in a weakly sericitic zone containing abundant silver-rich electrum. However, two follow-up holes, drilled 25 m on either side of TL271, did not return any significant gold values in the target locations. These two holes returned best assays of less than 100 ppb Au in TL275 and 800 ppb Au over 1.0 m from 60.5 to 61.5 m in TL276. Hole TL208 contained an isolated stringer of visible gold yielding 43.3 g/t Au over a core length of 1.5 m (532.5 to 534.0 m) obtained from a zone located 40 m above what is interpreted to be the Main Zone in this area. Drill hole TL272 returned 9.47 g/t Au over a sample length of 1.1 m from 187.7 to 188.8 m.

Six holes totalling 2,013 m were also drilled in the vicinity of the regional-scale synformal fold hinge (an area called the fold nose). This program was designed to test a number of anomalous sericite schist and sulphide showings, several IP anomalies and interpreted structures. All drill holes in the fold nose returned multiple short intervals of anomalous gold hosted in virtually all rock types in this area usually associated with quartz veining and/or increased sulphide content.

Hole TL262 returned the best gold assay intersection of 4.45 g/t Au over a sample length of 1.3 m (31.7 to 33.0 m) and hole TL264 assayed 2.42 g/t Au over 1.5 m (18.0 to 19.5 m). Teck could not define any localized structure or rock type that would have allowed focussing of alteration and mineralization in the fold nose area.

#### 6.3.2.6 1998 Corona Gold Corporation (Jones Property/Lot)

Corona Gold Corporation ("Corona") conducted a small diamond drilling program on its 100% owned Jones property (or "Lot"), land Parcel PA3830, from early October to early December 1998 (Page and Waqué, 1999). This parcel is located in the south part of Lot 8, Concession IV in Zealand Township. A total of 12 shallow NQ drill holes totalling 1,452 m were drilled at close spacing's (50 m centers) to intercept the western Main Zone extension targeting the zone at vertical depths of 25 m to 85 m from surface. The holes were numbered TL252, TL254 to TL256, TL258 to TL261, TL263, TL273, TL274 and TL277. Drilling was undertaken to follow-up on favourable gold intersection obtained from the first-pass drill holes which covered the full strike length of the claim package. The initial nine drill holes (TL252 to TL263) tested 500 m of strike length along the Main Zone.

According to Page and Waqué (1999), the results of this drilling program were disappointing. In this area, the Main Zone is only weakly mineralized with sericitic alteration of variable intensity and silicification, quartz and sulphide veining as well as intense deformation fabrics was found to be generally lacking. Overall, the assay results from all drill holes completed during this program were consistent with the character of a weakened mineralized system. Hole TL274 intersected the best mineralization returning 4.30 g/t Au over a sample length of 2.6 m (29.0 to 31.6 m). The highest grade was returned from hole TL259 that intersected 5.81 g/t Au over a core length of 1.4 m (61.0 to 62.4 m).

It was concluded that the potential for gold mineralization decreases significantly further west of the main resource area along the Main Zone structure and it was recommended that no further work be completed on the Jones property.

#### 6.3.2.7 Laramide Resources Ltd. (Laramide Property)

Eight (8) exploratory diamond drill holes totalling 1,622 m were completed on the Laramide property in October, 1996 (Hogg, 2002). These NQ holes, numbered G-1 to G-8, were all drilled due north (grid north) at a collar inclination of -45 degrees (Table 6.5). Holes G-1 to G-6 were drilled on land parcel 4822, Treasury patented claims PA3900 and PA8429. Drill holes G-7 and G-8 were collared on land parcel 21553, Treasury patented claim PA9074. All holes were drilled on patented land acquired by Laramide in 1996 with seven of the holes collared along the north boundary of the property.

These holes tested the depth extension of the Thunder Lake gold deposit (Goliath Gold Deposit) at vertical depths ranging from 105 m to 223 m from surface, and were collared both south of the deposit and south of Norman Road where the exploration base line had been established.

According to Hogg (2008), some narrow intersections of biotite schist (BMS?) and felsic tuff (MSS?) were reported to contain anomalous gold and silver values. Hole G-2 returned the best intersection of 675 ppb Au over a core length of 6.0 m. Anomalous gold values were also reported from the same horizon of silicified biotite schist for holes G-1 and G-3 located 100 m to the east and west of hole G-2.

**TABLE 6.5**
**LARAMIDE PROPERTY DIAMOND DRILLING PROGRAM**
**BY LARAMIDE RESOURCES LTD.**

| Drill Program | Year | Holes | Dates Drilled | Hole Numbers | Meters Drilled |
|---|---|---|---|---|---|
| 1 | 1998 | 8 | October 1998 | G-1 to G-8 | 1,622 |
| **Total** | | **8** | | | **1,622** |

***Source:*** *Treasury 2015*

Hole G-5 was collared further south to test a moderate to high chargeability ground IP anomaly. A weakly pyritized biotite schist containing possible graphitic mineralization was interpreted to be the source of the geophysical anomaly.

## 6.4 HISTORICAL MINERAL RESOURCE ESTIMATES

Four historical gold resource estimates were reported on the Thunder Lake Gold Deposit from 1996 to 1998 using the results from surface and annual exploration diamond drilling programs.

**TABLE 6.6**
**HISTORICAL MINERAL RESOURCE ESTIMATES,**
**THUNDER LAKE PROJECT**

| Year | Gold (oz) | "Inferred" Historical Resource Estimate |
|---|---|---|
| 1996 | 854,000 | 3.65 million tonnes grading 7.28 g/t Au |
| 1997 | 853,000 | 3.78 million tonnes grading 7.02 g/t Au |
| 1998 | 618,700 | 2.974 million tonnes grading 6.47 g/t Au |

***Note:*** *Resources Based on cut-off grade of 3.0 g/t Au and minimum thickness of 3.0 m*
***Source:*** *Wetherup and Kelso (2008)*

The reader is cautioned that the resource estimates in Table 6.6 are not compliant with NI43-101. A Qualified Person has not done sufficient work to classify the historical resource estimates as current resource estimates. P&E is not treating the historical estimate as current mineral resources and as such they should not be relied upon.

According to Stewart (1996), all of the drilling completed to the end of February 1996 was used to prepare a preliminary "Inferred" resource estimate of the deposit totalling 2.8 million tonnes averaging 9.13 g/t Au for a total of 822,000 ounces gold (Non-NI 43-101 Compliant Resource Estimate). This resource was calculated based on 56 diamond drill holes and one wedge hole covering a strike length of 1,000 m of the deposit to a vertical depth of 500 m using a minimum horizontal thickness of 3.0 m and block cut-off grade of 3.0 g/t Au.

At the completion of the 1996 drilling campaign, an "Inferred" Resource Estimate of 3.65 million tonnes grading 7.28 g/t Au for a total of 854,000 oz gold was calculated (Table 6.6). In 1997, a new "Inferred" resource estimate was completed based on diamond drilling at 25 m spacing's totalling 3.78 million tonnes grading 7.02 g/t Au for a total of 853,000 oz gold as follows (Wetherup et. al, 2007):

- Main Zone: 2.87 million tonnes, 744,000 oz Au at 2.87 g/t Au; and
- C Zone: 0.91 million tonnes, 109,000 oz Au at 3.75 g/t Au.

According to Wetherup and Kelso (2008), these resource calculations were carried out using the polygonal method (polygons obtained by half-distances between drill holes) and based on a cut-off grade of 3.0 g/t Au, a specific gravity of 2.7 $gm/cm^3$ and a minimum thickness of 3.0 m.

A final resource estimate was prepared based on all diamond drilling and surface work, including underground bulk sampling and drilling, completed to 1998 (Table 6.6). This estimate included 678 underground samples and 219 diamond drill holes from within the resource area (Wetherup et al., 2007). Calculations were completed using computer generated three-dimensional solid models of the Main Zone and C Zone muscovite-sericite schist units (MSS) using blocks measuring 3.0 m (thickness) X 10.0 m (height) X 10.0 m (strike length) and the Ordinary Kriging method for grade interpolation. The new "Inferred" resource estimate prepared by Teck geologists in 1998 was 2.974 million tonnes grading at 6.47 g/t Au (approximately 618,700 oz gold). According to Wetherup and Kelso (2007), this calculation includes 2.95 million tonnes of 6.52 g/t Au present in the Main Zone and 49,000 tonnes grading 3.71 g/t Au in the C Zone.

# 7.0 GEOLOGICAL SETTING AND MINERALIZATION

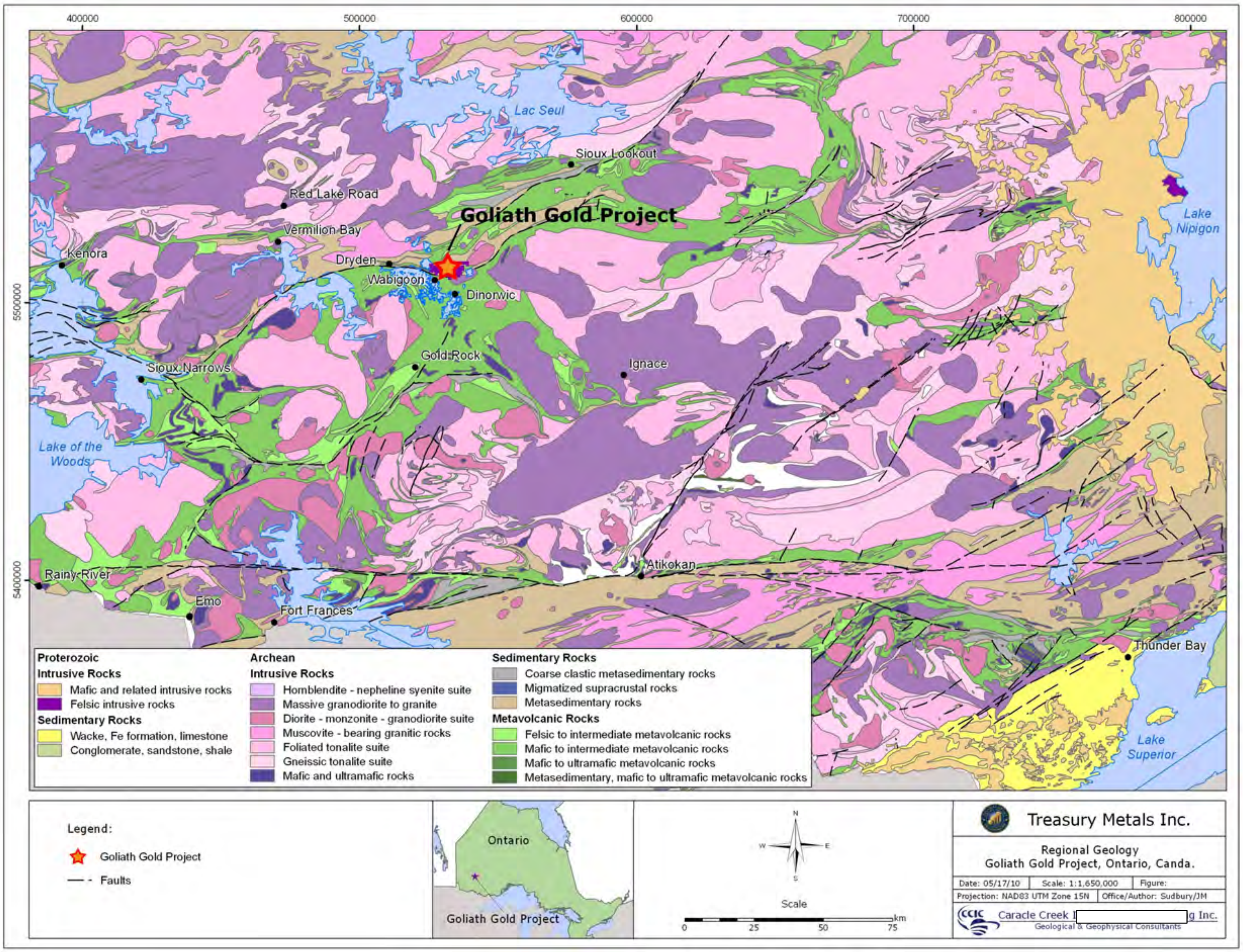
## 7.1 REGIONAL GEOLOGY

The Goliath Gold Project is located in the Eagle-Wabigoon-Manitou greenstone belt situated in the Wabigoon Subprovince of the Archean Age Superior Province (Figure 7.1). This belt is situated in a 150 kilometre-wide volcano-plutonic domain with an exposed strike extent of 700 km and extends an unknown distance beneath Palaeozoic strata at either end (Beakhouse et al., 1995).

South of the Property, and just north of the Village of Wabigoon, is the “Wabigoon Fault” which is a major regional fault structure (Figure 7.1). It separates a northern domain, characterized by generally southward-facing alternating panels of metavolcanic and metasedimentary rocks, from a southern domain of generally northward-facing metavolcanic rocks (Beakhouse, 2000).

The greenstone belt is a volcano-plutonic complex and is one of the four-types of lithotectonic domains within the Superior Province intruded by syn-volcanic to post-tectonic granitoid plutons. The magmatic components of the greenstone belts include ultramafic to intermediate volcanics and more felsic volcanic and pyroclastic rocks. The sedimentary component of greenstone belts includes both clastic and chemical deposits. Plutonic rocks in these domains include synvolcanic tonalitic, quartz dioritic and granodioritic plutons, the emplacement of which is thought to have deformed the greenstone belts into arc forms. Metamorphic grade is generally green schist or sub-green schist grade except for narrow belts or the margins of larger belts which commonly display mineral assemblages typical of low-pressure amphibolite grade rocks (Percival and Easton, 2007a and 2007b).

## FIGURE 7.1 REGIONAL GEOLOGY MAP, NORTHWESTERN ONTARIO




***Source:*** *Treasury (2010)*

## 7.2 PROPERTY GEOLOGY

The earliest descriptions of the local geology were carried out by Satterly (1941) for the Ontario Department of Mines. These were later expanded with the updating of geological maps by the Ontario Geological Survey from 1995 to 2002 (Beakhouse, 2002; Beakhouse, 2001; Beakhouse, 2000; Beakhouse et. al., 1995). A detailed geology map covering Zealand Township was published by Beakhouse and Pigeon (2003). Geology maps and descriptions of Laval and Hartman Townships were completed by Berger (1990).

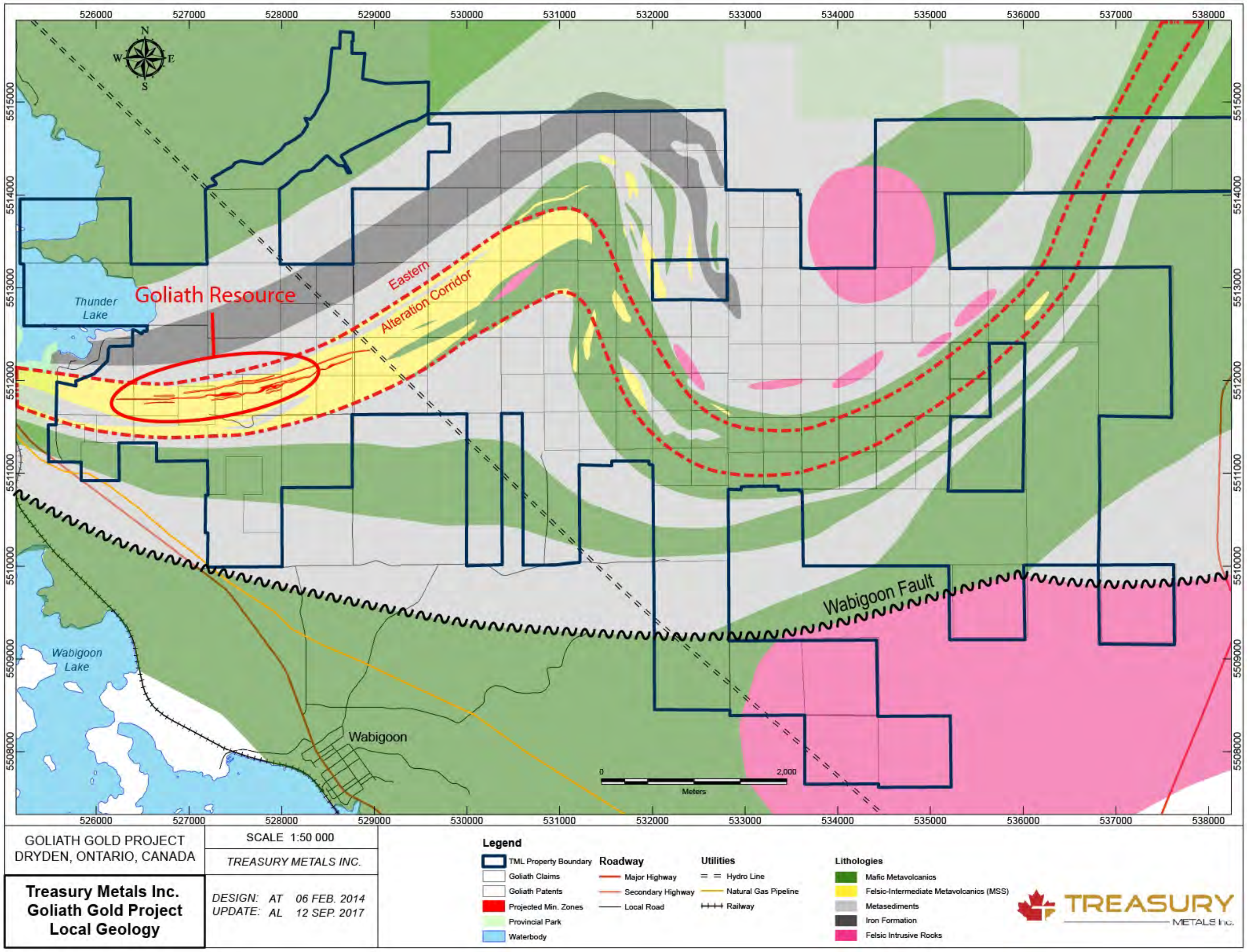
The Property area geology described below integrates all of the geological mapping, diamond drilling programs and structural studies completed by Teck, Corona, CCIC and Treasury geological staff from 2008 to present (Roy et. al., 2012; Roy and Trinder, 2011; Magyarosi and Peshkepia, 2011; Ilieva, 2008). The rocks have been grouped into the "Thunder Lake Assemblage" of predominantly meta-sedimentary rocks, and the "Thunder River Mafic Metavolcanic Rocks" (Figure 7.2).

### 7.2.1 Thunder Lake Assemblage

The Thunder Lake Assemblage, an upper greenschist to lower amphibolite metamorphic grade volcanogenic-sedimentary complex, is typically separated into the "Thunder Lake Sediments" and "Thunder Lake Volcanics" (Beakhouse 2000). Underlying much of the Project area, the assemblage comprises quartz-porphyritic felsic to intermediate metavolcanic rocks represented by biotite gneiss, mica schist, quartz-porphyritic mica schist, a variety of metasedimentary rocks and minor amphibolite rocks (Figure 7.2, Table 7.1).

Beakhouse (2001) described the "Thunder Lake Sediments" to be a package of rocks separated into two panels along its strike length by the "Thunder Lake Volcanics". These metasedimentary rocks are dominated by biotite-muscovite and biotite schist (greywackes) with subordinate inter-layered metasedimentary rocks (probably pyroclastic siltstone and arkosic sandstone) which exhibits well-preserved primary sedimentary structures such as graded bedding, scour, and rip-up clasts unlike the nearby Zealand Sediments adjacent to the Wabigoon Fault whose primary features are contorted by a high degree of strain (Beakhouse, 2001).

**FIGURE 7.2 LOCAL BEDROCK GEOLOGY, GOLIATH GOLD PROJECT, NORTHWESTERN ONTARIO**




***Source:*** *Treasury (2017)*

| **TABLE 7.1**<br>**THUNDER LAKE ASSEMBLAGE ROCK DESCRIPTIONS** | |
|---|---|
| **Rock Type** | **Description** |
| Biotite muscovite schist (BMS) | Dark grey to grey, fine to medium grained mica schist. Usually it consists of intercalated leucocratic and melanocratic bands. This unit contains a high number of grey to milky white quartz veins. Most of the veins are 1-15 cm wide, parallel or crosscutting the foliation. Some veins are associated with highly chloritized and silicified intervals with tourmaline and sulphides. |
| Muscovite sericite schist (MSS)<br><br>Interpreted as Altered Felsic Metavolcanic Rocks | Light grey to beige grey, fine to medium grained quartz- sericite schist. It is variably siliceous, commonly contains interbedded, dark grey biotite-muscovite bands and grey to milky white quartz veins. It is characterized by the presence of moderate to strong pervasive sericite alteration and gold and silver bearing disseminated sulphides. |
| Iron formation (IF) | Dark greenish grey calc-silicate metamorphic rocks, which include coarse to medium grained gneiss, biotite schist, 10 to 15 cm wide distinctive layers enriched with garnet, chlorite and narrow ink blue magnetite bands. The rock unit is magnetic and contains disseminated pyrite. |
| Metasedimentary Rocks (MSED) | Grey to dark grey-green medium grained massive unit, which consists of biotite, feldspar, quartz, muscovite with a weak patchy potassium and sericite alteration and rare hematite (rusty brown) alteration. Foliation is poorly developed but more prominent in contact and altered areas. Quartz veins, parallel or crosscutting the foliation are very common. This unit can be distinguished by the presence of numerous “quartz eyes” or quartz porphyroblast. (identified as “arkose metasediments” or “quartz feldspar porphyry” in Teck/Corona drill logs and historic reports). This unit may contain 1-5% bleb-finely disseminated pyrite and chalcopyrite. |
| Biotite schist (BS) | Dark grey to black, fine to medium grained, slightly to well foliated schist. Locally contains disseminated pyrite in the foliation planes and fractures. It was referred to as pelites or greywackes in the historical reports |
| Chloritic-Biotite schist (Chl-BS) | Dark grey to greenish grey medium grained, slightly to well foliated schist. Locally it contains disseminated pyrite along foliation planes and fractures. Referred to as pelites or greywackes in the historical reports. |

***Source:*** *Roy and Trinder (2011)*

The northern panel of “Thunder Lake Sediments” include ink blue coloured magnetite layers that are closely associated with distinctive garnet-rich layers and calc-silicate rock, described in earlier publications as iron formation (Satterly, 1941). Iron formation can be locally banded as “banded iron formation (“BIF”)” consisting of alternating layers of chert and magnetite. These iron formation units are the source of the prominent aeromagnetic anomaly that is folded across the western half of the Property.

Compositional layering in metasedimentary rocks strike 090° in the western portion of the Property around the Goliath Gold Deposit and dip from 70° to 80° south-southeast. The rock formational units strike northeast, east of the Deposit. Schistosity is commonly developed within both the metasedimentary rocks and metavolcanic rocks and exhibits a similar orientation (Hogg, 2002). In general, the foliation and schistosity is parallel to stratigraphy.

Sandwiched between the sediments are the "Thunder Lake Volcanics", a unit dominated by felsic metavolcanic rocks conformably inter-layered with wacke-siltstone. These rocks host the majority of gold mineralization at Goliath. The lenses of metasedimentary rocks that occur within the felsic unit are similar to those making up the main sedimentary unit. All of the rocks have been subjected to folding and moderate to intense shearing with local hydrothermal alteration, quartz veining and sulphide mineralisation.

### 7.2.2 Thunder River Mafic Metavolcanics

The Thunder River Mafic Metavolcanic rocks underlie the southern part of the Property between the southern panel of the "Thunder lake Sediments" and the "Zealand Sediments" north of the Wabigoon Fault (Table 7.2, Figure 7.2). The mafic rocks are generally massive but are pillowed locally and include amphibolite and mafic dykes which are characterised as chlorite schists (Beakhouse, 2000). Some rocks have been described as ultramafic in character (Hogg, 2002). These ultramafic rocks have been mapped locally as soapstones.

**TABLE 7.2**
**THUNDER RIVER MAFIC METAVOLCANIC ROCKS: ROCK DESCRIPTIONS**

| Rock Type | Description |
|---|---|
| Mafic dyke (MD) | Usually narrow dark green to almost black massive or slightly foliated fine to medium grained biotite-chlorite schist. The width of the layers can reach up to 5 m. The dykes can be either parallel to or crosscut the foliation. |
| Amphibolite (AMP) | Coarse to medium grained, dark green to black to green units, which consist mainly of 30-50% amphibole (hornblende and actinolite), 30-40% feldspar and pyroxene with rare post genetic quartz veins and layers of chlorite schist. It has typical "salt and pepper" appearance and nematoblastic texture. |
| Greenschist | Usually dark green to almost black foliated fine to medium grained schist, which consists mainly of chlorite, biotite, feldspar, amphibole. The width of the layers can reach up to 5 m. |

***Source:*** *Roy and Trinder (2011)*

## 7.3 DEPOSIT GEOLOGY

For the purpose of the exploration and development, the following four (4) groupings are consistently recognized from south to north at the Goliath Gold Deposit (modified after Page, 1994, Figure 7.3):

A "Hanging Wall Unit" of metasedimentary rocks (MSED) which share a sharp contact or may gradually grade to a biotite-quartz-feldspar-sericite schist (BMS) that have been intruded by quartz ± feldspar-porphyry intrusive rocks which may appear periodically along the strike length of the Deposit;

A "Transitional Unit" biotite-quartz-feldspar-sericite schist (BMS), occasionally intruded by porphyry rocks;

A "Central Unit" that consists of:

- A package of biotite-quartz-feldspar-sericite schist (BMS), occasionally intruded by porphyry rocks, interlayered with up to four hanging wall alteration zones (HW1 to HW4) consisting of quartz-feldspar-sericite schist (MSS) that can have significant gold mineralization that are often silicified;

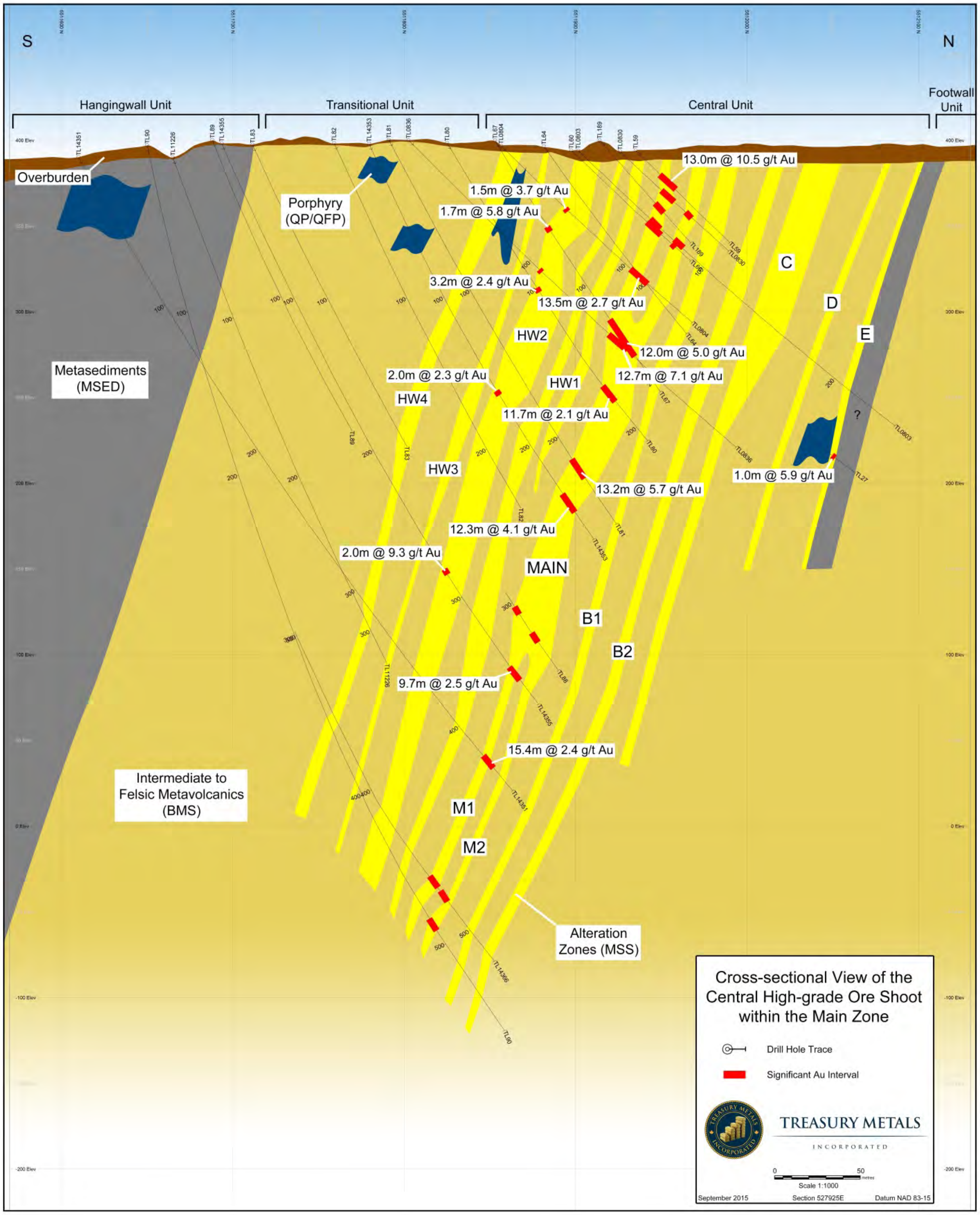
- A core section of rocks, approximately 100 to 150 m true thickness, that hosts the most significant gold concentrations in the Deposit (the Main and C Zones) and consist of intensely deformed and variably altered felsic, fine to medium grained, quartz-feldspar-sericite schist (MSS) and biotite-quartz-feldspar-sericite schist (BMS) with minor metasedimentary rocks (MSED);

- A package of rocks similar to (1) that hosts the D and E Zones in silicified MSS rocks surrounded by BMS; and

A "Footwall Unit" of predominantly metasedimentary rocks (MSED, BMS and weak iron formation) with some porphyritic intrusive bodies and minor felsic gneiss and schist rocks.

Considering that the host rocks of the Goliath Gold Deposit are extremely altered and are now schists held together by fine-grained quartz, which gives them their competency, Treasury devised a system of grouping the altered schists into two distinct geological units that could be mapped across the Deposit, the "MSS" and "BMS" units. These units are differentiated based on the relative modal abundance of biotite rich versus sericite rich layers, quartz (silicification) and sulphide mineral content. In general, the most altered rocks containing greater than 60% quartz-sericite felsic bands, are silicified and often contain base metal mineralization, have been mapped as "MSS" (light coloured) units. Those units containing less than 60% white mica have been mapped as biotite muscovite schist "BMS" (dark coloured). Figure 7.4 visually illustrates the difference between the two rock units. It should be noted that contacts are almost always gradational. Gold is usually associated with the MSS units in association with sphalerite and galena or occurs in smaller MSS bands hosted within the BMS units.

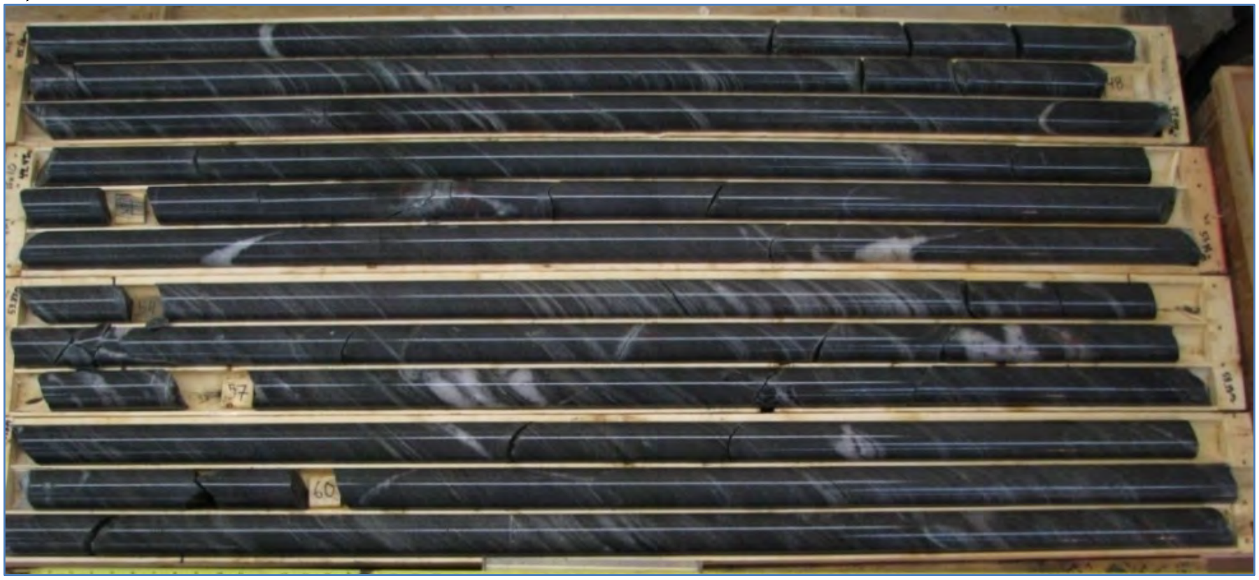
## FIGURE 7.3 GEOLOGY OF THE GOLIATH GOLD DEPOSIT



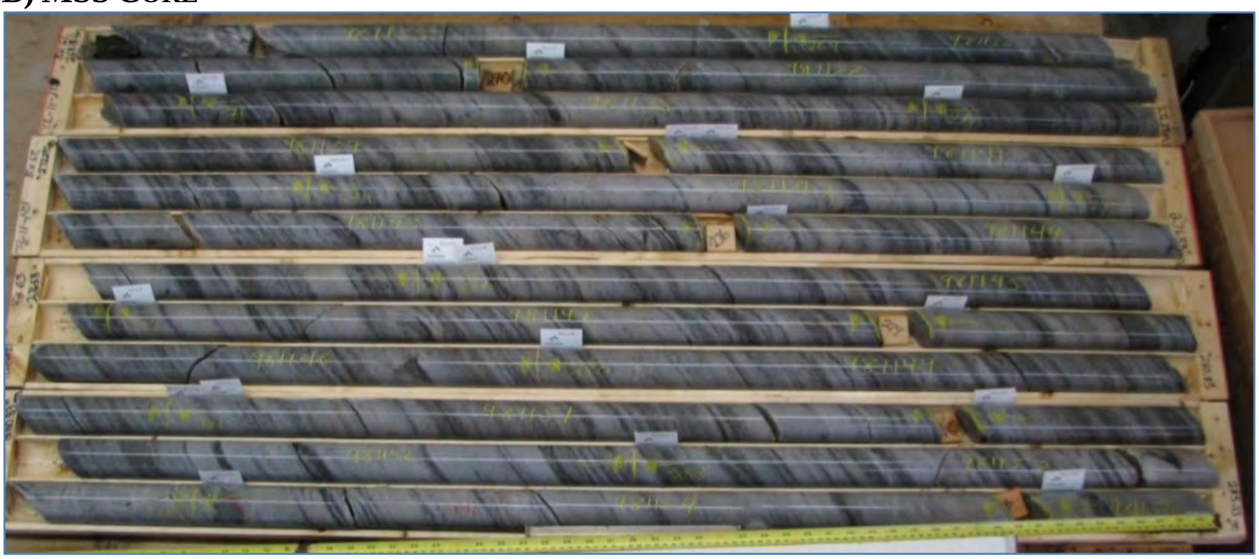

***Source:*** *Treasury (2015)*

**FIGURE 7.4 DIAMOND DRILL CORE PHOTOGRAPHS: A) BMS CORE AND B) MSS CORE**

**A) BMS CORE**



**B) MSS CORE**



***Source:*** *Treasury (2015)*

## 7.4 STRUCTURAL GEOLOGY

Page (1994), Beakhouse (2001), Ravnaas et al. (2007) and Wetherup (2008) and Wetherup (2010) have described and interpreted the key structural features on the Property identifying three deformation events and three related generations of fold axes. Geological and trench mapping programs as well as structural studies of bedrock and drill core have been undertaken over the last eight years by Treasury to obtain a better understanding of the structural geology of the Property. Structures and veins observed in the area of the Goliath Gold Deposit have been interpreted within and relative to this basic framework. Table 9.2, Section 9.3, summarizing the structural feature observed on the Property during the 2008 exploration program and the deformation features and events are summarized below.

### 7.4.1 D0 Pre-Deformation Structures

The $D_0$ pre-deformation structures developed during the rock formation and are a result of possibly transposed bedding and/or alteration zones. They can be observed in core and bedrock as alternating leucocratic quartz-sericite and melanocratic biotite-feldspar layers and represents compositional layering within felsic metavolcanic and metasedimentary rocks. The width of the layers varies from 0.5 to 10 centimetres, but locally forms larger units interbedded with layers of metasedimentary rocks. Larger zones (up to 40 metres wide) of dominantly quartz–sericite schist locally contain greyish, very fine-grained layers or "ribbons" of quartz, $V_0$ veins, which are usually associated with sulphide (pyrite-sphalerite-galena-chalcopyrite) mineralisation and have the potential to host coarse gold. The association of almost pure very fine-grained quartz layers within the center of a larger zone of quartz-sericite schist could represent transposed and metamorphosed sericite alteration around quartz veins within the felsic metavolcanic rocks. Sulphide minerals observed in drill core commonly occur along $S_1$ foliation planes and appear to have been remobilized.

Contacts between the lithostratigraphic units were measured in the outcrops and in the core. Within the felsic volcanic rocks the contacts between the muscovite-sericite schist (MSS) and the biotite-muscovite schist (BMS) can range from transitional to sharp. More noticeable is the contact between the felsic volcanic rocks and the metasedimentary rocks that is usually marked by a very small angular discordance and is almost parallel to the primary bedding. The strike and dip are approximately 090°/70°S, but can change from 068°/72°S to 090°/80°S. It is interpreted that the primary syngenetic gold and silver mineralisation was deposited during this event because the mineralisation is mostly contained within the sericite schist and/or biotite-muscovite schist. Isolated concentrations of gold lying outside of these units may be related to later remobilization or alteration and gold deposition at other parallel but different stratigraphic horizons as zones of mineralization are all parallel to one another parallel to stratigraphy.

### 7.4.2 D1 Deformation

The $D_1$ deformation is represented by well-developed foliation $S_1$ and isoclinal folds $F_1$ within the felsic metavolcanic rocks (BMS, MSS) and metasedimentary rocks (Biotite Schist ("BS") and Iron Formation). The foliation and the axes of the folds were measured in the outcrops, in the trenches and during the orientation drilling of holes TL0822 to TL0837. The foliation is approximately 074°/70°S, but it can vary from 064°/62°S to 090°/80°S. The mafic metavolcanic rock unit texture tends to be more massive as the foliation is suppressed.

$F_1$ folds were observed in the outcrops and in the core. The folds are isoclinal and the fold axes are parallel to the $F_1$ foliation. The dip and strike of the axial planes are approximately 090°/70° but it can change from 080°/68°S to 100°/78°S. In most cases, the hinges/fold noses display evidence of distension where continuing compressional deformation has stretched the hinge and its limbs are highly attenuated and thinned. These fold noses are often completely "decapitated" from their limbs and generally only hook shaped or quartz lenses remain which suggests that some of the boudinaged or quartz lenses observed in the felsic metavolcanic rocks may be related to $F_1$ structures. Deformed, white, coarse grained quartz veins ± tourmaline, ± stringers or porphyroblasts of sulphides, 1 to 10 centimetres wide occur dispersed throughout the felsic metavolcanic and metasedimentary rocks. White, coarse-grained quartz veins are not localized to certain pre-deformational "stratigraphy" and are interpreted to be syn-tectonic ($V_1$) as they are affected by $D_1$ deformation and occur in all rock types. They typically crosscut the foliation but may be parallel in some instances. The assay results show no direct correlation between the quartz veins and elevated gold and silver concentrations.

### 7.4.3 D2 Deformation

The $D_2$ deformation is observed as zones of disturbed foliation related to closed $F_2$ folds and $V_2$ quartz veins. Rare $F_2$ fold hinges are observed in the outcrops. They are several cm's in scale and affect the position of the felsic volcanic package that hosts mineralisation on the Goliath Project. Where $F_2$ fold axes and fold noses occur within the gold-silver mineralised zones in the felsic metavolcanic rocks, gold and silver values are commonly 10 to 100 times higher than in the adjacent intervals (Roy et. al, 2012). In some cases they contain coarse-grained visible gold ("VG") or electrum, but even the very fine-grained mineralisation returns higher gold or silver concentrations. Throughout the 2008 mapping program the orientation of the $F_2$ fold axes were measured in the outcropping rocks. The strike of the $F_2$ plane is approximately 220° to 230° and dips 85-90° southward. In addition, the $F_2$ fold axes are almost vertical and the intersections of these fold axes and the mineralisation plunge steeply westward. Overall, discrete $F_2$ fold zones are narrow (up to 10-15 centimetres wide), widely spaced (5 to 25 metres) and locally carry significant gold mineralisation. Determining where $F_2$ folds are likely to be located will identify areas of potential high-grade mineralisation. S and Z folded $F_1$ foliation, $V_0$ and $V_1$ quartz veins, and non-deformed crosscutting $V_2$ veins are all features attributed to the $D_2$ deformational event. The veins are differentiated on the basis of mineralogy, texture and amount of strain.

### 7.4.4 D3 Deformational Event

The $D_3$ deformational event is represented by brittle faults and fractures filled in with quartz, chlorite, feldspar, carbonate and/or fault gouge. Local shear zones and faults are exposed in outcrops and old trenches.

The first fault system is almost vertical and strikes 220 to 240°. The system consists of almost parallel microfaults with dextral displacement on a centimetre scale. Very often it is accompanied with a 1.0 to 1.5 metre wide sericite alteration.

The second fault system, exposed in the outcrops, has almost a north-south orientation. The azimuth bearing ranges from 352 to 008° and the dips from 85 to 90°. Usually the fault zone consists of 2-3 microfaults located within an interval with widths ranging from 0.5 to 1.0 metres. These faults can be found in all rock types including clastic metasedimentary, felsic volcanic and mafic volcanic rocks. Commonly the rocks adjacent to the faults are highly fractured.

The most significant feature found in the drill holes that can be related to $D_3$ deformation is what Teck-Corona described as the Northwest Fault. This is a brittle structure which strikes west to west-northwest and dips shallowly northward and was observed in most of the deeper holes. Drill section interpretation by Teck-Corona shows very little dip-slip movement along this structure (approximately 5 to 10 metres – hanging wall up). Most shallow dipping structures are dip-slip in nature but since this is such a prevalent feature there may be a significant component of strike-slip motion since dip-slip offset is minor.

A third generation of white, coarse-grained quartz veins ($V_3$) are formed during the $D_3$ event. These veins occur in all rock units and typically crosscut the foliation obliquely with sharp margins. No deformation appears to have occurred in these veins, which can also cut $D_2$ structures. $V_3$ veins are hematized on the surface, have been previously sampled, and do not return any significant gold or silver values. $D_3$ deformation is not related to the gold-silver mineralisation emplacement. However, the Northwest Fault appears to offset the mineralised zone towards the north east of the main deposit. Wetherup (2008) demonstrated that high-grade mineralisation occurs along the steeply southwest plunging intersections of $F_1$-$F_2$ fold axes and that these shoots are offset by the northwest Fault.

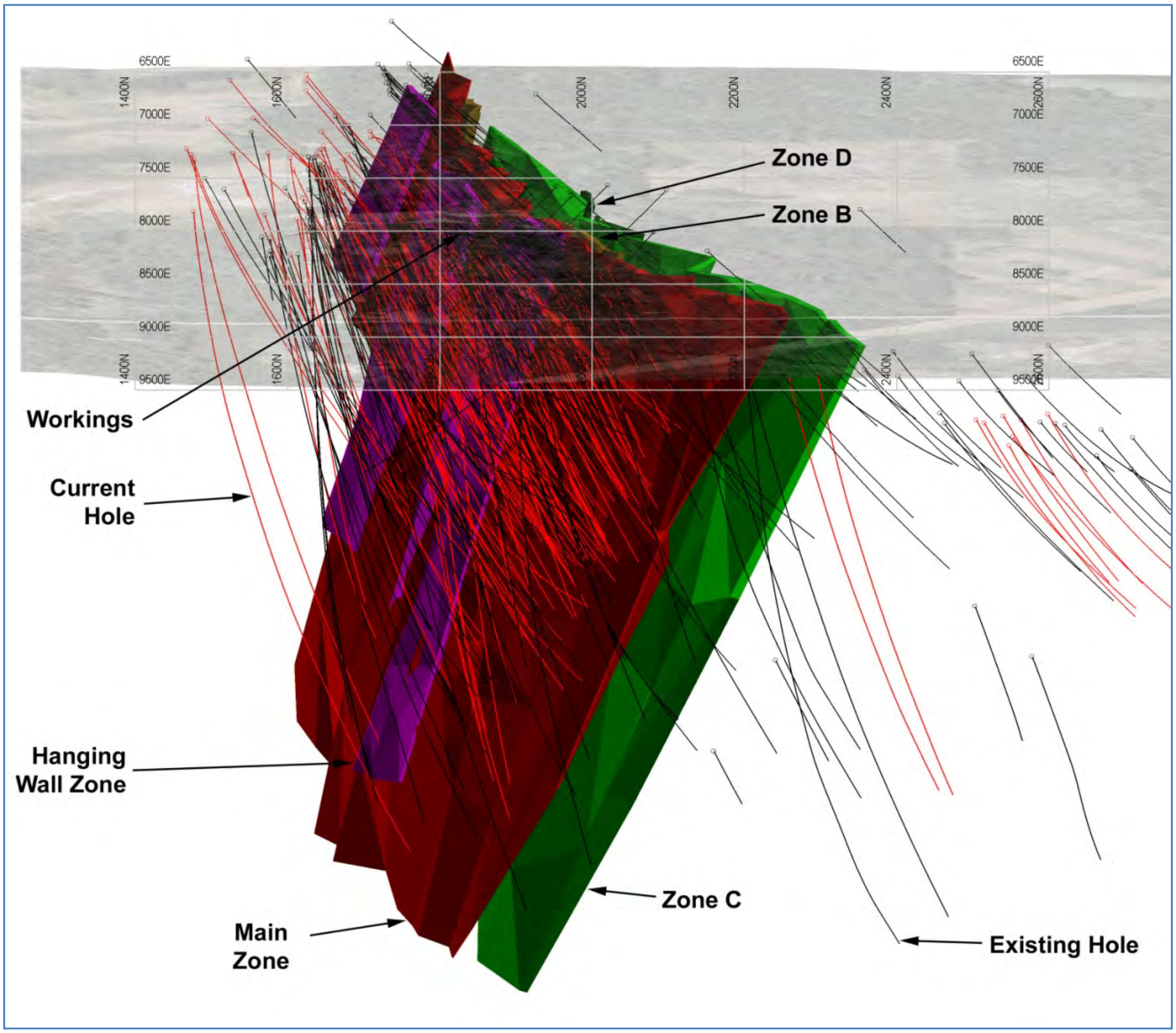
## 7.5 MINERALIZATION

The Goliath Gold Deposit is located 250 to 300 metres north of Norman Road and since 1990 the main resource area has been defined by extensive diamond drilling efforts concentrated over a strike length of over 2.0 km. To date, ten (10) zones containing gold and silver mineralization have been identified within the "Central Unit" of the main deposit (Figure 7.3). From south to north, they are the:

- Hanging Wall Zones (HW1 to HW4 Subzones) hosted in mostly BMS rock units and small amounts of metasedimentary and porphyry intrusive rocks;
- Main Zone (M1 and M2 Subzones) which is 5 to 40 m wide and occurs principally in silicified and sulphide mineralized (sphalerite, galena and pyrite) MSS rocks;
- B1 and B2 Zones hosted in BMS rocks residing between the Main and C Zones;
- C Zone (C1 and C2 Subzones) hosted in silicified and sulphide-bearing (sphalerite and galena) MSS Rocks; and
- D and E Zones hosted in mostly a mixture of MSS and BMS rocks surrounded by significant amounts of metasedimentary rocks and minor porphyry intrusive rocks.

The majority of the historical gold and silver resource estimates reside in the "Main Zone" and "C Zone" (Figure 7.5). At Goliath, the gold-bearing zones all strike from 090° to 072° with dips that are consistently 72°-78° toward the south or southeast. The main area of gold, silver and sulphide mineralisation and alteration occurs up to a maximum drill-tested vertical depth of ~805 metres (TL135) below the surface, over a drill-tested strike-length of approximately 2,300 metres within the current defined resource area. Gold mineralized zones remain open at depth. The historic Teck-Corona drilling confirmed that anomalous gold mineralisation occurs over a strike length of at least 3,500 metres (Corona, 1998). Exploration work by Treasury has shown alteration zones containing intersections of gold mineralisation extend over a strike length of at least 5,000 metres. Overall, rocks surrounding the principal defined target zones are often anomalous in gold mineralization (background gold concentrations).

**FIGURE 7.5** **3-D VIEW OF THE INTERPRETED MINERALIZED ZONES OF THE GOLIATH GOLD DEPOSIT**




Looking West.
Legend: HW Zones (purple), Main Zone (red), C Zone (green) and D Zone.
***Source:*** *Treasury (2015)*

The mineralised zones are tabular composite units defined on the basis of moderate to strongly altered rock units, anomalous to strongly elevated gold concentrations, and increased sulphide content and are concordant to the local stratigraphic units. Stratigraphically, gold mineralisation is concentrated in an approximately 100 to 200 metre wide "Central Unit" composed of intensely altered felsic metavolcanic rocks (quartz-sericite and biotite- muscovite schist) with minor argillaceous metasedimentary rocks. Gold within the central unit is concentrated in a pyritic alteration zone consisting of quartz-sericite schist (MSS), quartz-eye gneiss and quartz-feldspar gneiss (Corona, 2001).

Detailed wireframes of each of the mineralized zones were developed by P&E with assistance of Treasury personnel using the combined historical Teck and the Treasury database. The zones follow the sericite alteration corresponding to the main trends of mineralization both down dip and along strike. Some zones are more loosely constrained by alteration and the gold grades were more heavily relied upon.

To date, drilling has focused primarily on targeting the Main and C Zones where high grade (> 3.0 g/t Au) gold mineralization have been intercepted. Caracle Creek International Consulting Inc. ("CCIC") determined that native gold and silver (electrum) are associated with finely disseminated sulphides, coarse grained pyrite and very narrow light grey translucent "ribbon" quartz veining. The main sulphide phases are pyrite, sphalerite, galena, pyrrhotite, minor chalcopyrite and arsenopyrite and dark grey needles of stibnite in decreasing order of abundance. The sulphide content ranges from 3-5%, but is locally up to 15%.

Visible gold and/or electrum are often rare and occur mainly within the leucocratic bands of MSS but can also in the melanocratic bands enriched with biotite and chlorite. In general, the highest gold and silver values occur in association with very strong pervasive quartz-sericite alteration. An increase in gold and silver correlates with an increase in pyrite and more specifically an increase in sphalerite content. The modal abundance of sphalerite usually exceeds that of galena and pyrite. Although the presence of elevated sphalerite and galena have been used as an indicator of the potential presence of gold with the deposit, there are some instances when gold is not present even through the base metals are clearly visible in drill core. In addition, an increase in chalcopyrite and galena content has a lower correlation to an increase in gold values.

Two distinct types of pyrite are recognized: disseminated fine grained cubic euhedral crystals occurring in the foliation planes; and disseminated subhedral to irregular grains and stringers, with inclusions of galena, occurring in quartz veins and along the margins of the veins. The second type is commonly associated with other base metal sulphides. Pyrite can occur as fine-grained disseminations in the foliation planes, disseminations in the matrix, blebs, stringers and or veinlets. The base metals sulphides can be concentrated in blebs and stringers of sphalerite, cubic fine-grained galena and on occasion as chalcopyrite.

Silver to gold ratios are generally unpredictable and have a substantial range. Possibly during the syngenetic mineralisation event, more silver than the gold was contained in the hydrothermal solutions (ratio Ag/Au>1), but during the epigenetic mineralisation event, some of the gold was redistributed and there was enrichment in structurally induced zones of enhanced porosity and permeability. A similar relationship of gold to base metals is observed.

In the Goliath Gold Deposit, high grade gold mineralization and silver occur in shoots with relatively short strike-lengths (up to 50 meters) that plunge steeply to the west (Figure 7.6). In the Main Zone, three shoots have been well defined named the "East", "Central" and "West" shoots and a "Central Shoot" has been delineated along the C Zone. Corona (1998) interpreted the high-grade shoots to be the result of tight folding of the mineralised horizon (gold concentrated in fold noses) that appear to occur at regular intervals (Figure 7.6). The shoots have considerable down-plunge continuity and are all open and untested down dip at depth. Treasury has interpreted that these zones may be connected through a large folded anticlinal feature with a fold axis that strikes down the centre of the Deposit and plunges around 10 to 20 degrees east.

The Main Zone is comprised of one larger well-defined pyritic, and often silicified, MSS zone or is bifurcated into two sub-zones (M1 and M2) separated by less-altered BMS rocks. C Zone gold mineralization always occurs in the C1 and C2 subzones hosted in sulphide mineralized and silicified MSS that demonstrate excellent on strike and down dip continuity throughout the Deposit.

The portion of the "Central Unit" of the Deposit that hosts the B1, B2, C Zone and D and E Zones ranges in thickness from 75 to 150 m but is often lower in grade than the Main Zone. It should be noted that the D and E zones have often only been sporadically drill tested since many holes historically end before intersecting them. Since the last 2011 technical report, Treasury has re-entered thirty historical Teck and Treasury drill holes to extend the holes in order to intersect the C, D and E Zones and have conducted an extensive infill sampling program of existing core to provide B1 and B2 assay data to add to the mineral resource.

The Hanging Wall Zones (HW1 to HW4) are located 10 to 50 m south of the Main Zone. These zones are often narrow in width (1-3 m) and remain open along strike and at depth. Many of the Teck intersections of these zones were not sampled historically because they were not significantly mineralized or contained no visible base metal minerals (sulphide content ranges from 3-5%). Gold and silver are probably included in the pyrite or around the pyrite micro grains. Only a few flakes of coarse-grained gold or electrum were visible in the core or in the grab samples. Most of the sulphides are located mainly in blebs or stringers parallel to the foliation planes. Usually blebs, stringers and veinlets of pyrite are associated with the stringers of sphalerite, cubic fine-grained galena, chalcopyrite and pyrrhotite. Very often they in-fill small fractures in the host rock or occur along margins of quartz veins.

## 7.6 ALTERATION

The Goliath Gold Deposit consists of hydrothermally altered felsic metavolcanic and metasedimentary rocks. Alteration has been traced through drilling and geological mapping for an approximate strike length of at least five kilometers. The alteration consists of primarily sericitization and silicification in association with the gold mineralization. Chloritization is visible in metamorphosed and altered mafic rocks in the area. Very rare flakes of aquamarine green mica (fuchsite: Cr muscovite) occur in the strongly altered sericite alteration and will sometime appear within the vicinity of high-grade gold.

Page (1995a) correlated the sericitic alteration of quartz-sericite schist rocks (MSS) with moderate potassium enrichment and significant sodium depletion. CCIC made the following observations from the analyses of 756 whole rock samples collected from holes TL0801, TL0802, TL0807, TL0808 and TL0823:

- The intervals with significant gold and silver mineralisation are very strongly altered;
- Very often extensive pervasive hydrothermal alteration obscures primary textural and structural features to the extent that it's not possible to identify the original rock type;
- The hydrothermal alteration commonly involves massive depletion of CaO and $Na_2O$ and addition of $H_2O$, K, silica and sulphur as quartz ribbons and sericite;

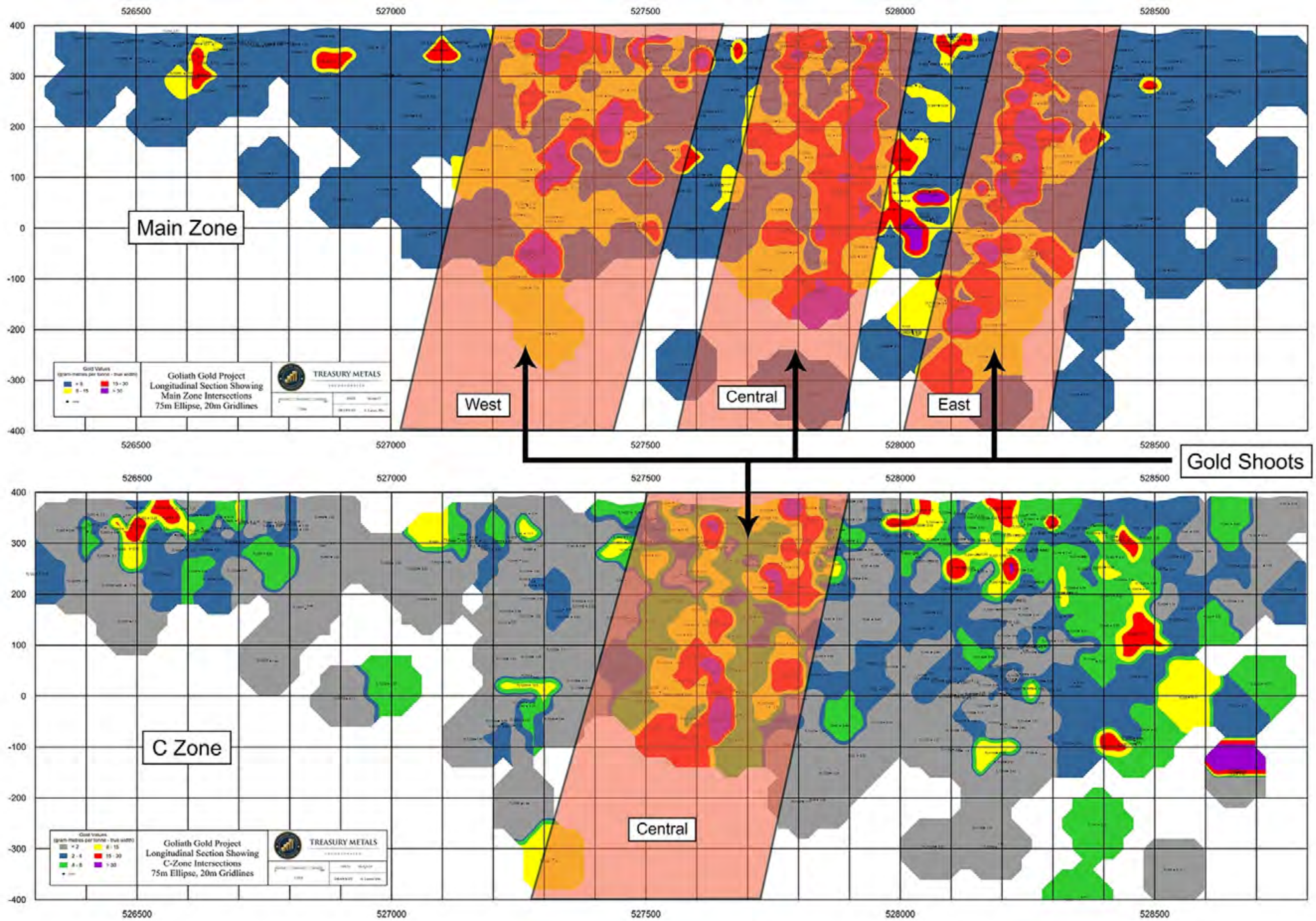
- The feldspar and biotite are totally replaced by sericite, quartz and disseminated pyrite;

- Most of the mineralised zones are hosted by fine to medium grained quartz-sericite schist or in patches of sericite alteration in biotite- muscovite schist;

- The chlorite alteration is more intense in zones of fractured and brecciated host rocks. As a result of the depletion of CaO and $Na_2O$ from the feldspar and addition of MgO and $Fe_2O_3$, sulphur and silica, quartz-pyrite-chlorite-tourmaline veins were formed; and

- Complex, overprinting alteration and metamorphic assemblages and diverse metal associations are interpreted to be the result of a overprinting of hydrothermal and metamorphic fluids, which were focused in the zones of structurally-induced porosity/permeability.

**FIGURE 7.6 LONGITUDINAL SECTION: MAIN ZONE (TOP), C ZONE (BOTTOM)**




***Source:*** *Treasury (2015)*

## 8.0 DEPOSIT TYPES

In 2001, Teck-Corona originally described the Goliath Gold Deposit as a shear-hosted mesothermal gold deposit with structurally controlled gold mineralization related to local silica and sulphide replacements, and widespread, small, discordant to concordant quartz and sulphide veins. However, the Deposit is not hosted within a shear-zone and is missing most of the critical attributes of these types of deposits. The host rocks do not contain typical iron-carbonate alteration mineral assemblages and gold is not commonly hosted by quartz veins in association with silicification (Beakhouse, 2002). Furthermore, the gold mineralisation is generally associated with highly elevated silver (locally >100 g/t Ag but varies significantly across Deposit), zinc and lead in the form of stringers and layers within felsic volcanic schist which is not common in shear-hosted mesothermal gold deposits (Page, 1995a).

Page (1995b) describes the alteration of the host rocks in the area of the deposit as being enriched in potassium and depleted in sodium which is a diagnostic feature peculiar to Volcanogenic Massive Sulphide ("VMS") deposits. Wetherup (2008) suggested that the deposit may be part of a VMS system within a bimodal package of folded volcanic strata on the basis of this "classic" K-Na alteration signature along with the close association of gold with silver, zinc and lead. No massive sulphide cap has been found to date. However, in 2012 isolated lenses of massive sulphides consisting of pyrrhotite and pyrite (no base metals) were intersected in drill holes TL12245 and TL12247 in the nose of the North East regional fold. Although this model does not fit perfectly, it should not be dismissed as a possible mechanism in which the gold was originally introduced into the system. In addition, future exploration work should also not dismiss the possibility of perhaps finding a gold-zinc VMS deposit near surface or at depth elsewhere on the Property.

Treasury favours a hybrid deposit-type model, also known as a "Pre-orogenic Atypical Greenstone Belt Gold Model" as a promising genetic model to explain the geology, structures and mineralization observed within the Goliath Gold Deposit (Section 8.4). In this model, early gold-rich volcanogenic sulphide mineralization is overprinted by subsequent deformation and alteration events which can contribute to further concentration and/or remobilizing of both precious and base metals. This model also integrates potential VMS and Magmatic Hydrothermal Archean Lode Gold Deposit ("Magmatic Hydrothermal") models in the formation of the deposit. It is likely that the Goliath Gold Deposit does not fit into any one idealized model and neither should be discounted. Short descriptions of the aforementioned deposit models are provided below for comparison.

### 8.1 MAGMATIC HYDROTHERMAL ARCHEAN LOAD GOLD DEPOSIT MODEL

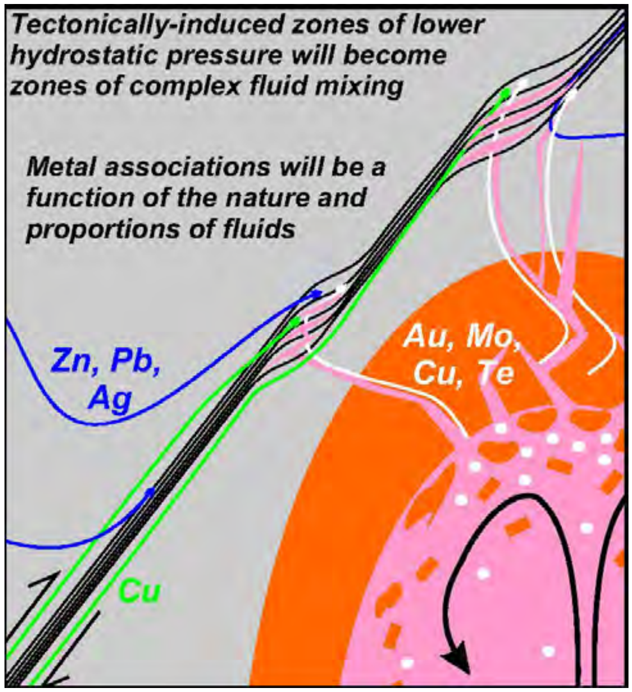
Treasury suggests that one of the most applicable contributing genetic models for the Goliath Gold Deposit is that of a magmatic-hydrothermal deposit, or a variation thereof, in which the ore metals were derived from temporally and genetically related intrusions including quartz and quartz-feldspar porphyries. Large polyphase hydrothermal systems developed within and above genetically related intrusions and commonly interacted with meteoric fluids (and possibly seawater) on their tops and peripheries. Redistribution, and possibly further concentration of metals, occurred in some deposits during the late stages (Brimhall, 1980; Brimhall and Ghiorso, 1983).

Magmatic Hydrothermal Archaean Lode Gold Deposits ("ALGD") are a variation of porphyry deposits temporally and spatially related to Archean intermediate to felsic plutonic rocks. These deposits develop exclusively in a post-arc setting and are typically distal from the magmatic systems that may be the source of the magmatic hydrothermal fluid (Figure 8.1). Although their geometry is quite variable, ALGDs tend to occur as veins or disseminated replacement style mineralisation that defines a steeply dipping tabular or prolate elliptical geometry. They are characterized by diverse ore and alteration mineral assemblages, only a subset of which is similar to those characterizing Phanerozoic magmatic hydrothermal (porphyry) deposits. The ALGDs occur in structures that are related to late, often regional scale, tectonic processes and not in pluton-centered hydrothermal breccia zones.

The Troilus disseminated gold and copper deposit in the Archean Frotet-Evans greenstone belt of Quebec is an example of a Magmatic Hydrothermal Archaean Lode Gold Deposit. The host rocks consist predominately of mafic lavas and intrusive rocks with lesser amounts of intermediate to felsic volcanoclastic metasedimentary rocks intruded by numerous sills and dykes of felsic porphyries.

Gold generally occurs as electrum and native gold. The gold occurs as discrete grains, from 20 to 4,000 microns in diameter, along sulphide grain boundaries, along fractures within the sulphides and along grain boundaries in small quartz veinlets. The mineralisation contains two to three per cent sulphides (pyrite, chalcopyrite, pyrrhotite, and rare sphalerite). These form disseminations, tiny veinlets, and narrow semi-massive seams that are controlled by both foliation and fractures. The mineralisation occurs within a zone of potassic altered in-situ brecciation at the margin of a mafic intrusive, but also within felsic dykes cutting the zone.

**FIGURE 8.1 IDEALIZED FORMATION OF A MAGMATIC HYDROTHERMAL ARCHEAN LODE GOLD DEPOSIT**




***Source:*** *Burnham (1979)*

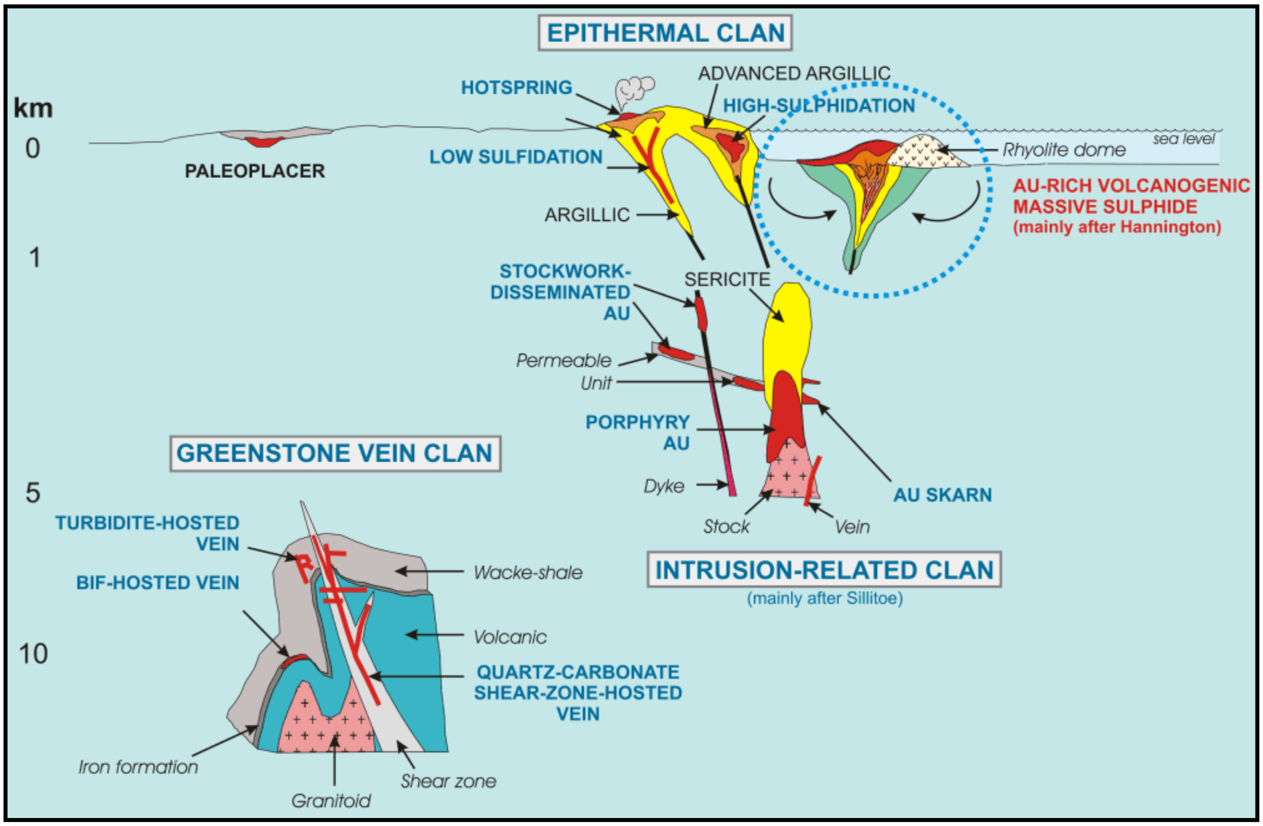
## 8.2 GOLD-RICH VOLCANOGENIC MASSIVE SULPHIDE DEPOSIT MODEL

Gold-rich volcanogenic massive sulphide (VMS) deposits are a sub-type of both VMS and lode gold deposits (Dubé et al, 2006; Poulsen and Hannington, 1996; Hannington et al., 1999; Huston, 2000; Poulsen et al., 2000). Typical VMS deposits comprise a semi-massive to massive sulphide zone of concordant sulphide lenses underlain by a discordant stockwork system or feeder zone (Galley et al., 2007). An epigenetic gold-bearing event can be superimposed on this syngenetic VMS system resulting in gold-rich VMS mineralisation (Dubé et al., 2006). Epigenetic gold-rich VMS deposits have gold grades exceeding the associated combined base metal grades. Distinct alteration features develop as a result of the epigenetic mineralising event, including metamorphosed advanced argillic (aluminous) and silicic alteration, with this alteration focused in the region of the epigenetic stockwork. High-temperature (andalusite, kyanite, zinc-rich staurolite or Mn-garnet) or low-temperature (sericite, mica or chlorite) argillic minerals can be present along with silicic alteration (quartz veins or quartz breccia zones). These alteration styles can be superimposed on the pre-existing syngenetic VMS alteration.

An example of gold-rich VMS deposits are the long producing world-class gold-rich VMS deposits of the Doyon-Bousquet-LaRonde district - Cadillac Mining Camp (e.g., Lapa Property and LaRonde Extension of Agnico-Eagle Mines Ltd.; Doyon Mine of IAMGOLD Corporation). Ravnaas et al. (2007) suggested that the “Zone 17 Gold Trend” of Rainy River Resources Ltd. is a potential example of this style of mineralisation in northwestern Ontario.

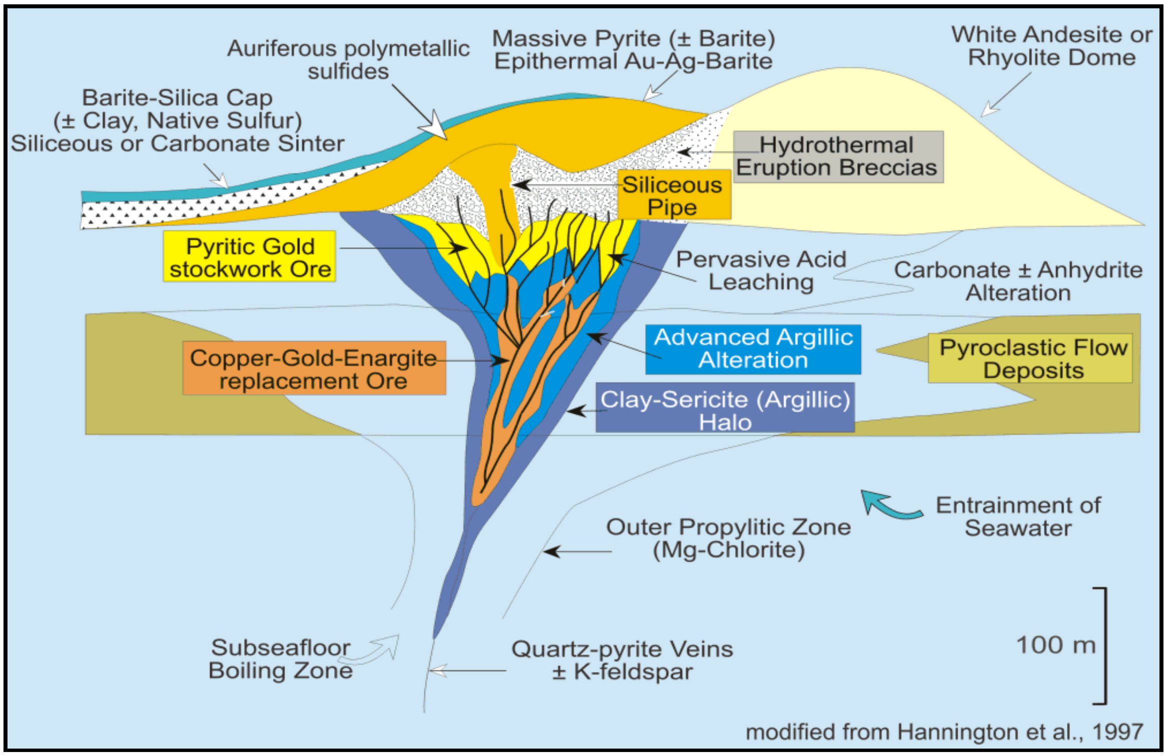
Figure 8.2 provides a schematic section of the inferred crustal levels of formation of gold-rich VMS and shear-zone hosted environments and Figure 8.3 illustrates the geological setting and hydrothermal alteration associated with gold-rich (high sulphidation) VMS hydrothermal systems.

**FIGURE 8.2 VARIOUS TYPES OF GOLD DEPOSITS AND INFERRED CRUSTAL LEVELS OF FORMATION FOR GOLD-RICH VMS DEPOSITS**




***Source:*** *Dubé et al. (2006)*

**FIGURE 8.3 GEOLOGICAL SETTING AND HYDROTHERMAL ALTERATION ASSOCIATED WITH GOLD-RICH HIGH SULPHIDATION VMS HYDROTHERMAL SYSTEMS**




***Source:*** *Hannington et al. (1999)*

## 8.3 PRE-OROGENIC ATYPICAL GREENSTONE BELT GOLD MODEL

The unique style of gold mineralization at the Goliath Gold Deposit suggests that it, like many other gold-base metal deposits within prolific greenstone belts, does not conform to the classic orogenic model (Robert et al., 2007). They still may display similar regional-scale controls and occur in the same general region as orogenic deposits but differ in styles of mineralization, metal association, interpreted crustal levels of emplacement and relative age. The alteration found in some of these deposits is quite distinct in its aluminous mineral assemblages (Robert et al., 2007).

These atypical deposits have formed relatively early in the development of the greenstone belts, prior to regional scale folding of their host belts, and are often overprinted by orogenic veins. The ores of these deposits range from disseminated-stockwork zones, to crustiform-textured veins with associated sulfidic wallrock replacements, to less common sulphide-rich veins (Robert et al., 2005). All of these demonstrate a close spatial association with high-level porphyry stocks and dykes.

Groves et al. (2003) mentions that “these types of [atypical] deposits form prior to the major phase(s) of orogenesis, involving compressional to transpressional deformation, regional metamorphism, and post-volcanic granitoid magmatism during which the orogenic gold deposits form". Once the gold has entered the system, it is then exposed to these later events adding to the complexity of unravelling the deposit.

Research was conducted by the Kenora Resident Geologist office on three gold deposits in the western Wabigoon Subprovince based on their similarly unique style of gold mineralization. Two of these, classified as Pre-Orogenic Atypical Greenstone Belt deposits and situated in different geology settings, were identified as the Cameron Lake deposit hosted in mafic volcanic rocks and the Rainy River deposit hosted in sedimentary and pyroclastic rocks (Ravnaas, 2014).

Gold mineralization at Rainy River is associated with strong sodium depletion, potassium enrichment (sericite alteration), silicification, aluminous alteration, a strong gold-pyrite association, ubiquitous sphalerite, chalcopyrite, garnets (spessartine), and has a very high ratio of silver to gold. This deposit is also isoclinally folded and has both gold and electrum. The Goliath Gold Deposit shares nearly all these characteristics except it has a weak gold-pyrite association and no garnets or significant chalcopyrite mineralization.

## 8.4 HYBRID DEPOSIT-TYPE MODEL OF THE GOLIATH GOLD DEPOSIT

Hardie et al. (2012) suggested "the gold mineralization at the Rainy River gold deposit can be interpreted as a hybrid deposit-type consisting of an early gold-rich volcanogenic sulphide mineralization [pre-orogenic] overprinted by shear-hosted mesothermal [post-orogenic] gold mineralization. Both styles of gold mineralization have been progressively overprinted by deformation, whereby auriferous quartz veins post-date the sulphide stringers and veins and were emplaced during active deformation". The presence of isoclinal folding of the pyrite-sphalerite-chalcopyrite-galena stringer veinlets gives the mineralization a relative timing of pre- to syn-deformational. Folded mineralized stringers are found within the quartz-sericite- schist at the main deposit.

Treasury believes that there are similarities between the Rainy River deposit and Goliath and have integrated the Hybrid deposit-type model into a final simplified four-stage Hybrid model for the genesis of Goliath Gold Deposit which is presented below.

**Stage 1:** Pre-Orogenic Event. Anomalous gold, silver, zinc and lead mineralization is introduced as part of a VMS and/or magmatic hydrothermal system along a Pre-Orogenic structure consisting of stratigraphically sheared felsic volcanic (or volcanoclastic) and sedimentary rocks. If it is a VMS system, potassic alteration accompanies the mineralization event or the felsic rocks are altered by the hydrothermal solutions moving through this conduit. Quartz and quartz-feldspar porphyries may be the heat engine, or remnants of the heat source, that drove the hydrothermal solutions as these intrusive rocks are early-stage and are folded and deformed with rest of the rocks in subsequent deformation events. At this stage the sericite altered weakly mineralized zone may have been several 100 m in width.

**Stage 2:** $D_1$ Deformation Event. The stratigraphic units within the deposit are isoclinally folded into an anticlinal (anticlinorium) structure whose fold axis runs east-west along the entire strike length of the deposit and plunges 10-20$^o$ to the east following the altered felsic volcanic rocks which are sheared and foliated (axial planar $S_1$ and $F_1$). V1 quartz veins are formed parallel to stratigraphy.

**Stage 3:** $D_2$ Deformation Event. Northeast (060$^o$) striking $F_2$ structures intersect $F_1$ structures accompanied by later magmatic hydrothermal solutions which remobilize the gold, silver and base metals and re-concentrate and upgrade them within steeply west dipping shoots which now host the "high grade" gold and silver mineralization. Silicification accompanies this event and $V_2$ quartz veins are developed. The relative abundance of base metals varies along strike depending on the original concentrations at different locations along the initial shear structure.

**Stage 3:** $D_3$ Deformation Event. Brittle faults, fractures and white non-mineralized $V_3$ quartz veins form (dip moderately NNE) and cross-cut of follow location foliation.

## 9.0 EXPLORATION

Since 2008, Treasury has focused its exploration work on the western half of the Property in order to evaluate the gold potential of the Goliath Gold Deposit. During this ten year period, exploration activities consisted of re-establishing the former Teck exploration grid, geological mapping and sampling, prospecting, the completion of structural studies, trenching and channel sampling, the completion of a ground IP geophysical survey and two airborne geophysical surveys, downhole IP and Tomography surveys, metallurgical testing, mineral resource estimations of the main deposit (including Preliminary Economic Analyses in 2012 and 2017) and the completion of sixteen (16) diamond drilling programs (Table 9.1).

The 2008, 2009 and 2010 exploration programs were conducted and managed by CCIC of Toronto, Ontario. Treasury personnel assumed field management all exploration activities as of February 2011.

The exploration work completed on the Property has been documented in a number of independent technical reports prepared for the Company and is summarized below (Puritch et. al, 2015; Roy et. al, 2012; Roy and Trinder, 2011; Roy and Trinder, 2008). Assessment reports filed with the Ministry of Northern Development and Mines ("MNDM") provides additional information on their exploration activities. The reader is directed to Section 10.0 ("Drilling") for details regarding the diamond drilling programs completed by Treasury from 2008 to 2018.

## 9.1 HISTORIC CORE RECLAMATION

In 2008, all historical Teck drill core was in long-term storage within a chain link fenced and locked core compound across Highway 17 from the Pine Grove Motel in the town of Wabigoon approximately 20 km east of Dryden, Ontario. According to Wetherup and Kelso (2008), approximately 8,000 boxes (one third of the core) were stored outside on metal racks and open to the elements (sun, rain, snow etc.). Many of the wooden core boxes, having been stored outdoors and uncovered for over ten years, were nearly rotten requiring re-boxing before they could be moved or re-examined. The remaining core boxes (around 16,000) were cross stacked onto wooden pallets with approximately 100 core boxes per pallet and were poorly covered by core box lids. These boxes were in various states of decay from moderate to nearly completed rotted through.

**TABLE 9.1**
**EXPLORATION WORK COMPLETED BY TREASURY METALS INC.**

| Year | Company | Work Completed |
|---|---|---|
| **2008 - 2010** | **Caracle Creek International Consulting Inc. (CCIC)** | **Operator – Field Project Management** |
| 2008 | CCIC | Core reclamation; Exploration Grid Cut (65.9 line-km) |
| | CCIC | Geological Mapping (1:5,000 Scale), 32 grab samples collected including 17 Whole Rock and REE analyses |
| | CCIC | Diamond Drilling Program – 55 holes (TL0801 to TL0855) |

| **TABLE 9.1 EXPLORATION WORK COMPLETED BY TREASURY METALS INC.** | | |
|---|---|---|
| **Year** | **Company** | **Work Completed** |
| 2008 | CCIC | Structural Study on 2008 drill core |
| | CCIC | One Main Zone Trench, 10 Channels, 29 samples, channel sampling iron formation (3 channels, 25 samples) + mapping |
| | Firefly Aviation Ltd. | Aeromagnetic (HRAM) Survey, 309 line km covering 3,064 ha |
| | JVX Geophysical Surveys & Consulting | Ground IP/Resistivity Survey, 29.6 line-km covering 230 ha |
| | A.C.A. Howe International Limited | Mineral Resource Estimate (NI 43-101 Compliant) |
| 2009 | CCIC | Prospecting, Sampling and Mapping Program covering nine legacy claims; outcrop sampling (5 grabs) and channel sampling (34 channels, 115 channel samples) |
| | CCIC | Diamond Drilling Program – 31 holes (TL0956 to TL0986) |
| 2010 | CCIC | Downhole DCIP/Resistivity EarthProbe Survey; 60 holes profiled; 94 hole-to-hole tomography imaging; 4-line, 21 surface-to-hole tomography pairings; Petrographic/ SEM Study (Beakhouse, 2010); SCIP Core Testing |
| | CCIC | 2 Phase Diamond Drilling Program – 32 holes (TL1087 to TL10118) |
| | CCIC | Trenching of Main Zone, mapped and channel sampled, 47 channel samples, 2 duplicate channels, 4 geological units mapped |
| | A.C.A. Howe International Limited | Updated Resource Estimate & Preliminary Economic Analyses |
| **2011 - present** | **Treasury Personnel (Operator)** | **Operator – Field Project Management** |
| 2011 | Treasury | Diamond Drilling Program – 111 holes (TL11119 to TL11229) |
| | G & T Metallurgical Services Limited, B.C. | Preliminary Metallurgical Test Program, 59 kg composite sample; Grindability, Gravity and Cyanidation Testing |
| | Fugro Airborne Surveys | DIGHEM EM & Magnetic Survey (July), helicopter, 582.62 line-kms |
| | A.C.A. Howe International Limited | Updated Resource Estimate (NI 43-101) |
| 2012 | G & T Metallurgical Services Limited, B.C. | 2 Tests: Gravity + cyanidation and just cyanidation (48 hours); Sample size 398.5 kg, ½ diamond core, 163 samples |
| | Treasury | 2 Phase Diamond Drilling Program – 81 holes (TL12278 to TL12295; 15 Re-entry holes) |
| 2012 | Treasury | Goliath 3-D Inversion Study (Ellis, 2012); Petrographic Work |
| | A.C.A. Howe International Limited | Preliminary Economic Analyses (using 2011 Resource Estimate) |

**TABLE 9.1**
**EXPLORATION WORK COMPLETED BY TREASURY METALS INC.**

| Year | Company | Work Completed |
|---|---|---|
| 2013 | Treasury | Diamond Drilling Program – 48 holes (TL13296 to TL13336; 7 Re-entry holes) |
| 2014 | Treasury | 2 Phase Diamond Drilling Program – 48 holes (TL14337 to TL14377; 5 Re-entry holes, 3 wedges and 1 Abandoned hole) |
| | Treasury | Soil Mobile Metal Ion Survey (MMI) – Property-Wide Survey |
| | Gekko Systems Pty Ltd (Australia) | Leach Optimisation Testwork and Bulk Concentrate Production; Cyanide Detox Testwork; High Grade and Medium Grade Ore Testwork (Gravity, Flotation, Cyanide Leach Recovery). |
| 2015 | Treasury | Diamond Drilling Program – 27 holes (TL14378B, TL15379 to TL15402; 2 Re-entry holes); infill core sampling program (95 holes, 2,091 samples); cyanide bottle roll testing program (19 holes, 391 samples). |
| | P & E Mining Consultants Inc. | Updated Mineral Resource Estimate (NI 43-101) |
| 2016 | Treasury | Diamond Drill Program – 19 holes (TL16403 to TL16420), 1 Wedge hole (TL16-415W1) |
| | Treasury | Condemnation Field Mapping Program – 146 Grab Samples (G156001 to G156146), 15 Channel Samples (C156351 to C156365), 7 coarse blanks and 7 standards (CDN-CM-26) were used during the sampling. Covers an area of approximately 1.4 km$^2$. |
| 2017 | Treasury | Drill Program – 43 holes (TL17421A to TL17463) |
| | Treasury | Iron Formation Mapping Program – 36 Grab Samples, in addition to 2 coarse blanks and 2 standards (CDN-CM-26 & CDN-GS-1P5K) were used during the sampling. Covers an area of approximately 5 km2 |
| | Treasury | Infill Sampling Program – 5256 Samples (across 142 drill holes), including 525 blanks and standards. |
| 2018 | Treasury | Diamond Drill Program – 38 holes (TL18464 to TL18501) |
| | Treasury | Soil Gas Hydrocarbon Sampling Program – 845 Soil Samples (not including duplicates). Covers an area of approximately 9.88 km$^2$. |
| | Knight Piésold Consulting Ltd. | Geotechnical Drill Program – 20 holes. Covers an area of approximately 2 km$^2$. |

***Source:*** *P&E (2015)*

This core was subsequently moved to Treasury's core office facility at the former Tree Nursery where it is all now in long-term storage outside at their core farm. Access to the core farm is restricted by a locked gate which controls traffic from entering the office and storage sites.

Records show that CCIC recovered around 65% or 13,723 boxes out of a possible 21,070 boxes of historical Teck drill core which are located currently on the drill site. After moving the core to the Exploration Office in 2011, it was found that the drill core is not recoverable to be resampled. Some photographs were re-covered of a few drill holes (TL1, TL4 and TL46) documenting the condition of the core but no other information is available. There is no information on the state of the Laramide drill core (holes G-1 to G-8) or if that core was also recovered.

## 9.2 2008 GEOLOGICAL MAPPING PROGRAM

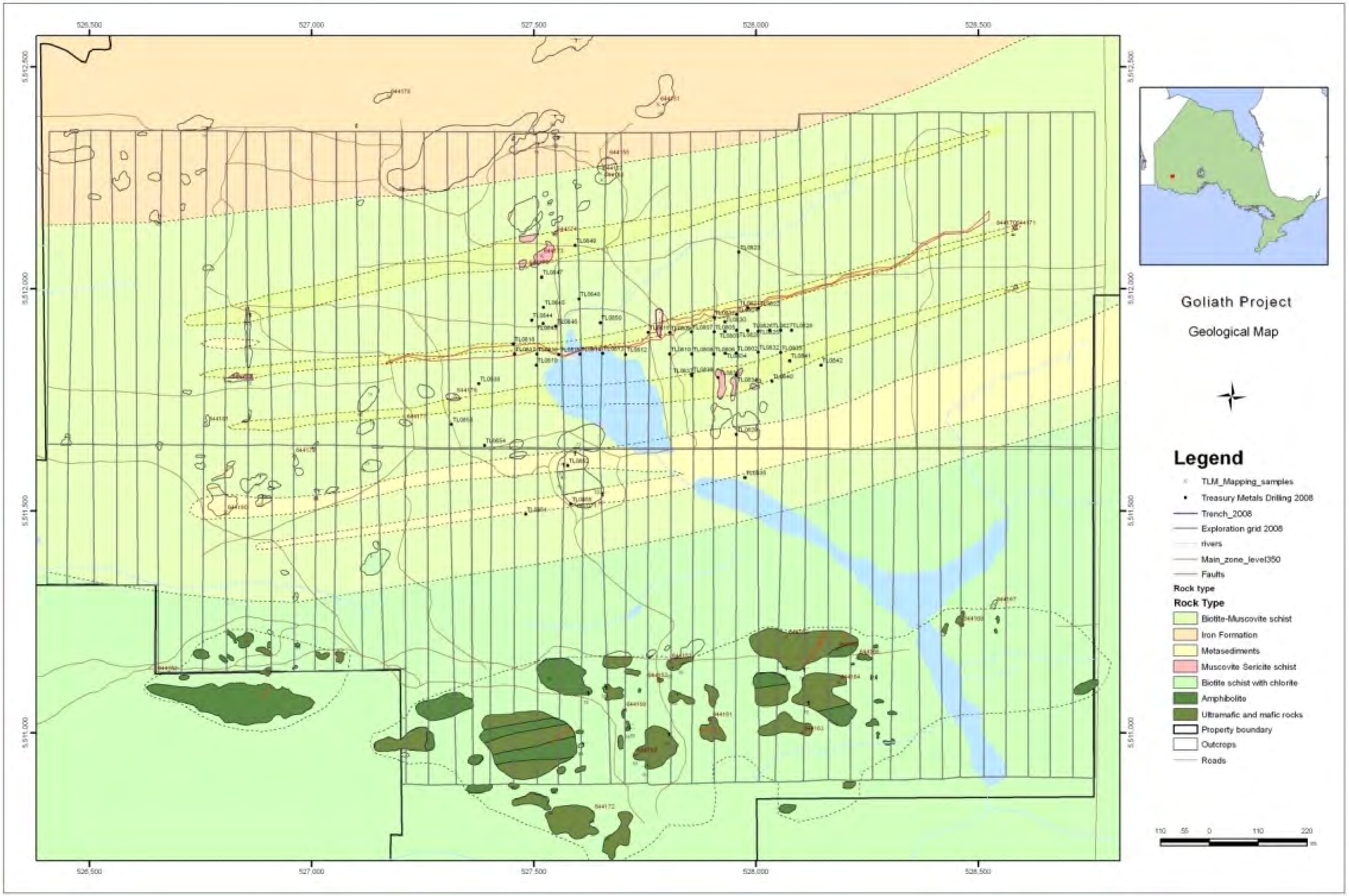
An exploration grid was cut in January 2008 to facilitate geological mapping, sampling, ground geophysical surveys, trenching and diamond drilling programs. A total of 69.5 line-km were cut with the base line established along Norman Road which represented the former boarder between the old Laramide and Teck properties. Grid lines were cut at 50 m intervals perpendicular to the baseline in an attempt to establish or mimic the former Teck grid. The grid consisted of 30 lines at approximately 1,500 m length, 11 lines at 1,225 m and five lines at 1,025 m.

Geological mapping, at a scale of 1:50,000, was completed between June and August, 2008. Major lithological units were identified, structures interpreted and a new geological map of the Property was completed (Figure 9.1). A total of thirty-two (32) representative and grab samples were taken (Ilieva and McKenzie, 2009). Seventeen (17) samples were sent to Accurassay Laboratory in Thunder Bay for fire assay, Whole Rock and REE analyses. None of the samples returned any significant precious or base metal assays.

## 9.3 2008 STRUCTURAL GEOLOGY STUDY

Caracle Creek International Consulting Inc. ("CCIC") was retained by Treasury to review both the geological and structural data on its Thunder Lake Property (now the Goliath Property) and prepared a report containing a structural description and interpretation of the geology (Wetherup, 2008). Three different generations of folds and deformational events were described (Table 9.2).

**FIGURE 9.1 GEOLOGICAL GRID MAP – GOLIATH GOLD DEPOSIT OUTLINED IN RED**




***Source:*** *Treasury (2015)*

| **Table 9.2**<br>**Summary of Structural Features Observed on the Goliath Gold Property** | | | | |
|---|---|---|---|---|
| **Event** | **Structure** | **Description** | **Veins** | **Description** |
| $D_0$ | $S_0$ | Compositional layering of meta-volcanic and meta-sedimentary rocks; argillic alteration zones (?) | $V_0$ | Greyish, highly deformed, $S_1$ foliation parallel quartz-sulphide ribbons and silicification surrounded by quartz-sericite schist |
| $D_1$ | $F_1$<br><br>$S_1$ | Isoclinal folding<br><br>$F_1$ axial planar and layer parallel foliation/schistosity | $V_1$ | White deformed, locally cross-cutting quartz+/-tourmaline+/-sulphide veins |
| $D_2$ | $F_2$ | Closed (60$^o$) folds; axial planes ~045/90$^o$; discrete, 50-40 m spaced, axial planes | $V_2$ | Weakly deformed white quartz+/-sulphide veins along $F_2$ axial planes & at 45° to $F_2$ axial planes. |
| $D_3$ | NW Fault | Brittle faults/fractures dip moderately NNE | $V_3$ | Un-deformed white, non-planar quartz veins dip moderately NNE and follow foliation locally |

***Source:*** *P&E (2015)*

Oriented core was used during the 2008 diamond drilling program for the first time to collect additional structural data (Roy et al., 2012). Core from drill holes TL0822 to TL0837 was used for this study. Foliation, geological contacts, fault lines and fold axes were measured using an Ezy-Mark™ core orientation tool provided by BoreInfo Ltd. ("BoreInfo"). The purpose of this program was to clarify the spatial relationships between the structural features and their influence on the mineralization.

CCIC observed that the $F_2$ folds (axial planes) upgrade gold mineralization within the Main Zone and that gold is focused in shoots where $F_1$ and $F_2$ structures intersect and where $F_2$ structures are concentrated (in the shoots). Shoot structures are steeply plunging (west as observed on current Treasury Longitudinal Sections of the Main and C Zones). In addition, it should be noted that the zones of alteration and gold mineralization strike more northerly and assume a northeast strike, east of the Deposit and are nearly parallel to the strike of the $F_2$ axial planes. Therefore, it was concluded that it might be more difficult for exploration drilling to locate and intersect gold-bearing shoots in this region.

## 9.4 2008 EXPLORATION TRENCH

A 1,005 m long trench, oriented north-south, was excavated in September 2008 to expose auriferous "Main Zone" mineralization intersected by diamond drilling within the Goliath Gold Deposit (Ilieva, 2009). The trench, located at UTM 527782E, 5511893N (NAD 83, Zone 15N), is an elongated oval shape and measured at surface 46 m in length, 14-15 m wide and 5 m deep. A decline was added at the southern end of the trench for easier access.

Two outcrops were exposed and geologically mapped at a scale of 1:200 and channel sampled perpendicular to strike. The bedrock geology was described as strongly altered (sericitized) volcanic rocks. A total of ten channel samples (designated Channel 1 to 10) were cut across the two exposures and a total of 29 samples were collected. Each channel is approximately 4 to 5 cm wide and 5-6 cm deep (Roy and Trinder, 2008). A blank or standard was inserted in alternating order at every tenth sample. All samples were dispatched to Accurassay for gold and base metal analyses.

Two zones of mineralization were exposed in Channel 3 and Channel 5 located about 2.5 m to the south. Channel 3 (Sample 644112) returned the highest gold value of 27.55 g/t Au and 2.19 g/t Ag over a sample length of 0.65 m (Table 9.3). A 1.5 m lower-grade mineralised interval was also sampled in Channel 5 where samples 644115, 644116 and 644117, each 0.5 m in length, returned 1.75 g/t Au, 2.74 g/t Au and 1.03 g/t Au, respectively.

**TABLE 9.3**
**2008 CHANNEL SAMPLING OF MAIN ZONE: BEST ASSAY RESULTS**

| Channel | Sample Number | Length (m) | Au (g/t) | Ag (g/t) | Cu (ppm) | Pb (ppm) | Zn (ppm) |
|---|---|---|---|---|---|---|---|
| 3 | 644112 | 0.65 | 27.55 | 2.19 | 43 | 98 | 34 |
| 5 | 644115 | 0.50 | 1.75 | 3.70 | 145 | 280 | 351 |
| 5 | 644116 | 0.50 | 2.74 | 3.78 | 48 | 346 | 386 |
| 5 | 644117 | 0.50 | 1.03 | 1.97 | 39 | 92 | 87 |

***Source:*** *P&E (2015)*

### 9.4.1 Iron Formation: Tree Nursery Road

Three channels were cut across a bedrock exposure of iron formation that outcrops on either side of Tree Nursery Road located at in Zealand Township (UTM 528767E, 5513144N; UTM 528803E, 5513165N; UTM 528802E 5513155N, NAD83, Zone15N). Twenty-five channel samples were collected and dispatched to Accurassay in Thunder Bay for analyses for gold, base metals and trace element geochemistry (31 element package). Channel sample assay results are presented in Table 9.4. It should be noted that the sample length were not reported (Ilieva, 2009). Sample 644150 returned the best assays of 352.66 g/t Ag and 0.24 g/t (240 ppb) Au in association with zinc, lead and copper (Table 9.4). Fourteen (14) samples returned silver values in excess of 1.0 g/t.

**TABLE 9.4**
**BEST GOLD AND SILVER CHANNEL SAMPLE ASSAYS,**
**IRON FORMATION TREE NURSERY ROAD**

| Sample Number | Au (ppb) | Ag (ppm) | Cu (ppm) | Pb (ppm) | Zn (ppm) |
|---|---|---|---|---|---|
| 644137 | <5 | 1.05 | 38 | 62 | 36 |
| 644139 | <5 | 1.22 | 21 | 42 | 39 |
| 644141 | <5 | 3.14 | 31 | 78 | 56 |
| 644142 | <5 | 1.29 | 32 | 50 | 57 |
| 644143 | <5 | 2.82 | 34 | 57 | 81 |
| 644144 | <5 | 2.01 | 28 | 67 | 54 |
| 644145 | <5 | 1.89 | 32 | 58 | 128 |
| 644146 | <5 | 1.01 | 29 | 59 | 67 |
| 644147 | <5 | 1.03 | 42 | 94 | 51 |
| 644148 | <5 | 1.37 | 34 | 112 | 49 |
| 644149 | <5 | 1.33 | 22 | 55 | 42 |
| 644150 | 240 | 352.66 | 496 | 9,586 | 13,517 |
| 644202 | <5 | 1.06 | 21 | 57 | 43 |
| 644202 | <5 | 1.08 | 21 | 52 | 42 |

| TABLE 9.4<br>BEST GOLD AND SILVER CHANNEL SAMPLE ASSAYS,<br>IRON FORMATION TREE NURSERY ROAD | | | | | |
|---|---|---|---|---|---|
| **Sample Number** | **Au (ppb)** | **Ag (ppm)** | **Cu (ppm)** | **Pb (ppm)** | **Zn (ppm)** |
| 644207 | <5 | 1.08 | 16 | 81 | 39 |

***Source:*** *Modified after Ilieva (2009)*

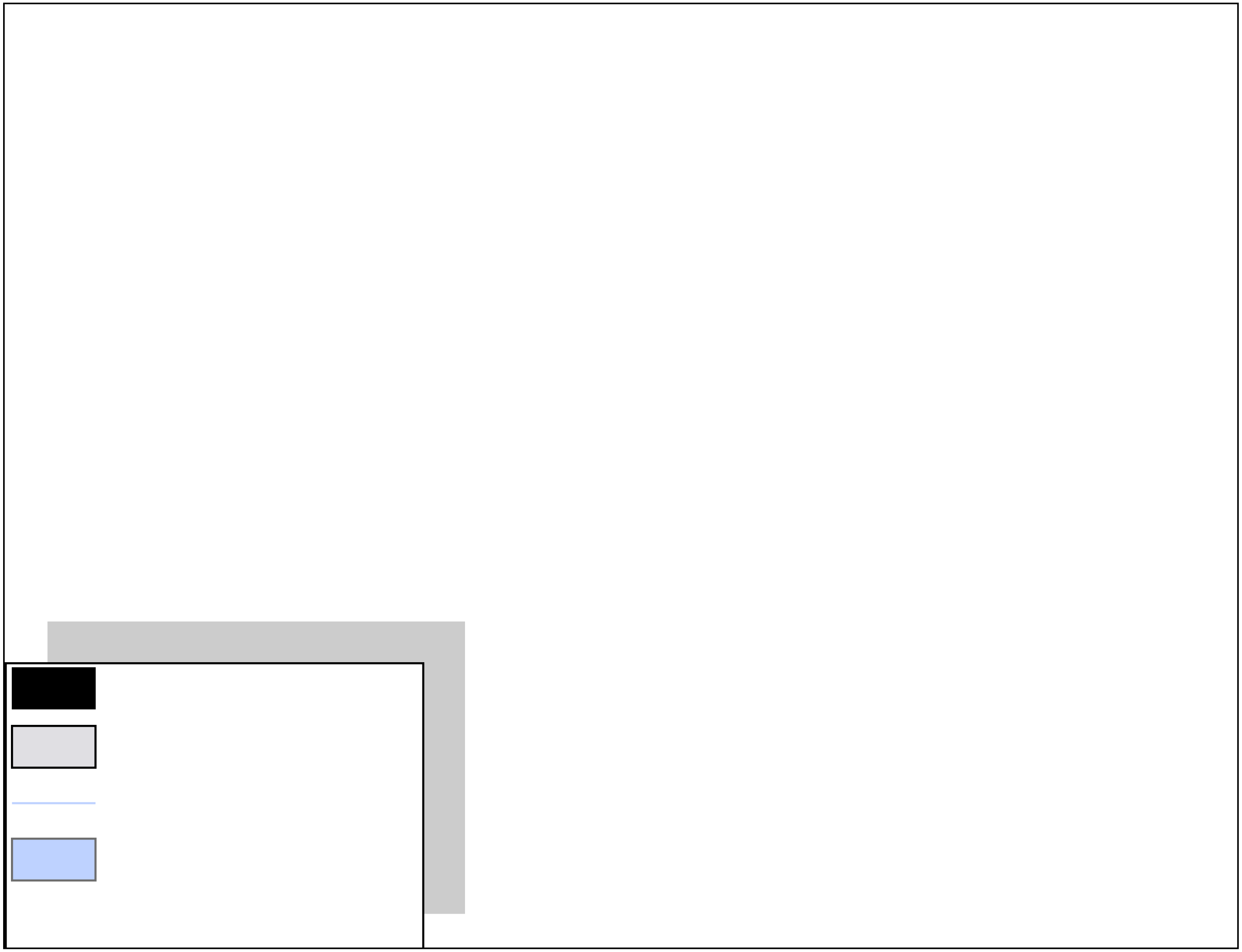
## 9.5 2008 FIREFLY AEROMAGNETIC (HRAM) SURVEY

Considering that approximately 70% of the Goliath Property is covered by glaciofluvial outwash, and that overburden can range in thickness from a few meters to over 40 m thick, CCIC concluded that an airborne magnetic survey was required to identify the regional bedrock geology and structure.

A High Resolution Aeromagnetic Survey ("HRAM") was completed by Firefly Aviation Ltd. ("Firefly") during the month of March, 2008. A total of 2,165 line km were flown by fixed wing aircraft covering an area of 180 $km^2$ (Figures 9.2 and 9.3) North-south survey lines were flown at 100 m spacing and east-west tie lines flown every 500 m covering a large area of Zealand and Hartman Townships and the southern portions of Brownridge and Laval Townships (Evans, 2008). Standard and enhanced gridding filters were applied to the Goliath Survey data based on the calculated International Geomagnetic Reference Model ("IGRF"). This survey was conducted using a NAD83, Zone 15 projection and datum.

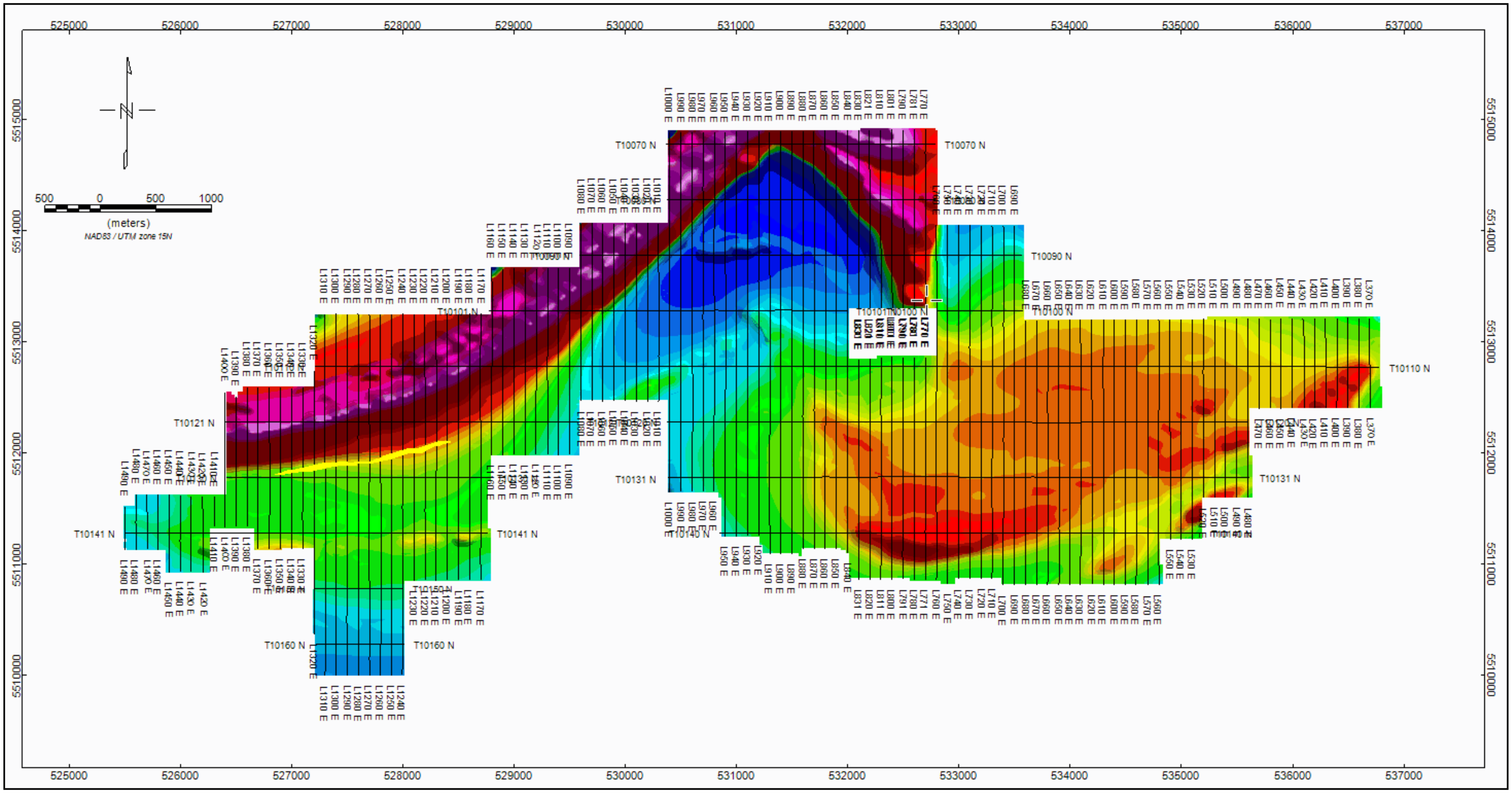
According to McKenzie (2008), the data was subsequently interpreted by Balch Exploration Consulting Inc. ("BECI"). The bedrock underlying the survey area reflects the typical magnetic signature of a regional greenstone belt which is expressed as a large arcuate high/low sequence reflecting the magnetite precipitated during and after formation along with subsequent tectonic deformation. However, the Goliath Gold Deposit is not detected on the airborne magnetic survey and actually occurs in a magnetic low. The Property is underlain by large scale synclinal and anticlinal folded structures and it was concluded that the magnetic data provides a better understanding of the $F_1$ fold architecture. Secondary $F_2$ structures, believed to be responsible for up-grading concentrations of both gold and silver at Goliath, are not identified by the survey results. A regional thrust fault is mapped throughout the southern extent of the survey. This is coincident with a string of discrete magnetic bodies occurring along the trace of the fault.

**FIGURE 9.2 GOLIATH FIREFLY AEROMAGNETIC SURVEY LOCATION MAP**



***Source:*** *McKenzie (2008)*

**FIGURE 9.3 2008 FIREFLY GEOPHYSICS TOTAL MAGNETIC FIELD INTENSITY MAP OF THE GOLIATH PROPERTY**

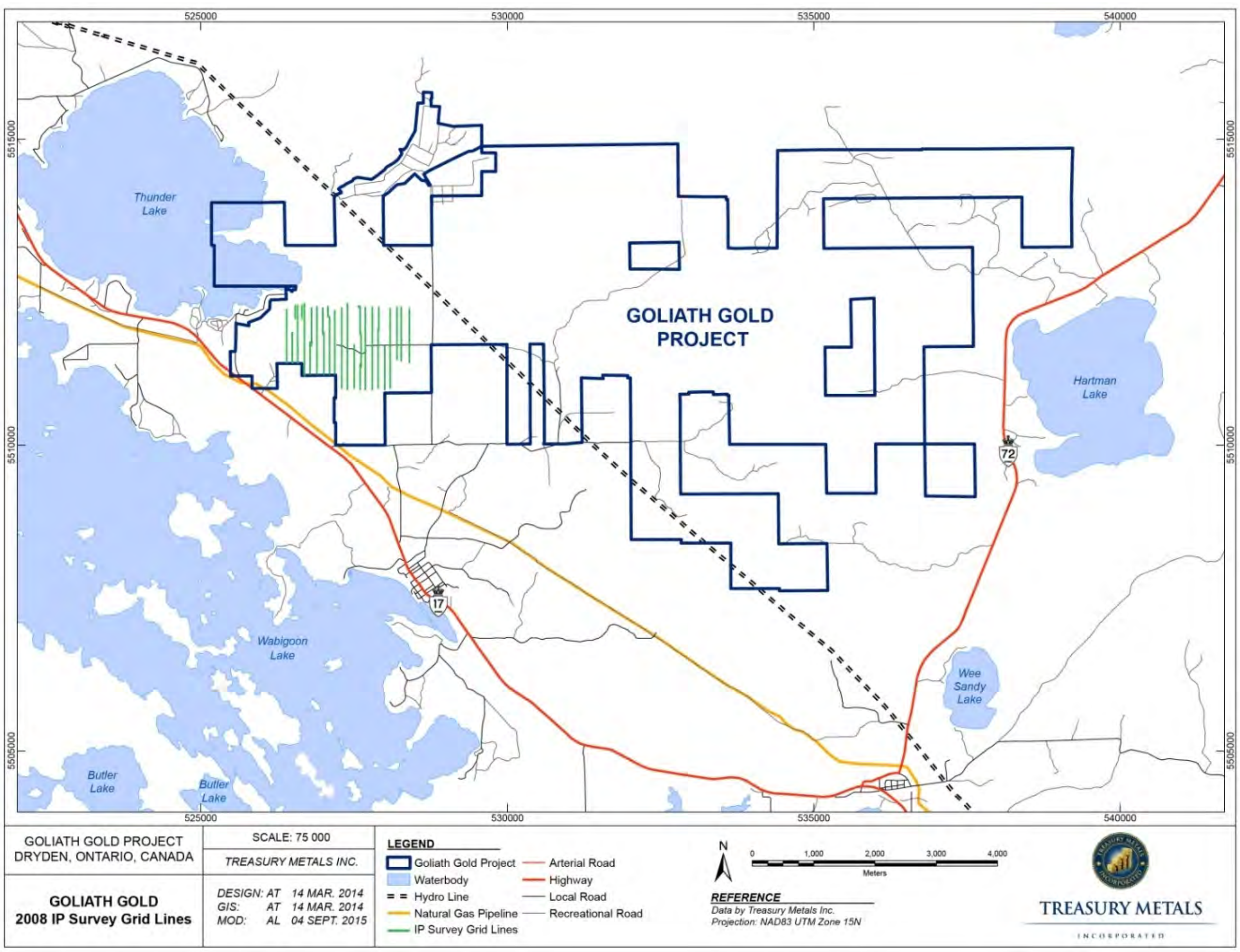



***Source:*** *Ilieva and McKenzie (2009)*

## 9.6 2008 GROUND INDUCED POLARIZATION/RESISTIVITY SURVEY

JVX Geophysical Surveys and Consulting ("JVX") was contracted by Treasury to conduct 29.6 line-km spectral IP/resistivity survey on the Goliath Project grid from March 31 to May 1, 2008 (Figure 9.4). The maximum vertical depth of penetration of this survey was approximately 60 meters (Palich, 2010b). This grid covered the main resource area for a strike length of approximately 2.0 km covering all or parts of legacy claims 1106347 and 1106348 and patented land parcels 4690, 4822, 13492, 15395, 21533, 21609, 21974, 34461 and 41941 (Johnson and Webster, 2008). The exploration grid consisted of 21 north-south oriented lines at 100 m spacing (L350E to L2350E) plus two line segments (L2100E and L2200E) from stations 750S to 750N. The survey instrumentation consisted of a Scintrex IPC-7 (2.5 kW) transmitter and Scintrex IPR-12 receivers. Surveys were completed in time domain with a pole-dipole array ('a' =25 m, n=1 to 8).

**FIGURE 9.4 LOCATION MAP OF 2008 JVX LTD. IP SURVEY, GOLIATH GOLD PROPERTY**




***Source:*** *Modified after IIieva and McKenzie (2009)*

The contract stated that ground magnetic data would also be collected. However, due to time constraints, including poor weather, the deep IP and ground magnetic surveys were not completed (McKenzie, 2008). Plan maps at the scale of 1:5,000 for chargeablity (n=2) and resistivity (n=2) are presented in Figures 9.5 and 9.6.

It was determined that much of the survey area is covered by extensive surficial overburden with 43% of the survey area at 250 Ωm or less. Conductive overburden can mask chargeable bodies thus requiring a high percentage of sulphide mineralization to overcome this problem. However, JVX noted that despite the presence of conductive overburden, the conductivity was not as high as initially anticipated (Johnson and Webster, 2008).

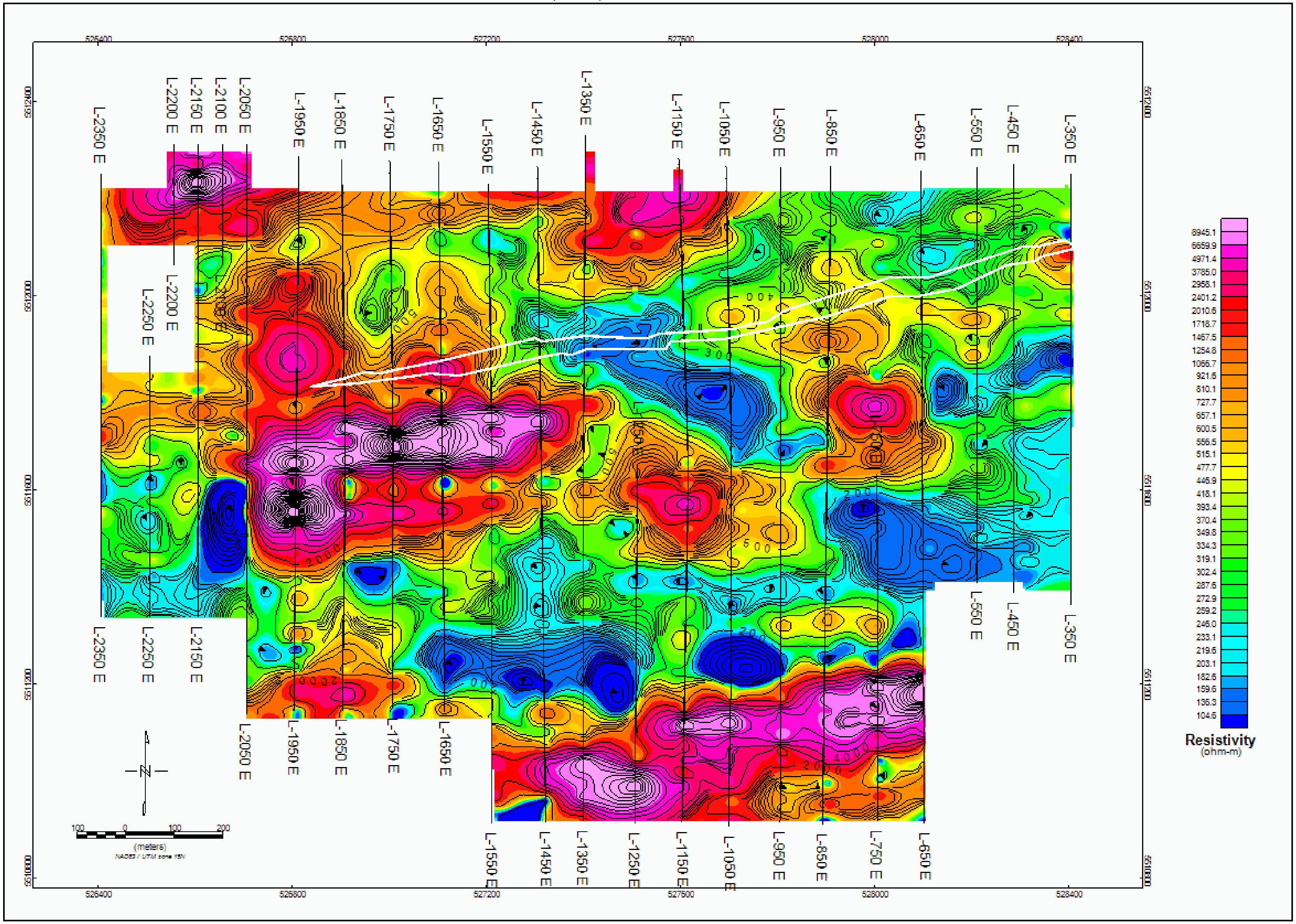
The Goliath Gold Deposit is marked by weak resistivity highs in an area of predominantly low resistivity. Overall, the main gold deposit has a weak and uncertain IP/resistivity expression. It appears to be defined by three marginal IP anomalies associated with relative resistivity highs. This signature does not improve to the east or west of the deposit. South of the deposit, there is a coinciding chargeability and resistivity anomaly in the western portion of the deposit between lines L1950 to L450 (Figures 9.5 and 9.6). A possible northwest trending fault was also identified by the survey.

A series of pseudosections were also generated at the scale of 1:2,500 and can be found in the JVX report. Examination of these sections identified a possible northwest trending fault and low values of chargeability which was interpreted to possibly displace the mineralization in a west-northwest direction (IIieva and McKenzie, 2009). Seven IP anomalies were defined for possible follow-up exploration work and CCIC recommended that the data be inverted for proper 3-D interpretation of the IP survey results (Table 9.5).

## 9.7 2009 PROSPECTING, CHANNEL SAMPLING AND MAPPING PROGRAMS

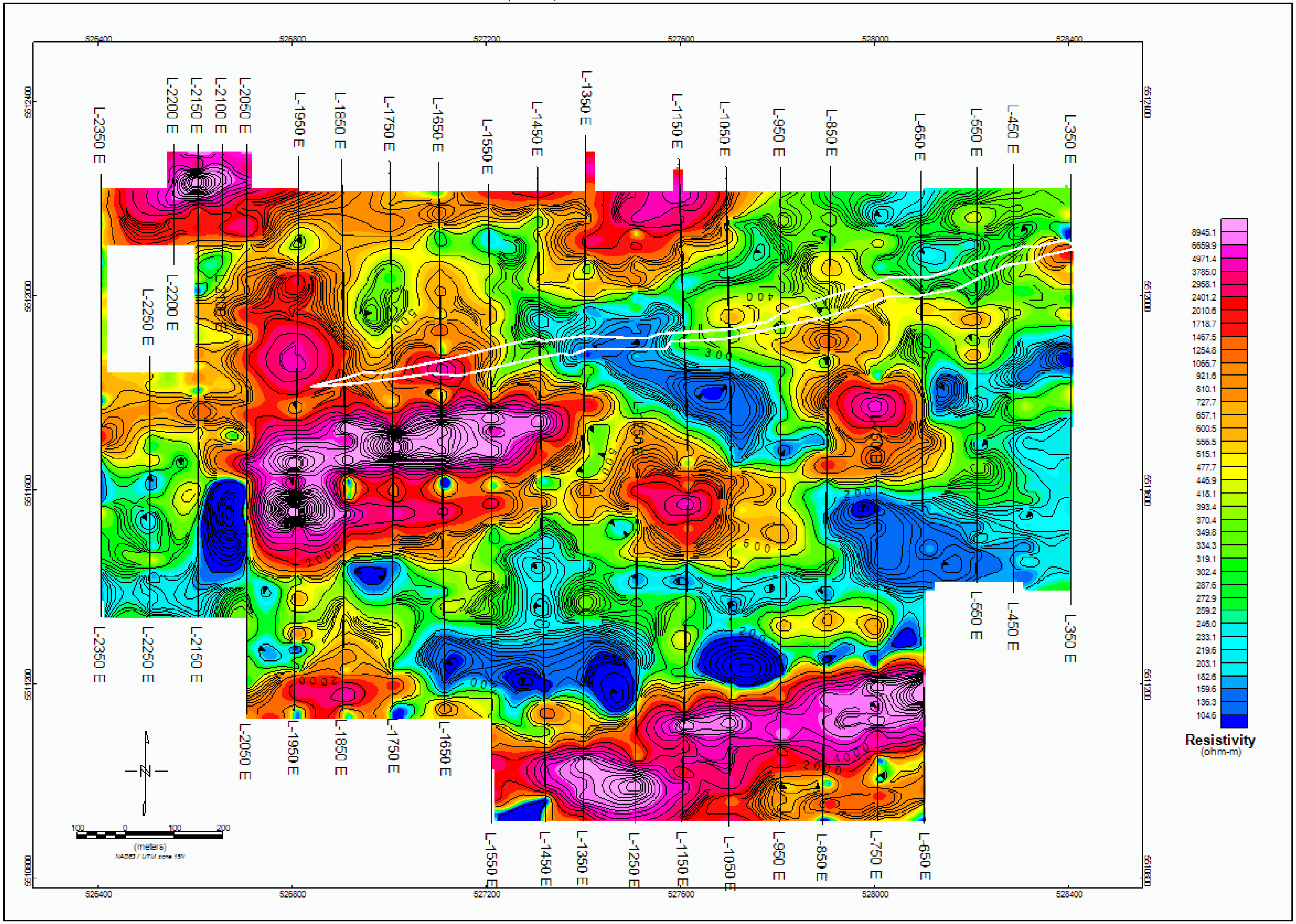
In 2009, general reconnaissance prospecting and some focused stripping and channel sampling, was completed by CCIC from July 6, 2009 to August 4, 2009 (Caracle Creek International Consulting Inc., 2009). A small grid was cut and geologically mapped on the Collins Patent and the remaining work was concentrated on the Jones Patent (Parcel 41215), the Johnson Patent (Parcel 15401) and legacy claims 4211252, 3017936, 1144570, 119568, 1119567, 11195632, 1119563, 119564, 119555, 1119560, 1119549 and 4211252.

**FIGURE 9.5 2008 JVX LTD. CHARGEABILITY (N=2) MAP, GOLIATH GOLD PROPERTY***




** Goliath Gold Deposit Outlined in White*
***Source:*** *IIieva and McKenzie (2009)*

**FIGURE 9.6 2008 JVX LTD. RESISTIVITY (N=2) MAP, GOLIATH GOLD PROPERTY***




** Goliath Gold Deposit Outlined in White*
***Source:*** *Ilieva and McKenzie (2009)*

| **TABLE 9.5**<br>**2008 IP SURVEY TARGETS SELECTED FOR FURTHER INVESTIGATION** | | | |
|---|---|---|---|
| **Anomaly ID** | **Easting*** | **Northing** | **Comments** |
| TL_0001 | 526661 | 5512237 | Cluster of strong IP anomalies at north end of lines 2050W, 2200W; Shallow; N1 resistivities are moderate to high; Short time constants - response of fine grained disseminated sulphides (+gold) |
| TL_0002 | 526908 | 5511224 | Very strong, shallow IP anomalies 0 part of 300 m long IP zone with weaker end members that may define an east/west IP zone that crosses entire grid; Coincident lower resistivities at depth may indicate a partial cause by bedrock conductors; Strong IP anomalies noted - masked by conductive cover - short time constants upgrading for gold target |
| TL_0003 | 527010 | 5511629 | Stronger of two IP anomalies - lower resistivity at depth - possible bedrock conductor - time constant uniformly long |
| TL_0004 | 527009 | 5511705 | Part of 400 m long IP zone - may be on strike with Thunder Lake gold deposit; Moderate resistivity noted - possible bedrock conductor |
| TL_0005 | 527507 | 5512155 | Two nearby strong, shallow IP anomalies 250 m north of Thunder Lake. N1 resistivities are moderate. Some outcrop/subcrop and a prospecting history are likely. Time constants are long or mixed |
| TL-0006 | 528006 | 5511247 | One of two strong IP anomalies south of the Thunder Lake deposit; Part of East-west trending IP/resistivity zones; Interpreted as probable bedrock conductors; This anomaly portion has short time constants and high resistivities - interesting for gold; N1 resistivity is high suggesting thin overburden |
| TL_0007 | 528006 | 5511021 | One of two strong IP anomalies south of the Thunder Lake deposit; Part of East-west trending IP/resistivity zones; Interpreted as probable bedrock conductors |

***** *Coordinates: UTM NAD83, Zone 15N Datum*
***Source:*** *P&E (2015)*

A total of five (5) grab samples were collected during the prospecting exercise, 22 channel samples collected from three stripped outcrops on legacy claim 1119562 and 93 channels collected from two stripped outcrops located just east of Tree Nursery Road near the power lines on the Johnson Patent (Parcel 15401) in Zealand Township, Lot 5, Concession 4.

Three samples returned significant gold assays from this program. The best gold assay was obtained from sample 59109 that assayed 20.519 g/t Au over a channel sample length of 1.0 m on the Johnson Patent. The host rock is described as a biotite-muscovite schist containing 1 to 2% sulphides and is identified by Treasury as an outcrop exposure of Zone D just east of Tree Nursery Road, west of the hydro line. A second channel was cut directly adjacent to sample 59109 over a sample length of 1.0 m. That sample was subsequently cut into five 20 cm samples to isolate where the gold was concentrated. One of these samples C59139 returned 3.296 g/t Au over a sample length of 0.20 m. One grab sample from the reconnaissance prospecting program returned 2.14 g/t Au. However, the location of this sample was not disclosed in the memo-style report.

During the month of July, three and a half days were spent completing general reconnaissance prospecting, outcrop sampling and a channel sampling program to generate future exploration targets for geological mapping and sampling on legacy claim 4211252 (Caracle Creek International Consulting Inc., 2009b). Work was focused in Lot 1, Concession II within the southern portion of Zealand Township.

A detailed grid was set up over an outcrop area where five outcrops were exposed and a 100 m long east oriented baseline and cross lines were established and the lines were mapped at a scale of 1:500. The area was found to be underlain by predominantly meta-sedimentary rocks with lesser amounts of felsic volcanic/quartz porphyry rocks. A total of 24 channel samples, ranging from 0.3 to 1.0 m in length, were taken from five distinct outcrops with interesting mineralization (quartz veins? with elevated pyrite) and dispatched to Accurassay for gold analyses. There are no individual sample descriptions of the mineralization. None of the samples returned any significant gold assays (best 5 ppb Au).

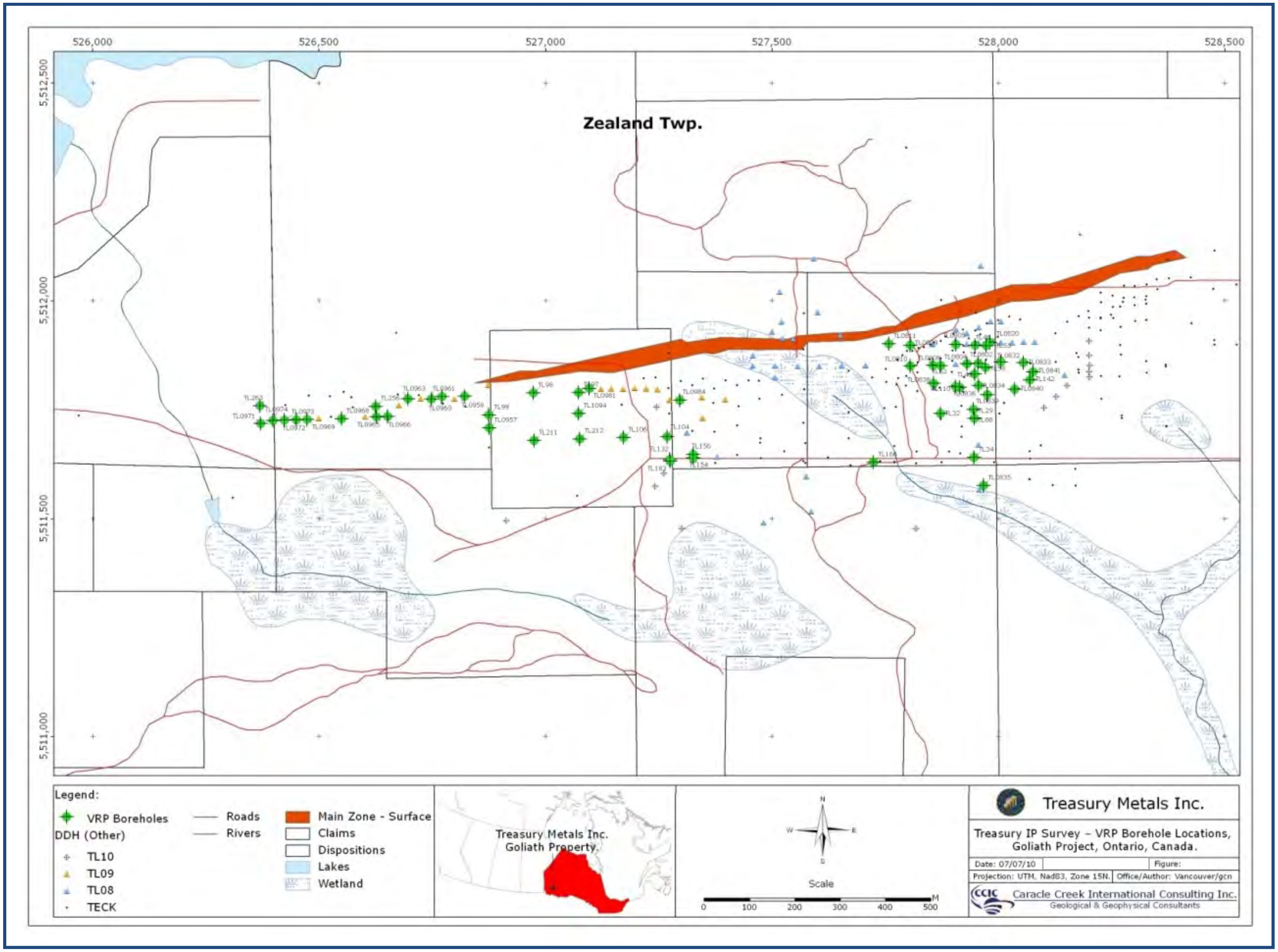
In July, 2009, a reconnaissance prospecting program was conducted to ascertain the geology underlying legacy claim 4211250 (Caracle Creek International Consulting Inc., 2009c). A total of 1.5 line-km were traversed in Lot 9, Concession II within the southern portion of Zealand Township. Only one large outcrop ridge was encountered on the traverse which appeared to be an un-mineralized granitoid intrusive rock. No samples were taken.

## 9.8 2010 GROUND GEOPHYSICAL SURVEYS

A downhole direct current induced polarization (“DCIP”/Resistivity) survey was completed by CCIC over a 24-day period in the spring of 2010 (Palich, 2010). The survey consisted of 60 holes profiled for vertical resistivity/chargeability and ninety-four (94) hole-to-hole tomography images between holes up to 150 m separation (Figure 9.7). Four surface lines with 21 surface-to hole tomography pairings were also completed. The survey was designed to:

- Characterize the resistivity/chargeability signatures of rock types and ore zones;
- Determine if zones containing significant concentrations of gold can be isolated with distinct geophysical signatures; and
- Test if a new CCIC IP/resistivity technology called EarthProbeTM was capable of imaging between drill holes.

**FIGURE 9.7 VERTICAL RESISTIVITY PROBE AND TOMOGRAPHY DRILL HOLE LOCATIONS**




***Source:*** *Treasury (2010)*

The EarthProbe™ survey method utilizes closely spaced electrode at 5.0 m separation distances to a centralized data acquisition system that enables arbitrary selection of current and potential electrodes through relays (Roy and Trinder, 2011). Rapid data acquisition and signal processing techniques allow for efficient use of conventional and non-conventional arrays and the removal of natural and cultural noise. The result is a high resolution DCIP system able to delineate both large resistivity/chargeability anomalies and narrow structural features down to depths of approximately 240 m (Roy et al, 2012).

### 9.8.1 Resistivity/Chargeability Correlations

CCIC identified seven distinct resistivity/chargeability correlations from the DCIP survey (Palich, 2010):

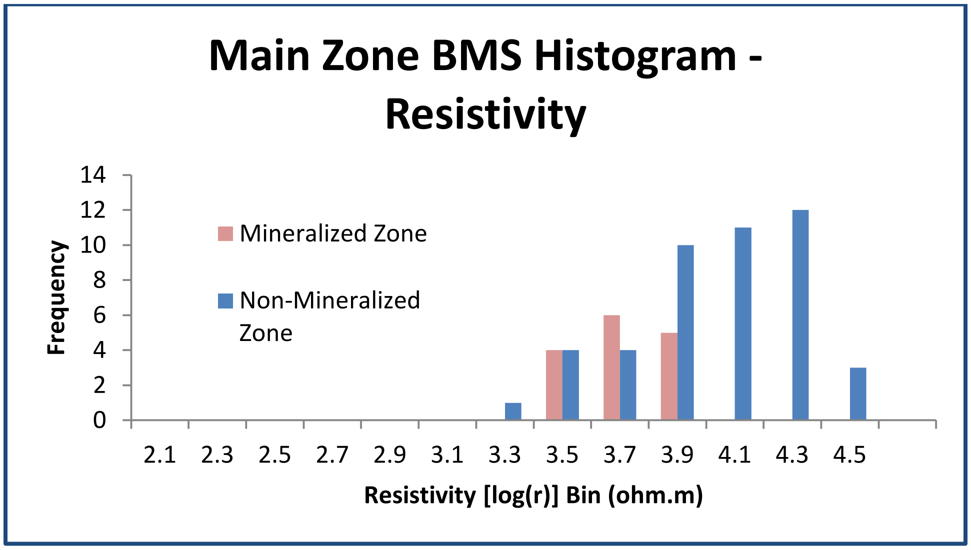
- Mineralized zones exhibit low resistivity and high chargeability;
- Different DCIP signatures between Main Zone and West Goliath extensional area;
- Resistivity responses greater than 7,900 Ω.m (3.9 log Ω.m) reflect non-mineralized zones (Figures 9.8 and 9.9);
- Resistivity responses less than 5,000 Ω.m (3.7 log Ω.m) reflect mineralized zones (Figures 9.8 and 9.9);
- Chargeability responses less than 30 mV/V in the Main Zone and less than 50 mV/V in the West Goliath extensional area reflect non-mineralized zones;
- Chargeability responses greater than 50 mV/V reflect mineralized zones; and
- There is overlap of resistivity and chargeability response between the mineralized and non-mineralized zones in the Main Zone, suggesting that the occurrence of gold may be controlled by multiple factors (e.g. several alteration types) each having a unique IP signature.

### 9.8.2 Mineralization Response Signature

CCIC characterized three mineralization responses from the survey (Palich, 2010):

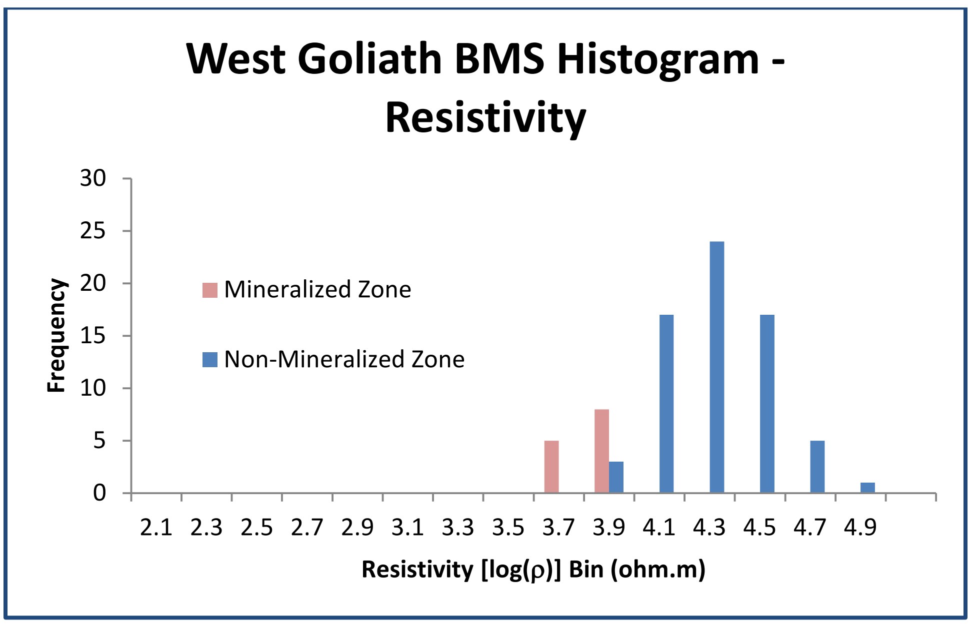
- Anomalous resistivity responses occur in association with mineralized zones that are greater than 4.0 m thick and exhibit a gold grade greater than 2 ppm;
- An anomalous resistivity response does not occur if the thickness of the mineralized zone is less than 2.0 m unless the intersection is in close proximity (less than 5.0 m) to a thicker mineralized zone; and
- An anomalous resistivity response typically does not occur if the thickness of the mineralized zone is less than 4 m unless the gold grade exceeds 2 ppm and zinc exceeds 2,000 ppm.

**FIGURE 9.8 MINERALIZED VS NON-MINERALIZED RESISTIVITY RESPONSE, MAIN ZONE**




***Source:*** *P&E (2015)*

**FIGURE 9.9 MINERALIZED VS NON-MINERALIZED RESISTIVITY RESPONSE, WEST GOLIATH EXTENSION**




***Source:*** *P&E (2015)*

### 9.8.3 Anomaly Summary

CCIC summarized the anomaly findings as follows (Palich, 2010):

- Numerous in-hole and off-hole low resistivity responses were identified;
- Main Zone: a high level of electrical continuity existed between known gold intersections suggesting that mineralization is continuous;
- West Goliath extensional exploration area: Vertical Resistivity Probe and tomography results were well correlated with known mineralization zones showing limited additional extent from previously drilled intersections. A shallow conductor (50-70 m) was identified near drill holes TL0965, TL0966, TL0968, TL0969 and TL0972; and
- Four low resistivity anomalies were identified from the surface survey. At least one of these anomalies is beyond the western extent of existing drilling.

### 9.8.4 Recommendations for Future Work

The DCIP survey was not correlated to the sericite alteration zones. CCIC recommended completing that correlation as well as characterizing the bulk resistivity/chargeability using the entire vertical resistivity probe and drill hole assay dataset (Palich, 2010). They also recommended compiling the special resolution of the resistivity responses into a format that could be overlain with the existing 3-D model of the Deposit and drilling four IP anomalies identified in the West Goliath extensional exploration area.

## 9.9 2010 SCIP CORE TESTING

CCIC collected 79 SCIP ("Sample Core Induced Polarization") readings on limited intervals of mineralized core form three 2008 drill holes in early August, 2010 (Palich, 2010b). They also compared the results of the 2010 EarthProbe™ IP survey to the 2008 JVX traditional IP survey. The results of this work are summarized below. SCIP core test readings were collected using a GDD SCIP Rx 8-32 unit as follows:

- Hole TL0802: 38 reading were taken of mineralized biotite-muscovite-schist (BMS) between 121.1 and 128.9 m;
- Hole TL0803: 26 readings were collected in mineralized muscovite-sericite-schist (MSS) between 62.0 to 70.2 m; and
- Hole TL0836A: 15 readings were taken from mineralized MSS occurring from 165.07 to 168.08 m.

The SCIP could not identify any clear correlations between chargeability and resistivity with gold mineralization or gold assays observed in these drill cores. However, both resistivity and chargeability values within the mineralized zones were consistent with the bulk resistivity and chargeablity values obtained in the mineralized zones during the EarthProbe™ drill hole surveys.

Although the vertical depth of penetration for the EarthProbe™ survey is deeper (250 m), compared to the JVX survey, which could only reach a vertical depth of around 60 m, CCIC was not able to define any new ground geophysical anomalies that weren't already identified by the 2008 JVX IP survey.

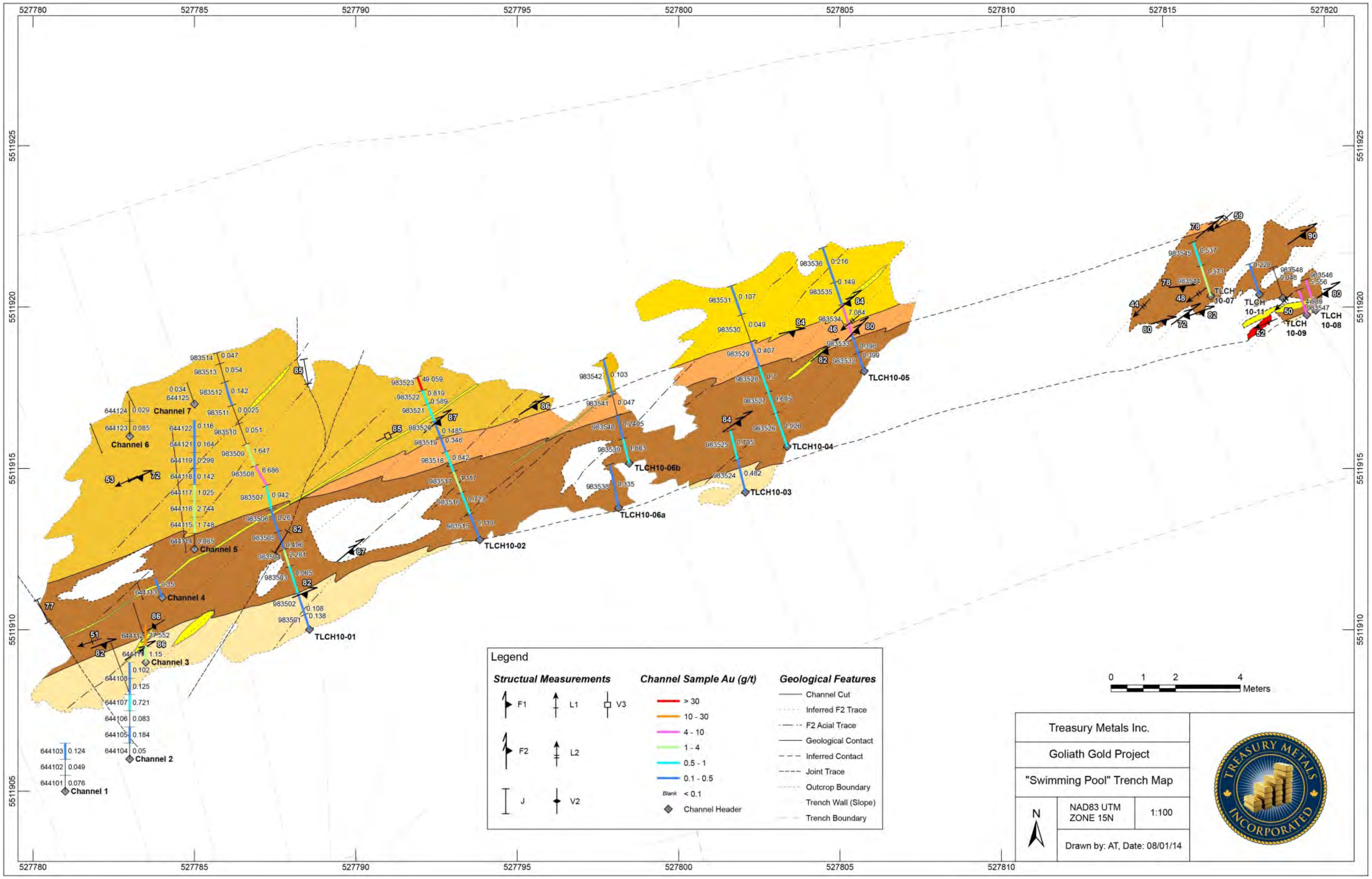
## 9.10 2010 TRENCHING PROGRAM

The 2008 trench was extended by CCIC to expose mineralized bedrock of the Main Zone for an approximate strike length of 42 m in the summer of 2010. This trench exposes the Central Shoot of the Main Zone and is located around drill section 527800E. It was geologically and structurally mapped at a scale of 1:100 and then systematically channel sampled (Figure 9.10).

Table 9.6 summarizes the structures mapped in the Main Zone trench. Overall, CCIC concluded that the best potential for the highest gold concentrations are likely to occur near the $F_1$-$F_2$ intersections and in areas where there is an increased intensity of $F_2$ structures in the formation of high-grade shoots. It was also noted that concentrations of sulphide minerals also increased where $F_2$ fold hinges cut the Main Zone. They also recommended that future drilling programs should be focused along these westward plunging shoots.

A total of 47 channel samples plus two duplicates were collected for the trench covering all four geological units (Figure 9.10). The highest channel sample assays are presented on Table 9.7. Overall, samples from Unit 1 (3 samples taken) were generally low with the highest of 1.15 g/t Au over a channel sample length of 0.5 m (sample 644111). Unit 2 (22 samples), which contained the most sulphide mineralization, returned three high grade samples of 27.55 g/t Au over a sample length of 0.65 m, 5.56 g/t Au over 1.0 m and 4.99 g/t Au over 0.60 m (Table 7). The latter sample also returned 133.43 g/t Ag over the 0.6 m channel length. A metallic screen fire assay of sample 644112 returned 12.98 g/t Au. Unit 3, with a total of 5 samples, averaged 2.11 g/t Au with a high of 7.08 g/t Au and 217.14 g/t Ag over a sample length of 1.0 m (sample 983534). A total of 17 samples were collected from Unit 4 and averaged 2.99 g/t and returned the highest gold assay grade of the program of 49.06 g/t over a sample length of 0.55 m hosted in the MSS rocks.

**FIGURE 9.10 GEOLOGY AND STRUCTURAL MAP OF THE MAIN ZONE TRENCH WITH GOLD CHANNEL SAMPLE ASSAY RESULTS**




*Source:* *Treasury (2014)*

| **TABLE 9.6<br>SUMMARY OF STRUCTURES MAPPED IN THE 2010 MAIN ZONE TRENCH** | | | | |
|---|---|---|---|---|
| **Event** | **Structure** | **Description** | **Veins** | **Description** |
| $D_0$ | $S_0$ | Compositional layering of meta-volcanic and meta-sedimentary rocks; argillic alteration zones (?) | $V_0$ | White to grey, highly deformed, $S_1$ foliation parallel very fine grained quartz-sulphide ribbons and silicification with narrow sericite lamellae |
| $D_1$ | $F_1$ | Isoclinal folding | $V_1$ | White coarse grained deformed, foliation parallel distended quartz lenses (rare) |
| | $S_1$ | $F_1$ axial planar and layer parallel foliation/schistosity ~073/80$^o$ | | |
| | $L_1$ | Stretching lineation, axis to isoclinal fold hinges; trend ~248$^o$, plunge 52$^o$ | | |
| $D_2$ | $F_2$ | Closed (interlimb angle 60$^o$) folds; axial planes ~052/83$^o$; discrete, 20 cm to 1.5 m spacing | $V_2$ | Weakly deformed white quartz+/-sulphide lenses along $F_2$ axial planes. |
| | $L_2$ | $F_2$ fold axes trend 228$^o$ and plunge 49$^o$ | | |
| $D_3$ | J (?) | Brittle joints oriented ~162/81$^o$ and 032/82$^o$ ; possibly related to NW Fault | $V_3$ | White un-deformed, planar cross-cutting quartz-tourmaline+/-sulphide veins near vertical WSW striking. |

***Source:*** *Wetherup (2010)*

| **TABLE 9.7<br>BEST CHANNEL SAMPLE ASSAYS OF THE 2010 MAIN ZONE TRENCH** | | | | | |
|---|---|---|---|---|---|
| **Channel** | **Sample Number** | **Length (m)** | **Unit** | **Au (g/t)** | **Ag (g/t)** |
| TLCH10-02 | 983523 | 0.55 | 4 | 49.059 | |
| TLCH10-01 | 983508 | 0.75 | 4 | 6.686 | |
| TLCH10-05 | 644115 | 0.50 | 4 | 1.748 | 3.70 |
| TLCH10-01 | 983509 | 0.85 | 4 | 1.647 | |
| TLCH10-05 | 983534 | 1.00 | 3 | 7.084 | 217.14 |
| TLCH10-03 | 644112 | 0.65 | 2 | 27.552 | 2.19 |
| TLCH10-08 | 983546 | 1.00 | 2 | 5.556 | |
| TLCH10-09 | 983547 | 0.60 | 2 | 4.989 | 133.43 |
| TLCH10-01 | 983504 | 0.50 | 2 | 2.281 | |
| TLCH10-07 | 983544 | 0.90 | 2 | 1.373 | |
| TLCH10-02 | 983517 | 0.65 | 2 | 1.117 | |

***Source:*** *P&E (2015)*

## 9.11 2010 PETROGRAPHIC AND SCANNING ELECTRON MICROSCOPE STUDY

Two polished sections of two samples collected from diamond drill hole TL0814 for petrographic examination (Beakhouse, 2010). The samples were analysed by Gary Beakhouse of the Ministry of Northern Development of Mines ("MNDM") under plan polarized, cross-polarized and reflected light as well as on the OGL scanning electron microscope (SEM"). The following observations were reported:

- Minor amounts of gold were present in both thin sections; small grains infilling pyrite in association with galena, between sphalerite grains or between larger pyrite crystals;
- It was unclear if the gold occurred in the sulphides or whether the association observed is representative and accounts for the high gold assay results (38.63 g/t Au and 44.62 g/t Ag);
- Gold is spatially associated with galena and sphalerite and appears to be paragenetically late;
- Galena and sphalerite exhibit a paragenetically late timing relative to other sulphides occurring as overgrowths around, and veins within, pyrite and minor amounts of arsenopyrite;
- The timing relationship of chalcopyrite is unclear; and
- Silicate mineralogy consists of quartz, feldspar, white mica and calcium alumosilicate (stilpnomelane?).

Mineralogical observations are supported by fourteen (14) photomicrographs identifying the various mineral phases and relationships.

## 9.12 2011 FUGRO AIRBORNE GEOPHYSICAL SURVEY

A DIGHEM electromagnetic and magnetic helicopter supported airborne geophysical was carried out for Treasury over the Goliath Property between July 14 and July 16, 2011 (Fugro Airborne Surveys, 2011). A total of 531.46 line-km of traverse lines (oriented north-south) were flown with a spacing of 100 m and 54.16 km of tie lines with a spacing of 1,000 m for a total of 585.6 km for the complete survey.

Fugro created the following set of maps: (1) Horizontal Gradient Enhanced Total Magnetic Intensity, (2) Calculated Vertical Magnetic Gradient, (3) Apparent Resistivity (56,000 Hz), (4) Apparent Resistivity (7,200 Mz), and (4) DIGHEM EM Anomaly Maps. All final maps were created at a scale of 1:20,000 with the Universal Transverse Mercator (UTM Zone 15N) coordinate system, NAD83 Datum. The results of the Fugro airborne survey are summarized below from the technical report by Roy et al. (2012):

- Magnetic calculated vertical gradient ("CVG") and horizontal gradient enhanced total magnetic intensity maps clearly define geological rock contacts throughout the Property;

- An iron formation with high magnetic responses (BIF) is defined in the western part of the Property;

- The Thunder Lake Assemblage of meta-volcanic and meta-sedimentary rocks also show strong magnetic intensity in the southern parts of the Property;

- A combination of magnetic and resistivity parameters have outlined a few very interesting magnetic lows that coincide with resistivity highs that might reflect alteration zones or siliceous caps warranting further investigation;

- Deep conductive units are potentially capped by superficial resistive units;

- Several low resistivity zones where values are less than 100 ohm-m likely represent conductive clays or graphitic shales which some of the more discrete responses might be caused by conductive sulphide content or clay-altered shears; and

- The survey identified 987 EM anomalies with nearly 69% of those linked to conductive overburden or metasedimentary rocks, about 7.5% are due to cultural sources and approximately 23.5% are due to possible or probably bedrock sources.

## 9.13 2012 GOLIATH 3-D INVERSION STUDY OF AEROMAGNETIC SURVEY DATA

In 2012, a three dimensional ("3-D") inversion modeling study was completed by Ellis (2012) using the Fugro airborne magnetic survey data (assuming they used the Fugro dataset). This study was initiated to (1) attempt to identify the aeromagnetic signature of the Goliath Gold Deposit, (2) to determine the possible explanation for the apparent termination of the zone east of the main deposit and (3) define possible easterly extensions of the gold-bearing zone again east and northeast of the deposit.

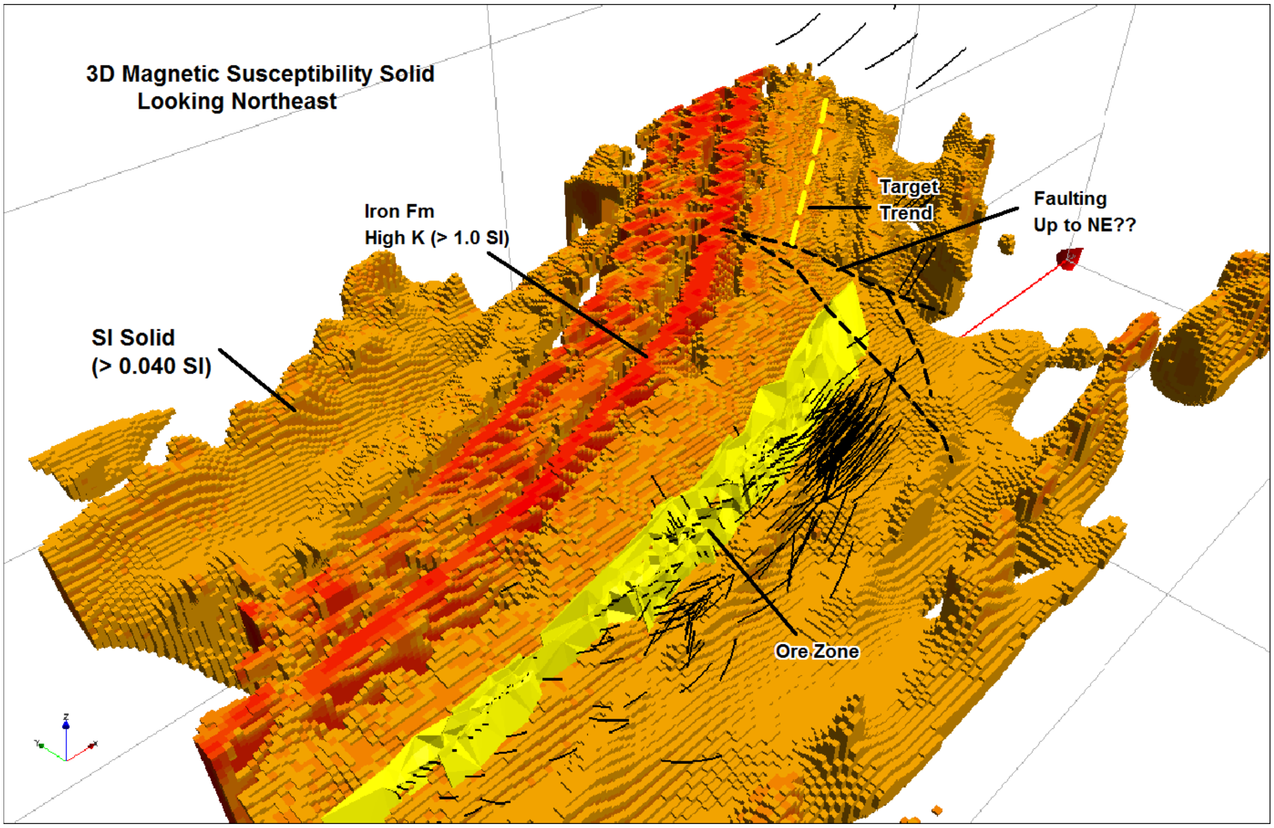
The 3-D inversion modeling of the aeromagnetic data generates a solid of magnetic susceptibility that will fit the raw magnetic data within a predefined error tolerance. A series of 3-D susceptibility solid maps at 350 m elevation, including cross-sections of the model, were prepared to compare with both known zones of gold mineralization at Goliath and local geology. The models clearly define a north trending normal fault that displays left lateral motion disrupting the main deposit in the east and shifting the main zone north of its present location (Figure 9.11). The red areas on the map in the north represent the iron formation. Ellis (2012) also had the following additional observations:

- There is a bend in the iron formation to the north that is consistent with shifting of the target trend of mineralization to the north by the fault; and

- That the stratigraphy hosting the gold mineralization is not always concordant with mineralization (structurally controlled).

The 3-D inversion modeling was able to demonstrate where the gold mineralized zone resumes east of the fault for future drill targeting of the Main Zone (Eastern Alteration Corridor, east of the fault).

**FIGURE 9.11 3-D MAGNETIC SUSCEPTIBILITY SOLID MAP, 350 M ELEVATION**




***Source:*** *P&E (2015)*

## 9.14 2012 THIN SECTION STUDY OF MINERALIZED DRILL CORE

A total of 18 samples collected from nine (9) diamond drill holes were submitted to Vancouver Petrographics Ltd. in Langley, British Columbia, in 2012 for Petrographic thin section work (Table 9.8). An examination of these samples concluded that (Leitch, 2012):

- Seven (7) samples likely represented either felsic to intermediate meta-volcanic rocks (samples TLTS-3 to 7, TLTS-10 and TLTS-12);

- Seven (7) samples represented exhalative rocks containing massive or semi-massive sulphides with some local significant occurrences of visible gold (samples TLTS-11, TLTS-14 to 18, and TLTS-13);

- Two samples likely represented mafic meta-volcanic rocks (samples TLTS-2, TLTS-9);
- One possibly a meta-microdiorite rock (sample TLTS-8); and
- One was a possible anhydrite-quartz-amphibole-green biotite vein hosted in felsic to intermediate meta-volcanic rock (sample TLTS-1).

Detailed petrographic descriptions and photomicrographs were included with the final report.

**TABLE 9.8**
**ROCK SAMPLES SUBMITTED FOR 2012 PETROGRAPHIC EXAMINATION**

| Sample Number | Drill Hole | Depth (m) | Comments |
|---|---|---|---|
| TLTS-1 | TL11229 | 224.75 | $F_l$/chlorite veining |
| TLTS-2 | TL11229 | 148.60 | Orange porphyroblasts and cordierite (?) |
| TLTS-3 | TL11223 | 527.00 | Green silicate band with silicification and some sulphide mineralization |
| TLTS-4 | TL11229 | 234.42 | MSS (East), Northeast exploration area, no min |
| TLTS-5 | TL11135 | 321.20 | MSS (West), silicified, no mineralization |
| TLTS-6 | TL11222 | 358.00 | BMS (East), Northeast exploration area |
| TLTS-7 | TL11209A | 129.15 | BMS (West) from western zone |
| TLTS-8 | TL11222 | 363.15 | Massive, less foliated BMS with quartz eyes |
| TLTS-9 | TL11187 | 179.95 | Mafic Dyke |
| TLTS-10 | TL11209A | 129.80 | F2 fold |
| TLTS-11 | TL11148 | 55.35 | Massive fuchsite/chlorite with black tourmaline/amphibole |
| TLTS-12 | TL11193 | 377.10 | Mineralized zone with coarse pyrite, chalcopyrite, sphalerite, and garnet; Sample no.1076645 (0.25 g/t) |
| TLTS-13 | TL11121 | 266.70 | Semi-massive sulfide band; Sample #981132 (19.63 g/t) |
| TLTS-14 | TL11121 | 268.15 | Deformed quartz veins (no VG); Scattered sulfides, no VG, Sample #981135 (Trace) |
| TLTS-15 | TL11122 | 270.70 | Low Grade (1-2 g/t); Sample #981248 (1.24 g/t) |
| TLTS-16 | TL11152 | 239.20 | Medium to High Grade; Stringers adjacent to quartz veins, Sample #1007597 (18.6 g/t) |
| TLTS-17 | TL11135 | 325.95 | Medium to High Grade; Edge of semi-massive sulfide band, increased Pb, Sample #983067 (10.3 g/t) |
| TLTS-18 | TL11130 | 341.30 | Deformed & boudinaged quartz veins (with VG); Several VG flecks with quartz, Sample#981797 (89.2 g/t) |

***Source:*** *P&E (2015)*

## 9.15 2014 MMI SOIL SAMPLING PROGRAM

A Mobile Metal Ion ("MMI") soil sampling program was conducted on selected target area throughout the Goliath Gold Project area from July to October 2014. A total of 1,850 samples were collected during this period by two Treasury field sampling teams. Target grids were located over numerous areas targeting airborne EM, magnetic, ground IP and geological units of interest including iron formation to the north and the strike extension of the Goliath Gold Deposit. All samples were collected following sampling procedures outlined by SGS Minerals Services ("SGS") (SGS Minerals Services, 2013a, 2013b).

An orientation survey identified the optimal sampling depth of 10 to 25 cm below the surface. No grid lines were physically cut but samples were collected using a GPS at line spacing's of 200 m and samples taken at 25 m stations. Additional infill lines at 100 m were added to higher priority target areas after the survey results were made available.

Samples were analyzed at SGS and response ratios for gold and multi-elements, including base metals copper, lead and zinc, were calculated by Treasury and the results plotted on a regional plan map of the Property (Figure 9.12). Five (5) "High Priority" targets for ground truthing and further field investigation were identified from this survey:

- Anomaly P – Iron Formation possibly intercepted by F2 gold bearing structures northeast of the Goliath Deposit; moderate to strong linear Au/Cu/Sb/W and weak Ag and As response ratios ("RR's"); highest Au RR of 60. This anomaly was drill tested in 2015 by holes TL15401 and TL15402 with no significant gold intersections;

- Anomaly N – Nose of regional fold structure (iron formation and eastern strike extension zone of the Goliath Deposit). High magnetic anomaly, moderate to strong Au/Ag/Cu, weak Pb and Zn RR's in close proximity to historical Teck holes that intersected some significant gold mineralization;

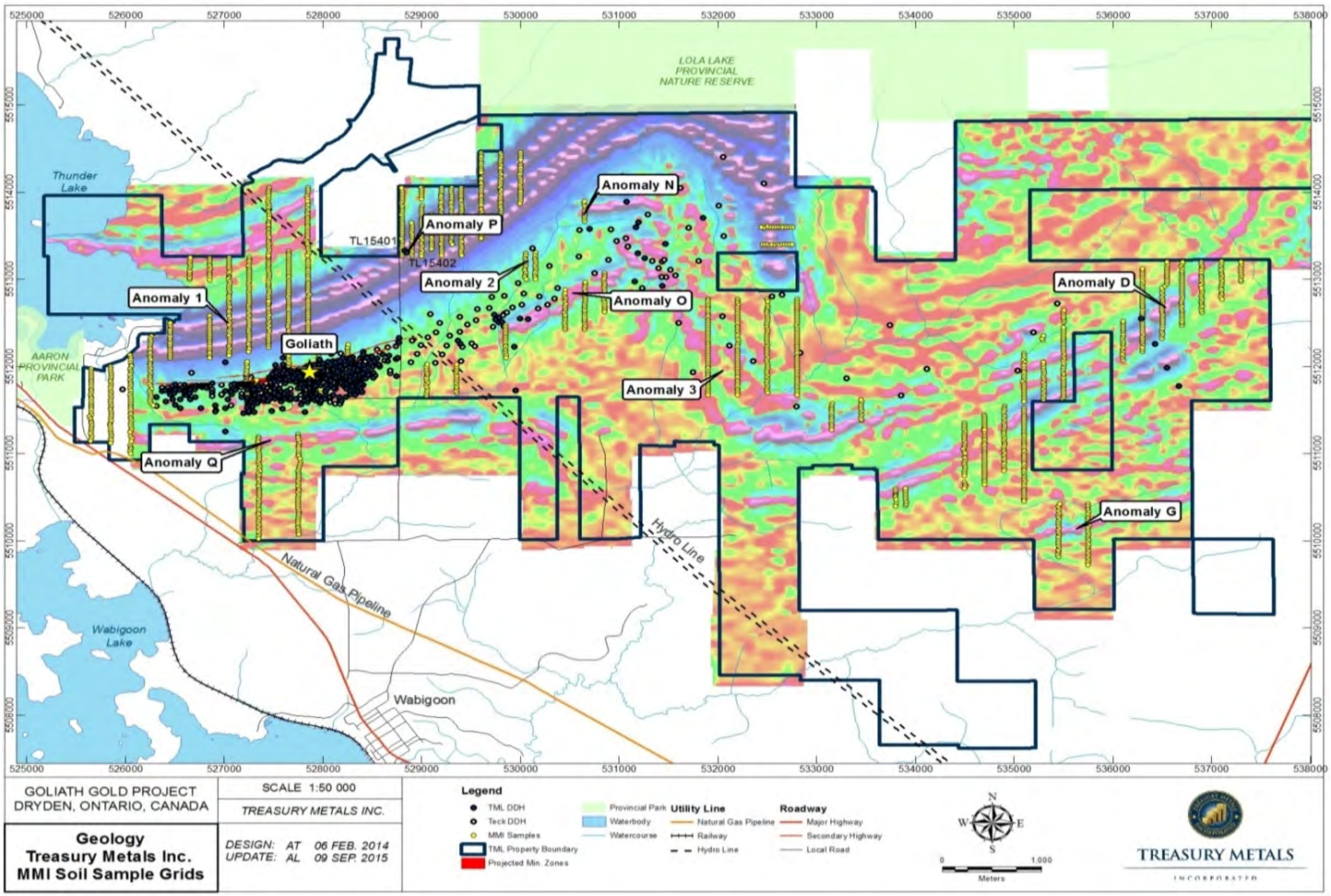
- Anomaly O – corresponding magnetic and EM linear anomaly, moderate to strong Ag/As/Pb/As and weak Au/Bi/Cu/Sb/W RR's;

- Anomaly G – EM anomaly following a magnetic trend. Moderate to strong Cu/Pb/Zn and weak Sb/W RR; and

- Anomaly D – Strong tungsten/zinc, moderate to strong Ag/Cu/Sb, weak As in close proximity to 2012 Treasury drilling fence where one hole intersected 2.0 g/t Au over a core length of 2.0 m (hole TL12266) in a 70 m wide MSS unit located in the far east of the Property (represents extreme east extension of the Goliath gold zone).

With the exception of Anomaly P which was drill tested during the 2015 drilling program, the remaining anomalies need to be investigated in the field to determine if the source of the anomalies can be explained at surface.

**FIGURE 9.12 2014 MMI SAMPLE GRID LOCATION MAP**




***Source:*** *Treasury (2015)*

## 9.16 2015 INFILL CORE SAMPLING PROGRAM

An infill core sampling program was completed at the conclusion of the 2015 diamond drilling program to further evaluate the gold potential of the "B Zone" and test other zones throughout the Deposit known to contain significant gold mineralization but were never previously sampled or assayed (Treasury drill core only). This program covered untested areas of either extensions or potential new zones of previously un-sampled drill core focusing on identifying zones that would reside in a potential "open pit" located from surface to a vertical depth of around 200 m. The boxes containing the target intervals of drill core were retrieved from the core farm located on-site, examined and logged by the geologist, and samples were marked up for splitting. Canadian Standards and blanks were submitted for each hole. Split core samples were then dispatched to Accurassay Laboratories for gold analyses.

A total of 2,090 new split core samples were collected from 95 drill holes. The program was successful in identifying new zones of gold mineralization in half (56) of the 110 new target zones that were identified for inspection. The best gold assay intersections are summarized on Table 9.9. A near surface hole and a newly tested Hanging Wall zone both reported significant results: Hole TL10116 returned 6.08 g/t Au over 6.0 m at a vertical depth of 17 m from surface and TL0853 returned 4.53 g/t Au over a sample length of 5.0 m at a depth of 160 m. The highest gold assay return was obtained from "D Zone" hole TL13301 that intersected 7.15 g/t Au over a core length of 1.0 m. Visible gold was observed in the drill core.

**TABLE 9.9**
**BEST GOLD ASSAY INTERSECTIONS: CORE INFILL SAMPLING PROGRAM**

| Hole Number | Section | From (m) | To (m) | Length (m) | Au (g/t) | Target Zone Description |
|---|---|---|---|---|---|---|
| TL13301 | 528300 | 105.00 | 106.00 | 1.00 | 7.15 | D Zone, Visible Gold |
| TL10116 | 527825 | 14.00 | 20.00 | 6.00 | 6.08 | Hanging Wall 1 (In-Pit) |
| TL11184 | 527225 | 203.00 | 204.00 | 1.00 | 5.77 | B2 Zone |
| TL11210 | 527700 | 360.00 | 361.00 | 1.00 | 5.62 | B1 Zone |
| TL0853 | 527300 | 177.00 | 182.00 | 5.00 | 4.53 | Main Zone (In-Pit) |
| TL11206A | 527225 | 411.00 | 412.03 | 1.03 | 3.37 | Main Zone |
| TL12278 | 527600 | 306.00 | 307.00 | 1.00 | 2.81 | B1 Zone |
| TL0852-12RE | 527575 | 354.00 | 355.00 | 1.00 | 2.58 | Main Zone |
| TL12283 | 527325 | 433.00 | 434.00 | 1.00 | 2.52 | B1 Zone |
| TL15385B | 527675 | 375.00 | 377.00 | 2.00 | 2.25 | B1 Zone |
| TL14358 | 528000 | 180.00 | 183.00 | 3.00 | 2.29 | Main Zone |
| TL11128 | 528150 | 443.00 | 444.00 | 1.00 | 1.90 | C Zone |

***Source:*** *P&E (2015)*

## 9.17 2016 FIELD MAPPING AND SAMPLING PROGRAM

In 2016, Treasury completed a field mapping and sampling program conducted by geologist Cheyenne Sica. This program consisted of a total of 134 grab samples and 13 channel samples (not including 7 coarse blanks and 7 standards CDN-CM-26) that were collected and dispatched to Actlabs in Dryden, Ontario, for gold assay and multi-element analysis. A total of 65 samples were taken over 3 separate patented claims and an additional 69 samples were taken from 5 unpatented legacy claims (Table 9.10, 9.11, Figure 9.13). The samples were mainly located along strike of the known resource over a distance of approximately 2.4 km and covering an area of approximately 1.4 km$^2$. The purpose of this program was to:

- Map the terrain and geology of the proposed mine infrastructure sites;
- Locate and GPS survey historical drill collars locations (Figure 9.15);
- Ground truth the surface mineralization locations of gold chutes interpreted by Exploration Manager Paul Dunbar from historical drill hole compilation and newly prepared longitudinal sections of the Eastern Alteration corridor ("EAC");
- Map and sample the eastern strike extension of Goliath Gold Deposit Main Zone, C Zone and parallel zones (D-G) along the EAC;
- Further investigate, prospect and sample the "Gossan Showing";
- Follow up on MMI anomalies observed from the previous year's MMI sampling program; and
- Identify new exploration drill targets to potentially increase gold ounces outside of the currently defined resource area.

**TABLE 9.10**
**2016 GRAB SAMPLE – PATENTED CLAIM LIST**

| Patented Claim No. | Parcel | MNDM Pin No. | Total Samples |
|---|---|---|---|
| 0136 | 34461 | 42089-0136 | 9 |
| 0138 | 15401 | 42089-0138 | 21 |
| S-0140, M-0139 | 40282 | 42089-0140 | 35 |

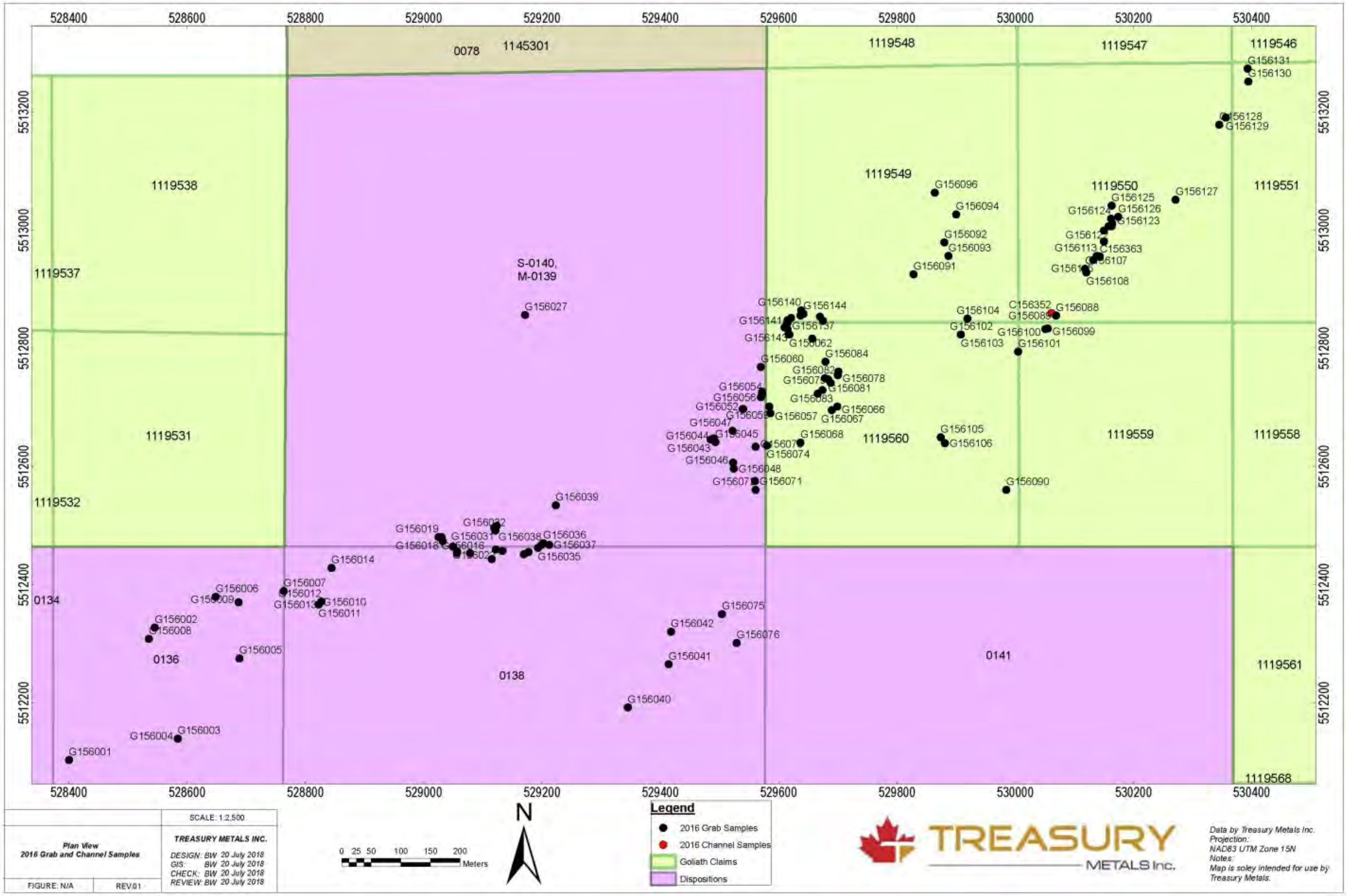
***Source:*** *Treasury (2019)*

**TABLE 9.11**
**2016 GRAB AND CHANNEL SAMPLE – UNPATENTED MINING CLAIM LIST**

| Unpatented Legacy Claim No. | Total Samples |
|---|---|
| 1119549 | 13 |
| 1119550 | 36 |
| 1119551 | 2 |
| 1119559 | 3 |
| 1119560 | 27 |

***Source:*** *Treasury (2019)*

## FIGURE 9.13 2016 GRAB AND CHANNEL SAMPLING PROGRAM (GOLIATH GOLD PROJECT)




***Source:*** *Treasury (2019)*

### 9.17.1 Proposed Mine Infrastructure Sites

From September 17, 2016 to October 26, 2016 the locations of the proposed mine infrastructure sites were surveyed to explore for outcrops with potential gold mineralization by geologist Cheyenne Sica and field assistants Stephen Lappage and Kyle Botos. The GPS tracks and current location of proposed mine infrastructures are presented in Figure 9.14.

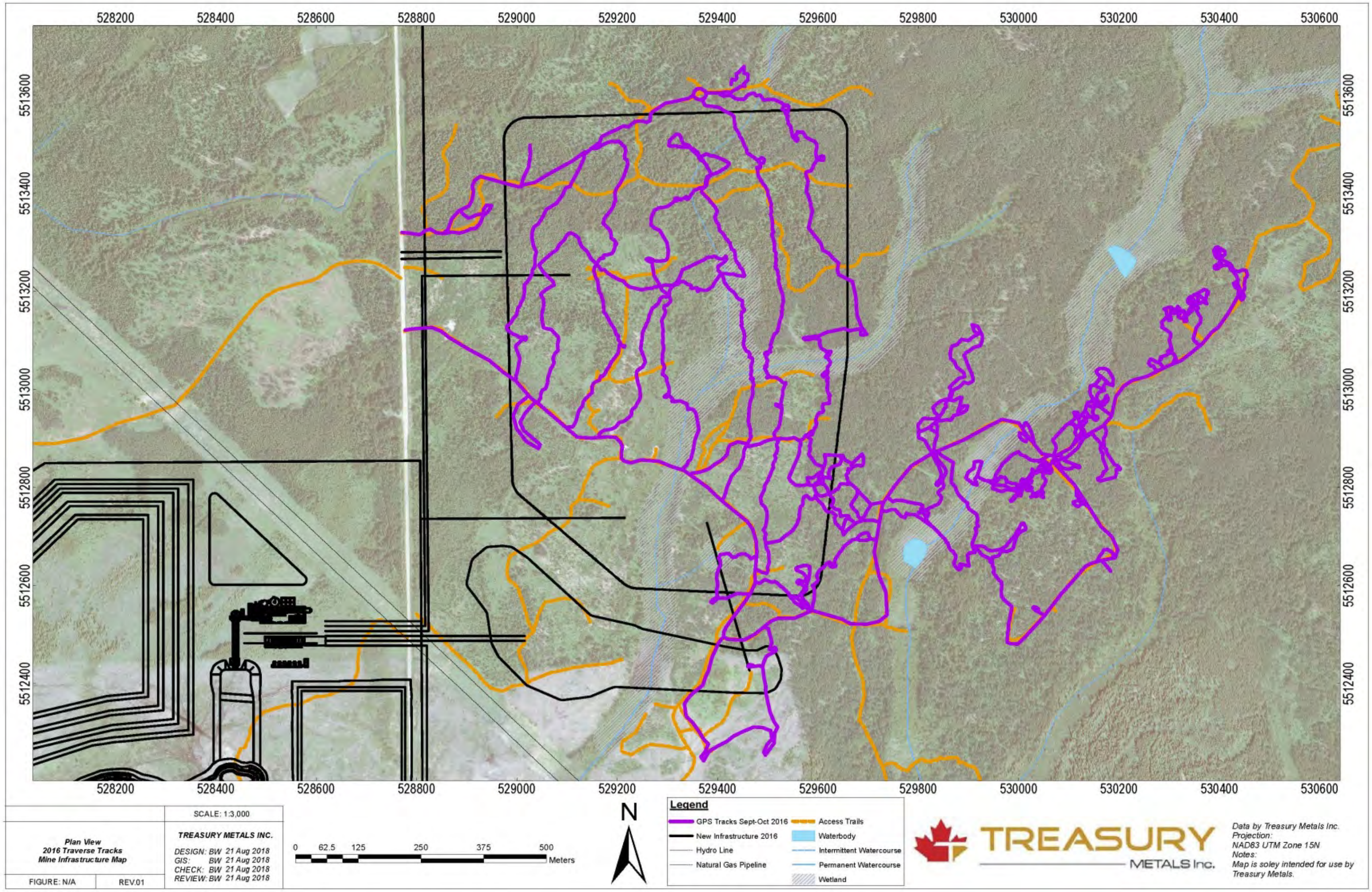
Infrastructure to the west of Tree Nursery Road, north of the proposed open pit, is located in old slash from previous logging activities with new growth of small alder trees (Figure 9.15). Several outcrops of muscovite sericite schist (MSS) and biotite muscovite schist (BMS) were mapped and sampled in this area with no detectable gold mineralization.

The location of the tailings pond is dominantly in muskeg lowland (Figure 9.14, Figure 9.15). In the northern portion of the proposed tailings pond location, scattered outcrops of iron formation are present with no evidence of alteration, deformation or mineralization. The southeastern portion of the tailings pond covers the strike extension of the Goliath Deposit Main Zone and C Zone extensions. In this area mineralized BMS and MSS rocks were sampled and mapped returning assays from 0.42 g/t Au to 1.42 g/t Au (Table 9.12).

The proposed site of the polishing pond is located in a mixture of old slash with new growth alders, muskeg lowland, Jackpine forest high-ground with sandy soil, and a swamp surrounding a small creek (Figure 9.14, Figure 9.15). Outcrops of mineralized BMS and MSS rocks were mapped in this area returning assays of 0.37 g/t Au to 0.41 g/t Au (Table 9.12).

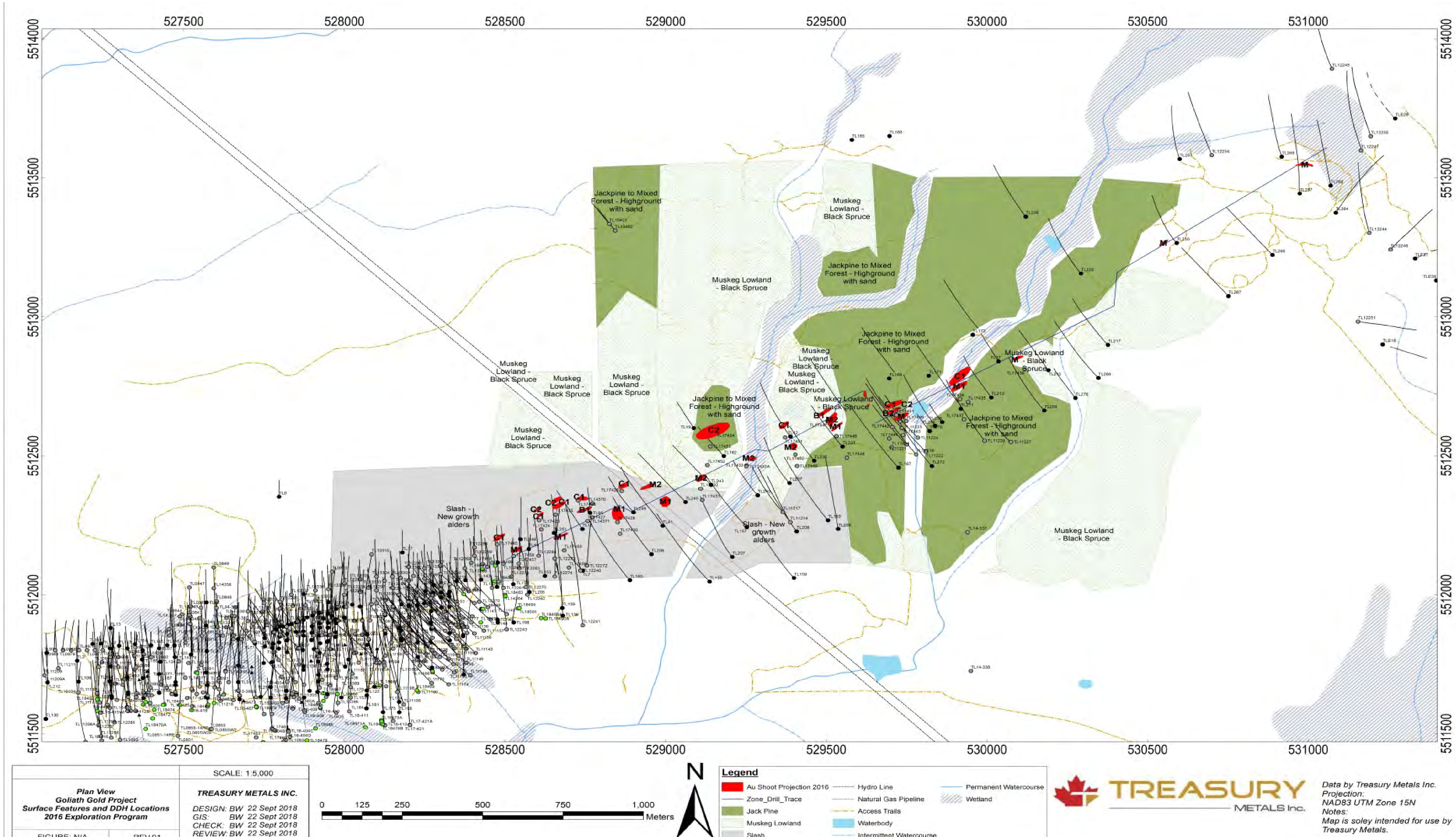
In Figure 9.14 the purple lines show the GPS tracks (September-October 2016) of the areas covered during the 2016 field program and the black lines show the layout of the proposed mine infrastructure.

**FIGURE 9.14 2016 TRAVERSE TRACK AND MINE INFRASTRUCTURE MAP**




***Source:*** *Treasury (2019)*

**FIGURE 9.15 2016 SURFACE FEATURES AND DIAMOND DRILL HOLE LOCATIONS**




***Source:*** *Treasury (2019)*

Error! Reference source not found.**9.15** shows the surface terrain and comparison of locations of resurveyed Teck diamond drill holes. The red units denote the surface projection of mineralized gold chutes interpreted by Paul Dunbar using the best intersections from historical Teck and Treasury drill hole data. The pink dots mark the location of resurveyed holes with black dots and lines showing the initial geo-referenced collar locations and drill hole traces.

| **Table 9.12**<br>**2016 Best Assay Results – Condemnation Field Mapping Program** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Sample Number** | **Easting** | **Northing** | **Sample Description** | **Au (ppm)** | **Ag (ppm)** | **Cu (ppm)** | **Pb (ppm)** | **Zn (ppm)** |
| G156061 | 529615 | 5512847 | **BMS;** Strongly silica flooded with weak to moderate shear fabric; pink color (pervasive hematite?); some chlorite bands with <=1-% biotite bands; altered porphyry protolith? Pyrite fine grains – coarse grains throughout (up to 10%) | **1.42** | 1.1 | 50 | 2 | 74 |
| C156361 | 530143 | 5512954 | **BMS;** moderate silica flooding; ~5% MSS bands; 5-7% blue quartz eyes; 1% pyrite seams and 1-2% fine grains pyrite disseminations; 2% chlorite bands containing locally up to 5% pyrite ; smokey grey quartz vein with oxidized staining hosting 1% galena + sphalerite seams; strongly sheared around quartz with increased sericite alteration | 0.98 (over 0.7 m) | 6.8 | 259 | **1,760** | **3,020** |
| C156362 | 530143 | 5512954 | **BMS;** moderate silica flooding; 2-3% MSS bands; 2% blue quartz eyes; mm-wide seam of galena; mm-scale massive pyrite seams; 2% very fine grains pyrite mineralization | 0.76 (over 1.0 m) | 0.9 | 64 | 127 | 267 |
| G156110 | 530132 | 5512949 | **BMS;** massive pyrite (~15% of sample); 15% chlorite; 60% glassy dark silica flooding; | 0.754 | **7.5** | **409** | 560 | 1,060 |
| G156058 | 529584 | 5512701 | **BMS**; 60% biotite, 5% sericite the rest is silica flooded; moderate foliation; coarse grain pyrite seams up to 5% | 0.471 | 4.6 | 5 | 155 | 175 |
| G156054 | 529572 | 5512721 | **MSS;** ~60% sericite + muscovite, ~30% silica; oxidized on foliation planes; trace chalcopyrite and arsenopyrite; up to 4% | 0.417 | 2.3 | 18 | 20 | 15 |

| Sample Number | Easting | Northing | Sample Description | Au (ppm) | Ag (ppm) | Cu (ppm) | Pb (ppm) | Zn (ppm) |
|---|---|---|---|---|---|---|---|---|
| TABLE 9.12<br>2016 BEST ASSAY RESULTS – CONDEMNATION FIELD MAPPING PROGRAM | | | | | | | | |
| | | | pyrite along foliation planes as blebs and fine grains dissemination | | | | | |
| G156031 | 529119 | 5512496 | **BMS;** moderate silica flooding; <=1% black quartz eyes; balk quartz veinlets parallel to foliation (~30% of sample); <= 3% fine grains pyrite | 0.41 | 0.6 | 3 | 18 | 85 |
| G156029 | 529123 | 5512499 | **MSS;** sericite + muscovite + silica; oxidized staining throughout; up to 3% pyrite as seams along foliation planes | 0.373 | 0.8 | 8 | 10 | 26 |
| G156114 | 530138 | 5512956 | **MSS;** strong silica flooded with galena seam and 2% pyrite seams | 0.333 | 2.3 | 188 | 775 | 768 |

***Source:*** *Treasury (2019)*

### 9.17.2 Eastern Alteration Corridor

Geological mapping and sampling of the EAC was conducted from September 17, 2016 to October 13, 2016 by geologist Cheyenne Sica. The work covered unpatented legacy claims 1119560, 1119549, 1119550, 1119551, 1119559 and patented claims 0136, 0138, S-0140/M-0139 (Figure 9.13 and Figure 9.16). Mapping and sampling targeted the strike extension of Goliath gold-bearing muscovite sericite schist (MSS) and biotite muscovite schist (BMS) geological units. A "high priority" component of the 2016 field program was to ground truth and explore for signs of mineralization at the locations where gold chutes were projected to outcrop, utilizing the new Longitudinal Sections that had been constructed along the entire strike length of the EAC (red units shown on Figure 9.15 and Figure 9.16). Unfortunately, no outcrops were found at the exact locations of the interpreted high grade chutes.

Grid geology mapping completed by Teck in the 1990's mapped a large package of felsic metavolcanic rocks throughout the central portion of the EAC bound to the north and south by metasedimentary rocks. The surface projection of geology from historical drill hole data (projections completed by Paul Dunbar), reveals a more complicated stratigraphy consisting of quartz-feldspar porphyry, quartz-porphyry, strongly altered BMS and MSS rock units. The BMS and MSS units are on strike with identical rock units that host the high grade gold mineralization at the Goliath Gold Deposit. Pervasive alteration, metamorphism and deformation make it difficult to distinguish these units throughout the EAC as definitive felsic volcaniclastic rocks, such as a silicified felsic tuff, and the MSS and BMS rocks typically have a porphyritic texture and could be interpreted as felsic intrusive porphyry rocks.

A final geology compilation map has been generated integrating (1) the geological mapping from the 2016 field program, (2) the newly interpreted drill sections utilizing all historic drill holes along the EAC, (3) the newly interpreted longitudinal sections (interpreted work by Paul Dunbar), (4) geology from the old Teck grid mapping programs, and (4) all existing ground and airborne geophysical data (Figure 9.16 and Figure 9.17).

Of the 134 grab samples collected from the EAC, 110 samples contained anomalous gold returning assays of > 0.005 g/t Au. Thirteen (13) channel samples were taken, all of which returned > 0.10 g/t Au. The dominant sulphide phase observed was pyrite occurring as fine to coarse grained disseminations with some massive pyrite seams. Galena and sphalerite were also observed as stringers concentrated at contacts between BMS rocks and smoky grey quartz veinlets.

Grab samples with gold assays of > 0.3 g/t Au have been summarized on Table 9.12 and sample locations have been plotted on the geology map as red stars (Figure 9.17). Each of the showings have been described below starting in the western portion of the map area:

- Two grab samples returning 0.373 g/t Au (G156029) and 0.41 g/t Au (G156031) are located at the merging point of the C and B Zones. These samples contain low concentrations of Ag, and were anomalous in Pb and Zn.

- Assays returns of 0.417 g/t Au (G156054) and 0.471 g/t Au (G156058) were obtained from grab samples collected from the B1 and Main Zones just west of the fault

(Figure 38). Sample G156058 contained 4.6 g/t Ag and anomalous Pb (155 ppm) and Zn (175 ppm).

- Sample G156061 returned 1.42 g/t Au and 1.10 g/t Ag and was collected north of the best known mineralized MSS zones.

In all three gold occurrences described above, gold is associated with silicification and pyrite and is hosted by both MSS and BMS rock units.

Samples C156361, C156361, G156110 and G156114 were collected from the C Zone and are located 2 km along strike from the main Goliath Deposit. C Zone grab samples returned 0.333 g/t Au (G156114) and 0.754 g/t Au (G156110). Sample G156110 also contained 7.5 g/t Ag (the highest silver assay of the 2016 program) in association with 409 ppm Cu, 560 ppm Pb and 1,060 ppm Zn. Channel sample C156361 assayed 0.98 g/t Au and 6.8 g/t Ag over a sample length of 0.7 m and also contained elevated base metals (259 ppm Cu) as well as the highest Pb and Zn assays of the program of 1,760 ppm Pb and 3,020 ppm Zn, respectively. BMS rocks host the three highest gold assays. This C zone showing occurs further east than anticipated from historical drill best assay intersections suggesting the potential for additional chutes to occur east along strike.

Upon completion of the field sampling program, several new exploration targets were identified along strike of the main resource situated in the Eastern Alteration Corridor ("EAC") near the nose of a regional fold structure (folded syncline) which is considered a "Very High Priority" target area. Anomalous gold assays found within the grab and channel samples warrant an additional soil sampling program (soil gas hydrocarbon) or follow up with exploratory drilling to further test the potential of the select locations.

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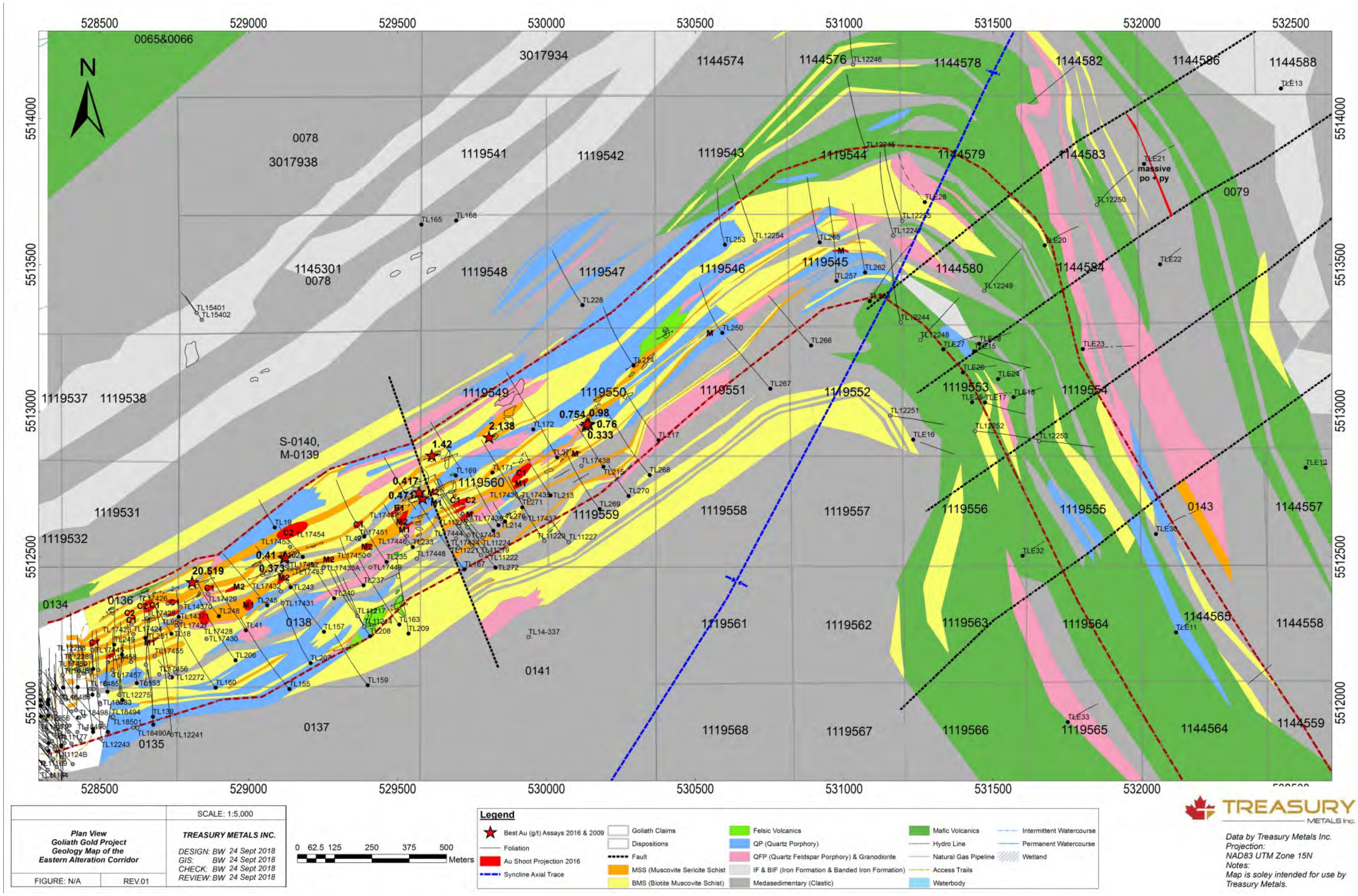
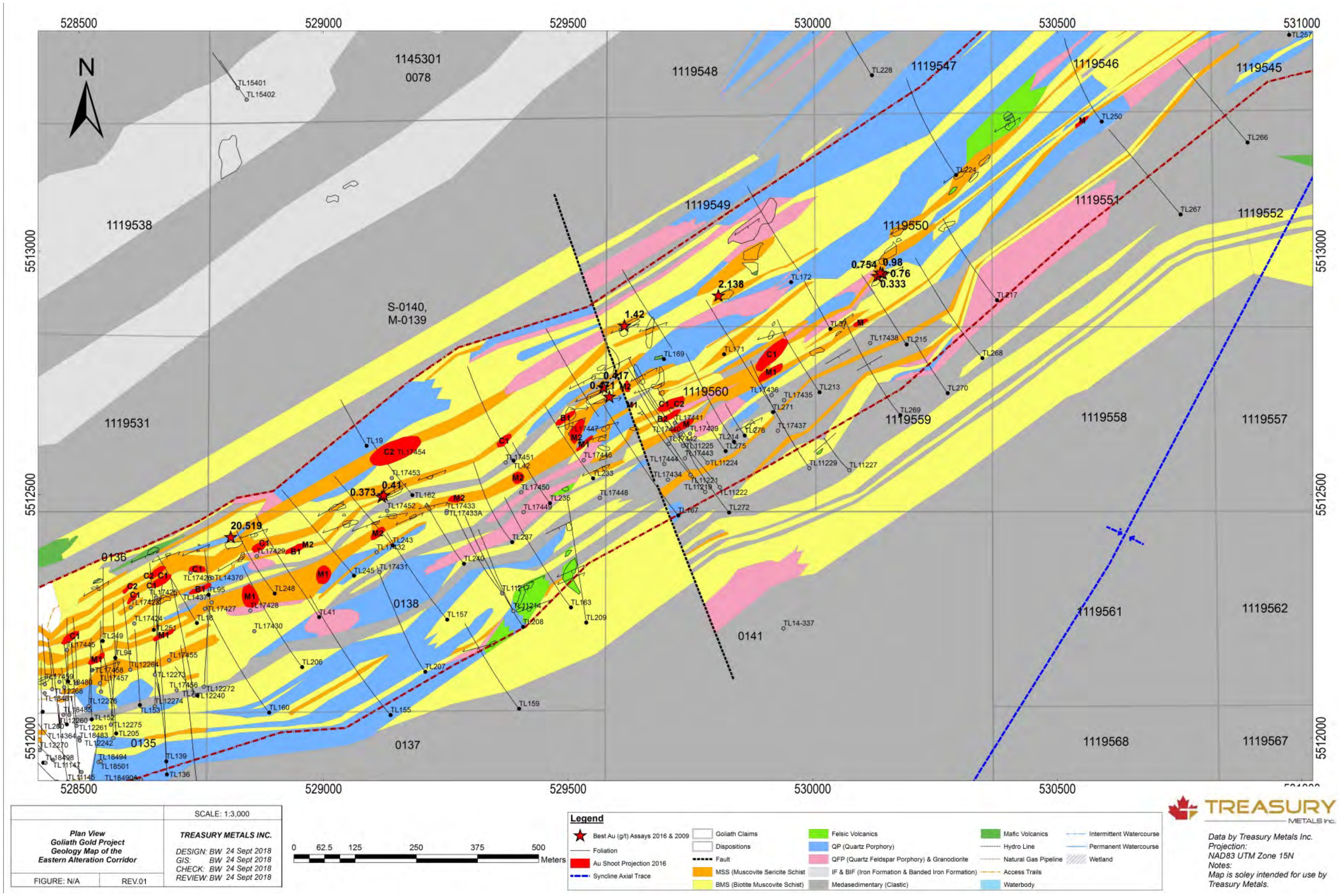
## FIGURE 9.16 GEOLOGY MAP OF THE EASTERN ALTERATION CORRIDOR (GOLIATH GOLD DEPOSIT)




***Source:*** *Treasury (2019)*

**FIGURE 9.17 DETAILED GEOLOGY MAP OF THE EASTERN ALTERATION CORRIDOR (GOLIATH GOLD DEPOSIT)**




***Source:*** *Treasury (2019)*

### 9.17.3 Gossan Showing

On November 4, 2016, geologists Cheyenne Sica and Ardian Peshkepia visited the Gossan Showing exposed by the construction of a new logging road and initially described and sampled by geologist Adam Larsen in October, 2015 (legacy claim 3017887). The access logging road has since been extended westward 700 m following the strongly gossaned (oxidized) shear zone.

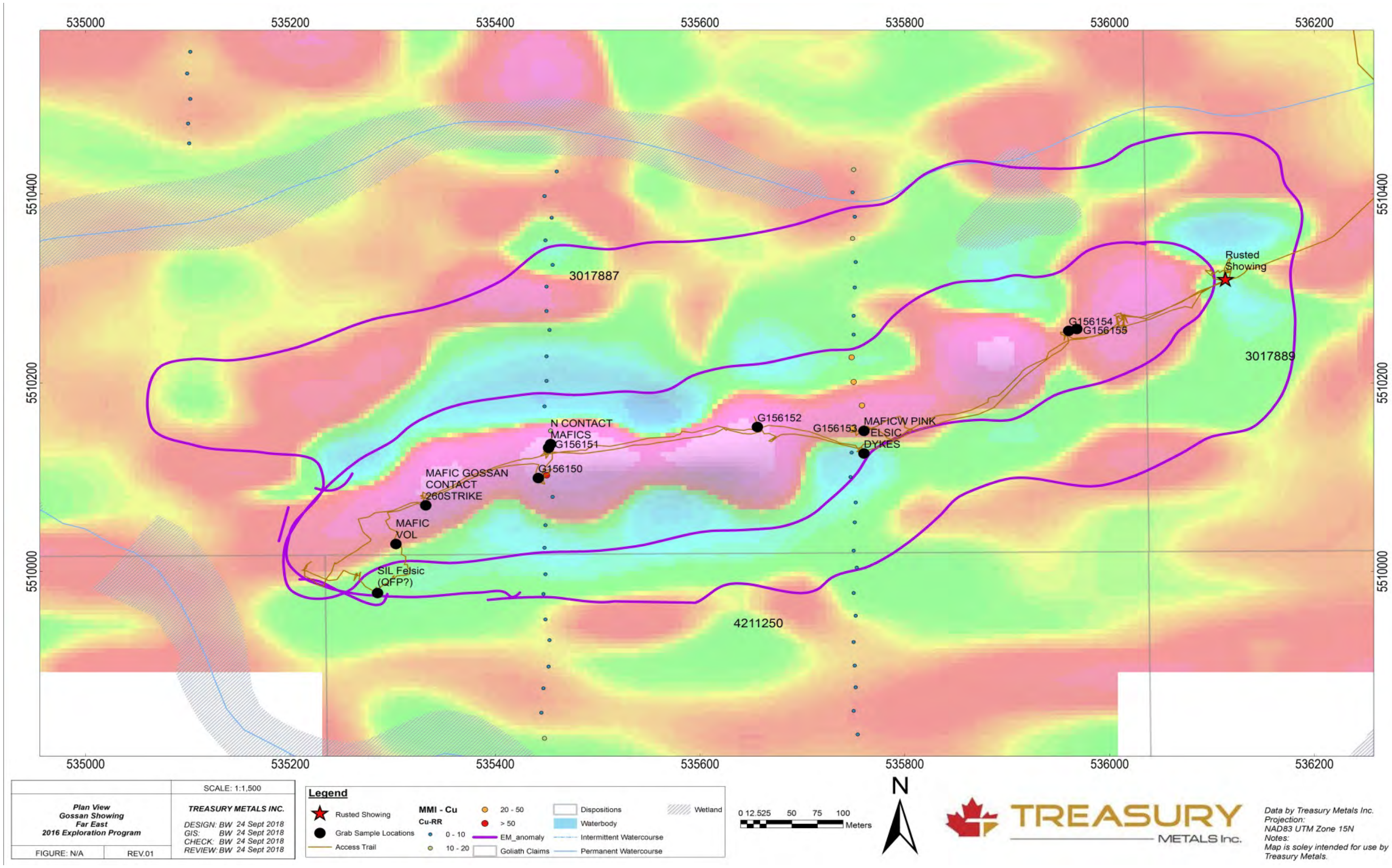
The Gossan Showing coincides with a ~1 km long east-west trending airborne EM and magnetic geophysical anomaly which also occurs in association with Pb, Zn and Cu MMI anomalies identified during the 2014 soil sampling program (Figure 9.18). During the field program, the strike extension of the Gossan Showing was traversed and sampled over a strike length of almost one kilometer.

The gossan zone itself is hosted in a moderately to strongly sheared mafic volcanic package with strong chlorite + amphibole alteration and is typically strongly oxidized along foliation planes. The strike of the zone is 260° and it dips north from 80° to 85°. Portions of the showing are weakly silicified. Pyrite was observed as semi-massive bands and fine grained disseminations concentrated along foliation planes. Pyrrhotite (up to 2%) was also observed along foliation planes.

The intense gossan alteration zone extends for at least 1.0 km in strike length and is contacted by mafic volcanic rocks to the north and south. On certain outcrops, pink felsic dykes with irregular contacts are injected into the southern mafic volcanic rocks. South of the southern mafic volcanic unit, is a large body of strongly silicified felsic intrusive rocks (a possible quartz feldspar porphyry unit).

Five (5) samples were taken along strike length of the gossaned unit. None of the samples returned any significant gold values. Samples were found to be anomalous in Cu (up to 244 ppm), Zn (up to 184 ppm), Pb (up to 39 ppm) and Mn (up to 4,130 ppm).

**FIGURE 9.18 GOSSAN SHOWING FAR EAST 2016 EXPLORATION PROGRAM**




***Source:*** *Treasury (2019)*

## 9.18 2017 FIELD MAPPING AND SAMPLING PROGRAM

In 2017, Treasury completed an outcrop mapping and sampling program with focus on the iron formation lithological unit. The program consisted of a total of 36 grab samples including 2 coarse blanks and 2 standards. The sampling program occurred over twelve unpatented mining claims and one patented mining claim. The samples were mainly located along the iron formation as well as from within the nose of the regional fold structure. The samples covered an area of approximately 5 $km^2$. The purpose of this program was to:

- Further investigate and sample the "Iron Formation";
- Map and sample newly exposed outcrops that had recently been exposed by logging activity in the area of the Eastern Alteration Corridor; and
- Identify new exploration drill targets in the nose of the regional fold to potentially increase gold ounces outside of the currently defined resource.

### 9.18.1 Sampling Program

Sampling of the Iron Formation and the Eastern Alteration Corridor was conducted from August 30, 2017 to November 6, 2017 by geologists Bryan Wolfe and Eldon Phillips. A total of 36 grab samples were collected and dispatched to Actlabs in Dryden, Ontario for a fire assay gold analysis. The work covered unpatented legacy claims 1119548, 1119542, 1144588, 1119544, 1119552, 3017934, 1119537, 1119532, 1119541, 1119553, 1119545, 1144587 (Figure 9.19) and patented claim 42089-0079 (MNDM Pin Number). The areas of interest were accessed using a variety of methods including trucks, ATV's and traversing on foot. Most areas were easily accessed through the use of a truck or ATV utilizing old drill trails that were previously established by Teck and Treasury Metals. Towards the nose of the regional fold structure an ATV was used along newly constructed logging roads to gain access to the area of study (Figure 9.19).

Mapping and sampling targeted the strike extension of the Iron Formation along the limbs of the regional fold structure as well as the hinge of the regional fold structure in close proximity to the "Eastern Alteration Corridor". Of the 26 grab samples collected from the Iron Formation only one sample (IF-33, Sample Number 303986) returned an anomalous gold value of 0.01 g/t Au. The remainder of the Iron Formation samples returned no significant assay results. Of the 10 grab samples collected from the nose of the regional fold structure, seven samples returned anomalous gold values ranging from 0.01 g/t Au to 0.12 g/t Au. The remaining three samples collected from the nose of the fold returned no significant assay values as summarized below.

Upon completion of the sampling program it was determined that the program was unsuccessful at identifying any new prospective exploration targets within the Iron Formation. The hinge of the regional fold structure covers a large area (approximately 2 $km^2$) with an abundance of new outcrop exposure and was not extensively sampled at the time of the program. This area still warrants further investigation as the program was modest in size and previously identified anomalies in the 2014 MMI sampling study require follow up. Although no substantial gold assays were returned, the nose of the regional fold and the "Eastern Alteration Corridor" still remains a "High Priority" target with the potential to add additional gold ounces along strike of the main resource.

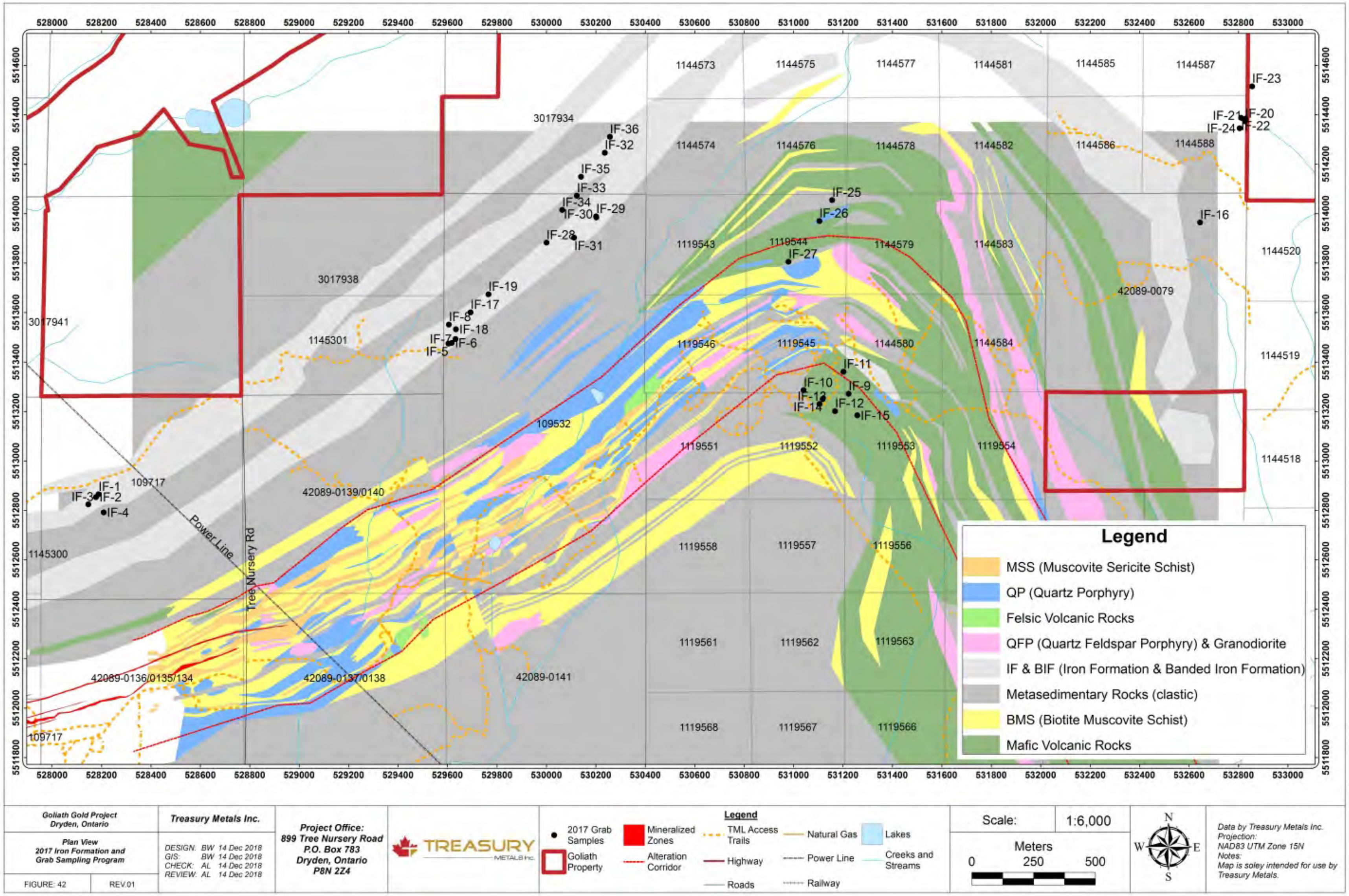
### 9.18.2 Mapping of the Iron Formation and Eastern Alteration Corridor

In addition to sampling, a brief geological mapping program of the Iron Formation and the Eastern Alteration Corridor was conducted from August 30, 2017 to November 6, 2017 by geologists Bryan Wolfe and Eldon Phillips to further add to the current outcrop database. The purpose of this program was focused on mapping the extent and continuity of the Iron Formation as well as mapping newly exposed outcrops due to recent logging activity in the nose of the regional fold structure situated within the Eastern Alteration Corridor. Only a small amount of the exposed outcrops was mapped in detail in this program and an extensive mapping program should be undertaken to further explore the continuity of the lithologies and the structural elements that constrain them.

#### 9.18.2.1 The Eastern Alteration Corridor

Recent timber logging of the Goliath Gold Property has exposed an extensive amount of new outcrop showings at the nose of the fold within the Eastern Alteration Corridor. The area is primarily clear cut and can easily be navigated through use of an all-terrain vehicle. In this area several new outcrops were observed (Figure 9.20, Figure 9.21) and mapped using a Trimble geo-explorer 600 series hand held gps unit and traversing the circumference of the surface feature. Within the nose of the fold, in close proximity to the Eastern Alteration Corridor, Treasury Metals personnel located and identified five new outcrops of Banded Iron Formation (BIF), six new Metasedimentary (MSED) outcrops, one outcrop of Biotite Muscovite Schist (BMS). Towards the end of the mapping program the geologists were successful in locating one new outcrop of Muscovite Sericite Schist (MSS). Since the Muscovite Sericite Schist is the primary gold bearing lithology within the Goliath Gold Deposit further mapping of the area will be required to try and establish where the mineralized zones may be projected to the surface.

**FIGURE 9.19 2017 IRON FORMATION AND GRAB SAMPLING PROGRAM (GOLIATH GOLD PROPERTY)**

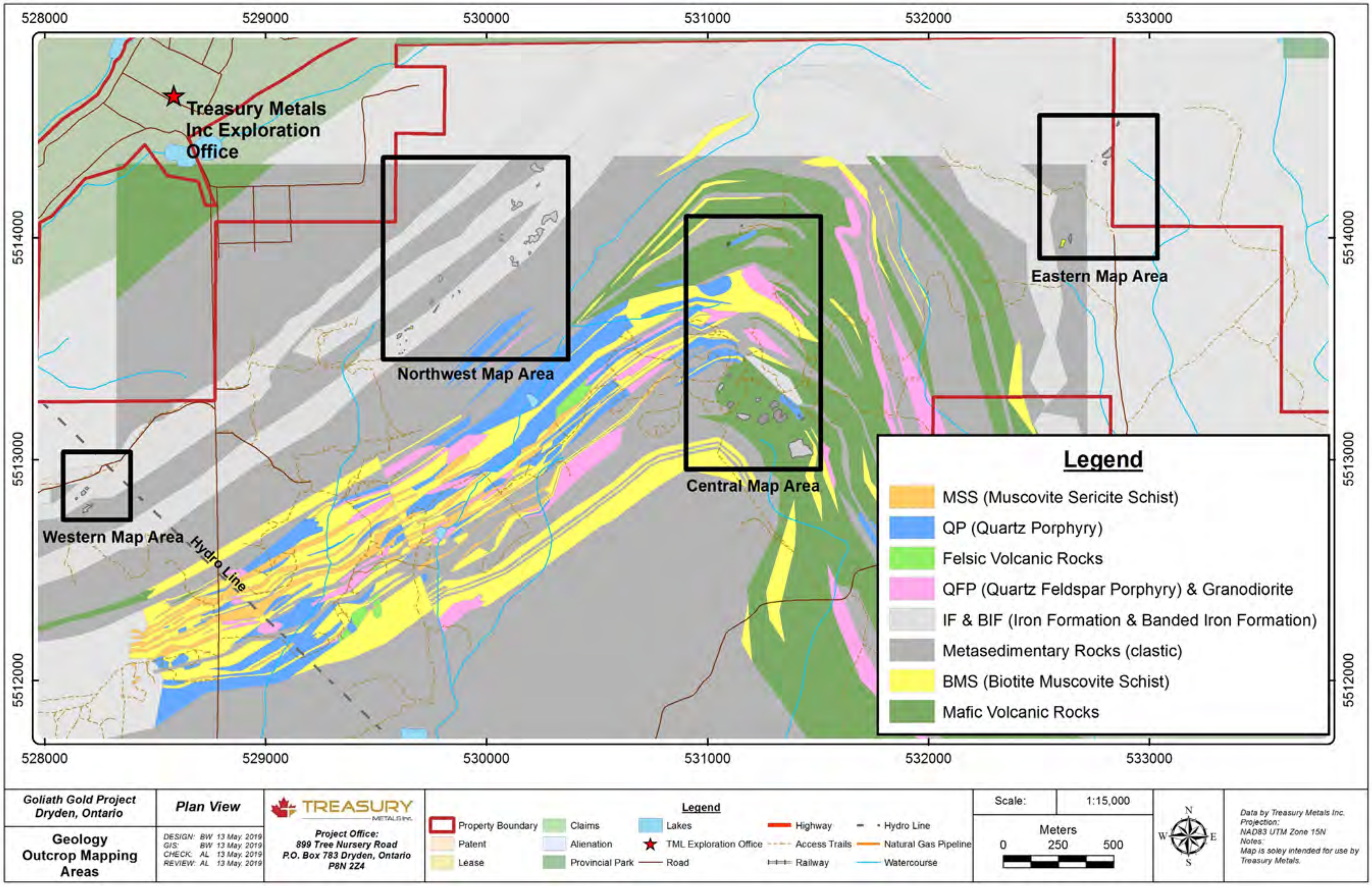



***Source:*** *Treasury (2019)*

#### 9.18.2.2 The Iron Formation

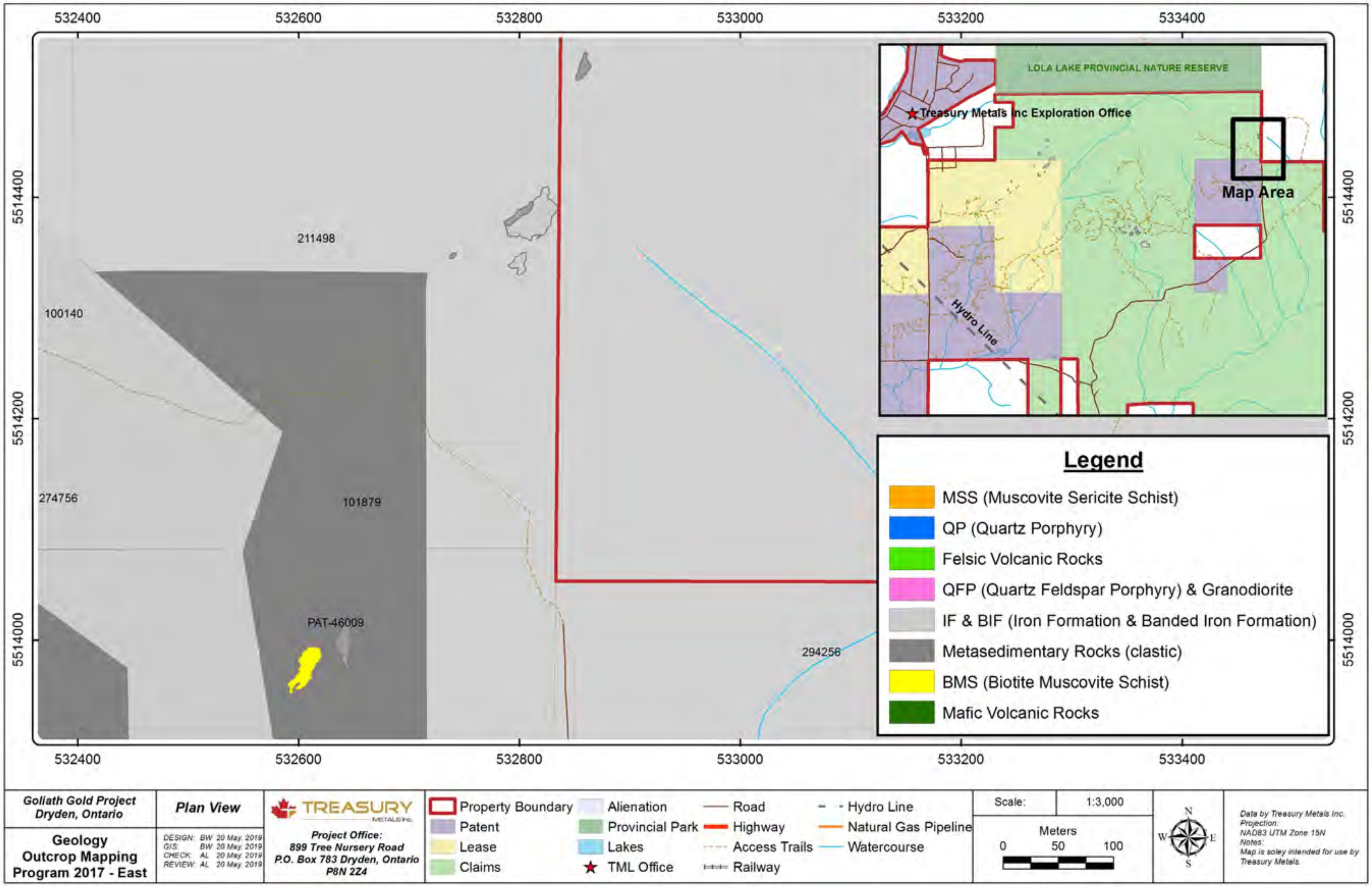
The primary purpose of the mapping and sampling program was focused on trying to establish the extents of the Iron formation along the northern limb of the regional fold structure as well as identify any new prospective exploration targets. Treasury Metals personnel was successful in identifying several new outcrop showings in the south-west and also in the north-east (Figure 9.20, Figure 9.21, Figure 9.22, Figure 9.23 and Figure 9.24). The Iron Formation is thought to extend all the way to the most northern tip of the Goliath Gold Property but was not easily accessible. In order to reach the northern tip of the regional fold the geologists used an all-terrain vehicle on an old drill trail. Once reaching the end of the existing trail the geologists had to follow a small ridge of outcrops and had to be traversed by foot. On the northern limb of the fold Treasury Metals was able to identify and map a total of twenty-five new outcrops of Banded Iron Formation, five outcrops of Biotite Muscovite Schist and two new Metasedimentary outcrops. Due to the short nature of the program, Treasury Metals personnel were unable to map the northern most extent of the Iron Formation in the nose of the fold.

**FIGURE 9.20 2017 OUTCROP MAPPING PROGRAM (GOLIATH GOLD PROPERTY)**



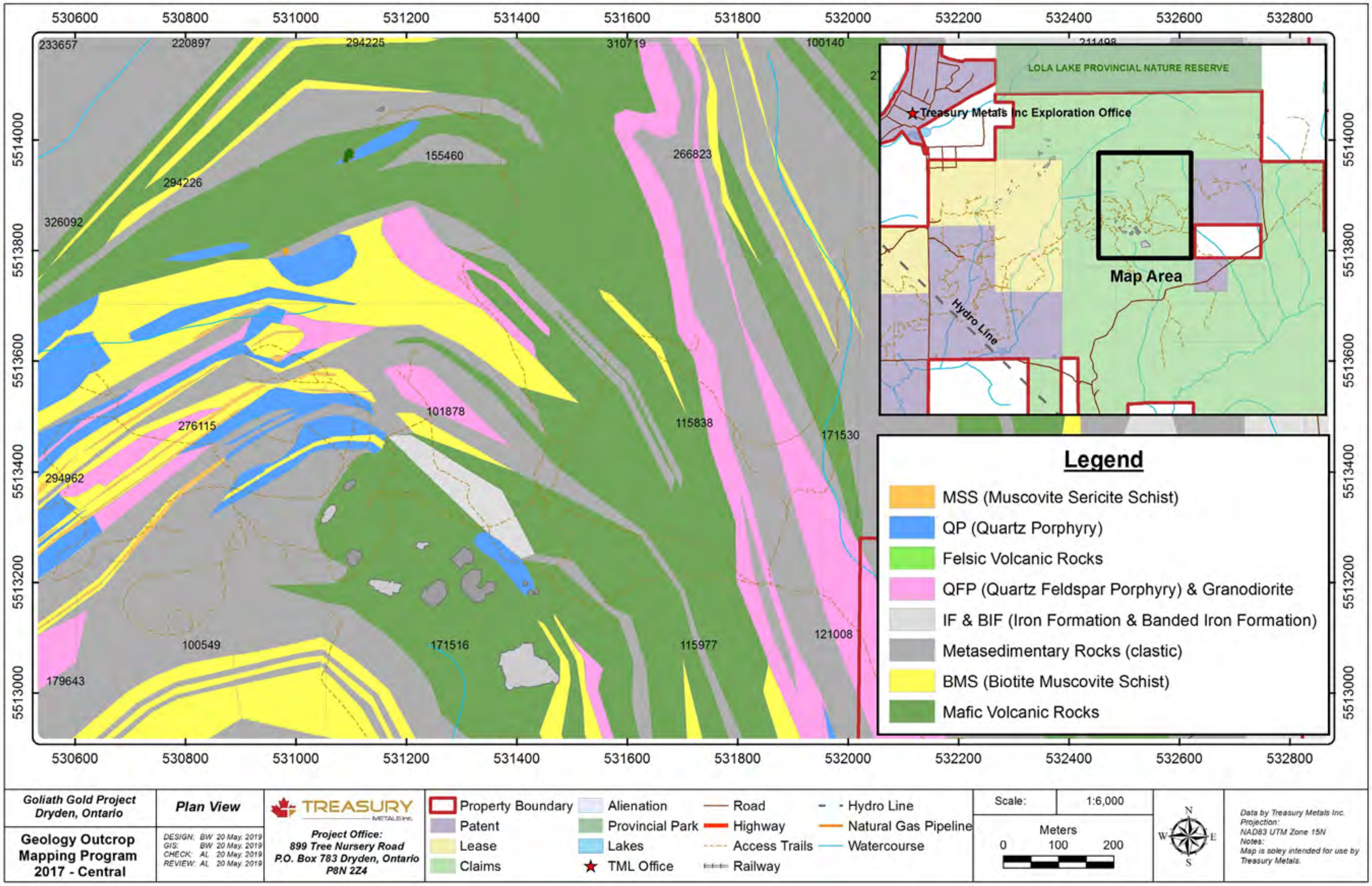

***Source:*** *Treasury (2019)*

**FIGURE 9.21 2017 OUTCROP MAPPING PROGRAM – EAST (GOLIATH GOLD PROPERTY)**



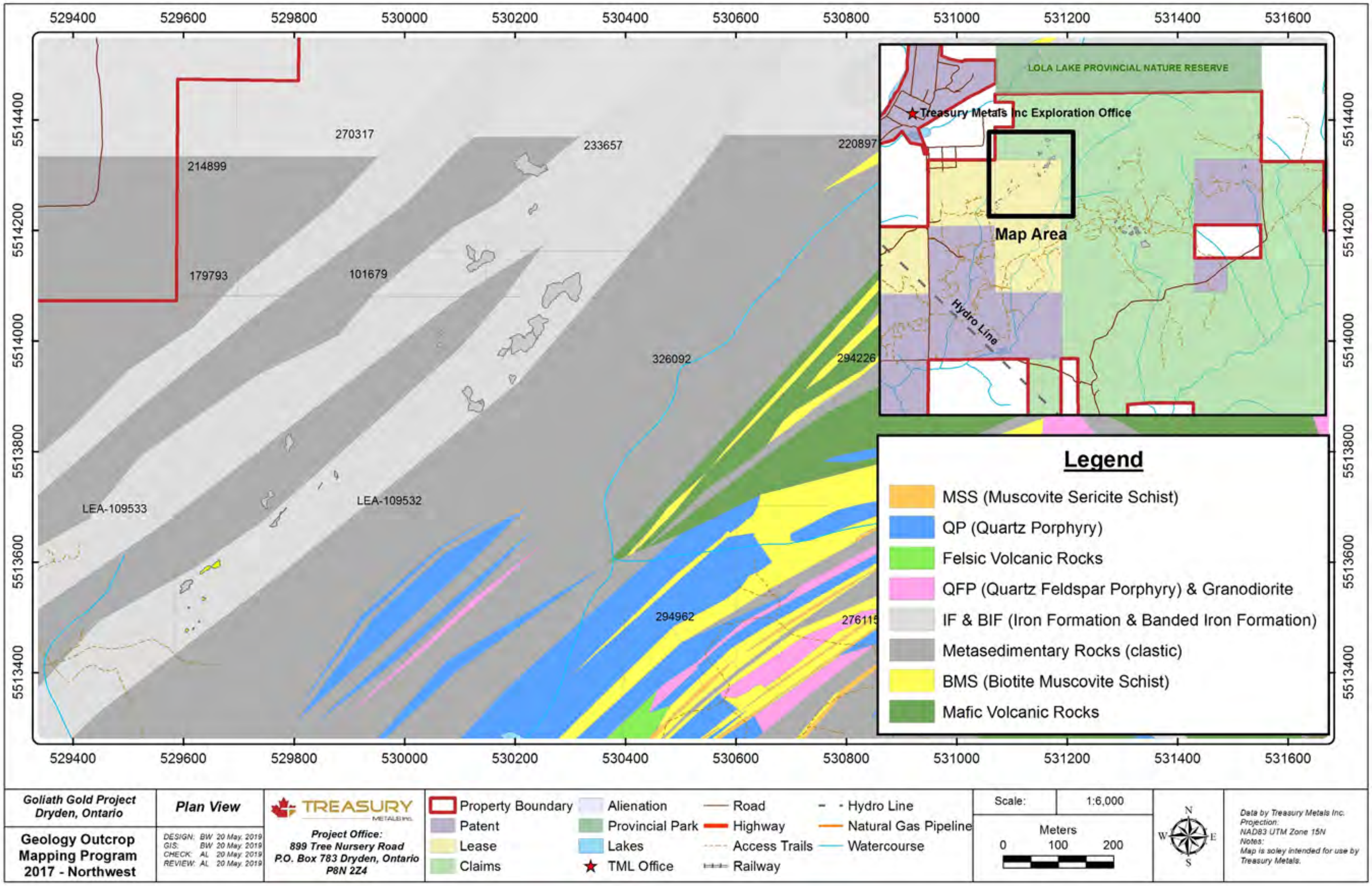

***Source:*** *Treasury (2019)*

**FIGURE 9.22 2017 OUTCROP MAPPING PROGRAM – CENTRAL (GOLIATH GOLD PROPERTY)**



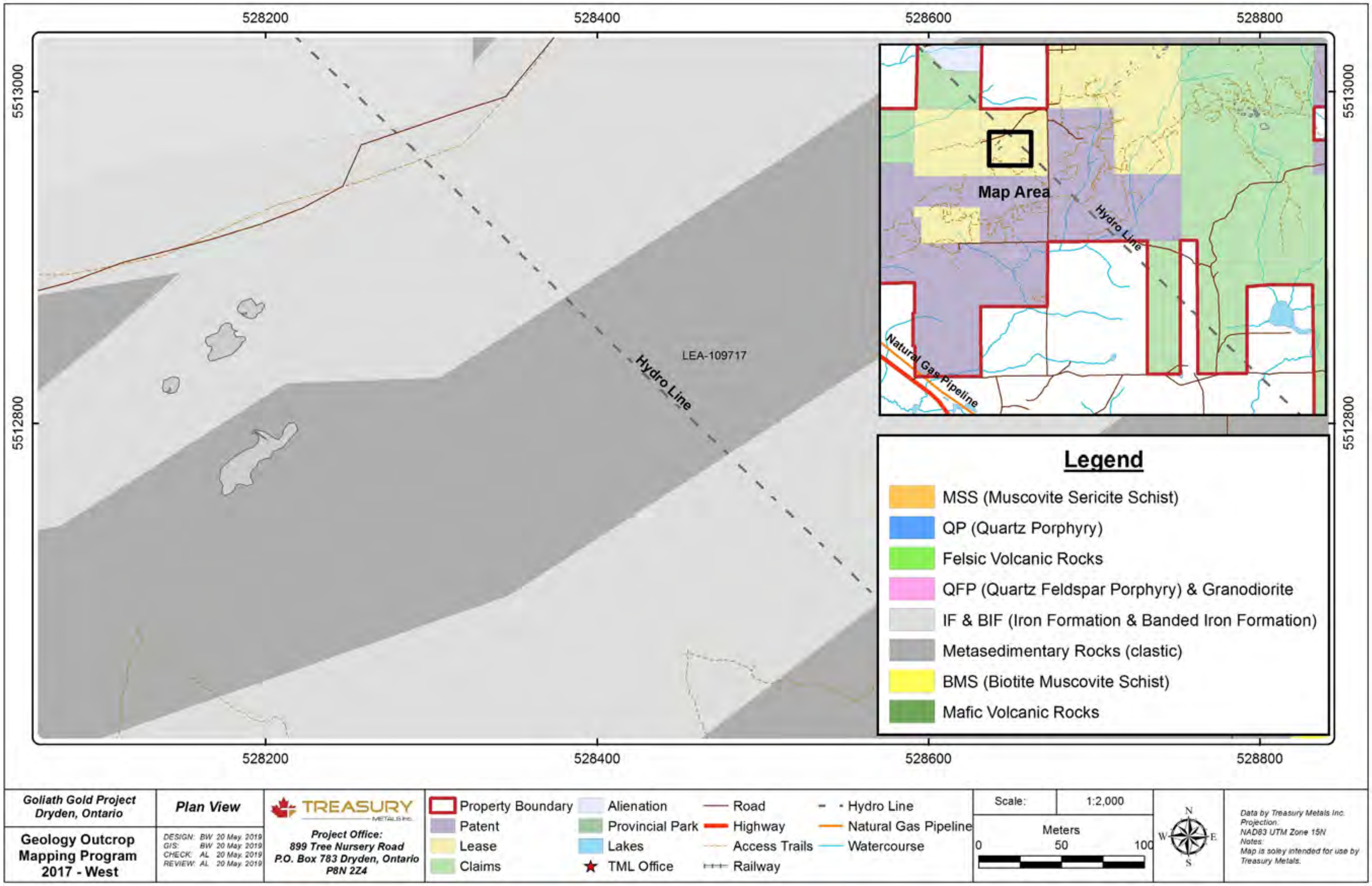

***Source:*** *Treasury (2019)*

**FIGURE 9.23 2017 OUTCROP MAPPING PROGRAM – NORTHWEST (GOLIATH GOLD PROPERTY)**




**Source:** *Treasury (2019)*

**FIGURE 9.24 2017 OUTCROP MAPPING PROGRAM – WEST (GOLIATH GOLD PROPERTY)**




***Source:*** *Treasury (2019)*

## 9.19 2017 INFILL CORE SAMPLING PROGRAM

From April 7th to June 14th, 2017, Treasury Metals initiated an infill sampling program intended to assay previously drilled but un-sampled drill core. The program was designed to cover all mineralized zones while prioritizing intervals within and near the proposed open pit. This sampling program covered a total of 9 patented and 2 unpatented claims over a 1.5 $km^2$ area. A total of 5256 samples were submitted including 525 blanks and standards and covered 142 separate drill holes. The three main objectives for the infill sampling program were: 1) to add new gold ounces to be included in the next Mineral Resource Estimate; 2) to extend existing gold mineralization; and 3) to uncover any potential new zones.

**TABLE 9.13**
**BEST GOLD ASSAY INTERSECTIONS: 2016/2017 CORE INFILL SAMPLING PROGRAM**

| Diamond Drill Hole | Section | From (m) | To (m) | Intercept (m) | Au (g/t) | Ag (g/t) | Target |
|---|---|---|---|---|---|---|---|
| TL0849 | 527600E | 100.00 | 104.00 | 3.00 | 1.61 | 15.97 | E Zone |
| TL1096 | 527250E | 206.80 | 211.00 | 4.20 | 11.37 | P | D Zone |
| including | | 208.00 | 209.30 | 1.30 | 34.80 | P | |
| TL10108 | 527475E | 250.00 | 253.00 | 3.00 | 31.38 | 21.63 | HW Zone |
| including | | 252.00 | 253.00 | 1.00 | 93.40 | 64.10 | |
| TL11145 | 528500E | 49.50 | 52.00 | 2.50 | 1.36 | 9.90 | BMS HW |
| TL11167 | 527275E | 134.30 | 137.00 | 2.70 | 4.52 | 5.18 | |
| including | | 134.30 | 135.00 | 0.70 | 15.90 | 11.70 | HW Zone |
| TL11171 | 527225E | 279.57 | 284.00 | 4.43 | 4.97 | 1.16 | B Zone |
| including | | 283.00 | 284.00 | 1.00 | 18.20 | 0.70 | |
| TL11209A | 527075E | 43.00 | 47.00 | 4.00 | 8.61 | 0.99 | HW Zone |
| including | | 44.00 | 45.00 | 1.00 | 29.80 | 2.20 | |
| TL12287 | 527275E | 292.00 | 294.00 | 2.00 | 4.12 | 2.09 | HW Zone |
| including | | 292.70 | 294.00 | 1.30 | 6.07 | 2.40 | |
| TL13306 | 527850E | 86.00 | 90.00 | 4.00 | 1.12 | 1.65 | C Zone |
| TL15387 | 527550E | 143.00 | 145.00 | 2.00 | 3.70 | 5.38 | HW Zone |
| TL164-12RE | 527625E | 417.00 | 419.30 | 2.25 | 3.01 | N/A | B Zone |

The next steps for the program will be to re-visit the portions of the geological model wherein these new results are located to better understand their impact and develop a follow-up program which may include additional infill core sampling and new drill holes.

## 10.0 DRILLING

Treasury has conducted 16 diamond drilling campaigns on the Goliath Property since 2008. A total of 170,135 m has been drilled by Treasury on the Property since 2008 including 501 newly collared holes, 30 re-entry holes and four (4) wedge holes (Table 10.1, Figure 10.1 and 10.2). All holes were drilled with NQ or NQ2 size core. The diamond drilling programs completed from 2008 to 2015 have been well summarized by Technical Reports prepared by Puritch et al. (2015), Roy et al. (2012) and Roy and Trinder (2011) as well as a number of drilling reports that have been filed for assessment credits by CCIC and Treasury Metals with the MNDM. Selected highest gold grade intercepts for the diamond drilling programs is presented on Table 10.2. Table 10.3 presents selected best drill hole intercepts over sample lengths of at least 1.5 m with gold assay returns of greater than 10 g/t Au. Metallic assays have been integrated into both tables when available. Lengths reported in these tables are core sample lengths and do not represent true widths. Additional information regarding the drilling program including Press Releases can be found on the Company's website at www.treasurymetals.com.

Caracle Creek International Consulting Inc. ("CCIC") designed and supervised all of the drilling programs from 2008 to 2010. In February 2011, Treasury geological staff took over the direct supervision of all Goliath exploration activities.

Over the last ten years, Treasury has used four different drilling contractors to complete the drilling programs (Table 10.4). The majority of the drill contracts were awarded to Distinctive Drilling Services Inc. of Westbank, British Columbia covering the years 2009 to 2013 and George Downing Estate Drilling Ltd. ("Downing Drilling") of Grenville-sur-la-Rouge, Quebec from years 2014 to 2018. Other contractors include G & O Diamond Drilling Contractors Ltd., of Hay lakes, Alberta, which drilled the first 37 holes of the 2008 drilling campaign and North Star Drilling Limited out of Thunder Bay, Ontario in 2014.

Each drill contractor constructed drill access trails and drill pads for each setup with water supplied by pump from local beaver ponds, creeks and streams. A Reflex single shoot down hole survey tool is used to survey the holes with readings taken at 50 m intervals. The drill casing is left in each hole and the hole capped to allow for future downhole geophysical testing and/or deepening of the hole.

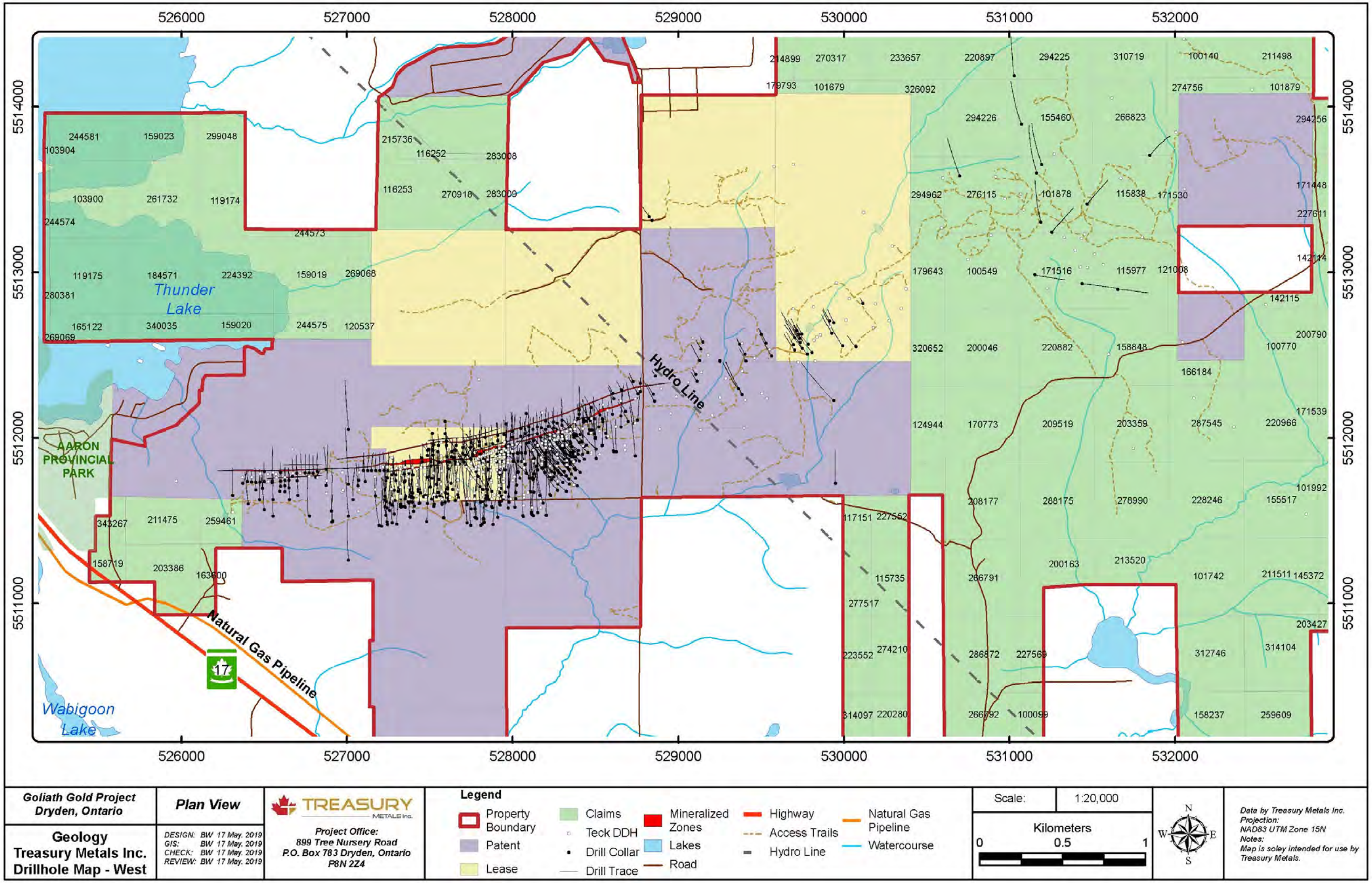
**TABLE 10.1**
**TREASURY METALS INC. DIAMOND DRILLING PROGRAM**

| Drill Program | Year | Dates Drilled | Hole Numbers | Meters Drilled |
|---|---|---|---|---|
| 1 | 2008 | February 18, 2008 to September 21, 2008 | TL0801 to TL0855 | 13,121 |
| 2 | 2009 | October 20, 2009 to December 15, 2009 | TL0956 to TL0986 | 4,589 |
| 3 | 2010 | February 20, 2010 to March 29, 2010 | TL1087 to TL1094 | 5,211 |
| 4 | 2010 | May 2, 2010 to June 2, 2010 | TL1095 to TL10112 | 5,153 |
| 5 | 2010 | December 2, 2010 to December 19, 2010 | TL10113 to TL10118 | 1,818 |
| 6 | 2011 | January 17, 2011 to September 1, 2011 | TL11119 to TL11229 | 48,538 |
| 7 | 2012 | January 25, 2012 to June 6, 2012 | TL12230 to TL12277 | 16,110 |
| 7 | | | TL220-12RE, TL234-12RE, TL231-12RE, TL219-12RE, TL216-12RE | |
| 8 | 2012 | October 22, 2012 to December 14, 2012 | TL12278 to TL12295 | 6,540 |
| 8 | | | TL164-12RE, TL0852-12RE, TL230-12RE | |
| 8 | | | TL227-12RE, TL226-12RE, TL238-12RE | |
| 8 | | | TL242-12RE, TL148-12RE, TL225-12RE | |
| 8 | | | TL0826-12RE | |
| 9 | 2013 | January 7, 2013 to February 26, 2013 | TL13296 to TL13336 | 7,772 |
| 9 | | | TL176-13RE, TL180-13RE, TL223-13RE | |
| 9 | | | TL1095-13RE, TL10107-13RE | |
| 9 | | | TL0827-13RE, TL10113-13RE | |
| 10 | 2014 | January 23, 2014 to June 23, 2014 | TL14337 to TL14371 | 10,749 |
| 10 | | | TL0855W2b, TL166-14RE, TL161-14RE | |

| **TABLE 10.1<br>TREASURY METALS INC. DIAMOND DRILLING PROGRAM** | | | | |
|---|---|---|---|---|
| **Drill Program** | **Year** | **Dates Drilled** | **Hole Numbers** | **Meters Drilled** |
| 10 | | | TL0851-14RE, TL10109-14RE | |
| 10 | | | TL0855W1, TL0855W2, TL0855W2b | |
| 11 | 2014 | November 27, 2014 to December 19, 2014 | TL14372 to TL14377 | 1,614 |
| 12 | 2015 | January 8, 2015 to March 17, 2015 | TL14378B to TL15402 | 7,263 |
| 12 | | | TL14373-15RE, TL14377-15RE | |
| 13 | 2016 | August 24, 2016 to January 15, 2017 | TL16403 to TL16420 | 12,154 |
| 13 | | | TL16415W1 | |
| 14 | 2017 | January 10, 2017 to March 16, 2017 | TL17421 to TL17445 | 4,022 |
| 15 | 2017 | June 22, 2017 to October 31, 2017 | TL17446 to TL17463 | 4,494 |
| 16 | 2018 | January 8, 2018 to June 22, 2018 | TL18464 to TL18501 | 20,987 |
| **Total** | | | | **170,135** |

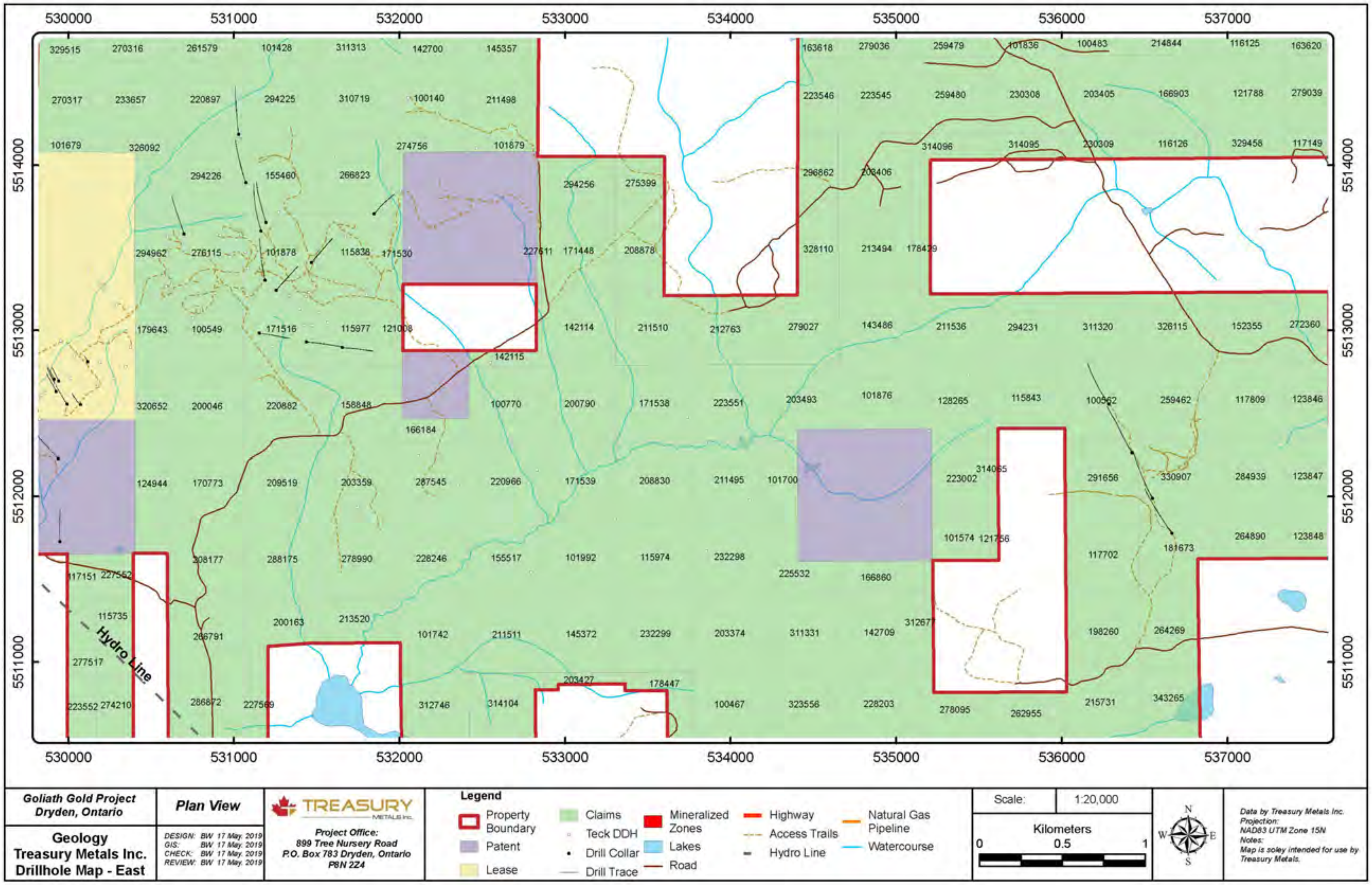
***Source:*** *Treasury (2019)*

**FIGURE 10.1 TREASURY DIAMOND DRILL HOLE LOCATION MAP, WESTERN GOLIATH GOLD PROPERTY**




**Source:** *Treasury (2019)*

**FIGURE 10.2 TREASURY DIAMOND DRILL HOLE LOCATION MAP, EASTERN GOLIATH GOLD PROPERTY**




*Source: Treasury (2019)*

| **TABLE 10.2<br>SELECTED HIGHEST GOLD ASSAY DRILL HOLE INTERCEPTS** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Diamond Drill Hole** | **Section** | **Zone** | **From (m)** | **To (m)** | **Length (m)** | **Au (g/t)** | **Comments** |
| TL13320 | 527525E | Main Zone | 16.70 | 17.70 | 1.00 | 430.00 | |
| TL15390B | 527801E | B Zone | 460.00 | 461.00 | 1.00 | 286.23 | |
| TL14374 | 527425E | Western | 234.50 | 236.50 | 2.00 | 199.75 | |
| TL18489 | 527500E | Main Zone | 543.00 | 544.00 | 1.00 | 145.00 | Visible Gold |
| TL18494 | 528525E | C-Zone | 426.00 | 427.00 | 1.00 | 111.00 | |
| TL0801 | 527950E | Main Zone | 74.00 | 75.00 | 1.00 | 82.37 | |
| including | 528375E | Main Zone | 323.25 | 328.50 | 5.25 | 77.25 | Visible Gold |
| TL18469 | 528225E | Main Zone | 559.00 | 560.00 | 1.00 | 79.60 | Visible Gold |
| TL0815 | 527550E | Main Zone | 50.80 | 51.00 | 0.20 | 68.49 | Visible Gold |
| TL18474 | 527400E | Main Zone | 451.00 | 452.00 | 1.00 | 64.50 | |
| TL0984 | 527300E | Main Zone | 67.50 | 69.00 | 1.50 | 58.09 | |
| TL14341 | 527575E | C Zone | 294.40 | 294.90 | 0.50 | 57.95 | Visible Gold |
| TL10108 | 527475E | HW Zone | 184.00 | 185.00 | 1.00 | 49.18 | |
| TL10100 | 528200E | Main Zone | 312.00 | 313.50 | 1.50 | 48.99 | |
| TL0824 | 527950E | Main Zone | 33.90 | 34.45 | 0.55 | 47.96 | |
| TL18474 | | Main Zone | 451.00 | 452.00 | 1.00 | 44.10 | |
| TL0844 | 527500E | Main Zone | 142.50 | 143.00 | 0.50 | 43.11 | |
| TL0814 | 527600E | Main Zone | 73.05 | 73.60 | 0.55 | 38.63 | |
| TL0984 | 527300E | Main Zone | 67.50 | 70.50 | 3.00 | 36.06 | |
| TL11135 | 528375E | Main Zone | 314.90 | 331.50 | 16.60 | 32.67 | Visible Gold |
| TL14373-15RE | 527450E | B Zone | 335.00 | 336.00 | 1.00 | 29.31 | Visible Gold |
| TL14350 | 527625E | C Zone | 81.33 | 82.33 | 1.00 | 28.41 | |
| TL14346A | 527625E | C Zone | 319.40 | 320.40 | 1.00 | 27.23 | |
| TL13316 | 527650E | B Zone | 157.50 | 159.00 | 1.50 | 25.50 | |
| TL15381B | 527550E | B Zone | 293.15 | 296.15 | 3.00 | 24.18 | Visible Gold |
| TL18478 | 527725E | Main Zone | 414.00 | 415.00 | 1.00 | 24.00 | |
| including | 527725E | Main Zone | 437.70 | 438.70 | 1.00 | 13.40 | |
| TL18467A | 527925E | Main Zone | 539.50 | 540.00 | 0.50 | 23.90 | |
| Tl16410 | 527925E | MainZone | 547.0 | 550.0 | 3.0 | 21.84 | |
| TL11173 | 527300E | Main Zone | 280.30 | 283.70 | 3.40 | 20.38 | |
| TL11164 | 528325E | Main Zone | 405.00 | 409.00 | 4.00 | 18.93 | |
| TL164-12RE | 527625E | C Zone | 485.30 | 490.50 | 5.20 | 18.60 | Visible Gold |

| **Table 10.2**<br>**Selected Highest Gold Assay Drill Hole Intercepts** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Diamond Drill Hole** | **Section** | **Zone** | **From (m)** | **To (m)** | **Length (m)** | **Au (g/t)** | **Comments** |
| TL17422 | 527550E | C-Zone | 459.00 | 460.00 | 1.00 | 18.20 | Visible Gold |
| TL11125 | 528125E | Main Zone | 376.15 | 377.15 | 1.00 | 18.06 | |
| TL11132 | 528300E | Main Zone | 198.00 | 203.11 | 5.11 | 17.83 | Visible Gold |
| TL12247 | 531175E | NE Fold | 22.50 | 24.00 | 1.50 | 17.52 | |
| TL11204A | 527450E | Main Zone | 223.50 | 229.50 | 6.00 | 17.32 | |
| TL148-12RE | 528125E | C Zone | 201.00 | 202.50 | 1.50 | 17.13 | |
| Tl16410 | 527925E | Main Zone | 546.0 | 550.0 | 4.0 | 16.94 | |
| TL14352A | 527850E | Main Zone | 407.25 | 408.25 | 1.00 | 16.62 | |
| TL15380 | 527425E | Main HW | 269.90 | 272.00 | 2.10 | 15.85 | |
| TL18488A | 528600E | C-Zone | 488.00 | 489.00 | 1.00 | 15.60 | |
| TL16405 | 527750E | B1 Zone | 580.8 | 584.5 | 3.8 | 14.61 | |
| TL16403B | 527775E | Main Zone | 542.00 | 543.00 | 1.00 | 14.30 | Visible Gold |
| TL17459 | 528450E | C-Zone | 122.00 | 123.00 | 1.00 | 13.80 | |
| TL12284 | 527275E | C Zone | 417.90 | 418.90 | 1.00 | 13.46 | |
| TL13311 | 527750E | Main Zone | 52.20 | 53.20 | 1.00 | 13.19 | |
| TL18487 | 527525E | Main Zone | 484.00 | 485.00 | 1.00 | 13.10 | |
| TL18496 | 528425E | Main Zone | 336.00 | 337.00 | 1.00 | 13.00 | |
| TL16410 | 527925E | Main Zone | 544.00 | 551.00 | 7.00 | 10.95 | |
| TL14362 | 527500E | Main Zone | 317.90 | 321.00 | 3.10 | 9.32 | |
| TL13325 | 527750E | Main Zone | 16.50 | 17.50 | 1.00 | 9.14 | |
| TL13328 | 528225E | C Zone | 63.50 | 65.50 | 2.00 | 8.82 | |
| TL16406 | 527875E | B1 Zone | 555.1 | 558.0 | 2.9 | 8.93 | Visible Gold |

***Source:*** *Treasury (2019)*

| **Table 10.3**<br>**Selected Gold Assay Drill Hole Intercepts (1.5 m & 10.0 g/t Au)** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Diamond Drill Hole** | **Section** | **Zone** | **From (m)** | **To (m)** | **Length (m)** | **Au (g/t)** | **Comments** |
| TL0801 | 527950E | Main Zone | 66.00 | 75.00 | 9.00 | 13.00 | |
| TL0844 | 527500E | Main Zone | 142.50 | 144.00 | 1.50 | 14.76 | |
| TL0836 | 527925E | Main Zone | 165.00 | 169.48 | 4.48 | 11.22 | |
| TL0984 | 527300E | Main Zone | 67.50 | 74.00 | 6.50 | 16.97 | |
| including | 527300E | Main Zone | 67.50 | 70.50 | 3.00 | 36.06 | |
| including | 527300E | Main Zone | 67.50 | 69.00 | 1.50 | 58.09 | |
| TL10100 | 528200E | Main Zone | 312.00 | 313.50 | 1.50 | 48.99 | |

| **TABLE 10.3**<br>**SELECTED GOLD ASSAY DRILL HOLE INTERCEPTS (1.5 M & 10.0 G/T AU)** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Diamond Drill Hole** | **Section** | **Zone** | **From (m)** | **To (m)** | **Length (m)** | **Au (g/t)** | **Comments** |
| TL10100 | 528200E | Main Zone | 310.50 | 313.50 | 3.00 | 26.97 | |
| TL1098 | 528200E | Main Zone | 279.00 | 280.50 | 1.50 | 21.04 | |
| TL0981 | 527100E | Main Zone | 60.50 | 62.00 | 1.50 | 12.78 | |
| TL1098 | 528200E | Main Zone | 274.50 | 276.00 | 1.50 | 17.12 | |
| TL11135 | 528375E | Main Zone | 314.90 | 331.50 | 16.60 | 32.67 | |
| including | 528375E | Main Zone | 323.25 | 328.50 | 5.25 | 77.25 | |
| TL11132 | 528300E | Main Zone | 198.00 | 203.11 | 5.11 | 18.0 | Visible Gold |
| TL11204A | 527450E | Main Zone | 223.50 | 229.50 | 6.00 | 17.32 | |
| TL11173 | 527300E | Main Zone | 280.30 | 283.70 | 3.40 | 20.38 | |
| TL11164 | 528325E | Main Zone | 405.00 | 409.00 | 4.00 | 18.93 | |
| TL11147 | 528375E | Main Zone | 252.00 | 253.50 | 1.50 | 12.77 | |
| TL164-12RE | 527625E | C Zone | 485.30 | 490.50 | 5.20 | 18.60 | |
| TL12247 | 531175E | NE Fold | 22.50 | 24.00 | 1.50 | 17.52 | |
| TL12248 | 531250E | NE Fold | 186.0 | 187.0 | 1.50 | 9.57 | |
| TL13316 | 527650E | B Zone | 157.50 | 159.00 | 1.50 | 25.50 | |
| TL13328 | 528225E | C Zone | 63.50 | 65.50 | 2.00 | 8.82 | |
| TL14362 | 527500E | Main Zone | 317.90 | 321.00 | 3.10 | 9.32 | |
| TL14362 | 527500E | HW | 252.50 | 254.00 | 1.50 | 10.82 | |
| TL166-14RE | 527725E | B Zone | 419.00 | 421.00 | 2.00 | 6.67 | |
| TL14355 | 527925E | Main Zone | 282.00 | 284.00 | 2.00 | 9.30 | |
| TL0855W2b | 527600E | C Zone | 565.50 | 567.25 | 1.75 | 9.44 | |
| TL14374 | 527425E | Main Zone | 234.50 | 236.50 | 2.00 | 199.75 | |
| TL15381B | 527550E | B Zone | 293.15 | 296.15 | 3.00 | 24.18 | Visible Gold |
| TL15380 | 527425E | Main HW | 269.90 | 272.00 | 2.10 | 15.85 | |
| TL15389 | 528025E | Main HW | 448.00 | 451.00 | 3.00 | 11.67 | Visible Gold |
| TL16405 | 527750E | B-Zone | 582.85 | 588.00 | 5.15 | 13.30 | Visible Gold |
| including | 527750E | B-Zone | 582.85 | 586.30 | 3.45 | 19.27 | |
| TL16410 | 527925E | Main Zone | 544.00 | 551.00 | 7.00 | 10.95 | |
| including | 527925E | Main Zone | 547.00 | 550.00 | 3.00 | 24.47 | Visible Gold |
| TL16412B | 527325E | Main Zone | 439.00 | 441.00 | 2.00 | 9.75 | |
| TL16413 | 528125E | Main Zone | 663.00 | 668.50 | 5.50 | 11.32 | |
| including | 528125E | Main Zone | 663.00 | 666.70 | 3.70 | 15.67 | |
| TL17445 | 528475E | D-Zone | 68.00 | 70.00 | 2.00 | 16.79 | |
| TL18469 | 528225E | Main Zone | 558.00 | 564.00 | 6.00 | 14.88 | Visible Gold |
| TL18474 | 527400E | Main Zone | 445.00 | 452.00 | 7.00 | 10.35 | |

| **TABLE 10.3**<br>**SELECTED GOLD ASSAY DRILL HOLE INTERCEPTS (1.5 M & 10.0 G/T AU)** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Diamond Drill Hole** | **Section** | **Zone** | **From (m)** | **To (m)** | **Length (m)** | **Au (g/t)** | **Comments** |
| TL18478 | 527725E | Main Zone | 413.00 | 415.00 | 2.00 | 12.30 | |
| TL18489 | 527500E | Main Zone | 542.00 | 545.00 | 3.00 | 48.71 | Visible Gold |
| TL18494 | 528525E | C-Zone | 426.00 | 430.5 | 4.50 | 25.20 | |
| TL18499A | 528275E | Main Zone | 516.00 | 519.00 | 3.00 | 10.17 | Visible Gold |
| Tl16410 | 527925E | Main Zone | 544.0 | 550.0 | 6.0 | 11.55 | |
| | | Main Zone | 546.0 | 550.0 | 4.0 | 16.94 | |
| | | Main Zone | 547.0 | 550.0 | 3.0 | 21.84 | |
| | | Main Zone | 580.8 | 584.5 | 3.8 | 14.61 | |

***Source:*** *Treasury (2019)*

| **TABLE 10.4**<br>**DRILLING CONTRACTORS, GOLIATH GOLD PROJECT** | |
|---|---|
| **Drilling Years** | **Drill Contractor Name** |
| 2008 | G & O Diamond Drilling Contractors Ltd. |
| | North Star Drilling Limited (Thunder Bay) |
| 2009 to 2013, 2018 | Distinctive Drilling Services Inc. (B.C.) |
| 2014 (January to June) | North Star Drilling Limited (Thunder Bay) |
| 2014 to 2018 | George Downing Estate Drilling Ltd. |

***Source:*** *Treasury (2019)*

Each hole is initially surveyed with a GPS hand held instrument in UTM coordinates (NAD83 Zone 15N) and upon completion holes are surveyed using a Trimble survey instrument for higher accuracy. Oriented core drilling was implemented for holes TL0822 to TL0837 using an EzyMark tool provided by Boreinfo Ltd. The objective of this oriented core drilling was to clarify the spatial relationships between structural features and their influence on the mineralization (Roy et. al, 2012).

The drill core was logged, split and stored at the exploration field office and core shack in Dryden under the supervision of the CCIC staff from 2008 to 2010. Once Treasury staff took over the project management, they moved their operations to the former Tree Nursery facility located at the end of Tree Nursery Road which they purchased in 2011 (building and surface rights) covering an area of 136 hectares. This facility includes a large office building with a core logging and core cutting room, additional large building structures which are used for storing pulps, rejects and drill core and there is also a core farm on-site. A gate has been set up on the road at the pond restricting access to the site and the main office building is monitored by a security alarm system.

As the core boxes arrive at the core shack from the drill, the meterage in each box is recorded and verified by a technician and hole number and meterage interval label tags are made using a dymo gun and stapled to the end of each box. Rock-quality designation ("RQD") is also determined for each hole. Overall, core recovery has been excellent. The geologist then logs and marks out samples for assaying. Sample lengths are adjusted as necessary to reflect geological and/or mineralization contacts. Sample assay tags are placed in the box by the geologist. In general, samples range in width from 0.2 to 1.5 m with the majority of sampling being 1.0 m or 1.5 m in length. Longer sample lengths have been taken of strongly sheared core sections with poor core recoveries. All drill core boxes are photographed after they have been logged and sampled.

Samples are spilt using a core saw to retain half of the sampled sections for future verification and metallurgical testing (if required). Sample tags are placed in the bags and the sample number is written on the bag using a black permanent marker pen. Samples are then sealed in plastic sample bags using zip-straps, placed in sealed and numbered rice bags and shipped by bus or courier to the Actlabs in Dryden, Ontario. This laboratory is an ISO 17025/IEC guideline accredited laboratory. Core boxes are placed in long-term storage on-site at the core farm.

Samples are analyzed for gold (Fire Assay), silver, zinc, lead and trace element geochemistry (ICP). Treasury switched over from 30 gm to 50 gm fire assays in 2015. Samples containing more than 3.0 g/t Au and less than 5.0 g/t Au (6.0 g/t Au in recent years) are analyzed using the gravimetric method. Samples exceeding the upper threshold value of 5.0 g/t Au are analyzed with the pulp metallic method. This procedure attempts to overcome the "nugget effect" of gold by increasing the sub-sample size to 1,000 grams and physically collecting the free gold within the system using the 150 mesh sieve (Magyarosi and Peshkepia, 2011). Digital assay files provided by the laboratories are merged directly into the Datamine digital database using DHlogger and DHexplorer software to avoid errors in transferring data.

At certain times, the laboratory was requested to determine the bulk density for selected core samples (i.e. 92 requests in 2008). Treasury also did some SG work on drill core in-house. For this testing, an oven was not used but the core was "sun-dried" for the SG determination.

Upon arriving at the laboratory, samples were dried, jaw crushed to approximately 8 mesh and a 250 to 500 gm sub-sample taken. The sub-sample was then pulverized to 90% pass 150 mesh and then matted to ensure homogeneity. Silica sand was used to clean out pulverizing equipment. The homogeneous sample was then sent to the laboratory or the wet chemistry laboratory depending on the analysis required.

Each of the various drilling campaigns completed by the Company over the last ten years has been summarized below.

## 10.1 2008 DIAMOND DRILLING PROGRAM

Fifty-five (55) NQ2 diamond drill holes were drilled on 21 drill sections for a total of 13,121 m from February 15, 2008 to September 22, 2008 (Table 10.1). The holes were numbered TL0801 to TL0855 and the diamond core drilling was NQ2 size only (50.6 millimetres in diameter). This program targeted primarily the Main Zone over a strike length of 1,700 m within the resource-defined area to a maximum vertical depth of around 695 m (hole TL0835). The drill contracts were awarded to G & O Diamond Drilling Contractors Ltd. who drilled the first 37 holes and North Star Drilling Limited completed the remainder. The objective of this program was three-fold (Ilieva, 2009):

- To both confirm and add potential gold ounces to the historical "Inferred" Mineral Resource (non-compliant with NI 43-101) of the Thunder Lake Deposit (now referred as the "Goliath Gold Deposit");

- To include not only gold but also silver, zinc and lead assays to eventually prepare a new resource estimate of the Deposit; and

- To target deeper (>400 m) down dip extensions of known gold mineralized shoots.

This new drilling data was integrated into the Mineral Resource Estimate prepared by A.C.A. Howe International Limited PEA in December 2008 (Roy, 2008).

Holes were drilled at azimuths of 360° or 180° with the inclination of each hole set at -45° or -60°. The first 10 holes (TL0801 to TL0810) were twinned holes in close proximity to former Teck drill holes along the Deposit to confirm historical gold assays as well as sample areas downhole that were not previously sampled by Teck. Drill holes TL0801 to TL0837 were completely sampled from top to bottom. Once it was confirmed by CCIC that the gold mineralization was associated with the MSS unit and visible occurrences of sphalerite and galena, sampling was focused mostly on these targets and the Main Zone. Magnetic susceptibility readings were collected from 7,430.1 m of drill core using a hand held KT-9 Kappameter instrument.

All of the diamond drill holes intersected and tested the Main Zone which consisted of the Hanging Wall (M1) and Footwall (M2) sub-zones. Intersection core lengths of this zone ranged from 5.0 to 30.4 m (hole TL0836). Mineralized intervals were often narrow (up to 0.5 m) zones enriched with 3-5% visible sulphide, locally up to 15% (Ilieva, 2009). The main sulphide mineral phases identified were pyrite, sphalerite, galena, pyrrhotite, minor chalcopyrite, arsenopyrite and dark grey needles of stibnite in decreasing order of abundance. These sulphides occur as disseminations, blebs and stringer as well as cubic in the case of galena.

Visible occurrences of gold and electrum (gold-silver) are rare and are observed mostly in the MSS units and in leucocratic sericite-rich bands. For example, very rare specks of visible gold were found in holes TL0815 and TL0817 and downhole depths of 50.8 m and 129.2 m, respectively.

All of the holes intersected gold-bearing sulphide mineralization many returning significant assay results for gold silver, zinc and lead. Highlights of this program included the following drill hole intersections:

Hole TL0801 intersected 13.0 g/t Au and 17.75 g/t Ag over a core length of 9.0 m from 66.0 to 75.0 m in the Main Zone. This interval also contained silver values ranging from 5.0 to 341.0 g/t Ag;

Hole TL0815 encountered a zone containing 7% disseminated pyrite and 2-3% sphalerite, galena and chalcopyrite that assayed 9.47 g/t Au and 1.93 g/t Ag over a sample length of 1.5 m (50.0 to 51.5 m) including 68.49 g/t Au and 6.59 g/t Ag over a length of 0.20 m from 50.8 to 51.0 m (Main Zone); and

Hole TL0824 returned 5.41 g/t Au and 18.69 g/t Ag over a core length of 8.0 m (30.0 to 38.0 m) including 47.96 g/t Au and 204.55 g/t Ag over 0.55 m (33.90 to 34.45 m) in the Main Zone with mineralization consisting of 3% blebs and stringers of sphalerite, galena and chalcopyrite.

All three holes were collared in base metal mineralized muscovite-sericite schist (MSS) rocks. Other notable intersections include:

- Hole TL0806 – 6.38 g/t Au and 286.0 g/t Ag over a sample length of 0.45 m (113.0 to 113.45 m);

- Hole TL0814 – 6.74 g/t Au and 5.42 g/t Ag over 6.0 m (71.0 to 77.0 m); and

- Hole TL0836 – 7.13 g/t Au and 34.5 g/t Ag over 12.7 m (164.3 to 177.0 m) including 36.99 g/t Au and 72.2 g/t Ag over 0.85 m (165.0 to 165.85 m) and 30.51 g/t Au 364.41 g/t Ag over 0.33 m (171.15 to 171.48 m).

Gold concentrations were found to be independent of pyrite content. However, an increase in the pyrite (especially coarser grained pyrite) and sphalerite content corresponded to increases in both gold and silver grades. Grade wise, it was determined that an increase in chalcopyrite and galena didn't seem to affect the overall gold content or grade.

CCIC concluded that "low grade gold-silver mineralization is pervasive throughout the Main Zone but the high grade gold (>3.0 g/t Au) is concentrated in steeply west-plunging "shoots" with relatively short strike-lengths up to 50 m, good down-plunge continuity and remained open at depth." Very rare flakes aquamarine green mica (fuchsite- Cr muscovite) were found to occur in the strongly altered sericite alteration in association with high grade gold.

## 10.2 2009 AND 2010 DIAMOND DRILLING PROGRAM

Four phases of drilling were completed from October 2009 to the end of 2010 (Table 10.1). The purpose of this drilling program was to (1) follow-up on the results of the 2008 drilling program with "infill" drilling to better define the resource in and around the Main Zone and expand it at depth and along strike and (2) to conduct exploration drilling to expand the known resource along strike to the west and to the east and at depth (Magyarosi and Peshkepia, 2011).

Sixty-three (63) NQ holes were drilled on 28 drill sections for a total of 16,672 m testing the gold potential of the main deposit over a strike length of around 2.0 km. The drill contract was awarded to Distinctive Drilling Services Inc. All holes were drilled approximately perpendicular to the mineralization with azimuths of 360$^o$ and 320$^o$ and dips ranging between -45$^o$ and -87$^o$.

Drilling was conducted in four phases over the fourteen month period. Phase I was carried out in the fall of 2009 with 31 holes drilled for a total of 4,590 m (TL0956 to TL0986) with most of this work being concentrated in the western portion of the deposit. The Phase 2 was completed in the spring of 2010 and includes 8 holes numbered TL1087 to TL1094 for a total of 5,111 m. Phase 3 was initiated in the summer of 2010 where 18 holes were drilled for a total of 5,153 m (TL1095 to TL10112). The final phase of drilling was carried out in December, 2010 with the completion of 6 holes totalling 1,818 m numbered TL10113 to TL10118. The majority of the 2010 drill program tested primarily the eastern flank of the Main Zone as well as its down dip gold potential.

The drilling program was successful by extending the known mineralization and alteration corridor an additional 650 m to the west, 200 m to the east and tested the gold potential of the Main Zone to a vertical depth of 720 m.

Some of most notable best drill hole intersections in the Main Zone include:

- Hole TL0983 intersected 6.37 g/t Au and 4.5 g/t Ag over a core length of 6.0 m (16.5 to 22.5 m) near surface;

- Hole TL1092 intersected high grade gold mineralization returning 10.06 g/t Au and 21.0 g/t Ag over a sample length of 1.5 m (750.6 to 752.1 m) extending the Main Zone to a vertical depth of 720 m;

- Holes TL10117 and TL10118 intersected 5.51 g/t Au and 84.0 g/t Ag over 2.0 m (349.69 to 351.69 m) and 5.35 g/t Au over 2.48 m (86.00 to 88.48 m), respectively, extending the Main Zone 200 m further to the east; and

- Hole TL1088 intersected the widest mineralized zone returning 1.45 g/t Au and 3.23 g/t Ag over a sample length of 21.0 m (462.0 to 483.0 m).

High grade silver values were obtained from drill holes at the eastern portion of the Main Zone. Holes TL1097, TL1098 and TL10102 returned 12.96 g/t Au over 22.5 m (216.0 to 238.5 m), 259.15 g/t Ag over 3.0 m (279.0 to 282.0 m) and 11.05 g/t Ag over 25.5 m (343.5 to 369.0 m), respectively (Magyarosi and Peshkepia, 2011). The highest zinc assay was obtained from hole TL0965 that assayed 2.78% Zn over a sample length of 0.20 m (102.0 to 102.2 m) intersected at the westernmost extent of the Main Zone.

## 10.3 2011 AND 2012 DIAMOND DRILLING PROGRAM

Treasury completed three diamond drilling programs from January 17, 2011 to December 13, 2012 with the completion of 192 NQ2 drill holes totalling 70,775 m (Table 10.1). This drilling included 15 re-entry holes to extend historical Teck drill holes (Krocker and Wolfe, 2013). The objective of this drilling was three-fold:

- To confirm and increase "Indicated" gold resources at Goliath;

- To locate additional gold Mineral Rresources at depths no more than 400 m from surface in and around the Main Zone focusing on the Western Shoot and on the eastern flank of the Main Zone. Several former Teck holes were re-entered in 2012 to test the gold potential of the C Zone; and

- To test new exploration targets that reside on strike with the Goliath Gold Deposit to the northeast following the known alteration corridor and other potential targets elsewhere on the Property (reconnaissance exploration drilling).

Drilling was contracted to Distinctive Drilling Services Inc. The 2011 holes were drilled approximately perpendicular to the mineralized zone with azimuths ranging from 312$^o$ to 005$^o$ and dips ranging from -50$^o$ to -87$^o$. Most of the 2011 drilling was concentrated in the eastern portion of the main resource deposit. The new drilling data collected from the main deposit was integrated into the new Mineral Resource Estimate prepared by A.C.A. Howe International Limited PEA in 2010 and updated resource estimate in 2011 (Roy and Trinder, 2011; Roy, 2010).

According to Krocker and Wolfe (2013), compilation work indicated that there was approximately 11.5 km of potential strike length of the alteration corridor that hosts the Goliath Deposit heading east throughout the remainder of the Property to the far northeast corner of the property claim block. The folded stratigraphy (nose area) is clearly illustrated by the Fugro airborne magnetic survey data.

The 2012 drilling program including further drilling of the main resource deposit and exploration the gold potential of this 11.5 km proposed alteration corridor. A reconnaissance exploration drilling program was initiated to:

- Drill test the northeast strike extension of the main deposit in areas where Teck had previously intersected some high gold assay values (Parcel 0138 and legacy claims 1119559 and 1119560);

- Drill test the large fold nose centered around claim 1144580 where $F_2$ folds were thought to possibly concentrate gold mineralization (holes TL12244 to TL12254); and

- Explore for similar Goliath Deposit geology utilizing a north-northwest trending fence of four holes (covering legacy claims 3017880 and 1144553) to test 1,200 m of prospective stratigraphy to a vertical depth of 300 m where alteration and gold mineralization was anticipated to occur (holes TL12266, TL12262, TL12271 and TL12277).

Hole azimuths for the 2012 drilling ranged from 320$^o$ to 360$^o$ with hole dips ranging between -45$^o$ and -70$^o$.

### 10.3.1 2011 Drilling Results

The best drill hole intersections of the 2011 drilling was obtained from hole TL11135 that returned 32.67 g/t Au and 30.37 g/t Ag over a core length of 16.6 m (314.9 to 330.5 m) including 78.66 g/t Au and 36.14 g/t Ag over 5.25 m (323.25 to 328.5 m) in the eastern portion of the Main

Zone. Hole TL11132 intersected 16.37 g/t Au and 98.02 g/t Ag over a sample length of 5.61 m (199.00 to 203.11) and visible gold was recorded in this interval.

In the western flank of the deposit, highlighted intersections include 17.83 g/t Au and 8.33 g/t Ag over 6.0 m in hole TL11204A (223.5 to 229.5 m) and 20.38 g/t Au and 10.72 g/t Ag over 3.4 m in hole TL11173 (280.3 to 283.7 m). Drill hole TL11161 returned the widest mineralized intersection of 3.49 g/t Au and 10.11 g/t Ag over 17.72 m (369.21 to 386.93 m).

During September-November, 2011, ACA Howe International Limited prepared a new Mineral Resource Estimate for the Goliath Deposit using the historical and Treasury drill holes completed up to hole TL11228 (Roy and Trinder, 2011). That Mineral Resource Estimate was used to prepare the Preliminary Economic Analyses of the gold deposit in 2012 (Roy et. al, 2012).

### 10.3.2 2012 Drilling Results

Highlights of the 2012 drilling include the following:

- Hole TL12245 intercepted 2.27 g/t Au and 2.5 g/t Ag over a sample length of 3.0 m (51.0 to 54.0 m);

- Hole TL12235 drilled to test the westernmost strike extension of the main resource area mineralization returned 1.05 g/t Au and 1.25 g/t Ag over a sample length of 3.32 m (199.18 to 202.5 m) within the C Zone;

- Re-entry hole TL148-12RE assayed 17.13 g/t Au and 9.0 g/t Ag over 1.5 m from 201.0 to 202.5 m;

- Hole TL164-12RE intersected 5.87 g/t Au and 9.26 g/t Ag over a sample length of 17.13 m (485.31 to 502.44 m) including 18.64 g/t Au and 26.94 g/t Ag over 5.2 m (485.31 to 490.50 m) with visible gold; and

- Hole TL12293 returned 2.47 g/t Au and 2.70 g/t Ag over a core length of 10.65 m (33.25 to 43.90 m) including 6.65 g/t Au and 7.0 g/t Ag over 2.25 m (33.25 to 35.50 m) near surface in the C Zone.

The most northwest exploration fence hole TL12266 on legacy claim 1144553 returned 2.62 g/t Au and 2.48 g/t Ag over a core length of 2.1 m (336.16 to 338.25 m), including 3.67 g/t Au over 1.0 m (337.25 to 338.25 m), hosted in a MSS unit surrounded by BMS rocks in association with elevated pyrite and trace chalcopyrite. The other three holes to the south did not return any significant assays. These results clearly demonstrate that the alteration corridor hosting gold mineralization is still present in the eastern portion of the Goliath Property.

Two exploration drill holes (TL12247 and TL12255) intersected several massive to semi-massive sulphides, mostly consisting of pyrrhotite and pyrite bands up to 30 cm wide hosted in mafic volcanoclastic amphibolite rocks with minor meta-sedimentary rocks. These holes were collared on claim 1119545 in the nose of the regional fold structure. Hole TL12247 intersected several 20 to 30 cm wide semi-massive sulphide intervals containing predominantly pyrrhotite with lesser amounts of pyrite from 291.0 to 343.0 m. The second hole intersected seams and stringers of massive sulphides hosted in biotite schist and amphibolite rocks within seams 1 to 10 cm thick. The sulphide enriched units did not contain any significant base metal mineralization. However, hole TL12247 returned 17.52 g/t Au and 2.0 g/t Ag over a sample length of 1.5 m (22.5 to 24.0 m) in a metasedimentary rock and 4.86 g/t Au and 2.0 g/t Ag over 1.0 m (103.0 to 104.0 m) in a biotite mica schist.

## 10.4 2013 DIAMOND DRILLING PROGRAM

From January 7, 2013 to February 26, 2013, Treasury completed 48 NQ2 diamond drill holes totalling 7,773 m. This program consisted of 41 holes numbered TL13296 to TL13336 and seven (7) re-entry holes on former Teck drill holes (Table 10.1).

The primary objective of the drilling program was to further delineate the C Zone within the proposed open pit to convert “Inferred” gold resources to the “Indicated” resource category and to add ounces to the open pit. Drilling was focused along the main deposit over a strike length of 1.5 km. Additional exploration work focused on the C Zone high-grade gold shoot discovered in the central part of the Goliath Deposit intersected approximately 50 m after the Main Zone mineralization. A re-interpretation of the geology concluded that the re-entry holes were required in order to extend the Teck holes past the Main Zone to test the gold potential of the C Zone that was largely unknown during the Teck drilling programs in the 1990’s. The C Zone mineralization within MSS rocks usually starts downhole around 30 to 60 m past the Main Zone.

This drill contract was awarded to Distinctive Drilling Services Inc. Holes were drilled north with azimuths ranging from 355$^o$ to 045$^o$ with the exception of hole TL13315 that was drilled south at 190$^o$. Collar dips ranged from -45$^o$ to -80$^o$. Significant C Zone intersections reported include the following drill holes:

- TL13300: 3.24 g/t Au and 11.73 g/t Ag over 13.0 m (79.5 to 92.5 m);
- TL13305: 1.46 g/t Au and 1.76 g/t Ag over 11.5 m (34.40 to 45.90 m) including 13.74 g/t Au and 5.0 g/t Ag over 1.0 m (44.9 to 45.9 m);
- TL13306: 1.64 g/t Au and 3.29 g/t Ag over 18.6 m (63.0 to 81.6 m) including 8.13 g/t Au and 14.33 g/t Ag over 3.0 m (77.6 to 80.60 m);
- TL13315: 1.64 g/t Au and 2.53 g/t Ag over 8.5 m (260.0 to 268.5 m) and 1.2 g/t Au and 2.0 g/t Ag over 10.0 m (288.0 to 298.0 m);
- TL13324: 1.86 g/t Au and 6.7 g/t Ag over 15.0 m (140.5 to 155.5 m) including 3.07 g/t Au and 11.23 g/t Ag over 6.5 m (149.0 to 155.5 m);
- TL13334: 0.94 g/t Au and 4.84 g/t Ag over 13.0 m (70.5 to 83.5 m); and
- TL223-13RE: 1.28 g/t Au and 2.47 g/t Ag over 14.3 m from 114.70 to 129.0 m.

Drilling of the proposed open pit mine shell was successful in providing significant gold intersections of the central shoot of the C Zone and in adding ounces to the resource inventory and reducing overall waste to potential ore stripping ratios, especially in the eastern portion of the deposit. The hole extensions also lead to the discovery of several new mineralized zones, including the B Zone intercepts hosted in the BMS unit located between the Main Zone and C Zone (TL13296: 2.7 g/t Au and 53.9 g/t Ag over 2.4 m from 27.6 to 30.0 m; TL13316: 25.5 g/t Au and 10.6 g/t Ag over 1.5 m from 157.5 to 159.0; TL13324: 1.5 g/t Au and 3.9 g/t Ag over 7.0 m from 62.0 to 69.0 m).

Examples of some of the best Main Zone intercepts reported include:

- TL13311 returned 13.19 g/t Au over 1.0 m (52.25 to 53.25 m);
- TL13317: 2.36 g/t Au and 15.52 g/t Ag over 24.0 m (153.0 to 177.0 m) including 6.0 g/t Au and 10.5 g/t Ag over 4.0 m (154.0 to 158.0 m);
- TL13320: A high grade assay of 216.42 g/t Au over 2.0 m (16.7 to 18.7 m) including 430 g/t Au over 1.0 m (16.7 to 17.7 m) with multiple flecks of visible gold occurring in the MMS unit containing pyrite, sphalerite and galena;
- TL13331: 1.55 g/t Au and 11.35 g/t Ag over 10.0 m (26.0 to 36.0 m) including 3.64 g/t Au and 25.0 g/t Ag over 3.0 m (28.0 to 31.0 m); and
- TL13332: 3.51 g/t Au and 7.73 g/t Ag over 7.5 m from 36.0 to 43.5 m.

Holes TL13332 and TL13331 were drilled near surface within sparsely drilled areas of a proposed open pit shell and hole TL13317 located outside the “Indicated” gold resource area at that time.

At the completion of the program, Treasury performed a gap analysis to determine what further diamond drilling would be required for future resource conversion from “Inferred” to the “Indicated” classification within the proposed open pit design focusing on the Main and C Zones to propose an expanded 2014 infill diamond drilling program.

## 10.5 PHASE I 2014 DIAMOND DRILLING PROGRAM

In 2014, Treasury completed the first Phase diamond drilling program from January 23, 2014 to June 23, 2014. A total of 42 NQ2 holes were drilled for a total of 10,294 m. This drilling consisted of 35 holes numbered TL14337 to TL14371, five (5) re-entry holes of both Teck and Treasury historical holes and three (3) wedge holes turned off of Treasury hole TL0855 previously drilled in 2008 (Table 10.1). Drill hole TL14363 was abandoned at a depth of 50 m. None of the core in that hole was mineralized.

This program consisted of infill and expansion drilling of the Main and C Zones, further delineation of the new high-grade zone discovered in the central portion of the C Zone and exploration drill testing of targets on its Norman property acquisition, located east of the deposit, which Treasury purchased the surface rights to in 2014 (holes TL14337 and TL14338). The

Norman property is contiguous to and located along strike and down dip of the eastern end of the mineral resource at Goliath. Prior to that purchase, Treasury was not allowed surface easement on that property. The new acquisition allowed for the first time access for drilling on an additional 1.6 km of potential deposit strike length given that the resources defined at that time were interpreted to project towards the northeast portion of this new ground.

This program focused considerably on both exploring and developing the C Zone target both near surface and at depth to add to potential open pit and underground resources. The purpose of the re-entry holes was to extend drill holes to evaluate the C Zone where these original holes were initially terminated after the Main Zone. Further delineation efforts of the Main Zone were also implemented to tighten grades and extend limits of known mineralization within the westward plunging shoots, which included additional infill drilling.

The drill contract was awarded to North Star Drilling Limited. The majority of the holes along the main deposit were drilled north with azimuths ranging from 320$^{o}$ to 005$^{o}$ with the exception of hole TL14356 that was drilled southeast at 145 $^{o}$ in the central portion of the deposit. Collar dips ranged from -49$^{o}$ to -77$^{o}$.

Highlights of the drilling program include the following best intersections of the C Zone:

- TL14343: 4.32 g/t Au and 32.50 g/t Ag over 3.0 m (16.3 to 19.3 m) in the western portion of the C Zone;

- TL14346A: 4.69 g/t Au and 6.67 g/t Ag over 6.4 m (317.0 to 323.4 m) including 27.23 g/t Au and 29.0 g/t Ag over 1.0 m (319.4 to 320.4 m) in the western area of the C Zone;

- TL14349: 2.2 g/t Au and 3.48 g/t Ag over 9.3 m (112.7 to 122.0 m) approximately 30 m below hole TL14350;

- TL14350: 5.39 g/t Au and 14.59 g/t Ag over 6.7 m (79.33 to 86.00 m) including 28.41 g/t Au and 93.0 g/t Ag over 1.0 m (81.33 to 82.33 m) was intersected in the C Zone at a vertical depth of 60 m from surface;

- TL14356: 2.69 g/t Au and 8.87 g/t Ag over 13.5 m (111.5 to 125.0 m) in the C Zone that was drilled down dip on the mineralization;

- Wedge hole TL0855W2b: a step-out exploration hole that that intersected 3.64 g/t Au and 2.5 g/t Ag over 5.75 m (561.50 to 567.25 m) in the C2 sub-zone with visible gold located 36 m west of previous C Zone hole TL164-12RE (18.64 g/t Au over 5.2 m reported above); and

- TL161-14RE: 4.94 g/t Au and 44.0 g/t Ag over a sample length of 4.0 m (485.0 to 489.0 m).

Drill hole TL14341 returned 57.95 g/t Au and 344 g/t Ag over a sample length of 0.5 m (294.4 to 294.9 m) in the Main Zone followed by an intersection of 6.28 g/t and 60.33 g/t Ag over 3.0 m (431.0 to 434.0 m) in the C Zone (C2) extending mineralization further west.

Re-entry hole TL166-14RE encountered the B Zone returning 6.67 g/t Au and 2.8 g/t Ag over a sample length of 2.0 m (419.0 to 421.0 m).

Significant Main Zone drill intersections include the following:

- TL14345: 5.19 g/t Au and 3.14 g/t Ag over 4.35 m (349.00 to 353.35 m);
- TL14353 which intersected 4.05 g/t Au and 4.64 g/t Ag over 12.25 m (234.00 to 246.25 m) including 6.51 g/t Au and 4.34 g/t Ag over 6.0 m (234.0 to 240.0 m) in the Hanging Wall (M1) of the Main Zone, followed by an intersection of 2.69 g/t Au and 8.53 g/t Ag over 3.25 m (243.00 to 246.25 m) in the footwall (M2). This hole is located in the Main Zone central shoot occurring approximately 200 m from surface;
- TL14356: 6.57 g/t Au and 1.81 g/t Ag over 4.0 m (316.0 to 320.0 m) reported to have been drilled down dip on the Main Zone mineralization;
- TL14362 returned 9.32 g/t Au and 8.48 g/t Ag over a core length of 3.1 m (317.90 to 321.00 m) within the Western Shoot of the Main Zone. Several specks of visible gold were observed at this sample location; and
- TL14367 was drilled approximately 400 m west of the main resource intersecting 2.45 g/t Au and 0.50 g/t Ag over a sample length of 12.80 m (67.15 to 79.95 m) in the Main Zone at a shallow depth vertically of 52 m.

At the conclusion of drilling program, Treasury determined that the C Zone remained a "high priority" exploration target that remained open to the west and down plunge at depth.

Two exploration holes were drilled on the Norman ground collared on land Parcel 0141 with only one gold assay intersection. Hole TL14337 was targeting an EM anomaly identified from the Fugro airborne geophysical survey as well as testing the potential to intercept down dip MSS mineralization intersected by nearby Teck hole TL272 that returned 9.47 g/t Au over a sample length of 1.1 m. However, this hole did return an isolated assay of 2.79 g/t Au over a sample length of 1.0 m (444.5 to 445.5 m) hosted in a BMS unit with patches of moderate to strong sericite alteration in associated with elevated concentrations of copper (98 ppm Cu) and zinc (761 ppm Zn). It is possible that this hole just intersected the fringe of alteration located just south of the main alteration corridor that hosts the Goliath mineralization. A strong magnetic iron formation containing both magnetite and pyrrhotite were intersected from 118.0 to 120.0 m and the core was determined to be very conductive using a multi-meter resistivity instrument which was most likely the source of the EM target.

A second drill hole TL14338 drilled further to the south was found to be meta-sedimentary rocks with a small iron formation unit intersected from 74.0 to 89.0 m containing patches of blebby pyrrhotite and pyrite. This hole did not return any significant gold assays.

## 10.6 PHASE II 2014 AND 2015 DIAMOND DRILLING PROGRAM

The Phase II drilling program on the Goliath Property was completed between November 27, 2014 and March 17, 2015. A total of 31 NQ2 holes were drilled for a total of 8,769 m. Twenty-nine new holes were drilled numbered TL14372 to TL15402 and two re-entry holes (TL14373-15RE and TL14377-15RE) were extended to evaluate the gold potential of the C Zone (Table 10.1).

This drilling program was initiated for the purpose of resource category conversion and expanding known gold mineralization by drill testing high-grade gold intercepts down plunge and along the perimeter of the gold-bearing shoots outside of the main shoots to complete the current mineral resource update. The program focused on further developing and expanding the resource potential of the C Zone and Main Zone mineralization and Western shoots at depth in areas that had not been previously drill tested. A short two-hole exploration drilling program was also completed to test one of the best gold MMI anomalies defined by the 2014 soil sampling program.

The drill contract was awarded to Downing Drilling. In February, 2015, a second drill was added accelerate the drilling program. This program focused predominantly along a 1.6 km strike length of the main resource deposit with holes drilled north at azimuths ranging from 325$^o$ to 002$^o$. Collar dips ranged from -45$^o$ to -79$^o$.

Significant Main Zone Intersections consisted of the following:

- TL14372 returned an interval of 3.86 g/t Au and 1.67 g/t Ag over 4.5 m (267.0 to 271.5 m) through the western Main Zone shoot;

- TL14374 intersected the western Main Zone shoot containing an interval with visible gold that assayed 199.75 g/t Au and 13.25 g/t Ag over 2.0 m (234.5 to 236.5 m). This hole was drilled around 41.0 m down plunge of the same zone tested by hole TL11204A that returned 17.83 g/t Au over a sample length of 6.0 m (223.5 to 229.5 m);

- TL14375 returned 4.87 g/t Au over 3.5 m in a Hanging Wall zone from 133.0 to 136.5 m and then intersected 3.81 g/t Au and 8.38 g/t Ag over 8.0 m (185.0 to 193.0 m) through the Main Zone (western shoot); and

- TL15396 intersected a well mineralized and quartz veined unit that returned 7.93 g/t Au and 43.57 g/t Ag over a sample length of 2.74 m (45.00 to 47.74 m) at a depth of just 36.0 m vertically from surface in the Main Central Zone. This result is within the proposed reserve pit and came from an area considered to contain low gold concentration.

In an area located 400 meters west of the main proposed pit, Treasury completed seven infill holes to discover and potentially delineate additional shallow open pit-able resources. The program was following up on TL 14367 which intersected 12.8 m at 2.71 g/t (68.0 to 75.0 m) in the Main Zone at a vertical depth of 52 m identified by the 2014 Phase 1 program. Hole TL15400 returned 6.68 g/t Au and 1.97 g/t Ag over a sample length of 3.6 m (23.4 to 27.0 m) in a Hanging Wall (HW) zone at a depth of 21.0 m from surface. Main Zone intersections included holes TL15395 that returned 1.43 g/t Au and 1.44 g/t Ag over 8.0 m (107.0 to 115.0 m), and hole TL15397 that assayed 2.44 g/t Au and 0.5 g/t Ag over 4.6 m (M1: 109.4 to 114.0 m) followed by 6.20 g/t Au and 0.5 g/t Ag over 2.0 m (M2: 120.0 to 122.0 m). The latter hole also returned the best C Zone (C2) intersection of 2.07 g/t Au and 0.5 g/t Ag over a sample length of 2.0 m (189.0 to 191.0 m).

The B Zone has been previously intersected by other historical holes throughout the deposit that have also returned significant gold assays; holes TL14373-15RE (6.32 g/t Au over a core length of 5.0 m), TL15381B (24.18 g/t Au over 3.0 m), TL11220 (8.78 g/t Au over 4.0) and TL0822 (10.19 g/t Au and 52.22 g/t Ag over 0.25 m). This program, including the 2015 infill core sampling program, further emphasized the importance of the B Zone (and potential B2 zone) located in the BMS rocks situated between the Main Zone and C Zone and their potential to add additional gold ounces to the Goliath Gold Deposit. In the 2015 drilling, hole TL15-390B intersected 286.23 g/t Au and 26.0 g/t Ag over a core length of 1.0 m (460.0 to 461.0 m) in a B zone hosted in BMS rocks with no significant base metal mineralization but containing coarse visible gold on the selvage edge of a well mineralized grey glassy quartz vein.

Two exploration holes numbered TL15401 and TL15402 were drilled just northeast of Tree Nursery Road on claim 1145301 to test the gold potential of a “high priority” Mobile Metal Ion ("MMI") Anomaly P in iron formation. This was a moderately strong gold (RR=60) and copper anomaly that occurred in association with weak silver and arsenic RR’s. Treasury interpreted that F2 structures at the main resource deposit could be possibly extrapolated northeast to potentially intersect this target anomaly.

Both holes were drilled as a fence across the target anomaly and they intersected a series of iron formational units separated by strong to moderately garnetiferous metasedimentary rocks (MSED) that were locally weakly magnetic. Small sections of chert-magnetite banded iron formation (BIF) were also recorded. The iron formation was periodically intercalated with chloritized amphibolite rocks, which could represent mafic volcanoclastic rocks or inter-pyroclastic flows.

A bleached silicified and possibly weakly sericite altered zone was intersected by both drill holes at the point where the gold MMI high was centred. All cores were split for assay. None of the samples returned any significant gold or base metal assays.

## 10.7 2016 DIAMOND DRILLING PROGRAM

A single phase diamond drill program on the Goliath Property was completed from August 24, 2016 to January 15, 2017. A total of 28 NQ2 holes were drilled for a total of 12,154 m. eighteen new holes were drilled numbered TL16403 to TL16420, including one wedged hole (TL16415W1) in order to recover 2 m of lost core in the main zone of mineralization. In this program were also ten drill holes that needed to be abandoned due to bad ground conditions causing the drill to deviate from the planned pierce points.

The objective of this drilling program was to:

- Convert and increase "Indicated" gold resources at Goliath through means of infill drilling;

- Locate and identify additional gold resources at depth with focus on the down plunge potential of the eastern, western and central high grade chutes of the Main Zone as well as the C Zone chute;

This drilling program consisted of infill and expansion drilling of the Main and C Zone, further delineation of the high-grade zone situated in the eastern, central and western chutes of the Main Zone, further delineation of the new high-grade zone discovered in the central portion of the C Zone, additional drill testing high-grade gold intercepts down plunge to depth's up to 723.0 m (TL16404D) to potentially add to underground resources.

Drilling was contracted to **George Downing Estate Drilling Ltd.** The 2016 holes were drilled approximately perpendicular to the mineralized zone with azimuths ranging from 345° to 357° and dips ranging from -67° to -83°. Most of the drilling was concentrated along the peripherals of known high grade chutes of the Main Zone and the C Zone to further delineate the chutes and convert Mineral Resources from Inferred to Indicated. The remainder of the drilling focused on testing the down dip potential of the high grade chutes to add additional ounces of gold to the current resource. The average core recoveries were excellent and the RQD was good.

Drilling of the proposed underground Mineral Resource was successful in providing significant gold intersections of the central chute of the Main Zone and the C Zone. In addition to the Main Zone there was also significant gold intercepts occurring in the Hanging Wall and B Zones. Upon completion of the program, Treasury performed a gap analysis to further determine what diamond drilling would be required for future resource conversion from "Inferred" to the "Indicated" classification and assist in further delineating the high grade chutes of the Main zone and C Zone.

Out of a total of 5,078 individual samples the highest gold assay obtained from the 2016 drilling program was from drill hole TL16405 that returned 63.1 g/t Au over a sample length of 1.0 m. Additional significant intervals from the 2016 drill program include:

- TL16403B intersected 5.44 g/t Au and 5.90 g/t Ag over 1.0 m (529.0 to 530.0 m) followed by 3.94 g/t Au and 4.28 g/t Ag over 4.0 m (541.0 to 545.0 m) as well as 14.3 g/t Au and 6.60 g/t Ag over a 1.0 m sample in the Main Zone that contained visible gold. This hole is located in the main zone central chute approximately 475 m from surface;

- TL16405 encountered several specks of visible gold in the B Zone returning 13.3 g/t Au and 6.68 g/t Ag over a sample length of 5.15 m (582.85 to 588.0 m) including 19.27 g/t Au and 9.51 g/t Ag over 3.45 m (582.85 to 586.3 m);

- TL16410 returned 10.95 g/t Au and 12.44 g/t Ag over a sample length of 7.0 m (544.0 to 551.0 m) including 24.47 g/t Au and 22.7 g/t Ag over 3.0 m (547.0 to 550.0 m). Visible gold was observed within this interval which was centrally located in the M2 portion of the Main Zone;

- TL16413 returned 6.54 g/t Au and 7.04 g/t Ag over a sample length of 11.50 m (657.0 to 668.5 m) including 11.32 g/t Au and 9.38 g/t Ag over 5.5 m (663.0 to 668.5 m) in the M2 footwall of the Main Zone. This hole was drilled to a depth of 717.0 m to test the down plunge potential of the eastern chute.

At the conclusion of the drilling program, and given the excellent gold grade intersections, Treasury determined that the eastern and western chutes of the Main Zone and the C Zone remained a "high priority" exploration target that remained open to the west and down plunge at depth.

## 10.8 2017 DIAMOND DRILLING PROGRAM

Treasury conducted a diamond drill program from January 10, 2017 through to October 31, 2017. A total of 43 NQ2 drill holes totalling 8,516 m was completed, not including two holes that were abandoned due to poor sub-surface conditions. A total of 6,176 samples were taken over the span of the year, not including a total of 686 blanks and standards. The objectives of the drilling program were:

- To conduct condemnation and exploration drilling of areas where proposed mining infrastructure will be situated, including milling, tailings storage facility and mining operations;

- To convert and increase "Indicated" gold resources at Goliath Gold Property, through means of infill and expansion drilling; and

- To locate and identify additional gold resources at depth with focus on the down plunge potential of the eastern, western and central high grade chutes of the Main Zone as well as the C Zone chute.

This drilling program consisted of condemnation/exploration drilling along strike of the main resource as well as infill and expansion drilling of the Main and C Zone, further delineating the extents of the high-grade chutes. The program also included drill testing high-grade gold intercepts down plunge to depths up to 774.0 m (TL17412A) to potentially add to underground resources.

Drilling was contracted to George Downing Estate Drilling Ltd. The holes were drilled approximately perpendicular to the mineralized zone with azimuths ranging from 319.2° to 355° and dips ranging from -48.6° to -82.9°. The condemnation/exploration drilling was concentrated along strike, north-east of the known resource and outside of the current proposed open-pit. The purpose of the condemnation/exploration program was to drill test areas along strike of the main resource where proposed mining infrastructure is to be located, including milling, tailings storage facility and mining operations. In addition, to test locations of potential gold chutes interpreted by Exploration Manager Paul Dunbar from historical drill hole compilation and newly prepared longitudinal sections of the Eastern Alteration corridor ("EAC"). The condemnation/exploration drilling was comprised of a series of shallow drill holes ranging in depth from 57.0 m to 204.0 m.

Treasury spent the remainder of the drilling in 2017 focused on infill and resource conversion around the perimeter of known high grade chutes of the Main Zone and the C Zone. The purpose of this program was to further delineate the chutes and convert resources from the "Inferred" to "Indicated" classification, while also testing the down dip extents of the mineralized chutes. The average core recoveries were excellent and the RQD was good.

Infill drilling of the proposed underground resource was successful in providing significant gold intersections of the Main Zone and C Zone. In addition to the Main Zone and C Zone there was also significant gold intercepts occurring in the Hanging Wall, D Zone and E Zone. Upon completion of the program, Treasury performed a gap analysis to further determine what diamond drilling would be required for future resource conversion from "Inferred" to the "Indicated" classification and assist in further delineating the high grade chutes of the Main Zone and C Zone.

Two infill/resource conversion drill holes numbered TL17422 and TL17460 were drilled on mining patent 47122 and mining lease 109717. The purpose of these infill holes was to test the gold potential of the eastern most edge of the western high grade chute of the Main Zone and to test the down dip potential of the central chute of the Main Zone. TL17422 intersected good gold assays within the Main, C, and B Zones, therefore successfully expanding the Main Zone's western chute to the east and warranting further drilling to test the continuity. TL17460 also intersected good gold grades within the Main Zone and was able to expand the continuity of the high grade central chute further down dip. It was determined from TL17460 that the central chute of the Main Zone remains open down dip and remains to be a high priority target for future drill programs. Infill holes TL17445 and TL17459 were drilled just southwest of where the main hydro line intersects with Tree Nursery Road on mining patent 46017. These are both near surface holes with the goal of identifying and expanding the C Zone resource along strike to the east of the known deposit. TL17445 returned a number of anomalous gold assays within the C zone and the highest gold sample of the program within the D Zone. TL17459 intersected a single high grade gold assay in the C Zone. Both of these holes display that there is some continuity down dip between the high grade lenses within the eastern side of the C-zone but more investigation is required to determine their trend and extent.

The condemnation and exploration drilling took place along strike of the main resource area, stepping out to the North East over a distance of approximately 1.4 km from the current known resource. Low grade gold intersections were encountered to the northeast of the proposed tailings pond in what was previously a sparsely drilled portion of the Property. No significant gold intersections were observed where proposed future mining infrastructure are located.

Out of a total of 6,176 individual samples the highest gold assay obtained from the 2017 drilling program was from drill hole TL17445 that returned 33.3 g/t Au over a sample length of 1.0 m. Additional significant intervals from the 2017 program include:

**Infill/Resource Conversion Program**

- TL17422 intercepted 3.67 g/t Au and 3.58 g/t Ag over a sample length of 4.0 m (348.0-352.0 m) in the Main Zone. This hole also intersected 7.13 g/t Au and 6.20 g/t Ag over a sample length of 0.9 m (392.0-392.9 m) in the B Zone. In the C Zone this hole intersected 4.10 g/t Au and 26.46 g/t Ag over a sample length of 5.0 m (457.0-462.0 m), including 18.2 g/t Au and 119.0 g/t Ag over a sample length of 1.0 m (459.0-460.0 m) which contained several specks of visible gold and electrum.

- TL17445 was targeting the C and D Zones and returned several high grade assay values. In the C Zone this hole found 9.92 g/t Au and 3.60 g/t Ag over a sample length of 1.0 m (47.0-48.0 m) with several specks of visible gold. In the D Zone this hole intersected 16.79 g/t Au and 1.90 g/t Ag over a sample length of 2.0 m (68.0-70.0 m), including 33.30 g/t Au and 2.10 g/t Ag over a 1.0 m sample length (69.0-70.0 m). No visible gold was noted in this interval.

- TL17459 intercepted 13.8 g/t Au and 19.90 g/t Ag over a sample length of 1.0 m (122.0-123.0 m) in the C Zone.

- TL17460 intersected 4.53 g/t Au and 29.90 g/t Ag over 1.0 m (576.0-577.0 m) in the Hanging Wall. Followed by 3.34 g/t Au and 5.94 g/t Ag over 5.0 m (641.0-646.0 m), including 4.80 g/t Au and 8.83 g/t Ag over 3.0 m (643.0-646.0 m) and 3.41 g/t Au and 56.50 g/t Ag over 2.0 m (663.0-665.0 m), including 6.47 g/t Au and 80.10 g/t Ag over 1.0 m (664.0-665.0 m).

Upon completion of the drilling program and given the excellent gold grade intersections, Treasury determined that the eastern and western chutes of the Main Zone and the C Zone remained a "high priority" exploration target that remained open to the east and west as well as down plunge at depth.

## 10.9 2018 DIAMOND DRILLING PROGRAM

Treasury conducted a diamond drill program on the Goliath Property from January 8$^{th}$, 2018 through to June 22$^{nd}$, 2018, totaling 20,987 m. This consisted of 38 new holes drilled (TL18464 to TL18501), not including fourteen holes that needed to be abandoned due to bad ground conditions causing deviation from the intended target. A total of 10,251 samples and 1,139 blanks and standards were tested over the span of the year. The objective of the drilling program was:

- To convert and increase "Indicated" gold resources in the Main and C Zones of the Goliath Gold Property, through means of infill and expansion drilling; and

- To investigate the extent of high grade mineralization found in historic Teck drill holes in the East C Zone.

This drilling program consisted of infill and resource conversion drilling within the Main and C Zones and further delineation of the high grade chutes of each. The program included drill testing of high-grade gold intercepts down plunge of the Main Zone to depths up to 762.0 m (TL18471A) to potentially add to underground resources.

Drilling was contracted to George Downing Estate Drilling Ltd and Distinctive Drilling Services Inc. The 2018 holes were drilled approximately perpendicular to the mineralized zone with azimuths ranging from 350° to 0° and dips ranging from -58° to -78°. This program consisted of drilling at depths ranging from 195.0 m (TL18480) to 831.0 m (TL18473A) and targeted areas along the outer edges and down plunge of the high grade chutes in the central, western and eastern chutes of the Main Zone as well as the C Zone. Additionally, 5,000 m of drilling was conducted on the East C zone area where historic Teck drill holes intercepted moderate to high grade mineralization. The average core recoveries were excellent and the RQD Rock Mass Quality was good.

Drilling of the underground resource was successful in providing significant gold intersections in both the Main and C Zone. Upon completion of the program, Treasury performed a gap analysis to further determine what diamond drilling would be required for future resource conversion from "Inferred" to the "Indicated" classification and assist in further delineating the high grade chutes of the Main zone and C Zones (Figure 10.3).

Out of a total of 10,251 individual samples the highest gold assay obtained from the 2018 drilling program was from drill hole TL18494 that returned 238.0 g/t Au over a sample length of 1.0 m. This was drilled as a follow up to Teck drill hole TL205 which intersected 1.0 g/t Au over 23.5 m and is located near the eastern most extent of drilling in the C Zone. Additional significant intervals from the 2018 program include:

- TL18469 intersected 14.88 g/t Au and 5.33 g/t Ag over 6.0 m (558.0-564.0 m), including 79.6 g/t Au and 3.8 g/t Ag over 1.0 m (559.0-560.0 m) in the Main Zone. This hole is situated along the eastern edge of the east chute. Three small specks of visible gold (< 1 mm grain size) was observed between 559.75 m to 559.58 m.

- TL18474 intersected 10.35 g/t Au and 5.89 g/t Ag over a sample length of 7.0 m (445.0-452.0 m), including 64.5 g/t Au and 1.8 g/t Ag over 1.0 m (451.0-452.0 m). This hole was drilled along the eastern edge of the west chute in the Main Zone.

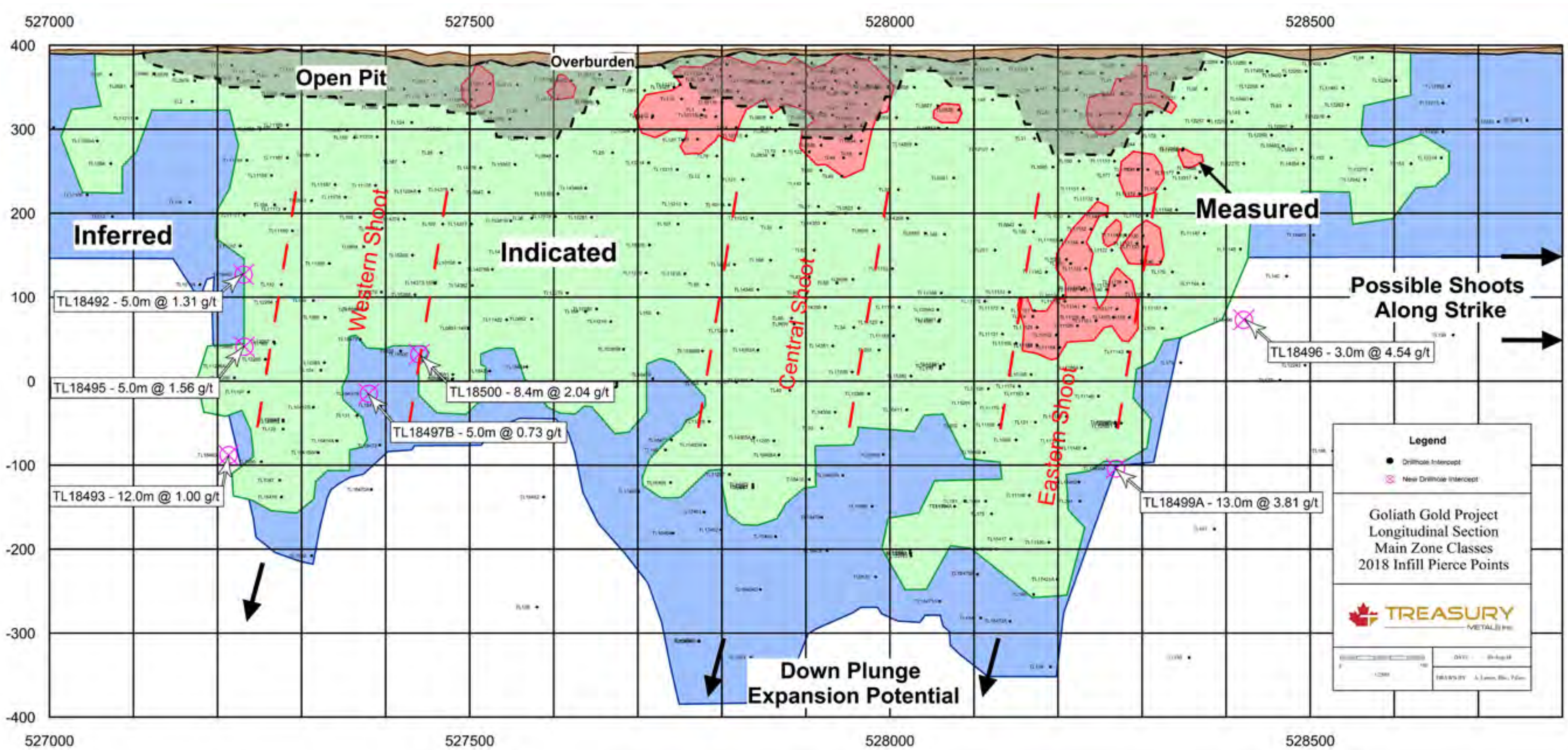
- TL18489 intersected 48.71 g/t Au and 310.67 g/t Ag over a sample length of 3.0 m (542.0-545.0 m), including 145.00 g/t Au and 921.00 g/t Ag over 1.0 m (543.0-544.0 m) in the C Zone in addition to 5.28 g/t Au and 143.00 g/t Ag over 1.0 m (528.4-529.4 m). This hole was drilled at the deepest extent of the C Zone and was successful in confirming the continuity of gold mineralization down plunge. Minor visible gold was observed between 528.4-529.4 m depth and approximately 20 specks of visible gold ranging in size from 1-5 mm was observed between 543.2-543.3 m depth.

- TL18494 intersected 25.20 g/t Au and 3.98 g/t Ag over a 4.50 m sample length (426.0-430.5 m), including 1.0 m (426.0-427.0 m) at 111.00 g/t Au and 11.10 g/t Ag. This drill hole was drilled to investigate nearby Teck drill hole TL205 which intersected 1.0 g/t Au over 23.5 m and is located near the eastern most extent of drilling in the C Zone.

- TL18499A intersected 3.81 g/t Au and 34.65 g/t Ag over 13.0 m (516.0-529.0 m), including 10.17 g/t Au and 120.47 g/t Ag over 3.0 m (516.0-519.0 m) in the Main Zone. This hole was drilled as a follow up to TL18469 and is located on the eastern edge of the east chute within the Main Zone. Visible gold was observed in 4 small specks (< 1 mm grain size) between 518.4-518.5 m depth.

Upon completion of the drilling program and given the gold grade intersections, Treasury determined that the eastern and western chutes of the Main Zone and the C Zone remained a "high priority" exploration target that remained open to the east as well as down plunge.

## FIGURE 10.3 TREASURY MAIN ZONE CLASSES, 2018 INFILL PIERCE POINTS




**Legend:** brown = overburden, grey = open pit, red = Measured Mineral Resource, green = Indicated Mineral Resource, blue = Inferred Mineral Resource

***Source**: Treasury (2018)*

## 11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

The drill core for Treasury's Goliath Project was logged and split with a core saw lengthwise, with the majority of samples ranging from 1.0 m to 1.5 m in length. Half of the core was retained for future verification and the other half was sent to Accurassay Laboratories in Thunder Bay, Ontario, for analysis. All samples to be sent for analysis were bagged and sealed once collected and then placed in rice sacks and sealed. Samples were stored in Treasury's field office in Wabigoon, Ontario under the supervision of Treasury staff until they were securely shipped to the laboratory for analysis.

Once the rock samples were received at the Accurassay Lab facilities in Thunder Bay, Ontario, they are entered into Accurassay Laboratories Local Information System (LIMS). The samples are dried in a drying oven, if necessary and the jaw crushed to 8 mesh size and the entire sample pulverized to approximately 90% 150 mesh and then matted to ensure homogeneity. Silica abrasive sand is used to clean out the pulverizing dishes between each sample to prevent cross contamination. The samples are sent to the fire assay laboratory or the wet chemistry laboratory depending on the required analysis.

All analysis performed by Accurassay are accredited by ISO/IEC 17025 guidelines and Accurassay is accountable to the Standards Council of Canada for its quality management (http://accurassay.com).

For the analysis of precious metals (gold), the sample is mixed with a lead based flux fused for one hour and fifteen minutes. Each sample has a silver solution added to it prior to fusion, which allows each sample to produce a precious metal bead after cupellation. The fusing process results are lead buttons that contain all of the precious metals from the sample as well as the silver that was added. The button is then placed in a cupelling furnace where all of the lead is absorbed by the cupel and a silver bead, which contains gold, platinum and palladium and is left in the cupel. The cupel is removed from the furnace and allowed to cool.

Au samples are digested using a nitric and hydrochloric digestion and bulked up with distilled water to a final volume of 3 mL (http://accurassay.com). Once the samples have settled they are analyzed for gold using atomic absorption spectroscopy (AAS). Calibration standards for Au are made up from 1,000 ppm certified stock solution. The results for the atomic absorption are checked by the technician. Using electronic transfer the results are forwarded to the data base. A certificate is produced from the laboratory database system (LIMS). The Laboratory Manager checks the data, validates the certificates and issues the results as a pdf file and an Excel file.

Samples containing more than 5.0 g/t Au are analyzed with the pulp metallic method (2015 drilling program used 6.0 g/t Au used as the threshold limit). Accurassay (http://accurassay.com) describes the pulp metallic method as a procedure that is able to overcome the "Nugget Effect" of gold by increasing the sub-sample size to 1,000 g and physically collecting the free gold within the system using a 150 mesh (106µ) sieve. This procedure is most effective when the whole sample is used for the analysis. The sub-sample is pulverized to ~90% - 150 mesh (106 µ) and subsequently sieved through a 150-mesh (106µ) screen. The entire +150 metallics portion is assayed along with two duplicate sub-samples of the -150 pulp portion. Results are reported as a weighted average of gold in the entire sample.

It is P&E's opinion that sample preparation, security and analytical procedures for the Goliath Gold drill program were adequate for the purposes of this Mineral Resource Estimate.

## 11.1 QUALITY ASSURANCE/QUALITY CONTROL PROGRAM

Treasury implemented and monitored a thorough quality assurance/quality control program ("QA/QC" or "QC") for the diamond drilling and sampling undertaken at the Goliath Gold Project from 2008 through 2018. QC protocol included the insertion of QC samples into every batch sent off for analysis. QC protocol altered somewhat over the program and is described in the following sections by year.

### 11.1.1 2008 QA/QC Program

A total of 17 outcrop, 32 trench and 25 outcrop channel samples were taken and sent for analysis during Treasury's 2008 exploration program. Core samples from diamond drilling (holes TL0801 through TL0855) were also sent for analysis, with a total of 14,853 samples taken for both the 2008 and 2009 drilling programs (this number does not include QC samples).

To monitor accuracy, certified reference materials (CRM or standard) and blanks were inserted into the sample stream by Treasury at a rate of at least 1 in every 20 samples submitted.

#### 11.1.1.1 Performance of Certified Reference Materials

A total of nine CRMs were utilized to monitor gold results over the course of the 2008 drill program, including the CDN-FCM-4, CDN-GS-5D, OREAS 61D, Au43, Au48, AuQ1, AuG1 and AuG2 standards, supplied by CDN Resource Laboratories Ltd of Delta, BC, ASL Lab, Vancouver, BC and Accurassay Laboratory, Thunder Bay, Ontario. Treasury selected a mixture of low, medium and high grade CRMs to monitor lab accuracy. A summary of the standards used is given in Table 11.1.

**TABLE 11.1**
**SUMMARY OF CRMS USED IN THE 2008 DRILL PROGRAM**

| Standard | Au (ppm) | SD (ppm) | 3*SD | STD+3SD | STD-3SD | Supplier |
|---|---|---|---|---|---|---|
| AuQ1 | 1.33 | 0.114 | 0.342 | 1.672 | 1.216 | Accurassay |
| Au43 | 12.686 | 0.859 | 2.577 | 15.263 | 11.827 | Accurassay |
| CDN-FCM4 | 0.970 | 0.040 | 0.12 | 1.09 | 0.93 | CDN |
| AuG1 | 1.019 | 0.040 | 0.12 | 1.139 | 0.979 | Accurassay |
| AuG2 | 1.013 | 0.020 | 0.06 | 1.073 | 0.993 | Accurassay |
| OREAS_61D | 4.760 | 0.140 | 0.42 | 5.18 | 4.62 | ASL |
| Au48 | 16.150 | 0.964 | 2.892 | 19.042 | 15.186 | Accurassay |
| CDN-GS-5D | 5.060 | 0.125 | 0.375 | 5.435 | 4.935 | CDN |
| CDN-SE2 | 0.242 | 0.009 | 0.027 | 0.269 | 0.233 | CDN |
| Blank | <0.015 | blank | | | | Accurassay |

***Source:*** *A.C.A. Howe International (2010)*

Results were monitored and samples were considered failures if they fell above or below three standard deviations from the mean and potentially if three consecutive samples fell between two and three standard deviations from the mean (on the same side of the mean).

The majority of the CRMs monitoring accuracy within the mineralized zone returned values within three standard deviations from the mean. There were a total of twenty failures within the mineralized zone and the pulp samples from all twenty batches were re-analysed at Accurassay to confirm results. Most of the standard failures occurred in the initial phase of the drill program and standards that returned initial erratic results (Oreas 61D and Au48) were replaced with more reliable standards.

#### 11.1.1.2 Performance of Blank Material

The blank material used for the QC monitoring was a prepared blank supplied by Accurassay, that was pulverized to –200 mesh, blended and packaged in 60 gram packets. The blank was inserted at a rate of at least one in twenty samples and has a gold concentration of less than 15 ppb gold. A tolerance limit of 45 ppb was set by the Company to evaluate for contamination.

There were a total of 16 samples out of 636 that returned results greater than the 45 ppb tolerance limit and, of those 16, there were three that lay within the mineralized zone. Two of these were sample misallocations, where a standard was replaced instead of a blank and the remaining sample is not considered by the author to be of significant impact to the resource.

#### 11.1.1.3 Performance of Duplicate Samples

Treasury did not insert any duplicate samples into the sample stream, however internal lab pulp duplicates were inserted by Accurassay. The lab's duplicate data was not available for review by the author, although A.C.A. Howe International Limited ("A.C.A. Howe") reported that they analyzed a total of 1,318 lab pulp duplicates and good correlation was noted between the original samples and duplicates.

### 11.1.2 2009 QA/QC Program

Treasury undertook a similar QA/QC program through
hout the 2009 drill program, with every tenth sample being either a low- or medium-grade CRM or blank and a quarter-core (field) duplicate was inserted every 20$^{th}$ sample.

#### 11.1.2.1 Performance of Certified Reference Materials

The Company utilized five CRMs in total to monitor gold results for the 2009 drill program, including the OREAS 61D, CDN-GS-1D, CDN-GS-5D and the CDN-SE2, supplied by CDN Resource Laboratories Ltd of Delta, BC, ASL Lab, Vancouver, BC and Accurassay Laboratory, Thunder Bay, Ontario. A summary of the standards used is given in Table 11.2.

**TABLE 11.2**
**SUMMARY OF CRMS USED IN THE 2009 DRILL PROGRAM**

| Standard | Au (ppm) | SD (ppm) | 3*SD | STD+3SD | STD-3SD | Supplier |
|---|---|---|---|---|---|---|
| OREAS_61D | 4.76 | 0.14 | 0.42 | 5.18 | 4.62 | ASL |
| CDN-GS-1D | 1.05 | 0.05 | 0.15 | 1.20 | 0.90 | CDN |
| CDN-GS-5D only two samples | 5.060 | 0.125 | 0.375 | 5.435 | 4.935 | CDN |
| CDN-SE2 | 0.242 | 0.009 | 0.027 | 0.269 | 0.233 | CDN |
| Blank | <0.015 | blank | | | | Accurassay |

***Source:*** *A.C.A. Howe International (2010)*

CRM results were monitored in the same way as in the 2008 drill program and, again, the majority of the CRMs within the mineralized zone returned values within three standard deviations from the mean. There were a total of eight failures within the mineralized zone and Treasury elected to re-analyze the pulps from the preceding five and subsequent six samples in the batch to confirm results.

#### 11.1.2.2 Performance of Blank Material

The same blank material that was used for the 2008 QC monitoring was used again in 2009. A tolerance limit of 45 ppb was set by the Company to evaluate for contamination.

There were a total of 184 data points for the blank material and all results were below three times the detection limit of the analysis type (15 ppb).

### 11.1.3 2010-2011 QA/QC Program

Treasury continued their QA/QC program in similar fashion throughout the 2010 and 2011 drill programs, with every tenth sample being either a low- or medium-grade CRM or blank and a quarter-core (field) duplicate was inserted every 20$^{th}$ sample.

#### 11.1.3.1 Performance of Certified Reference Materials

The Company utilized seven CRMs in total to monitor gold results for the 2010 and 2011 drill programs, including the CDN-SE-2, CDN-GS-1F, CDN-GS-5D, OREAS 61D, CDN-CGS-13, CDN-CM-6 and CDN-ME-6, supplied by CDN Resource Laboratories Ltd of Delta, BC, ASL Lab, Vancouver, BC and Accurassay Laboratory, Thunder Bay, Ontario. A summary of the standards used is given in Table 11.3.

**TABLE 11.3**
**SUMMARY OF CRMS USED IN THE 2010-2011 DRILL PROGRAM**

| Standard Name | Recommended Au g/t | Standard Deviation |
|---|---|---|
| CDN-SE2 | 0.242 | 0.009 |
| CDN-GS1F | 1.16 | 0.065 |
| CDN-GS5D | 5.06 | 0.125 |
| Oreas61d | 4.76 | 0.14 |
| CDN-CGS13 | 1.01 | 0.055 |
| CDN-CM6 | 1.43 | 0.045 |
| CDN-ME6 | 0.27 | 0.014 |

***Source:*** *A.C.A. Howe International (2012)*

CRM monitoring continued in the same fashion as the previous years and the majority of the CRMs within the mineralized zone returned values within three standard deviations from the mean. Treasury elected to re-analyze the pulps from the preceding five and subsequent five samples for any batches where failures occurred within the mineralized zone (if any samples were greater than 5.0 g/tonne Au) to confirm results. Some failures were considered to be misallocated blanks or standards and the records were changed accordingly.

#### 11.1.3.2 Performance of Blank Material

The same blank material that was used for the 2008 and 2009 QC monitoring was used again in 2010. A tolerance limit of 15 ppb was set by Treasury to evaluate for contamination.

There were a total of 291 data points for the blank material and all results, except two, were below three times the detection limit of the analysis type (15 ppb). One result was considered a misallocated CDN-CM-6 standard and the other sample (at 0.045 g/tonne Au) was considered the only failure.

#### 11.1.3.3 Performance of Duplicate Samples

Treasury submitted a total of 970 quarter-core duplicate samples into the 2010 and 2011 drill programs. A.C.A. Howe (2012) reported the results of the field duplicate data and a plot of the original versus duplicate data shows poor (but acceptable) precision.

Accurassay's own internal QA/QC, includes the analysis of a pulp duplicate every 10 samples and crusher replicate every 60 samples. These records were available for review by the author and both the pulp and crusher duplicate data showed excellent precision, as is expected for the finer grain-size.

### 11.1.4 2012-2013 QA/QC Program

The 2012-2013 QA/QC program, carried out by Treasury followed the same protocol as earlier years, with every tenth sample being either a low- or medium-grade CRM or blank and a quarter-core (field) duplicate was inserted every 20th sample.

#### 11.1.4.1 Performance of Certified Reference Materials

A total of four CRMs were used to monitor gold results for the 2012 and 2013 drill programs, including the CDN-GS-P2A, CDN-CM-26, CDN-GS-2K and CDN-GS-5J, supplied by CDN Resource Laboratories Ltd of Delta, BC, ASL Lab, Vancouver, BC and Accurassay Laboratory, Thunder Bay, Ontario. A summary of the standards used is given in Table 11.4.

**TABLE 11.4**
**SUMMARY OF CRMS USED IN THE 2012-2013 DRILL PROGRAM**

| Standard Name | Recommended Au g/t | Standard Deviation |
|---|---|---|
| CDN-GS-P2A | 0.229 | 0.015 |
| CDN-CM-26 | 0.372 | 0.024 |
| CDN-GS-2K | 1.97 | 0.09 |
| CDN-GS-5J | 4.96 | 0.21 |

***Source:*** *Treasury (2013)*

A slightly higher rate of failures was noted by the Company at the commencement of the 2012-2013 drill program for the CDN-GS-2K standard, with four out of 18 failures in total. Overall, 28 standards failed, where results were greater than three standard deviations away from the CRM mean value. Out of these 28 failures, 22 samples were selectively chosen to retest due to their proximity to mineralized zones and magnitude of failure.

#### 11.1.4.2 Performance of Blank Material

The same blank material was continued to be used for the 2012-2013 QC monitoring. A tolerance limit of 15 ppb was set by Treasury to evaluate for contamination.

There were a total of 197 data points for the blank material and all results, except three, were below three times the detection limit of the analysis type (15 ppb). None of these failures were considered to be of significant impact to the resource.

#### 11.1.4.3 Performance of Duplicate Samples

The Company submitted 750 quarter-core duplicate samples for assaying during the 2012-2013 drill program. The results of the original and duplicate data display poor precision, as is to be expected for these coarse level duplicates.

Accurassay's pulp duplicates and crusher replicate samples were available for review by the author and displayed excellent precision at both the pulp and crusher duplicate data, as is expected for the decreased grain-size.

### 11.1.5 2014-2015 QA/QC Program

The 2014-2015 QA/QC program, carried out by Treasury followed the same protocol as earlier years, with every tenth sample being either a low- or medium-grade CRM or blank and a quarter-core (field) duplicate was inserted every $20^{th}$ sample.

#### 11.1.5.1 Performance of Certified Reference Materials

A total of four CRMs were used to monitor gold results for the 2014-2015 drill program, including the CDN-CM-26, CDN-GS-1P5K, CDN-GS-2K and CDN-GS-5P, supplied by CDN Resource Laboratories Ltd of Delta, BC, ASL Lab, Vancouver, BC. A summary of the standards used is given in Table 11.5.

**TABLE 11.5**
**SUMMARY OF CRMS USED IN THE 2014-2015 DRILL PROGRAM**

| Standard Name | Recommended Au g/t | Standard Deviation |
|---|---|---|
| CDN-CM-26 | 0.372 | 0.024 |
| CDN-GS-1P5K | 1.44 | 0.065 |
| CDN-GS-2K | 1.97 | 0.09 |
| CDN-GS-5P | 4.78 | 0.155 |

***Source:*** *Treasury (2015)*

CRMs were monitored in the same fashion as the previous years and the majority of the CRMs within the mineralized zone returned values within three standard deviations from the mean. Treasury elected to re-analyze the pulps from the preceding five and subsequent five samples for any batches where failures occurred within the mineralized zone to confirm results.

Overall, 21 standards failed out of a total of 274, where results were greater than three standard deviations away from the CRM mean value. Out of these 21 failures, 10 samples were selectively chosen to retest due to their proximity to mineralized zones and magnitude of failure. Additional failures were considered to be misallocated blanks or standards and the records were altered accordingly.

#### 11.1.5.2 Performance of Blank Material

The same blank material was continued to be used for the 2014-2015 QC monitoring. A tolerance limit of 15 ppb was set by Treasury to evaluate for contamination.

There were a total of 277 data points for the blank material and all results, except two, were below three times the detection limit of the analysis type (15 ppb). None of these failures were considered to be of significant impact to the resource.

#### 11.1.5.3 Performance of Duplicate Samples

The Company submitted quarter-core duplicate samples only for assaying during the 2014-2015 drilling program. The results of the original and duplicate data were plotted on a scatter plot and poor (but acceptable) correlation is displayed for these coarse level duplicates.

Treasury did not insert any other duplicate samples into the sample stream, however Accurassay's pulp duplicates and crusher replicate samples were available for analysis. All data was analyzed for gold and the pulp duplicates displayed excellent precision.

### 11.1.6 2016 QA/QC Program

The 2016 QA/QC program, carried out by Treasury followed the same protocol as earlier years, with every tenth sample being either a low- or medium-grade CRM or blank and a quarter-core (field) duplicate was inserted every 20$^{th}$ sample.

#### 11.1.6.1 Performance of Certified Reference Materials

A total of five CRMs were used to monitor gold results for the 2016 drill program, including the CDN-CM-26, CDN-GS-1P5K, CDN-GS-1P5P, CDN-GS-5T and CDN-GS-5P, supplied by CDN Resource Laboratories Ltd of Delta, BC, ASL Lab, Vancouver, BC. A summary of the standards used is given in Table 11.6.

**TABLE 11.6**
**SUMMARY OF CRMS USED IN THE 2016 DRILL PROGRAM**

| Standard Name | Recommended Au (g/t) | Standard Deviation |
|---|---|---|
| CDN-CM-26 | 0.372 | 0.024 |
| CDN-GS-1P5K | 1.44 | 0.065 |
| CDN-GS-1P5P | 1.59 | 0.075 |
| CDN-GS-5T | 4.76 | 0.105 |
| CDN-GS-5P | 4.78 | 0.155 |

***Source:*** *Treasury (2019)*

CRMs were monitored in a similar fashion as the previous years and the majority of the CRMs within the mineralized zone returned values within the acceptable limits of three standard deviations from the mean. Overall, 11 standards failed out of a total of 276, where results were greater than three standard deviations away from the CRM mean value. A slightly higher rate of failures was noted by the Company at the commencement of the 2016 drill program for the CDN-CM-26 standard, which accounted for five out of the 11 failures in total. There was also a slightly elevated failure rate for the CDN-GS-5T standard, which accounted for three out of the 11 failures. None of these failures were considered to be of significant impact to the resource.

#### 11.1.6.2 Performance of Blank Material

In 2016, a coarse blank made from bags of crushed granite replaced the packaged blank (CDN-BL-10) used in previous years. A total of 10 test samples were sent to the lab to ensure that the material was suitable for use. All test samples returned values below detection limit. A tolerance limit of 15 ppb was maintained by Treasury to evaluate for contamination.

There were a total of 281 samples of blank material and all results, except one, were below three times the detection limit of the analysis type (5 ppb).

#### 11.1.6.3 Performance of Duplicate Samples

The Company submitted 278 quarter-core duplicate samples for assaying during the 2016 drill program. The results of the original and duplicate data were plotted on a scatter plot and show acceptable correlation for these coarse level duplicates.

### 11.1.7 2017 QA/QC Program

The 2017 QA/QC program, carried out by Treasury followed the same protocol as earlier years, with every tenth sample being either a low- or medium-grade CRM or blank and a quarter-core (field) duplicate was inserted every 20$^{th}$ sample.

#### 11.1.7.1 Performance of Certified Reference Materials

A total of four CRMs were used to monitor gold results for the 2017 drill program, including the CDN-CM-26, CDN-GS-1P5K, CDN-GS-1P5P and CDN-GS-5T, supplied by CDN Resource Laboratories Ltd of Delta, BC, ASL Lab, Vancouver, BC. A summary of the standards used is given in Table 11.7.**Error! Reference source not found.**

**TABLE 11.7**
**SUMMARY OF CRMS USED IN THE 2017 DRILL PROGRAM**

| Standard Name | Recommended Au (g/t) | Standard Deviation |
|---|---|---|
| CDN-CM-26 | 0.372 | 0.024 |
| CDN-GS-1P5K | 1.44 | 0.065 |
| CDN-GS-1P5P | 1.59 | 0.075 |
| CDN-GS-5T | 4.76 | 0.105 |

***Source:*** *Treasury (2019)*

CRMs were monitored in the same fashion as the previous years and the majority of the CRMs within the mineralized zone returned values within three standard deviations from the mean value. Overall, 12 standards failed out of a total of 343, where results were greater than three standard deviations away from the CRM mean value. A slightly higher rate of failures was noted by the Company at the commencement of the 2017 drill program for the CDN-CM-26 standard, with five out of twelve failures in total. There was also an elevated failure rate for the CDN-GS-

5T standard with six out of twelve failures. Out of these 12 failures, 11 were actual failures not selected for retesting as the failures were considered to have minimal impact to the resource. The remaining sample flagged for failure, was not an actual failure but a misallocated standard that fell within acceptable limits.

#### 11.1.7.2 Performance of Blank Material

The same blank material was again used for the 2017 QC monitoring (coarse crushed granite). A tolerance limit of 15 ppb was set by Treasury to evaluate for contamination.

There were a total of 343 samples of blank material and all results, except five, were below three times the detection limit of the analysis type (5 ppb). None of these failures were considered to be of significant impact to the resource.

#### 11.1.7.3 Performance of Duplicate Samples

The Company submitted 341 quarter-core duplicate samples for assaying during the 2017 drill program. The results of the original and duplicate data were plotted on a scatter plot and show acceptable correlation for these coarse level duplicates.

### 11.1.8 2018 QA/QC Program

The 2018 QA/QC program, carried out by Treasury followed the same protocol as earlier years, with every tenth sample being either a low- or medium-grade CRM or blank and a quarter-core (field) duplicate was inserted every 20$^{th}$ sample.

#### 11.1.8.1 Performance of Certified Reference Materials

A total of six CRMs were used to monitor gold results for the 2018 drill program, including the CDN-CM-26, CDN-GS-1P5K, CDN-GS-1P5P, CDN-GS-1P5Q, CDN-GS-5P and CDN-GS-5T, supplied by CDN Resource Laboratories Ltd of Delta, BC, ASL Lab, Vancouver, BC. A summary of the standards used is given in Table 11.8**Error! Reference source not found.**.

**TABLE 11.8**
**SUMMARY OF CRMS USED IN THE 2018 DRILL PROGRAM**

| Standard Name | Recommended Au (g/t) | Standard Deviation |
|---|---|---|
| CDN-CM-26 | 0.372 | 0.024 |
| CDN-GS-1P5K | 1.44 | 0.065 |
| CDN-GS-1P5P | 1.59 | 0.075 |
| CDN-GS-1P5Q | 1.329 | 0.05 |
| CDN-GS-5T | 4.76 | 0.105 |
| CDN-GS-5P | 4.78 | 0.155 |

***Source:*** *Treasury (2019)*

CRMs were monitored in the same fashion as previous years and the majority of the CRMs within the mineralized zone returned values within three standard deviations from the mean. Overall, 23 standards failed out of a total of 569, where results were greater than three standard deviations away from the CRM mean value. A higher rate of failures was noted by the Company for the CDN-GS-5T standard, accounting for 11 out of the 23 failures. Of these failures, 8 standards were selected for retest due to their proximity to significant mineralization. All standards selected for retesting have fallen within acceptable limits and no further action is deemed necessary. The remaining failed standards were not considered to be of significant impact to the resource.

#### 11.1.8.2 Performance of Blank Material

The Company continued to use the coarse crushed granite blank material for the 2018 QC monitoring program. A tolerance limit of 15 ppb was set by Treasury to evaluate for contamination.

There was a total of 569 data points for the blank material and all results, except 2, were below three times the detection limit of the analysis type (5 ppb). Neither of the two failures was considered to be of significant impact to the resource

#### 11.1.8.3 Performance of Duplicate Samples

The Company submitted 569 quarter-core duplicate samples for assaying during the 2018 drill program. The results of the original and duplicate data were plotted on a scatter plot and acceptable correlation is displayed for these coarse level duplicates.

### 11.1.9 Accurassay Versus Actlabs Laboratory Check Assays 2015

Treasury submitted a total of 328 pulp samples from Accurassay Laboratory for check assaying to Actlabs Laboratory in Thunder Bay in 2015. Pulp samples were taken from 29 drill holes, drilled over the 2014 to 2015 period. Samples were sent in two batches of 134 and 194 pulp samples.

Scatter plots and line graphs of the Actlabs results were compared to the original Accurassay results and the comparison was very good, considering test results were from two separate laboratories. Nugget effect was also evident in a number of samples.

### 11.1.10 AGAT Versus Actlabs Laboratory Check Assays 2017

Treasury submitted a total of 172 pulp samples from AGAT Laboratory for check assaying to Actlabs Laboratory in Thunder Bay in 2017. Pulp samples were taken from 10 drill holes, drilled over the 2017 period.

Scatter plots and line graphs of the AGAT results were compared to the original Accurassay results and the comparison was very good, considering test results were from two separate laboratories. Nugget effect was also evident in a number of samples.

#### 11.1.11 AGAT Versus Actlabs Laboratory Check Assays 2018

Treasury submitted a total of 560 pulp samples from AGAT Laboratory for check assaying to Actlabs Laboratory in Thunder Bay in 2018. Pulp samples were taken from 25 drill holes, drilled over the 2018 period.

Scatter plots and line graphs of the AGAT results were compared to the original Accurassay results and the comparison was very good, considering test results were from two separate laboratories. Nugget effect was also evident in a number of samples.

Based upon the evaluation of the QA/QC program undertaken by Treasury, it is P&E's opinion that the results are acceptable for use in the current Mineral Resource Estimate.

## 12.0 DATA VERIFICATION

### 12.1 SITE VISIT AND DUE DILIGENCE SAMPLING

The Goliath Gold Project was visited by Mr. Antoine Yassa, P.Geo., on two separate occasions, and also by Mr. Yungang Wu, P.Geo., on two occasions. Both Mr. Yassa and Mr. Wu are of P&E and independent Qualified Persons in terms of NI 43-101. Mr. Yassa carried out site visits on August 13, 2014 and June 24 to June 26, 2015 and Mr. Wu, on April 23 to April 24, 2018 and September 20 to September 21, 2018, for the purposes of completing site visits and due diligence sampling. General data acquisition procedures, core logging procedures and quality assurance/quality control (QA/QC) were discussed during the visits.

Mr. Yassa collected 18 samples from nine diamond drill holes during the August 2014 site visit. Twelve (12) of the samples were selected from holes included in the 2011 Mineral Resource Estimate and the remaining six samples were from holes drilled subsequent to the 2011 Mineral Resource Estimate.

Mr. Yassa collected 12 samples from four diamond drill holes during the June 2015 site visit. All 12 samples were selected from holes drilled subsequent to the 2011 Mineral Resource Estimate.

Mr. Wu collected ten samples from nine diamond drill holes drilled in 2016 and 2017, during the April 2018 site visit, which were analyzed for gold and silver. Two of these ten samples were not originally analyzed for silver.

Mr. Wu collected 12 samples from 12 diamond drill holes drilled in 2018, during the September 2018 site visit. All samples were analyzed for gold and silver, with one of the twelve samples not originally being analyzed for silver.

A range of high, medium and low-grade samples were selected from the stored drill core. Samples were collected by taking the half core remaining in the core box. Individual samples were placed in plastic bags with a uniquely numbered tag, after which all samples were collectively placed in a larger bag and taken by Messrs. Yassa and Wu to the offices of P&E in Brampton, ON, Canada for delivery to AGAT Labs in Mississauga, ON for analysis.

AGAT is an independent lab that has developed and implemented at each of its locations a Quality Management System ("QMS") designed to ensure the production of consistently reliable data. The system covers all laboratory activities and takes into consideration the requirements of ISO standards.

AGAT maintains ISO registrations and accreditations. ISO registration and accreditation provide independent verification that a QMS is in operation at the location in question. AGAT Laboratories in Mississauga, ON is ISO/IEC 17025:2005 accredited laboratory.

Gold was determined using either Aqua Regia digestion, followed by ICP-MS finish, or Fire Assay with ICP-OES finish. Samples returning results greater than 10 ppm were further analysed by Fire Assay with gravimetric finish. All samples collected during the April and September

2018 site visits were additionally analysed by Screen Metallic Fire Assay method with ICP finish (500 g).

Silver was analyzed using Aqua Regia Digest with ICP/ICP-MS finish. Samples returning results greater than 100 ppm were further analysed by 3-Acid digestion with ICP-OES finish.

All 2014 and 2015 samples were analyzed by pycnometer at AGAT to determine specific gravity. Core density was also determined for all 2018 samples utilizing wet immersion technique.

Results of the four site visits due diligence samples are presented in Figure 12.1 through Figure 12.8).

**FIGURE 12.1 GOLIATH GOLD DUE DILIGENCE SAMPLE RESULTS FOR GOLD (POST RESOURCE 2011): AUGUST 2014 SITE VISIT**

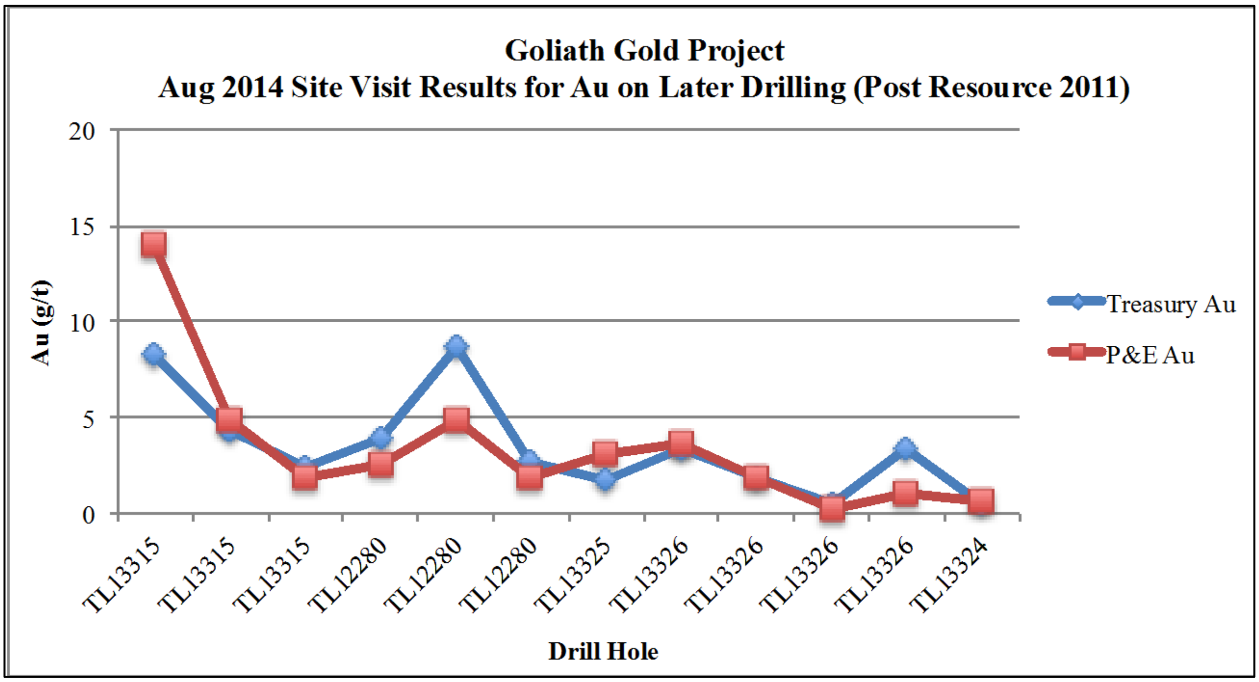


**FIGURE 12.2 GOLIATH GOLD DUE DILIGENCE SAMPLE RESULTS FOR GOLD (RESOURCE 2011): AUGUST 2014 SITE VISIT**

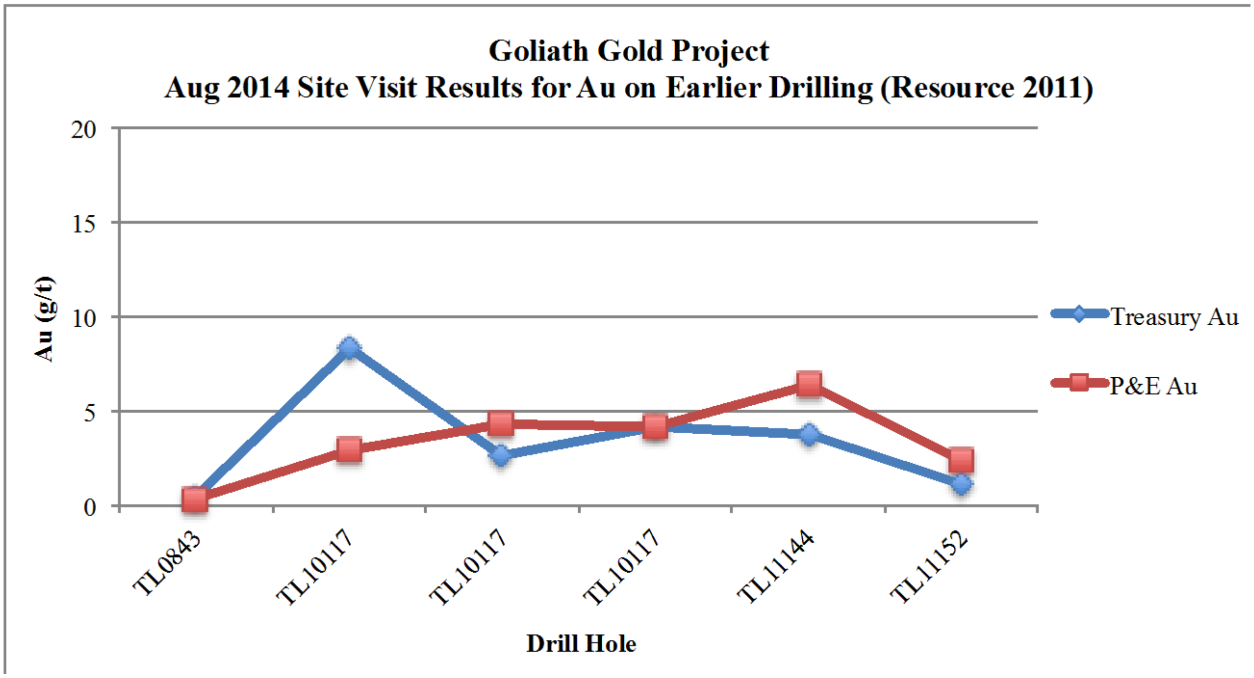



**FIGURE 12.3 GOLIATH GOLD DUE DILIGENCE SAMPLE RESULTS FOR GOLD (POST RESOURCE 2011): JUNE 2015 SITE VISIT**

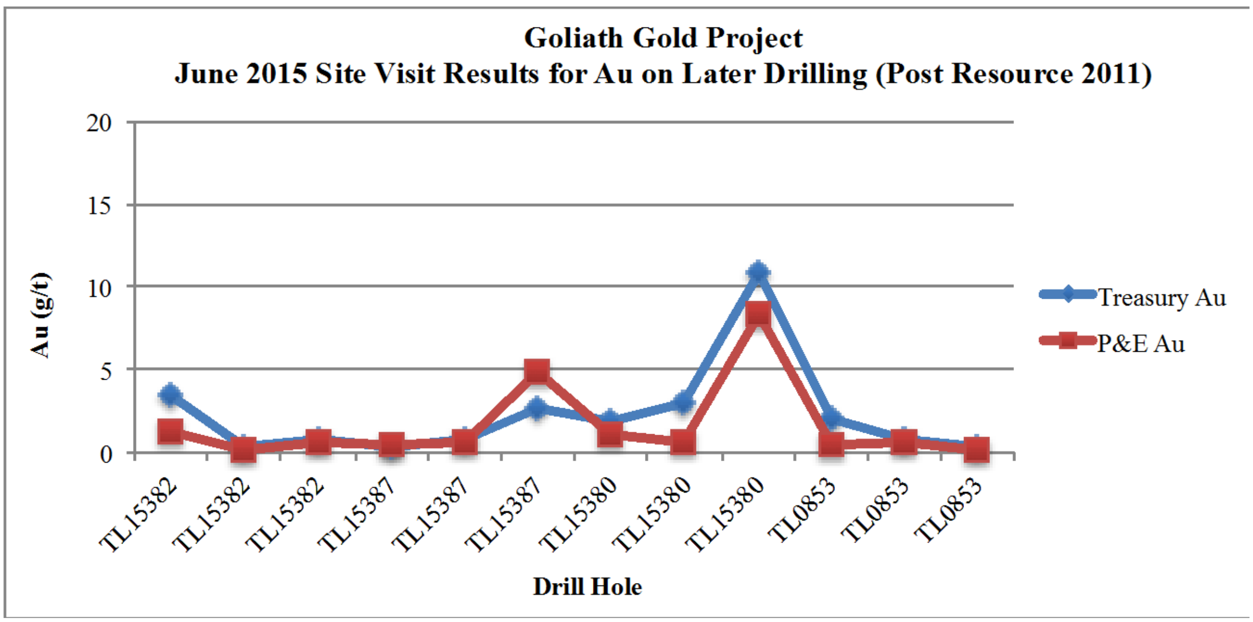


**Figure 12.4 Goliath Gold Due Diligence Sample Results for Silver (Post Resource 2011): June 2015 Site Visit**

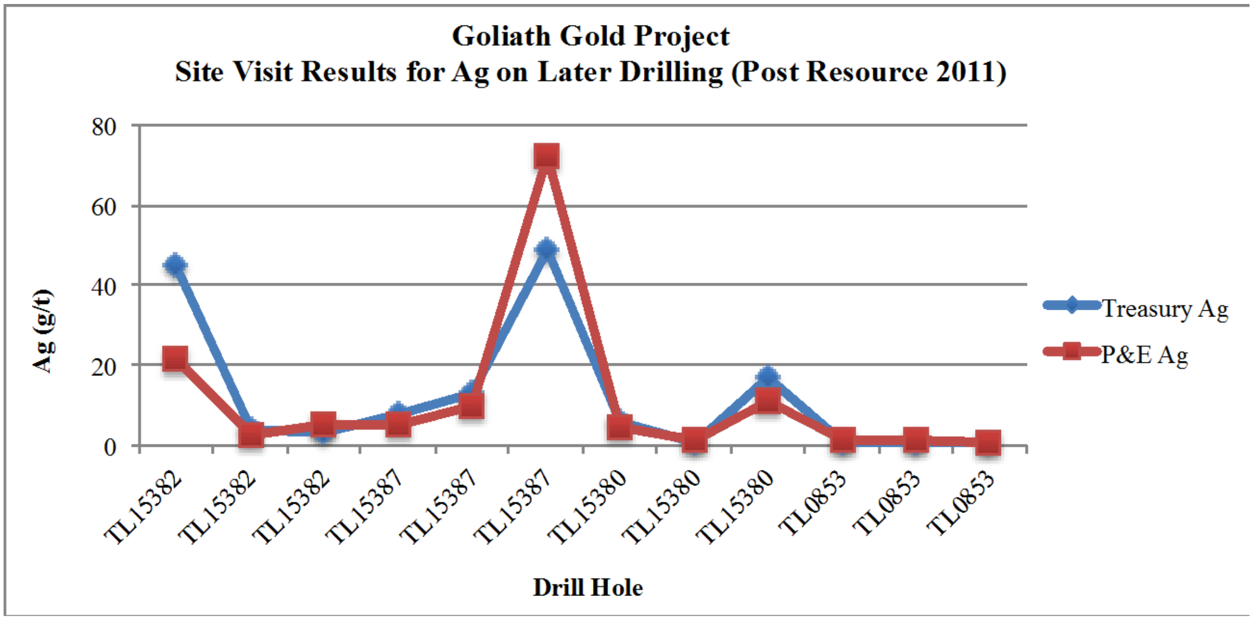



**Figure 12.5 Goliath Gold Due Diligence Sample Results for Gold: April 2018 Site Visit**

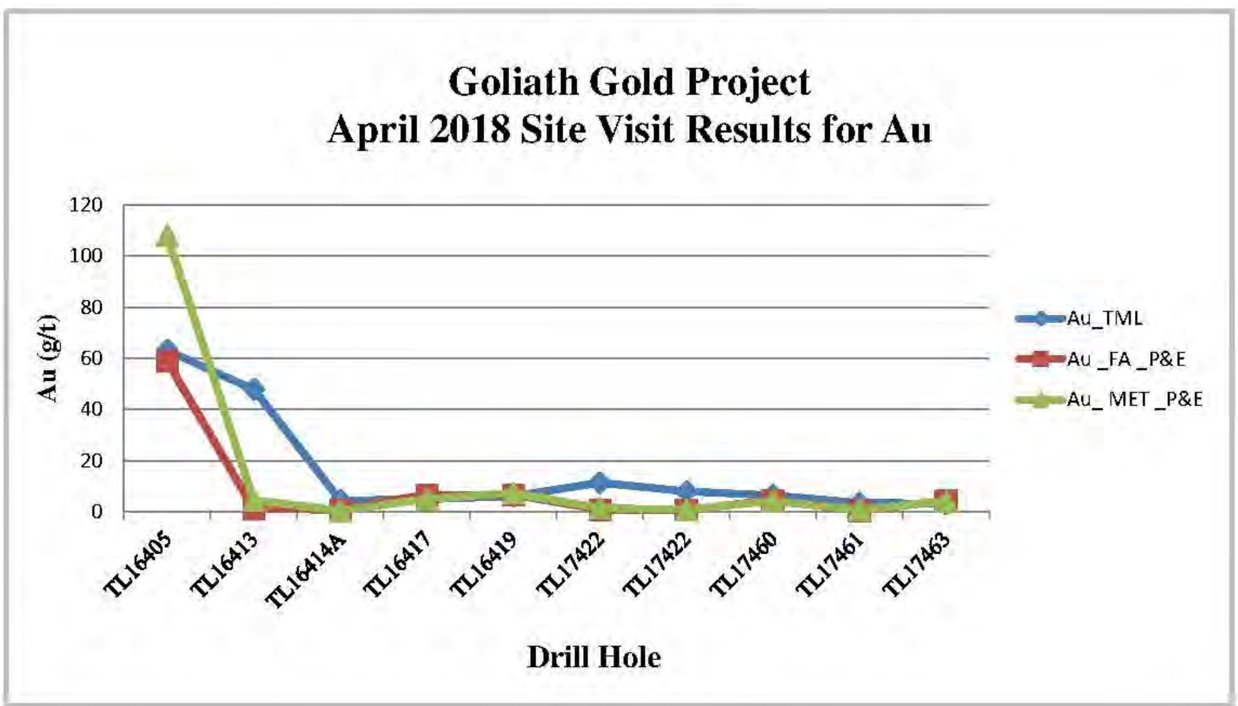


**FIGURE 12.6 GOLIATH GOLD DUE DILIGENCE SAMPLE RESULTS FOR SILVER: APRIL 2018 SITE VISIT**

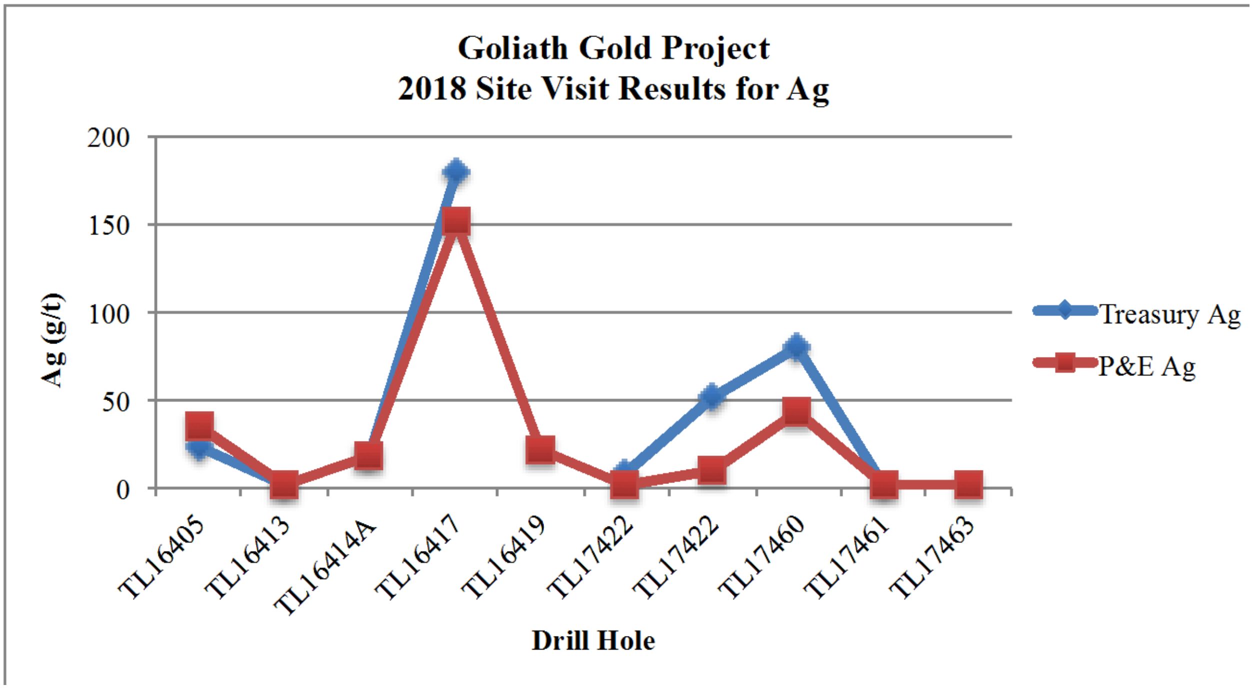



**FIGURE 12.7 GOLIATH GOLD DUE DILIGENCE SAMPLE RESULTS FOR GOLD: SEPTEMBER 2018 SITE VISIT**

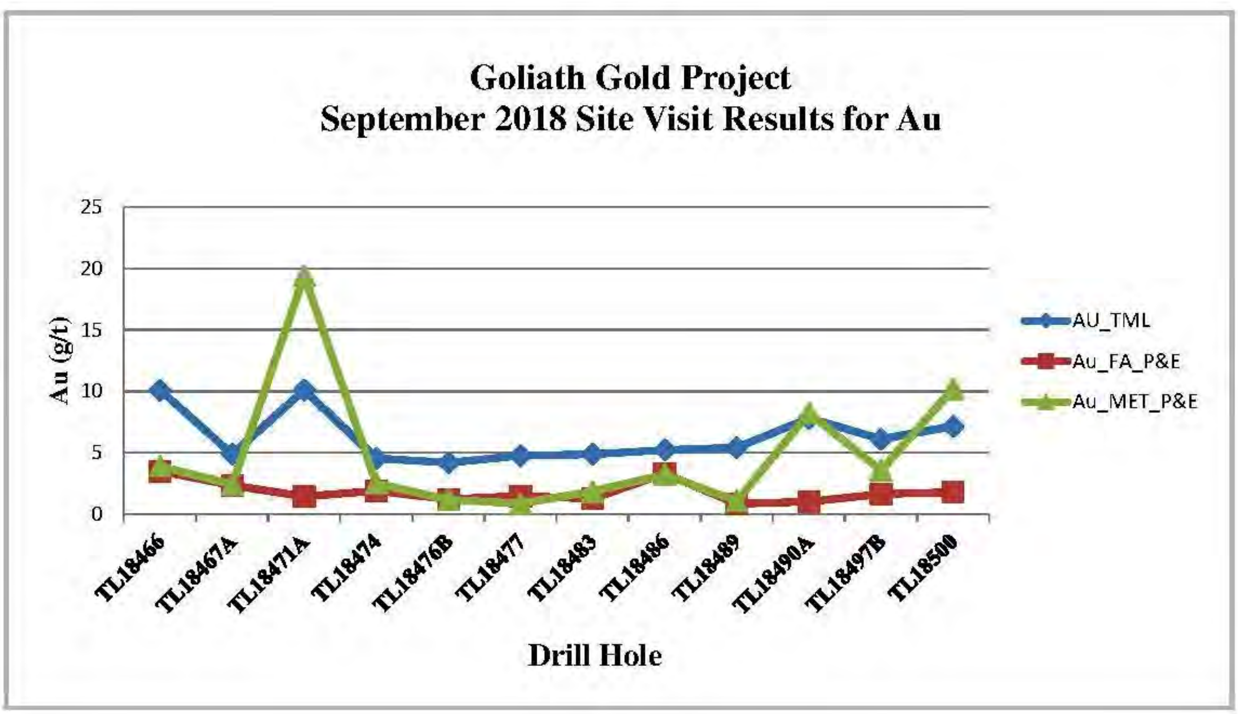
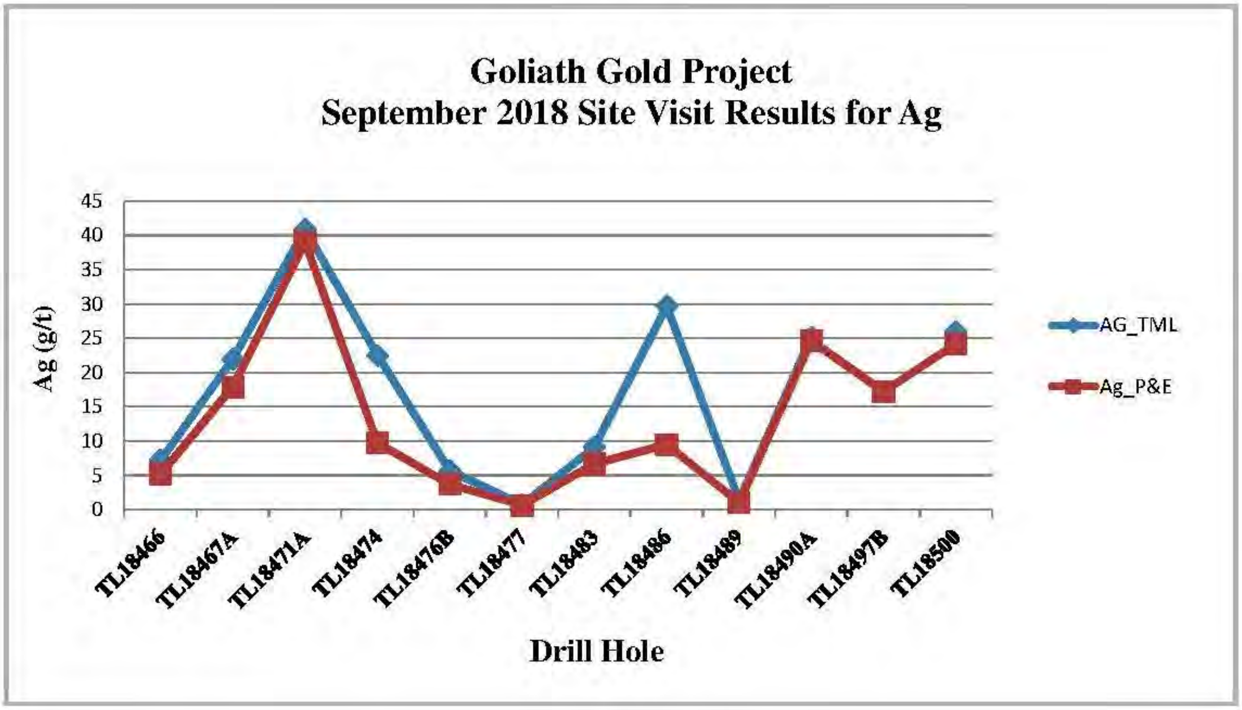


**FIGURE 12.8 GOLIATH GOLD DUE DILIGENCE SAMPLE RESULTS FOR SILVER: SEPTEMBER 2018 SITE VISIT**




P&E considers there to be good correlation between the majority of P&E's independent verification samples analyzed by AGAT and the original analyses in the Goliath Gold database. Grade variation is evident in some samples, however the authors consider the due diligence results to be acceptable.

Based upon the evaluation of the QA/QC program undertaken by Treasury, as well as P&E's due diligence sampling, it is P&E's opinion that the results are suitable for use in the current Mineral Resource Estimate.

# 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

## 13.1 HISTORICAL TESTING

### 13.1.1 1998 Testwork

In 1998, samples derived from bulk underground sampling were tested at SGS Lakefield Research and returned high gold extractions, indicating excellent amenability to conventional processing.

## 13.2 TREASURY METALS TESTWORK

### 13.2.1 2011 Testwork

G&T Metallurgical Services ("G&T") conducted a test program in 2011 on a composite sample grading 3.5 g/t Au and 25 g/t Ag which evaluated gravity concentration, flotation and cyanidation. General amenability to all tested process options was demonstrated, with gravity concentration followed by conventional carbon in pulp ("CIP") processing yielding the highest recoveries.

The G&T testwork was conducted on a sample composited from 30 drill core samples.

Chemical analysis of the composite is shown in Table 13.1.

**TABLE 13.1**
**COMPOSITE SAMPLE ANALYSES**

| Elements | Value |
|---|---|
| Au g/t | 3.4 |
| Ag g/t | 25 |
| S(T) % | 1.4 |
| Cu % | 0.012 |
| Pb % | 0.04 |
| Zn % | 0.08 |
| Fe, % | 1.3 |

***Source:*** *P&E (2015)*

The total sulphide content accounted for 2.1% of the mass, with the primary suphides being pyrite and lesser pyrrhotite (10% of the total sulphide). No silver minerals were identified. The dominant gangue mineral was quartz, with micas and feldspars representing 22% and 17% respectively.

A Bond ball mill index was determined for the composite and returned a value of 11.1 kWh/tonne (10.9 kWh/T) at a screen size of 106 micron, indicating a relatively soft material.

Gravity separation tests were completed on the composite sample to produce gravity tailing products for downstream testing. Each test was carried out using 4 kg of feed sample at grinds ranging from 68 to 144 microns. Gravity recovery of gold in two tests at grinds of 105 and 125 microns were 23% to 26% in 0.1% to 0.2% of feed weight, indicating moderate potential for gravity recovery of a substantial fraction of the gold. Silver recovery to the gravity concentrate was poor.

Cyanidation tests with and without pre-concentration by flotation were conducted on gravity tailings. Primary grind had a minor effect on gold recovery and a grind of 105 microns was considered adequate. The behaviour of silver was somewhat unique in that overall recovery by flotation followed by cyanidation of the concentrate was substantially higher than by cyanidation alone. However, due to higher gold recovery with direct cyanidation, this route appears to be the most economic.

Gravity plus flotation test results are summarized in Table 13.2.

**TABLE 13.2**
**GRAVITY PLUS FLOTATION**

| Test 7B | Cum. Wt. (g) | Weight % | Ag (g/t) | Au (g/t) | Distribution | |
|---|---|---|---|---|---|---|
| | | | | | Ag (%) | Au (%) |
| Gravity concentrate | 13.6 | 0.34 | 696 | 497 | 10.0 | 46.4 |
| GC+R1 | 133.8 | 3.36 | 612 | 103 | 86.5 | 94.2 |
| GC+R1-R2 | 154.2 | 3.88 | 559 | 91 | 91.0 | 96.4 |
| GC+R1-R3 | 165.0 | 4.15 | 529 | 86 | 92.2 | 97.0 |
| GC+R1-R4 | 171.7 | 4.32 | 511 | 83 | 92.76 | 97.39 |
| | | | | | | |
| **Test 10B** | **Cum. Wt. (g)** | **Cum. Wt. (g)** | **Ag (g/t)** | **Au (g/t)** | **Distribution** | |
| | | | | | **Ag (%)** | **Au (%)** |
| Gravity concentrate | 24.6 | 0.31 | 630 | 439 | 7.5 | 35.7 |
| GC+R1 | 417.3 | 5.23 | 457 | 67 | 92.0 | 92.5 |

***Note:*** *Cum. Wt. (g) = cumulative weight (grams)*
***Source:*** *P&E (2015)*

Test 10B concentrate was leached for 48 hours and returned an overall gold recovery of 95.3%. Cyanide concentration was 2 g/L and cyanide and lime consumptions were 2.9 kg/t and 1.2 kg/t respectively.

Gravity concentration with 48-hour cyanidation of the gravity tail is summarized in Table 13.3.

| TABLE 13.3<br>GRAVITY PLUS CYANIDATION | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Grind K80, µ** | **NaCN (g/L)** | **Gravity (Wt %)** | **Recovery (%)** | | | | **Reagents (kg/t)** | |
| | | | **Gravity** | | **Grav + CN** | | | |
| | | | **Au** | **Ag** | **Au** | **Ag** | **NaCN** | **CaO** |
| 105 | 2.0 | 1.1 | 71 | 30 | 97 | 82 | 0.7 | 0.7 |
| 105 | 2.0 | 0.1 | 26 | 6 | 97 | 77 | 0.7 | 0.5 |
| 125 | 2.0 | 0.2 | 23 | 5 | 94 | 72 | 0.9 | 0.4 |
| 68 | 2.0 | 0.2 | 23 | 5 | 96 | 78 | 1.6 | 0.4 |
| 144 | 2.0 | 0.6 | 43 | 8 | 96 | 71 | 0.6 | 0.8 |
| 105 | 1.0 | 0.1 | 26 | 6 | 97 | 65 | 0.3 | 1.0 |
| 105 | 0.5 | 0.1 | 26 | 6 | 96 | 69 | 0.2 | 0.6 |

***Source:*** *P&E (2015)*

### 13.2.2 2012 Testwork

G&T conducted a second testwork program on composites comprised of 163 samples totaling about 400 kg of drill core. Two master composites were made, with most of the work being conducted on the lower grade composite (Master Composite 3) which assayed 2.15 g/t Chemical analysis of this composite is recorded in Table 13.4. The higher grade composite (Master Composite 2) assayed 5.89 g/t gold. Ten variability samples were tested with head grades as shown in Table 13.5.

| TABLE 13.4<br>MASTER COMPOSITE 3 ANALYSIS | |
|---|---|
| **Elements** | **Value** |
| Au g/t | 2.15 |
| Ag g/t | 8 |
| S(T) % | 1.27 |
| Hg g/t | 1 |
| As % | 0.004 |
| Sb, % | 0.003 |

***Source:*** *P&E (2015)*

Table 13.6 displays the assayed gold content of the variability samples.

| TABLE 13.5<br>VARIABILITY SAMPLES ANALYSES | |
|---|---|
| **Sample** | **Au (g/t)** |
| Variability Composite 1 | 1.98 |
| Variability Composite 2 | 0.84 |
| Variability Composite 3 | 2.34 |
| Variability Composite 4 | 3.59 |
| Variability Composite 5 | 2.86 |
| Variability Composite 6 | 0.71 |
| Variability Composite 7 | 1.82 |
| Variability Composite 8 | 5.52 |
| Variability Composite 9 | 0.37 |
| Variability Composite 10 | 15.4 |

***Source:*** *P&E (2015)*

A gravity concentrate was analysed by Automated Digital Imaging System ("ADIS") to determine gold associations. Of the observed gold particles in the gravity concentrates, 72 and 42 percent of the gold mass was considered liberated for Master Composites 2 and 3, respectively. The majority of the remaining gold mass observed in Master Composite 2 was associated with pyrite, while the majority of the remaining gold mass observed in Master Composite 3 split fairly evenly between gangue and multi-phase.

Crushing and grinding parameters were measured using the SMC test and the Bond ball mill work index test. SAG Mill Comminution ("SMC") test data were generated for Master Composite 2. On the basis of the SMC test data, Master Composite 2 is of medium hardness with respect to breakage in a SAG mill. Bond ball mill work indices on variability samples ranged from 8.9 to 13.9 kWh/t and Composite 2 returned 10.8 kWh/t, all indicating relatively soft rock.

Cyanidation testwork was undertaken on both "whole ore" (also known as "direct cyanidation"), and on gravity tailings. In the former case a grind of 94 microns was adopted. In the latter case, grinds of 60 to 147 microns were tested and the gravity concentrates produced were separately leached under "intensive" cyanidation conditions. The intensive cyanidation tailings were added to the gravity tailings prior to leaching.

Table 13.6 summarizes the results of cyanidation tests on the master composites.

| **TABLE 13.6<br>COMPOSITE CYANIDATION SUMMARY** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Sample** | **Test** | **Grind K80 (µ)** | **NaCN (mg/L)** | **Oxidant** | **Gold Extraction (%)** | | **Reagent (kg/t)** | |
| | | | | | **Intensive CN** | **Overall** | **NaCN** | **CaO** |
| MC2 | 2 | 114 | 1,000 | O2 | 72 | 98 | 1.1 | 0.3 |
| MC2 | 3 | 114 | 1,000 | O2 | | 98 | 1.0 | 0.3 |
| MC3 | 4 | 94 | 1,000 | O2 | 69 | 96 | 0.8 | 0.2 |
| MC3 | 5 | 94 | 1,000 | O2 | | 95 | 0.6 | 0.2 |
| MC3 | 7 | 147 | 1,000 | O2 | 70 | 94 | 0.3 | 0.3 |
| MC3 | 8 | 73 | 1,000 | O2 | 74 | 96 | 0.6 | 0.4 |
| MC3 | 9 | 60 | 1,000 | O2 | 73 | 96 | 1.3 | 0.3 |
| MC3 | 10 | 94 | 1,000 | O2 | 61 | 94 | 0.8 | 0.3 |
| MC3 | 11 | 94 | 750 | O2 | 63 | 93 | 0.4 | 0.3 |
| MC3 | 12 | 94 | 500 | O2 | 68 | 93 | 0.3 | 0.3 |
| MC3 | 13 | 94 | 250 | O2 | 71 | 95 | 0.3 | 0.3 |
| MC3 | 14 | 94 | 1,000 | air | 85 | 97 | 2.1 | 0.7 |

***Source:*** *P&E (2015)*

High extractions were obtained in all tests, with little apparent effect of grind on extraction. The effect of gravity concentration on overall extraction is also minimal, however inclusion of a gravity circuit in the flowsheet could reduce the required leach time significantly.

Cyanidation tests on the variability composites using a gravity – cyanidation flowsheet returned generally high gold extractions as shown in Table 13.7.

| **TABLE 13.7<br>VARIABILITY SAMPLE CYANIDATION** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Sample** | **Test** | **Grind K80 (µ)** | **NaCN (mg/L)** | **Oxidant** | **Gold Extraction (%)** | | **Reagent (kg/t)** | |
| | | | | | **Intensive CN** | **Overall** | **NaCN** | **CaO** |
| Var 1 | 15 | 91 | 1,000 | air | 76 | 97 | 1.5 | 0.2 |
| Var 2 | 16 | 102 | 1,000 | air | 95 | 99 | 0.6 | 0.4 |
| Var 3 | 17 | 112 | 1,000 | air | 79 | 97 | 0.5 | 0.4 |
| Var 5 | 18 | 101 | 1,000 | air | 84 | 96 | 0.6 | 0.4 |
| Var 6 | 19 | 103 | 1,000 | air | 67 | 92 | 0.5 | 0.4 |
| Var 7 | 20 | 91 | 1,000 | air | 74 | 95 | 0.5 | 0.4 |
| Var 8 | 21 | 100 | 1,000 | air | 66 | 92 | 0.7 | 0.4 |
| Var 9 | 22 | 93 | 1,000 | air | 91 | 98 | 0.6 | 0.3 |
| Var 10 | 23 | 93 | 1,000 | air | 77 | 98 | 0.4 | 0.3 |

***Source:*** *P&E (2015)*

### 13.2.3 2014 Testwork

Gekko conducted gravity-flotation-cyanidation of concentrate testwork on “medium” and “high” grade samples; oriented toward application of their proprietary equipment to the process. Three reports were issued. In general, the results appear to be generally compatible with earlier testwork; however, significant sampling and/or assaying difficulties compromised interpretation of the data and this work is considered unreliable on this account. Additionally, the proposed application of intensive leaching equipment to treatment of a combined gravity-flotation concentrate is not considered appropriate for this project, given the excellent response to conventional processing.

Overall, and subject to the validity of the samples utilized in the 2011 and 2012 G&T programs, conventional direct cyanidation, with or without gravity concentration is recommended, primarily due to a significantly higher recovery than can be obtained utilizing flotation followed by cyanidation of concentrate. Reagent consumptions are also moderate.

# 14.0 MINERAL RESOURCE ESTIMATE

## 14.1 INTRODUCTION

The purpose of this report section is to provide a Mineral Resource Estimate update to the previous Mineral Resource Estimate “Technical Report and Updated Mineral Resource Estimate for the Goliath Gold Project, Kenora Mining Division, Northwestern Ontario”, effective date August 28, 2015, with 2016 - 2018 drill holes and infill samples on the Goliath Deposit of Treasury Metals Inc. ("Treasury"). The update includes Open Pit (“OP”) and Underground (“UG”) Mineral Resource models. The Mineral Resource Estimate presented herein is reported in accordance with the Canadian Securities Administrators’ National Instrument 43-101 and has been estimated in conformity with the generally accepted CIM “Estimation of Mineral Resource and Mineral Reserves Best Practices” guidelines. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no guarantee that all or any part of the Mineral Resource will be converted into a Mineral Reserve. Confidence in the estimate of Inferred Mineral Resources is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. Mineral Resources may be affected by further infill and exploration drilling that may result in increases or decreases in subsequent Mineral Resource Estimates.

This Mineral Resource Estimate was undertaken by Yungang Wu, P.Geo., Eugene Puritch, P.Eng., FEC, CET and Antoine Yassa, P.Geo. of P&E Mining Consultants Inc. of Brampton, Ontario, all independent Qualified Persons in terms of NI 43-101, from information and data supplied by Treasury. The effective date of this Mineral Resource Estimate is July 1, 2019.

## 14.2 PREVIOUS MINERAL RESOURCE ESTIMATES

A previous public Mineral Resource Estimate for the Goliath Project with an effective date of August 28, 2015 is presented in Table 14.1. The Mineral Resources were reported against a gold equivalent (AuEq) cut-off of 0.35 g/t and 1.9 g/t for In-pit and Underground Mineral Resources respectively. The previous Mineral Resource Estimate is superseded in its entirety by the Mineral Resource Estimate reported herein.

| **Table 14.1<br>Previous Goliath Mineral Resource Estimate** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Mineral Resource Area** | **Classification** | **Cut-off AuEq (g/t)** | **Tonnes (kt)** | **Au (g/t)** | **Contained Au (koz)** | **Ag (g/t)** | **Contained Ag (koz)** | **AuEq (g/t)** | **Contained AuEq (koz)** |
| OP | Measured | 0.35 | 1,015 | 1.90 | 62 | 7.84 | 256 | 2.00 | 65 |
| | Indicated | 0.35 | 17,174 | 1.22 | 676 | 5.20 | 2,869 | 1.29 | 710 |
| | Meas + Ind | 0.35 | 18,189 | 1.26 | 738 | 5.34 | 3,125 | 1.33 | 775 |
| | Inferred | 0.35 | 1,351 | 0.99 | 43 | 4.28 | 186 | 1.04 | 45 |
| UG | Measured | 1.9 | 103 | 7.32 | 24 | 23.10 | 76 | 7.60 | 25 |
| | Indicated | 1.9 | 2,264 | 4.84 | 352 | 14.35 | 1,044 | 5.02 | 365 |
| | Meas +Ind | 1.9 | 2,367 | 4.95 | 376 | 14.73 | 1,120 | 5.13 | 390 |
| | Inferred | 1.9 | 2,120 | 4.22 | 287 | 10.90 | 743 | 4.35 | 296 |
| Total | Measured | 0.35+1.9 | 1,118 | 2.40 | 86 | 9.24 | 332 | 2.51 | 90 |
| | Indicated | 0.35+1.9 | 19,438 | 1.65 | 1,028 | 6.26 | 3,913 | 1.72 | 1,075 |
| | M+I | 0.35+1.9 | 20,556 | 1.69 | 1,114 | 6.42 | 4,245 | 1.76 | 1,165 |
| | Inferred | 0.35+1.9 | 3,471 | 2.96 | 331 | 8.32 | 929 | 3.06 | 341 |

***Source:*** *P&E 2019*

## 14.3 DATABASE

All drilling and assay data were provided in the form of Excel data files by Treasury. The Gems database for this Mineral Resource Estimate, constructed by P&E, consisted of 811 core holes totalling 257,540 metres (Table 14.2). A total of 99 new holes including exploration holes were drilled and 4,468 new infill sample intervals from holes drilled prior to 2015 were taken. The last hole in the database is TL18501. The holes in the database located east of UTM 529,000 E were not used for this Mineral Resource Estimate since they targeted only an exploration potential area. A drill hole plan is shown in Appendix A.

**TABLE 14.2**
**DRILL HOLE DATABASE SUMMARY**

| Drilling Year | No. Drill Holes | Metres of Drilling | No. of Au Assays |
|---|---|---|---|
| 2018 | 37 | 19,603 | 9,686 |
| 2017 infill sampling | - | - | 4,468 |
| 2016-2017 | 62 | 19,862 | 10,609 |
| 1990-2015 | 712 | 218,075 | 79,553 |
| **Total** | **811** | **257,540** | **104,316** |

***Note:*** *does not include abandoned holes*

The assay table of the database contained 104,316 Au assays and 58,848 Ag Assays. The Au assay database consisted of five types of assays. P&E combined the Au assay database field as "Au_Final" in the precedence order of Metallic analysis, Gravimetric analysis, Cyanide Bottle Roll analysis, Fire Assay with 50 g and Fire Assay with 30 g (Table 14.3).

**TABLE 14.3**
**GOLIATH ASSAY DATABASE SUMMARY**

| Assay Type | No. of Assays | Assay Method |
|---|---|---|
| Au_FA30 | 89,359 | Fire Assay with 30 g |
| Au_FA50 | 19,184 | Fire Assay with 50 g |
| Au_GRAV | 305 | Gravimetric analysis |
| Au_MET | 1,022 | Metallic analysis |
| Au_CYNBR | 379 | Cyanide Bottle Roll analysis |

All drill hole survey and assay values are expressed in metric units, with grid coordinates in the NAD 83, Zone 15 UTM system.

## 14.4 DATA VERIFICATION

Verification of Au assay database records was performed by P&E against original laboratory electronically issued certificates from Activation Laboratories, Thunder Bay and Accurassay

Laboratories, Thunder Bay. A total 95% of the pre-2016 Au assays and all 2016-2018 Au and Ag assays were checked. Very minor errors were found and corrected in the database. All assays below detection limit (<0.005 g/t) were set to 0.001 g/t or 0.005 g/t by Treasury in the database. Unverified assays were due to no laboratory certificates being made available to P&E.

P&E typically also validates a Mineral Resource database by checking for inconsistencies in analytical units, duplicate entries, interval, length or distance values less than or equal to zero, blank or zero-value assay results, out-of-sequence intervals, intervals or distances greater than the reported drill hole length, inappropriate collar locations, survey and missing interval and coordinate fields. Some very minor errors were noted and corrected. P&E believes that the supplied database is suitable for Mineral Resource estimation.

## 14.5 DOMAIN INTERPRETATION

The mineralization wireframes (aka domains) were updated from the 2015 Mineral Resource Estimate using new drill holes and infill samples completed in 2016 to 2018. Two sets of mineralization wireframes were generated separately for potential Open Pit Mineral Resources and Underground Mineral Resources. The open pit domains were modelled from surface down to 150 masl elevation, while underground domains were modelled up to -380 metres from surface, overlapping with the open pit wireframes from surface to 150 masl elevation.

Mineralization domains were defined by continuous mineralized structures, lithology along strike and down dip, and assay intervals equal to or greater than 0.4 g/t AuEq for the potential Open Pit Mineral Resource area, and 1.9 g/t AuEq for the potential Underground Mineral Resource area. The formula for AuEq was AuEq=Au+(Ag/112.17). The ratio of Au/Ag = 112.17:1 was derived from Au and Ag prices of US$1,250/oz and US$17/oz respectively, and respective 95.5% and 62.6% process recoveries.

Thirteen (13) mineralized wireframes for the Open Pit Mineral Resource Estimate and nine (9) mineralized wireframes for the Underground Mineral Resource Estimate were constructed. The wireframes were created from successive sectional polylines on east orientated vertical sections on 25 m spacings. In some cases, mineralization below the above-mentioned 0.4 g/t and 1.9 g/t AuEq cut-offs were included for the purpose of maintaining wireframe continuity. On each section, polyline interpretations were digitized from drill hole to drill hole but not typically extended more than 25 metres into untested territory. Minimum constrained sample length for interpretation was 2.0 metres. The resulting Mineral Resource domains were used as hard boundaries during Mineral Resource estimation, for rock coding, statistical analysis and compositing limits. The 3-D domains are presented in Appendix B.

A topographic surface was created using drill hole collars west of UTM 526,650 m E and a Digital Elevation Model ("DEM") was provided by Treasury which covered up to 526,650 m E. The overburden surface was created using casing depths from drill hole logs. Lithology models were developed based on the drill hole lithology logs.

## 14.6 ROCK CODE DETERMINATION

A unique rock code was assigned for each mineralized domain in the Mineral Resource model. Due to strike and dip variation, some domains were divided into sub-domains for search ellipsoid orientation. The rock codes applied for both Open Pit and Underground Mineral Resource models can be seen in Table 14.4.

**TABLE 14.4**
**ROCK CODE DESCRIPTION**

| Zone | UG Model Code | Open Pit Model Code |
|---|---|---|
| Main1 | 100 | 100/102 |
| Main2 | 110 | 110/112 |
| B1 | 210 | 210/212 |
| B2 | NA | 220/222 |
| C1 | 230 | 230/232 |
| C2 | 240 | 240/242 |
| D | 250 | 250/251/252 |
| E | NA | 260 |
| H1 | 310 | 310/312 |
| H2 | 320 | 320/322 |
| H3 | 330 | 330/332 |
| H4 | NA | 340/342 |
| H5 | NA | 350 |
| Air | 0 | 0 |
| Overburden | 10 | 10 |
| Waste | 99 | 99 |

***Note:*** *UG = underground*

## 14.7 COMPOSITING

The basic statistics of all constrained assays and sample length are presented in Tables 14.5 and 14.6 for the Open Pit and Underground Mineral Resource Estimates respectively. There are some overlaps above the 150 masl elevation between the open pit and underground wireframes.

| **TABLE 14.5<br>BASIC STATISTICS OF ALL CONSTRAINED ASSAYS AND SAMPLE LENGTHS FOR OPEN PIT MINERAL RESOURCE ESTIMATE** | | | |
|---|---|---|---|
| **Variable** | **Assay Au (g/t )** | **Assay Ag (g/t)** | **Length (m)** |
| Number of Samples | 11,029 | 8,056 | 11,029 |
| Minimum Value | 0.001 | 0.1 | 0.1 |
| Maximum Value | 430.49 | 1214.00 | 3.05 |
| Mean | 1.29 | 6.44 | 1.05 |
| Median | 0.37 | 1.00 | 1.00 |
| Geometric Mean | 0.32 | 1.85 | 0.99 |
| Variance | 66.07 | 1085.95 | 0.11 |
| Standard Deviation | 8.13 | 32.95 | 0.33 |
| Coefficient of Variation | 6.28 | 5.12 | 0.32 |

| **TABLE 14.6<br>BASIC STATISTICS OF ALL CONSTRAINED ASSAYS AND SAMPLE LENGTHS FOR UNDERGROUND MINERAL RESOURCE ESTIMATE** | | | |
|---|---|---|---|
| **Variable** | **Assay Au (g/t )** | **Assay Ag (g/t)** | **Length (m)** |
| Number of Samples | 3,454 | 2,243 | 3,454 |
| Minimum Value | 0.002 | 0.1 | 0.10 |
| Maximum Value | 747.26 | 1214.00 | 3.00 |
| Mean | 4.21 | 15.54 | 1.07 |
| Median | 0.90 | 2.80 | 1.00 |
| Geometric Mean | 0.92 | 3.29 | 1.01 |
| Variance | 437.76 | 3853.16 | 0.10 |
| Standard Deviation | 20.92 | 62.07 | 0.32 |
| Coefficient of Variation | 4.97 | 3.99 | 0.30 |

As shown in Figures 14.1 and 14.2, approximately 43% and 44% of the constrained samples for the Open Pit and Underground Mineral Resource Estimates respectively were 1.0 metre in length. In order to regularize the assay sampling intervals for grade interpolation, a one metre compositing length was selected for the drill hole intervals that fell within the constraints of the above-mentioned Mineral Resource domains. Un-assayed intervals and below detection limit assays were set to 0.001 g/t for Au, while intervals without Ag assays were treated as “NULL”. Any composites that were less than 0.25 metre in length were discarded so as not to introduce any short sample bias in the grade interpolation process. The constrained composite data were extracted to point area files for a capping study. The composite statistics of the Open Pit and Underground Mineral Resource Estimates are summarized in Tables 14.7 and 14.8 respectively.

**FIGURE 14.1 CONSTRAINED SAMPLE LENGTH DISTRIBUTION - OPEN PIT MINERAL RESOURCE MODEL**

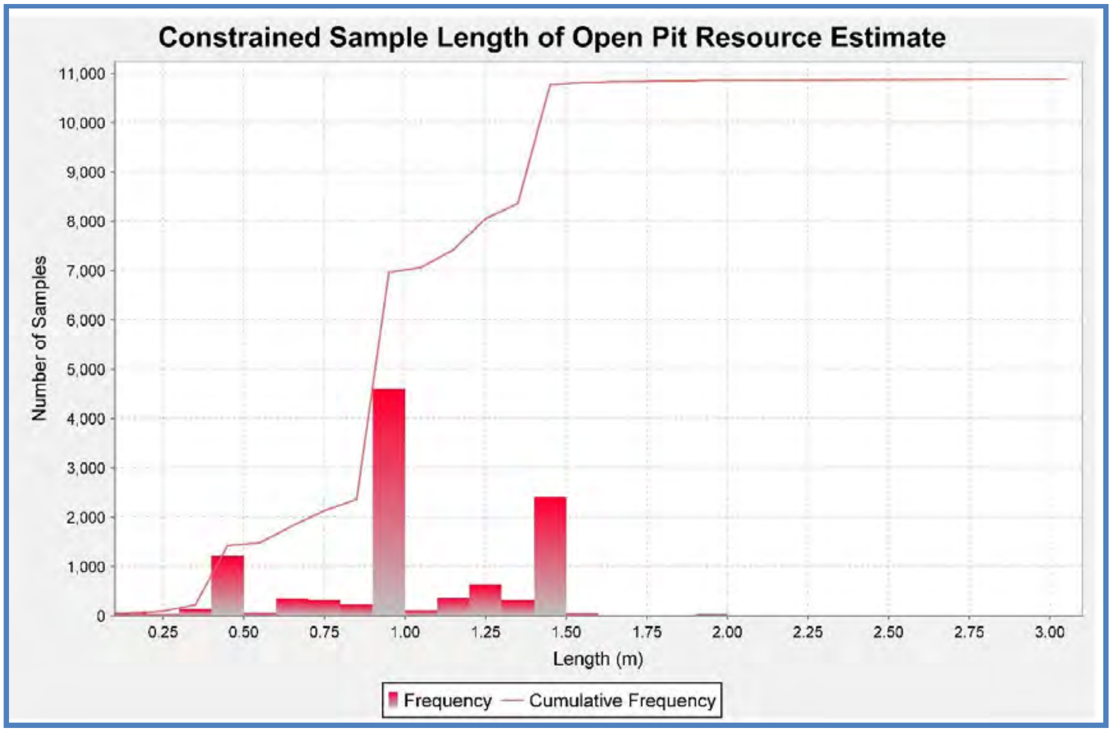
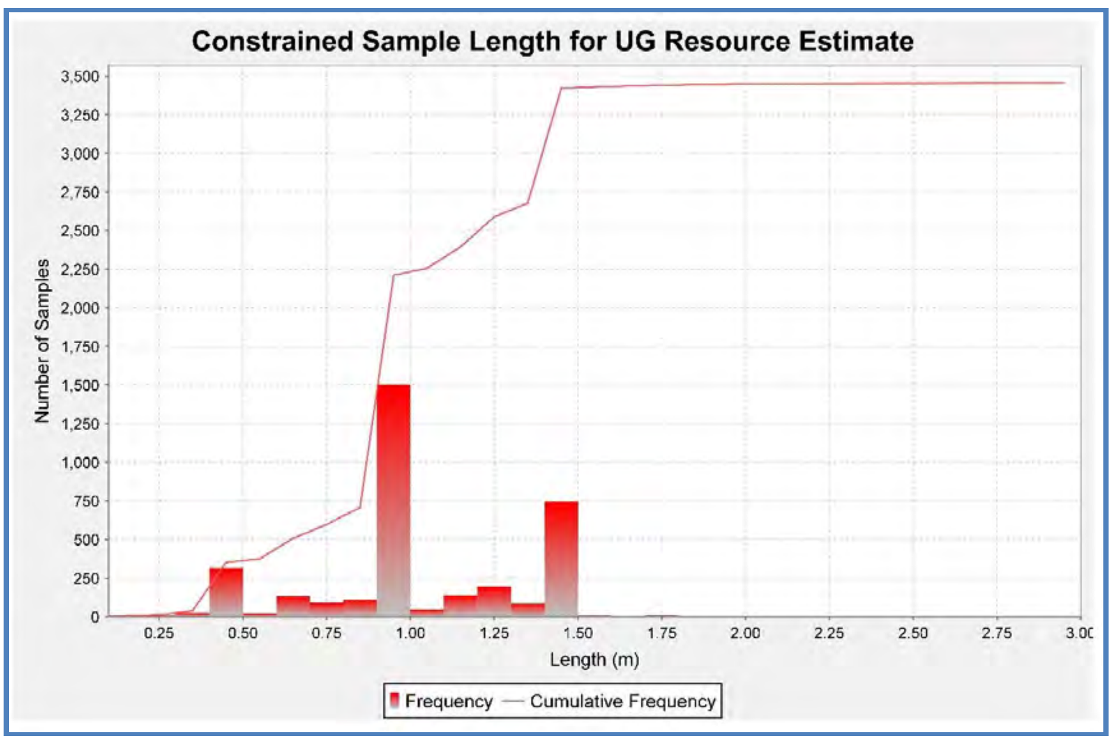



**FIGURE 14.2 CONSTRAINED SAMPLE LENGTH DISTRIBUTION - UNDERGROUND MINERAL RESOURCE MODEL**



| **Table 14.7**<br>**Composite Summary Statistics for Open Pit Mineral Resource Estimate** | | | | |
|---|---|---|---|---|
| **Variable** | **Au Composites** | **Ag Composites** | **Au Capped Composites** | **Ag Capped Composites** |
| Number of Samples | 13,065 | 8,427 | 13,065 | 8,427 |
| Minimum Value | 0.001 | 0.1 | 0.001 | 0.1 |
| Maximum Value | 429.08 | 604.49 | 50.00 | 140.00 |
| Mean | 1.10 | 5.60 | 0.91 | 4.74 |
| Median | 0.36 | 1.50 | 0.36 | 1.50 |
| Geometric Mean | 0.22 | 1.88 | 0.22 | 1.87 |
| Variance | 41.80 | 470.84 | 6.94 | 132.47 |
| Standard Deviation | 6.47 | 21.70 | 2.63 | 11.51 |
| Coefficient of Variation | 5.90 | 3.88 | 2.88 | 2.43 |

| **Table 14.8**<br>**Composite Summary Statistics for Underground Mineral Resource Estimate** | | | | |
|---|---|---|---|---|
| **Variable** | **Au Composites** | **Ag Composites** | **Au Capped Composites** | **Ag Capped Composites** |
| Number Of Samples | 5,239 | 3,457 | 5,239 | 3,457 |
| Minimum Value | 0.001 | 0.1 | 0.001 | 0.1 |
| Maximum Value | 429.08 | 1184.43 | 100.00 | 300.00 |
| Mean | 3.18 | 11.96 | 2.68 | 10.28 |
| Median | 0.85 | 2.50 | 0.85 | 2.50 |
| Geometric Mean | 0.79 | 3.00 | 0.78 | 2.98 |
| Variance | 199.51 | 1929.40 | 51.49 | 724.21 |
| Standard Deviation | 14.12 | 43.92 | 7.18 | 26.91 |
| Coefficient of Variation | 4.45 | 3.67 | 2.68 | 2.62 |

## 14.8 GRADE CAPPING

Grade capping was investigated on the 1.0 m composite values in the database within the constraining mineralized domains to ensure that the possible influence of erratic high values did not bias the database. Au composite Log-normal histograms were generated for each domain and the resulting graphs are exhibited in Appendix C for the open pit and Appendix D for the underground mine. The Au and Ag grade capping values for the Open Pit and Underground Mineral Resource Estimates are detailed in Tables 14.9 and 14.10 respectively. The capped composites were utilized to develop variograms and for block model grade interpolation.

**TABLE 14.9**
**GRADE CAPPING VALUES FOR OPEN PIT MINERAL RESOURCE ESTIMATE**

**AU**

| Domain | Total No. of Composites | Capping Value Au (g/t) | No. of Capped Composites | Mean of Composites | Mean of Capped Composites | CoV of Raw Composites | CoV of Capped Composites | Capping Percentile |
|---|---|---|---|---|---|---|---|---|
| Main1 | 2,490 | 20 | 20 | 1.42 | 1.23 | 3.54 | 2.05 | 99.2 |
| Main2 | 2,463 | 50 | 12 | 2.08 | 1.58 | 6.34 | 3.08 | 99.5 |
| Zone B1 | 816 | 10 | 10 | 0.79 | 0.56 | 5.01 | 2.37 | 98.8 |
| Zone B2 | 574 | 5 | 2 | 0.29 | 0.27 | 2.44 | 1.80 | 99.7 |
| Zone C1 | 1,652 | 15 | 3 | 0.81 | 0.80 | 1.91 | 1.80 | 99.8 |
| Zone C2 | 1,502 | 15 | 5 | 0.86 | 0.85 | 2.11 | 1.91 | 99.7 |
| Zone D | 512 | 10 | 6 | 0.75 | 0.57 | 4.14 | 2.20 | 98.8 |
| Zone E | 152 | No Capping | 0 | 0.62 | 0.62 | 1.82 | 1.82 | 100.0 |
| Zone H1 | 951 | 10 | 6 | 0.57 | 0.48 | 4.06 | 2.41 | 99.4 |
| Zone H2 | 835 | 10 | 10 | 0.84 | 0.63 | 4.83 | 2.30 | 98.8 |
| Zone H3 | 572 | 15 | 3 | 0.54 | 0.45 | 5.00 | 3.18 | 99.5 |
| Zone H4 | 475 | No Capping | 0 | 0.34 | 0.34 | 2.33 | 2.33 | 100.0 |
| Zone H5 | 71 | No Capping | 0 | 0.21 | 0.21 | 2.31 | 2.31 | 100.0 |

**AG**

| Domain | Total No. of Composites | Capping Value Ag (g/t) | No. of Capped Composites | Mean of Composites | Mean of Capped Composites | CoV of Raw Composites | CoV of Capped Composites | Capping Percentile |
|---|---|---|---|---|---|---|---|---|
| Main1 | 1,556 | 140 | 11 | 8.21 | 6.85 | 3.99 | 2.51 | 99.3 |
| Main2 | 1,483 | 100 | 13 | 6.85 | 5.96 | 3.18 | 2.27 | 99.1 |
| Zone B1 | 506 | 90 | 7 | 10.66 | 8.96 | 2.90 | 2.01 | 98.6 |
| Zone B2 | 385 | 20 | 2 | 1.75 | 1.69 | 1.74 | 1.35 | 99.5 |
| Zone C1 | 1,348 | 50 | 6 | 3.78 | 3.52 | 2.55 | 1.71 | 99.6 |
| Zone C2 | 1,227 | 60 | 5 | 3.80 | 3.50 | 2.69 | 1.92 | 99.6 |

| **Table 14.9**<br>**Grade Capping Values for Open Pit Mineral Resource Estimate** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Domain** | **Total No. of Composites** | **Capping Value Ag (g/t)** | **No. of Capped Composites** | **Mean of Composites** | **Mean of Capped Composites** | **CoV of Raw Composites** | **CoV of Capped Composites** | **Capping Percentile** |
| Zone D | 355 | 50 | 2 | 2.95 | 2.37 | 4.13 | 2.18 | 99.4 |
| Zone E | 118 | No Capping | 0 | 2.62 | 2.62 | 1.28 | 1.28 | 100.0 |
| Zone H1 | 485 | 25 | 7 | 3.39 | 2.82 | 2.63 | 1.49 | 98.6 |
| Zone H2 | 482 | 45 | 3 | 3.12 | 2.85 | 2.68 | 2.00 | 99.4 |
| Zone H3 | 257 | 60 | 5 | 10.43 | 5.36 | 4.73 | 2.28 | 98.1 |
| Zone H4 | 208 | 25 | 6 | 5.52 | 4.16 | 2.87 | 1.40 | 97.1 |
| Zone H5 | 17 | No Capping | 0 | 4.21 | 4.21 | 0.94 | 0.94 | 100.0 |

| **Table 14.10**<br>**Grade Capping Values for Underground Resource Estimate** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Au** | | | | | | | | |
| **Domain** | **Total No. of Composites** | **Capping Value Au (g/t)** | **No. of Capped Composites** | **Mean of Composites** | **Mean of Capped Composites** | **CoV of Raw Composites** | **CoV of Capped Composites** | **Capping Percentile** |
| Main1 | 1,790 | 40 | 16 | 2.92 | 2.53 | 3.35 | 2.08 | 99.1 |
| Main2 | 1,633 | 100 | 8 | 4.41 | 3.71 | 4.72 | 2.92 | 99.5 |
| Zone B | 181 | 30 | 3 | 4.54 | 2.70 | 4.96 | 2.08 | 98.3 |
| Zone C1 | 782 | 30 | 3 | 1.88 | 1.73 | 2.86 | 1.86 | 99.6 |
| Zone C2 | 700 | 30 | 3 | 1.98 | 1.72 | 3.63 | 2.00 | 99.6 |
| Zone D | 35 | 7 | 2 | 2.79 | 1.45 | 2.80 | 1.43 | 94.3 |
| Zone H1 | 67 | 30 | 2 | 3.74 | 3.23 | 2.42 | 2.07 | 97.0 |
| Zone H2 | 33 | No Capping | 0 | 2.64 | 2.64 | 1.29 | 1.29 | 100.0 |
| H3 & H4 | 18 | 20 | 1 | 4.83 | 3.21 | 2.30 | 1.52 | 94.4 |

| **TABLE 14.10 GRADE CAPPING VALUES FOR UNDERGROUND RESOURCE ESTIMATE** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AG** | | | | | | | | |
| **Domain** | **Total No. of Composites** | **Capping Value Ag (g/t)** | **No. of Capped Composites** | **Mean of Composites** | **Mean of Capped Composites** | **CoV of Raw Composites** | **CoV of Capped Composites** | **Capping Percentile** |
| Main1 | 1,032 | 300 | 6 | 15.05 | 13.30 | 3.74 | 2.63 | 99.4 |
| Main2 | 958 | 220 | 9 | 13.85 | 12.55 | 3.06 | 2.53 | 99.1 |
| Zone B | 154 | 100 | 4 | 14.18 | 9.34 | 3.54 | 2.30 | 97.4 |
| Zone C1 | 615 | 70 | 5 | 7.05 | 6.48 | 2.26 | 1.65 | 99.2 |
| Zone C2 | 595 | 80 | 9 | 8.16 | 6.28 | 4.98 | 2.00 | 98.5 |
| Zone D | 24 | 20 | 2 | 15.64 | 4.44 | 2.75 | 1.31 | 91.7 |
| Zone H1 | 42 | No Capping | 0 | 5.71 | 5.71 | 1.34 | 1.34 | 100.0 |
| Zone H2 | 24 | 30 | 1 | 7.05 | 3.85 | 3.06 | 2.08 | 95.8 |
| H3& H4 | 13 | 60 | 1 | 28.49 | 16.19 | 2.03 | 1.29 | 92.3 |

## 14.9 SEMI-VARIOGRAPHY

A semi-variography study was performed as a guide to determining a grade interpolation search strategy. Omni, along strike, down dip and across dip semi-variograms were attempted for each domain using capped composites. Reasonable variograms were developed for the Main Zone (M1 & M2) and C Zone (C1 & C2) domains, while no variograms were developed for all other smaller domains due to insufficient data. Selected variograms are attached in Appendix E for the open pit and Appendix F for the underground mine.

Continuity ellipses based on the observed semi–variogram ranges were subsequently generated and used as the basis for grade estimation search ranges, distance weighting calculations and Mineral Resource classification criteria. The search ranges for all hanging wall domains (H1 to H5) were same as the Main Zone; while the search ranges for all footwall domains (B, D and E) were same as the C Zone. Anisotropy was modelled based on an average strike direction of 80° and a -70° S dip.

## 14.10 BULK DENSITY

A total of 517 bulk density measurements from 147 drill holes were provided by Treasury, of which 323 samples were collected from the historical drill cores and tested by Actlabs in Thunder Bay in 2016. The overall average bulk density was 2.75 t/$m^3$.

Antoine Yassa of P&E collected 18 bulk density samples in 2014 and 12 samples in 2015 during his site visits. The samples were tested in AGAT Laboratories in Mississauga, and average bulk density was 2.84 t/$m^3$.

Yungang Wu of P&E collected 10 samples in April 2018 and 12 samples in September 2018 during his site visits. The samples were tested in AGAT Laboratories in Mississauga, and average bulk density was 2.78 t/$m^3$, ranging from 2.71 to 2.92 t/$m^3$.

## 14.11 BLOCK MODELLING

The Goliath Mineral Resource block models were constructed using Geovia Gems V6.8 modelling software and the block model origin and block size are tabulated in Table 14.11. Each block model consists of separate model attributes with estimated grade for Au, Ag and gold equivalent (AuEq), rock type, volume percent, bulk density and classification.

| TABLE 14.11<br>BLOCK MODEL DEFINITION | | | | |
|---|---|---|---|---|
| **Item** | **Direction** | **Origin** | **No. of Blocks** | **Block Size (m)** |
| Open Pit Model | X | 526,047.5 | 608 | 5.0 |
| | Y | 5,511,397.5 | 468 | 2.5 |
| | Z | 412.5 | 70 | 5.0 |
| Underground Model | X | 526,267.5 | 536 | 5.0 |
| | Y | 5,511,585 | 340 | 2.5 |
| | Z | 412.5 | 166 | 5.0 |
| Rotation | | $0^{o}$ | | |

All blocks in the rock type block model were initially assigned a waste rock code of 99, corresponding to the surrounding country rocks. All mineralized domains were used to code all blocks within the rock type block model that contain 1% or greater volume within the domains. These blocks were assigned their appropriate individual rock codes as indicated in Table 14.4. The overburden and topographic surfaces were subsequently utilized to assign rock codes 10 and 0, corresponding to overburden and air respectively, to all blocks 50% or greater above the respective surfaces.

A volume percent block model was set up to accurately represent the volume and subsequent tonnage that was occupied by each block inside the constraining domains. As a result, the domain boundary was properly represented by the percent model ability to measure individual infinitely variable block inclusion percentages within that domain. The minimum coding percentage of the mineralized block was set to 1%.

A bulk density model was interpolated with Inverse Distance Squared ($1/d^2$) interpolation method using the bulk density measurements.

The Au and Ag grade blocks were interpolated with Inverse Distance Cubed ($1/d^3$). Multiple passes were executed for the grade interpolation to progressively capture the sample points in order to avoid over smoothing and preserve local grade variability. Search ranges were based on the variograms and search directions which were aligned with the strike and dip directions of each domain/sub-domain accordingly. Grade blocks were interpolated using the parameters in Table 14.12.

| **TABLE 14.12 AU AND AG BLOCK MODEL INTERPOLATION PARAMETERS** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Model Type** | **Pass** | **Dip Range (m)** | **Strike Range (m)** | **Across Dip Range (m)** | **Max No. of Sample per Hole** | **Min No. Sample** | **Max No. Sample** |
| Open Pit Model | I | 20 | 25 | 6 | 2 | 5 | 16 |
| | II | 35 | 40 | 10 | 2 | 3 | 16 |
| | III | 140 | 160 | 40 | 2 | 1 | 16 |
| Underground Model | I | 20 | 25 | 10 | 2 | 5 | 16 |
| | II | 35 | 40 | 15 | 2 | 3 | 16 |
| | III | 140 | 160 | 60 | 2 | 1 | 16 |

Selected cross-sections and plans of the Au grade blocks are presented in Appendix G. The Au equivalent blocks (AuEq) were calculated using the formula AuEq = Au + (Ag/112.17).

## 14.12 MINERAL RESOURCE CLASSIFICATION

In P&E's opinion, the drilling, assaying and exploration works of the Goliath Deposit support this Mineral Resource Estimate and are sufficient to indicate a reasonable potential for economic extraction and thus qualify it as a Mineral Resource Estimate under the CIM definition standards. The Mineral Resources were classified as Measured, Indicated and Inferred based on the geological interpretation, semi-variogram performance and drill hole spacing. The Measured Mineral Resources were classified for the blocks interpolated by the grade interpolation Pass I in the table 14.11, which used at least five composites from a minimum of three drill holes; The Indicated Mineral Resources were defined for the blocks interpolated by the grade interpolation Pass II, which used at least 3 composites from a minimum of two holes; and Inferred Mineral Resources were categorized for all remaining grade populated blocks within the mineralized domains. The classifications have been adjusted on a longitudinal section to reasonably reflect the distribution of each category. Selected classification block cross-sections and plans are attached in Appendix F.

## 14.13 MINERAL RESOURCE ESTIMATE CUT-OFF

The Mineral Resource Estimate was derived from applying an AuEq cut-off grade to the block model and reporting the resulting tonnes and grade for potentially mineable areas. The following calculation demonstrates the rationale supporting the AuEq cut-off grade that determines the open pit and underground potentially economic portions of the constrained mineralization.

### Open Pit AuEq Cut-Off Grade Calculation

| | |
|---|---|
| Au Price | US$1,275/oz based on three year trailing average at Jun 30/19 |
| Ag Price | US$16.50/oz based on three year trailing average at Jun 30/19 |
| US$:CDN$ Exchange Rate | $0.77 based on three year trailing average at Jun 30/19 |
| Au Recovery | 95.5% |
| Ag Recovery | 62.6% |

| | |
|---|---|
| Process Cost (2500 tpd) | C$18.15/tonne processed |
| General & Administration | C$2.86/tonne processed |
| Au Smelter Payable | 99% |

Therefore, the AuEq cut-off grade for the Open Pit Mineral Resource Estimate is calculated as follows:

Process and G&A costs per ore tonne = ($18.15 + $2.86) = C$21.01/tonne
**($21.01)/[(($1,275/0.77/31.1035 )x 95.5% Recovery x 99% Payable)] =0.42   Use 0.40 g/t**

**Underground AuEq Cut-Off Grade Calculation**

| | |
|---|---|
| Au Price | US$1,275/oz based on three year trailing average at Jun 30/19 |
| Ag Price | US$16.50/oz based on three year trailing average at Jun 30/19 |
| US$:CDN$ Exchange Rate | $0.77 based on three year trailing average at Jun 30/19 |
| Au Recovery | 95.5% |
| Ag Recovery | 62.6% |
| Mining Cost | $77.00/tonne mined |
| Process Cost | $18.15/tonne processed |
| General & Administration | $2.86/tonne processed |
| Au Smelter Payable | 99% |

Therefore, the AuEq cut-off grade for the Underground Mineral Resource Estimate is calculated as follows:

Mining, Processing G&A costs per ore tonne = ($77 + $18.15 + $2.86) = $98.01/tonne
**[($98.01)/[($1,275/0.77/31.1035) x 95.5% Recovery x 99% Payable] = 1.95    Use 1.90 g/t**

**Pit Optimization Parameters**

An Open Pit Mineral Resource model was further investigated with a pit optimization to ensure a reasonable stripping ratio was applied and a reasonable assumption of potential economic extraction could be determined (See pit shell in Appendix I). The following parameters were utilized in the pit optimizations:

| | |
|---|---|
| Au Price | US$1,275/oz |
| Ag Price | US16.50/oz |
| Au Recovery | 95.5% |
| Ag recovery | 62.6% |
| Mineralized Material Mining Cost | C$5.00/tonne mined |
| Waste Rock Mining Cost | C$3.15/tonne mined |
| Overburden Mining Cost | C$2.00/tonne mined |
| Process Cost | $18.15/tonne milled |
| General/Administration | C$2.86/tonne milled |
| Process Plant Capacity | 750 ktpy |
| Au Smelter Payable | 99% |
| Pit Slopes | 50 degrees |

## 14.14 MINERAL RESOURCE ESTIMATE

P&E considers that the gold and silver mineralization of the Goliath Deposit is potentially amenable to Open Pit and Underground extraction. The resulting Mineral Resource Estimate is tabulated in the Table 14.13.

| **Table 14.13 Mineral Resource Estimate(1-5)** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Area** | **Classification** | **Cut-off AuEq (g/t)** | **Tonnes (kt)** | **Au (g/t)** | **Contained Au (koz)** | **Ag (g/t)** | **Contained Ag (koz)** | **AuEq (g/t)** | **Contained AuEq (koz)** |
| Pit Constrained | Measured | 0.4 | 762 | 1.91 | 47 | 8.86 | 217 | 1.99 | 49 |
| | Indicated | 0.4 | 11,849 | 1.37 | 522 | 5.47 | 2,083 | 1.42 | 541 |
| | Meas + Ind | 0.4 | 12,611 | 1.40 | 569 | 5.67 | 2,300 | 1.45 | 590 |
| | Inferred | 0.4 | 595 | 1.05 | 20 | 2.63 | 50 | 1.08 | 21 |
| Underground | Measured | 1.9 | 163 | 6.42 | 34 | 25.81 | 135 | 6.65 | 35 |
| | Indicated | 1.9 | 3,429 | 5.34 | 589 | 16.64 | 1,834 | 5.49 | 605 |
| | Meas + Ind | 1.9 | 3,591 | 5.39 | 623 | 17.05 | 1,969 | 5.54 | 640 |
| | Inferred | 1.9 | 1,414 | 4.43 | 201 | 11.42 | 519 | 4.53 | 206 |
| **Total** | Measured | 0.4+1.9 | 925 | 2.70 | 80 | 11.84 | 352 | 2.81 | 83 |
| | Indicated | 0.4+1.9 | 15,277 | 2.26 | 1,111 | 7.98 | 3,917 | 2.33 | 1,146 |
| | Meas + Ind | 0.4+1.9 | 16,202 | 2.29 | 1,192 | 8.20 | 4,269 | 2.36 | 1,230 |
| | Inferred | 0.4+1.9 | 2,009 | 3.43 | 222 | 8.81 | 569 | 3.51 | 227 |

*(1) Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability.*

*(2) The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*

*(3) The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.*

*(4) The Mineral Resources in this report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.*

*(5) The mined tonnage by historical underground drifts was not removed as the amount was insignificant to this Mineral Resource Estimate.*

Mineral Resources are sensitive to the selection of a reporting AuEq cut-off grade. The sensitivities of the Mineral Resource to the AuEq cut-off are demonstrated in Tables 14.14 and 14.15 for Goliath Open Pit and Underground Mineral Resources, respectively.

**TABLE 14.14**
**GOLIATH PIT CONSTRAINED MINERAL RESOURCE ESTIMATE SENSITIVITY**

| Classification | Cut-off AuEq (g/t) | Tonnes | Au (g/t) | Contained Au (oz) | Ag (g/t) | Contained Ag (oz) | AuEq (g/t) | Contained AuEq (oz) |
|---|---|---|---|---|---|---|---|---|
| Measured | 5.0 | 48,418 | 12.33 | 19,198 | 18.80 | 29,267 | 12.50 | 19,459 |
| | 4.0 | 65,712 | 10.22 | 21,596 | 18.39 | 38,854 | 10.39 | 21,942 |
| | 3.0 | 101,606 | 7.78 | 25,422 | 16.79 | 54,862 | 7.93 | 25,911 |
| | 2.0 | 166,419 | 5.65 | 30,237 | 15.35 | 82,114 | 5.79 | 30,969 |
| | 1.0 | 375,756 | 3.24 | 39,140 | 12.01 | 145,105 | 3.35 | 40,433 |
| | 0.4 | 762,283 | 1.91 | 46,715 | 8.86 | 217,051 | 1.99 | 48,650 |
| | 0.01 | 916,822 | 1.62 | 47,897 | 7.90 | 232,756 | 1.70 | 49,972 |
| Indicated | 5.0 | 439,923 | 8.98 | 127,018 | 13.76 | 194,555 | 9.10 | 128,753 |
| | 4.0 | 644,517 | 7.51 | 155,652 | 12.86 | 266,521 | 7.63 | 158,028 |
| | 3.0 | 1,003,947 | 6.03 | 194,565 | 11.49 | 371,006 | 6.13 | 197,872 |
| | 2.0 | 1,841,539 | 4.36 | 257,972 | 9.65 | 571,506 | 4.44 | 263,067 |
| | 1.0 | 4,843,855 | 2.47 | 385,395 | 7.30 | 1,136,395 | 2.54 | 395,526 |
| | 0.4 | 11,848,619 | 1.37 | 522,426 | 5.47 | 2,083,117 | 1.42 | 540,997 |
| | 0.01 | 18,577,032 | 0.94 | 564,251 | 4.43 | 2,646,116 | 0.98 | 587,841 |
| Inferred | 5.0 | 10,249 | 7.91 | 2,608 | 2.99 | 987 | 7.94 | 2,616 |
| | 4.0 | 13,738 | 7.02 | 3,099 | 2.77 | 1,224 | 7.04 | 3,110 |
| | 3.0 | 20,705 | 5.81 | 3,867 | 2.71 | 1,801 | 5.83 | 3,883 |
| | 2.0 | 44,966 | 3.98 | 5,759 | 2.53 | 3,651 | 4.01 | 5,792 |
| | 1.0 | 206,467 | 1.87 | 12,421 | 3.01 | 19,956 | 1.90 | 12,599 |
| | 0.4 | 595,315 | 1.05 | 20,143 | 2.63 | 50,332 | 1.08 | 20,592 |
| | 0.01 | 812,851 | 0.83 | 21,577 | 2.46 | 64,224 | 0.85 | 22,149 |

**TABLE 14.15**
**GOLIATH UNDERGROUND MINERAL RESOURCE ESTIMATE SENSITIVITY**

| Classification | Cut-off AuEq (g/t) | Tonnes | Au (g/t) | Contained Au (oz) | Ag (g/t) | Contained Ag (oz) | AuEq (g/t) | Contained AuEq (oz) |
|---|---|---|---|---|---|---|---|---|
| Measured | 5.0 | 72,647 | 10.74 | 25,078 | 36.12 | 84,359 | 11.06 | 25,830 |
| | 4.0 | 90,837 | 9.43 | 27,549 | 33.59 | 98,088 | 9.73 | 28,423 |
| | 3.0 | 115,449 | 8.13 | 30,167 | 30.11 | 111,770 | 8.40 | 31,164 |
| | 1.9 | 162,729 | 6.42 | 33,590 | 25.81 | 135,037 | 6.65 | 34,794 |
| | 1.5 | 186,323 | 5.81 | 34,777 | 24.28 | 145,454 | 6.02 | 36,073 |
| | 0.041 | 262,421 | 4.32 | 36,456 | 19.35 | 163,241 | 4.49 | 37,911 |
| Indicated | 5.0 | 1,055,371 | 10.89 | 369,441 | 25.85 | 876,981 | 11.12 | 377,259 |
| | 4.0 | 1,410,867 | 9.23 | 418,457 | 23.92 | 1,085,148 | 9.44 | 428,131 |
| | 3.0 | 2,056,724 | 7.37 | 487,302 | 20.95 | 1,385,445 | 7.56 | 499,653 |
| | 1.9 | 3,428,537 | 5.34 | 588,976 | 16.64 | 1,834,159 | 5.49 | 605,327 |
| | 1.5 | 4,196,478 | 4.66 | 628,817 | 15.16 | 2,045,246 | 4.80 | 647,051 |
| | 0.01 | 9,099,684 | 2.53 | 738,814 | 10.12 | 2,961,896 | 2.62 | 765,219 |
| Inferred | 5.0 | 423,085 | 8.01 | 108,934 | 13.46 | 183,104 | 8.13 | 110,566 |
| | 4.0 | 560,746 | 7.11 | 128,141 | 13.26 | 239,008 | 7.23 | 130,272 |
| | 3.0 | 860,837 | 5.80 | 160,644 | 12.08 | 334,206 | 5.91 | 163,624 |
| | 1.9 | 1,413,754 | 4.43 | 201,458 | 11.42 | 519,038 | 4.53 | 206,086 |
| | 1.5 | 1,763,940 | 3.87 | 219,514 | 10.86 | 615,748 | 3.97 | 225,003 |
| | 0.01 | 3,985,099 | 2.13 | 273,235 | 8.02 | 1,027,822 | 2.20 | 282,398 |

## 14.15 CONFIRMATION OF MINERAL RESOURCE ESTIMATE

The Mineral Resource block model was validated using a number of industry standard methods including visual and statistical methods.

- Visual examination of composites and block grades on successive plans and sections on-screen in order to confirm that the block model correctly reflects the distribution of sample grades.

- Review of estimation parameters including:
    - Number of composites used for estimation;
    - Number of holes used for estimation;
    - Mean Distance to sample used;
    - Number of passes used to estimate grade;
    - Mean value of the composites used.

- Comparison of gold mean grades of composites with block models is presented in Table 14.16.

**TABLE 14.16**
**AU AVERAGE GRADE COMPARISON OF COMPOSITES WITH BLOCK MODEL FOR ALL DOMAINS**

| Area | Data Type | Au (g/t) |
|---|---|---|
| Open Pit | Composites | 1.10 |
| | Capped Composites | 0.91 |
| | Block Model $ID^3$* | 0.75 |
| | Block Model OK** | 0.76 |
| | Block Model NN*** | 0.76 |
| Underground | Composites | 3.18 |
| | Capped Composites | 2.68 |
| | Block Model $ID^3$* | 2.44 |
| | Block Model OK** | 2.34 |
| | Block Model NN*** | 2.48 |

***** *block model grade interpolated using Inverse Distance Cubed = $ID^3$*
****** *block model grade interpolated using Ordinary Kriging = OK*
******* *block model grade interpolated using Nearest Neighbour = NN*

The comparison above shows the average grade of the Au blocks in the block models to be somewhat lower than the average grade of capped composites used for grade estimation. This is probably due to the localized clustering of some higher grade assays which were smoothed by the block modelling grade interpolation process. The block model Au values will be more representative than the capped composites due to the block model's 3-D spatial distribution characteristics.

- A volumetric comparison was performed with the block model volume versus the geometric calculated volume of the domain solids and the differences are detailed in Table 14.17.

| **TABLE 14.17**<br>**VOLUME COMPARISON OF BLOCK MODEL WITH GEOMETRIC SOLIDS** | | |
|---|---|---|
| **Area** | **Block Model Item** | **Amount** |
| Open Pit Model | Geometric Volume of Wireframes | 16,366,097 $m^3$ |
| | Block Model Volume | 16,348,556 $m^3$ |
| | Difference % | 0.11% |
| Underground Model | Geometric Volume of Wireframes | 6,522,794 $m^3$ |
| | Block Model Volume | 6,512,380 $m^3$ |
| | Difference % | 0.16% |

- Au local trends were evaluated by comparing the OK, $ID^3$ and NN estimate against Au Composites and Capped Composites (Figures 14.3 to 14.5 for open pit model and Figures 14.6 to 14.8 for underground model). In general, the $ID^3$ block estimates are in good agreement with the NN estimates.

**FIGURE 14.3 AU GRADE SWATH EASTING PLOT - OPEN PIT MINERAL RESOURCE MODEL**

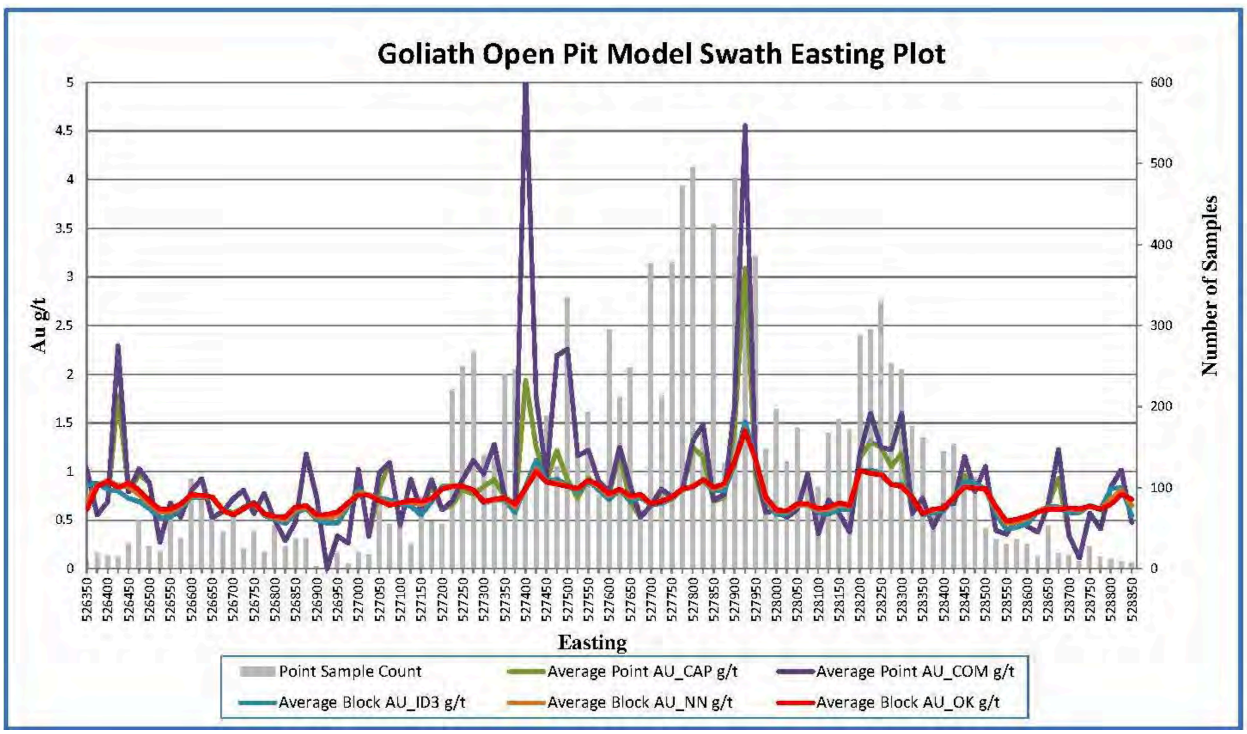


**FIGURE 14.4 AU GRADE SWATH NORTHING PLOT - OPEN PIT MINERAL RESOURCE MODEL**

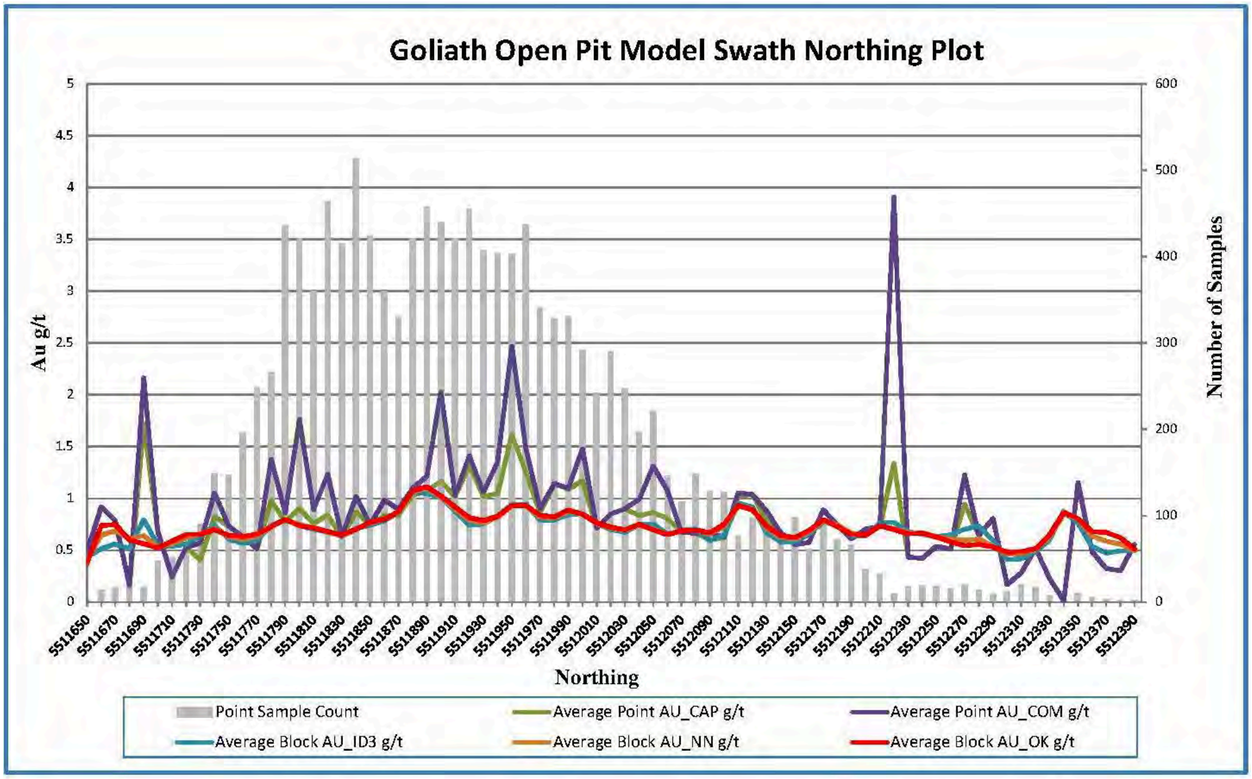



**FIGURE 14.5 AU GRADE SWATH ELEVATION PLOT - OPEN PIT MINERAL RESOURCE MODEL**

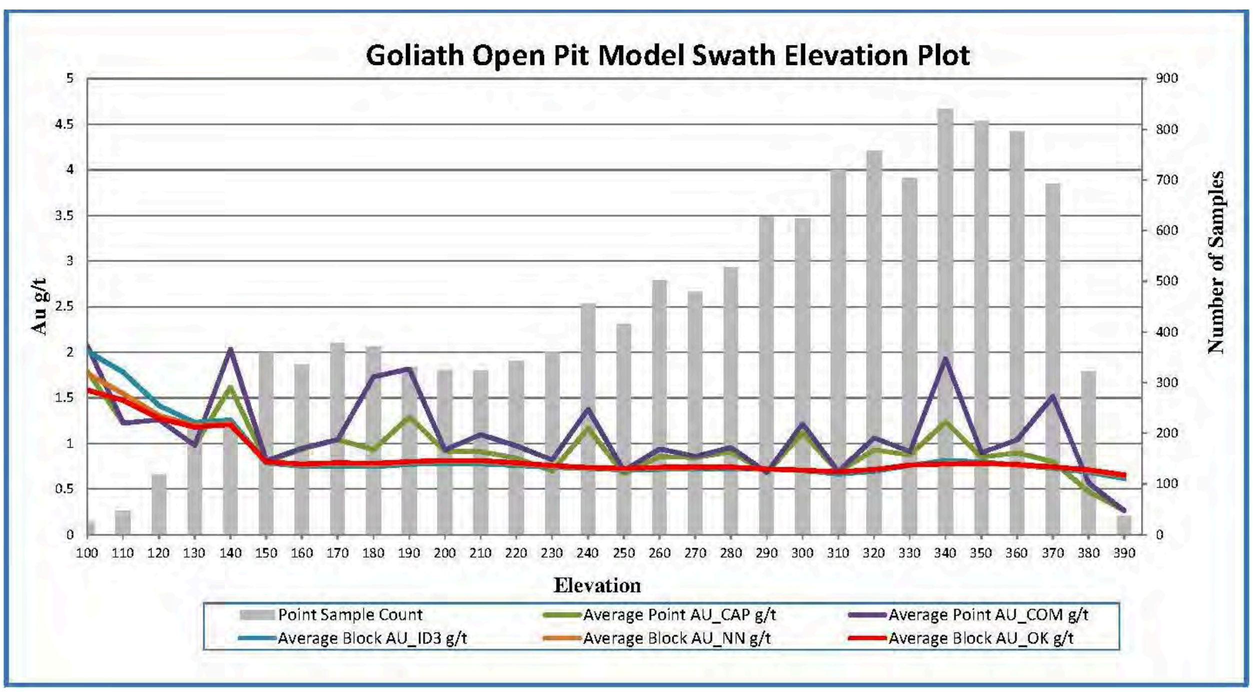


**FIGURE 14.6 AU GRADE SWATH EASTING PLOT - UNDERGROUND MINERAL RESOURCE MODEL**

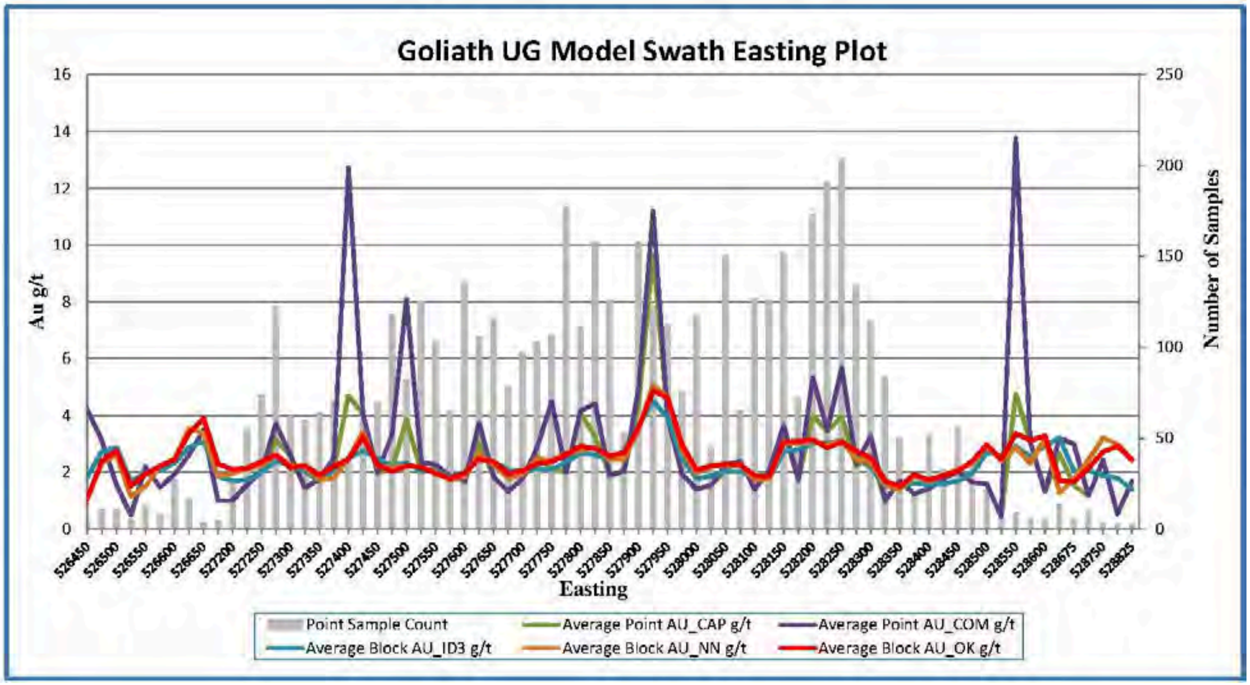



**FIGURE 14.7 AU GRADE SWATH NORTHING PLOT - UNDERGROUND MINERAL RESOURCE MODEL**

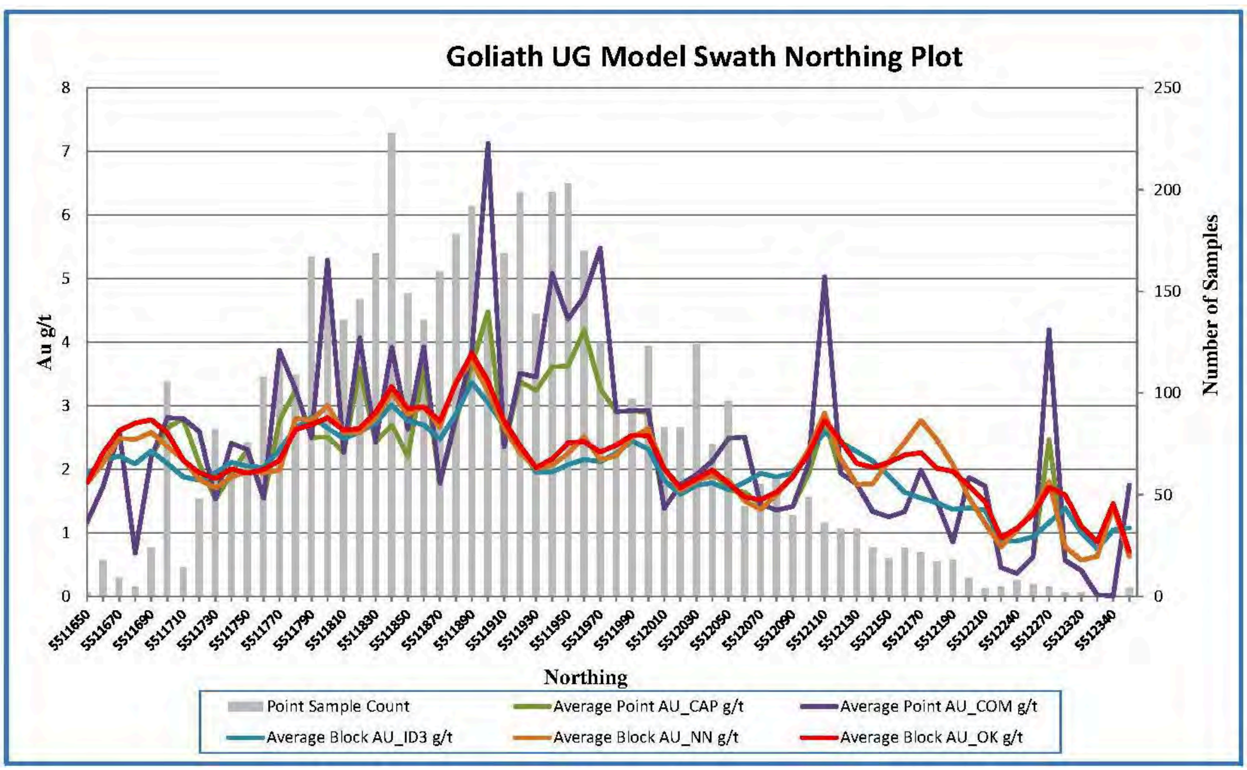
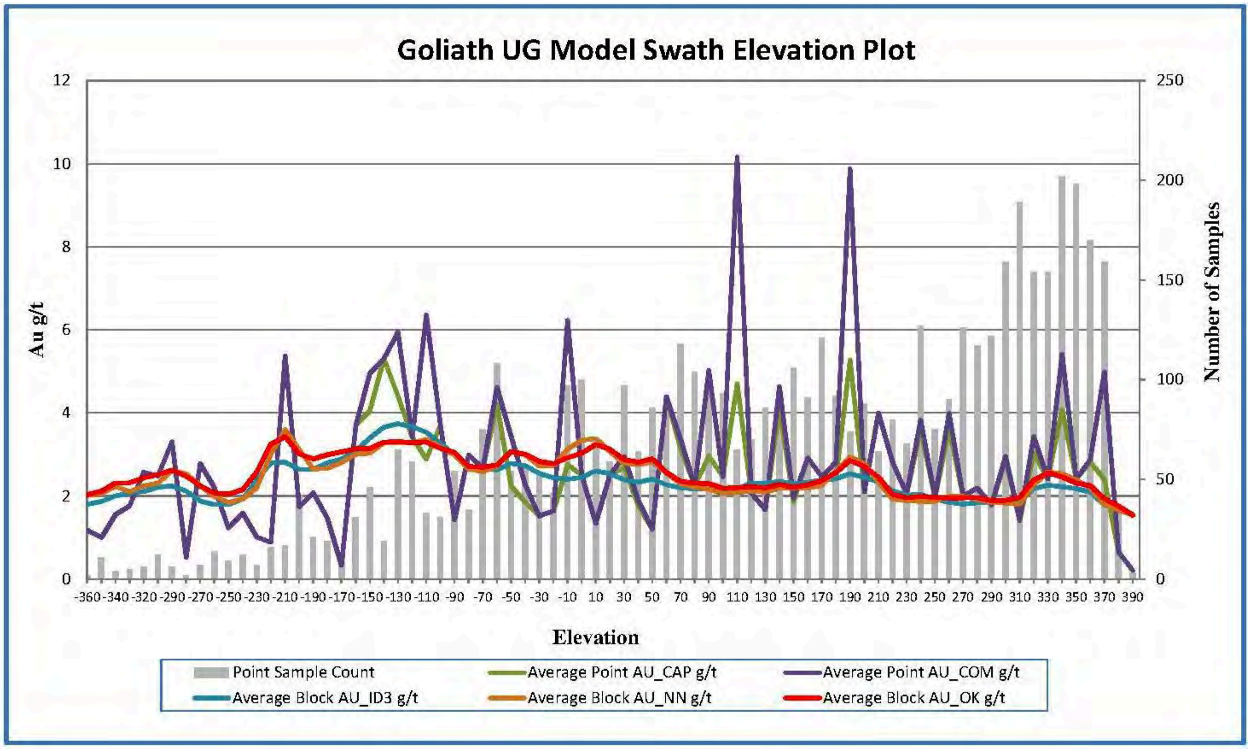


**FIGURE 14.8 AU GRADE SWATH ELEVATION PLOT - UNDERGROUND MINERAL RESOURCE MODEL**




- A comparison of the grade-tonnage curve of Au grade models interpolated with Inverse Distance cubed ($1/d^3$), Ordinary Kriging (OK), and Nearest Neighbour (NN) on global Mineral Resource basis for all domains. Figures 14.9 and 14.10 present the comparison of grade-tonnage curve for the Open Pit and Underground Mineral Resource models, respectively.

**FIGURE 14.9 AU GRADE TONNAGE COMPARISONS FOR ID³, NN AND OK INTERPOLATION - OPEN PIT MINERAL RESOURCE MODEL**

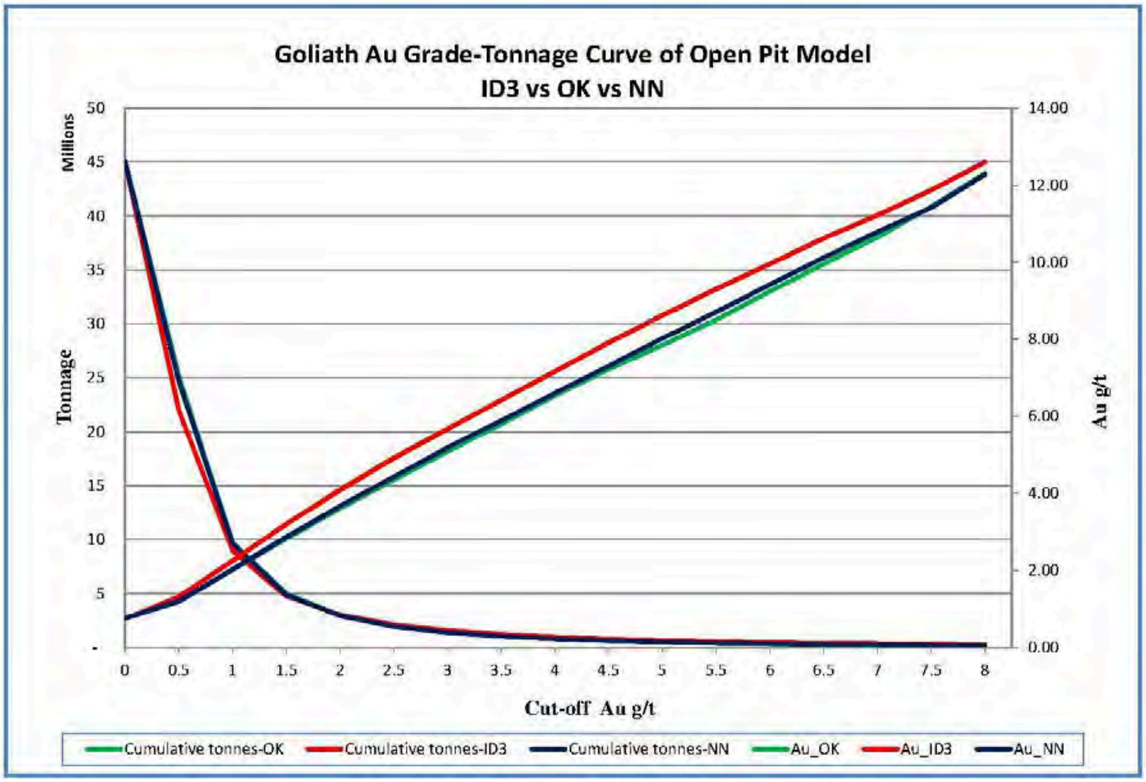
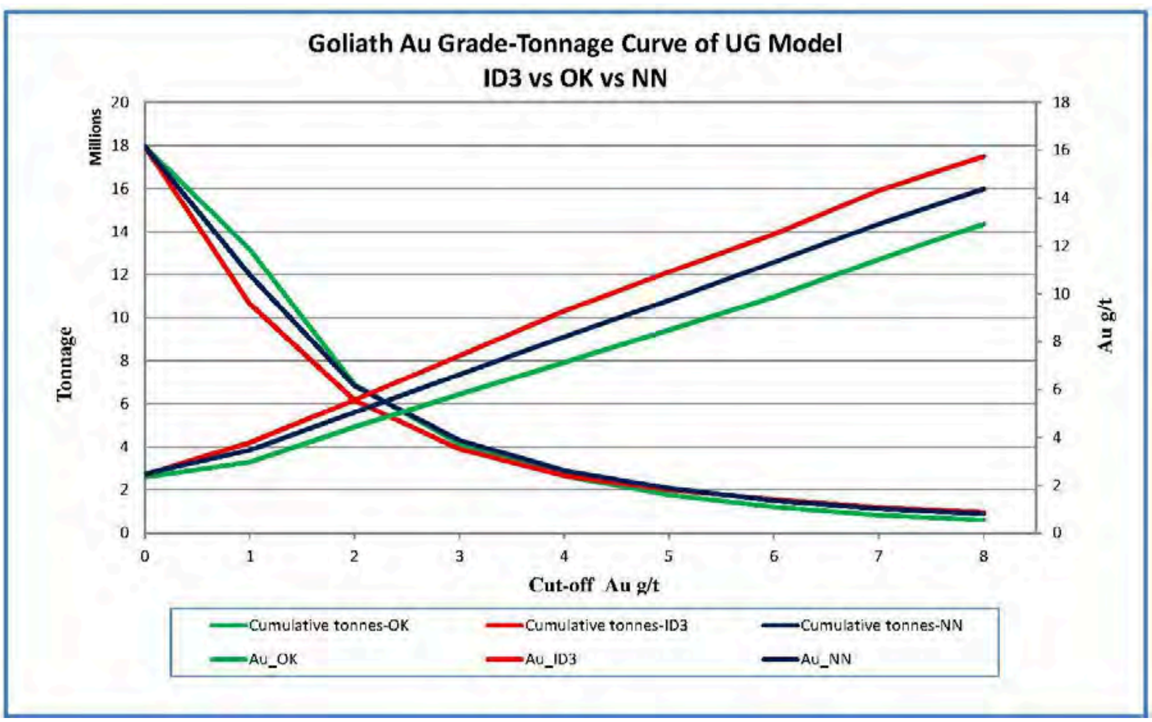



**FIGURE 14.10 AU GRADE TONNAGE COMPARISONS FOR ID³, NN AND OK INTERPOLATION FOR UNDERGROUND MINERAL RESOURCE MODEL**



# 15.0 MINERAL RESERVE ESTIMATES

This section is not applicable to this report.

# 16.0 MINING METHODS

This section is not applicable to this report.

# 17.0 RECOVERY METHODS

This section is not applicable to this report.

# 18.0 PROJECT INFRASTRUCTURE

This section is not applicable to this report.

## 19.0 MARKET STUDIES AND CONTRACTS

This section is not applicable to this report.

## 20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

Since 2008, Treasury Metals has commenced several environmental and socio-economic programs in order to advance the Goliath Gold Project towards commissioning and operation. Treasury Metals with aid from a series of third party consultants undertook a rigorous baseline environmental study in 2010, and shortly following the baseline work Treasury started preliminary permitting efforts for the Project. Environmental works included programs related to terrestrial biology, aquatic biology, hydrological, hydrogeological, geotechnical, and climatic. In addition to these efforts the Company has undertaken significant engagement activities with regional Indigenous, government, and public stakeholders as part of the development process associated with the Project. Critical milestones related to permitting and Indigenous approvals within the Projects timeline have been summarized in Table 20.1. Indigenous concerns are highlighted in grey.

**TABLE 20.1**
**ENVIRONMENTAL PERMITTING SUMMARY**

| Year | Date | Environmental Permitting Event |
|---|---|---|
| 2010 | November 1 | Environmental baseline study initiated. |
| 2012 | November 27 | Project Description accepted by the Canadian Environmental Assessment Agency (“the Agency”). |
| 2012 | December 3 | Public comments Invited for comment on the Project Description – submitted to the Agency. |
| 2013 | January 17 | The Agency determines that a Federal Environmental Assessment is required for the Goliath Gold Project. |
| 2013 | January 18 | Environmental Assessment Commenced and Draft Environmental Impact Statement (“EIS”) issued for public comment – deadline February 17, 2013. |
| 2013 | February 21 | EIS Guidelines finalized and Treasury initiates completion of the EIS. |
| 2015 | April 10 | EIS submitted to the Agency for review and accepted as conforming to EIS Guidelines. |
| 2015 | April 25 | Public consultation period initiated by the Agency. Public Invited to Comment on EIS. |
| 2015 | May 25 | Public consultation period concluded by the Agency. |
| 2015 | June 30 | Treasury receives Information Request #1 from the Agency requesting addition information to support the conclusions of the EIS. |
| 2017 | April 4 | Agency indicates to Treasury that a revised EIS, Indigenous Engagement Repot, and IR#1 response package must be submitted to ensure that IR#1 meets completeness. |
| 2017 | September 5 | Treasury Metals resubmits IR#1 package to the Agency. |
| 2017 | October 5 | Agency concludes that the response provided by Treasury Metals does not meet the requirements of IR#1. |
| 2017 | December 11 | Treasury Metals and Eagle Lake First Nation execute Memorandum of Understanding fostering trust between the |

| TABLE 20.1<br>ENVIRONMENTAL PERMITTING SUMMARY | | |
|---|---|---|
| **Year** | **Date** | **Environmental Permitting Event** |
| | | Parties, potential support, and meaningful participation with the permitting and development of the Goliath Project. |
| 2018 | April 20 | Treasury Metals resubmits IR#1 package to the Agency. |
| 2018 | May 11 | The Agency concludes that the response to IR#1 sufficiently meets the requirements of IR#1, and advises Treasury that the Agency is resuming the technical review of the response to IR#1 of the EIS. |
| 2018 | July 6 | Treasury receives Information Request #2 (IR#2) from the Agency requesting addition information to support the conclusions of the EIS, two supplemental requests are received July 13, and July 27, 2018. |
| 2019 | January 14 | Treasury Metals and Eagle Lake First Nation execute Memorandum of Understanding enabling continued communication, consultation, and meaningful participation with the permitting and development of the Goliath Project. |
| 2019 | February 14 | Treasury Metals and Wabauskang First Nation execute Engagement Agreement to enable continued meaningful participation with the permitting and development of the Goliath Project. |
| 2019 | March 6 | Treasury Metals submits IR#2 package to the Agency. |
| 2019 | March 14 | The Agency concludes that the response to IR#2 sufficiently meets the requirements of IR#2, and advises Treasury that the Agency is resuming the technical review of the response to IR#2 of the EIS. |
| 2019 | June 14 | The Canadian Environmental Assessment Agency released their Draft Environmental Assessment (EA) Report and the potential conditions that would be applied and be legally binding following an approval of the Project under the Canadian Environmental Assessment Act, 2012 |

***Source:*** *Treasury (2019)*

## 20.1 ENVIRONMENTAL STUDIES

As part of the development process of the Project Treasury undertook significant programs related to all facets of the environment. These programs included terrestrial biology, aquatic biology, hydrological, hydrogeological, geotechnical, and climatic studies. In addition as part of continued dialogue and engagement activities Treasury Metals has expanded its understanding of the existing environment incorporate and integrate traditional knowledge that has been shared by the Indigenous communities into development and Project related designs.

An expanded discussion and reference to the studies undertaken is presented within Section 5 of the Environmental Impact Statement (April 2018) including the traditional knowledge that has been considered and incorporated. These components were used to refine the selection the valued components, determining local and regional study areas for the various disciplines, and considered in the description of the effects of the Project.

## 20.2 PERMITTING EFFORTS

Treasury Metals submitted a Project Description to the Canadian Environmental Assessment Agency ("the Agency") on November 26, 2012 and on January 18, 2013 received draft guidelines for the preparation of an Environmental Impact Statement ("EIS") for an environmental assessment conducted pursuant to the Canadian Environmental Assessment Act, 2012 (CEAA 2012). The EIS guidelines were issued as final on February 21, 2013 (CEAA 2013). In April of 2015 the Agency accepted Treasury Metals' EIS as meeting conformity and the EIS was moved into the technical review and public comment period. As part of the Information request ("IR") process, the Agency requested a revised EIS.

Treasury Metals submitted a revised EIS to the Agency on September 5, 2017. Following review of the September 2017 revised EIS, the Agency determined that the revised EIS was still deficient in a number of areas, and Treasury Metals was directed to prepare and resubmit a further revision to the EIS, as per the Agency letter to Treasury Metals dated October 5, 2017. In particular, the Agency determined that the newly revised EIS, as per this document, must include:

- A fully revised EIS that includes insertions or changes made through the EIS main text, Addenda, and the EIS Summary;
- A revised Indigenous Engagement Report; and
- A revised IR#1 response package that addresses the original IR#1 by correcting all identified deficiencies.

Following receipt of additional requirements for the Agency the revised document was prepared in accordance with the Agency's request and submitted on April 20, 2018. The Agency accepted Treasury Metals' EIS and IR#1 package as meeting completeness and the EIS and IR#1 was moved into the technical review on May 11, 2019.

Following technical review the Agency provided Treasury with a second Information Request (IR#2). These inquiries were developed based on technical questions arising from the review of Treasury's response to IR #1. In accordance with subsection 23(2) of CEAA 2012, the Agency at this stage requires that Treasury submit complete responses to the requests contained in IR #2. These responses were submitted to the Agency on March 6, 2019 and on March 14, 2019 the Agency concluded that the response to IR#2 sufficiently meets the requirements of IR#2. This resumied the technical review of the response to IR#2.

As per the federal legal timeline as of March 15, 2019 the approval process of the Goliath Gold Project sits at day 182 of 365. A key requirement as part of the continued development and progression of the federal EA is ongoing engagement with the Indigenous communities potentially affected by the Project. Treasury Metals used the EIS guidelines as reference in adopting a precautionary approach to planning and designing the Project. At each stage of planning and development, alternatives were assessed and, where possible, mitigation of potential effects was incorporated into the Project design.

## 20.3 SOCIAL AND COMMUNITY EFFORTS

### 20.3.1 Indigenous Engagement

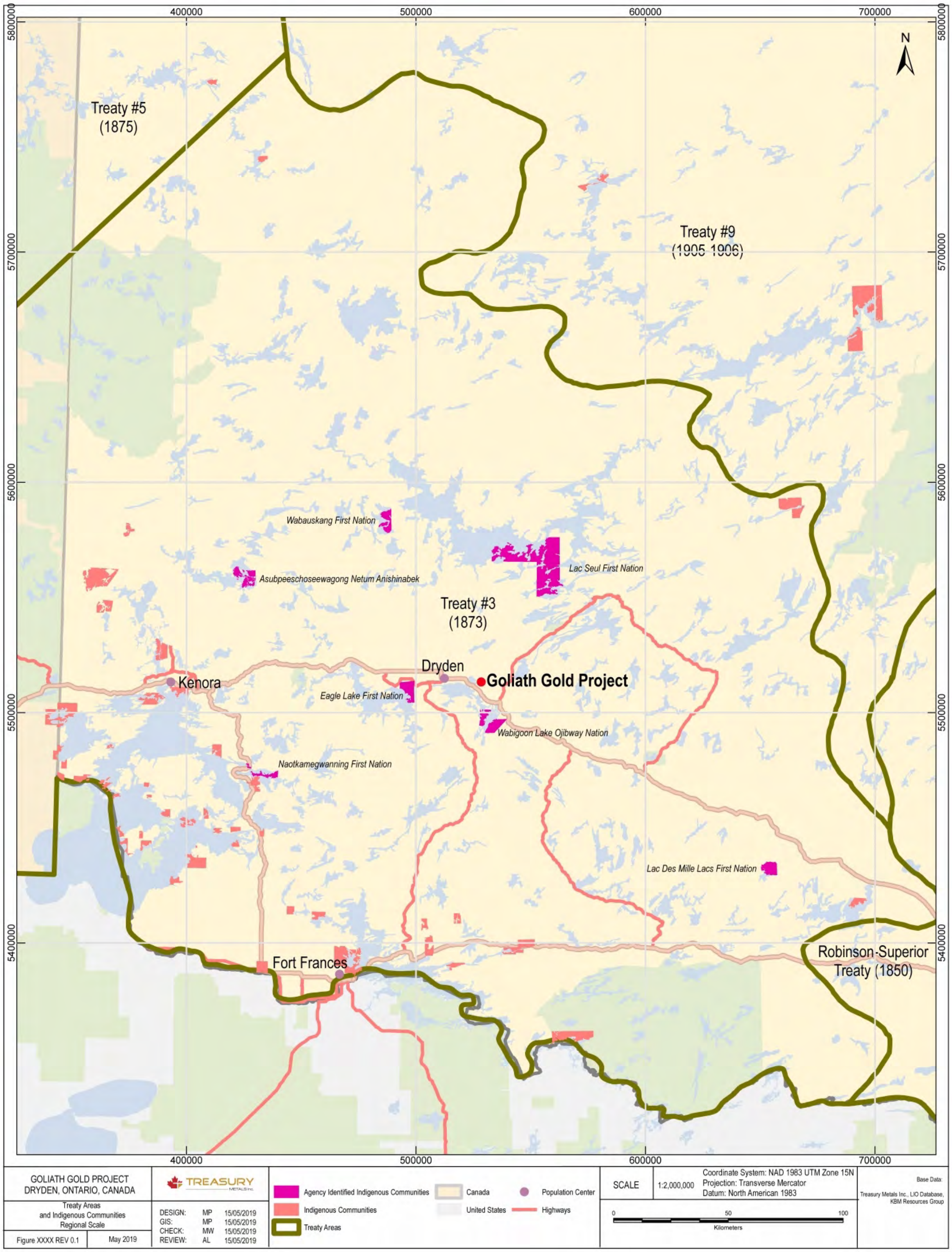
Engagement efforts with Indigenous communities has primarily focused on development of key milestones and providing opportunities for communities to identify and describe how the Project may affect their potential or established Aboriginal or treaty rights. Aboriginal rights are derived from Aboriginal people's original occupation of the land and are recognized and affirmed by Section 35 of the Constitution Act (1982). Aboriginal and Treaty Rights has been defined within this assessment as the ability to harvest traditional resources through activities including hunting, trapping, fishing and gathering. In addition, Aboriginal rights may also entail a range of cultural, social, political, and economic rights including the right to practice one's own culture and to establish treaties.

Both the Ontario Ministry of Energy Northern Development and Mines (MNDM) and the Agency directed Treasury Metals to engage with specific Indigenous communities. The Indigenous communities identified are as follows:

- Wabigoon Lake Ojibway Nation;
- Eagle Lake First Nation;
- Naotkameganning (Whitefish Bay) First Nation;
- Lac Seul First Nation;
- Wabauskang First Nation;
- Asubpeeschoseewagong Netum Anishinabek;
- Lac des Mille Lacs First Nation;
- Métis Nation of Ontario;
- The Aboriginal People of Wabigoon; and
- Grand Council Treaty #3.

A detailed log capturing interactions, discussion, and documentation sharing with regional Indigenous communities can be referenced with the Environmental Impact Statement (April 2018). Figure 20.1 details regional Indigenous community's locations and regional Treaty's proximity to the Project. Agreements with the communities of Eagle Lake First Nation (January 14, 2019), Wabauskang First Nation (February 14, 2019), and the Métis Nation of Ontario (December 11, 2017) were signed to continue meaningful participation related to the Projects development. Treasury as noted continues dialogue with all regional communities.

**FIGURE 20.1 TREATY AREAS AND INDIGENOUS COMMUNITIES**




***Source:*** *Treasury (2019)*

### 20.3.2 Public Engagement Activities

#### 20.3.2.1 Local Citizens (Proximal to Goliath Gold Project)

The residents of Anderson Road, Tree Nursery Road, East Thunder Lake Road, Thunder Lake Road, Highway 11/17, those proximal to Wabigoon Lake, and those proximal to Thunder are the parties in closest proximity to the Project. Residents from these locations have interests in the potential effects and impacts to their environment, health, lifestyle, and economic conditions due to the development of the Project. A number of meetings specifically for these high impact residents have been held to provide a forum for these community members to ensure their concerns are expressed and for the company to ensure proper mitigation measures are implemented and communicated.

#### 20.3.2.2 Village of Wabigoon

The Village of Wabigoon has a long history associated with gold mining. With the discovery of gold on Upper Manitou Lake at Goldrock and development of mines there during the 1890s, Wabigoon with its location on the Canadian Pacific Railway became the transportation hub, supply depot and jumping off location for personnel and supplies destined for the Goldrock mining area. Personnel and supplies arriving by rail at Wabigoon followed the freight route across Wabigoon, Dinorwic and Minehaha lakes and then portaged overland to the Goldrock Mines. Many Wabigoon area families have historical ties to the Goldrock mining activities. Since the closure of the Gold Rock Mines, Wabigoon's employment and economic base has been tied primarily to forestry and tourism. The Village of Wabigoon has significant interest in the Project due to the potential effects and impacts to their environment, health, lifestyle, and economic stimulus to the community. A number of meetings have been held to provide a forum for these community members to ensure their concerns are expressed and for the company to ensure proper mitigation measures are implemented and communicated. A number of meetings specifically for the residents of Wabigoon have been held to provide a forum for these community members to ensure their concerns are expressed and for the company to ensure proper mitigation measures are implemented and communicated.

#### 20.3.2.3 City of Dryden

The City of Dryden also has some early ties to gold mining with mines operating just south of the City of Dryden and Wabigoon Lake in the Larson Bay/Contact Bay area during the early part of the 20th Century. Dryden also has some ongoing links to the mining industry as an industrial supply area for northwestern Ontario including sales and maintenance of mining equipment. However, the mainstay of Dryden's economy has been the forest industry. Until recently, the mill complex in Dryden included pulp and paper operations, paper converting and a sawmill; along with the associated woodlands operations. Recent closures of the sawmill, followed by closures of the paper machines and converting facility have left the complex with a pulp mill only and significantly reduced employment in the Dryden area. Reduced employment opportunity has resulted in numerous people having to relocate away from the Wabigoon/Dryden area. This in turn, has adversely affected the retail sector as well as real estate values in the area. Therefore the City of Dryden is seen as a key partner and is seen as having significant interest in the Project due to the potential effects and impacts to residents' environment, health, lifestyle, and economic prosperity of the community. A number of meetings specifically for the residents of Dryden have been held to provide a forum for these community members to ensure their concerns are expressed and for the company to ensure proper mitigation measures are implemented and communicated.

# 21.0 CAPITAL AND OPERATING COSTS

This section is not applicable to this report.

## 22.0 ECONOMIC ANALYSIS

This section is not applicable to this report.

## 23.0 ADJACENT PROPERTIES

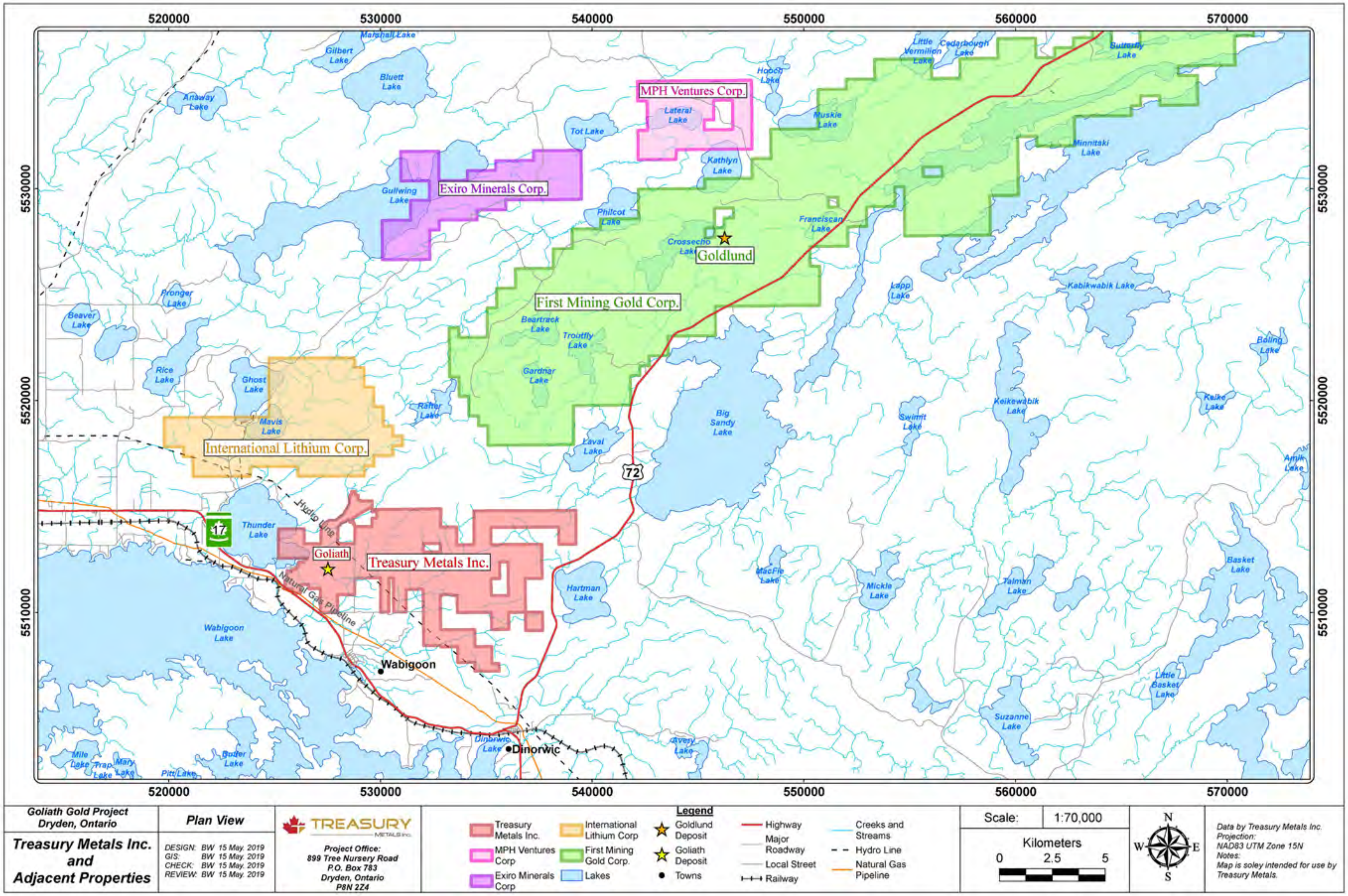
The majority of land claims located immediately surrounding the Goliath Gold Property are privately held by local residents, many of which are Patents land parcels, crown lands or lands owned by the Ontario Government (Ministry of Infrastructure).

The most advanced exploration property in the vicinity of the Goliath Gold Project is the "Goldlund Project" which is owned by a junior mining company called First Mining Gold Corporation ("First Mining"). First Mining's claim package consists of 1,348 contiguous mining claims, 27 patented claims, one mining lease and one licence of occupation covering an area of approximately 285 $km^2$. First Mining's "Goldlund Project" is situated in a northeast extension of the same Wabigoon Greenstone Belt meta-sedimentary and volcanic rocks that transect the Goliath Property. The southern boundary of their claim block in Laval Township lies just 1.6 km to the north of the northern Goliath claim boundary in Hartman Township (Figure 23.1). The Goldlund Deposit can be reached from Goliath by driving approximately 51 km travelling along the TransCanada Highway 17 and the Sioux Lookout Highway 72.

According to First Mining's website, the Goldlund Project is estimated to contain an NI 43-101 Mineral Resource Estimate of 809,200 combined "Measured" and "Indicated" ounces of gold at a grade of 1.96 g/t Au and 876,954 "Inferred" ounces of gold grading 1.49 g/t Au (First Mining 43-101 Technical Report dated April 1, 2019). Furthermore, the First Mining Mineral Resource is not indicative of the mineralization on the Goliath Gold Project.

Northwest of the Goliath Property there is the "Mavis-Fairservice" Lithium-Rare Metals Property, also known as the "Mavis Lake Project", currently being explored by International Lithium Corp. ("ILC") listed on the Toronto Stock Exchange Venture (TSX-V: ILC). This project consists of 295 contiguous claims totalling 61 $km^2$ covering a pegmatite belt adjacent to Mavis Lake located in Brownridge Township approximately 19 km northeast of the town of Dryden (Figure 23.1). Mavis Lake is situated just 7 km north northwest of the main Goliath Gold Deposit. This project is still in the early stage of exploration with 20 diamond drill holes completed in 2011, 12 diamond drill holes were completed in 2017, and 9 diamond drill holes were completed in 2019. ILC reported some significant intersections of $Li_2O$ from their drilling program which encountered spodumene, a major lithium ore mineral, hosted in coarse pegmatite rocks. No resources have been reported.

**FIGURE 23.1 ADJACENT PROPERTIES HELD BY JUNIOR MINING COMPANIES**




***Source:*** *Treasury (2019)*

North of the Goliath Property there is a Lithium Rare Metals-Property, also known as the "Gullwing-Tot Lake Property", that is currently being explored by Exiro Minerals Corp. and optioned off to Power Metals Corp. This project consists of 111 contiguous mining claims totalling approximately 22 $km^2$ covering a pegmatite swarm adjacent to Gullwing Lake in Webb Township, approximately 22 km northeast of the town of Dryden. Exiro's Property is situated 15 km north of the Goliath gold main resource. This project is still in the early stages with minimal exploration drilling and lithium assays.

Approximately 25 km to the northeast of the Goliath Property is the "Pidgeon Molybdenum Project" currently being explored on by MPH Ventures Corp, ("MPS") listed on the Toronto Stock Exchange Venture (TSX-V: MPS). This project consists of 77 contiguous mining claims totalling approximately 16 $km^2$ covering a foliated tonalitic suite of host rock. This project is located in Echo Township and the property boundary encompasses Lateral Lake, approximately 4.5 km north of First Mining Gold's Goldlund Property.

## 24.0 OTHER RELEVANT DATA AND INFORMATION

This section is taken from the NI 43-101 Technical Report titled "Preliminary Economic Assessment Update on the Goliath Gold Project, Kenora Mining Disvision, Ontario" by CSA Global Canada Geosciences Ltd. dated 17th April 2017.

This technical report ("Report") was prepared by CSA Global Canada Geosciences Ltd ("CSA Global") with contributions from P&E Mining Consultants Inc. ("P&E") of Brampton Ontario at the request of Mr. Chris Stewart, President & CEO of Treasury Metals Inc. ("Treasury" or the "Company"). This Report is specific to the standards dictated by National Instrument 43-101 (NI 43-101), companion policy NI 43-101CP and Form 43-101F (Standards of Disclosure for Mineral Projects) and to CIM Estimation of Mineral Resource and Mineral Reserves Best Practices guidelines in respect to the Goliath Gold Project (the "Goliath Project" or "Project"). This Report:

- States the NI 43-101 Mineral Resource Estimate reported in P&E's 2015 technical report #303 titled "Technical Report and Updated Mineral Resource Estimate for the Goliath Gold Project, Kenora Mining Division, Northwestern Ontario" and dated October 9th 2015" (Puritch et al., 2015); and

- Presents an update of ACA Howe International's (Howe) 2012 Preliminary Economic Assessment ("PEA") of the Project (Roy et al., 2012) based on the above Mineral Resource Estimate, updated processing parameters and updated costs for a proposed operation consisting of open pit and underground mining with on-site milling.

The 2017 updated PEA indicates that the proposed Project is of economic interest and CSA Global recommends continued work by Treasury towards a Pre-Feasibility Study of the Project.

## 24.1 PROPERTY LOCATION ACCESS AND DESCRIPTION

The Goliath Gold Project, located in northwestern Ontario, lies approximately 145 km east of the City of Kenora, 20 km east of the City of Dryden, and 325 km northwest of the City of Thunder Bay, in the Kenora Mining Division, Ontario, Canada.

The Goliath Gold Project consists of 126 contiguous unpatented mining claims (238 claim units – approximately 3,808 ha), three mining leases (261.022 ha) and 23 patented land parcels (approximately 979.68 ha). The total area of the claim group is approximately 5,049 ha (approximately 50.5 $km^2$) covering portions of Hartman and Zealand townships east of the City of Dryden. Treasury holds the Project 100%, subject to certain underlying royalties on 13 of the 19 patented land parcels. All mining claims and leases are currently active and in good standing with Ontario's Ministry of Northern Development and Mines (MNDM).

## 24.2 PROPERTY HISTORY

There is only limited documentation of exploration activity conducted on the Project area prior to 1989. Previous exploration in the area was either regional in nature or focused mainly on the western portion of the Property. Reconnaissance investigation by Teck Exploration Ltd (now

Teck Resources Limited) geologists in 1989 identified a poorly exposed, broad area of weak surface mineralization and anomalous gold extending through parts of Lots 3 through 8 of Concession IV of Zealand Township. The discovery hole (TL-001) on the Main Zone of the Thunder Lake Deposit was drilled in October 1990, intersecting multiple horizons of gold mineralization with intersections of 1.5 g/t Au over 22.2 m, 0.9 g/t Au over 11.6 m and 17.5 g/t Au over 2.6 m (Page, 1995). Land acquisition, field surveys, drilling and underground bulk sampling were completed by Teck Resources Limited (Teck) and its various partners between late 1989 and 1998; the Thunder Lake project was put on hold in 1999. Total diamond drilling by Teck on the Thunder Lake Property from 1990 to 1998 amounted to approximately 97,412 m in 320 drill holes.

The program culminated in 1998 with an underground development program. A 275 m long ramp was driven to access the Main Zone and a total of 220 m of drifting was completed along the Main Zone at an approximate vertical depth of 35 m. A 2,355-tonne bulk sample was shipped to the St Andrews Goldfields' mill near Timmins, Ontario for custom milling in the fall of 1999. The custom mille d bulk sample had a head grade of 5.63 g/t gold (Au) and 15.28 g/t silver (Ag) as calculated by St Andrew Goldfields. The gold recovery was calculated at 96.83% and silver at 38.0%.

## 24.3 GEOLOGICAL SETTING AND MINERALIZATION

The Goliath Gold Project is located in the Archean Eagle -Wabigoon-Manitou greenstone belt in the Wabigoon Subprovince of the Superior Province. Rocks in the area of the Goliath Deposit have been grouped into the Thunder Lake assemblage of predominantly meta-sedimentary rocks, and the Thunder River mafic metavolcanic rocks. The Thunder Lake assemblage underlies the majority of the Project area and comprises quartz-porphyritic felsic to intermediate metavolcanic rocks represented by biotite gneiss, mica schist, quartz-porphyritic mica schist, a variety of metasedimentary rocks and minor amphibolite rocks. Within the Thunder Lake assemblage, a unit dominated by felsic metavolcanic rocks is conformably inter - layered with wacke-siltstone and hosts the majority of gold mineralization at Goliath. All the rocks have been subjected to folding and moderate to intense shearing with local hydrothermal alteration, quartz veining and sulphide mineralisation. In the immediate area of the Deposit, a 100 m to 150 m thick unit of intensely deformed and variably altered felsic, fine to medium grained, quartz -feldspar-sericite schist (MSS) and biotite-quartz-feldspar-sericite schist (BMS) with minor metasedimentary rocks (MSED) hosts the most significant gold concentrations in the Main and C Zones of the Deposit.

Native gold and silver (electrum) are associated with finely disseminated sulphides, coarse grained pyrite and very narrow light grey translucent "ribbon" quartz veining. The main sulphide phases are pyrite, sphalerite, galena, pyrrhotite, minor chalcopyrite and arsenopyrite and dark grey needles of stibnite. The alteration consists of primarily sericitization and silicification in association with the gold mineralization. Chloritization is visible in metamorphosed and al tered mafic rocks in the area. Rare flakes of aquamarine green fuchsite occur in the strongly altered sericite alteration and in association with high -grade gold. At Goliath, the gold-bearing zones strike from 090° to 072° with dips that are consistently 72° to 78° south or southeast. The mineralised zones are tabular composite units defined on the basis of moderate to strongly altered rock units, anomalous to strongly elevated gold concentrations, and increased sulphide content and are concordant to the local stratigraphic units. In the Goliath Gold Deposit, higher grade gold mineralization occurs in shoots with relatively short strike -lengths (up to 50 m) that plunge steeply to the west. The main area of gold, silver and sulphide mineralisation and alteration occurs up to a maximum drill tested vertical depth of approximately 725 m, over a drill-tested strike length of approximately 2,300 m within the current defined resource area. Gold mineralized zones remain open at depth.

## 24.4 EXPLORATION

Since acquiring the Property in 2008, Treasury has completed extensive exploration including geological mapping, diamond drilling, trenching, airborne (EM/mag) and ground geophysical (IP) surveys, downhole geophysical surveys, mobile metal ion (MMI) soil surveys, metallurgical testing, resource estimation and environmental studies. A total of 478 diamond drill holes totalling 143,575 m have been completed including 445 newly collared holes, 30 re-entry holes and three (3) wedge holes. Treasury has advanced environmental and socio-economic studies including a submission of an Environmental Impact Statement (EIS) to the Canadian Environmental Assessment Agency (CEAA) for review.

## 24.5 QUALITY ASSURANCE/QUALITY CONTROL AND DATA VERIFICATION

Treasury implemented and monitored a thorough quality assurance/quality control (QAQC) program for the diamond drilling and sampling undertaken at the Goliath Gold Project from 2008 to 2014. Quality control (QC) protocol included the insertion of QC samples into every batch sent for analysis. QC samples included certified reference materials, blanks and duplicates. The Goliath Gold Project was visited by Mr Antoine Yassa, P.Geo., of P&E and an independent Qualified Person in terms of NI 43-101, on 13 August 2014 and 24-26 June 2015. An independent verification sampling program was conducted by Mr Yassa at that time. Based upon the evaluation of the QAQC program undertaken by Treasury, as well as P&E's due diligence sampling, it is P&E's opinion that the results are suitable for use in the current Mineral Resource Estimate.

## 24.6 MINERAL PROCESSING AND METALLURGICAL STUDIES

The Goliath Gold Deposit mineralization has been tested in several metallurgical campaigns beginning with the 1998 bulk sample. Testwork has generally returned high gold extractions, indicating excellent amenability to conventional direct cyanidation processing, with or without gravity concentration.

## 24.7 MINERAL RESOURCE ESTIMATE

This Report states the Mineral Resource Estimate for the Goliath Gold Project prepared in 2015 by Yungang Wu, P.Geo., Eugene Puritch, P.Eng. FEC and Antoine Yassa, P.Geo. of P&E Mining Consultants Inc. of Brampton, Ontario, all independent Qualified Persons in terms of NI 43-101, from information and data supplied by Treasury. P&E prepared the Mineral Resource Estimate for the Project based on a combination of historical drill holes and recent holes drilled by Treasury up to the end of the 2015 drill program.

All drilling and assay data were provided in the form of Microsoft Excel data files by Treasury. The Gems database for this Mineral Resource Estimate, constructed by P&E, consisted of 714 core holes totalling 218,497 m with 79,553 Au assays and 55,739 Ag assays. Verification of Au assay database records was performed by P&E against original laboratory electronically issued certificates from Activation Laboratories, Thunder Bay and Accurassay Laboratories, Thunder Bay.

Based on the previous Mineral Resource Estimate performed by ACA Howe International Limited (ACA Howe) in 2011, P&E determined it was necessary to construct two individual sets of mineralization wireframes for potential open pit mining and underground minin g above and below 150 m elevation respectively, which were overlapped from surface to 150 m elevation. Mineralization domains were defined by continuous mineralized structures, lithology along strike and down dip, and assay intervals equal to or greater than 0.35 g/t AuEq for the potential open pit mining area, and 1.9 g/t AuEq for the potential underground mining area. The formula applied for AuEq was AuEq=Au+(Ag/82.68) based on 30 April 2015 three-year trailing average Au and Ag prices of US$1,397 and US$22.93 respectively, and 95% recovery for Au and 70% recovery for Ag.

Eleven mineralization zone wireframes for the open pit Mineral Resource and eight wireframes for the underground Mineral Resource were constructed for the Mineral Resource Estimate. The wireframes were created from successive sectional polylines on east facing oriented vertical sections with 25 m spacing. Minimum constrained sample length for interpretation was 2.0 m. The average constrained sample length was 1.06 m. In order to regularize the assay sampling intervals for grade interpolation, a 1.0 m compositing length was selected for the drill hole intervals. The composites were calculated for Au and Ag over 1.0 m lengths starting at the first point of intersection between assay data hole and hanging wall of the 3-D zonal constraint. The compositing process was halted upon exit from the footwall of the aforementioned constraint.

Grade capping was investigated on the 1.0 m composite values in the database within the constraining domains to ensure that the possible influence of erratic high values did not bias the database. Gold and silver composite Log-normal histograms were generated for each mineralized zone and gold and silver grade capping values for open pit and underground Mineral Resource Estimates were established on a domain by domain basis. The majority of the domains were capped. A semi-variography study was performed as a guide to determining a grade interpolation search strategy. Omni, along strike, down dip and across dip semi-variograms were attempted for each domain using capped composites. Continuity ellipses based on the observed ranges were subsequently generated and used as the basis for estimation search ranges, distance weighting calculations and Mineral Resource classification criteria. Anisotropy was modeled based on an average strike direction of 080° and -70° south dip.

A total of 194 bulk density measurements from 23 drill holes were provided by Treasury. A bulk density model was interpolated with the Nearest Neighbour interpolation method using 159 bulk density measurements.

The Goliath Gold Mineral Resource block model was constructed using Geovia Gems V6.7.1 modelling software. The block model consists of separate model attributes for estimated grade, rock type, percent, bulk density and classification. Block dimensions were 5 m x 5 m x 2.5 m for both open pit and underground models. The Au grade blocks of the Main and C Zones were interpolated with Ordinary Kriging (OK) while all other zones were interpolated with Inverse Distance Cubed ($1/d^3$) based on the variogram performance. The Ag grade blocks of all domains were interpolated with Inverse Distance Cubed ($1/d^3$). The Au equivalent blocks (AuEq) were determined using formula AuEq = Au + (Ag/82.68). The Mineral Resources were classified as Measured, Indicated and Inferred based on the geological interpretation, semi–variogram performance and drill hole spacing. The Measured Mineral Resources were classified for the blocks interpolated by the grade interpolation Pass I which used at least five composites from a minimum of three drill holes; Indicated Mineral Resources were defined for the blocks interpolated by the grade interpolation Pass II, which used at least three composites from a minimum of two holes; and Inferred Mineral Resources were categorized for all remaining grade populated blocks within the mineralized domains.

The Mineral Resource Estimate was derived from applying an AuEq cut-off grade to the block model and reporting the resulting tonnes and grade for potentially mineable areas. Based on estimated operating costs and gold and silver recoveries, a trailing average gold price of US$1,397/oz, silver price of US$22.93/oz and an exchange rate of US$0.94=C$1.00, in-pit and underground cut-offs were 0.35 g/t AuEq and 1.90 g/t AuEq respectively. Near-surface Mineral Resources are constrained within an optimized conceptual pit-shell that utilized Measured, Indicated and Inferred Mineral Resources. Underground Mineral Resources are reported outside of the pit shell.

The resulting Mineral Resource Estimate is tabulated in Table 24.1. P&E considers that the gold and silver mineralization of the Goliath Gold Project is potentially amenable to open pit and underground extraction.

**TABLE 24.1**
**MINERAL RESOURCE ESTIMATE STATEMENT(1-8)**

| | Class | Cut-off AuEq (g/t) | Tonnage (Kt) | Au (g/t) | Contained Au (Koz) | Ag (g/t) | Contained Ag (Koz) | AuEq (g/t) | Contained AuEq (Koz) |
|---|---|---|---|---|---|---|---|---|---|
| In-Pit | Measured | 0.35 | 1,015 | 1.90 | 62 | 7.8 | 256 | 2.00 | 65 |
| | Indicated | 0.35 | 17,174 | 1.22 | 676 | 5.2 | 2,869 | 1.29 | 711 |
| | M+I | 0.35 | 18,189 | 1.26 | 738 | 5.3 | 3,125 | 1.33 | 776 |
| | Inferred | 0.35 | 1,351 | 0.99 | 43 | 4.3 | 186 | 1.04 | 45 |
| UG | Measured | 1.9 | 103 | 7.32 | 24 | 23.1 | 76 | 7.60 | 25 |
| | Indicated | 1.9 | 2,264 | 4.84 | 352 | 14.4 | 1,044 | 5.012 | 365 |
| | M+I | 1.9 | 2,367 | 4.95 | 376 | 14.7 | 1,120 | 5.13 | 390 |
| | Inferred | 1.9 | 2,120 | 4.22 | 287 | 10.9 | 743 | 4.35 | 296 |
| **Total** | **Measured** | **0.35+1.9** | **1,118** | **2.40** | **86** | **9.2** | **332** | **2.51** | **90** |
| | **Indicated** | **0.35+1.9** | **19,438** | **1.65** | **1,028** | **6.3** | **3,913** | **1.72** | **1,076** |
| | **M+I** | **0.35+1.9** | **20,556** | **1.69** | **1,114** | **6.4** | **4,245** | **1.76** | **1,166** |
| | **Inferred** | **0.35+1.9** | **3,471** | **2.96** | **330** | **8.3** | **929** | **3.06** | **341** |

***Notes:***

*(1) Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*

*(2) The quantity and grade of reported Inferred Mineral Resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred Mineral Resources as an Indicated or Measured Mineral Resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured Mineral Resource category.*

*(3) The Mineral Resource Estimate in this press release were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.*

*(4) A gold price of US$1,397/oz and silver price of US$22.93/oz based on the April 30, 2015 three year trailing average prices and an exchange rate of US$1.06=C$1.00 were utilized in the AuEq cut-off grade calculations of 0.35 g/t AuEq for Open Pit and 1.90 g/t AuEq for Underground Mineral Resources.*

*(5) Open Pit mining costs were assumed at C$5.00/t for mineralized material, C$3.15/t for waste rock and C$2.00/t for overburden, while Underground mining costs were assumed at C$70.00/t, with process costs of C$13.81/t, G&A of C$2.72/t, and process recoveries of 95% for gold and 70% for silver.*

*(6) The Au:Ag ratio used for AuEq was 82.68.*

*(7) A bulk density model averaged 2.76 t/m$^3$ for mineralized material.*

*(8) Totals in the table may not sum due to rounding.*

## 24.8 PROPOSED OPERATION

ACA Howe has reviewed the Goliath Gold Project at the level of a Preliminary Economic Assessment (PEA). The reader is cautioned that this PEA uses Indicated and Inferred Mineral Resources.

The proposed operation considered in this PEA includes surface and underground mining of the Goliath Gold Project mineralization and on-site milling.

## 24.9 MINING METHODS

The block model from P&E's 2015 Mineral Resource Estimate was used as a basis for pit optimisation and preliminary design. Nested pits were optimi sed and best case, worst case, and constant bench lag scheduling scenarios were run. From that process, a nested pit was selected for further, more detailed design including benches and haul roads.

The detailed preliminary design includes mill feed and waste scheduling on a yearly basis. The production rate would be a maximum of 2,500 tonnes per day (tpd), producing an average of 875,000 tonnes per annum (t/a). For the first year, production would be solely from the pit while the underground mine is being developed. In Year 2, a small amount of production would come from underground, with the pit supplying the balance. In Year 3 and onward, the underground would supply the majority of the mill feed with the pit supplying the balance.

The pit contains nearly 3.2 million diluted tonnes of mill feed with average grades of 1.59 g/t gold and 5.5 g/t silver. When overburden stripping and waste rock removal are considered, the life of mine stripping ratio is 7.9:1 ($tonnes_{waste}$:$tonnes_{mill\ feed}$). After the proposed pre-production stripping, the stripping ratio drops to 6.8:1. Upon removing all unconsolidated overburden, the stripping ratio is 6:1

The underground mine would supply 6.6 million tonnes (Mt) of mill feed with average grades of 4.87 g/t gold and nearly 13 g/t silver.

Over the life of mine, nearly 1.2 million ounces (Moz) of gold and 3.3 Moz of silver would be delivered to the mill.

The combined surface and underground mine has a 13-year mine life.

## 24.10 MILLING AND RECOVERY

Three testwork programs from 1998 to 2011 have demonstrated a recovery of 95.5% gold and 62.5% silver for the selected plant configuration at a nominal processing rate of 2,500 tonnes/day.

The testwork has demonstrated that a conventional gravity recovery gold (GRG) plant together with a standard carbon in leach circuit (CIL) as the most appropriate option for this orebody.

A treatment plant capital cost of C$87,580,500 has been calculated inclusive of plant, infrastructure, tailings storage facility and indirect costs.

A process operating cost of C$18.15/t has been calculated for the conventional plant as configured, however, the addition of an oxygen plant could reduce this cost significantly.

A process plant availability of 91.3% has been adopted from testwork, however, it is considered conservative and the optimised plant is more likely to average 93%.

## 24.11 CAPITAL AND OPERATING COSTS

The initial capital expense estimate to start producing from the Goliath Project is summarized in the Table 24.2 below.

**TABLE 24.2**
**INITIAL CAPITAL COST ESTIMATE**

| Item | Cost Estimate C$ million |
|---|---|
| Permitting and Feasibility | 1.7 |
| Mining | 41.0 |
| Processing & Infrastructure | 87.6 |
| Additional Contingency | 2.9 |
| **Total** | **133.2** |

An additional C$1.6 million is estimated to complete the open pit fleet in Year 1 of production. The estimate to start underground production is C$18.0 million in Year 1 and C$23.2 million in Year 2.

The operating cost estimate is summarized in Table 24.3 below.

**TABLE 24.3**
**OPERATING COST ESTIMATE**

| Item | C$ |
|---|---|
| Mining open pit ore, per tonne | C$3.45 |
| Mining open pit waste, per tonne | C$3.30 |
| Mining underground, per tonne ore | C$77.00 |
| Processing, per tonne ore | C$18.14 |
| General and Administration, annual cost | C$2.5 million |

## 24.12 ECONOMIC ANALYSIS

NI 43-101 Part 2, Section 2.3(1)(b) and Companion Policy 43-101CP, Part 2, Section 2.3(1) Restricted Disclosure, prohibits the disclosure of the results of an economic analysis that includes or is based on Inferred Mineral Resources, an historical estimate, or an exploration target. However, under NI 43-101, Part 2, Section 2.3(3) and Companion Policy 43-101CP, Part 2 section 2.3(3), the use Inferred Mineral Resources is allowed in a Preliminary Economic Assessment in order to inform investors of the potential of the Property.

This PEA is preliminary in nature, it includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the PEA will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

A Microsoft Excel spreadsheet was used to model and analyse the net cash flow (NCF) of the Goliath Project. The model calculates the pre-tax and post-tax NCF as well as the internal rate of return (IRR) and the net present value (NPV) at various discount rates. The payback period, the minimum gold price required to breakeven, and the IRRs at higher and lower metal prices and operating and capital costs are also calculated.

### 24.12.1 Results

The Goliath Project yields an IRR of 25.0% on a post-tax basis and 29.9% on a pre-tax basis. The respective payback periods are 4.1 years and 3.7 years after the start of production. The "break even" price of gold is US$696.10 per ounce post-tax and US$693.06 on a pre-tax basis where "break even" is the gold price required to produce a zero Net Cash Flow (i.e. all capital is paid back but no profit is incurred).

At a 10% discount rate, the Project's NPVs are C$167.8 million pos t-tax and C$248.2 million pre-tax while at a 5% discount, the Project's NPV's are C$306.1 million post-tax and C$425.4 million pre-tax. The underlying assumptions and parameters used in CSA Global's model include:

- All units of measurement are metric unless otherwise stated.
- All dollars are Canadian Dollars unless otherwise stated.
- The gold (US$1,225 per troy oz) and silver (US$17.00 per troy oz) prices are based on the average London 2nd fixing for the last three years as of February 2, 2017.
- The United States: Canadian exchange rate (C$1.32: US$1.00) is based on the three-year trailing average as of February 2, 2017.
- The model has assumed a two-year pre-production period. This allows for one year to complete environmental studies, permitting, a final feasibility study and the time to put financing in place. In the second year, the model assumes that the company will build the processing plant, supporting infrastructure and strip 1,311,000 $m^3$ of overburden and 901,000 t of waste. As well, 75,000 t of mill feed is mined during the pre-production period and milled in the first production year.

- The production rate is designed to supply 2,500 tpd or 875,000 t/a of mineralized material to the mill. This generates an open pit life of one full year of production plus seven partial years. The underground mine operates from Year 2 to Year 11 and produces a total of 6,597,000 t of mineralized material. Thus the total mine life is 12.9 years.

- 3,054,000 $m^3$ of overburden and 19,078,000 t of waste are removed during the life of the open pit operation for a life of mine stripping ratio of 7.9:1. After the proposed preproduction stripping, the stripping ratio drops to 6.8:1. Upon removing all unconsolidated overburden, the stripping ratio is 6:1.

- The production schedule has been prepared by co-authors Ghavalas and Roy of CSA Global and includes waste, overburden and mineralized material tonnages and gold and silver grades for each production year for both the open pit and underground operations.

- Mill recoveries are based on gravity concentration followed by cyanidation of the gravity tails via carbon-in-leach circuit ("CIL") and are 95.5% and 62.6% for gold and silver respectively.

- CSA Global has estimated costs for gold and silver smelting and refining (including transportation and insurance) at US$0.50/oz of doré with payment for 99.75% of the contained gold and 97% of the contained silver. There are a number of different royalties that apply to various areas of the Goliath Property. These royalties are applied to the gold and silver revenues after deducting smelting and refining costs and in some cases, mineral taxes. The model assumes that the principal royalty, is purchased in Year 2 of production, thus reducing the royalty payments substantially. In the current model, the total royalties over the life of the mine (including pre-production) are C$1.2 million or approximately C$1.10/AuEq ounce.

- Capital costs have been developed by CSA Global and are shown in Section 21.

- Operating costs have been calculated by CSA Global and are shown in Section 21.

- The model calculates depreciation using the Units of Production ("UOP") method. In this method, the model calculates depreciation based on the amount of mineralized material milled each year.

- Working Capital is based on:
    - Two weeks of precious metal inventory (at the net smelter return (NSR) value).
    - Accounts Receivable as four weeks of metal production (at the NSR value).
    - Spare Parts and Supplies as C$1.8 million.
    - Less: Accounts Payable as one half of four weeks of operating costs.

- The model assumes a "Reclamation Trust" to satisfy the regulatory authorities that the mine will be able to reclaim the mining operation at the end of the mine life. While CSA Global has assumed that total reclamation will amount to about C$12 million, the model assumes that the required reclamation bond will be in the order of

C$20 million. The cash flow shows the reclamation trust below the working capital line in the main cash flow shown in Appendix 8. The Project raises the trust fund in the last pre-production year and then reduces it as the closure and restoration capital is expended in the final production years.

- The model calculates Federal and Ontario Corporate taxes and Ontario Mining Taxes. The Federal and Ontario Corporate taxes are based on net income as described in the Canadian Income Tax Act.

- The Federal Income Tax base has been calculated as:
  - Earnings before Depreciation, Amortization and Taxes ("EBITDA").
  - Less: Ontario Mining Taxes (see below).
  - Less: Capital Cost Allowance (CCA), i.e. depreciation where most of the capital is treated as CCA Class 41.2. Class 41.2 uses the Declining Balance (DB) method with a rate of 25%. Formerly, initial mine capital costs could incur a rate of 100% but this is being phased out and will no longer exist after 2020.
  - Less: Canadian Exploration Expenses (CEE), 100% DB; includes most pre-production exploration expenses plus waste stripping and mine excavations (if expended before 2018).
  - Less: Canadian Development Expense (CDE), 30% DB; resource acquisition costs as well as sinking mine shafts and major underground haulage-ways after coming into production. After 2017 CDE includes waste stripping and mine excavation.
  - Less: Interest Expense.
  - Equals Net Taxable Income.
  - Federal Corporate Tax is calculated as 15% of Net Taxable Income.
  - Note that any losses can currently be carried back three years and forward 20 years.

- Ontario Corporate Taxes are calculated on the same basis as Federal Corporate Taxes except that the Ontario Corporate Tax Rate is 10% for mining operations.

- Ontario Mining Taxes are calculated as:
  - EBITDA.
  - Plus: Royalties payable to other stakeholders (except government royalties).
  - Less: Depreciation charged on New Mining Assets calculated on a Straight Line ("SL") basis at 100%.
  - Less: Depreciation on Ongoing Mining Assets calculated on a SL basis at 30%.
  - Less: Depreciation on Processing and Transportation Assets calculated on a SL basis at 15%.
  - Less: Depreciation of Exploration and Development Expenses calculated on a DB basis at 100%.
  - Less: A Processing Allowance (PA) of 8% of processing and refining assets purchased and installed to date. The minimum PA is 15% of net income at this point with a maximum of 65% of net income at this point.
  - The first C$10 million of net income at this point is tax free during the first three years of production. Note, however, that depreciation must be deducted as specified above during the tax free period.

- The taxation rate is 10% of any net profits that exceed C$500,000.
- No deduction is allowed for interest expense or royalties paid to third parties.
- Ontario Mining Tax is treated as a royalty rather than a tax as it is applied to the mine itself.

### 24.12.2 Sensitivity

CSA Global tested the sensitivity of the Goliath Project IRR to changes in metal prices, operating costs and capital costs. Metal prices and costs were varied up and down by 30%. As would be expected the IRR is most sensitive to changes in metal prices. Changes in operating and capital costs have approximately the same effect on the IRR. For instance, a drop in metal prices of 30% leads to a post-tax IRR of 8.6% while an increase in metal prices of 30% raises the post-tax IRR to 38.8%. Similarly, an increase in operating costs of 30% reduces in the post-tax IRR to 17.9% and a decrease in the operating costs of 30% raises the post-tax IRR to 32.2%. CSA Global has not included the gold grade in the sensitivity calculation as the gold price acts as a surrogate for the gold grade. Any percentage change in the gold price would produce almost the same result as the equivalent change in the gold grade.

## 24.13 CONCLUSIONS AND RECOMMENDATIONS

CSA Global's economic modelling and analysis of the Project reveals the Project could yield a post-tax IRR of 25.1% and a post-tax NPV, discounted at 10%, of C$167.8 million. In CSA Global's opinion, the Goliath Gold Project is a potentially very robust one and warrants Treasury's continued advancement of the Project towards a further feasibility study.

To proceed with the assessment of the potential development of the Project, CSA Global recommends:

- Variability sampling of diamond drill core and associated metallurgical testwork.

- Additional resource definition is required to upgrade the current Mineral Resource categories and to clarify flagged areas included in the 2017 PEA mining inventory.

- It is recommended that Treasury continue with its planned 2017 Phase II diamond drill program focused primarily on converting and expanding underground "Inferred" Mineral Resource blocks that reside in and adjacent to the known Main Zone and C Zone gold-bearing shoots in the main Mineral Resource area to the "Indicated" Mineral Resource category.

- It is also recommended that Treasury continue follow-up on previous exploration drilling programs to test the periphery of the Goliath Gold Deposit and the on-strike potential of the Eastern Alteration Corridor which hosts the Goliath Gold Deposit. These two programs could have the desired effect of extending the potential mine life and/or providing additional easily attainable ounces to enhance the current Mineral Resource inventory.

Further feasibility studies should consider the following processing and underground mining recommendations:

- Installation of a 4 t/day oxygen plant for the processing facility.

- Evaluate the eastern and western mining zones excluded from the 2017 PEA mining inventory to determine if they add value to the underground mine.

- An economic analysis, considering mining costs and revenues, should be undertaken to determine if the high recovery using cemented backfill is preferable to the lower cost, lower recovery method of mining without cemented fill and leaving supporting pillars.

- Evaluate the quantity of Mineral Resource that may be included in the mining inventory by modifying the design parameters. This could include a reduction in mining width and heights, and the inclusion of marginal mill feed and other low-grade material that may be excavated as part of the current mine design.

Treasury has proposed a 2017 program estimated to be in the order of C$5.25 million (Table 24.4). CSA Global concurs with the proposed program and budget.

**TABLE 24.4**
**TREASURY PROPOSED 2017 PROGRAM AND BUDGET**

| Description | Estimated Cost |
|---|---|
| Metallurgical Variability Testing | C$100,000 |
| Infill Drilling | C$2,250,000 |
| Further Feasibility Studies | C$2,000,000 |
| Condemnation Drilling | C$500,000 |
| Permitting and Environmental | C$400,000 |
| **Total** | **C$5,250,000** |

## 25.0 INTERPRETATION AND CONCLUSIONS

Treasury's 100% owned Goliath Gold Project is located approximately 20 km east of the city of Dryden, in Zealand and Hartman Townships, northwestern Ontario, Canada. The Property benefits from excellent access and close proximity to the City of Dryden and the Trans-Canada Highway.

The Goliath Gold Project is located in the Archean Eagle-Wabigoon-Manitou greenstone belt in the Wabigoon Subprovince of the Superior Province. A supracrustal unit dominated by felsic metavolcanic rocks is conformably inter-layered with meta-wacke-siltstone rocks and hosts the majority of gold mineralization at Goliath. All of the rocks have been subjected to folding and moderate to intense shearing with local hydrothermal alteration, quartz veining and sulphide mineralisation. In the immediate area of the Deposit, a 100 to 150 m thick unit of intensely deformed and variably altered felsic, fine to medium grained, quartz-feldspar-sericite schist (MSS) and biotite-quartz-feldspar-sericite schist (BMS) with minor metasedimentary rocks hosts the most significant gold concentrations in the Main and C Zones of the Deposit.

At Goliath, the gold-bearing zones strike from 090° to 072° and dips steeply south. The mineralised zones are tabular composite units defined on the basis of moderate to strongly altered rock units (sericitization and silicification), anomalous to high grade gold concentrations, and increased sulphide content, especially sphalerite and galena, and are concordant to the local stratigraphic units. The main area of gold, silver and sulphide mineralisation and alteration occurs up to a maximum drill-tested vertical depth of over 800 metres, and drill-tested strike-length of approximately 2,300 metres. Gold mineralized zones and higher grade shoots all remain open at depth.

Treasury considers that the westerly plunging shoot structures demonstrate repeatable frequency of occurrence along strike within the Goliath Deposit. There is potential for the discovery of new gold resources outside the main deposit east and northeast along strike following the alteration corridor of MSS and BMS rock units.

Although originally described as a shear-hosted mesothermal gold deposit in an Archean greenstone belt, Treasury favours a hybrid deposit model with early gold-rich volcanogenic sulphide mineralization and/or shear hosted gold and base metal mineralization overprinted by subsequent deformation and alteration events followed by later stage reconcentration of gold into high grade steeply westward plunging shoots. The majority of the 50 $km^2$ Property remains largely underexplored.

Since acquiring the Property in 2008, Treasury has completed extensive exploration. Including work done by past issuers, 811 diamond drill holes totalling 257,540 m of drilling have been conducted. P&E has evaluated drilling procedures, sample preparation, analyses and security and is of the opinion that the core logging procedures employed, and the sampling methods used were thorough and have provided sufficient geotechnical and geological information. The authors consider the data to be of good quality and satisfactory for use in a Mineral Resource Estimate. P&E compared independent sample verification results versus the original assay results for gold and the P&E results demonstrate that the results obtained and reported by Treasury were reproducible.

The Mineral Resource Estimate is based on a database consisting of a total of 811 drill holes. Based on estimated operating costs and gold recovery, a trailing average gold price of US$1,250/oz, silver price of US$17/oz and an exchange rate of US$0.80=C$1.00, in-pit and underground cut-offs were 0.40 g/t AuEq and 1.90 g/t AuEq, respectively. In order for the constrained open pit mineralization in the resource model to be considered potentially economic, a first pass Whittle 4X pit optimization was carried out to create a pit shell for resource reporting purposes. A bulk density model was interpolated with the Nearest Neighbour interpolation method using 517 bulk density measurements.

The resulting Mineral Resource Estimate for the Goliath Project includes: In-Pit Measured and Indicated Mineral Resources of 12,611,000 tonnes at a grade of 1.45 g/t AuEq for 590,000 contained oz gold equivalent; In-Pit Inferred Mineral Resources of 595,000 tonnes at a grade of 1.08 g/t AuEq for 21,000 oz gold equivalent; out of pit potential underground Measured and Indicated Mineral Resources of 3,591,000 tonnes at a grade of 5.54 g/t AuEq for 640,000 contained oz gold equivalent; and out of pit potential underground Inferred Mineral Resources of 1,414,000 tonnes at a grade of 4.43 g/t AuEq for 206,000 contained oz gold equivalent. Total Measured and Indicated Mineral Resources are estimated to contain 1,230,000 contained oz gold equivalent and total Inferred Mineral Resources are estimated to contain an additional 227,000 contained oz gold equivalent. The new Measured Mineral Resources identified total 83,000 ounces AuEq (Open Pit and Underground).

The Mineral Resources in this Technical Report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council. Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. The quantity and grade of reported Inferred Mineral Resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred Mineral Resources as an Indicated or Measured Mineral Resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured Mineral Resource classification.

# 26.0 RECOMMENDATIONS

## 26.1 RECOMMENDATIONS AND PROPOSED BUDGET

P&E concludes that the Goliath Gold Project is one of merit with the Deposit now totalling 1,229,000 gold and gold equivalent silver ounces (AuEq) in the "Indicated" and "Measured" classification.

With guidance from the Company, P&E has prepared and recommends a project development budget and program totalling C$5,079,000 to further develop and advance the Project through Prefeasibility level studies and on to a Feasibility Study (Table 26.1). A budget has been presented for each of the recommended activities. A contingency of 10% has been applied to all estimated costs.

The company's Updated 2017 PEA demonstrated favourable economics supporting development of a mine.

With the Federal EA in the final phases work and spending will be limited for these purposes. We recommend that the company continue with provincial permitting activities in development towards a construction decision. It is also recommended that the company proceed towards advanced engineering studies and the completion of a Pre-Feasibility level study. Costs for the outstanding work to be completed have been estimated for their respective areas as follows:

A budget for the recommended work program is summarized in Table 26.1.

**TABLE 26.1**
**PROPOSED WORK BUDGET**

| Work Description | Total Cost (C$) |
|---|---|
| Prefeasibility Engineering studies | 600,000 |
| Environmental Work | 750,000 |
| **Total** | **1,350,000** |

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# 28.0 CERTIFICATES

## CERTIFICATE OF QUALIFIED PERSON

## EUGENE PURITCH, P. ENG., FEC, CET

I, Eugene J. Puritch, P. Eng., FEC, CET, residing at 44 Turtlecreek Blvd., Brampton, Ontario, L6W 3X7, do hereby certify that:

1. I am an independent mining consultant and President of P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled "Updated Mineral Resource Estimate for the Goliath Gold Deposit", (The "Technical Report") with an effective date of July 1, 2019.
3. I am a graduate of The Haileybury School of Mines, with a Technologist Diploma in Mining, as well as obtaining an additional year of undergraduate education in Mine Engineering at Queen's University. In addition I have also met the Professional Engineers of Ontario Academic Requirement Committee's Examination requirement for Bachelor's Degree in Engineering Equivalency. I am a mining consultant currently licensed by the: Professional Engineers and Geoscientists New Brunswick (License No. 4778); Professional Engineers, Geoscientists Newfoundland and Labrador (License No. 5998); Association of Professional Engineers and Geoscientists Saskatchewan (License No. 16216); Ontario Association of Certified Engineering Technicians and Technologists (License No. 45252); Professional Engineers of Ontario (License No. 100014010); Association of Professional Engineers and Geoscientists of British Columbia (License No. 42912); and Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (No. L3877). I am also a member of the National Canadian Institute of Mining and Metallurgy.

   I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.

   I have practiced my profession continuously since 1978. My summarized career experience is as follows:

   - Mining Technologist - H.B.M.& S. and Inco Ltd., 1978-1980
   - Open Pit Mine Engineer – Cassiar Asbestos/Brinco Ltd., 1981-1983
   - Pit Engineer/Drill & Blast Supervisor – Detour Lake Mine, 1984-1986
   - Self-Employed Mining Consultant – Timmins Area, 1987-1988
   - Mine Designer/Resource Estimator – Dynatec/CMD/Bharti, 1989-1995
   - Self-Employed Mining Consultant/Resource-Reserve Estimator, 1995-2004
   - President – P&E Mining Consultants Inc, 2004-Present

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring Sections 2 and 3 and co-authoring Sections 1, 14, 25, and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a "Qualified Person" for a Technical Report titled "Technical Report and Updated Resource Estimate for the Goliath Gold Project", with an effective date of October 9, 2015.
8. I have read NI 43-101 and Form 43-101F1. This Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: July 1, 2019

Signed Date: November 18, 2019

***{SIGNED AND SEALED}***

***[Eugene Puritch]***

______________________________

Eugene Puritch, P.Eng., FEC, CET

## CERTIFICATE OF QUALIFIED PERSON

## MARK WHEELER, P. ENG.

I, Mark Wheeler, P. Eng., residing at 146 Tecumseth St, Toronto, Ontario, do hereby certify that:

1. I am a mining engineer employed by Treasury Metals Inc.
2. This certificate applies to the Technical Report titled "Updated Mineral Resource Estimate for the Goliath Gold Deposit", (The "Technical Report") with an effective date of July 1, 2019.
3. I am a graduate of Queens University with a Bachelor of Science degree in Mining Engineering (2004). I have worked as a mining engineer/ for over 10 years since obtaining my B.Sc. degree. I am a mining engineer currently licensed by the Association of Professional Engineers of Ontario (License No 100130470).

   I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.

   My relevant experience for the purpose of the Technical Report is:
   - Director, Projects, Treasury Metals Inc. 2012-2019
   - Senior Mining Engineer, Teck Resources 2009-2012
   - Mining Engineer, Williams Operating Corp. 2006-2009
4. I have visited the Property that is the subject of this Technical Report numerous times the last which was on July 10, 2019.
5. I am responsible for authoring Section 20 and co-authoring Sections 1, 25 and 26.of this Technical Report.
6. I am not independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had prior involvement with the Project that is the subject of this Technical Report as Director, Projects, Treasury Metals Inc.
8. I have read NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: July 1, 2019
Signed Date: November 18, 2019

***{SIGNED AND SEALED}***
***[Mark Wheeler]***

____________________________
Mark Wheeler, P. Eng.

## CERTIFICATE OF QUALIFIED PERSON

## YUNGANG WU, P.GEO.

I, Yungang Wu, P. Geo., residing at 3246 Preserve Drive, Oakville, Ontario, L6M 0X3, do hereby certify that:

1. I am an independent consulting geologist contracted by P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled "Updated Mineral Resource Estimate for the Goliath Gold Deposit", (The "Technical Report") with an effective date of July 1, 2019.
3. I am a graduate of Jilin University, China, with a Master Degree in Mineral Deposits (1992). I am a geological consultant and a registered practising member of the Association of Professional Geoscientist of Ontario (Registration No. 1681).

   I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.

   My relevant experience for the purpose of the Technical Report is as follows:

   - Geologist –Geology and Mineral Bureau, Liaoning Province, China 1992-1993
   - Senior Geologist – Committee of Mineral Resources and Reserves of Liaoning, China 1993-1998
   - VP – Institute of Mineral Resources and Land Planning, Liaoning, China 1998-2001
   - Project Geologist–Exploration Division, De Beers Canada 2003-2009
   - Mine Geologist – Victor Diamond Mine, De Beers Canada 2009-2011
   - Resource Geologist– Coffey Mining Canada 2011-2012
   - Consulting Geologist Present
4. I have visited the Property that is the subject of this Technical Report on April 23 to April 24, 2018 and September 20 to September 21, 2018.
5. I am responsible for co-authoring Sections 1, 12, 14, 25, and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a "Qualified Person" for a Technical Report titled "Technical Report and Updated Resource Estimate for the Goliath Gold Project", with an effective date of October 9, 2015.
8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: July 1, 2019
Signed Date: November 18, 2019

***{SIGNED AND SEALED}***
***[Yungang Wu]***

______________________________

Yungang Wu, P.Geo.

## CERTIFICATE OF QUALIFIED PERSON

## DAVID BURGA, P.GEO.

I, David Burga, P. Geo., residing at 3884 Freeman Terrace, Mississauga, Ontario, do hereby certify that:

1. I am an independent geological consultant contracted by P & E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled "Updated Mineral Resource Estimate for the Goliath Gold Deposit", (The "Technical Report") with an effective date of July 1, 2019.
3. I am a graduate of the University of Toronto with a Bachelor of Science degree in Geological Sciences (1997). I have worked as a geologist for over 20 years since obtaining my B.Sc. degree. I am a geological consultant currently licensed by the Association of Professional Geoscientists of Ontario (License No 1836).

   I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.

   My relevant experience for the purpose of the Technical Report is:
   - Exploration Geologist, Cameco Gold 1997-1998
   - Field Geophysicist, Quantec Geoscience 1998-1999
   - Geological Consultant, Andeburg Consulting Ltd. 1999-2003
   - Geologist, Aeon Egmond Ltd. 2003-2005
   - Project Manager, Jacques Whitford 2005-2008
   - Exploration Manager – Chile, Red Metal Resources 2008-2009
   - Consulting Geologist 2009-Present
4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring Sections 4-10 and 23, and co-authoring Sections 1, 25, and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a "Qualified Person" for a Technical Report titled "Technical Report and Updated Resource Estimate for the Goliath Gold Project", with an effective date of October 9, 2015.
8. I have read NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: July 1, 2019
Signed Date: November 18, 2019

***{SIGNED AND SEALED}***
***[David Burga]***

______________________________
David Burga, P.Geo.

## CERTIFICATE OF QUALIFIED PERSON

## JARITA BARRY, P.GEO.

I, Jarita Barry, P.Geo., residing at 4 Creek View Close, Mount Clear, Victoria, Australia, 3350, do hereby certify that:

1. I am an independent geological consultant contracted by P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled "Updated Mineral Resource Estimate for the Goliath Gold Deposit", (The "Technical Report") with an effective date of July 1, 2019.
3. I am a graduate of RMIT University of Melbourne, Victoria, Australia, with a B.Sc. in Applied Geology. I have worked as a geologist for a total of 13 years since obtaining my B.Sc. degree. I am a geological consultant currently licensed by Engineers and Geoscientists British Columbia (License No. 40875), Professional Engineers and Geoscientists Newfoundland & Labrador (License No. 08399) and Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (License No. L3874). I am also a member of the Australasian Institute of Mining and Metallurgy of Australia (Member No. 305397);

   I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.

   My relevant experience for the purpose of the Technical Report is:

   - Geologist, Foran Mining Corp. 2004
   - Geologist, Aurelian Resources Inc. 2004
   - Geologist, Linear Gold Corp. 2005-2006
   - Geologist, Búscore Consulting 2006-2007
   - Consulting Geologist (AusIMM) 2008-2014
   - Consulting Geologist, P.Geo. (APEGBC/AusIMM) 2014-Present

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible authoring Section 11 and co-authoring Sections 1, 12, 25 and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a "Qualified Person" for a Technical Report titled "Technical Report and Updated Resource Estimate for the Goliath Gold Project", with an effective date of October 9, 2015.
8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: July 1, 2019
Signed Date: November 18, 2019

***{SIGNED AND SEALED}***
***[Jarita Barry]***

_________________________________

Jarita Barry, P.Geo.

## CERTIFICATE OF QUALIFIED PERSON

## ALFRED S. HAYDEN, P. ENG

I, Alfred S. Hayden, P. Eng., residing at 284 Rushbrook Drive, Newmarket, Ontario, L3X 2C9, do hereby certify that:

1. I am currently President of:
   EHA Engineering Ltd.,
   Consulting Metallurgical Engineers
   Box 2711, Postal Stn. B.
   Richmond Hill, Ontario, L4E 1A7
2. This certificate applies to the Technical Report titled "Updated Mineral Resource Estimate for the Goliath Gold Deposit", (The "Technical Report") with an effective date of July 1, 2019.
3. I graduated from the University of British Columbia, Vancouver, B.C. in 1967 with a Bachelor of Applied Science in Metallurgical Engineering. I am a member of the Canadian Institute of Mining, Metallurgy and Petroleum and a Professional Engineer and Designated Consulting Engineer registered with Professional Engineers Ontario. I have worked as a metallurgical engineer for over 50 years since my graduation from university.

   I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.

   My summarized career experience is as follows:
   - EHA Engineering Ltd: (President) 1990-Present
   - EH Associates: (Partner) 1985-1990
   - A.H. Ross & Associates Ltd. (Senior Associate) 1976-1985
   - Eldorado Nuclear Limited (Chief Metallurgist/Mill Engineer) 1966-1976
4. I have not visited the Property that is the subject of this Technical Report
5. I am responsible for authoring Section 13 and co-authoring Sections 1, 25 and 26 of this Technical Report.
6. I am independent of the issuer applying the test in Section 1.5 of NI 43-101.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a "Qualified Person" for a Technical Report titled "Technical Report and Updated Resource Estimate for the Goliath Gold Project", with an effective date of October 9, 2015.
8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: July 1, 2019
Signed Date: November 18, 2019

***{SIGNED AND SEALED}***
***[Alfred Hayden]***

______________________________
Alfred S. Hayden, P.Eng.

## CERTIFICATE OF QUALIFIED PERSON

## ANTOINE R. YASSA, P.GEO.

I, Antoine R. Yassa, P.Geo. residing at 3602 Rang des Cavaliers, Rouyn-Noranda, Quebec, J0Z 1Y2, do hereby certify that:

1. I am an independent geological consultant contracted by P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled "Updated Mineral Resource Estimate for the Goliath Gold Deposit", (The "Technical Report") with an effective date of July 1, 2019.
3. I am a graduate of Ottawa University at Ottawa, Ontario with a B. Sc (HONS) in Geological Sciences (1977) with continuous experience as a geologist since 1979. I am a geological consultant currently licensed by the Order of Geologists of Québec (License No 224) and by the Association of Professional Geoscientist of Ontario (License No 1890);

   I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.

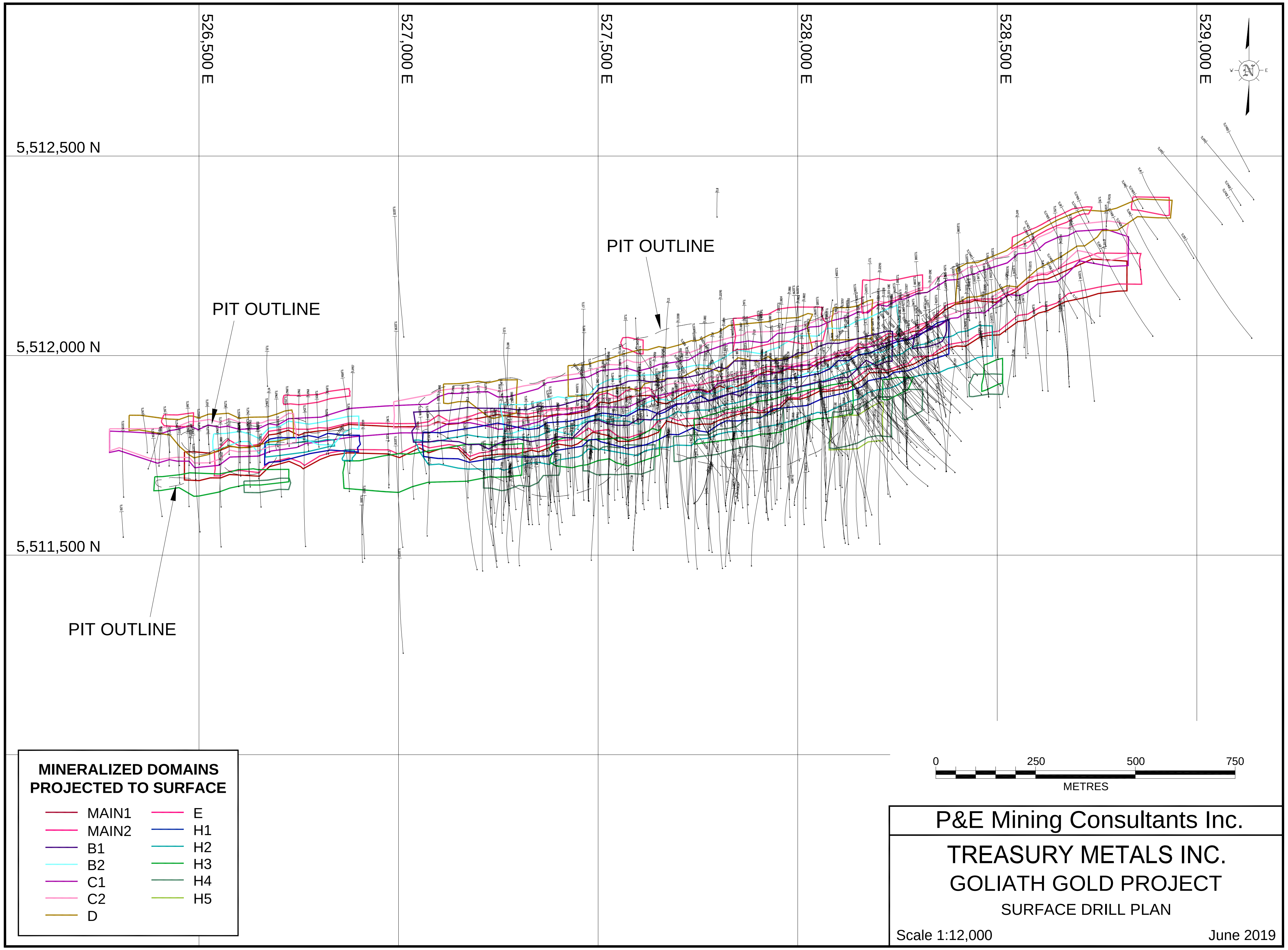
   My relevant experience for the purpose of the Technical Report is:
   - Minex Geologist (Val d'Or), 3D Modeling (Timmins), Placer Dome 1993-1995
   - Database Manager, Senior Geologist, West Africa, PDX, 1996-1998
   - Senior Geologist, Database Manager, McWatters Mine 1998-2000
   - Database Manager, Gemcom modeling and Resources Evaluation (Kiena Mine) 2001-2003
   - Database Manager and Resources Evaluation at Julietta Mine, Bema Gold Corp. 2003-2006
   - Consulting Geologist 2006-present
4. I have visited the Property that is the subject of this Technical Report on August 13, 2014 and June 24 to 26, 2015.
5. I am responsible for co-authoring Sections 1, 12, 14, 25 and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a "Qualified Person" for a Technical Report titled "Technical Report and Updated Resource Estimate for the Goliath Gold Project", with an effective date of October 9, 2015.
8. I have read NI 43-101 and Form 43-101F1. This Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: July 1, 2019
Signed Date: November 18, 2019

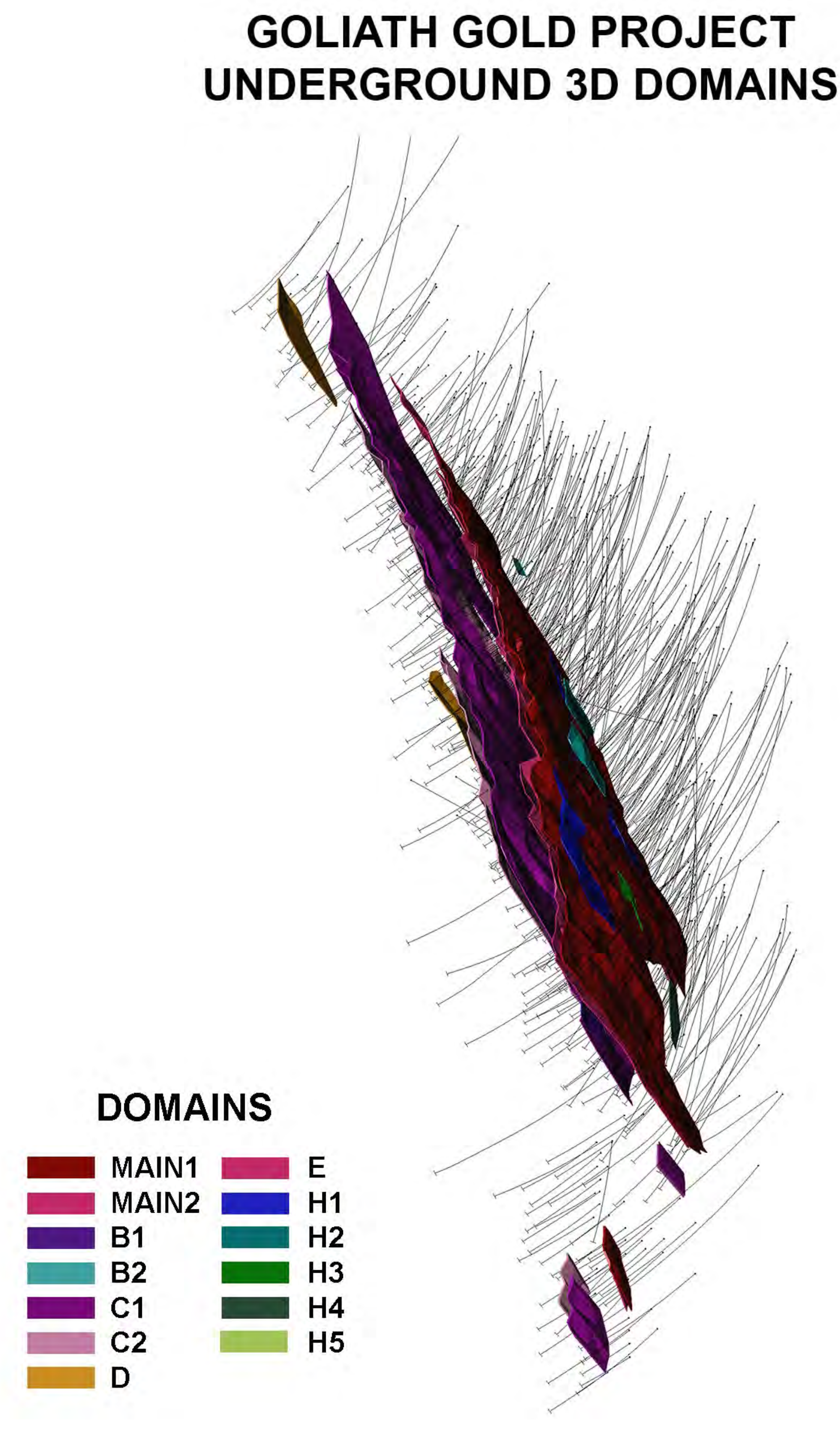
***{SIGNED AND SEALED}***
***[Antoine R. Yassa]***

___________________________
Antoine R. Yassa, P.Geo.

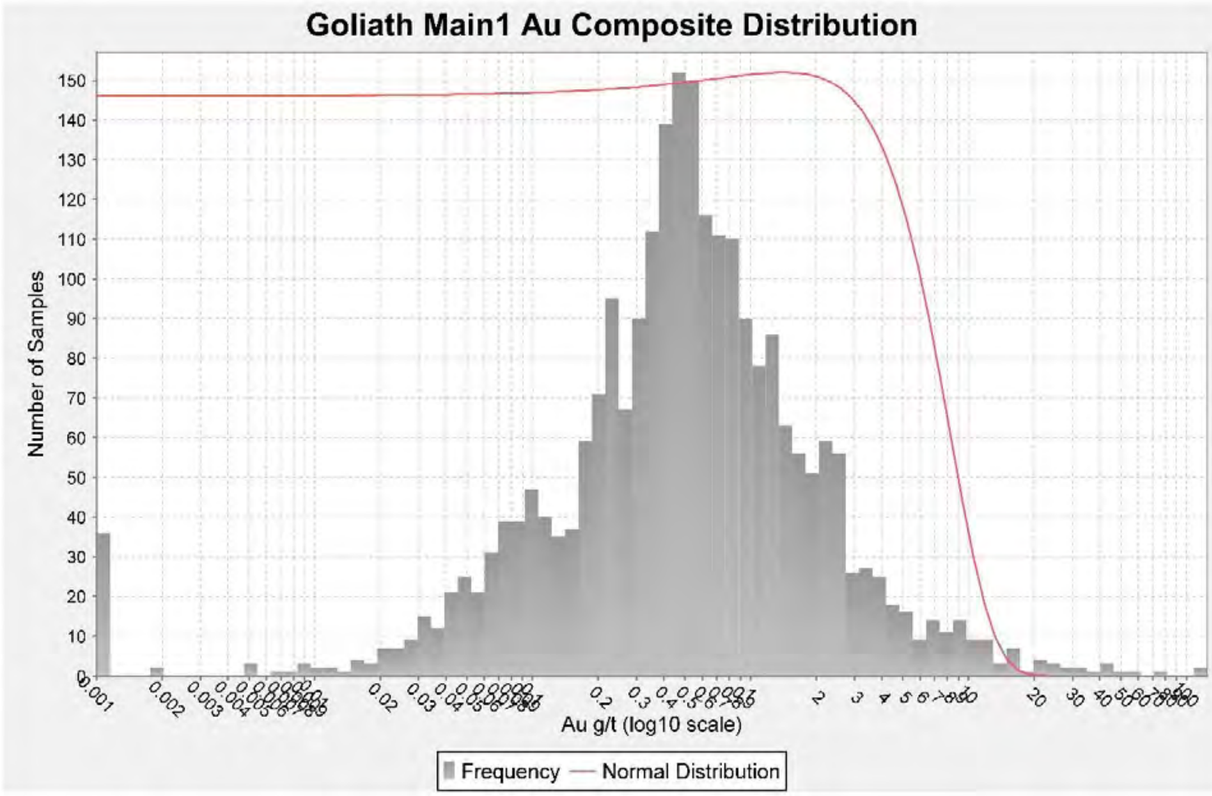
**APPENDIX A SURFACE DRILL HOLE PLAN**

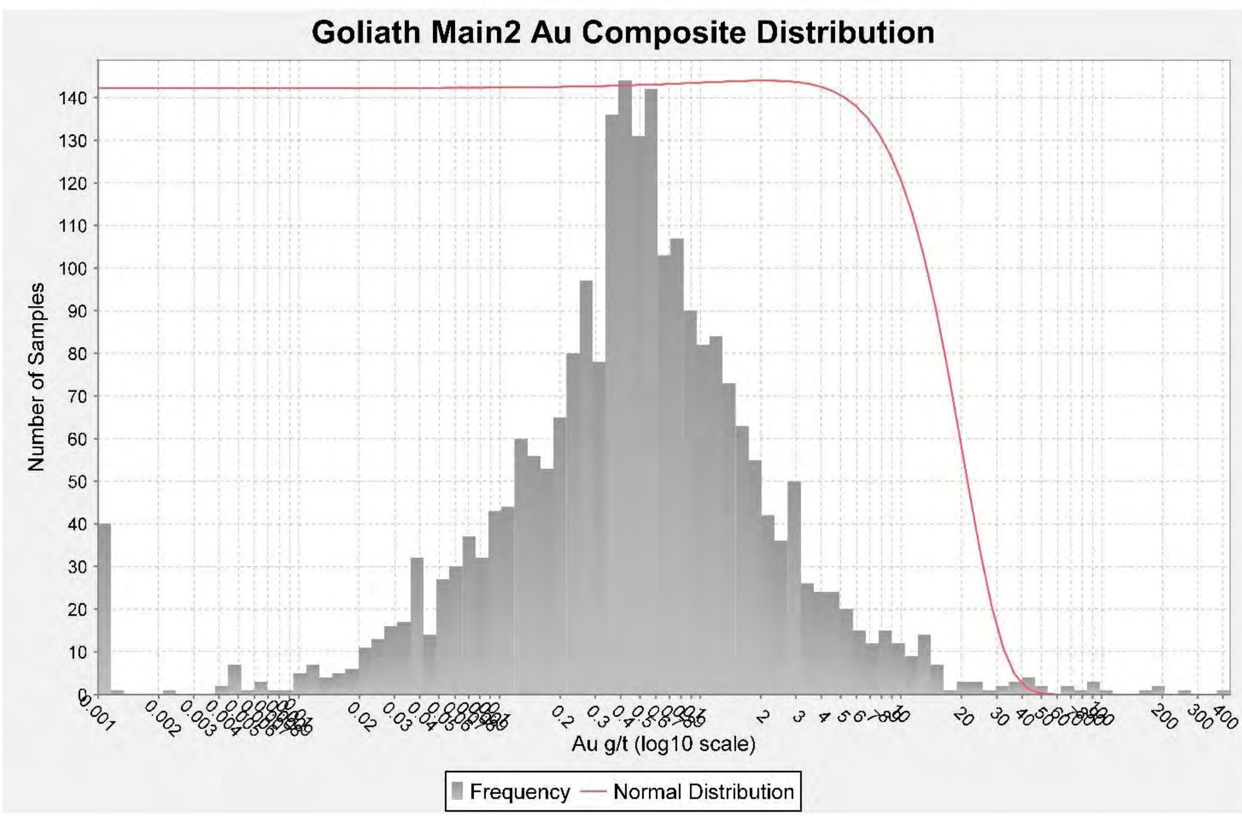


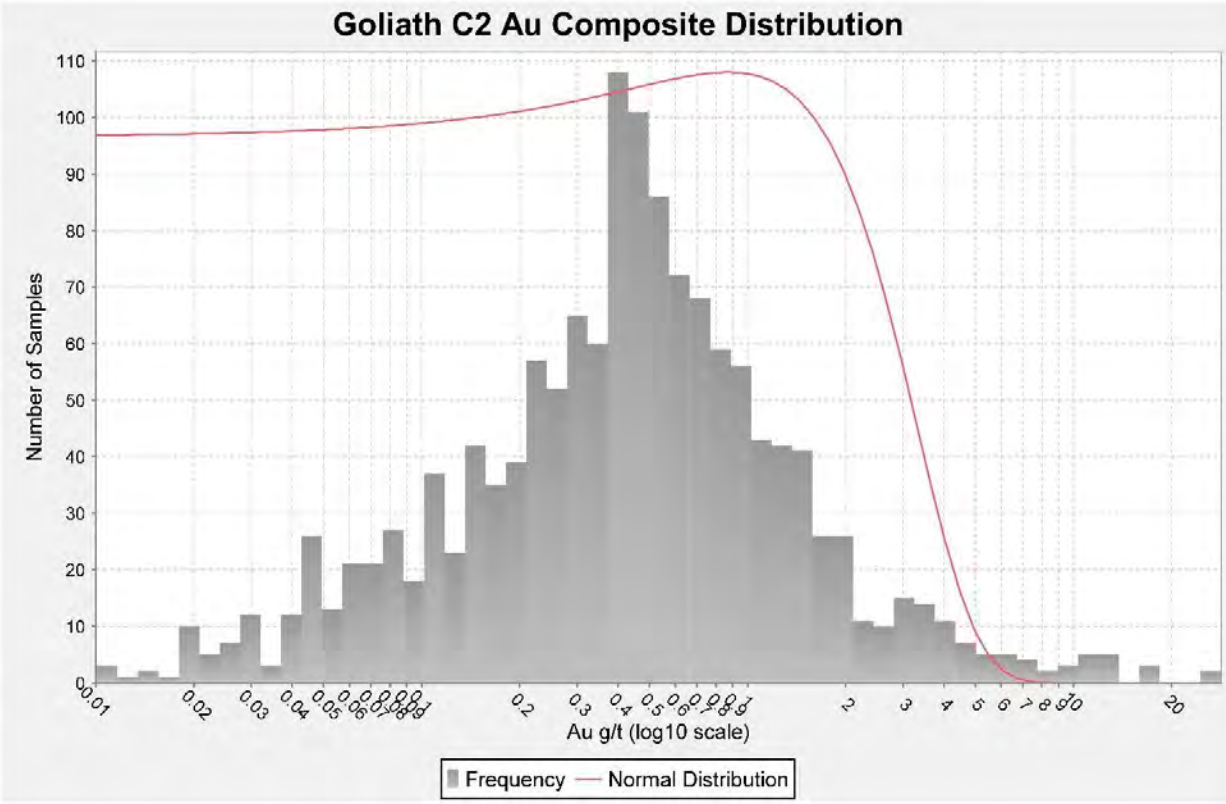
## APPENDIX B 3-D DOMAINS


GOLIATH GOLD PROJECT
UNDERGROUND 3D DOMAINS
DOMAINS
MAIN1
MAIN2
B1
B2
C1
C2
D
E
H1
H2
H3
H4
H5

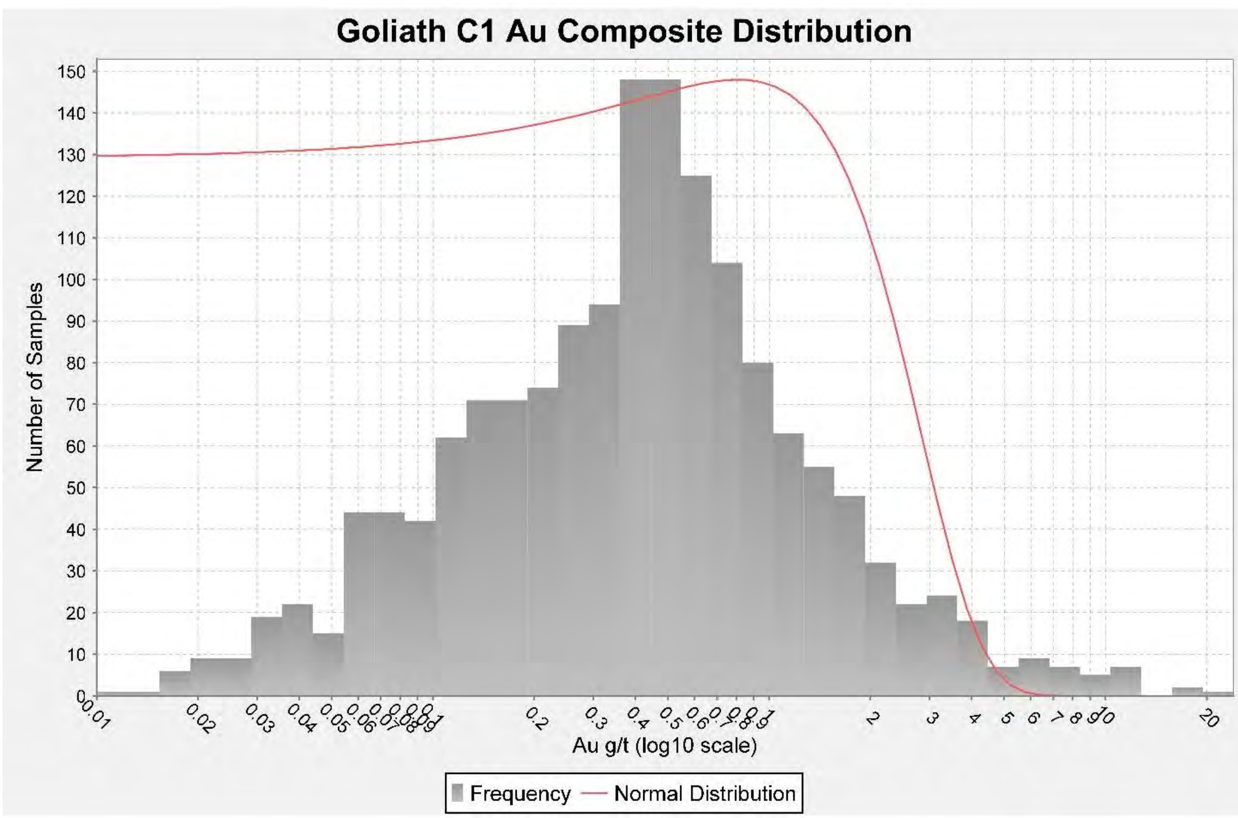
## APPENDIX C LOG NORMAL HISTOGRAMS – OPEN PIT MODEL



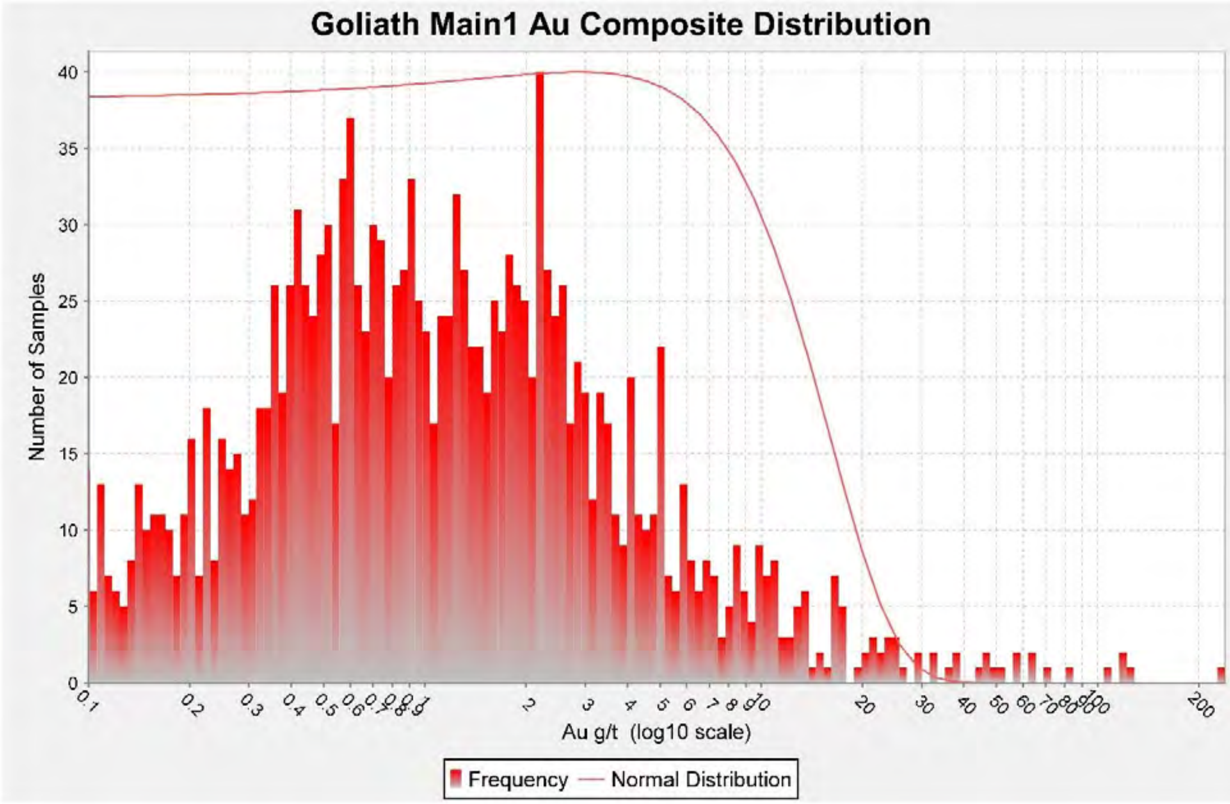


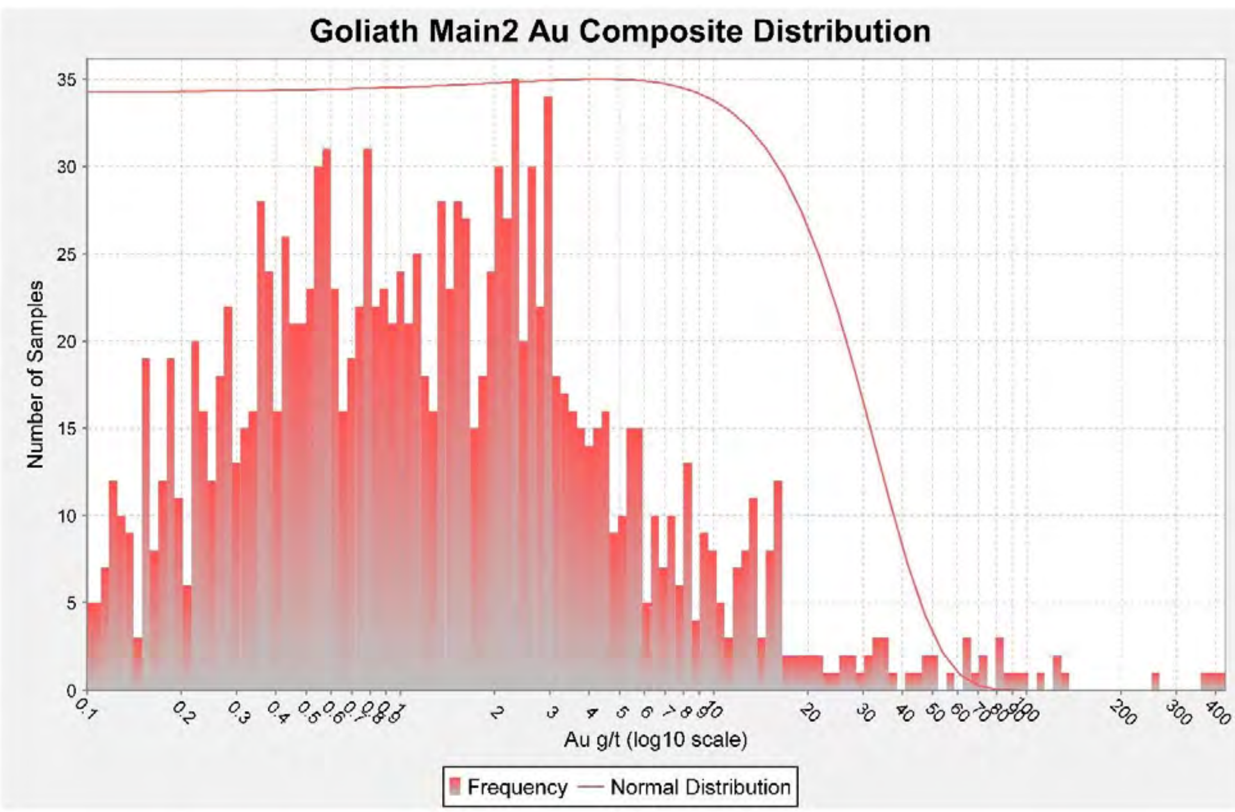
Goliath C2 Au Composite Distribution
Number of Samples
Au g/t (log10 scale)
Frequency
Normal Distribution

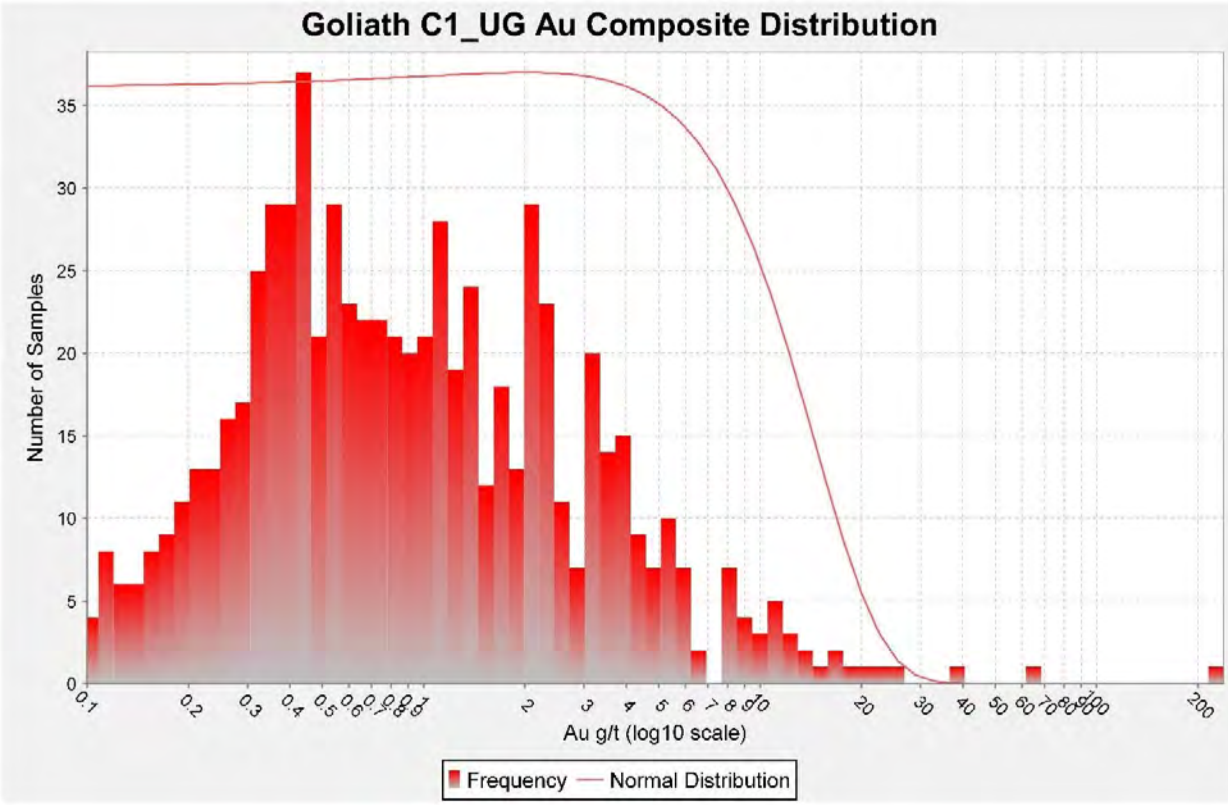



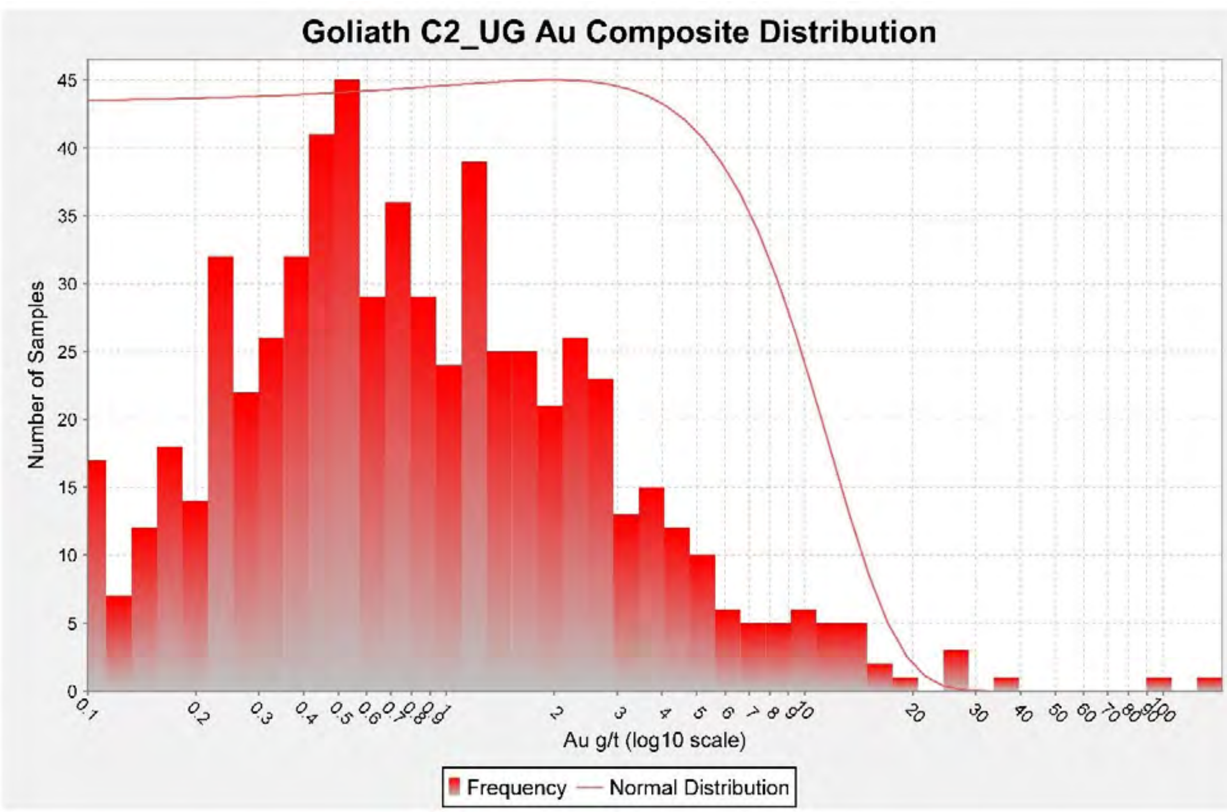
Goliath C1 Au Composite Distribution
Number of Samples
Au g/t (log10 scale)
Frequency
Normal Distribution

## APPENDIX D LOG NORMAL HISTOGRAMS - UNDERGROUND MODEL

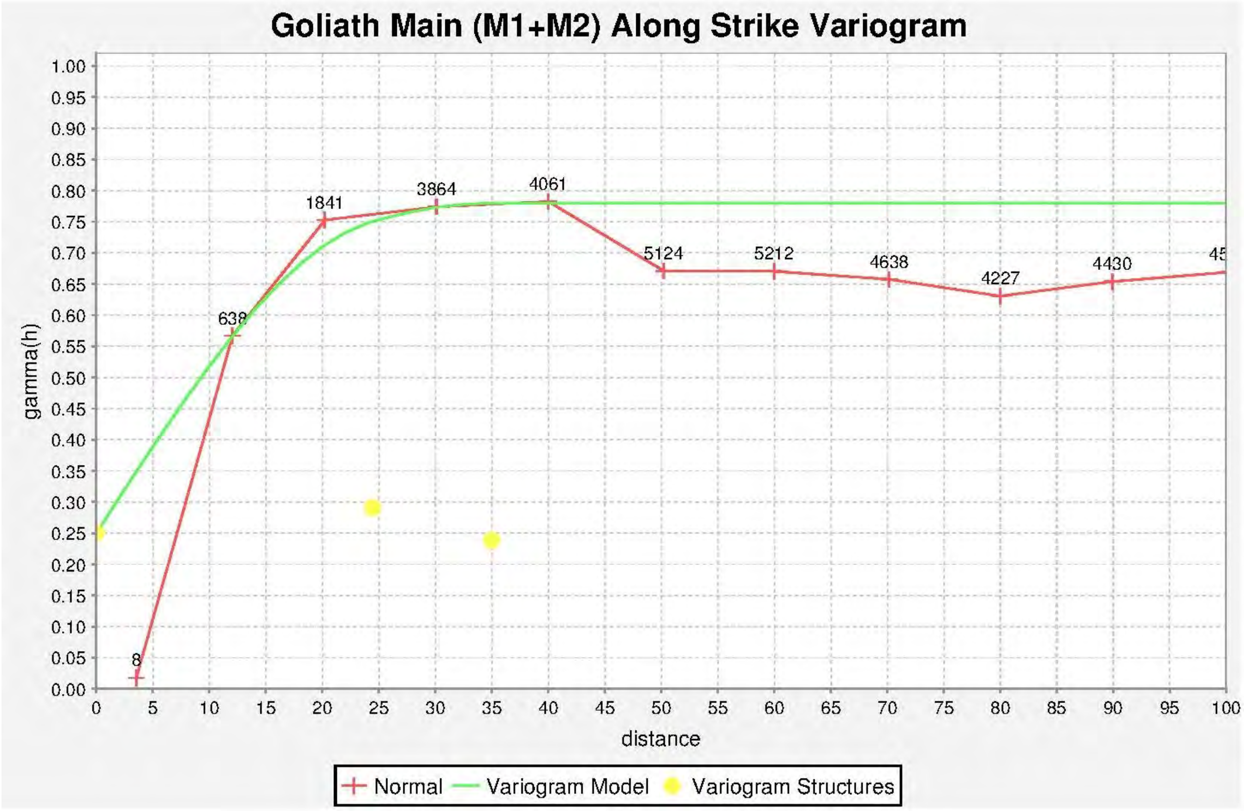


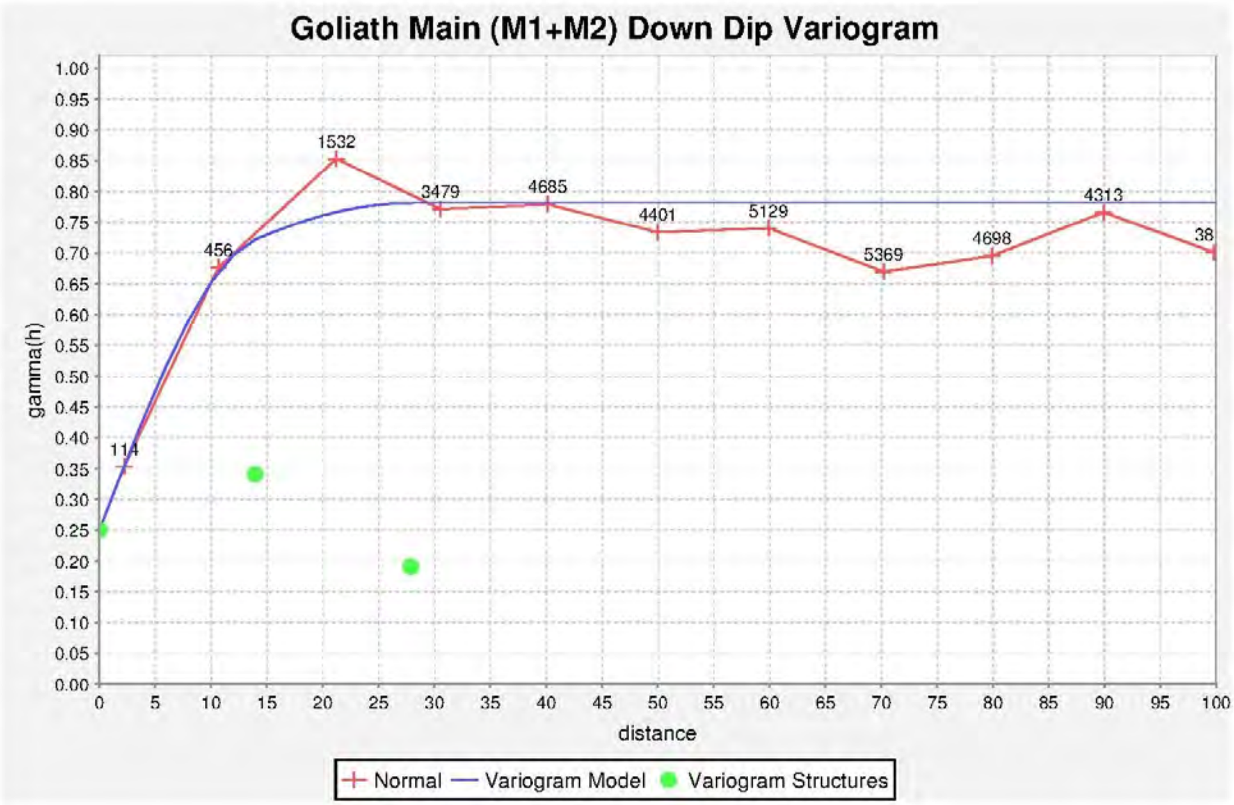



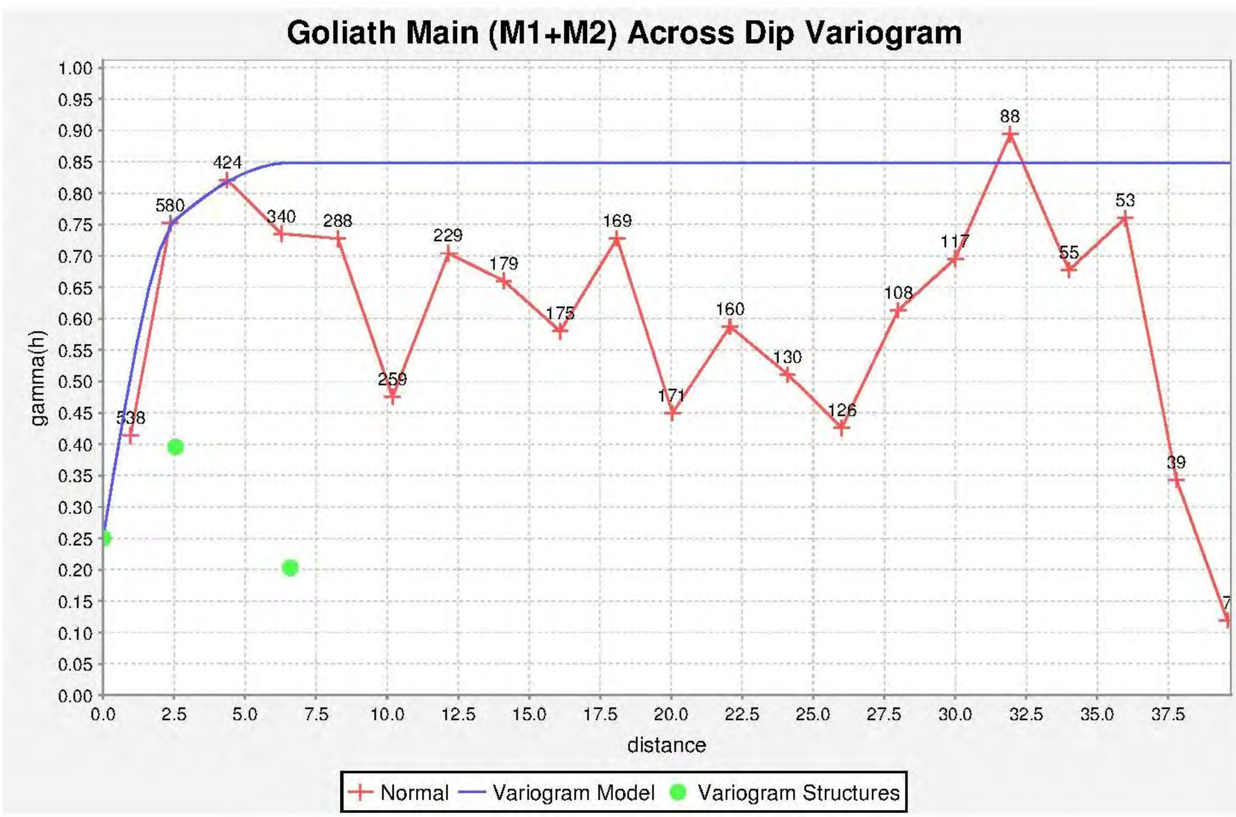

Goliath C1_UG Au Composite Distribution
Number of Samples
Au g/t (log10 scale)
Frequency
Normal Distribution


Goliath C2_UG Au Composite Distribution
Number of Samples
Au g/t (log10 scale)
Frequency
Normal Distribution

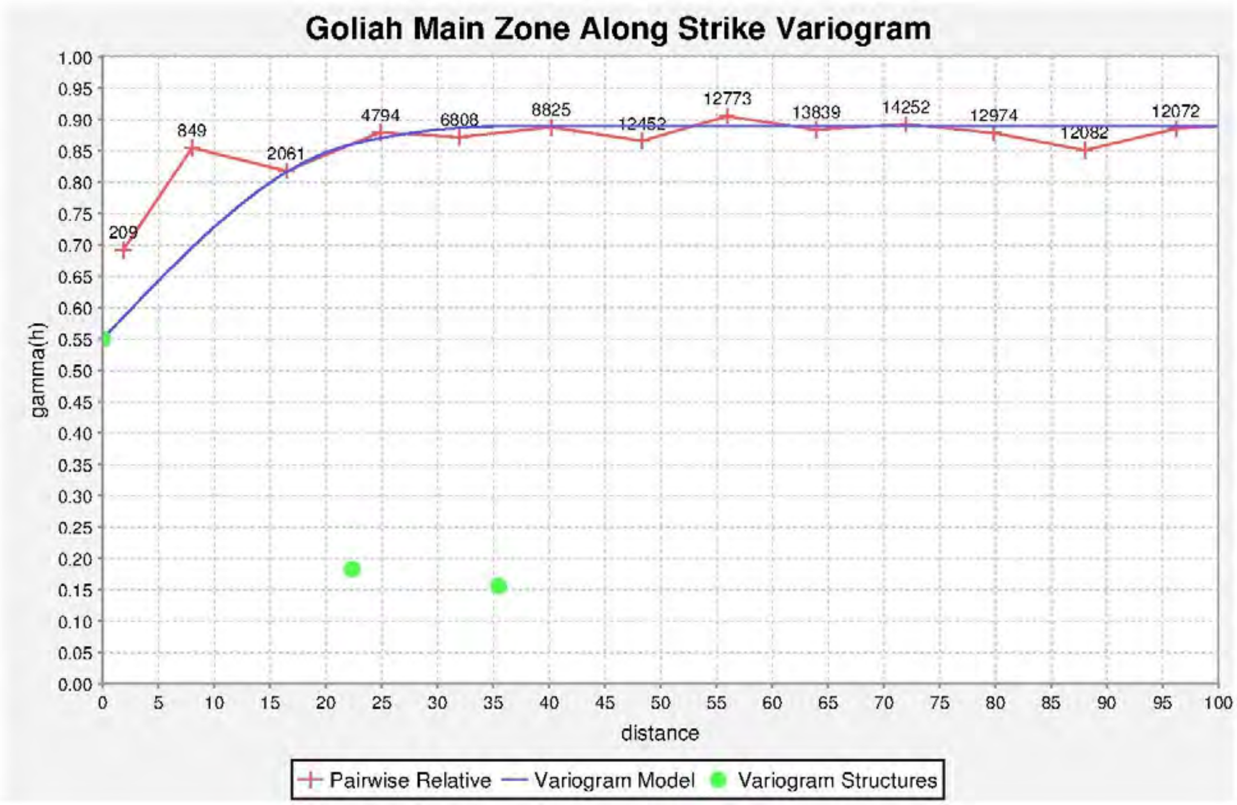
## APPENDIX E VARIOGRAMS - OPEN PIT MODEL

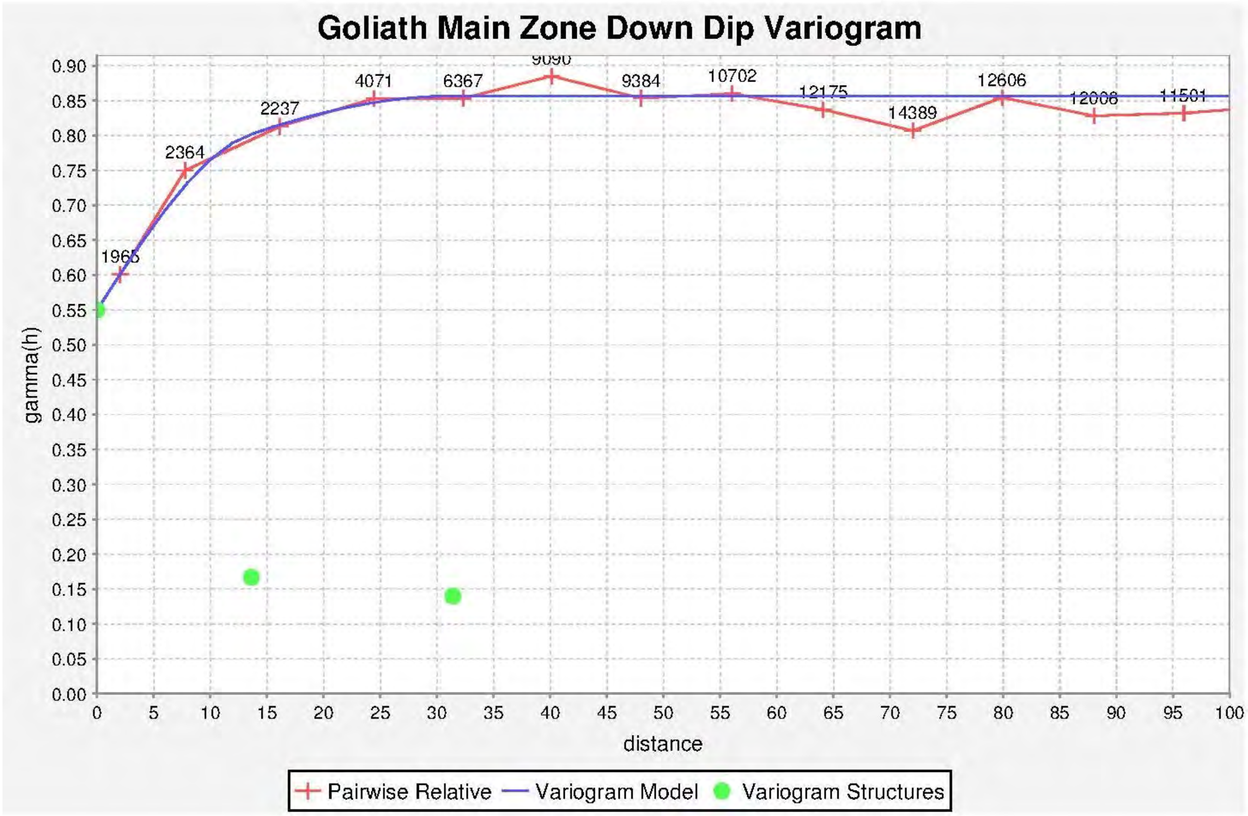



Goliath Main (M1+M2) Down Dip Variogram
gamma(h)
distance
Normal
Variogram Model
Variogram Structures

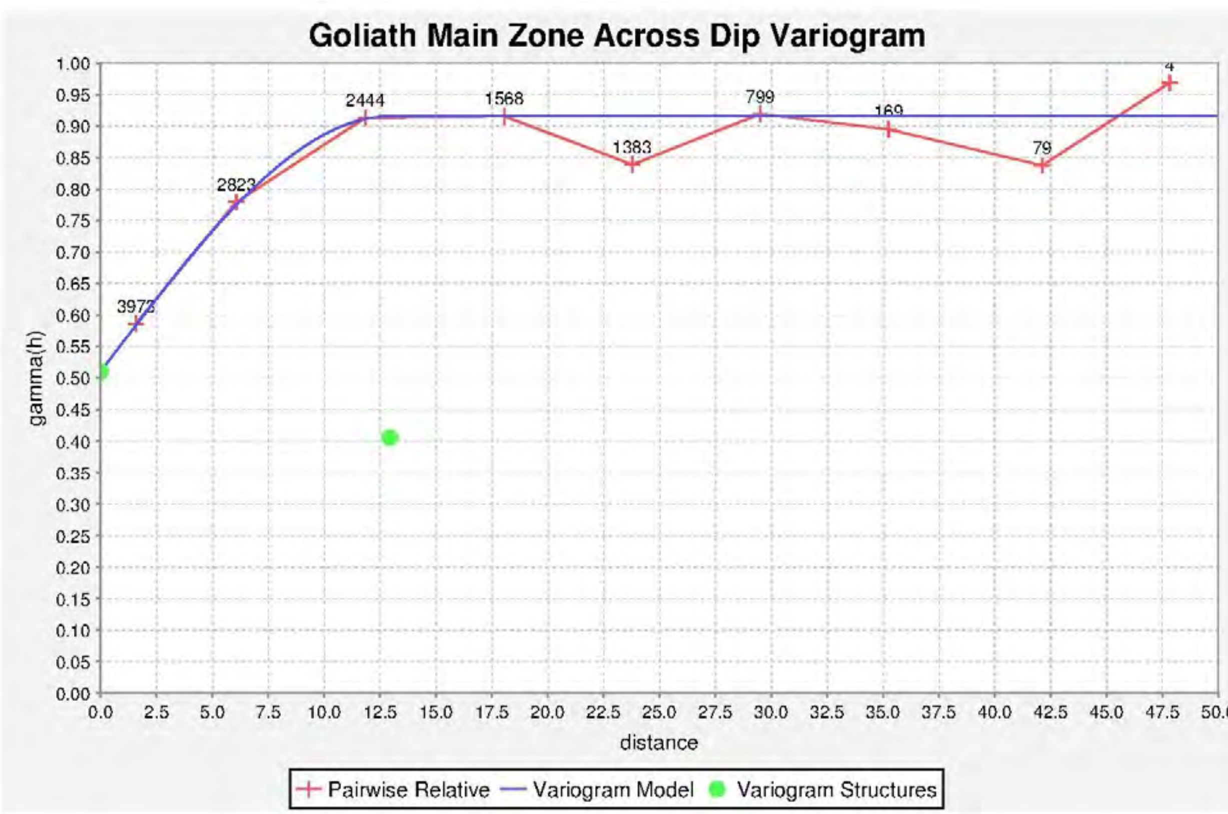

Goliath Main (M1+M2) Across Dip Variogram
gamma(h)
distance
Normal
Variogram Model
Variogram Structures

## APPENDIX F VARIOGRAMS - UNDERGROUND MODEL



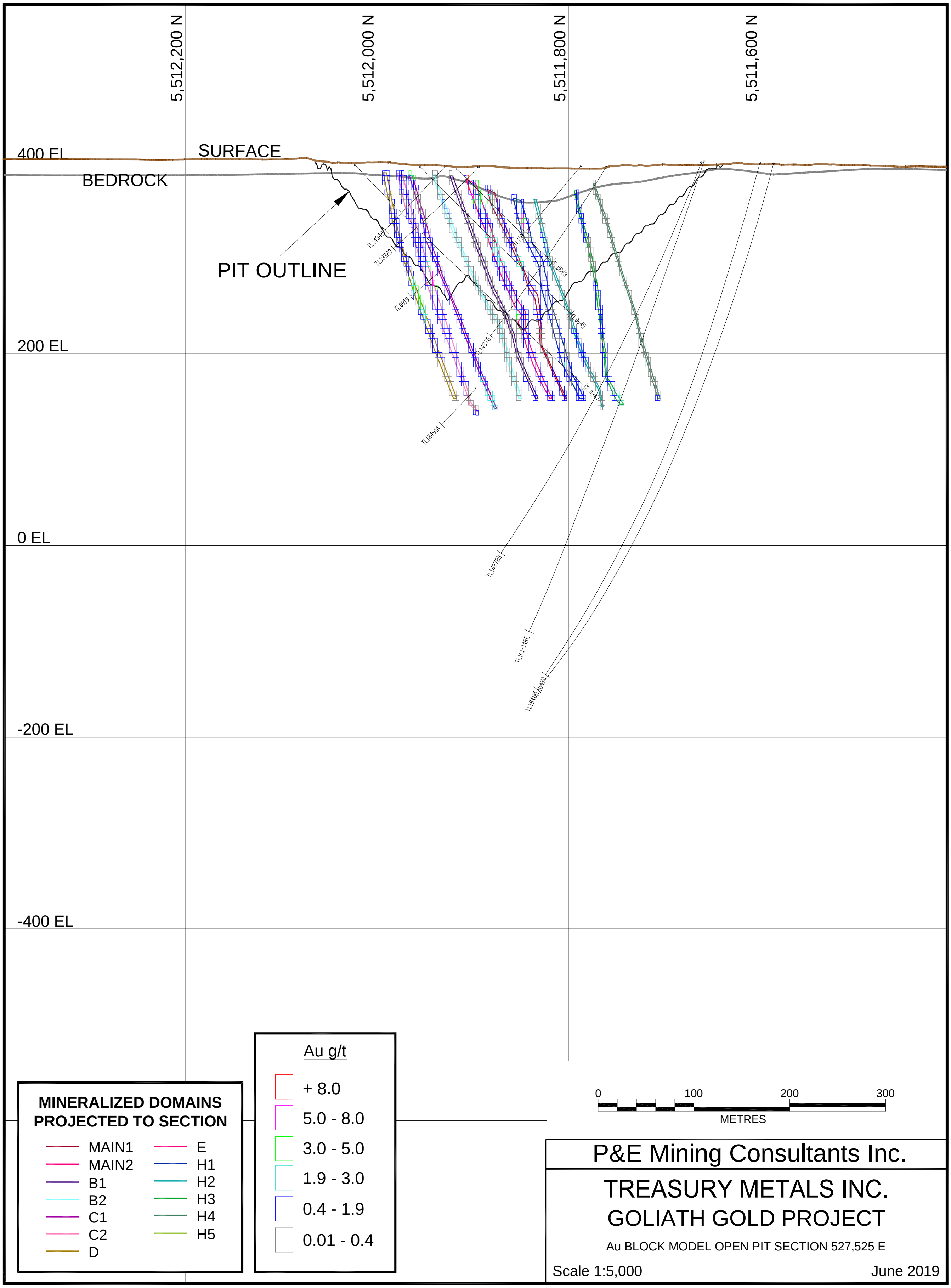


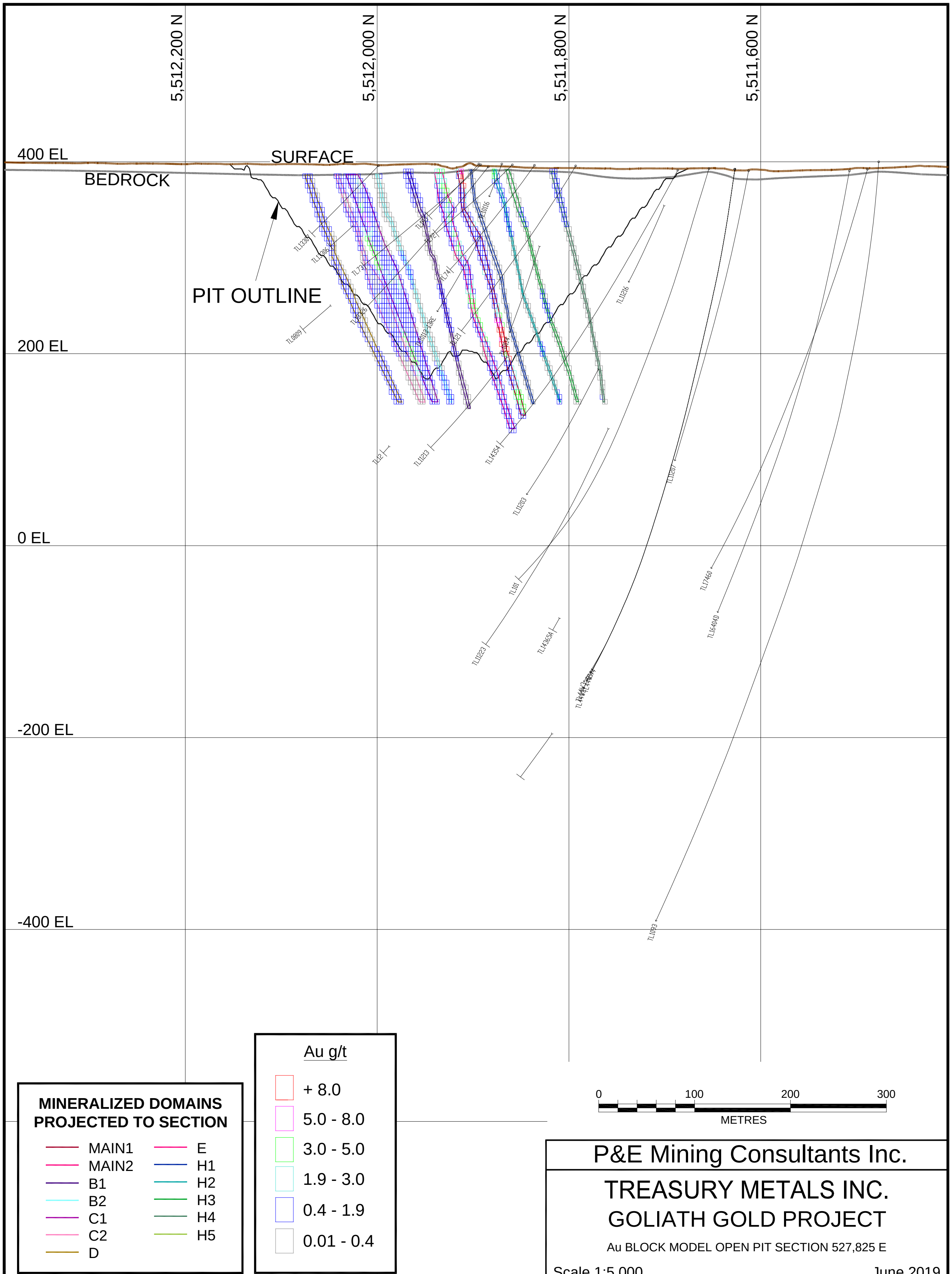
Goliath Main Zone Down Dip Variogram
gamma(h)
distance
1965
2364
2237
4071
6367
9090
9384
10702
12175
14389
12606
12006
11501
Pairwise Relative
Variogram Model
Variogram Structures

Goliath Main Zone Across Dip Variogram
gamma(h)
distance
3973
2823
2444
1568
1383
799
169
79
4
Pairwise Relative
Variogram Model
Variogram Structures

# APPENDIX G AU BLOCK MODEL CROSS SECTIONS AND PLANS


5,512,200 N
5,512,000 N
5,511,800 N
5,511,600 N
400 EL
SURFACE
BEDROCK
PIT OUTLINE
200 EL
0 EL
-200 EL
-400 EL
MINERALIZED DOMAINS PROJECTED TO SECTION
MAIN1
MAIN2
B1
B2
C1
C2
D
E
H1
H2
H3
H4
H5
Au g/t
+ 8.0
5.0 - 8.0
3.0 - 5.0
1.9 - 3.0
0.4 - 1.9
0.01 - 0.4
0
100
200
300
METRES
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
Au BLOCK MODEL OPEN PIT SECTION 527,525 E
Scale 1:5,000
June 2019



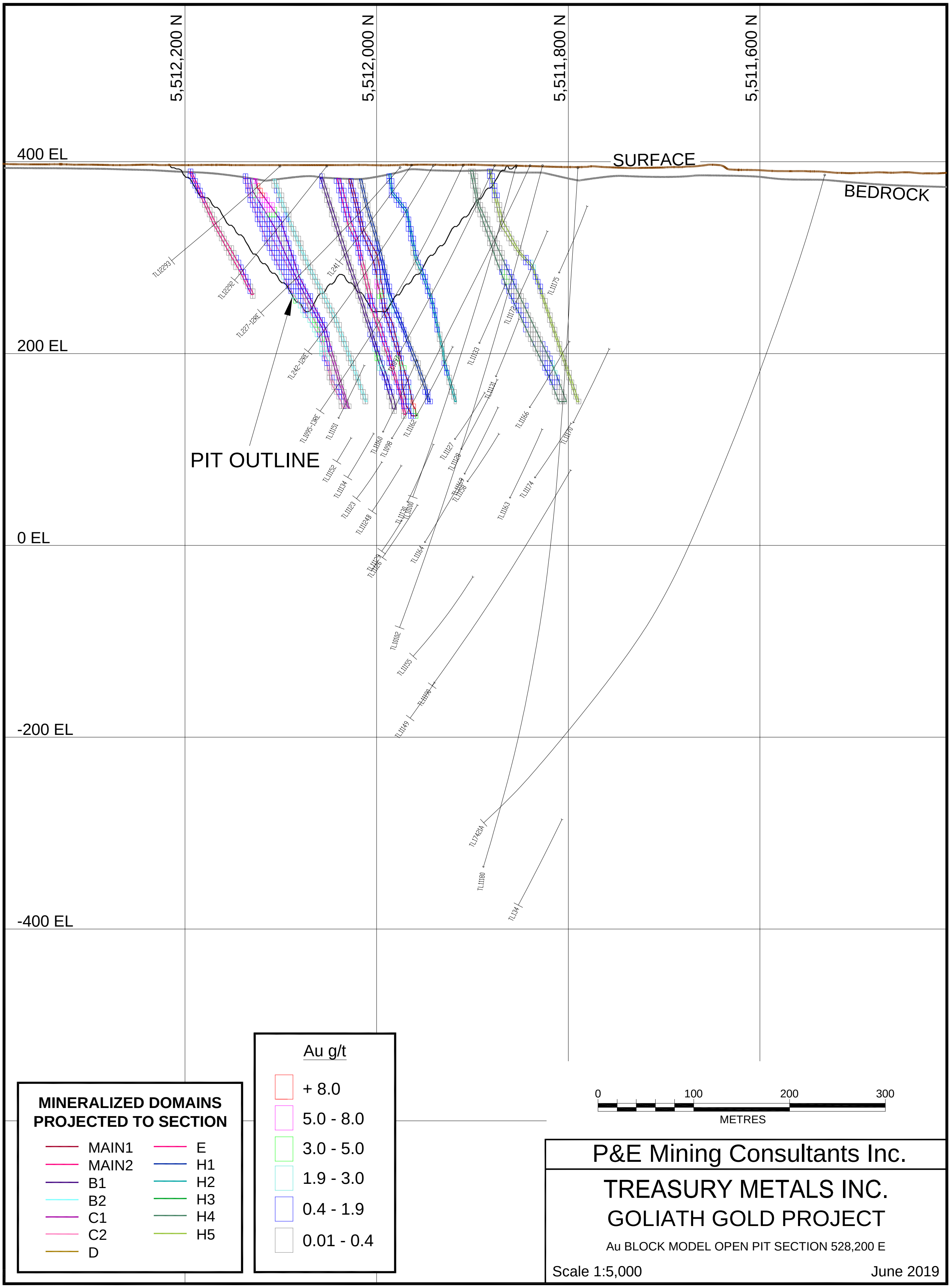

P&E Mining Consultants Inc.

TREASURY METALS INC.

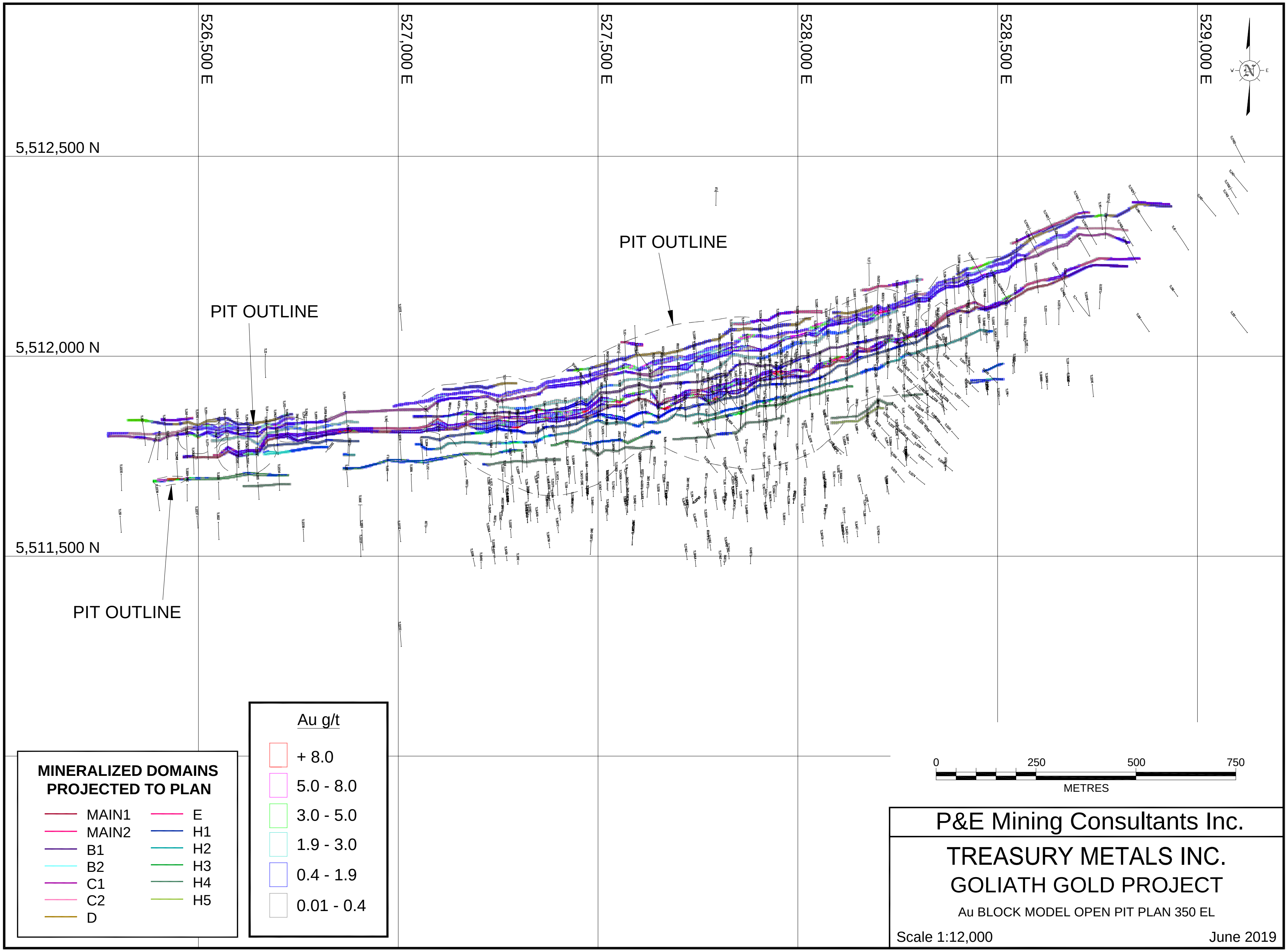
GOLIATH GOLD PROJECT

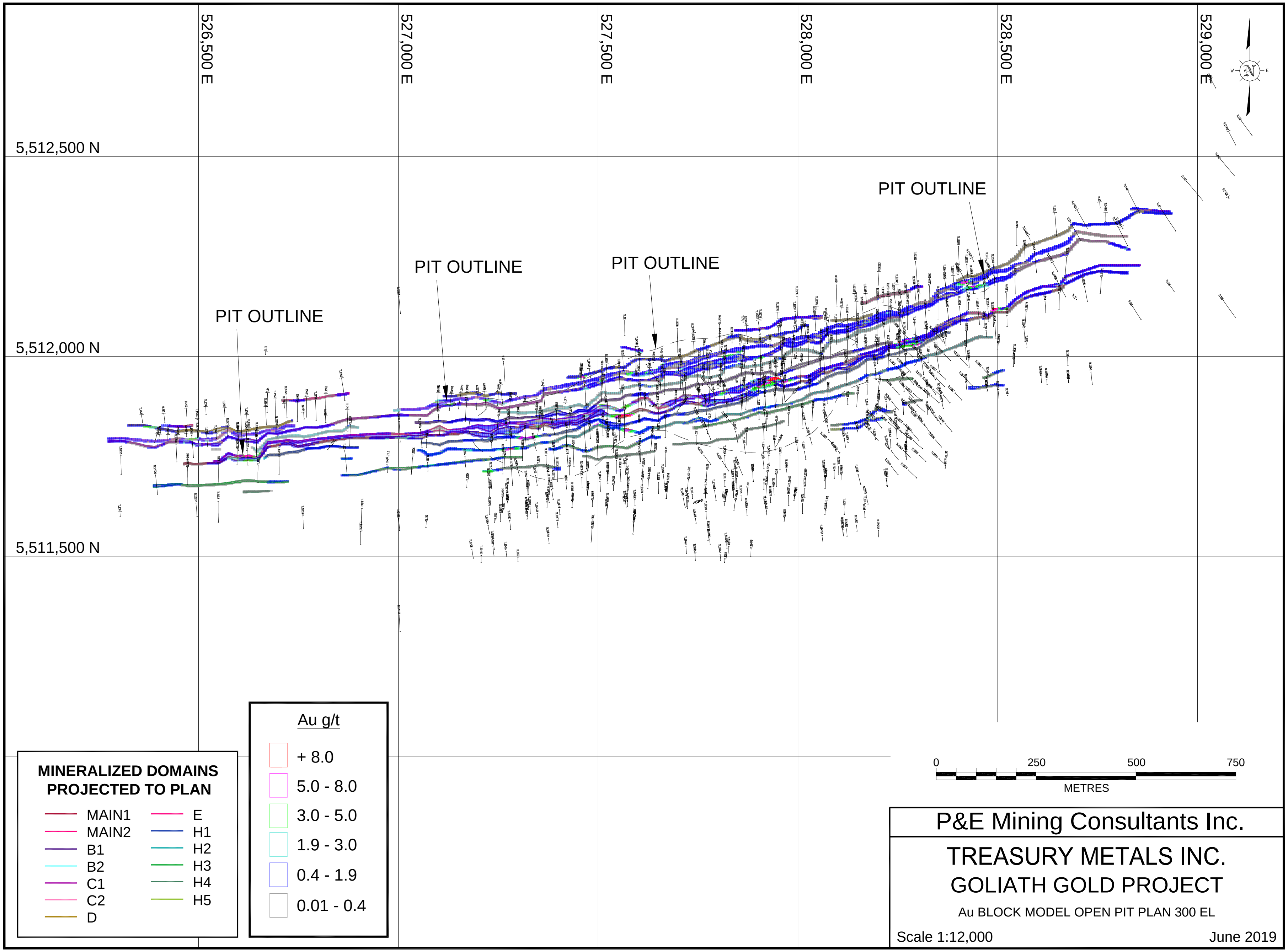
Au BLOCK MODEL OPEN PIT SECTION 527,825 E

Scale 1:5,000 June 2019



5,512,200 N
5,512,000 N
5,511,800 N
5,511,600 N
400 EL
200 EL
0 EL
-200 EL
-400 EL
SURFACE
BEDROCK
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO SECTION
MAIN1
MAIN2
B1
B2
C1
C2
D
E
H1
H2
H3
H4
H5
Au g/t
+ 8.0
5.0 - 8.0
3.0 - 5.0
1.9 - 3.0
0.4 - 1.9
0.01 - 0.4
0
100
200
300
METRES
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
Au BLOCK MODEL OPEN PIT SECTION 528,200 E
Scale 1:5,000
June 2019


526,500 E
527,000 E
527,500 E
528,000 E
528,500 E
529,000 E
5,512,500 N
5,512,000 N
5,511,500 N
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
MAIN1
MAIN2
B1
B2
C1
C2
D
E
H1
H2
H3
H4
H5
Au g/t
+ 8.0
5.0 - 8.0
3.0 - 5.0
1.9 - 3.0
0.4 - 1.9
0.01 - 0.4
0
250
500
750
METRES
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
Au BLOCK MODEL OPEN PIT PLAN 350 EL
Scale 1:12,000
June 2019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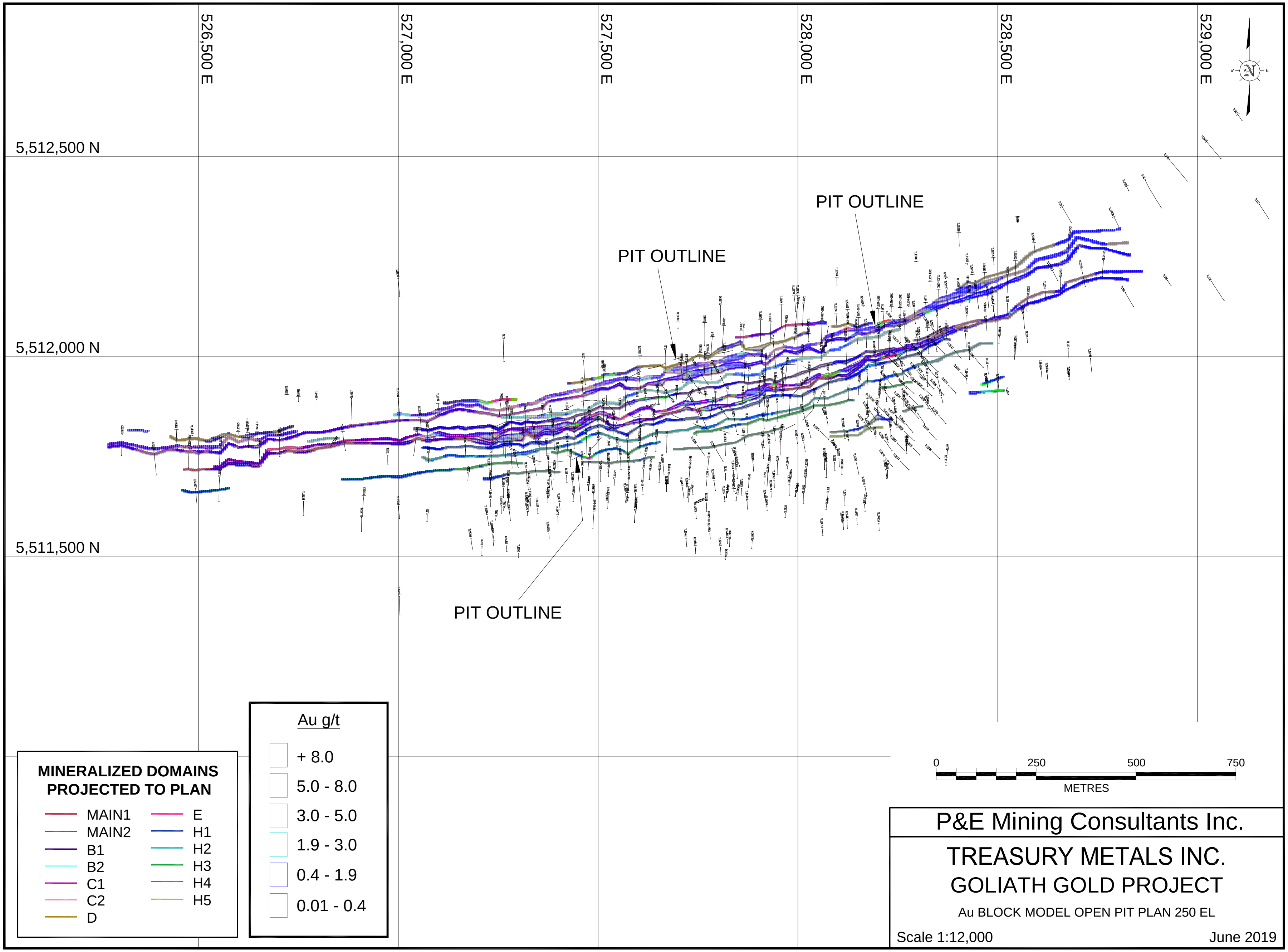
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
MAIN1
MAIN2
B1
B2
C1
C2
D
E
H1
H2
H3
H4
H5
Au g/t
+ 8.0
5.0 - 8.0
3.0 - 5.0
1.9 - 3.0
0.4 - 1.9
0.01 - 0.4
0
250
500
750
METRES
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
Au BLOCK MODEL OPEN PIT PLAN 300 EL
Scale 1:12,000
June 2019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PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
MAIN1
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B1
B2
C1
C2
D
E
H1
H2
H3
H4
H5
Au g/t
+ 8.0
5.0 - 8.0
3.0 - 5.0
1.9 - 3.0
0.4 - 1.9
0.01 - 0.4
0
250
500
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P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
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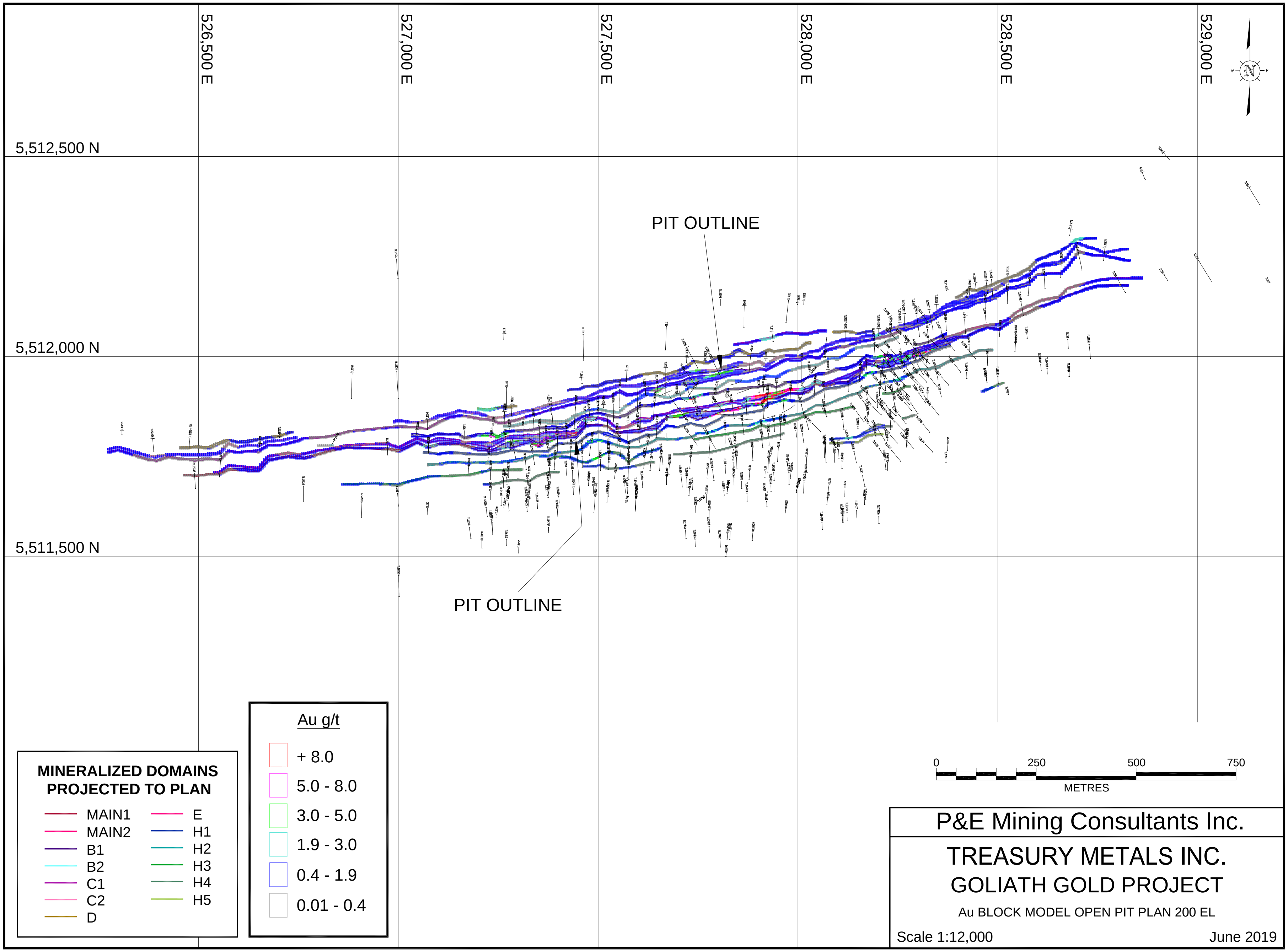
Scale 1:12,000
June 2019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PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
MAIN1
MAIN2
B1
B2
C1
C2
D
E
H1
H2
H3
H4
H5
Au g/t
+ 8.0
5.0 - 8.0
3.0 - 5.0
1.9 - 3.0
0.4 - 1.9
0.01 - 0.4
0
250
500
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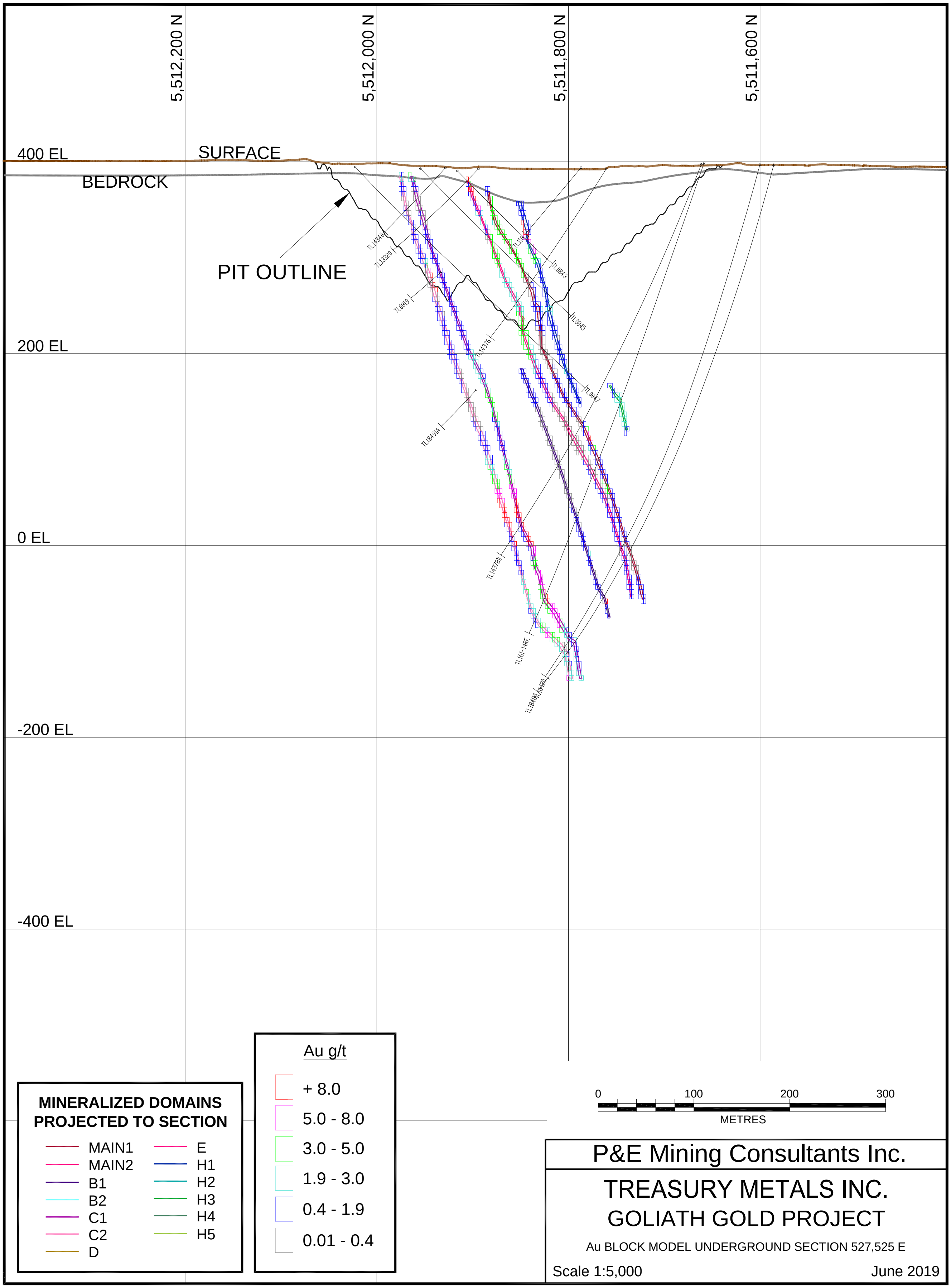
METRES
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
Au BLOCK MODEL OPEN PIT PLAN 200 EL
Scale 1:12,000
June 2019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SURFACE
BEDROCK
PIT OUTLINE
200 EL
0 EL
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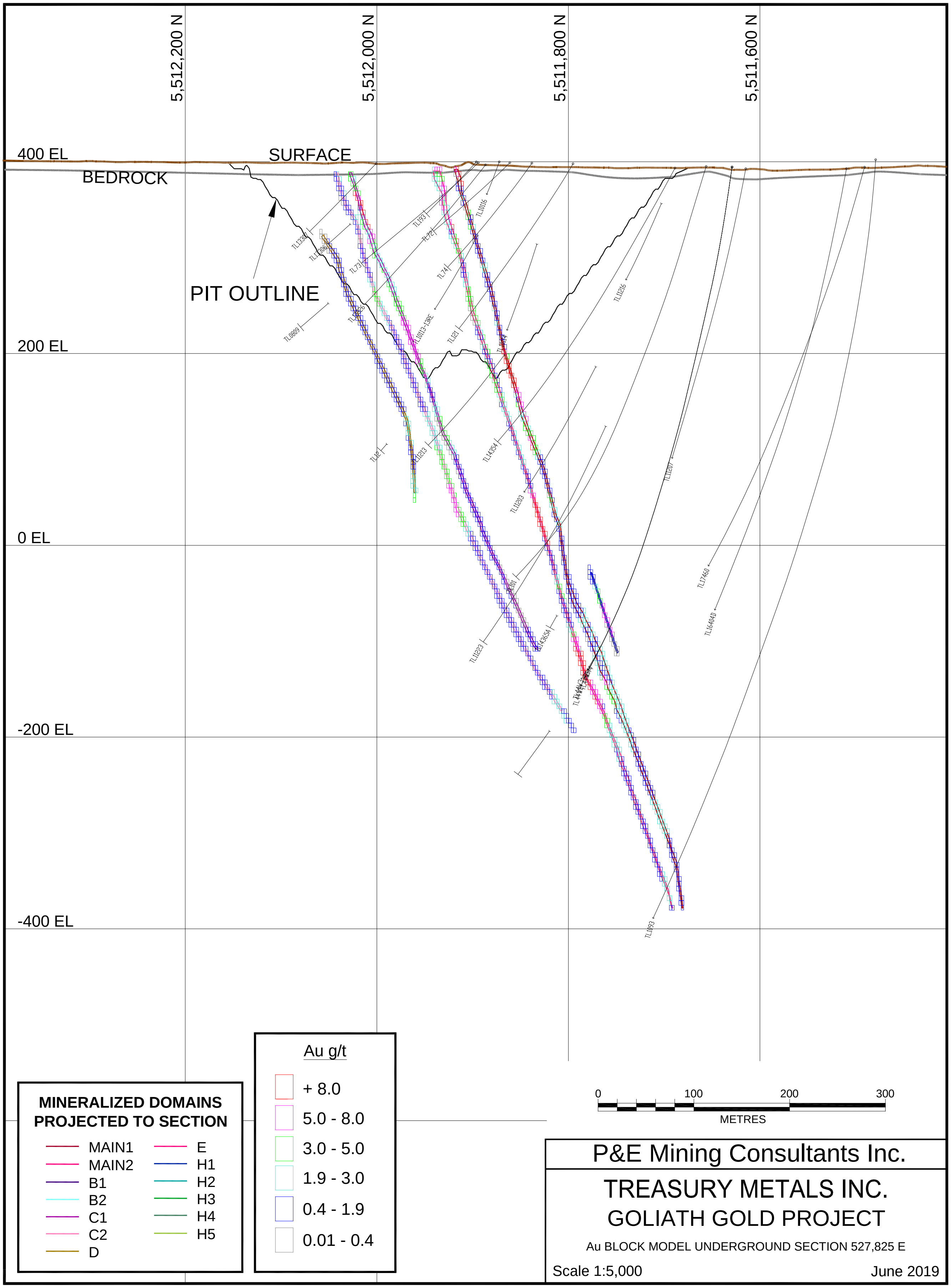
-400 EL
MINERALIZED DOMAINS
PROJECTED TO SECTION
MAIN1
MAIN2
B1
B2
C1
C2
D
E
H1
H2
H3
H4
H5
Au g/t
+ 8.0
5.0 - 8.0
3.0 - 5.0
1.9 - 3.0
0.4 - 1.9
0.01 - 0.4
0
100
200
300
METRES
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
Au BLOCK MODEL UNDERGROUND SECTION 527,525 E
Scale 1:5,000
June 2019



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PIT OUTLINE
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0 EL
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-400 EL
MINERALIZED DOMAINS PROJECTED TO SECTION
MAIN1
MAIN2
B1
B2
C1
C2
D
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H1
H2
H3
H4
H5
Au g/t
+ 8.0
5.0 - 8.0
3.0 - 5.0
1.9 - 3.0
0.4 - 1.9
0.01 - 0.4
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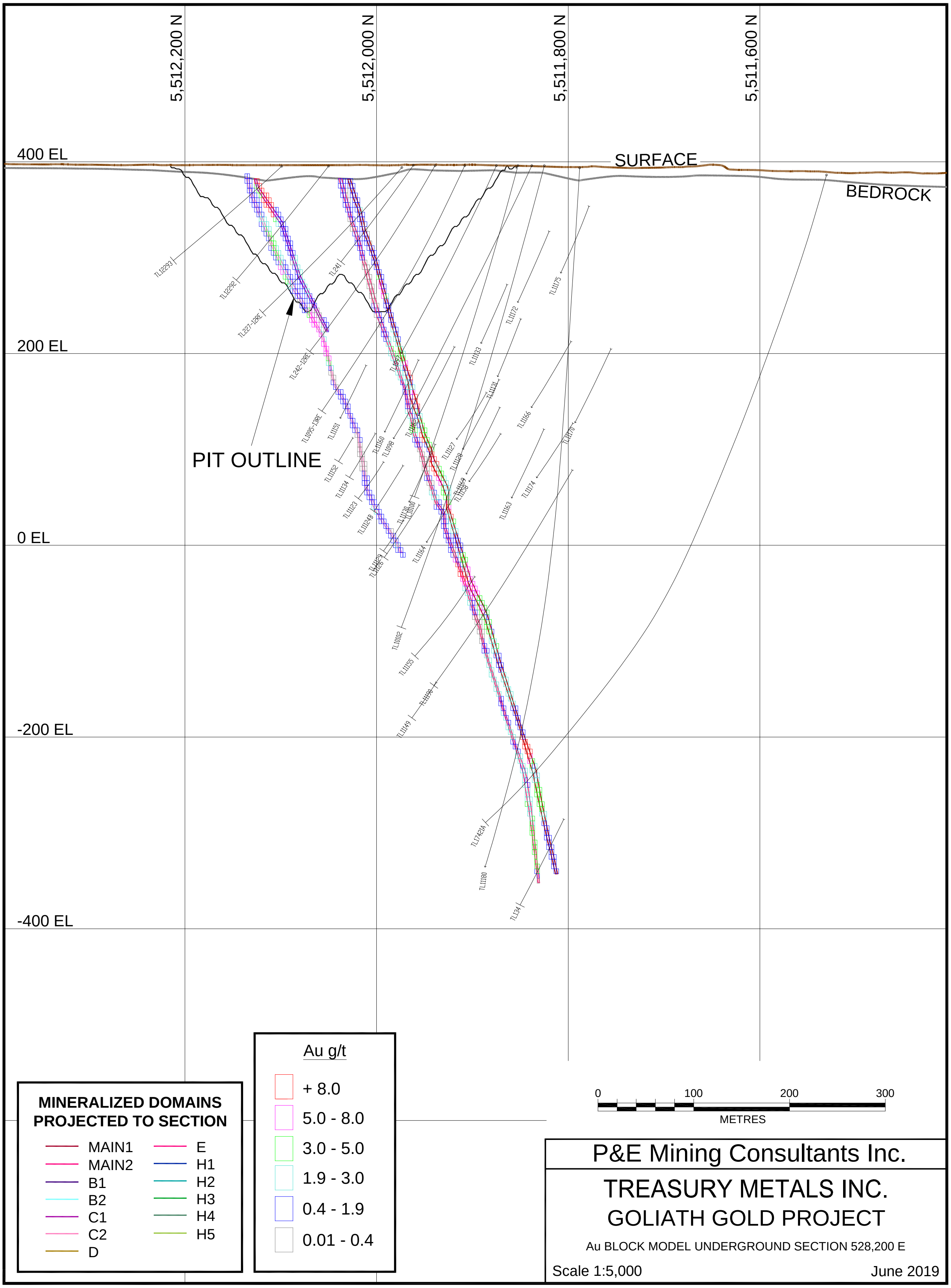
100
200
300
METRES
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
Au BLOCK MODEL UNDERGROUND SECTION 527,825 E
Scale 1:5,000
June 2019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BEDROCK
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PIT OUTLINE
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-400 EL
MINERALIZED DOMAINS PROJECTED TO SECTION
MAIN1
MAIN2
B1
B2
C1
C2
D
E
H1
H2
H3
H4
H5
Au g/t
+ 8.0
5.0 - 8.0
3.0 - 5.0
1.9 - 3.0
0.4 - 1.9
0.01 - 0.4
0
100
200
300
METRES
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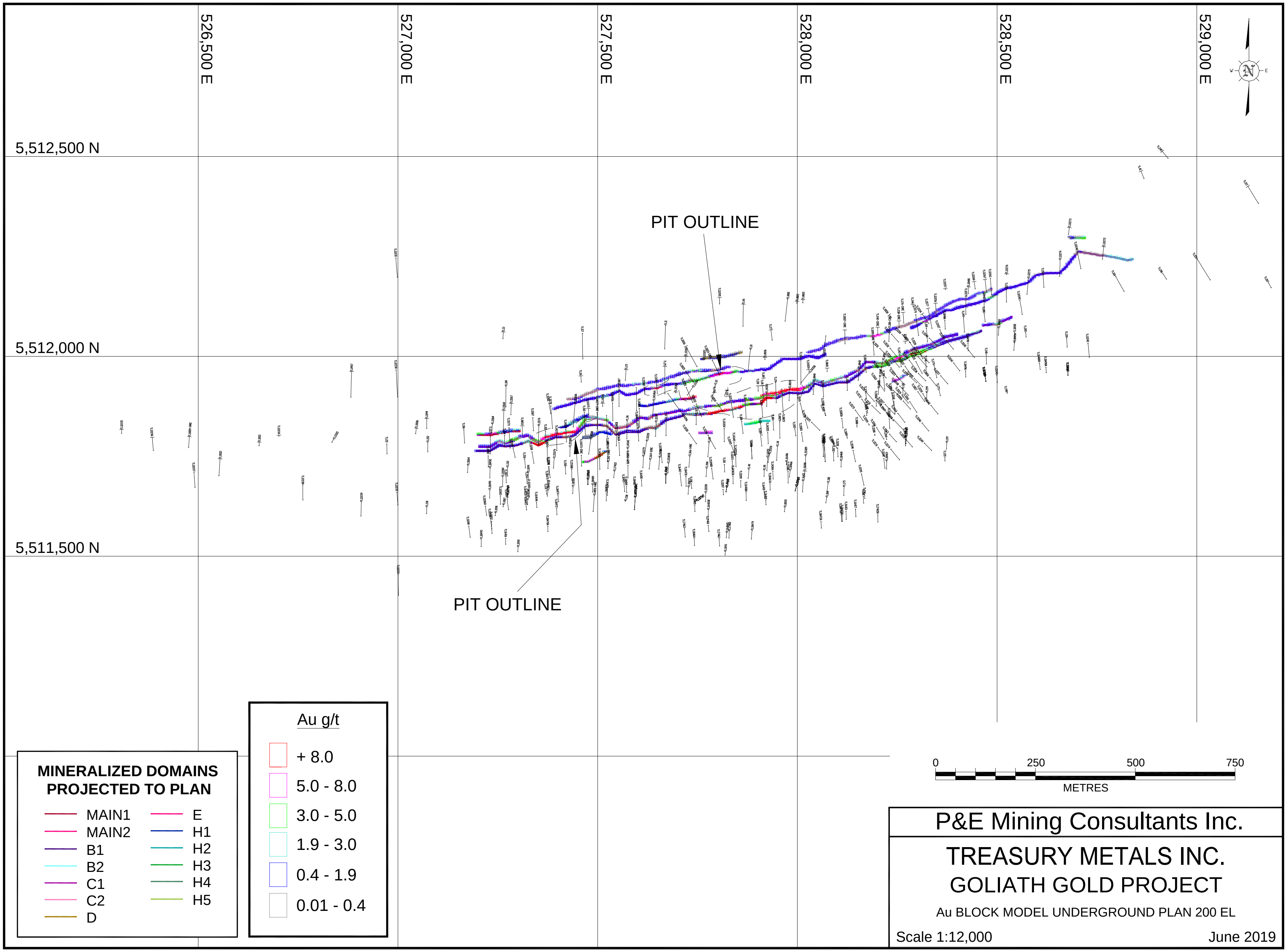
TREASURY METALS INC.
GOLIATH GOLD PROJECT
Au BLOCK MODEL UNDERGROUND SECTION 528,200 E
Scale 1:5,000
June 2019



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PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
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C1
C2
D
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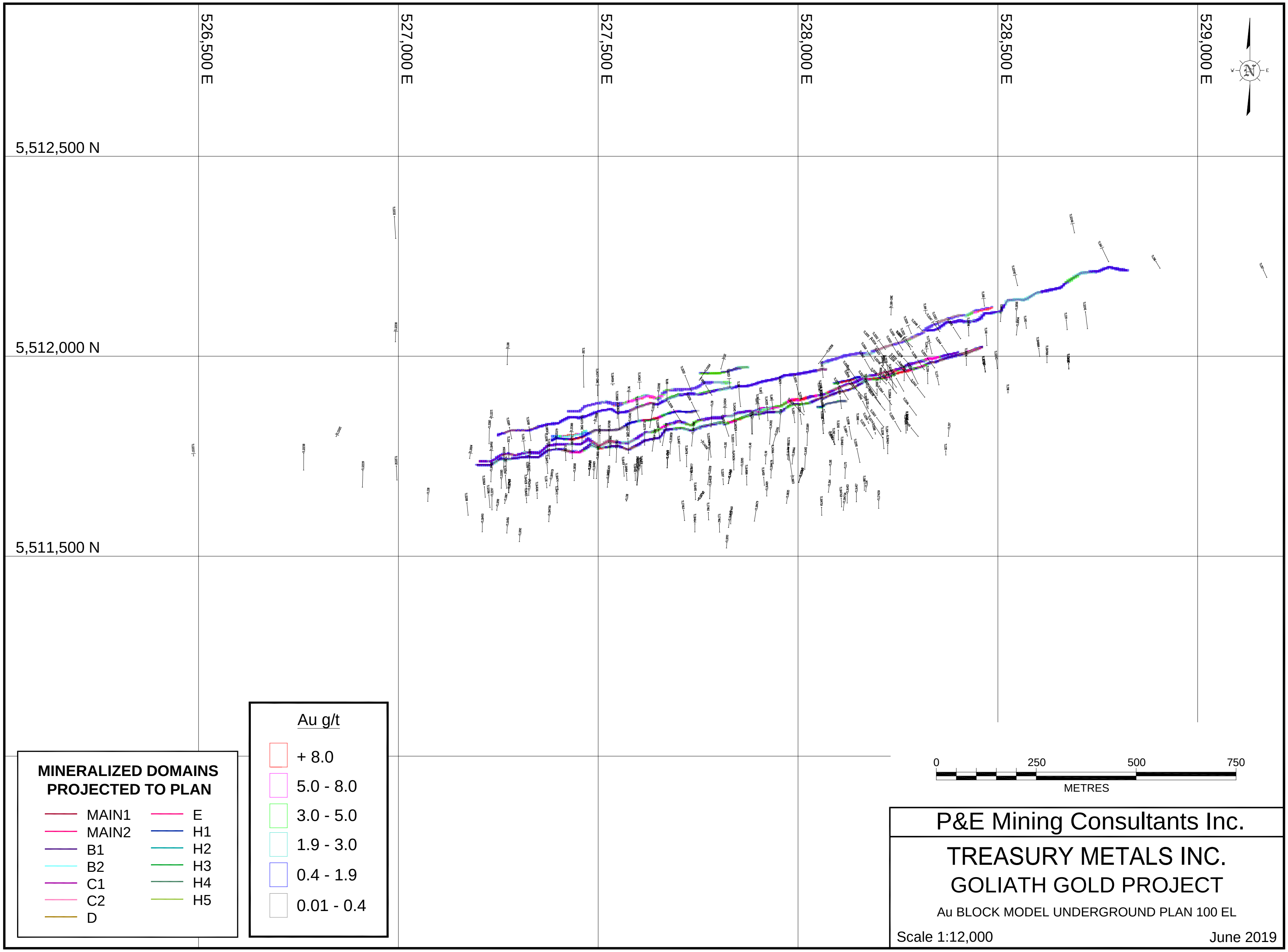
H1
H2
H3
H4
H5
Au g/t
+ 8.0
5.0 - 8.0
3.0 - 5.0
1.9 - 3.0
0.4 - 1.9
0.01 - 0.4
0
250
500
750
METRES
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
Au BLOCK MODEL UNDERGROUND PLAN 200 EL
Scale 1:12,000
June 2019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MINERALIZED DOMAINS PROJECTED TO PLAN
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B1
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C2
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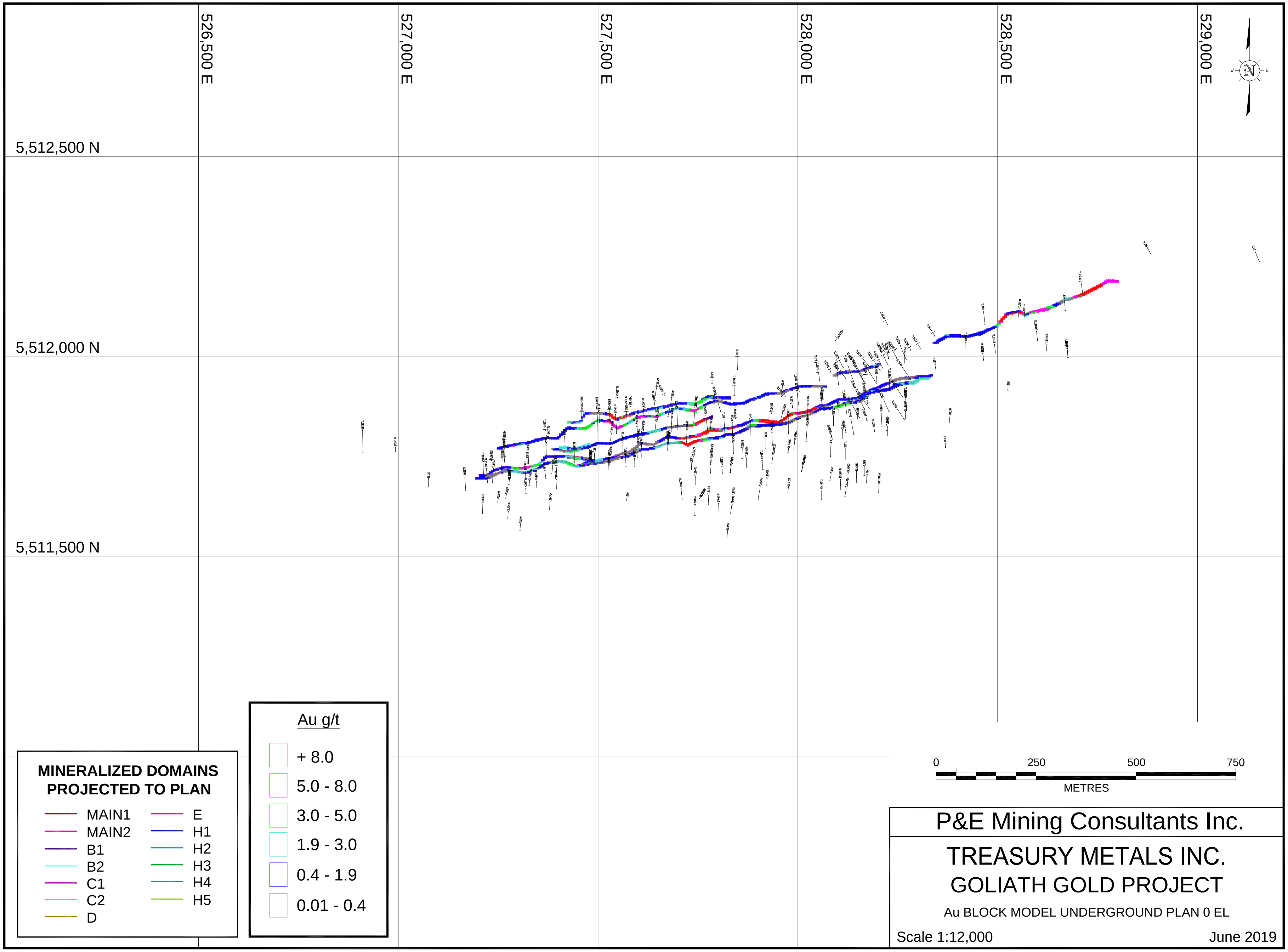
H1
H2
H3
H4
H5
Au g/t
+ 8.0
5.0 - 8.0
3.0 - 5.0
1.9 - 3.0
0.4 - 1.9
0.01 - 0.4
0
250
500
750
METRES
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
Au BLOCK MODEL UNDERGROUND PLAN 100 EL
Scale 1:12,000
June 2019



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MINERALIZED DOMAINS PROJECTED TO PLAN
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MAIN2
B1
B2
C1
C2
D
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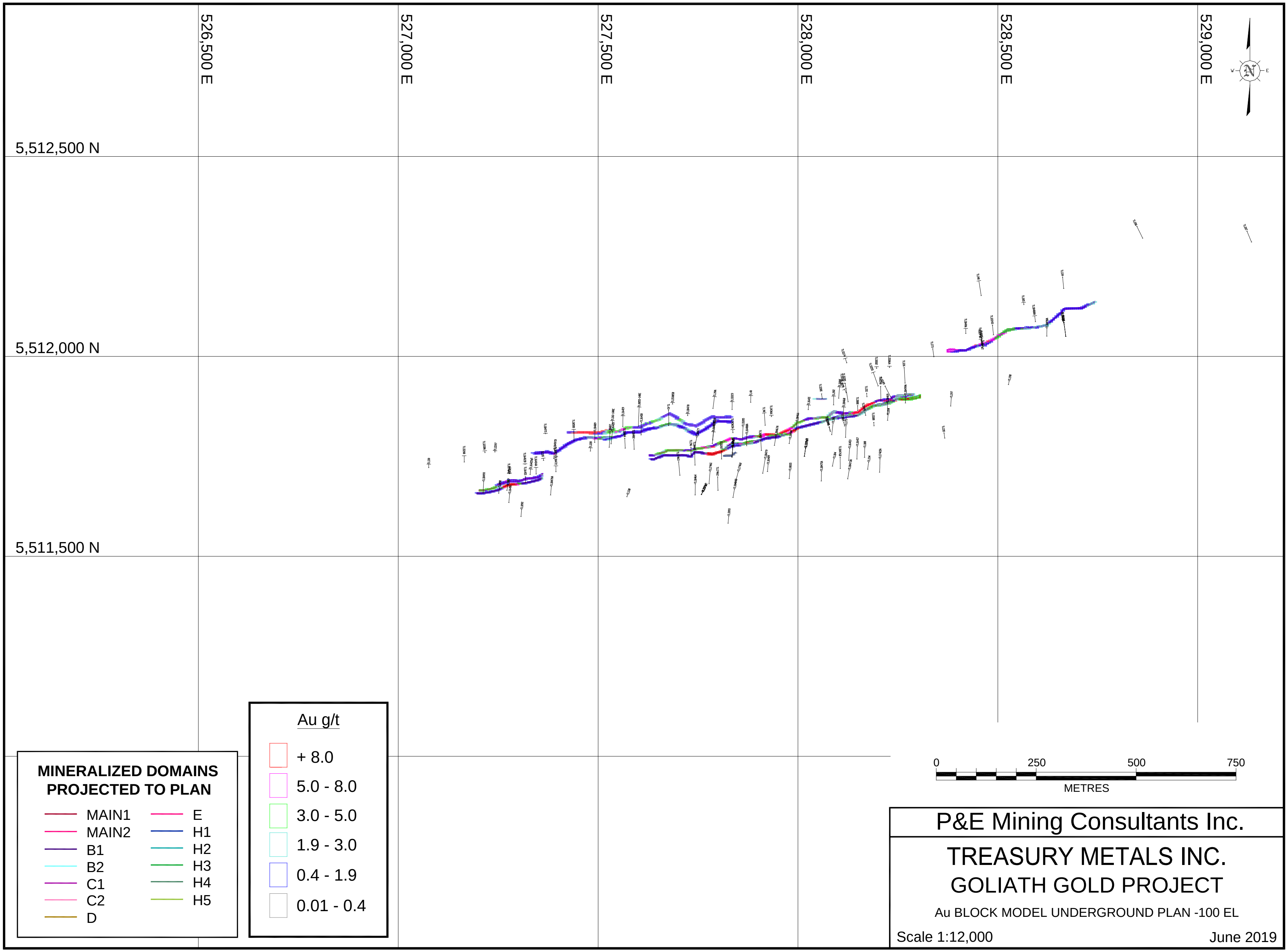
H1
H2
H3
H4
H5
Au g/t
+ 8.0
5.0 - 8.0
3.0 - 5.0
1.9 - 3.0
0.4 - 1.9
0.01 - 0.4
0
250
500
750
METRES
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
Au BLOCK MODEL UNDERGROUND PLAN 0 EL
Scale 1:12,000
June 2019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5,511,500 N
MINERALIZED DOMAINS PROJECTED TO PLAN
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B2
C1
C2
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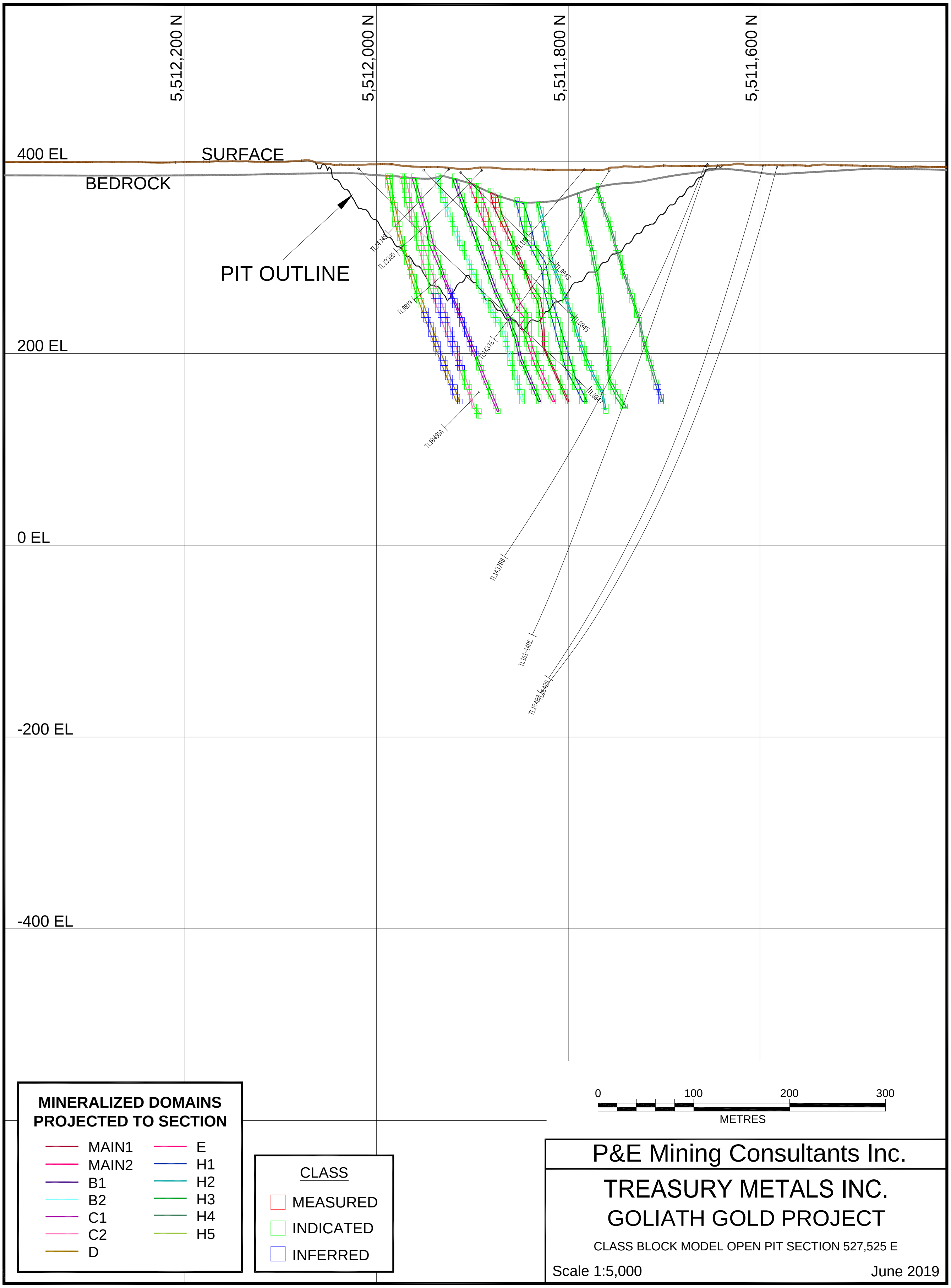
H1
H2
H3
H4
H5
Au g/t
+ 8.0
5.0 - 8.0
3.0 - 5.0
1.9 - 3.0
0.4 - 1.9
0.01 - 0.4
0
250
500
750
METRES
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
Au BLOCK MODEL UNDERGROUND PLAN -100 EL
Scale 1:12,000
June 2019

## APPENDIX H CLASSIFICATION BLOCK MODEL CROSS SECTIONS AND PLANS



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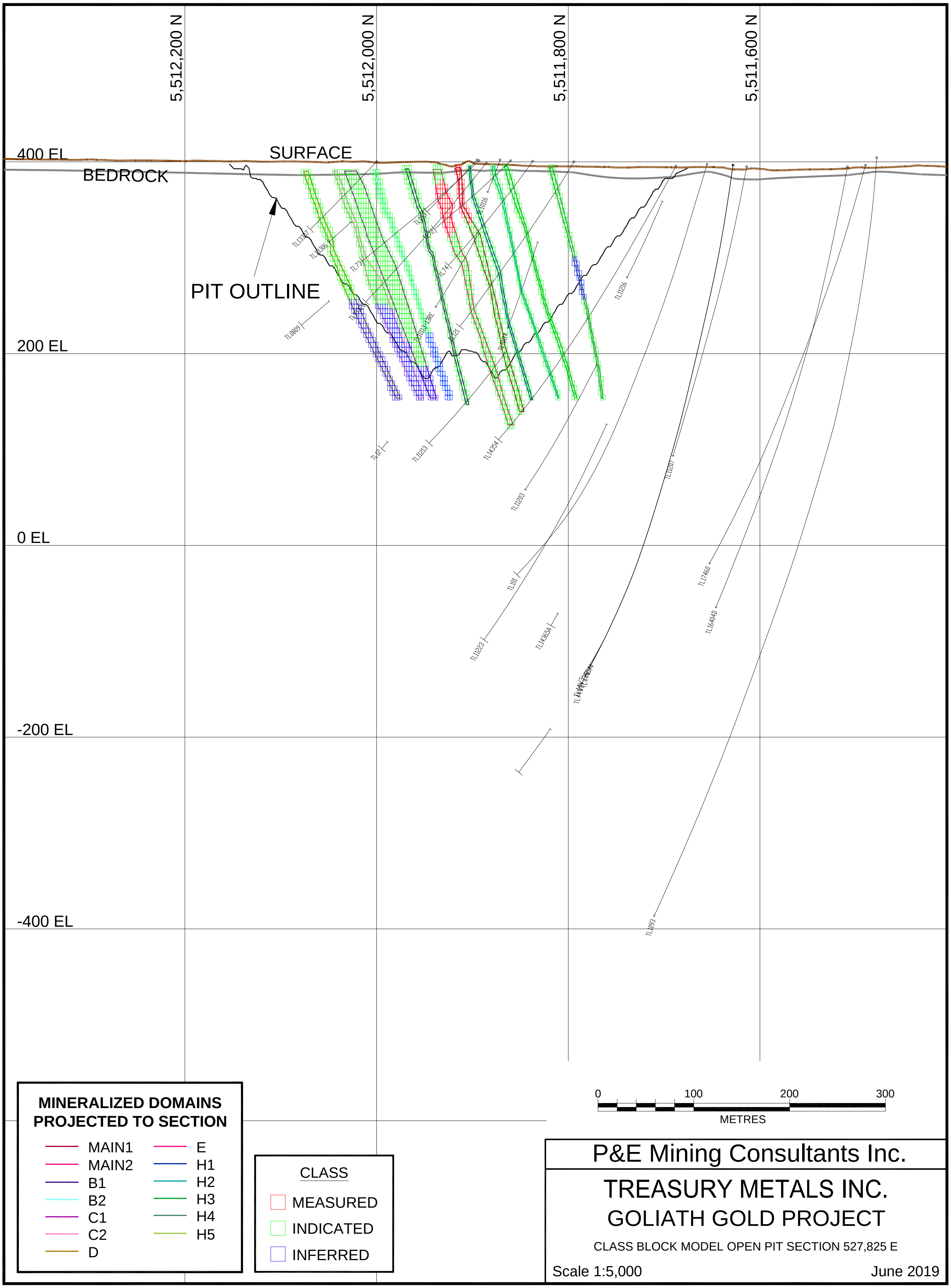
SURFACE
BEDROCK
PIT OUTLINE
200 EL
0 EL
-200 EL
-400 EL
MINERALIZED DOMAINS PROJECTED TO SECTION
MAIN1
MAIN2
B1
B2
C1
C2
D
E
H1
H2
H3
H4
H5
CLASS
MEASURED
INDICATED
INFERRED
0
100
200
300
METRES
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
CLASS BLOCK MODEL OPEN PIT SECTION 527,525 E
Scale 1:5,000
June 2019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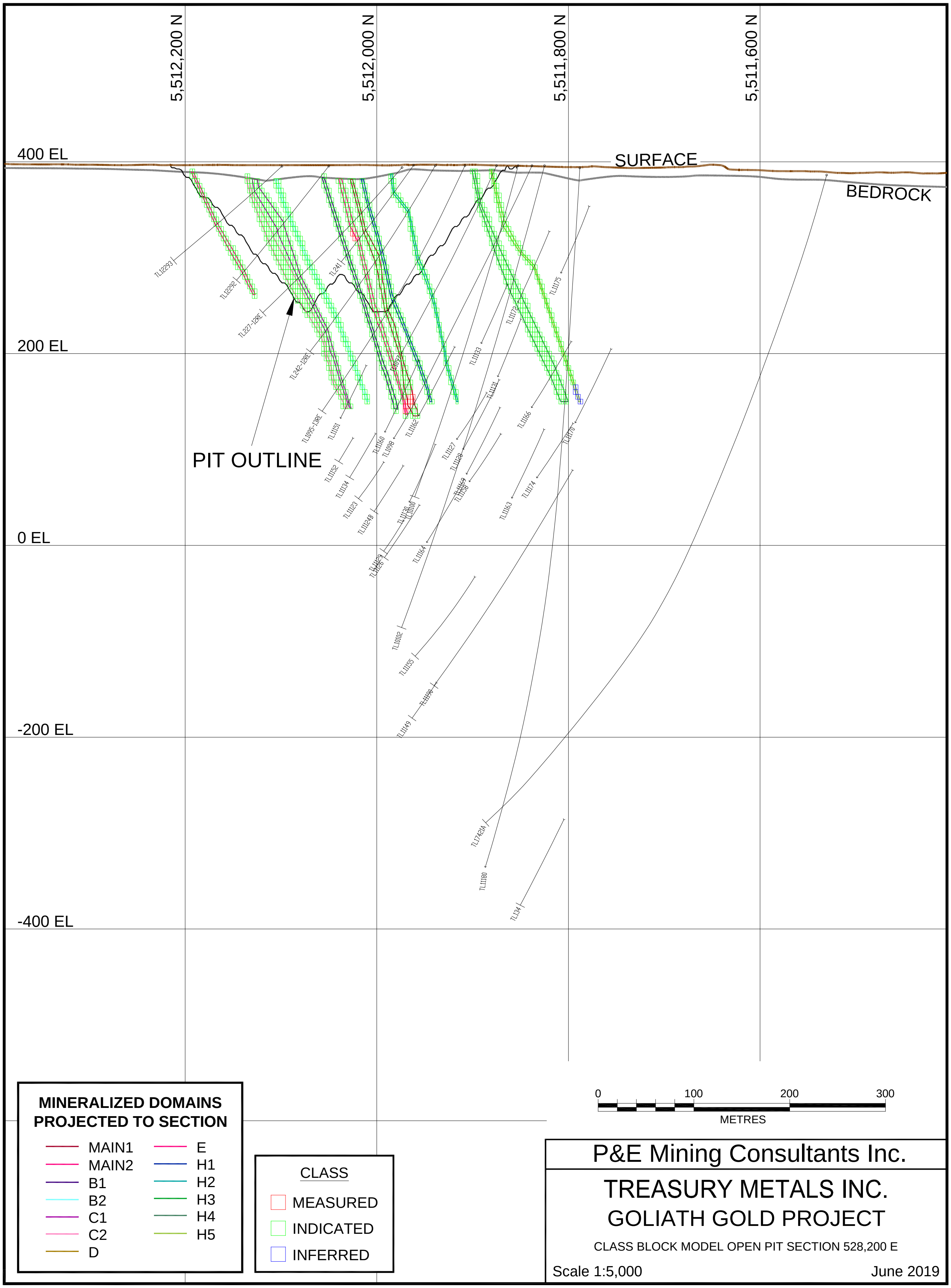
400 EL
SURFACE
BEDROCK
PIT OUTLINE
200 EL
0 EL
-200 EL
-400 EL
MINERALIZED DOMAINS PROJECTED TO SECTION
MAIN1
MAIN2
B1
B2
C1
C2
D
E
H1
H2
H3
H4
H5
CLASS
MEASURED
INDICATED
INFERRED
0
100
200
300
METRES
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
CLASS BLOCK MODEL OPEN PIT SECTION 527,825 E
Scale 1:5,000
June 2019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5,512,000 N
5,511,800 N
5,511,600 N
400 EL
SURFACE
BEDROCK
200 EL
0 EL
-200 EL
-400 EL
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO SECTION
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H1
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H4
H5
CLASS
MEASURED
INDICATED
INFERRED
0
100
200
300
METRES
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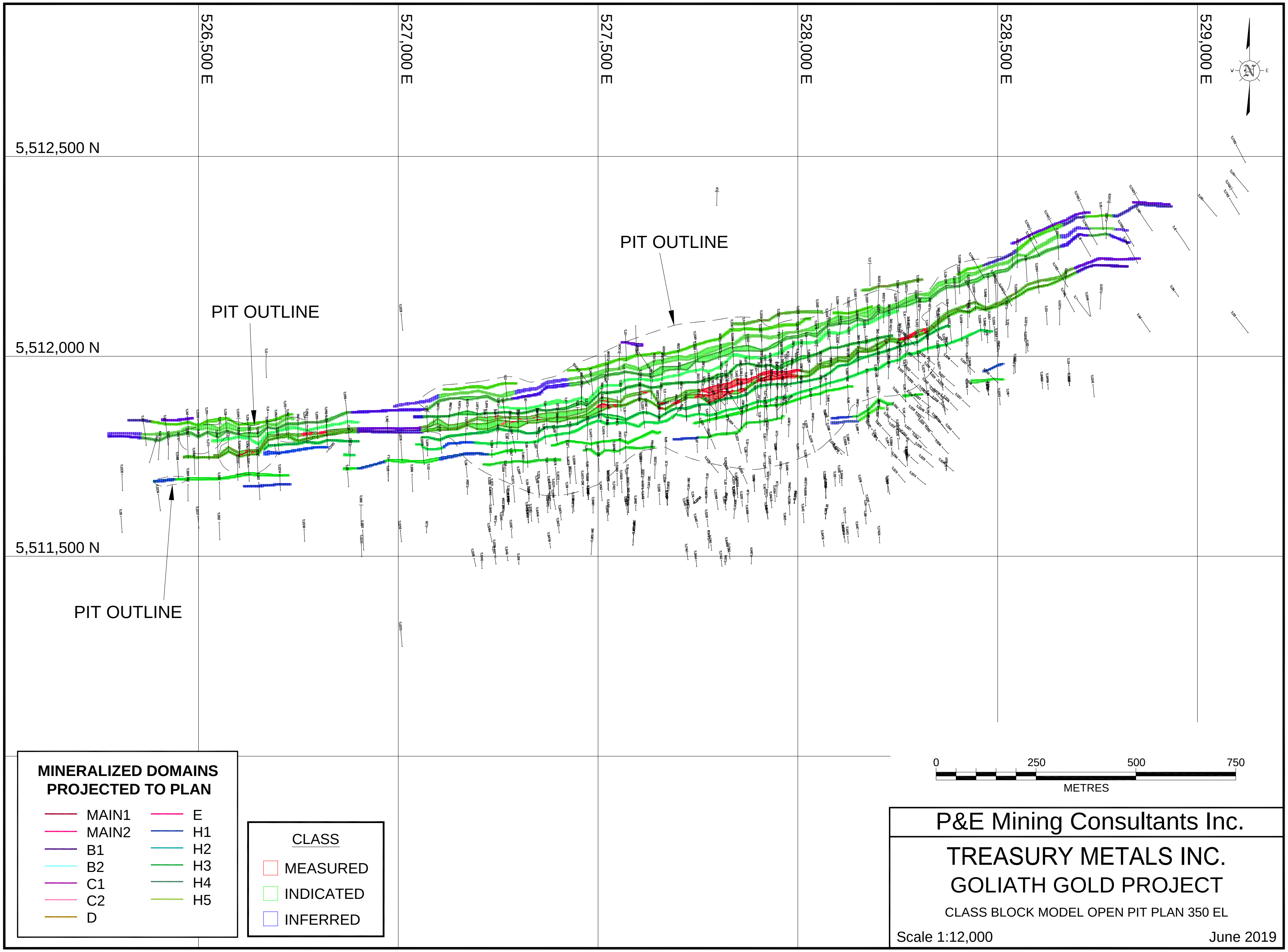
TREASURY METALS INC.
GOLIATH GOLD PROJECT
CLASS BLOCK MODEL OPEN PIT SECTION 528,200 E
Scale 1:5,000
June 2019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PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
N
MINERALIZED DOMAINS PROJECTED TO PLAN
MAIN1
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B2
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C2
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E
H1
H2
H3
H4
H5
CLASS
MEASURED
INDICATED
INFERRED
0
250
500
750
METRES
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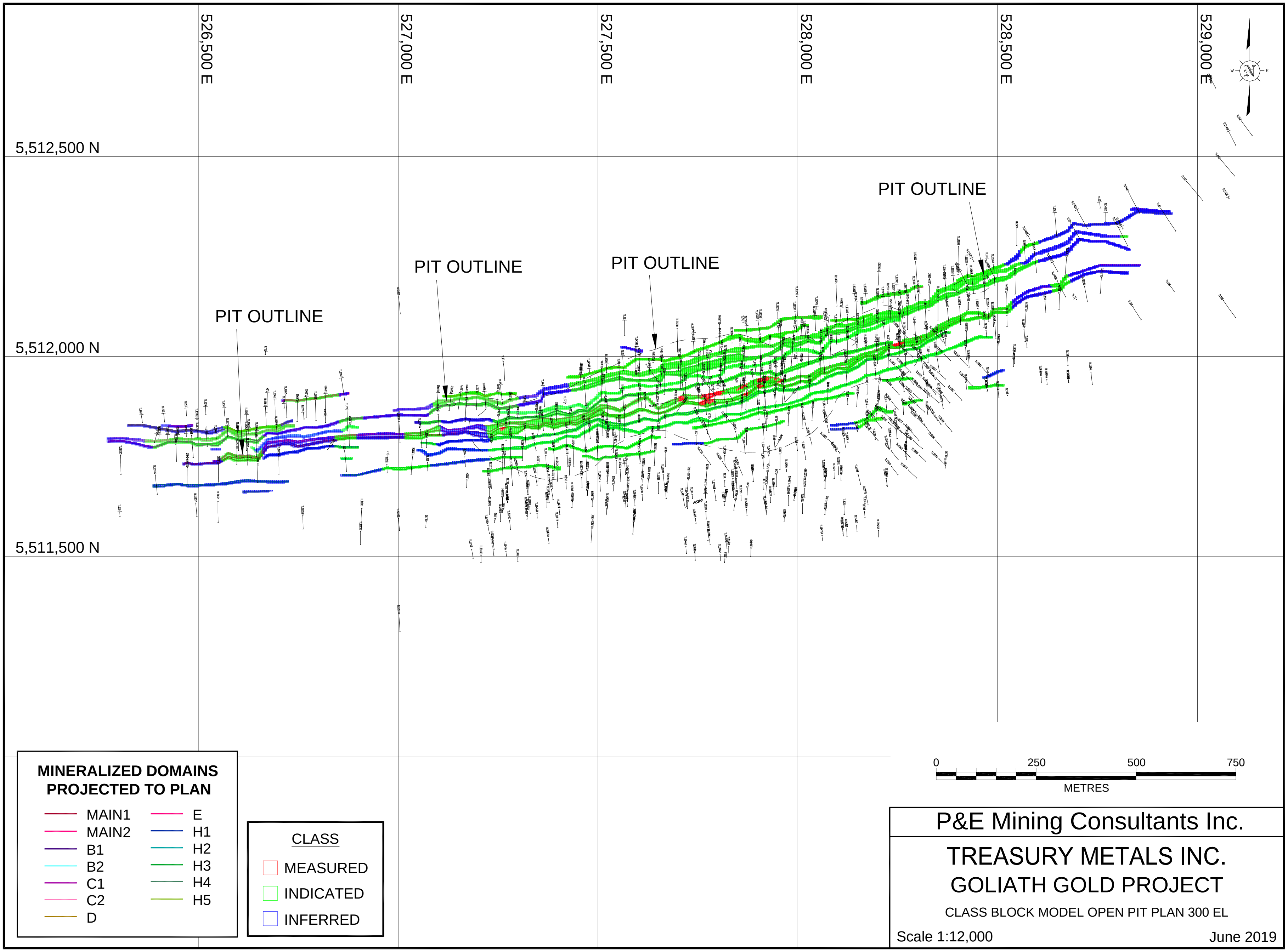
TREASURY METALS INC.
GOLIATH GOLD PROJECT
CLASS BLOCK MODEL OPEN PIT PLAN 350 EL
Scale 1:12,000
June 2019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PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
MAIN1
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C1
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D
E
H1
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H3
H4
H5
CLASS
MEASURED
INDICATED
INFERRED
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250
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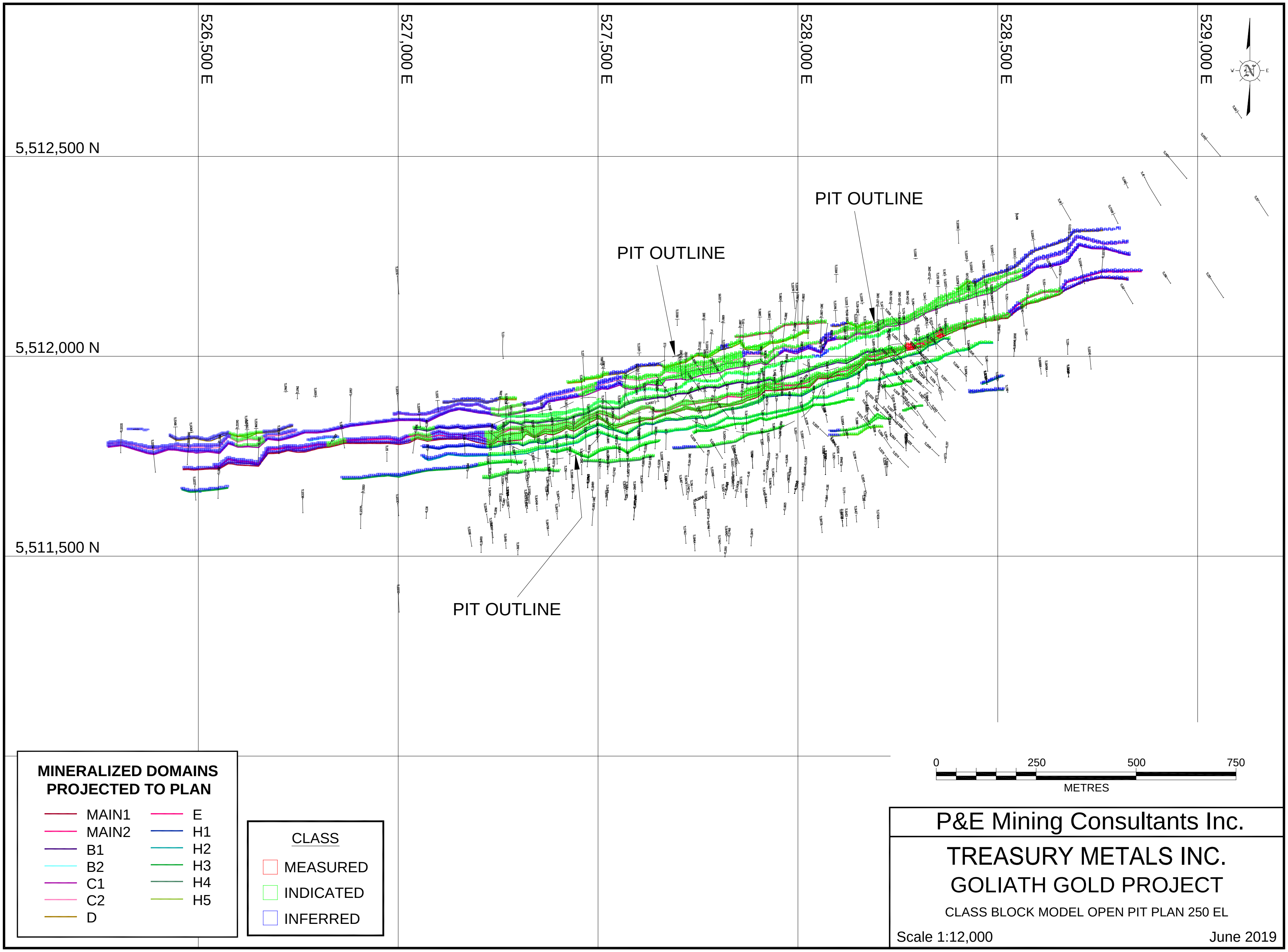
METRES
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
CLASS BLOCK MODEL OPEN PIT PLAN 300 EL
Scale 1:12,000
June 2019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PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
MAIN1
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H4
H5
CLASS
MEASURED
INDICATED
INFERRED
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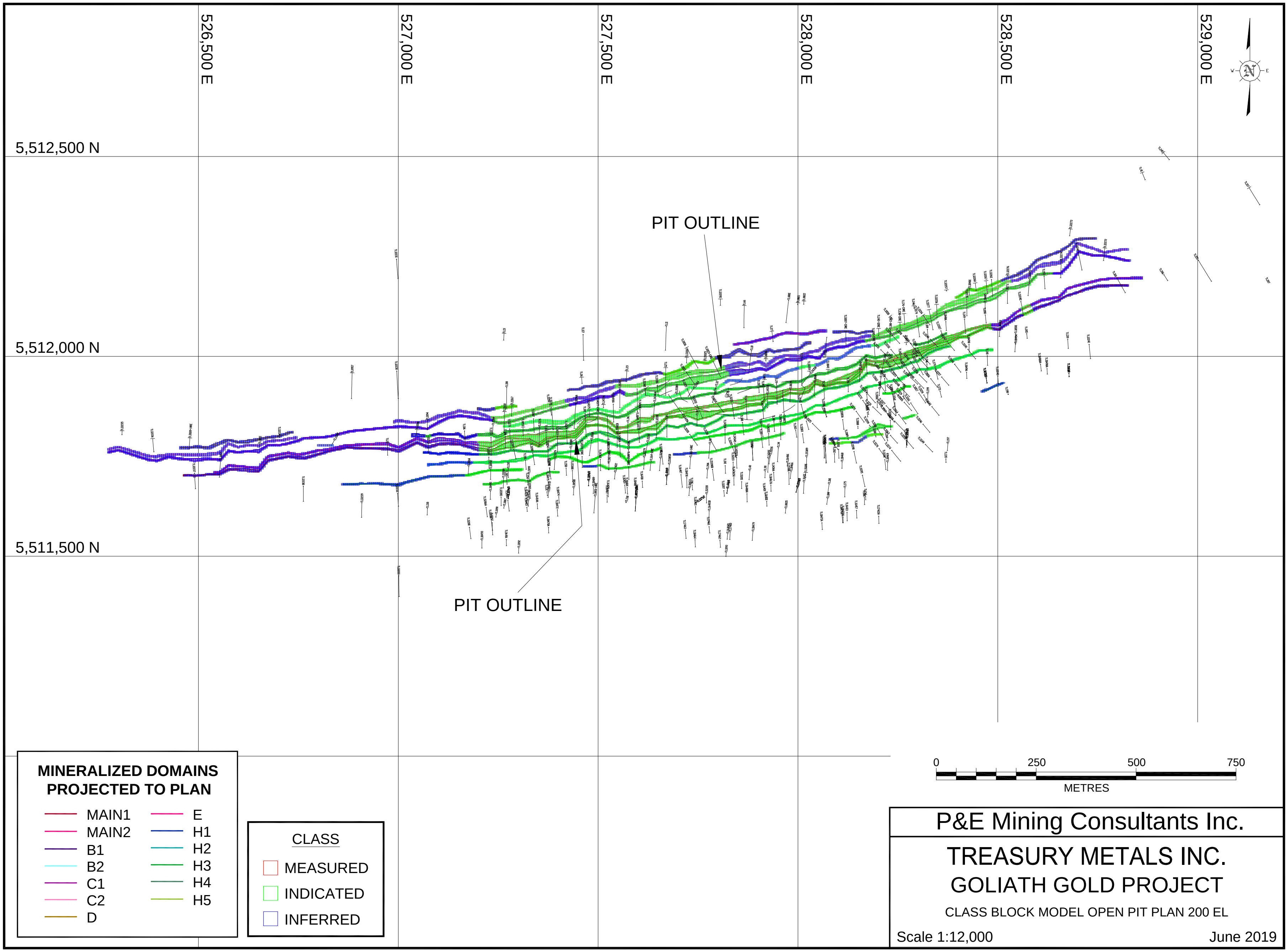
250
500
750
METRES
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
CLASS BLOCK MODEL OPEN PIT PLAN 250 EL
Scale 1:12,000
June 2019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PIT OUTLINE
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METRES
MINERALIZED DOMAINS PROJECTED TO PLAN
MAIN1
MAIN2
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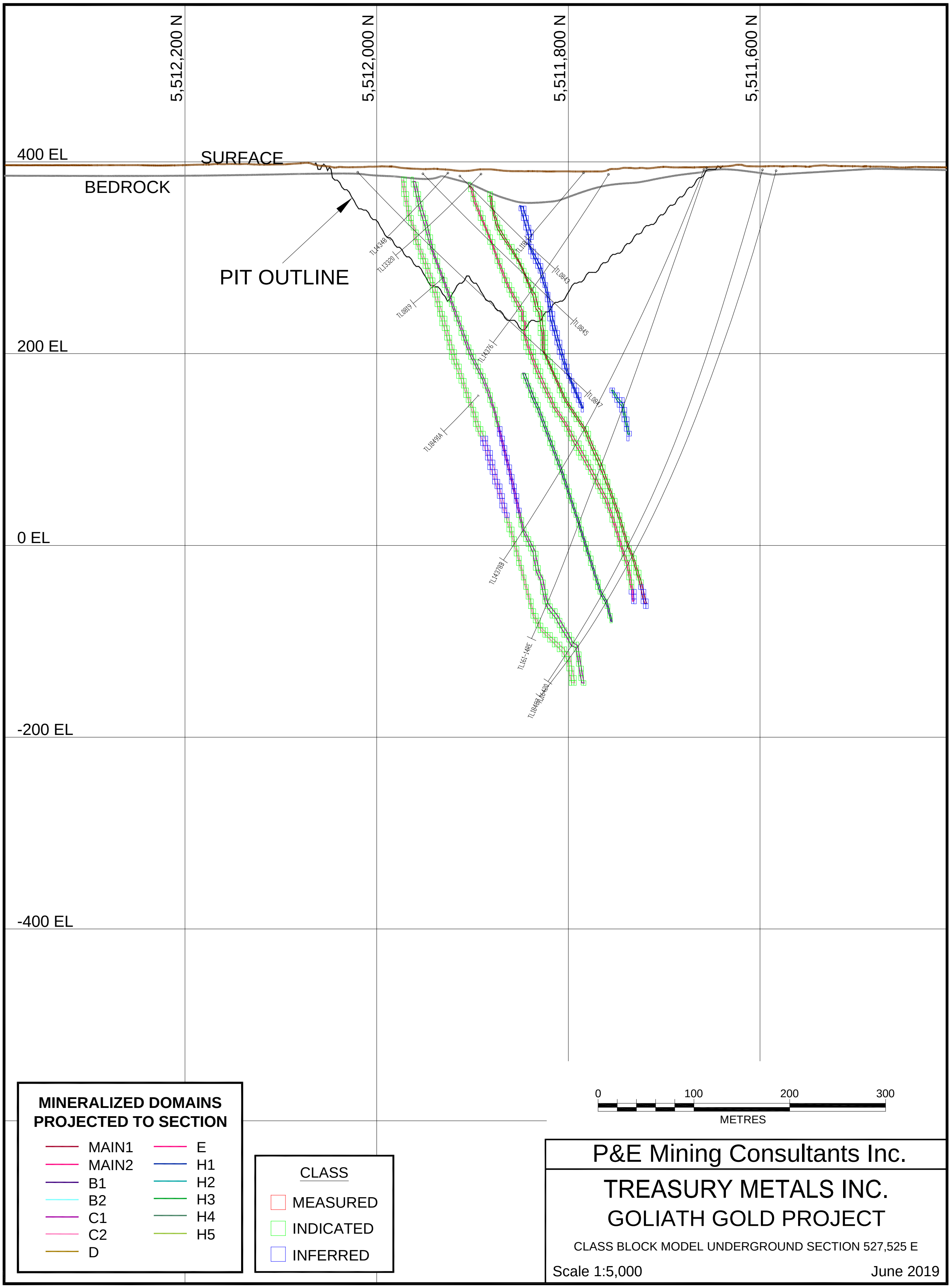
B2
C1
C2
D
E
H1
H2
H3
H4
H5
CLASS
MEASURED
INDICATED
INFERRED
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
CLASS BLOCK MODEL OPEN PIT PLAN 200 EL
Scale 1:12,000
June 2019



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BEDROCK
PIT OUTLINE
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0 EL
-200 EL
-400 EL
MINERALIZED DOMAINS PROJECTED TO SECTION
MAIN1
MAIN2
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B2
C1
C2
D
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H1
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H4
H5
CLASS
MEASURED
INDICATED
INFERRED
0
100
200
300
METRES
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TREASURY METALS INC.
GOLIATH GOLD PROJECT
CLASS BLOCK MODEL UNDERGROUND SECTION 527,525 E
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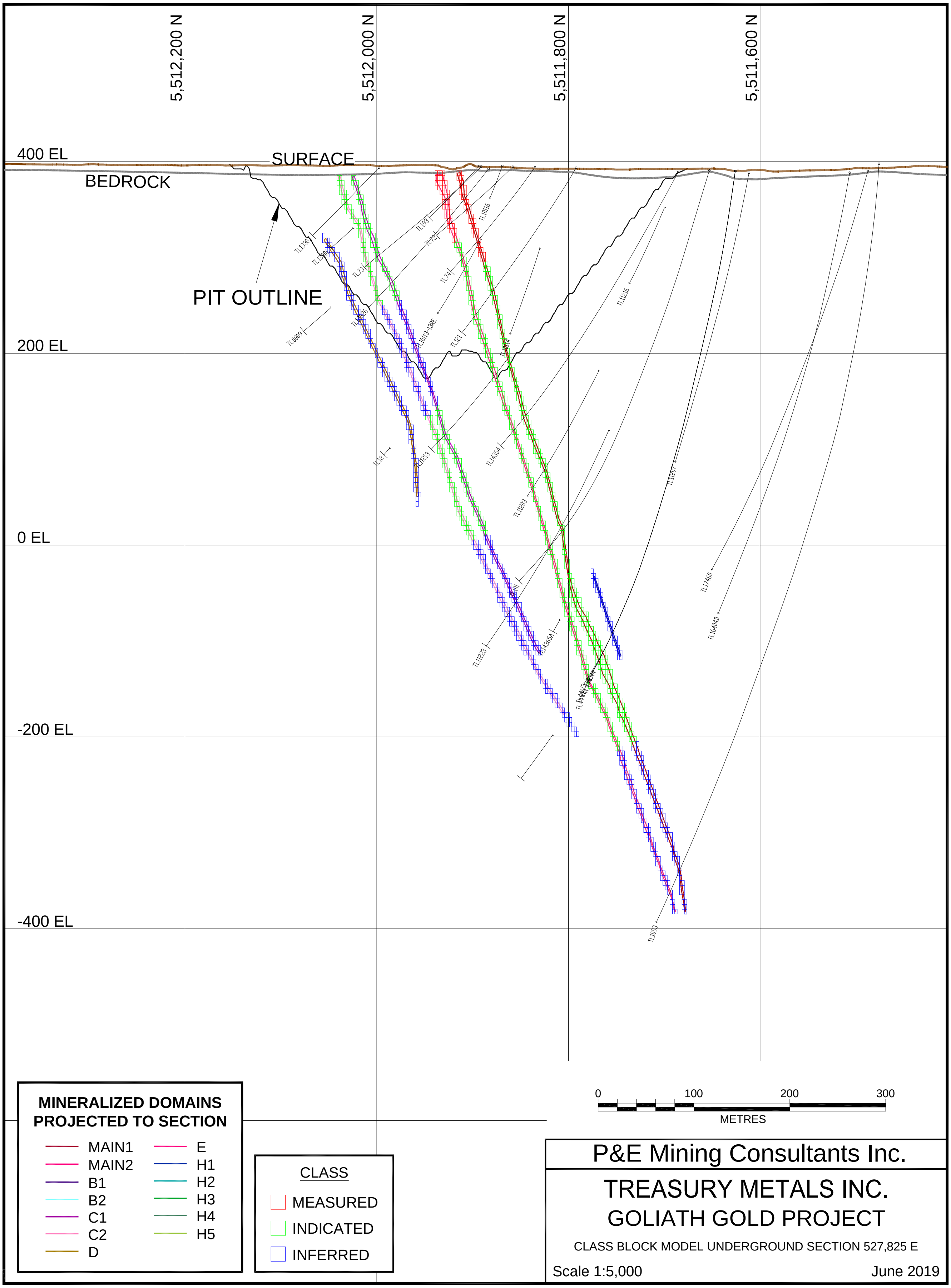
June 2019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BEDROCK
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MINERALIZED DOMAINS PROJECTED TO SECTION
MAIN1
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H5
CLASS
MEASURED
INDICATED
INFERRED
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P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
CLASS BLOCK MODEL UNDERGROUND SECTION 527,825 E
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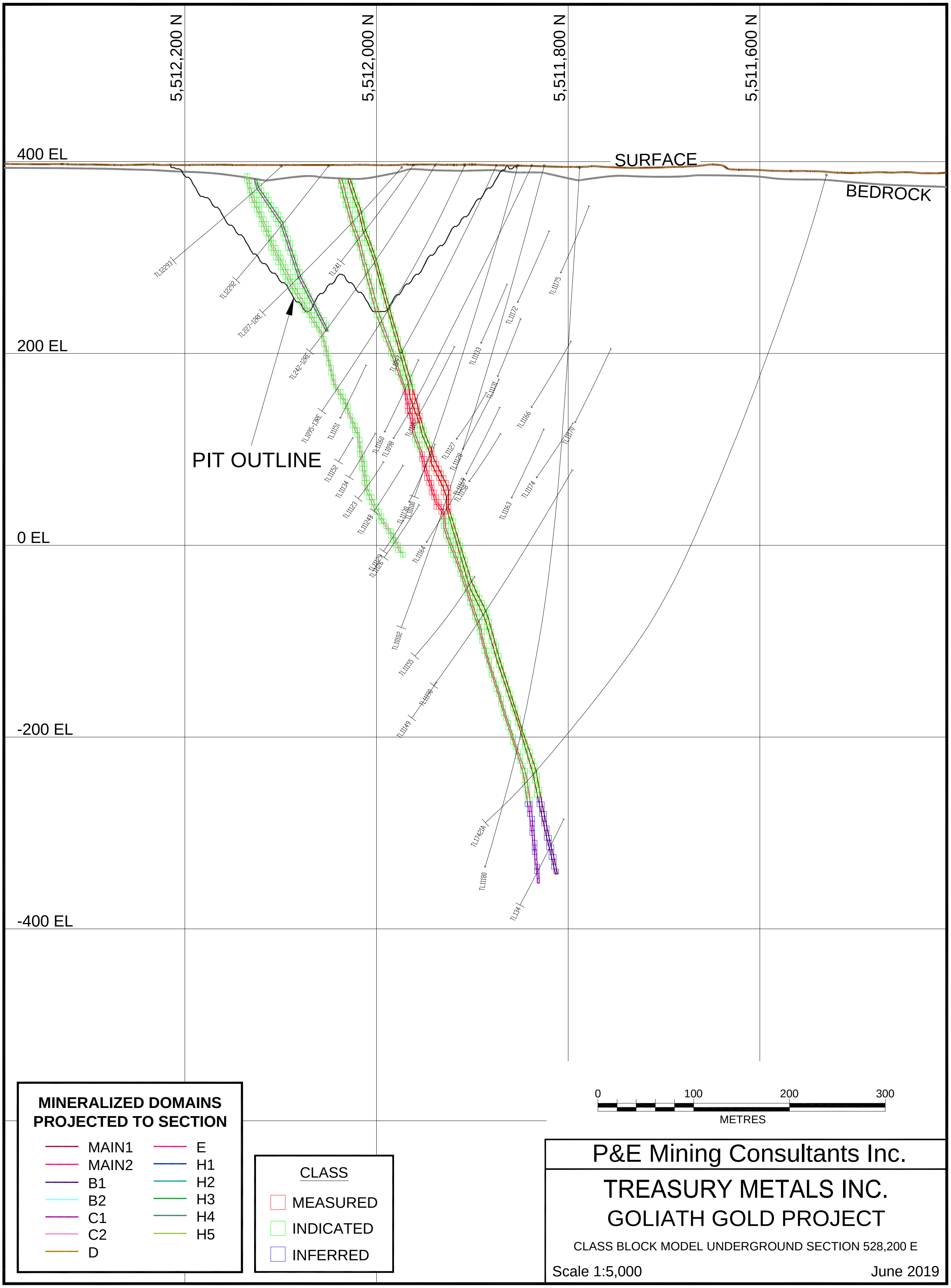
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BEDROCK
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO SECTION
MAIN1
MAIN2
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CLASS
MEASURED
INDICATED
INFERRED
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100
200
300
METRES
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TREASURY METALS INC.
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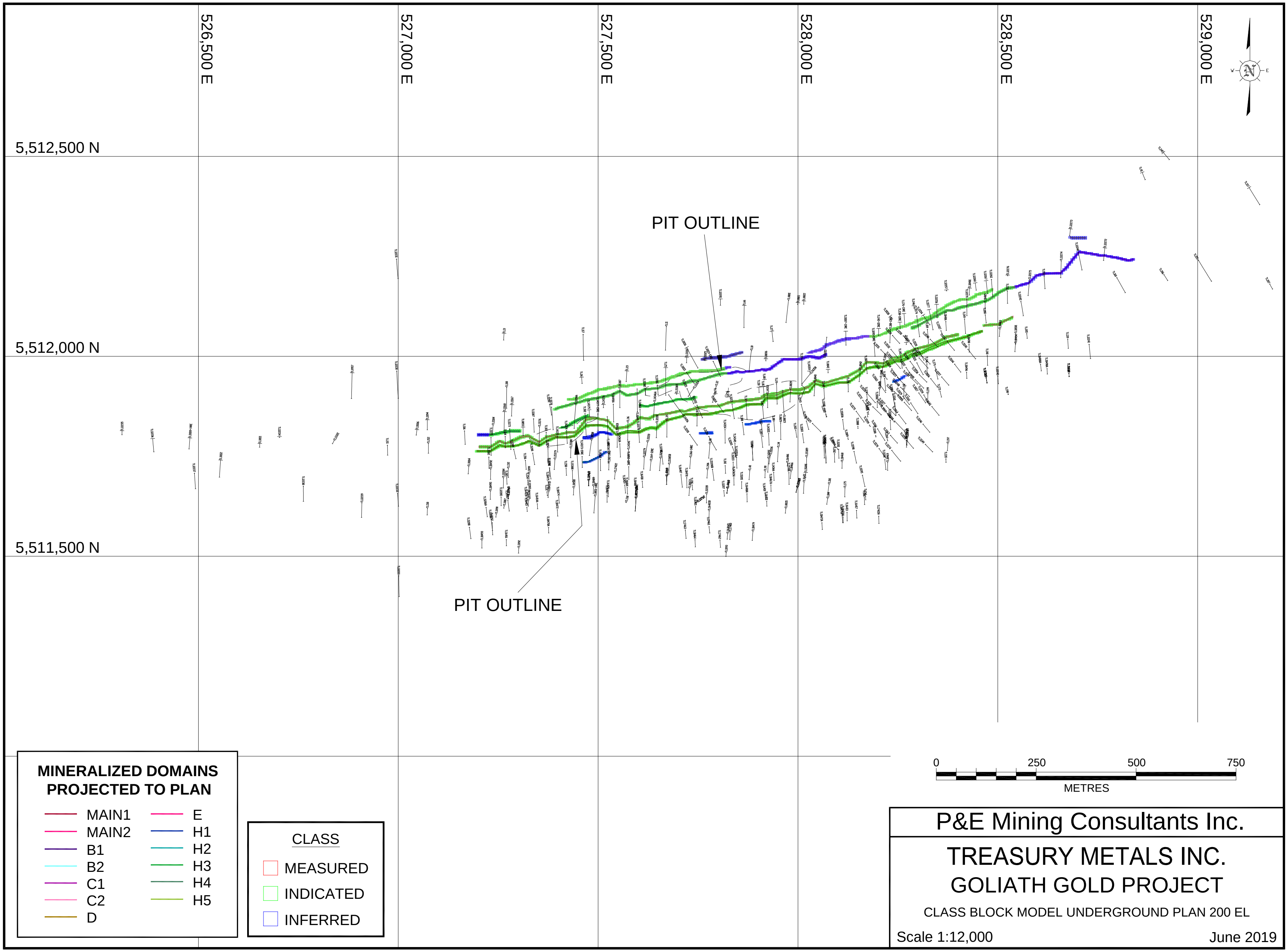
Scale 1:5,000
June 2019



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PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
MAIN1
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D
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H1
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H3
H4
H5
CLASS
MEASURED
INDICATED
INFERRED
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250
500
750
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TREASURY METALS INC.
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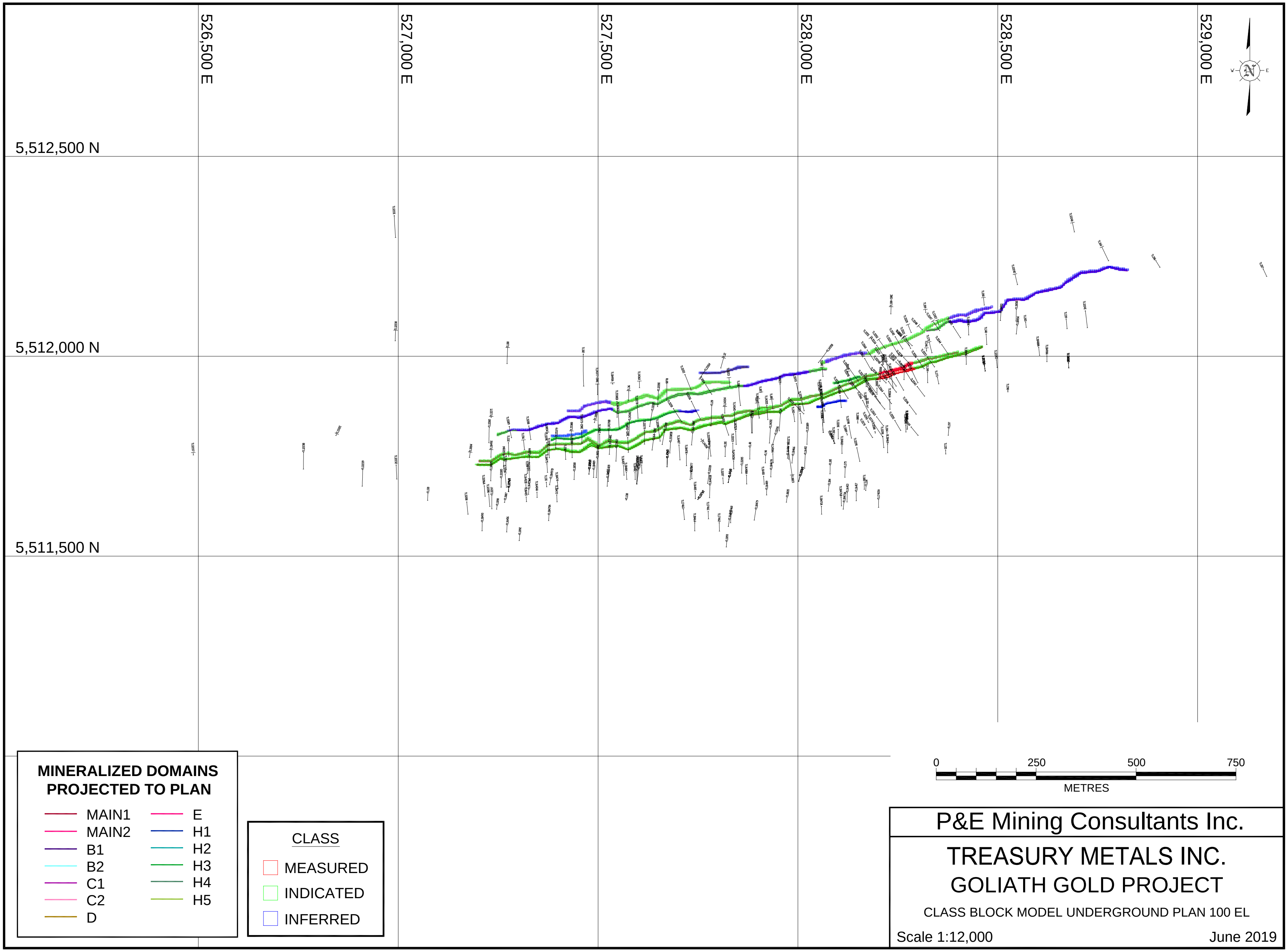
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METRES
MINERALIZED DOMAINS PROJECTED TO PLAN
MAIN1
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C1
C2
D
E
H1
H2
H3
H4
H5
CLASS
MEASURED
INDICATED
INFERRED
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TREASURY METALS INC.
GOLIATH GOLD PROJECT
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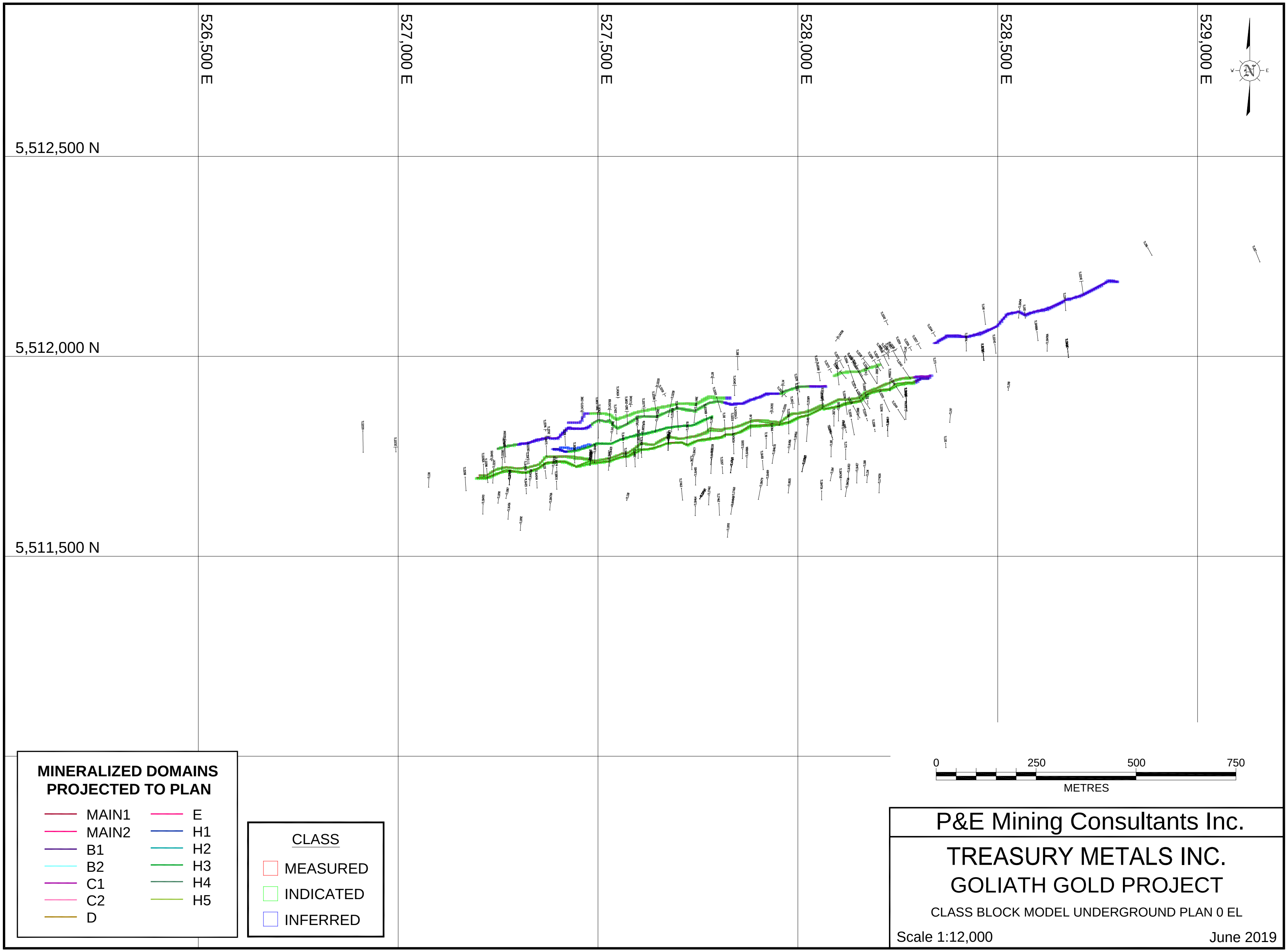
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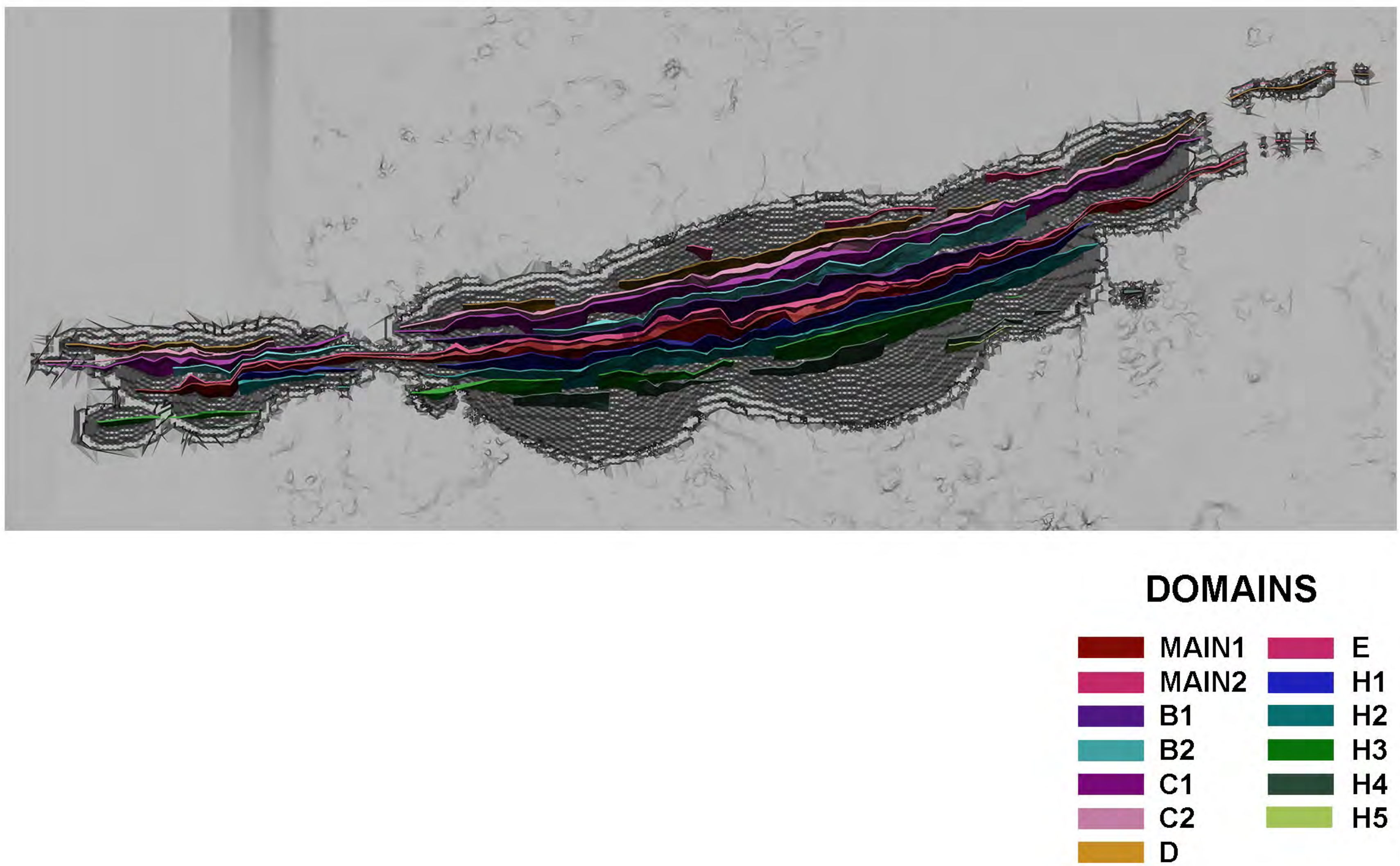
H4
H5
CLASS
MEASURED
INDICATED
INFERRED
0
250
500
750
METRES
P&E Mining Consultants Inc.
TREASURY METALS INC.
GOLIATH GOLD PROJECT
CLASS BLOCK MODEL UNDERGROUND PLAN 0 EL
Scale 1:12,000
June 2019

# GOLIATH GOLD PROJECT
# OPTIMIZED PIT SHELL



## APPENDIX J LAND TENUE

***Source:*** *Treasury (2019)*

SCHEDULE A
GOLIATH MINING CLAIMS

| Legacy Claim Id | Township / Area | Tenure ID | Tenure Type | Anniversary Date | Tenure Status | Encumbrances | Work Required | Total Reserve |
|---|---|---|---|---|---|---|---|---|
| 1106349 | ZEALAND | 163600 | Boundary Cell Mining Claim | 2019-10-13 | Active | ^ # | $200 | $0 |
| 1106349 | ZEALAND | 203386 | Boundary Cell Mining Claim | 2019-10-13 | Active | ^ # | $200 | $1,484 |
| 1106350 | ZEALAND | 211475 | Single Cell Mining Claim | 2019-10-13 | Active | ^ # | $200 | $897 |
| 1106350 | ZEALAND | 259461 | Single Cell Mining Claim | 2019-10-13 | Active | ^ # | $200 | $1,320 |
| 1106351 | ZEALAND | 158719 | Boundary Cell Mining Claim | 2019-10-13 | Active | ^ # | $200 | $1,574 |
| 1106351 | ZEALAND | 343267 | Boundary Cell Mining Claim | 2019-10-13 | Active | ^ # | $200 | $0 |
| 1119543 | ZEALAND | 326092 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $200 | $0 |
| 1119543 | ZEALAND | 276115 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $32,191 |
| 1119543 | ZEALAND | 294962 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $200 | $22,672 |
| 1119543 | ZEALAND | 294226 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $26,437 |
| 1119544 | ZEALAND | 155460 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $0 |
| 1119544 | ZEALAND | 101878 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $50,000 |
| 1119551 | ZEALAND | 179643 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $200 | $0 |
| 1119551 | ZEALAND | 100549 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $21,162 |
| 1119552 | ZEALAND | 171516 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $32,043 |
| 1119553 | ZEALAND | 115838 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $38,213 |
| 1119553 | ZEALAND | 115977 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $15,000 |
| 1119554 | ZEALAND | 121008 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $200 | $18,603 |
| 1119554 | ZEALAND | 171530 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $200 | $0 |
| 1119555 | ZEALAND | 166184 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $200 | $995 |
| 1119555 | ZEALAND | 158848 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $767 |
| 1119556 | ZEALAND | 220882 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $497 |
| 1119557 | ZEALAND | 200046 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $2,472 |
| 1119558 | ZEALAND | 320652 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $200 | $0 |
| 1119561 | ZEALAND | 170773 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $0 |
| 1119561 | ZEALAND | 124944 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $200 | $0 |
| 1119562 | ZEALAND | 209519 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $0 |
| 1119563 | ZEALAND | 203359 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $1,036 |
| 1119564 | ZEALAND | 287545 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $2,394 |
| 1119565 | ZEALAND | 278990 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $0 |
| 1119565 | ZEALAND | 228246 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $0 |
| 1119566 | ZEALAND | 288175 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $0 |
| 1119567 | ZEALAND | 208177 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $400 | $0 |
| 1119568 | ZEALAND | 227552 | Single Cell Mining Claim | 2019-10-26 | Active | ^ # | $200 | $0 |
| 1144513 | HARTMAN,ZEALANI | 314104 | Boundary Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 1144513 | HARTMAN | 203427 | Boundary Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144513 | HARTMAN | 145372 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |
| 1144513 | HARTMAN,ZEALANI | 211511 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |
| 1144514 | HARTMAN | 101992 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $643 |
| 1144514 | HARTMAN,ZEALANI | 155517 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $636 |
| 1144515 | HARTMAN,ZEALANI | 220966 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $28 |
| 1144515 | HARTMAN | 171539 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |

**SCHEDULE A**
**GOLIATH MINING CLAIMS**

| Legacy Claim ID | Township/Area | Tenure ID | Tenure Type | Anniversary Date | Tenure Status | Encumbrances | Work Required | Total Reserve |
|---|---|---|---|---|---|---|---|---|
| 1144516 | HARTMAN | 200790 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |
| 1144516 | HARTMAN,ZEALANE | 100770 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $2,272 |
| 1144517 | HARTMAN | 142114 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |
| 1144517 | HARTMAN,ZEALANE | 142115 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $1,643 |
| 1144519 | HARTMAN | 171448 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |
| 1144519 | HARTMAN,ZEALANE | 227611 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144520 | HARTMAN | 294256 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144520 | HARTMAN,ZEALANE | 101879 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144521 | HARTMAN | 275399 | Boundary Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144521 | HARTMAN | 208878 | Boundary Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144522 | HARTMAN | 211510 | Boundary Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144524 | HARTMAN | 171538 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |
| 1144525 | HARTMAN | 208830 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |
| 1144526 | HARTMAN | 115974 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |
| 1144527 | HARTMAN | 232299 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |
| 1144528 | HARTMAN | 178447 | Boundary Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 1144529 | HARTMAN | 100467 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $400 | $0 |
| 1144529 | HARTMAN | 203374 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |
| 1144530 | HARTMAN | 232298 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |
| 1144531 | HARTMAN | 211495 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |
| 1144532 | HARTMAN | 223551 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |
| 1144533 | HARTMAN | 212763 | Boundary Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144535 | HARTMAN | 279027 | Boundary Cell Mining Claim | 2019-04-02 | Active | ^ # | $200 | $0 |
| 1144536 | HARTMAN | 203493 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144537 | HARTMAN | 101700 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144538 | HARTMAN | 225532 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $746 |
| 1144539 | HARTMAN | 311331 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $2,161 |
| 1144540 | HARTMAN | 323556 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $400 | $0 |
| 1144541 | HARTMAN | 228203 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $400 | $0 |
| 1144541 | HARTMAN | 142709 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $400 | $2,651 |
| 1144542 | HARTMAN | 166860 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $1,823 |
| 1144543 | HARTMAN | 101574 | Single Cell Mining Claim | 2019-04-02 | Active | ^ # | $200 | $3,204 |
| 1144543 | HARTMAN | 312677 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 1144544 | HARTMAN | 143486 | Single Cell Mining Claim | 2019-04-02 | Active | ^ # | $400 | $0 |
| 1144544 | HARTMAN | 101876 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144546 | HARTMAN | 211536 | Single Cell Mining Claim | 2019-04-02 | Active | ^ # | $200 | $0 |
| 1144547 | HARTMAN | 128265 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $208 |
| 1144548 | HARTMAN | 223002 | Single Cell Mining Claim | 2019-04-02 | Active | ^ # | $200 | $1,484 |
| 1144548 | HARTMAN | 314065 | Single Cell Mining Claim | 2019-04-02 | Active | ^ # | $200 | $0 |
| 1144548 | HARTMAN | 115843 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144549 | HARTMAN | 294231 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144551 | HARTMAN | 311320 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $967 |
| 1144552 | HARTMAN | 100562 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $28,045 |

**SCHEDULE A**
**GOLIATH MINING CLAIMS**

| Legacy Claim ID | Township/Area | Tenure ID | Tenure Type | Anniversary Date | Tenure Status | Encumbrances | Work Required | Total Reserve |
|---|---|---|---|---|---|---|---|---|
| 1144555 | HARTMAN | 326115 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $2,872 |
| 1144556 | HARTMAN | 259462 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $400 | $2,692 |
| 1144562 | ZEALAND | 312746 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 1144562 | ZEALAND | 101742 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144566 | ZEALAND | 213520 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144568 | ZEALAND | 200163 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 1144570 | ZEALAND | 266791 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $400 | $0 |
| 1144573 | ZEALAND | 233657 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $400 | $0 |
| 1144573 | ZEALAND | 270316 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 1144573 | ZEALAND | 261579 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144573 | ZEALAND | 220897 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $10,567 |
| 1144575 | ZEALAND | 294225 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |
| 1144575 | ZEALAND | 101428 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144577 | ZEALAND | 310719 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |
| 1144577 | ZEALAND | 311313 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144578 | ZEALAND | 266823 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $16,459 |
| 1144581 | ZEALAND | 142700 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144581 | ZEALAND | 100140 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $400 | $0 |
| 1144582 | ZEALAND | 274756 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144585 | HARTMAN,ZEALANI | 145357 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $0 |
| 1144585 | HARTMAN,ZEALANI | 211498 | Single Cell Mining Claim | 2020-02-26 | Active | ^ # | $200 | $153 |
| 1210898 | HARTMAN | 121756 | Single Cell Mining Claim | 2019-04-02 | Active | ^ # | $200 | $0 |
| 1211082 | HARTMAN | 328110 | Boundary Cell Mining Claim | 2019-04-02 | Active | ^ # | $200 | $0 |
| 1211082 | HARTMAN | 296862 | Boundary Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 1211082 | HARTMAN | 178429 | Single Cell Mining Claim | 2019-04-02 | Active | ^ # | $200 | $0 |
| 1211082 | HARTMAN | 213494 | Single Cell Mining Claim | 2019-04-02 | Active | ^ # | $400 | $0 |
| 1211082 | HARTMAN | 203406 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $400 | $0 |
| 1211082 | HARTMAN | 314096 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 1247442 | HARTMAN | 156888 | Boundary Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 1247442 | HARTMAN | 162898 | Boundary Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 1247442 | HARTMAN | 258277 | Boundary Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 1247442 | HARTMAN | 258276 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 1247442 | HARTMAN | 162896 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $400 | $0 |
| 1247442 | HARTMAN | 202710 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 1247442 | HARTMAN | 156887 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $400 | $847 |
| 1247442 | HARTMAN | 288878 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 1247442 | HARTMAN | 162897 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 3017886 | ZEALAND | 158237 | Single Cell Mining Claim | 2019-09-06 | Active | ^ # | $200 | $0 |
| 3017886 | HARTMAN,ZEALANI | 259609 | Single Cell Mining Claim | 2019-09-06 | Active | ^ # | $200 | $0 |
| 3017887 | HARTMAN | 262955 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017887 | HARTMAN | 122427 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $400 | $2,469 |
| 3017887 | HARTMAN | 234263 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $400 | $0 |
| 3017887 | HARTMAN | 330119 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |

SCHEDULE A
GOLIATH MINING CLAIMS

| Legacy Claim ID | Township/Area | Tenure ID | Tenure Type | Anniversary Date | Tenure Status | Encumbrances | Work Required | Total Reserve |
|---|---|---|---|---|---|---|---|---|
| 3017887 | HARTMAN | 278095 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017887 | HARTMAN | 215731 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017887 | HARTMAN | 116250 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $400 | $0 |
| 3017887 | HARTMAN | 196284 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017887 | HARTMAN | 101762 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $400 | $0 |
| 3017887 | HARTMAN | 122428 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017887 | HARTMAN | 122429 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017887 | HARTMAN | 215732 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $400 | $0 |
| 3017887 | HARTMAN | 234264 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $400 | $0 |
| 3017887 | HARTMAN | 204916 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $400 | $195 |
| 3017887 | HARTMAN | 101763 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 3017887 | HARTMAN | 180382 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 3017889 | HARTMAN | 291656 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017889 | HARTMAN | 198260 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $27,192 |
| 3017889 | HARTMAN | 343265 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017889 | HARTMAN | 235594 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017889 | HARTMAN | 264269 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017889 | HARTMAN | 330865 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017889 | HARTMAN | 117702 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017889 | HARTMAN | 181673 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017889 | HARTMAN | 330907 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $400 | $0 |
| 3017890 | HARTMAN | 152355 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017890 | HARTMAN | 272360 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017890 | HARTMAN | 123846 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017890 | HARTMAN | 284939 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $400 | $0 |
| 3017890 | HARTMAN | 264890 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017890 | HARTMAN | 117809 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $400 | $4,666 |
| 3017890 | HARTMAN | 123847 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017890 | HARTMAN | 123848 | Single Cell Mining Claim | 2019-07-10 | Active | ^ # | $200 | $0 |
| 3017934 | ZEALAND | 179793 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017934 | ZEALAND | 101679 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017934 | ZEALAND | 329515 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017934 | ZEALAND | 214899 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017934 | ZEALAND | 270317 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $400 | $2,348 |
| 3017934 | ZEALAND | 329516 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017936 | ZEALAND | 286872 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $400 | $0 |
| 3017936 | ZEALAND | 227569 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017936 | ZEALAND | 266792 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017936 | ZEALAND | 100099 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017936 | ZEALAND | 115735 | Single Cell Mining Claim | 2019-09-10 | Active | ^ # | $200 | $0 |
| 3017936 | ZEALAND | 274210 | Single Cell Mining Claim | 2019-09-10 | Active | ^ # | $200 | $9 |
| 3017936 | ZEALAND | 220280 | Single Cell Mining Claim | 2019-09-10 | Active | ^ # | $200 | $0 |
| 3017937 | ZEALAND | 340035 | Boundary Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017937 | ZEALAND | 165122 | Boundary Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017937 | ZEALAND | 280381 | Boundary Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017937 | ZEALAND | 159020 | Boundary Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017937 | ZEALAND | 269069 | Boundary Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017937 | ZEALAND | 244574 | Boundary Cell Mining Claim | 2019-07-04 | Active | ^ # | $200 | $0 |
| 3017937 | ZEALAND | 244573 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |

**SCHEDULE A**
**GOLIATH MINING CLAIMS**

| Legacy Claim ID | Township/Area | Tenure ID | Tenure Type | Anniversary Date | Tenure Status | Encumbrances | Work Required | Total Reserve |
|---|---|---|---|---|---|---|---|---|
| 3017937 | ZEALAND | 184571 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017937 | ZEALAND | 224392 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $977 |
| 3017937 | ZEALAND | 159019 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $400 | $0 |
| 3017937 | ZEALAND | 120537 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017937 | ZEALAND | 269068 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017937 | ZEALAND | 119175 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $400 | $0 |
| 3017937 | ZEALAND | 244575 | Single Cell Mining Claim | 2019-05-21 | Active | ^ # | $200 | $0 |
| 3017937 | ZEALAND | 103900 | Single Cell Mining Claim | 2019-07-04 | Active | ^ # | $200 | $0 |
| 3017937 | ZEALAND | 119174 | Single Cell Mining Claim | 2019-07-04 | Active | ^ # | $200 | $0 |
| 3017937 | ZEALAND | 261732 | Single Cell Mining Claim | 2019-07-04 | Active | ^ # | $200 | $0 |
| 3017937 | ZEALAND | 116253 | Single Cell Mining Claim | 2019-10-10 | Active | ^ # | $200 | $0 |
| 3017939 | ZEALAND | 103904 | Boundary Cell Mining Claim | 2019-07-04 | Active | ^ # | $200 | $0 |
| 3017939 | ZEALAND | 299048 | Single Cell Mining Claim | 2019-07-04 | Active | ^ # | $200 | $0 |
| 3017939 | ZEALAND | 244581 | Single Cell Mining Claim | 2019-07-04 | Active | ^ # | $400 | $0 |
| 3017939 | ZEALAND | 159023 | Single Cell Mining Claim | 2019-07-04 | Active | ^ # | $200 | $0 |
| 3017940 | ZEALAND | 277517 | Single Cell Mining Claim | 2019-09-10 | Active | ^ # | $200 | $0 |
| 3017940 | ZEALAND | 117151 | Single Cell Mining Claim | 2019-09-10 | Active | ^ # | $200 | $0 |
| 3017940 | ZEALAND | 223552 | Single Cell Mining Claim | 2019-09-10 | Active | ^ # | $200 | $0 |
| 3017940 | ZEALAND | 314097 | Single Cell Mining Claim | 2019-09-10 | Active | ^ # | $200 | $0 |
| 3017941 | ZEALAND | 270918 | Single Cell Mining Claim | 2019-10-10 | Active | ^ # | $200 | $4,412 |
| 3017941 | ZEALAND | 283008 | Single Cell Mining Claim | 2019-10-10 | Active | ^ # | $200 | $0 |
| 3017941 | ZEALAND | 215736 | Single Cell Mining Claim | 2019-10-10 | Active | ^ # | $200 | $0 |
| 3017941 | ZEALAND | 116252 | Single Cell Mining Claim | 2019-10-10 | Active | ^ # | $200 | $0 |
| 3017941 | ZEALAND | 283009 | Single Cell Mining Claim | 2019-10-10 | Active | ^ # | $200 | $0 |
| 4211247 | HARTMAN | 145344 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211247 | HARTMAN | 157591 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211247 | HARTMAN | 117149 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211247 | HARTMAN | 101838 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211247 | HARTMAN | 163620 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211247 | HARTMAN | 279038 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211247 | HARTMAN | 145345 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $400 | $0 |
| 4211247 | HARTMAN | 157592 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211247 | HARTMAN | 163621 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211247 | HARTMAN | 223547 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $400 | $0 |
| 4211247 | HARTMAN | 279039 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $400 | $0 |
| 4211247 | HARTMAN | 296863 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $400 | $0 |
| 4211248 | HARTMAN | 329458 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211248 | HARTMAN | 214844 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211248 | HARTMAN | 116125 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211248 | HARTMAN | 166903 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $400 | $0 |
| 4211248 | HARTMAN | 121788 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $400 | $0 |
| 4211248 | HARTMAN | 203405 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $400 | $0 |
| 4211248 | HARTMAN | 100483 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211248 | HARTMAN | 116126 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211248 | HARTMAN | 230309 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211249 | HARTMAN | 230308 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $400 | $0 |
| 4211249 | HARTMAN | 223545 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $400 | $0 |
| 4211249 | HARTMAN | 101836 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211249 | HARTMAN | 314095 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211249 | HARTMAN | 163618 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |

**SCHEDULE A**

**GOLIATH MINING CLAIMS**

| *Legacy Claim ID* | *Township/Area* | *Tenure ID* | *Tenure Type* | *Anniversary Date* | *Tenure Status* | *Encumbrances* | *Work Required* | *Total Reserve* |
|---|---|---|---|---|---|---|---|---|
| 4211249 | HARTMAN | 259479 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211249 | HARTMAN | 279036 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211249 | HARTMAN | 223546 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211249 | HARTMAN | 259480 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $400 | $0 |
| 4211250 | HARTMAN | 168892 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211250 | HARTMAN | 205715 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211250 | HARTMAN | 320898 | Single Cell Mining Claim | 2019-08-21 | Active | ^ # | $200 | $0 |
| 4211252 | HARTMAN,ZEALANI | 194877 | Boundary Cell Mining Claim | 2019-09-06 | Active | ^ # | $200 | $0 |
| 4211252 | ZEALAND | 219135 | Single Cell Mining Claim | 2019-09-06 | Active | ^ # | $200 | $0 |
| 4211252 | ZEALAND | 293697 | Single Cell Mining Claim | 2019-09-06 | Active | ^ # | $200 | $0 |
| 4211252 | HARTMAN,ZEALANI | 286386 | Single Cell Mining Claim | 2019-09-06 | Active | ^ # | $200 | $0 |
| 4211252 | HARTMAN,ZEALANI | 281028 | Single Cell Mining Claim | 2019-09-06 | Active | ^ # | $200 | $0 |
| 4211252 | ZEALAND | 170924 | Single Cell Mining Claim | 2019-09-06 | Active | ^ # | $200 | $0 |
| 4211252 | ZEALAND | 274292 | Single Cell Mining Claim | 2019-09-06 | Active | ^ # | $200 | $0 |
| 4211252 | HARTMAN,ZEALANI | 225529 | Single Cell Mining Claim | 2019-09-06 | Active | ^ # | $400 | $0 |
| 4245003 | HARTMAN | 284291 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245003 | HARTMAN | 217007 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245003 | HARTMAN | 181126 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245003 | HARTMAN | 101188 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245003 | HARTMAN | 330866 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245004 | HARTMAN | 160968 | Boundary Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245004 | HARTMAN | 101335 | Boundary Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245004 | HARTMAN | 116190 | Boundary Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245004 | HARTMAN | 215651 | Boundary Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245004 | HARTMAN | 282941 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $400 | $0 |
| 4245004 | HARTMAN | 341882 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245004 | HARTMAN | 196227 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245004 | HARTMAN | 215649 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245004 | HARTMAN | 116189 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $400 | $0 |
| 4245004 | HARTMAN | 166956 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $400 | $0 |
| 4245004 | HARTMAN | 214921 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $400 | $0 |
| 4245004 | HARTMAN | 120433 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $400 | $0 |
| 4245004 | HARTMAN | 214922 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $400 | $0 |
| 4245004 | HARTMAN | 215650 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245004 | HARTMAN | 281029 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245005 | HARTMAN | 268968 | Boundary Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245005 | HARTMAN | 194876 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245005 | HARTMAN | 298333 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $400 | $0 |
| 4245005 | HARTMAN | 120432 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $400 | $0 |
| 4245005 | HARTMAN | 225528 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $400 | $0 |
| 4245005 | HARTMAN | 116670 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245005 | HARTMAN | 213513 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245005 | HARTMAN | 178444 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |
| 4245005 | HARTMAN | 213514 | Single Cell Mining Claim | 2020-02-28 | Active | ^ # | $200 | $0 |

^Subject to Demand Debenture Held by Loinette Company Leasing Ltd., Extract Capital Master Fund Ltd. and Extract Lending LLC in the amount of $10,000,000

#Subject to Demand Debenture Held by Loinette Company Leasing Ltd., Extract Capital Master Fund Ltd. and Extract Lending LLC in the amount of $5,000,000

***Source:*** *Treasury (2019)*

**SCHEDULE B**
**GOLIATH PATENTS**

| TOWNSHIP | PARTY | Claim | Grant | PARCEL | PIN | LOT/CONCESSION | AREA (ha) | ENCUMBRANCE | RIGHTS | NSR (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Zealand[1] | Lundmark | | PA7053 | 41941 | 42089-0239 | N ½ Lot 6, Con III | 66.57 | * ^ | MRO | 2 |
| Zealand[1] | Collins | | PA12997 | 17395 | 42089-0139 | N ½ Lot 5, Con IV | 66.4 | * ^ | MRO | 2 |
| Zealand[1] | Sheridan | SV200 | | 21374 | 42089-0229 | S.V. 200, Con III | 16 | * ^ | M+SR | 1 |
| Zealand[1] | Johnson | | | 15401 | 42089-0138 | N ½ of S ½ Lot 5, Con IV | 32 | * ^ | M+SR | 2 |
| Zealand[1] | Hudak | | PA14989 | 21609 | 42089-0083 | N part of S ½ Lot 7, Con IV | 31.56 | * ^ | M+SR | 2 |
| Zealand[1] | Fraser | | | 15395 | 42089-0134 | S ½ Lot 6, Con IV | 65.96 | * ^ | MRO | 2 |
| Zealand[1] | Fraser | | PA11706 | 15395 | 42089-0134 | S ½ Lot 6, Con IV | 16.59 | * ^ | SRO | - |
| Zealand[1] | Betker | | | 34461 | 42089-0136 | W ½ of S ½ Lot 6, Con IV | 32.78 | * ^ | SRO | - |
| Zealand[1] | LeClerc | | | 34303 | 42089-0135 | SE ¼ of S ½ Lot 6, Con IV | 16.59 | * ^ | SRO | - |
| Zealand[2] | Delk | | | 24724 | 42089-0143 | SW ¼ of N ½ Lot 1, Con IV | 16.23 | * ^ | M+SR | 2.5 |
| Zealand[2] | Davenport | | PA13844 | 19088 | 42089-0079 | S ½ Lot 1, Con V | 65.76 | * ^ | M+SR | 2 |
| Zealand[3] | Jones | | PA3830 | 41215 | 42089-0081 | S part of Lot 8, Con IV | 64.75 | * ^ | MRO | 2.5 |
| Hartman[2] | Nemeth | | PA5147 | 6556 | 42090-0053 | S ½ Lot 10, Con IV | 65.35 | * ^ | M+SR | 2 |
| Zealand[4] | Sterling | PA3900 | PA3900/PA8420 | 4822 | 42089-0237&0238 | Lot 7, Con III | 78.4 | * ^ | M+SR | 2 |
| Zealand[4] | Medlee | | PA9074 | 21553 | 42089-0232 | N Pt. Lot 8, Con III | 31.1 | * ^ | MRO | 2.5 |
| Zealand[4] | Medlee | | | 39935 | 42089-0233 | N Pt. Lot 8, Con III | 52.61 | * ^ | SRO | |
| Zealand[4] | Schultz | SV113/SV114 | PA10196 | 13492 | 42089-0236 | Lot 7, Con III | 57 | * ^ | M+SR | 2 |
| Zealand | Brisson | | | 23R2434 | 42089-0782 | Part of Broken Lot 9, Con IV | 40.8711 | * ^ | MRO | - |
| Zealand | Wetelainen | | PA12997 | 40282 | 42089-0140 | N1/2 Lot 5 Con IV | 64 | * ^ | SRO | |
| Zealand | Norman | | PA5437 | 7052 | 42089-0137 | S1/2 of S1/2 Lot 5 Con IV | 33.19 | * ^ | M+SR | |
| Zealand | Norman | | PA7449 | 9922 | 42089-0141 | S1/2 Lot 4 Con IV | 65.97 | * ^ | M+SR | |
| | | | | | | | | | | |
| Zealand | Lease | K1145301/3017938 | 109533 | | 42089-0803 | Lot 5 Con 5 | 65.56 | ^ | MRO | |
| Zealand | Lease | K1145300 | 109534 | | 42089-0804 | Lot 7 Con 4 | 63.94 | ^ | MRO | |
| Zealand | Lease | K1119541 et. al. | 109532 | | 42089-0802 | N1/2 Lot 4 Con 4 S1/2 Lot 4 Con 5 | 131.52 | ^ | M+SRO | |
| | | | | | | | | | | |
| | | | | | | | | | | |

[1]Thunder Lake West; [2]Thunder Lake East; [3]Jones Property, [4]Laramide Property

*Subject to Demand Debenture Held by Loinette Company Leasing Ltd., Extract Capital Master Fund Ltd. and Extract Lending LLC in the amount of $20,000,000

^Subject to Demand Debenture Held by Loinette Company Leasing Ltd., Extract Capital Master Fund Ltd. and Extract Lending LLC in the amount of $10,000,000

***Source:*** *Treasury (2019)*

**SCHEDULE C**
**GOLIATH TREE FARM**

| TOWNSHIP | PARTY | Claim | Grant | PARCEL | PIN | LOT/CONCESSION | AREA (ha) | *RIGHTS |
|---|---|---|---|---|---|---|---|---|
| Zealand | | | | 41807 | 42089-0066 | Pts. 1-5 23R-9766 | | MR+SR |
| Zealand | | | | 41810 | 42089-0065 | Pts. 1-2 23R-9937 | | SRO |

***Source:*** *Treasury (2019)*