NI 43-101 TECHNICAL REPORT

Technical Report on the Homathko Property, British Columbia, Canada

BCGS Map Sheets 92N037/38/48

Property Centre:

51° 21’ 00” N 124° 28’ 00” W

UTM 10 399500E 5689100N

Prepared for:

Homerun Resources Inc.

Vancouver, B.C., Canada

Report prepared by:

Jason K. McLaughlin, P.Geo

North Vancouver, B.C., Canada.

Effective Date: February 15, 2022

Date and Signature Page

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Date of Signing: February 15, 2022

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Technical Report on the Homathko Property, British Columbia
CANADA

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Summary

The Homathko Property (the “Property”) is located in the Cariboo Region of British Columbia, approximately 57 km south of the community of Tatla Lake which lies 222km west of Williams Lake, British Columbia along the Chilcotin-Bella Coola Highway (Figures 1 and 2). The Property comprises 35 contiguous mineral claims, encompassing 30,971hectares, within the Clinton Mining Division. The approximate centre of the Property, which stretches more than 30 km from east to west along the south side of Homathko River, is at 51° 21’ 00” N Latitude 124° 28’ 00” W Longitude (UTM 10 399500E 5689100N) on BCGS map sheet 92N038 (Figure 3).

In November, 2020, Homerun Resources Inc. (“Homerun” or the “Company”, formerly Envirotek Remediation Inc.), a public company with headquarters in Vancouver, British Columbia, Canada, acquired three mineral tenures in the Cariboo region of British Columbia via the Mineral Titles Online (MTO) system. On December 15, 2020, Homerun announced that it had signed an option agreement on three adjacent claims owned by Transition Metals Corp (“Transition”). Under the terms of arrangement, the Company can earn a 100% interest in the claims through a combination of payments, share issuances and work commitments. A further 29 claims were added to the Property during May, June and September of 2021.

Homerun commissioned Jason McLaughlin (“the author”) to prepare a technical report that summarized historical work completed on the property, reviewed the results of geochemical sampling undertaken by the author in November of 2020, and made recommendations of further exploration if warranted. A technical report was completed in February of 2021. This report is an update to the NI 43-101 Technical Report on the Homathko Property, British Columbia with an effective date of February 20, 2021. Since that previous report, Homerun has added 29 claims to the Property and completed an airborne survey which is described in this document. No ground-based work has been undertaken in the project area since the author visited in November, 2020. This report has been prepared in compliance with the requirements of National Instrument 43-101 and Form 43-101F1.

The project area is situated at the eastern edge of the southern Coastal Mountains where they border the Chilcotin Plateau. The Property includes rugged terrain and extreme variations in elevation typical of the Coastal Mountains. The lowest elevations on the project are just under 900m where the boundary of the Property nears the Homathko River. At the west end, the claim group encompasses the northern edge of the Homathko Icefield. Much of the project area is dominated by mountainous terrain with sharp ridges, glaciers, and bare, talus-covered slopes.

The southern Coast Mountains of British Columbia are characterized by voluminous plutonic and gneissic rocks of mainly Middle Jurassic to Eocene. Near the Homathko Property younger plutonic rocks of the Coast Plutonic Complex (CPL) are in contact with older sedimentary and volcanic rocks in a series of late Cretaceous east-vergent thrust faults that deform much of the eastern margin of the Coastal Belt. South and west of the Property, the region is dominated by the Tiedemann Pluton, a large, northwesterly-trending Cretaceous-aged body of granite to granodiorite. In the immediate vicinity of the Property, large-scale thrusts at the eastern margins of this belt form a complex, northwest-striking thrust belt, more than 35 km in width. The thrust belt was subsequently intruded by post-kinematic plutons in late Cretaceous and early Tertiary time (68 Ma and 58 Ma).

At its western extent, the Property is dominated by an intrusive body of tonalite and quartz diorite which outcrops as the rugged Homathko Mountain. To the north, the Homathko Tonalite is in faulted contact with a series of Upper Jurassic to Cretaceous units including massive to pillowed mafic volcanics, pyritic mudstones, graphitic argillites, siltstones, and metamorphic volcanic and sedimentary rocks. A quartz diorite to granite sill intrudes and outcrops in this package north of the Homathko Tonalite. Most mineralization identified on the property to date occurs within, or in close proximity to this sill. Quartz-ankerite-(pyrite) veins are distributed throughout the alteration zone in the differentiated sill and to a more limited extent within the adjacent mafic volcanics. Veins occur as stockwork veinlets, tension gashes, ladder veins, and wider and stronger veins up to 2-3 m in width widely distributed throughout the sill unit composing between 1 and 50% of the rock volume. Massive arsenopyrite, along with minor galena, sphalerite, chalcopyrite comprises up to 70% of some veins and free gold has been noted in the Discovery Vein.

Mineralization at the Discovery Zone was first identified in the western part of the Property in 1964 by workers for Falconbridge when a reconnaissance team landed on the north slope of Mt Homathko to investigate an exposure of rusty quartz veining. Sampling of a 30-centimetre wide vein hosting massive arsenopyrite and pyrite assayed 223.7 grams per tonne gold (g/t Au) and 160.7 grams per tonne silver (g/t Ag). During eight days in 1965, sampling of the Discovery Vein yielded up to 383.0 g/t Au and 194.9 g/t Ag over 15 centimetres and the average of 24 samples from nine or ten veins in the area yielded approximately 17.1 g/t Au. A drill program to test the Discovery Creek Showing was recommended but not undertaken due to proximity of the showing to the ice field, the remote location, short field season and the price of gold at the time. Falconbridge geologist McDougall recommended that the company return to the Property when the price of gold had improved and the ice field had retreated.

In 1975, Gerhard Von Rosen, a professional engineer, was commissioned to inspect the property and assess the showings. Assays taken from near the trenches exposed by Falconbridge were confirmed to contain gold and the property was staked as the “11 Ounce Mineral Claims”. Samples from the '11 ounce' vein yielded up to 581.4 g/t Au over 20 centimetres and a 0.9-metre sample from the Contact vein yielded 21.9 g/t Au (Property MINFILE 092N 049).

In July of 1989, Golden Rule geologist R.D Cruikshank and prospector A. Harmon performed a property inspection and reconnaissance geological mapping program on the property. Cruikshank located Falconbridge’s discovery showing and took 30 rock samples. The highest value of gold recorded was 64.5 g/t, from a composite of grab samples taken over 10 metres from a sulphide-bearing quartz vein 10 to 80 centimetres thick (AR18977).

The property was staked by Transition Metals Corp. (“Transition”) in 2010 and the company conducted helicopter-assisted property-wide prospecting and geological mapping in July of that year. The company returned in 2011 and 2012 to undertake additional prospecting, mapping and sampling and subsequently completed a satellite survey program. The sampling and prospecting work identified areas which returned elevated gold values and the geological mapping of the property successfully outlined the stratigraphy of the property. Two rocks sampled in 2010 assayed 87.5 and 15.1 g/t Au with 45.7 and 1.4 g/t Ag, respectively (AR32197). The following year, a rock sample (L781102) assayed 25.8 g/t Ag and 0.99 per cent copper (Cu).

Transition identified rocks related to mineralization and alteration along a strike length extending 2 km with elevated gold values across approximately 1.5 km (AR 33110).

The Homathko Property covers five mineral showings and two prospects documented in the MINFILE Database maintained by the British Columbia Geological Survey. Near the centre of Property, the Hom showing is described as an occurrence of arsenopyrite, pyrite and chalcopyrite located on Rainbow Mountain, approximately 6 kilometres east-northeast of Homathko Peak. In the main, mineralized zone at the west end of the project lie the Kor, Discovery Creek, and Chopper MINFILEs. Close together in the southern portion of the claim block there are the Ben 37 prospect and the Ben 24 showing and in the southeast is the Stik showing.

The Property is situated in a zone of complex structural geology where transpressional forces have resulted in widespread thrust faulting. Large scale plutonism during the Late Cretaceous to Paleocene related to the nearby Coast Plutonic Complex is demonstrated by the presence of nearby intrusions. Probably related to these intrusions, a mineralized sill of quartz-diorite with extensive veining has been identified in the western part of the Property. Sampling of veins in this unit has returned assay results as high as 581.4 g/t Au (sampled by New Pyramid Gold Mines in 1975).

The prospective tectonic setting of the Homathko Property, presence of structure, clear mineralogical assemblage and mode of occurrence recognized on the Property firmly establish the potential for hosting significant orogenic lode gold mineralization. Deposits of this type present attractive targets due to their relatively high grades and mining camp potential. Examples of this come from the Mother Lode Belt in California which produced over 13 M oz gold, the Bralorne-Bridge River regions of British Columbia just 130 km to the southeast which produced over 4 M oz gold, and the Juneau Gold Belt which produced almost 7 M oz gold.

Despite the prospective setting and demonstrated presence of highly anomalous gold on the Property it remains an early stage project. A total of 26 days has been spent on the Property by various companies since the Discovery Vein was first located by Falconbridge in 1964. Work on the property to this point has been limited to mapping, analysis of aerial photography, sampling and minor hand trenching/pitting. No systematic exploration of the Property has been done and no drilling has been conducted to determine the extent of mineralization below the surface.

The Homathko Property is a highly prospective and very underexplored project with excellent potential for additional high-grade gold mineralization. Additional exploration is recommended, with two work programs recommended at present.

Phase 1:

A first order recommendation for the Homathko Property is an extensive program of systematic, grid-based geochemical surveys and combined prospecting. It is recommended that promising structural features and potential extensions to mineralized units north of Homathko peak identified by the airborne geophysics be prioritized for this program. Where soil development allows, soil sampling on a grid basis should be conducted; grid lines should be spaced no more than 100 m apart in a roughly east-west dimension and sampling stations should be spaced at no more than 25m distance along north-west oriented lines. A timeline and program plan is suggested that will cost approximately $128,800.

Phase 2:

Dependent on the success of Phase 1, a 5-hole, 750 m drill program is recommended to test the subsurface expression and mineralization of the gold-bearing quartz-diorite sill. At least three holes should be spaced at 50 m intervals in and east-west fence south of the Discovery zone and drill towards the north at an incline of 65° to intersect the full extent of the mineralized sill. Additional holes should test any potentially mineralized structures identified by the geophysics. A budget of $247,500 is suggested.

Figure 1 Homathko Property location map.

1 INTRODUCTION

This technical report has been prepared at the request of Homerun Resources Inc. (“Homerun” or the “Company”), a public company listed on the Toronto Stock Exchange (TSX-V Symbol: HMR.H) and based in Vancouver, British Columbia, Canada. In November, 2020, Homerun acquired three mineral tenures in the Cariboo region of British Columbia via the Mineral Titles Online (MTO) system. On December 15, 2020, Homerun announced that it had signed an option agreement on three adjacent claims owned by Transition Metals Corp (“Transition”). An additional 29 mineral tenures were staked during May, June and September of 2021. The combined 35 tenures form the current Homathko Property, an exploration project located in the southwest edge of the Cariboo region of British Columbia. Limited prospecting, mapping and geochemical sampling has been conducted on the Property with promising results, but no drilling or other intensive exploration programs have been undertaken.

In December of 2020, Homerun commissioned Jason McLaughlin (“the author”) to prepare a technical report that summarized historical work completed on the property, reviewed the results of recent geochemical sampling undertaken by the author in November 2020, and made recommendations of further exploration. In February 2021, Homerun asked the author to update the technical report to reflect current conditions, to assess the results of recent geophysical studies, and to make renewed work recommendations. This technical report has been prepared in compliance with the requirements of National Instrument 43-101 and Form 43-101F1.

Jason K. Mclaughlin, P.Geo., wrote all sections of this report unless otherwise noted in the text. In preparing this report, the author has reviewed the geological and geochemical reports, maps and miscellaneous papers listed in the References section of this report. The primary source of information available on the Property is assessment reports filed by previous workers and available from the B.C. Ministry of Energy and Mines Assessment Report Indexing System (ARIS). In particular, the assessment reports detailing work completed by Transition Metals during the 2010 to 2012 field seasons were deemed useful and relevant. Though difficult to verify early results or to make representations regarding their accuracy, the author is satisfied that the information contained in these reports was collected and processed in a professional manner following industry best practices applicable at the time, and that the historical data gives an accurate description of the geology and mineral occurrences on the Property.

The author visited the Homathko Property on November 3rd, 2020. The purpose of the visit was to:

1) examine a known mineral showing and to verify the presence of high-grade gold mineralization on the Property;
2) conduct an examination of the Property towards a determination of the evidence of historical exploration work;
3) assess current access conditions.

A selection of 11 rock samples were collected during the visit and submitted to Bureau Veritas Laboratory in Whitehorse, Yukon Territory for assay on November 20, 2020. No ground-based work has been conducted on the Property since that time..

Units of measure in this report are metric; all monetary figures use Canadian dollars. Distances are reported in millimetres (mm), centimetres (cm), metres (m) and kilometres (km). Elevations are reported in m and it is intended to be assumed measured as a height above mean sea level (AMSL). Weights are reported in grams (g) or kilograms (kg) and in one case of historical sampling, as pounds (lbs) which are equivalent to 453.6 g. Units of area are measured in hectares (ha), of which 1 hectare is 100 m^2, and equivalent to 2.47 acres (ac). Location coordinates are variably reported in Latitude and Longitude as degrees (°) minutes (‘) and seconds (“), and/ or using the Universal Transverse Mercator (UTM) system.

Assay grades of gold are variably presented, depending on the year they were reported, as grams per tonne (g/t) in which a tonne is equal to 1000kg, or as ounces per ton (“opt”). In the historically reported grades, it is assumed, but not guaranteed, that the ounce referred to is equal to 31.103g (troy ounce) and the ton is equal to 2000 lbs (a “short” ton).

Abbreviations used for elements in this report are:

Au: Gold
Ag: Silver
Al: Aluminum
As: Arsenic
B: Boron
Ba: Barium
Be: Beryllium
Bi: Bismuth
Ca: Calcium
Cd: Cadmium
Ce: Cerium
Co: Cobalt
Cr: Chromium
Cs: Cesium
Cu: Copper
Fe: Iron
Ga: Gallium
Ge: Germanium
Hf: Hafnium
Hg: Mercury
In: Indium
K: Potassium
La: Lanthanum
Li: Lithium
Mg: Magnesium
Y: Yttrium
Zr: Zirconium

Mn: Manganese
Mo: Molybdenum
Na: Sodium
Nb: Niobium
Ni: Nickel
P: Phosphorous
Pb: Lead
Pd: Palladium
Pt: Platinum
Rb: Rubidium
Re: Rhenium
S: Sulphur
Sb: Antimony
Sc: Scandium
Se: Selenium
Sn: Tin
Sr: Strontium
Ta: Tantalum
Te: Tellurium
Th: Thorium
Ti: Titanium
Tl: Thallium
U: Uranium
V: Vanadium
W: Tungsten
Zn: Zinc

2 RELIANCE ON OTHER EXPERTS

The author has not relied on the opinion of non-qualified persons concerning commodity pricing, legal, political, environmental or tax matters in the preparation of this report. All opinions expressed in this report are those of the author based on personal observations and a review of historical work done on the Property.

3 PROPERTY DESCRIPTION AND LOCATION

3.1 LOCATION AND DESCRIPTION

The Homathko Property is located in the Cariboo Region of British Columbia, approximately 57 km south of the community of Tatla Lake which lies 222km west of Williams Lake, British Columbia along the Chilcotin-Bella Coola Highway (Figure 2). The project encompasses slightly more than 4458 Ha within the Clinton Mining Division. The approximate centre of the Property, which stretches almost 18 km from east to west along the south side of Homathko River, is at 51° 21’ 00” N Latitude and 124° 28’ 00” W Longitude (UTM 10 399500E 5689100N) on BCGS map sheet 92N038.

3.2 MINERAL CLAIMS

The Homathko Property comprises 35 contiguous mineral claims that are located within the Clinton Mining Division (Table 1). The area covered by these, calculated to be 30,972 hectares, is shown in Figure 3. Three of the claims (#107396 - #107398) were staked in November, 2020, by Mr. Casey Lewis on behalf of Homerun Resources Inc. Three additional claims (#761502, #761522 and #1010863) belong to Transition Metals Corp. with whom Homerun announced an option agreement in December of 2020. The remaining 29 claims were staked online by Mr. Lewis during May, June and September in 2021.

Two claims covering 241.98 Ha and wholly enclosed by the Homathko Property are owned in equal parts by Turnagain Resources Inc. and 1240089 BC Ltd. These claims are not part of the current project. These two mineral claims are underlain by six crown granted mineral leases totaling 116.2 Ha. The leases are currently active (in good standing) and have precedence to mineral rights on this land for as long as they remain so. The author was not able to determine ownership of the mineral leases.

The 35 claims that compose the Homathko Property have not undergone a legal survey. Details regarding these titles, including the claim names, ownership, issue dates and expiry dates is contained in Table 1.

The mineral title details presented in this section were researched at the Mineral Titles Online (MTO) web site at https://maps.gov.bc.ca/ess/hm/mto_min/ and are current as of February 6th, 2022. MTO is managed by the Mineral Titles Branch of the B.C. Ministry of Energy, Mines and Petroleum Resources. The MTO system is an electric claim staking platform and is used to locate and record mineral titles in British Columbia. It is updated on a daily basis.

In British Columbia, the owner of a mineral title acquires the right to the minerals which were available at the time of title acquisition as defined in the Mineral Tenure Act of British Columbia. Surface rights and placer rights are not included though a mineral title conveys the right to use, enter and occupy the surface of the claim or lease for the exploration and development or production of minerals and all operations related to the business of mining.

Table 1 Homathko Property claim details.

Claim Name	Tenure #	Ownership	Size (Ha)	Record Date	Expiry Date
MCDOUGALL	761502	TRANSITION METALS CORP 100%	80.7	29-Apr-10	1-Mar-24
MCDOUGALL	761522	TRANSITION METALS CORP 100%	100.9	29-Apr-10	1-Mar-24
#1	1010863	TRANSITION METALS CORP 100%	20.2	6-Jul-12	1-Mar-24
HOMATHKO 2	1079396	LEWIS, CASEY 100%	2017.7	3-Nov-20	1-Mar-24
HOMATHKO 3	1079397	LEWIS, CASEY 100%	1895.9	3-Nov-20	1-Mar-24
HOMATHKO 4	1079398	LEWIS, CASEY 100%	343.2	3-Nov-20	1-Mar-24
HOMATHKO 5	1082693	LEWIS, CASEY 100%	2018.3	20-May-21	1-Dec-23
HOMATHKO 6	1082695	LEWIS, CASEY 100%	2019.3	20-May-21	1-Dec-23
HOMATHKO 7	1082697	LEWIS, CASEY 100%	1333.9	20-May-21	20-May-22
HOMATHKO 8	1082699	LEWIS, CASEY 100%	484.8	20-May-21	1-Dec-23
HOMATHKO 9	1082700	LEWIS, CASEY 100%	322.7	20-May-21	1-Dec-23
HOMATHKO 10	1082702	LEWIS, CASEY 100%	606.1	20-May-21	20-May-22
HOMATHKO 11	1082704	LEWIS, CASEY 100%	282.3	20-May-21	1-Dec-22
HOMATHKO 12	1083129	LEWIS, CASEY 100%	504.7	20-Jun-21	20-Jun-22
HOMATHKO 13	1083130	LEWIS, CASEY 100%	929.6	20-Jun-21	20-Jun-22
HOMATHKO 14	1084301	LEWIS, CASEY 100%	2018.6	10-Sep-21	10-Sep-22
HOMATHKO 15	1084302	LEWIS, CASEY 100%	908.2	10-Sep-21	10-Sep-22
HOMATHKO 16	1084303	LEWIS, CASEY 100%	222.1	10-Sep-21	10-Sep-22
HOMATHKO 17	1084322	LEWIS, CASEY 100%	1978.3	12-Sep-21	12-Sep-22
HOMATHKO 18	1084324	LEWIS, CASEY 100%	2020.8	12-Sep-21	12-Sep-22
HOMATHKO 19	1084327	LEWIS, CASEY 100%	2019.0	13-Sep-21	13-Sep-22
HOMATHKO 20	1084328	LEWIS, CASEY 100%	1111.9	13-Sep-21	13-Sep-22
HOMATHKO 21	1084329	LEWIS, CASEY 100%	1372.5	13-Sep-21	13-Sep-22
HOMATHKO 22	1084330	LEWIS, CASEY 100%	222.5	13-Sep-21	13-Sep-22
HOMATHKO 23	1084331	LEWIS, CASEY 100%	404.2	13-Sep-21	13-Sep-22
HOMATHKO 24	1084332	LEWIS, CASEY 100%	443.6	13-Sep-21	13-Sep-22
HOMATHKO 25	1084333	LEWIS, CASEY 100%	60.6	13-Sep-21	13-Sep-22
HOMATHKO 26	1084334	LEWIS, CASEY 100%	242.6	13-Sep-21	13-Sep-22
HOMATHKO 27	1084335	LEWIS, CASEY 100%	121.2	13-Sep-21	13-Sep-22
HOMATHKO 28	1084357	LEWIS, CASEY 100%	202.2	13-Sep-21	13-Sep-22
HOMATHKO 29	1084358	LEWIS, CASEY 100%	121.2	13-Sep-21	13-Sep-22
HOMATHKO 30	1084492	LEWIS, CASEY 100%	181.5	24-Sep-21	24-Sep-22
HOMATHKO 31	1084493	LEWIS, CASEY 100%	909.3	24-Sep-21	24-Sep-22
HOMATHKO 32	1084494	LEWIS, CASEY 100%	1857.3	24-Sep-21	24-Sep-22
HOMATHKO 33	1084496	LEWIS, CASEY 100%	1593.5	24-Sep-21	24-Sep-22

Mineral titles are valid for one year and the anniversary date is the annual occurrence of the date of recording (the “Issue Date”). A mineral title has a set expiry date (the “Good To Date”), and in order to maintain the title beyond that expiry date, the recorded holder (or an agent) must, on or before the expiry date, register either exploration and development work that was performed on the title, or a payment of cash in lieu of exploration and development. Failure to maintain a title results in automatic forfeiture at midnight on the expiry date.

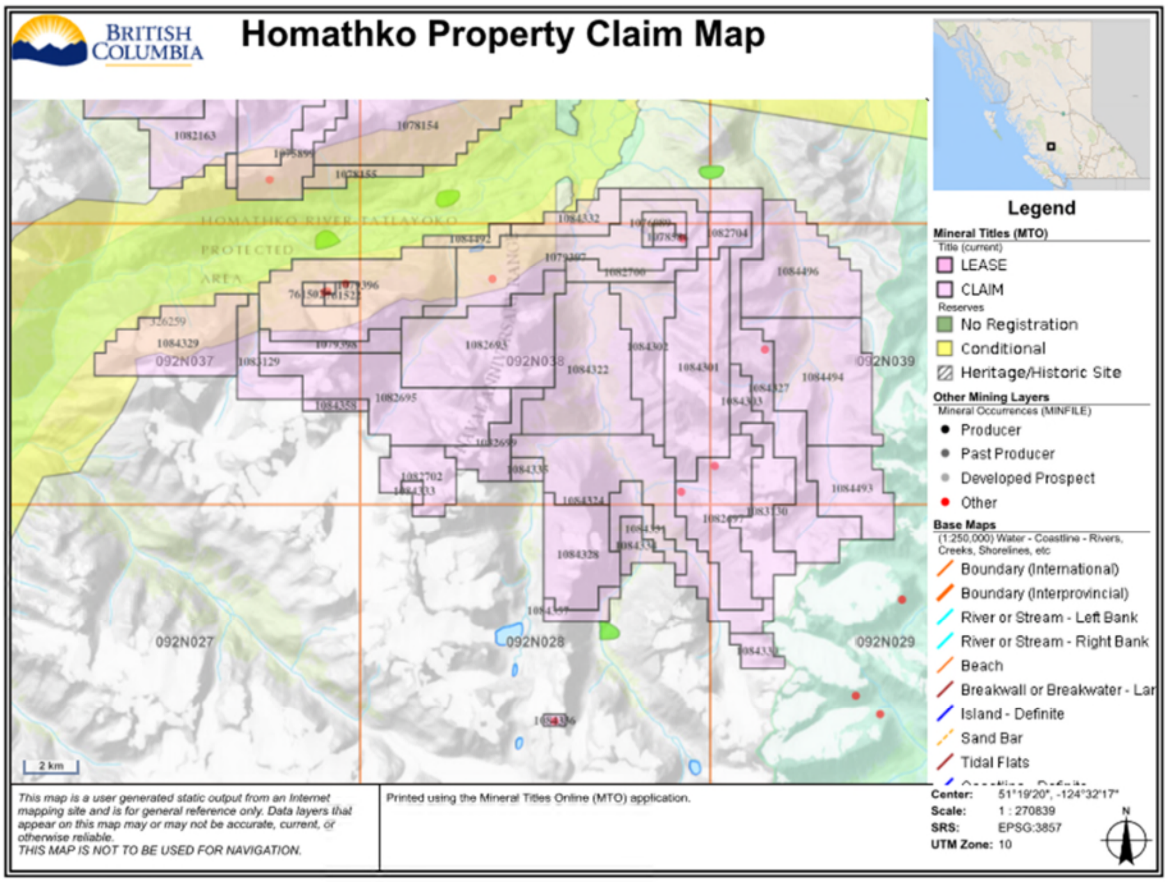

Figure 2 Homathko Property Claim Map. The property comprises 35 contiguous claims pictured at the centre of this map. Two claims enclosed by the Property at the north end, claim numbers 1076089 and 1078584, are not part of the current project. Non-contiguous claims at the north and the south of this map are not part of the Homathko Property. The Homathko River - Tatlayoko Protected Area. This map was created using the Mineral Titles Online application.

When exploration and development work or a payment instead of work is registered, the claim owner may advance the claim forward to a new date. With a payment instead of work the minimum requirement is 6 months, and the new date cannot exceed one year from the current year of expiry.

All recorded holders of a claim must hold a valid FMC when either work or a payment is registered on the claim.

The following are the of work or a "cash-in-lieu of work" payment required to maintain a claim for one year:

Mineral Claim - Work Requirement:

- $5 per hectare for anniversary years 1 and 2;
- $10 per hectare for anniversary years 3 and 4;
- $15 per hectare for anniversary years 5 and 6; and
- $20 per hectare for subsequent anniversary years

Mineral Claim - Cash-in-lieu of work:

- $10 per hectare for anniversary years 1 and 2;
- $20 per hectare for anniversary years 3 and 4;
- $30 per hectare for anniversary years 5 and 6; and
- $40 per hectare for subsequent anniversary years

3.3 Option Agreement, Royalties and Encumbrances

The following information is taken directly from the News Release issued by Homerun Resources Inc. and dated December 15, 2020 in which the company announced it had optioned the Homathko Project:

Under the terms of the option agreement, the Company can earn a 100% interest in the claims by making such payments as necessary to keep the Property in good standing and by completing the following:

a) Making the following cash payments and issuing the following common shares to Transition Metals Corp (the “Optionor”):
   - a $10,000 cash payment on or before December 31, 2020;
   - 700,000 common shares upon TSX Venture Exchange acceptance of the Option Agreement and no later than June 30, 2021;
   - $40,000 in common shares on a 30-Day VWAP on or before the 1st anniversary of the Option Agreement;
   - $50,000 in common shares on a 30-Day VWAP on or before the 2nd anniversary of the Option Agreement; and
   - $50,000 in common shares on a 30-Day VWAP on or before the 3rd anniversary of this Option Agreement.

b) Completing the following work expenditures on the Property:
   - cumulative $100,000 by June 30, 2021; and
   - cumulative $550,000 by December 31, 2022.

The Optionor, Transition Metals Corp., will retain a 1.5% Net Smelter Royalty on all mineral production, 0.75% of which can be purchased by the Company for $1,000,000. The Property is also subject to a pre-existing 1.0% royalty in favour of a third party.

3.4 ENVIRONMENTAL LIABILITIES

To date there has been no mining or physical disturbances related to mineral exploration on the Homathko Property. The author is unaware of any environmental liabilities that would have an impact on future exploration of the Property.

3.5 PERMIT REQUIREMENTS

At present, no permits are in place for exploration on the Homathko Property. Exploration activities that incur no significant ground disturbance, such as prospecting, soil sampling surveys and airborne surveys do not require a permit.

A permit is required for exploration activities on the property which involve mechanical disturbance of the land. Prior to initiating any physical work such as drilling, trenching, camp construction, upgrading or construction of access and geophysical surveys using live electrodes (IP) on a mineral property a permit application must be filed with and approved by the Ministry of Energy and Mines. The application is called a "Notice of Work" (NoW) and is regulated by the Mines Act. Applications can be completed online at the Natural Resource Online Services ("NROS") at https://portal.nrs.gov.bc.ca/web/client/home. Associated authorizations often required for these exploration activities, such as short-term water use approvals and occupant licence to cut timber (OLTC), can be bundled into a single application. A reclamation security may be required, based on a risk assessment of the proposed work. The filing of the Notice of Work initiates engagement and consultation with all other stakeholders including First Nations.

Larger projects which expect to continue beyond a single season can also apply for a "Multi-Year Area-based Permit" (MYAB) which typically authorize exploration activities for up to five years within identified activity area(s) underlain by the mineral tenures of the project. MYAB permits allow the flexibility to execute exploration programs over the entire area and through the life cycle of the authorization as field results and market conditions dictate. MYAB permit applications are accepted online at FrontCounterBC at http://www.frontcounterbc.gov.bc.ca/ and issued at the discretion of the Chief Permitting Officer (and delegates). Continued use of the MYAB requires a Work Program Annual Update outlines planned activities for the coming year and an Annual Summary of Exploration Activities (ASEA) that outlines the activities conducted over the previous year.

The MYAB application includes the requirement of an "Archaeological Chance Find Procedure" (CFP), which must be prepared, tailored and implemented for the particular work program as well as a "Mine Emergency Response Plan" which must be provided to the mining inspector for approval.

The on-site project manager of any exploration program will require a Mine Supervisor Certification from the Ministry of Energy, Mines and Petroleum Resources, Government of British Columbia.

3.6 Reporting Requirements

Work being completed under a NOW or MYAB requires that written notification that must be provided to the regional Inspector of Mines no less than 10 days prior to commencing an exploration program, and no less than 7 days prior to completion of exploration activities each season. If exploration activities take place during several separate time periods within a calendar year, the above notification must be provided for each exploration program.

An ASEA and a MYAB Work Program Annual Update must be submitted annually for MYAB permits. These documents are to be submitted concurrently no later than March 31. If additional work activities are planned to commence in the new calendar year prior to the annual reporting due date of March 31, the annual reporting must be submitted 30 days prior to the proposed commencement of new exploration activities in the new calendar year.

3.7 Stakeholder Referral and First Nations Consultation

The Ministry conducts an initial assessment status (IAS) report of all NOW applications. The IAS report is a search of government databases to identify other land uses, including other agency authorizations, identified wildlife habitat, and/or identified First Nations interests, that are located in or proximal to the area(s) of proposed exploration activities. The IAS report provides key information to the inspector for determination of potential impacts of the proposed exploration activities and potential mitigation.

The IAS is also used in agency referrals and First Nations consultation. The provincial government is legally obligated to consult with Indigenous Nations on land and resource decisions that could impact Indigenous Interests. The Homathko Property is situated within a First Nations Consultive Area which includes the Tsilhqot'in First Nation, the Xwemalhkwu (Homalco) First Nation and the Ulkatcho First Nation. No communities or settlements are identified on the property.

The northern boundary of the claim group roughly follows the Homathko River in the western half of the Property. The Homathko River – Tatlayoko Protected Area, a nature preserve administrated by BC Parks covers the river and some distance of land on either side of it (Figure 3). The Property touches the nature reserve and to a very small extent is underlain by it. Approximately 3.1 Ha, less than 0.2% of the project area, is underlain by the park.

Additionally, major portions of the property coincide the Chilko District Hydro Project mineral reserve. This feature is one of many mineral reserves established throughout British Columbia in 1960 by the BC Power Commission along rivers throughout the province that were deemed prospective for the creation of hydro-electric power. The reserve prohibits anyone conducting exploration or mining activities if they interfere with, or obstruct, the development of hydro-electric power. With the construction of the Site C hydroelectric power generating station and the establishment of the Homathko River – Tatlayoko Protected Area, the potential development of hydroelectric power at this location is effectively non-existent.

3.8 OTHER SIGNIFICANT ACTORS AND RISKS

To the best of the author's knowledge, there are no other significant factors and risks pertaining to the Homathko Property.

4 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

4.1 ACCESSIBILITY

The eastern portion of the property is reported to be seasonally accessible with all-terrain vehicles using logging access roads that extend south from Tatla Lake, run along the eastern edge of Tatlayoko Lake and for several km past its southern extent. This road is visible on Google Earth in satellite imagery, but the author was not able to determine its viability. Also mentioned in various reports are trails, suitable for horse or foot, extending up to 13 km across the property from this road. These also were not witnessed or confirmed by the author but mentioned by multiple previous operators.

Much of the property is only accessible via helicopter. White Saddle Helicopter Service is based at the west end of Bluff Lake approximately 40 km north of the property and offers year-round service. The White Saddle base lies 23 km from Tatla Lake via the Bluff Lake Road. Also, in the north of the Property is a body of water approximately 400 m in length which might be suitable for use by floatplane.

4.1 PHYSIOGRAPHY

The project area is situated at the eastern edge of the southern Coastal Mountains where they border the Chilcotin Plateau. The Property includes rugged terrain and extreme variations in elevation typical of the Coastal Mountains. The lowest elevations on the property are just under 900m where the boundary of the Property nears the Homathko River. At the west end, the property encompasses the northern edge of the Homathko Icefield. This part of the project area is dominated by mountainous terrain with sharp ridges, glaciers, and bare, talus-covered slopes. The highest point on the Project is Homathko Peak at 3017m.

The Property is elongate in an east-west manner and borders the southern edge of the Homathko River Valley where the river flows west from a point near Tatlayoko Lake. Along the southern edge of the claims the Property is dominantly sharp mountainous ridges separated by glaciated valleys. At the north edge of the Property, steep barren ridges slope northwards into the Homathko Valley becoming forested slopes of more moderate relief. Near the south end of Tatlayoko Lake, the Homathko river bends to the south and is crossed by the eastern extent of the claim group into a broad, forested valley. The claims cross two forested, north-south valleys with flowing water, the Stonsayako River and the eastern branch of the Homathko river. Several bodies of standing water are located near the centre of the claims, the largest of which is approximately 400 m in length.

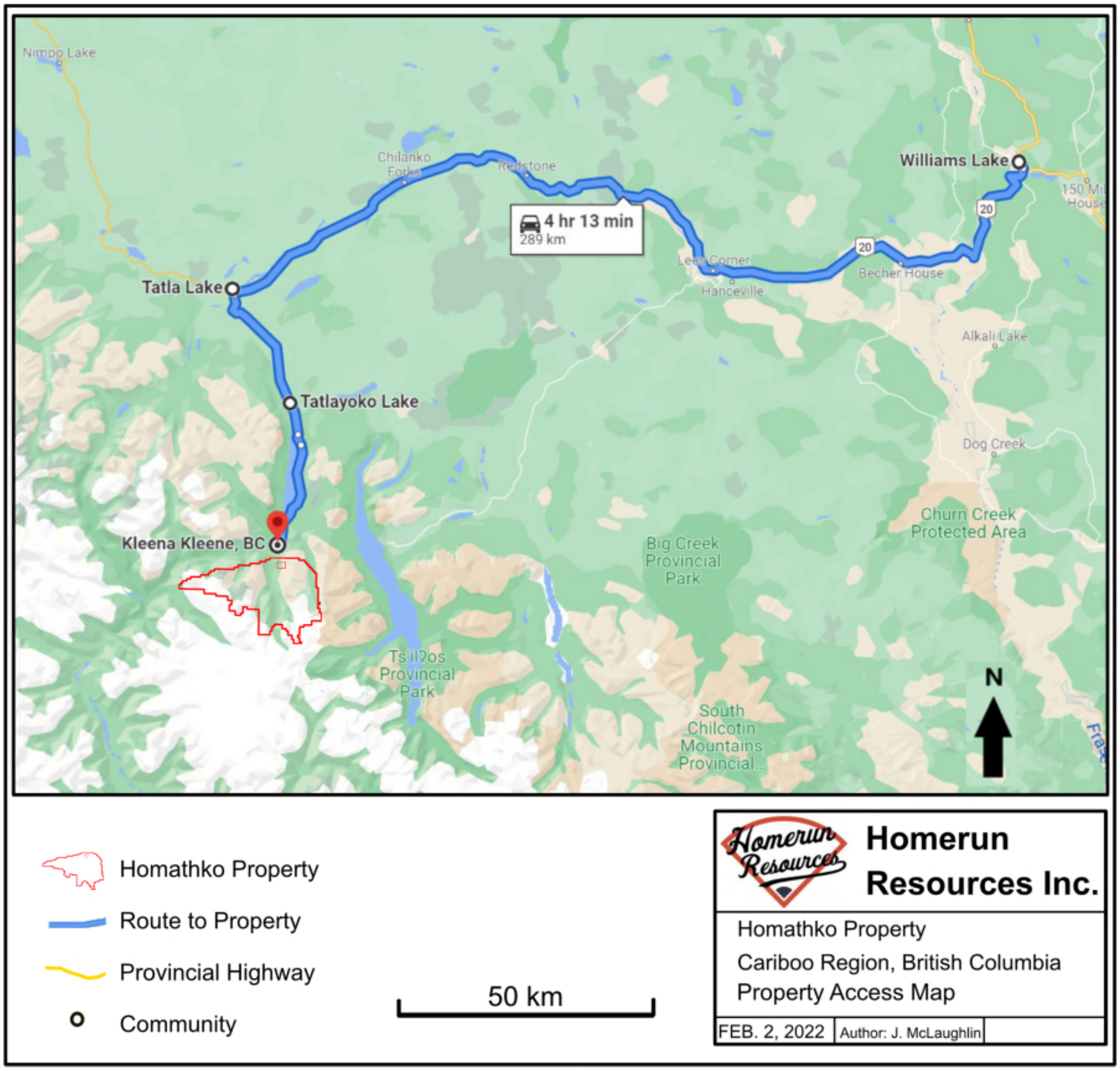

Figure 3 Property location and access map; modified from Google Maps.

4.2 Climate and Vegetation

The Homathko Property occurs at the eastern edge of the coastal mountains. The region experiences a warm and dry summer of relatively short duration and long winter which is typically cold and dry. Temperatures are moderated by proximity to the Pacific Ocean and humidity attenuated by the 'rain shadow' effect of the large Coastal Mountains to the east.

Within the project area, temperatures and vegetation are greatly influenced by elevation. At the highest points on the property are glaciers and sheets of ice belonging to the Homathko Icefield. Very limited vegetation, restricted to minor lichen, is found in these areas. Alpine zones in the project area are mapped as Boreal Altai Fescue Alpine (BAFA) Zone which is commonly found on the north and the lee side of the Coast Mountains. A thin windblown snowpack is typical of the Boreal Altai Fescue Alpine and vegetation is primarily dwarf willows, grasses, sedges and lichens.

Downslope from alpine zones are forests consisting of Engelmann spruce and subalpine firs. These are long-lived seral stages due to slow tree growth in this very cold and dry climate. Spruce and subalpine fir are common and the undergrowth vegetation is typically dominated by dwarf shrubs, mosses, and lichens. Common shrub or semi-shrub species are black crowberry, grouseberry, and mountain-heather.

At the lowest elevations covered by the claim group are moderately dense forests comprising Douglas fir, subalpine fir, white spruce and minor lodgepole pine.

4.3 Local Resources

The closest city to the Project is Williams Lake approximately 200 km to the northeast. With a population over 10,000, it is a source of skilled labour and full services. Smaller communities closer to the Property include Alexis Creek (population ~70-80) and Anahim Lake (population 1500). Limited amenities, such as food and lodging, are available at Bluff Lake, 40 km north of the Property, where White Saddle Helicopter is based.

4.4 Infrastructure

No significant infrastructure exists on the Property at this time. Flowing water is abundant and several small bodies of water found near the centre of the property. One such waterbody at the centre of the Property measures over 400 m in length and might be suitable for use by floatplane. The Chilcotin-Bella Coola Highway is 55 km north of the Property and Bute Inlet is approximately 50 km southwest.

5 HISTORY

Early accounts of work in the Homathko area are captured in the 1910 Annual Report of the Minister of Mines when small-scale mining was being conducted on the properties at the east end of the Homathko Property (currently held in equal parts by Turnagain Resources Inc. and 1240089 BC Ltd.). Six claims were staked in 1907 to cover mineralized veins discovered by I.T. Morris and Mr. A. Sheppard which led to several years of underground work on the 'Morris Mine' by the Tatlayoko Lake Gold Mining Co. In his 1910 report, provincial mineralogist W. F. Robertson described the district in general as "so promising that, in my opinion, it is highly desirable that a trail be put through from the Coast (Bute Inlet)". Work at the Morris Mine ceased in 1912. Bridge Island Gold Ltd. Assumed control of the claims and did additional development between 1921 and 1934 though no significant production was ever achieved.

In the western part of the Property, a reconnaissance team led by James McDougall of Falconbridge landed on the north slope of Mt Homathko in 1964 to investigate an exposure of rusty quartz veining located at the base on a retreating ice field. Sampling of the veins exposed in the C zone yielded from 0.3 to 4.8 g/t Au and a 30-centimetre wide vein from the B zone hosting massive arsenopyrite and pyrite assayed 223.7 g/t Au and 160.7 g/t Ag (McDougall, 1965). On the very promising results of these grab samples, a party returned to stake the property the following summer. During an 8-day program of deep trenching done by ground sluicing and blasting, a broad zone of auriferous quartz/carbonate veins was identified. Sampling of the Discovery vein (A zone) yielded up to 383.0 g/t Au and 194.9 g/t Ag over 15 centimetres. The average of 24 samples in the area from nine or ten veins generally 30 to 35 cm wide yielded approximately 17.1 g/t au (McDougall, 1966). A drill program to test the Discovery Creek Showing was recommended, though it was noted that the proximity of the showing to the ice field, the remote location, short field season and the price of gold were deterrents to Falconbridge conducting additional work on the prospect at the time. Workers observed that the ice field was retreating and could reveal additional veining up section in the future. In 1966 McDougall recommended that Falconbridge return to the Property when the price of gold had improved and the ice field had retreated.

At the south end of the property where MinFile No 092N 004 is located, Pacific Petroleums Ltd. explored copper and molybdenum mineralization between June 8 and August 26, 1970. Two geologists and two assistants spent a total aggregate of 56 days prospecting and mapping the area. Subsequently, an additional 17 days involving the two assistants and a single geologist was used to map portions of the property in detail utilizing a picketed grid to create a 1:2400 map. According to the associated assessment report, coarse-grained chalcopyrite and molybdenite occur in fracture-controlled, pegmatitic quartz veins in granite and granodiorite. The work identified a deposit covering an area of approximately 120m x 900m estimated to contain 0.1% copper and 0.002% molybdenum. Geologists W.D. Cowan and M.J. Linn recommended that certain claims be retained and additional work be done to test the possibility of an increase in grade with depth. No additional work is recorded.

In 1975, Gerhard Von Rosen, a professional engineer, was commissioned to inspect the property and assess the showings. Assays taken from near the trenches exposed by Falconbridge were confirmed to contain gold and the property was staked as the “11 Ounce Mineral Claims”. In 1975, samples from the '11 ounce' vein yielded up to 581.4 g/t Au over 20 centimetres and a 0.9-metre sample from the Contact vein yielded 21.9 g/t Au (Property MINFILE 092N 049).

No further work is recorded on the claims until 1983 when the property was acquired by R. R. Dion. Upon Mr. Dion’s instructions, a fracture density analysis was undertaken using vertical air photographs. An assessment report presenting the results of fracture evaluations and counts as well as maps of relative density isogradients was submitted on Mr. Dion’s behalf by Gerhard von Rosen in 1983 (AR11770). No physical work was recorded on the property at this time.

In 1988 the Property was staked by prospector A. Harmon and subsequently transferred to Golden Rule Resources Ltd. In July of 1989, Golden Rule geologist R.D Cruikshank and Harmon performed a property inspection and reconnaissance geological mapping program on the property. Cruikshank located Falconbridge’s discovery showing and took 30 rock samples. The highest value of gold recorded was 64.5 g/t, from a composite of grab samples taken over 10 metres from a sulphide-bearing quartz vein 10 to 80 centimetres thick (AR18977).

The property was staked by Transition Metals Corp. ("Transition") in 2010 and the company spent six days conducting helicopter-assisted property-wide prospecting and geological mapping in July of that year. The company returned in 2011 and 2012 to undertake additional prospecting, mapping and sampling and subsequently completed a satellite survey program. The sampling and prospecting work identified areas which returned elevated gold values and the geological mapping of the property successfully outlined the stratigraphy of the property. Two rocks sampled in 2010 assayed 87.5 and 15.1 g/t Au with 45.7 and 1.4 g/t Ag, respectively (AR32197). Transition returned the following year to conduct a program of detailed mapping and prospecting during which they identified rocks related to mineralization and alteration along a strike length extending 2 km (AR 33110). During the program one rock sample assayed 25.8 g/t Ag and 0.99% copper. In 2015 Transition conducted a lineament and hyperspectral satellite imagery study was completed using ASTER data and imagery from Google Earth Pro.

Transition optioned the property to Shamrock Resources Ltd ("Shamrock") who conducted two days of prospecting and sampling which yielded two samples exceeding 11.4 g/t Au. Additional exploration work was recommended (Clark, 2017).

In November, 2020, a representative of Homerun Resources Inc. and the author conducted a due diligence site visit. Helicopter reconnaissance of the property and a ground-based examination of the discovery zone were conducted. Of eleven rock samples collected and analyzed, one significant assay measured 57.9 g/t Au and two others exceeded 1 g/t Au.

6 GEOLOGICAL SETTING AND MINERALIZATION

6.1 REGIONAL GEOLOGY

The Coast Belt forms the core of an 1800 km mountain belt on the western edge of North America, one of the largest Mesozoic and Tertiary granitoid and metamorphic complexes anywhere (Woodsworth et. al., 2000). The Property lies at the eastern margin of the Coast Belt where it abuts and intrudes Mesozoic rocks at the southern extent of the Stikine Terrane, the largest terrane of the Intermontane Belt (Figure 4).

The southern Coast Mountains of British Columbia are characterized by voluminous plutonic and gneissic rocks of mainly Middle Jurassic to Eocene age as well as metamorphic rocks, folds and thrust and reverse faults (Bustin et. al., 2013). The Property lies at the northeast margin of the Coast Plutonic Complex (CPL) where younger plutonic rocks are in contact with older sedimentary and volcanic rocks in a series of late Cretaceous east-vergent thrust faults that deform much of the eastern margin of the Coastal Belt.

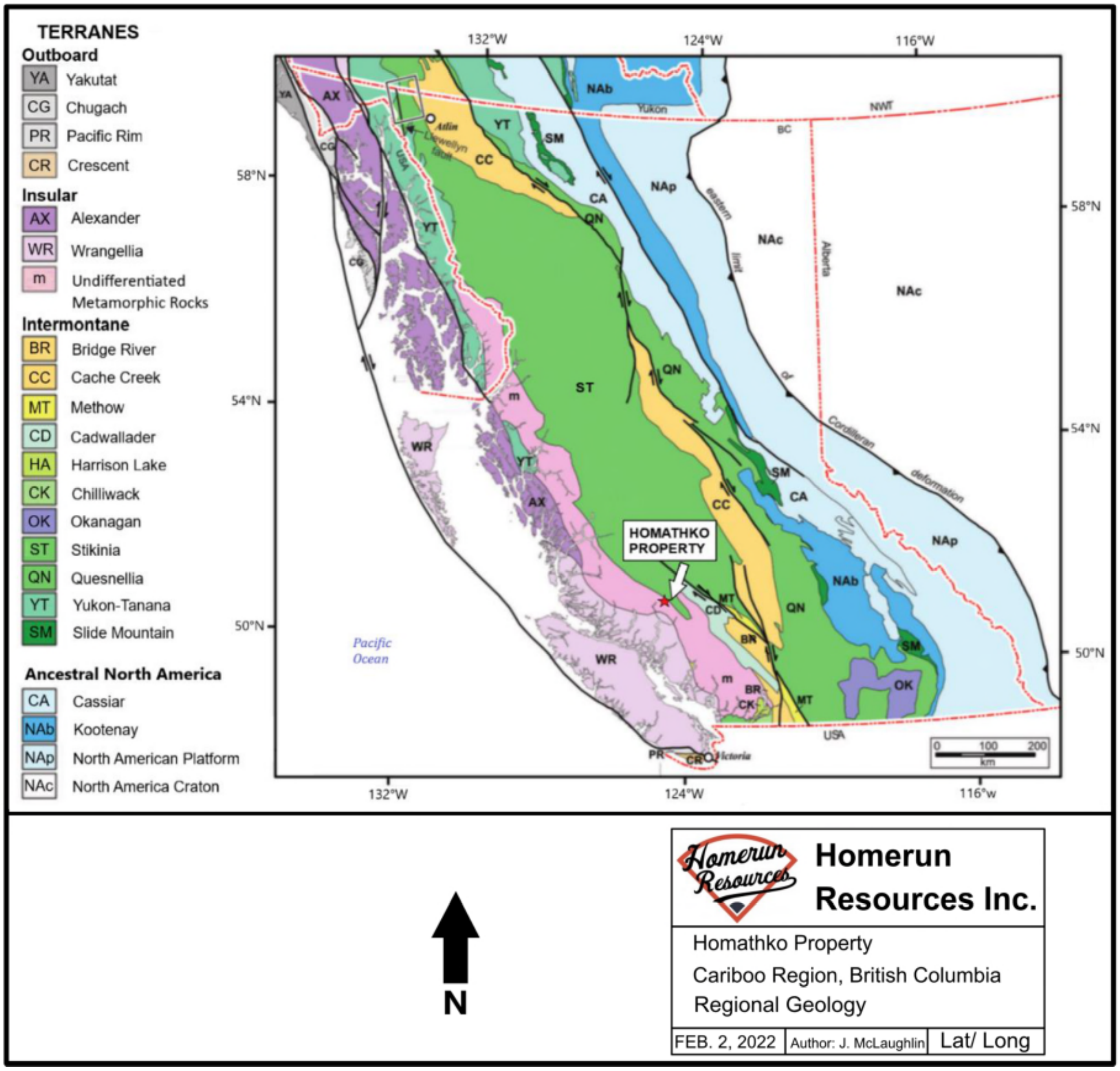

Figure 4 Location of the Homathko Property at the eastern margin of the coastal belt; modified from Wheeler et. al., 1991.

Large-scale thrusts at the eastern margins of this belt were recognized in the region by Tipper (1969) who mapped Upper Triassic volcanic units and their metamorphic equivalents over Lower Cretaceous clastic rocks east of Mt. Waddington (45 km west of the Homathko Project). Later work by Rusmore and Woodsworth (1991) showed this is a not a single faulted contact, but a complex, northwest-striking thrust belt, more than 35 km in width, which they termed the eastern Waddington thrust belt. The Late Cretaceous eastern Waddington thrust belt displaced Triassic rocks of the intermontane superterrane, Early Cretaceous volcanic and clastic rocks, and volcanic and plutonic rocks of the active arc to the northeast. The thrust belt was subsequently intruded by post-kinematic plutons in late Cretaceous and early Tertiary time (68 Ma and 58 Ma).

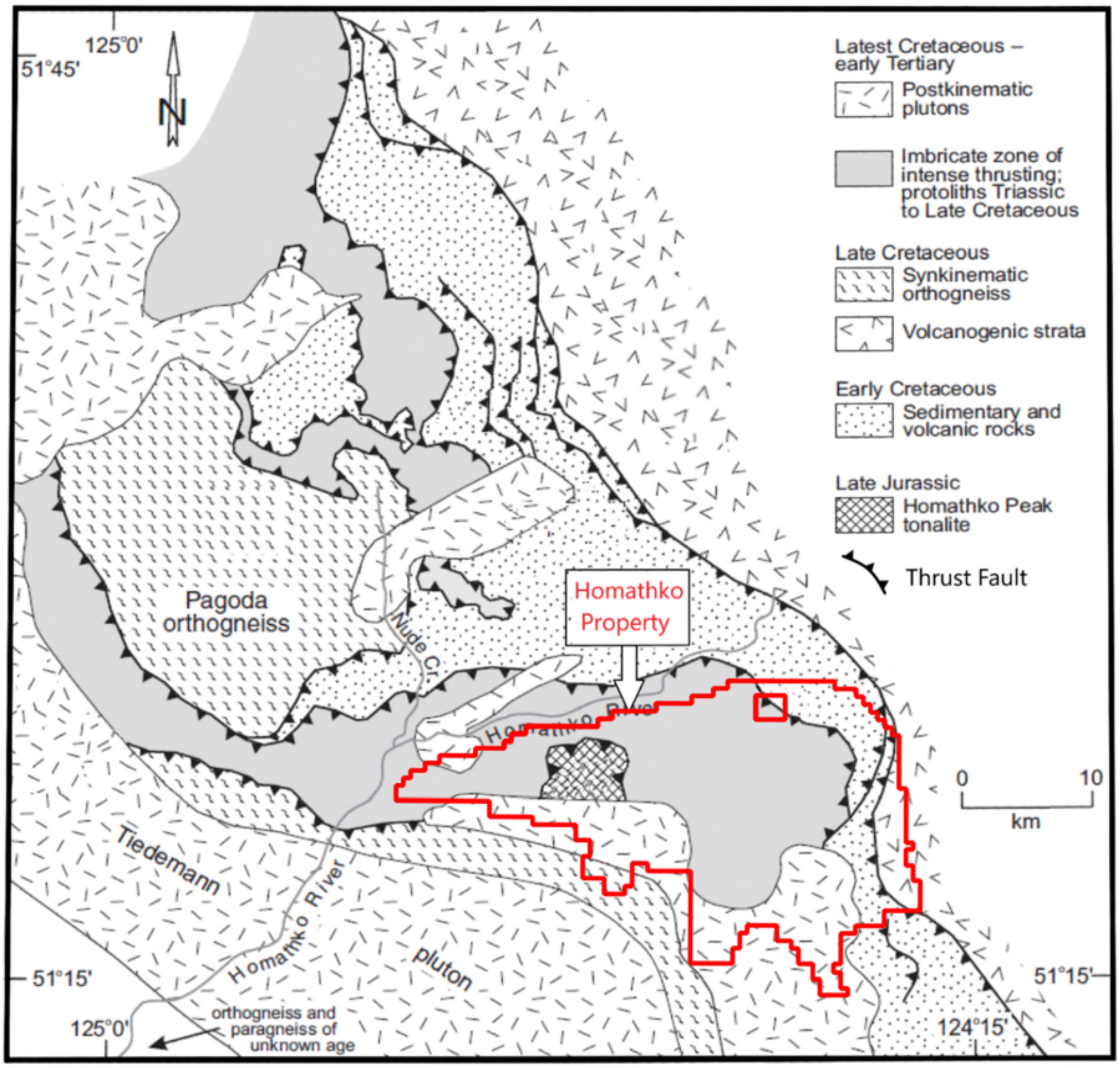

Figure 5 Position of the Homathko Property within a generalized map of the eastern Waddington thrust belt; modified from Woodsworth et. al., 2000.

In the region of the Homathko Property, faulting has resulted in a imbricated zone of structurally interleaved slices of Upper Triassic to Late Cretaceous units (Figure 5) which includes:

- Cretaceous aged amphibolite-facies schist and gneiss of sedimentary and volcanic protoliths;
- Cretaceous-aged gneiss and magmatic rocks of sedimentary and volcanic protoliths;
- Lower Cretaceous sandstones, siltstones and minor conglomerates of the Cloud Drifter Formation;

- Upper Jurassic to Lower Cretaceous volcanic breccias, tuffs, rare flows and minor siltstones and shales of the Ottarasko Formation;
- Late Jurassic Homathko Peak Tonalite.
- Upper Triassic sandstones, shales, limestones and various volcanic rocks.

To the south and west of the Property, the region is dominated by the Tiedemann Pluton, a large, northwesterly-trending Cretaceous-aged body of granite to granodiorite which measures roughly 100 km long and 8 to 20 km wide.

At the eastern extent of the Property lie Early Cretaceous sedimentary and volcanic rocks of the Cloud Drifter Formation. Approximately 5 km beyond this to the east, the Tchaikazan Fault separates the aforementioned units from an extensive package of Late Cretaceous volcanogenic strata. The Yalakom Fault marks the definitive boundary between the Coastal Belt and the Intermontane Belt approximately 30 km to the east of the Homathko Property.

6.2 PROPERTY GEOLOGY

Roddick and Tipper, working for the Geological Survey of Canada (GSC), produced a 1:125,000 map of the area in 1985. This map was expanded upon by Rusmore and Woodsworth, also working for the GSC, who produced a 1:50,000 map of the area in 1992. Limited mapping and prospecting were conducted in 1989 by Golden Rule Resources. The most recent detailed geological examination and mapping undertaken on the Homathko Property was completed by Transition Metals from 2010 to 2012. Much of the following description is derived from these sources. In particular, maps prepared by Transition Metals for the western part of the property were used as a basis for the maps presented in this report. Interpretation and mapping of the eastern part of the Homathko Property relied on information supplied at Mapplace2, the BCGS database-driven geospatial web service which follows from the work of Rusmore and Woodsworth. Where discrepancies exist in the previous work, the mapping done by Transition Metals north of Homathko Peak has been accepted as the most detailed. Outside of this main zone the maps created by the GSC have been viewed with the most authority.

The Homathko Property lies within the eastern Waddington thrust belt, a geologically complex melange of units comprising predominantly Late Triassic to Cretaceous sedimentary, volcanic, and metamorphic rocks. Units within the belt are typically in faulted contact with thrust faults dipping consistently to the south and west.

At its western extent, the Property is dominated by an intrusive body of tonalite and quartz diorite which outcrops as the rugged Homathko Mountain. To the north, the Homathko Tonalite is in faulted contact with mafic a series of Upper Jurassic to Cretaceous units including massive to pillowed mafic volcanic rocks, pyritic mudstones, graphitic argillites, siltstones, and metamorphic volcanic and sedimentary rocks (Figure 6). Units display a consistent east-west strike, contacts are interpreted to thrust faults dipping moderately to the south.

A quartz diorite to granite sill outcrops in this package North of Homathko mountain. Most of the mineralization identified on the property occurs within, or in close proximity to, this sill.

The unit is strongly overprinted by quartz carbonate (ankerite) veining which constitutes from 5 to 50% of the unit overall. Some degree of differentiation is displayed and the upper (south) part of the sill becomes more felsic. The upper, felsic portion of the unit is strongly and pervasively altered, comprising quartz, ankerite, sericite and fine, disseminated pyrite. This unit is bounded on both sides by mafic volcanics. At the sheared contacts, workers for Transition Metals report discontinuous quartz carbonate veinlets oriented in the plane of shearing up to 3m in width and traceable along strike for up to 30 m. Consistent with other units in the area, this body strikes east and dips moderately to the south. Mapping in 2012 extended the strike length of this unit to 2 km with elevated gold values detected across 1.5km of this exposed strike length (Collins, 2012).

Much of the property, in particular the central and eastern portions, is mapped as an undifferentiated 'Imbricate Zone'. Thrusting in this zone has resulted in a complicated interleaving of Upper Triassic volcanic units comprising mainly andesitic pyroclastics and flows and sedimentary units comprising mainly shale, sandstone, and conglomerate. Thrusts on the property typically strike east and dip south; the strata within them likewise strike east-northeast and dip moderately southeast.

At the very east of the property lie Lower Cretaceous volcanic and sedimentary rocks of the Cloud Drifter Formation consisting primarily of sandstones, stiltstones and conglomerates.

Geology of the Homathko Property is summarized by Figure 6. Lithological descriptions follow.

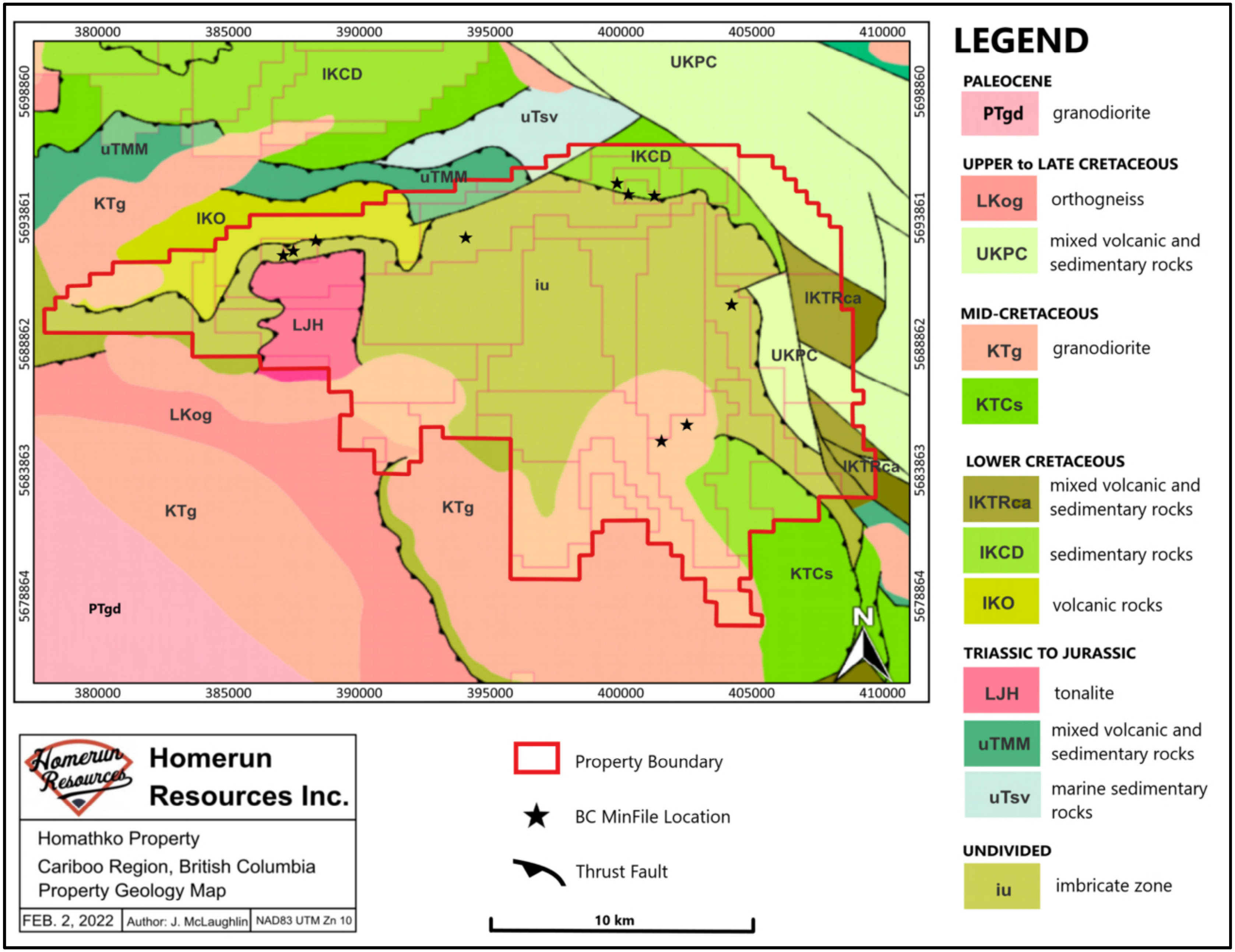

Figure 6 Property geology. Lithological descriptions follow.

6.2.1 *Lithological Descriptions*

<u>**Paleocene**</u>

Tiedemann Pluton PTgd - Granodiorite, tonalite, lesser quartz diorite

<u>**Late to Upper Cretaceous**</u>

Quartz Porphyry Sill – this unit consists of a 20 to 60m thick horizon of quartz feldspar porphyry emplaced within a unit of Late Jurassic mafic volcanics (Figure 6). The unit is equigranular throughout but shows some degree of differentiation and increases in grain size from about 1 - 2 mm in the north to 2 - 3 mm at the southern contact. Compositionally the unit is more felsic in the north consisting of approximately 15% biotite and hornblende, 20% quartz and 65% feldspar (primarily plagioclase) (Cruickshank, 1989). The unit is strongly overprinted by quartz carbonate (ankerite) veining which constitutes from 5 to 50% of the unit overall. Limonitic weathering of the ankerite causes a distinctive buff-orange alteration of the upper (southern) parts of this unit. The alteration zone strikes east-northeast with a southerly dip of ~50° and is 15 to 30m thick. The orientation of veining within the sill appears erratic, however near the contacts with mafic volcanic rocks, the unit becomes strongly sheared and veining is observed rotated into the plane of shearing (Collins, 2012). The rock is pervasively sericitized and silicified hosting trace amounts of fine disseminated pyrite.

This unit appears to pinch and swell along a structure paralleling the strike of the unit and has been traced for a distance of approximately 2 km with elevated gold values along at least 1.5 km (Collins, 2012).

LKog - Biotite-hornblende tonalitic orthogneiss

Powell Creek Formation UKPC - Andesitic volcanic breccia, lapilli tuff and ash tuff; mafic to intermediate volcanic flows; volcanic sandstone and conglomerate; local siltstsone and shale.

<u>**Mid Cretaceous**</u>

KTg – Granodioritic Intrusive Rocks; tonalite, quartz diorite, granodiorites related to the large, northwesterly trending Tiedeman Pluton that marks the western limit of structures recognized as part of the Waddington thrust belt; biotitic, unfoliated to weakly foliated and generally lacking secondary alteration.

KTCs – undivided lower to upper Cretaceous rocks of the Taylor Creek Group; sandstone, quartz sandstone, chert pebble conglomerate, argillite, siltstone; rare felsic tuff.

Lower Cretaceous

Tchaikazan River Succession lKTRca - andesitic to basaltic flows and breccias; lapilli tuff, conglomerate, volcaniclastic sandstone, siltstone turbidites, shale, fine-grained sandstone.

Cloud Drifter Formation lKCD – sandstone, siltstone, minor conglomerate; sandstone commonly contains detrital hornblende; conglomerate clasts dominantly felsic and intermediate volcanic rocks.

Ottarasko Formation lKO – green volcanic breccia and tuff, rare flows, minor siltstone and shale; volcanic rocks are dacite and andesite with subordinate but locally abundant basalt and rhyolite.

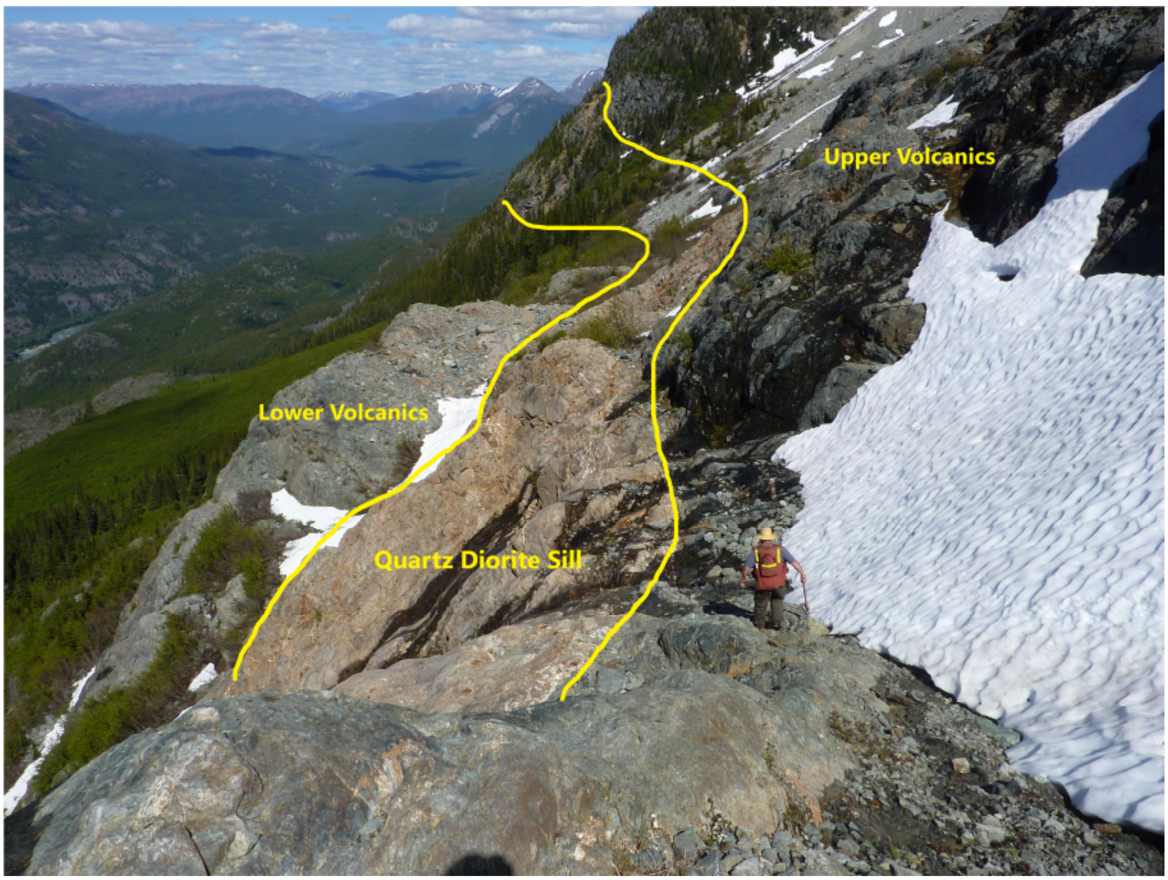

Figure 7 View of the quartz diorite sill looking to the east; modified from Collins, 2012.

Late Jurassic

Homathko Tonalite LJH – tonalite and quartz diorite, metamorphosed to greenschist facies; unfoliated to weakly foliated; contains numerous metamorphosed mafic dykes. This unit was dated at 153.4 ±0.3 Ma (Woodsworth et. al., 2000).

Mount Moor Formation uTMM - Mafic to intermediate volcanic breccia, conglomerate, flows and sills; minor sandstone, argillite, siltstone, and limestone.

uTsv – Marine sedimentary and volcanic rocks; primarily maroon and green tuffaceous shale and lapilli tuff

<u>Undifferentiated</u>

Imbricate Zone – undivided, structurally interleaved slices of all units from Lower Cretaceous and older except the Homathko Tonalite. This unit includes:

- Cretaceous aged amphibolite-facies schist and gneiss of sedimentary and volcanic protoliths;
- Cretaceous-aged gneiss and magmatic rocks of sedimentary and volcanic protoliths;
- Lower Cretaceous sandstones, siltstones and minor conglomerates of the Cloud Drifter Formation;
- Upper Jurassic to Lower Cretaceous volcanic breccias, tuffs, rare flows and minor siltstones and shales of the Ottarasko Formation;
- Late Jurassic Homathko Peak Tonalite.
- Upper Triassic sandstones, shales, limestones and various volcanic rocks.

Immediately north of the Homathko Tonaline, detailed mapping by Transition Metals in 2010 and 2011 has divided this unit into two sections interrupted by a layer of Jurassic metasedimentary rock. The 'Upper Volcanic' unit ranges from 1 to 100m in thickness and is exposed along the lower contact cliff face of the Homathko Tonalite. This is a horizon of massive to pillowed mafic volcanics, aphyric and weakly foliated without any distinguishing compositional layering. This unit appears to continue on the north side of the quartz diorite sill where a second 50 to 100m thick horizon of similar mafic volcanic rocks is observed.

The 'Lower Volcanic' unit consists of a 50 to 100m thick band of variably altered, massive to pillowed, chloritic mafic volcanics overprinted by quartz-ankerite veining with minor amounts of pyrite and chalcopyrite. Carbonate alteration related to the veining causes this unit to take on a buff, weathered appearance (Figure 7).

6.2.2 *Structure*

The Property lies within the east Waddington thrust belt where contractional orogenic forces created a zone of complex lithological relationships. The history of these forces is now evidenced at the Homathko property by foliation in the metamorphic units and bedding in the Triassic sediments which both tend to strike east northeasterly and dip moderately to the south (Cruickshank, 1989). Faulted contacts in the area of Homathko Peak share this strike direction and are observed to commonly dip between 50° and 60° to the south.

Workers for Transition Metals report discontinuous quartz carbonate veinlets oriented in the plane of shearing at the upper and lower contacts of the quartz-diorite sill suggesting some degree of later reactivation along this structure.

6.3 Mineralization and Minfiles

The Homathko Property covers three mineral showings and one prospect documented in the MINFILE Database maintained by the British Columbia Geological Survey ("MINFILES"). MINFILE details are compiled in Table 2. An additional three MINFILE reports are covered by the claims owned by Turnagain Resources and 1240089 BC Ltd. which are enclosed within the Homathko Property boundary at its eastern extent. Descriptions below are taken directly from the BCGS MINFILE Database. MINFILE locations are shown with local geology in figure 6.

Near the centre of the Property, the Hom showing is described as an occurrence of arsenopyrite, pyrite and chalcopyrite located on Rainbow Mountain, approximately 6 kilometres east-northeast of Homathko Peak. Gold is reportedly associated with arsenopyrite, but no grades or detailed location are available.

The most significant occurrence of mineralization on the property is associated with the quartz diorite sill north of Homathko Peak. Sulphide-bearing veins in this unit have been repeatedly shown to carry high gold values. A 5-lb (2.27 kg) sample of the 'Discovery Vein', collected in 1964 by McDougall for Falconbridge, assayed 6.54 opt gold (224 g/t Au). Samples from this location in 1975 yielded up to 581.4 g/t Au over 20 centimetres. A sample of sulphide-bearing quartz vein taken close to this location by the author during a site visit in 2020 retuned 57.9 g/t Au.

Quartz-ankerite-(pyrite) veins are distributed throughout the alteration zone in the differentiated sill and to a more limited extent within the adjacent mafic volcanics. Veins occur as stockwork veinlets, tension gashes, ladder veins, and wider and stronger veins up to 2-3 m in width widely distributed throughout the sill unit composing between 1 and 50% of the rock volume. According to the property report by McDougall for Falconbridge detailing their 1965 follow-up activities, within the buff-coloured zone of alteration: "Massive arsenopyrite, along with minor galena, sphalerite, chalcopyrite make up as much as 70% of the occasionally 1 to 2 foot wide veins. Free gold has been noted in the Discovery Vein ……values of interest occur along a 200-300 foot wide northwesterly trending zone centrally occupied by the Discovery Vein which itself has given specimen values up to 11 oz".

Investigation of the Discovery Creek area by Transition Metals in 2010 located a 20 to 60m wide exposure of stockwork of quartz ankerite veining over a strike length of approximately 200m, beyond which it was covered by talus. Mapping and prospecting traced the sill along strike for approximately 2.0 km with elevated gold values detected across 1.5km of this exposed strike length. This work discovered a new quartz carbonate vein hosted occurrence, the Chopper Zone, which assayed 0.88 g/t Au, 2.0 g/t Ag within quartz diorite sill 1 km east of the Discovery zone (Collins, 2011).

Table 2 List of MINFILEs on the Homathko Property; coordinates in UTM Zone 10. MINFILEs with an asterisk do not occur on the current Homathko Property, but on claims wholly contained within the Property.

MINFILE No.	Name	Status	Northing	Easting	Commodities	Deposit Character / Classification
092N 023	HOM	Showing	5693217	393910	Gold, Copper, Silver	Vein, Hydrothermal, Epigenetic
092N 049	KOR 1	Prospect	5692864	387345	Gold, Silver, Copper, Lead, Zinc	Vein, Disseminated, Mesothermal
092N 067	Discovery Creek	Showing	5692832	387202	Gold, Silver, Copper	
092N 068	Chopper	Showing	5693151	388077	Gold, Silver	Vein
092N 001*	Spokane	Developed Prospect	5695041	399998	Copper, Silver, Gold	Volcanic redbed copper
092N 002*	Morris	Developed Prospect	5694721	400572	Gold, Silver, Antimony, Copper, Zinc	Polymetallic veins Ag-Pb-Zn ± Au
092N 024*	ICT	Prospect	5694672	401499	Gold, Silver, Antimony	
092N 004	BEN 37	Prospect	5684633	401237	Copper, Molybdenum	
092N 005	BEN 28	Showing	5685639	402586	Copper, Molybdenum	
092N 052	STIK	Showing	5690224	404669	Molybdenum	

MINFILES:

Note: the following descriptions are taken directly from the MINFILE database; some parts have been deleted for the sake of brevity but the writing is otherwise unaltered.

092N 023 - HOM

The Hom occurrence consists of gold-silver mineralization. Its location is known only very approximately, 6 kilometres east-northeast of Homathko Peak and 9 kilometres southwest of the southern end of Tatlayoko Lake. Very little information is available (Minister of Mines Annual Report 1965). The occurrence is situated in a complex area of thrusts involving Upper Triassic rocks of the Stikine terrane, approximately 3 kilometres northeast of the margin of the Jurassic to Tertiary Coast Plutonic Complex (Geological Survey of Canada Open File 1163, Map 1713A). The thrusting has resulted in the interleaving of Upper Triassic volcanic units comprising mainly andesitic pyroclastics and flows and sedimentary units comprising mainly shale, sandstone and conglomerate. The thrusts strike east and dip south; the strata within them apparently strike northeast and dip moderately southeast.

The presence of gold and silver is related to arsenopyrite, pyrite and chalcopyrite mineralization in fissure veins.

092N 049 - KOR 1

The Kor (Tatlayoko Lake Gold) occurrence is located approximately 2 kilometres north of Homathko Peak at an elevation of 1650 metres, 14kilometres southwest of the southern end of Tatlayoko Lake.

Locally, quartz-ankerite-pyrite veins contain massive arsenopyrite with minor chalcopyrite, galena and sphalerite. Significant gold and silver values are erratic and are related to the presence of arsenopyrite. Free gold is also reported in the Discovery vein. Mineralization and alteration are concentrated in the upper, more felsic part of a differentiated sill composed of quartz diorite to granite. The sill intrudes the upper plate of a thrust that placed metamorphosed volcanics on unmetamorphosed Upper Triassic volcanic and sedimentary rocks. Immediately to the south of all these rocks is a very large quartz diorite intrusion of the Coast Plutonic Complex, called the Tiede pluton (Geological Survey of Canada Open File 1163). The differentiated sill may be related to this pluton. Geological contacts and structures consistently strike east-northeast and dip south.

A quartz diorite to granite sill outcrops in the metamorphic thrust sheet, south of the Upper Triassic rocks. It appears to be differentiated, becoming more felsic (granitic) at the top (towards the south). This upper felsic portion is strongly and pervasively altered, comprising quartz, iron carbonate (presumed to be ankerite), sericite and fine, disseminated pyrite. Locally it is oxidized to limonite. Quartz-ankerite-pyrite veins and lenses are widespread; locally they form major veins 10 to 20 metres long and 1 metre thick. Veins also occur up to 700 metres away in otherwise unaltered parts of the sill and the country rocks.

The alteration zone and most of the veins within it are concordant with the layering and structural fabrics, striking east-northeast and dipping about 50 degrees south. It is about 900 metres long and 15 to 30 metres wide on the surface. The degree of alteration appears to be related to the composition of the sill (favouring the more felsic top) rather than to the intensity of structural conduits like fractures; this suggests that it results from late magmatic, carbonate-rich hydrothermal fluids in a mesothermal environment (Assessment Report 18977). There are geochemical variations in the alteration zone. Gold, silver and arsenic are higher to the east, whereas zinc is higher to the west, where a quartz-ankerite vein was analyzed at 0.64 per cent zinc (Assessment Report 18977).

In 1964, sampling of the veins exposed in the C zone yielded from 0.3 to 4.8 g/t Au, whereas a 30-centimetre wide vein from the B zone hosting massive arsenopyrite and pyrite assayed 223.7 g/t Au and 160.7 g/t Ag (Property File - J.J. McDougall [1965-03-10]: Preliminary Report on Homathko Gold Prospect, Homathko River, B. C.).

In 1965, sampling of the Discovery vein (A zone) yielded up to 383.0 g/t Au and 194.9 g/t Ag over 15 centimetres, whereas the average of 24 samples from nine or ten veins in the area yielded approximately 17.1 g/t Au over 30 to 35 centimetres (Property File - J.J. McDougall [1966-01-07]: Report on Homathko Gold Prospect 1965).

In 1975, samples from the '11 ounce' vein yielded up to 581.4 g/t Au over 20 centimetres, whereas a 0.9-metre sample from the contact vein yielded 21.9 g/t Au (Property File - New Pyramid Gold Mines Ltd., 1975: Gold Claims Near Tatlayoko Lake).

In 1989, the highest value of gold recorded was 64.5 g/t, from a composite of grab samples taken over 10 metres from a sulphide-bearing quartz vein 10 to 80 centimetres thick (Assessment Report 18977). This vein also contained 10.1 g/t Ag, 0.12 per cent zinc and 0.18 per cent lead (Assessment Report 18977). Another quartz vein sample contained 17.1 g/t Ag and 0.39 per cent copper (Assessment Report 18977).

In 2010, two rock samples (E241886 and E241885) assayed 87.5 and 15.1 g/t Au with 45.7 and 1.4 g/t Ag, respectively (Assessment Report 32197). The following year, a rock sample (L781102) assayed 25.8 g/t Ag and 0.99 per cent copper (Assessment Report 33110).

092N 067 – Discovery Creek

The Discovery Creek showing is located approximately 205 kilometres northwest of Lillooet and 2 kilometres northwest of Homathko Peak. The showing is part of the Homathko property, which also contains the Hom showing (MINFILE 092N 023).

The area is underlain by the Stikine terrane, consisting of Jurassic plutonic and metamorphic rocks of the Coast Plutonic Complex.

Locally, the property is underlain by the Homathko tonalite, massive to pillowed mafic volcanics, pyritic mudstones, graphitic argillites, siltstones, quartz feldspar porphyry and altered mafic volcanics.

Mineralization occurs as patchy disseminated chalcopyrite, arsenopyrite and pyrite in a 20- to 60-metre-wide exposure of stockwork of quartz ankerite veining over a strike length of 200 metres within altered mafic volcanics and quartz feldspar porphyry.

In 2010, Transition Metals Corp. staked the property and completed prospecting and mapping. Highlights of the prospecting include rock sample E241886, which assayed 87.5 g/t Au and 45.7 g/t Ag, and rock sample E241885, which assayed 15.1 g/t Au and 1.4 g/t Ag (Assessment Report 32197).

In 2011, Transition Metals Corp. conducted geological mapping and prospecting on the property. Highlights of the prospecting include rock sample L781102, which assayed 25.8 g/t Ag and 0.99 per cent copper (Assessment Report 33110).

092N 068 - Chopper

The Chopper showing is located approximately 203 kilometres northwest of Lillooet and 2 kilometres northeast of Homathko Peak. The showing is part of the Homathko property, which also contains the Hom showing (MINFILE 092N 023).

The area is underlain by the Stikine terrane, consisting of Jurassic plutonic and metamorphic rocks of the Coast Plutonic Complex.

Locally, the property is underlain by the Homathko tonalite, massive to pillowed mafic volcanics, pyritic mudstones, graphitic argillites, siltstones, quartz feldspar porphyry and altered mafic volcanics.

Mineralization occurs as patchy disseminated chalcopyrite, arsenopyrite and pyrite within a quartz carbonate vein in quartz-feldspar porphyry.

In 2010, Transition Metals Corp. staked the property and completed prospecting and mapping. Highlights of the prospecting include rock sample E241886, which assayed 0.88 gram per tonne gold and 2.0 g/t Ag (Assessment Report 32197).

In 2011, Transition Metals Corp. conducted geological mapping and prospecting on the property.

092N 001 – Spokane (*This MINFILE does not occur on the Homathko Property)

The Spokane occurrence consists of a zone of copper mineralization in volcanic rocks, in rugged terrain 5.5 kilometres south of the southern end of Tatlayoko Lake. It is located in an area with a long history of exploration primarily devoted to gold-silver-antimony-bearing quartz veins, which outcrop in sedimentary rocks about 500 metres to the southwest, and which are covered by the Morris occurrence (092N 002).

The Spokane occurrence lies in the Gambier overlap assemblage, about 6 kilometres north of a large quartz diorite intrusion, the Tiedemann pluton, which forms the northeastern margin of the Jurassic to Tertiary Coast Plutonic Complex in this region (Geological Survey of Canada Open File 1163, Map 1713A). The occurrence is within Lower Cretaceous volcanic rocks, associated with sedimentary rocks, just north of a south-dipping thrust sheet comprising Upper Triassic rocks.

The occurrence is in interbedded andesitic and basaltic volcanics, which strike 340 degrees and dip 70 degrees northeast (Assessment Reports 1663, 10520). At least one porphyritic rhyolitic dyke, striking 280 degrees and dipping 75 degrees south, intrudes the volcanics; it pre-dates mineralization.

Most of the mineralization is confined to one 60-metre-thick unit of andesite, particularly along its northeastern margin adjacent to a unit of purple-brown basalt; the basalt is virtually unmineralized. This mineralization extends, somewhat erratically, for over 600 metres, with a surface width varying from 1 and 15 metres. Within this strike length is a central zone about 210 metres long and averaging 8 metres in width, where mineralization is strongest.

The mineralization consists of chalcopyrite and bornite, with rare chalcocite. These minerals are disseminated in the andesite, and locally occur as fracture-fillings, associated with calcite and epidote (Assessment Reports 1663, 10520). Malachite is abundant. Various assay results are given in the reports cited. While results from individual samples may be high, a more representative average of 11 chip samples taken over the strike length of the zone, with an average width of 6 metres, was 1.04 per cent copper (Assessment Report 1663). Another suite of samples yielded 1.25 per cent copper and 6 g/t Ag (Assessment Report 1663). Five samples averaged 1 gram per tonne gold (Assessment Report 10520).

It was estimated that the occurrence contains 335,000 tonnes grading 1.5 per cent copper (undiluted), based on a strike length of 210 metres, a width of 8 metres, and a vertical extent of 6 metres (Assessment Report 1663).

092N 002 – Morris (*This MINFILE does not occur on the Homathko Property)

The Morris occurrence consists of several gold-silver-antimony- bearing quartz veins which have been explored intermittently since their discovery in 1907, although it has never been a producer. The area is in rugged terrain 6 kilometres south of the southern end of Tatlayoko Lake, and is accessible by road.

The Morris occurrence lies in the Gambier overlap assemblage, about 6 kilometres north of a large quartz diorite intrusion, the Tiedemann pluton, which forms the northeastern margin of the Jurassic to Tertiary Coast Plutonic Complex in this region. This pluton has an early Tertiary age of 63 million years, based on the potassium-argon method on biotite (Geological Survey of Canada Open File 1163, Map 1713A). The occurrence is within Lower Cretaceous sedimentary rocks with some interbedded volcanics, just north of a south-dipping thrust sheet comprising Upper Triassic rocks.

The gold and silver-bearing quartz veins are mainly hosted in folded and sheared mudstone, argillite, greywacke, sandstone, and minor quartzite, quartz-pebble conglomerate and limestone. In general the rocks strike east-southeast and dip moderately south. Sparse, disseminated pyrite is widespread. Quartz diorite intrusions are common; they are probably related to the Coast Plutonic Complex, and locally also host mineralized quartz veins. Numerous quartz-feldspar porphyry dykes, locally with argillic and limonitic alteration, cut the rocks but pre-date east-striking faults. Interbedded andesite and basalt occur within a kilometre to the northeast; they do not host the quartz veins of interest, but they do host copper mineralization covered by the Spokane occurrence (092N 001).

The mineralized quartz veins strike 320 to 350 degrees and dip 45 northeast. They show a spatial relationship with the quartz diorite intrusions, although most of the veins are actually hosted in the adjacent sedimentary rocks (Assessment Report 10520; Minister of Mines Annual Report 1935). Locally, the host rocks are silicified. The veins are not offset by the east-striking faults mentioned above, so they represent younger hydrothermal fracture-fillings. The youngest intrusions are basaltic dykes, one of which follows a quartz vein for 55 metres.

A notable feature of the veins is that they are rich in stibnite. In addition, the veins contain arsenopyrite, pyrite, minor chalcopyrite, sphalerite, and very rare bornite and chalcocite (Assessment Report 10520). The quartz gangue is commonly banded, and may have a cox-comb texture; calcite is rare. The gold is native, occurring in the quartz or as grains around sulphide minerals, primarily arsenopyrite (Assessment Report 10520). The tetrahedrite is probably the silver-bearing variety, and is also found as inclusions in sphalerite.

At least 4 major veins have been explored, partly underground (Assessment Report 10520; Minister of Mines Annual Reports 1921, 1935). The Number 1 vein has been traced on the surface for 260 metres, and has been drifted on underground for 187 metres. It averages 40 centimetres in thickness. Sulphides, mainly arsenopyrite, stibnite and pyrite, occur as lenses or stringers parallel to the vein walls. The average assay of 8 samples taken over a strike length of 95 metres and width of 40 centimetres was 18.5 g/t Au, 252 g/t Ag, and 10 per cent antimony (Assessment Report 8320).

The Number 2 vein averages 20 centimetres in thickness and has been followed underground for 73 metres (Assessment Report 1663). Mineralization in this vein, and in the Number 4 vein, is similar to that in the Number 1 vein. The Number 3 vein, traceable for 30 metres on the surface, yielded a sample assaying 38 g/t Au, 1060 g/t Ag, and 10 per cent antimony, over a 30 centimetre width (Assessment Report 10520).

Seven diamond-drill holes were completed in 1981 to test the Number 1 and Number 3 veins; several smaller veins were penetrated in the process (Assessment Report 10520). Sporadic mineralization in a variety of host rocks was encountered, with a wide range of gold and silver grades.

The high values of gold and silver at the Morris occurrence led to a program of bulk sampling and metallurgical tests. A 90 kilogram, composite bulk sample from Number 1 and Number 3 veins assayed 27 g/t Au, 431 g/t Ag, 2.92 per cent antimony, and 4.92 per cent arsenic (Assessment Report 10520).

In 1966 it was estimated that based on a strike length of 104 metres, the Number 1 vein contained 19,000 tonnes of "ore" with an average grade of 10 g/t Au, 110 g/t Ag, and 2.1 per cent antimony (Assessment Report 1663). In 1982 a reserve calculation was announced: this partly consisted of a summary of the bulk sampling referred to above, and also gave a provisional estimate of drill-indicated reserves of 172,000 tonnes grading 8.3 g/t Au over an effective mining width of 4 metres (George Cross News Letter #116, 1982).

092N 924 – ICT (*This MINFILE does not occur on the Homathko Property)

The ICT occurrence consists of gold-silver showings in rugged terrain 6 kilometres south of the southern end of Tatlayoko Lake.. The adjacent Morris property (092N 002), which contains similar mineralization, has a much longer history of exploration, devoted to gold-silver-antimony bearing quartz veins (Assessment Report 10520).

The ICT occurrence lies in the Stikine Terrane and Gambier overlap assemblage, about 6 kilometres north of a large quartz diorite intrusion, the Tiedemann pluton, which forms the northeastern margin of the Jurassic to Tertiary Coast Plutonic Complex in this region (Geological Survey of Canada Open File 1163, Map 1713A). This pluton has an Early Tertiary age of 63 million years, based on the potassium-argon method on biotite (Geological Survey of Canada Open File 1163).

Based on the available information, the ICT occurrence is apparently associated within a major, east-striking thrust fault. The footwall of the fault to the north comprises sedimentary and volcanic rocks of Early Cretaceous age (Gambier); the hanging wall to the south comprises similar rocks of Late Triassic age (Stikinia) (Property File - O'Grady, B.T., 1937; Geological Survey of Canada Open File 1163).

Mineralization is largely confined to the fault zone, which strikes east and dips south between 30 and 70 degrees, and rocks immediately adjacent to it. To the north are purple tuffs striking north-northeast; to the south are pale, cherty tuffs and greenstones striking northwest. To the east, a large quartz diorite stock intrudes the hanging wall of the thrust; it is probably related to the Coast Plutonic Complex.

The fault zone varies between 3 and 9 metres in thickness. The rocks within it are highly brecciated, silicified and oxidized, and the matrix is partly unconsolidated. Pyrite, arsenopyrite and stibnite are present in minor amounts in the showings, associated with quartz and locally calcite. Similar mineralization also occurs in narrow widths in northwest-striking fractures to the south of the fault, some of which cut the quartz diorite.

The main showing is in an opencut which exposes the fault zone. A 2-metre thick zone in the hanging wall contains 2 oxidized and altered bands mineralized with stibnite and arsenopyrite. A selected grab sample assayed 0.7 gram per tonne gold, 34 g/t Ag, and 16 per cent "stibnite" (Property File - O'Grady, B.T., 1937). Another group of open cuts, which borders on the Morris property to the northwest, also exposes the altered fault zone. A sample taken here across 0.8 metre was assayed at 2.7 g/t Au and 55 g/t Ag (Property File - O'Grady, B.T., 1937). A selected grab sample containing disseminated arsenopyrite assayed 9.6 g/t Au and 185 g/t Ag (Property File - O'Grady, B.T., 1937).

092N 004 – Ben 37

The Ben 37 occurrence consists of copper-molybdenum mineralization in mountainous terrain 16 kilometres south of the southern end of Tatlayoko Lake. It is related to similar mineralization covered by the Ben 28 occurrence (092N 005).

The area is underlain mostly by a lobe of a large intrusion, the Tiedemann pluton, on the northeastern margin of the Jurassic to Tertiary Coast Plutonic Complex. This pluton consists of granodiorite mainly, and tonalite, and is dated at 63 million years (Early Tertiary) by the potassium-argon method on biotite (Geological Survey of Canada Open File 1163). The pluton contains northeast-striking shear zones, some of which contain lamprophyre or granite dykes.

The granodiorite contains fracture-controlled pegmatitic quartz veins containing coarse chalcopyrite and molybdenite (Assessment Report 2670). The density of fractures and veining varies, and at least 3 common orientations are present. Individual quartz veins range from 2 to 25 millimetres in thickness.

The Ben 37 occurrence is located in the granodiorite, 2 kilometres west of its contact with Lower Cretaceous greywacke. It is in the most fractured and mineralized area, measuring about 900 by 120 metres, which also contains 4 narrow shear zones (Assessment Report 2670). Channel samples from here indicate that the occurrence contains 0.1 per cent copper, but only 0.002 per cent molybdenum. Individual samples contain up to 0.4 per cent copper and 0.22 per cent molybdenum (Assessment Report 2670).

092N 005 – Ben 28

The Ben 28 occurrence consists of copper-molybdenum mineralization in mountainous terrain 15 kilometres south of the southern end of Tatlayoko Lake. It is related to similar mineralization covered by the Ben 37 occurrence (092N 004), 1.7 kilometres to the southwest.

The area is underlain mostly by a lobe of a large intrusion, the Tiedemann pluton, on the northeastern margin of the Jurassic to Tertiary Coast Plutonic Complex. This pluton consists of granodiorite mainly, and tonalite, and is dated at 63 million years (Early Tertiary) by the potassium-argon method on biotite (Geological Survey of Canada Open File 1163). The pluton contains northeast-striking shear zones, some of which contain lamprophyre or granite dykes.

The occurrence is located in the granodiorite about 1 kilometre inside its contact, in the centre of the Ben 28 claim (Assessment Report 2670). This location is approximately in the centre of a small area of chalcopyrite and molybdenite showings, hosted in fracture-controlled pegmatitic quartz veins. The density of fractures and veining varies, and at least 3 common orientations are present. Individual quartz veins range from 2 to 25 millimetres in thickness. No geochemical information from these showings is available.

092N 052 – Stik

The Stik occurrence is based on a map symbol indicating a molybdenite occurrence, in the rugged terrain south of the southern end of Tatlayoko Lake (Geological Survey of Canada Map 5-1968).

Very little information is available. The showing consists of a small quartz veinlet containing molybdenite, in a unit of Upper Triassic shale, sandstone and pebble conglomerate (Geological

Survey of Canada Map 5-1968, Paper 68-33, Open File 1163). These rocks belong to the Stikinia Terrane, and occur in a complex, faulted area 3 kilometres northeast of the early Tertiary Tiedemann pluton of the Jurassic to Cretaceous Coast Plutonic Complex (Geological Survey of Canada Open File 1163, Map 1713A).

7 DEPOSIT TYPES

The principal target at the Homathko Property is an orogenic lode-gold deposit, similar in style to the high-grade Bralorne-Pioneer Mining Camp ~ 130 km southeast which produced 4.2 M oz of gold at 17.7 g/t. Deposits of this type typically occur in continental margin accretionary orogens where complex quartz-carbonate vein arrays develop in association with major fault zones. Gold bearing fluids, either magmatic-hydrothermal, metamorphic or some combination of those, exploit structures caused by compressional and transpressional tectonic forces. Mineralization is typically hosted within quartz-carbonate veins and consists of gold + silver + lead + copper ± arsenic ± antimony ± tellurium ± tungsten ± bismuth ± mercury.

Orogenic gold deposits are attractive exploration targets due to relatively high gold grades. Important examples of this deposit type along the west side of North America include the deposits of the Mother Lode Belt in California which produced over 13 M oz gold, the Bralorne-Bridge River regions of British Columbia which produced over 4 M oz gold, and the Juneau Gold Belt which produced almost 7 M oz gold.

The tectonic setting, alteration and mineral assemblage discovered to date at the Homathko Property closely fit the orogenic model. The property lies within the large east-Waddington thrust best, a complex series of brittle fault and shears that formed under transpressional forces caused by terrane accretion. Mineralization is intimately related to a quartz diorite sill north of Homathko Peak which intrudes Jurassic to Cretaceous sedimentary and volcanic rocks. Gold, found variably with silver, arsenopyrite, chalcopyrite and galena, is hosted in quartz – ankerite veins within and proximal to the sill. Mineralized veins have been identified primarily in the more strongly altered “upper” (southern) section of the unit in conjunction with quartz-ankerite-sericite alteration. Veins occur as stockwork veinlets, tension gashes, ladder veins, and wider and stronger veins up to 2-3 m in width widely distributed throughout the sill unit and composing between 1 and 50% of the rock volume.

A secondary mineralization style is noted in the south on claims recently staked by Homerun. At the location of the Ben 37 Showing, Pacific Petroleums Ltd. identified fracture-controlled pegmatitic quartz veins containing coarse chalcopyrite and molybdenite (Assessment Report 2670). The area is also reported to feature four distinct shear zones. According to their 1970 assessment report the company identified a zone approximately 900 metres long by 120 metres wide which they estimated to average 0.1% copper and 0.001% molybdenite. Extensive geochemical work to substantiate this claim does not appear to have been completed and no drilling of the deposit occurred.

8 EXPLORATION

The following is a chronological description of all known exploration activities to have been undertaken at the Homathko Property. Two additions have been appended to this list since the previous NI 43-101 Technical Report on the Homathko Property, British Columbia dated February 20, 2021: geological mapping conducted in 1970 by Pacific Petroleums Ltd. which occurred within the bounds of the claims added to the Property in 2021, and an airborne geophysical survey completed by Homerun Resources in June, 2021.

Apart from a single-day of prospecting and due diligence conducted by the author along with a representative of Homerun Resources Inc. in November 2020, and the subsequent geophysical survey of 2021, Homerun Resources Inc. has not undertaken any exploration at the Homathko Property. Homerun was not involved with any of the work described herein prior to acquiring the Property in 2020.

Table 3 Summary of all known exploration conducted at the Homathko Property, current and historical, with expenditure wheres available.

Year	Operator	Days on Property	Work Completed	Expenditures
1964	Falconbridge Ltd.	1	Reconnaissance; limited sampling	Unknown
1965	Falconbridge Ltd.	8	Prospecting; trenching; sluicing; pitting; mapping; 90 rock samples assayed.	$14,000
1970	Pacific Petroleums Ltd.	26	Mapping	$9,363.50
1975	New Pyramid Gold Mines.	1	Sampling	Unknown
1984	R.R. Dion	0	Airphoto structural analysis.	$3500
1989	Golden Rule Resources Ltd.	6	Reconnaissance; mapping; prospecting; 30 rock samples assayed.	$10,685
2010	Transition Metals Corp.	6	Mapping; prospecting; 58 rock samples assayed	$26,800
2011	Transition Metals Corp.	2	Mapping; prospecting; 42 rock samples assayed	$24,980
2012	Transition Metals Corp.	1	Mapping; prospecting; 12 rock samples assayed	$15,409
2015	Transition Metals Corp.	0	Lineament and hyperspectral imagery study.	$4603
2017	Shamrock Resources Ltd.	2	Prospecting: 9 rock samples collected	$12,241
2020	Homerun Resources Inc.	1	Airborne reconnaissance, 11 rocks samples assayed	$19,450
2021	Homerun Resources Inc.	0	1055 line km airborne geophysical survey	$102,900

8.1 RECENT EXPLORATION (CONDUCTED BY HOMERUN RESOURCES INC. SINCE LAST TECHNICAL REPORT)

<u>Homerun Resources Inc., 2021</u>

Homerun commissioned Precision Geosurveys to conduct a helicopter-borne magnetic and radiometric survey of part of the Homathko Property. Between June 1 and June 5 of 2021, Precision flew 1055 line-km at a 100-metre spacing with a Scintrex CS-3 cesium vapour airborne magnetometer sensor, providing sample spacings of 1-2 metres.

The airborne magnetic survey identified magnetic trends and potential structures associated with the primary Homathko showing and around Homathko Peak, as well as towards the east, near the historic Morris Mine.

Magnetic highs coincident with the primary Homathko showing form a curvilinear feature, locally extending east-west around the circumference of Homathko Peak into Homerun's newly expanded claim area, further to the west. These magnetic highs coincide with structural measurements and grab samples, including one sample yielding 57.9 g/t gold, taken during the Company's property visit in late 2020.

Radiometric data from the study shows a unique localized high in the area of the historic Morris Mine where mineralized quartz veins show a spatial relationship with the quartz diorite intrusions. In the area veins, which have been shown to carry up to 38 g/t Au, 1060 g/t Ag, and 10 per cent antimony strike at 320° to 350°. Radiometric trends in the area seem to be reflected in the radiometric data further to the west which may, with further study, suggest additional exploration targets.

The Total Magnetic map and Total Count (radiometric) map are presented as Figures 8 and 9 below. A complete report detailing methods employed by Precision GeoSurveys, as well as maps produced is presented in Appendix 2.

Total expenditure by Homerun for this survey was $102,900.

8.2 HISTORICAL EXPLORATION

<u>Falconbridge Ltd., 1964-1965</u> (ARIS Property Files #650219, #650220)

Limited exploration of the project area was undertaken by Falconbridge in 1964. Two employees conducted one day of helicopter reconnaissance of the Property stopping at several locations and sampling some of the more accessible veins in each location (sites “A”, “B” and “C”). Other veins and prospective zones were located and noted but were not prospected at this time.

Results from four samples taken at site C returned gold values from 0.01 to 0.14 opt Au (0.3 to 4.8 g/t Au). At site B, a 30 cm vein hosting massive arsenopyrite and pyrite (the “Discovery” vein) assayed 6.54 opt Au and 4.7 opt Ag (223.7 g/t Au and 160.7 g/t Ag). No results were reported for the samples taken at the third location.

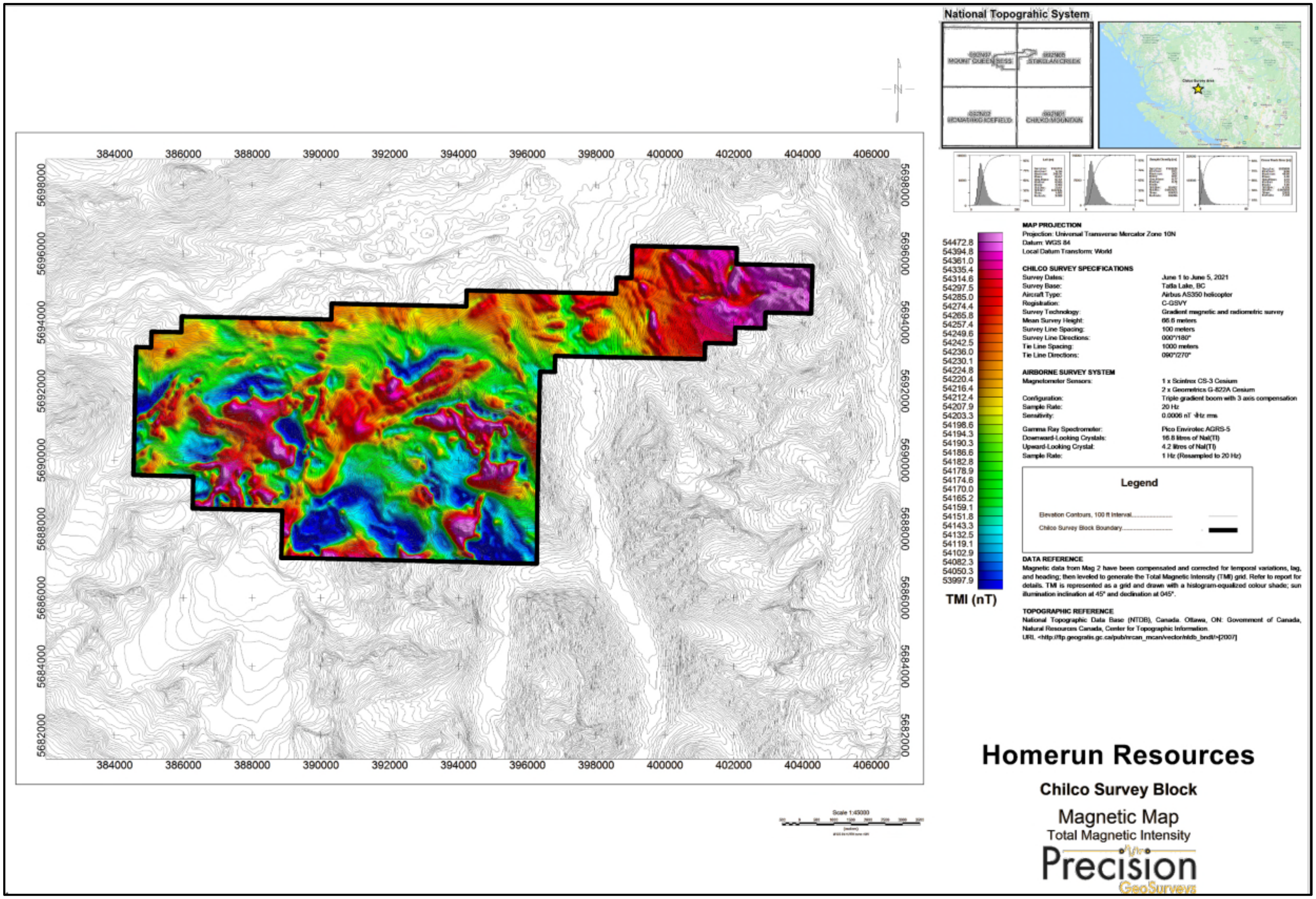

Figure 8 Total Magnetic Intensity; June 2021.

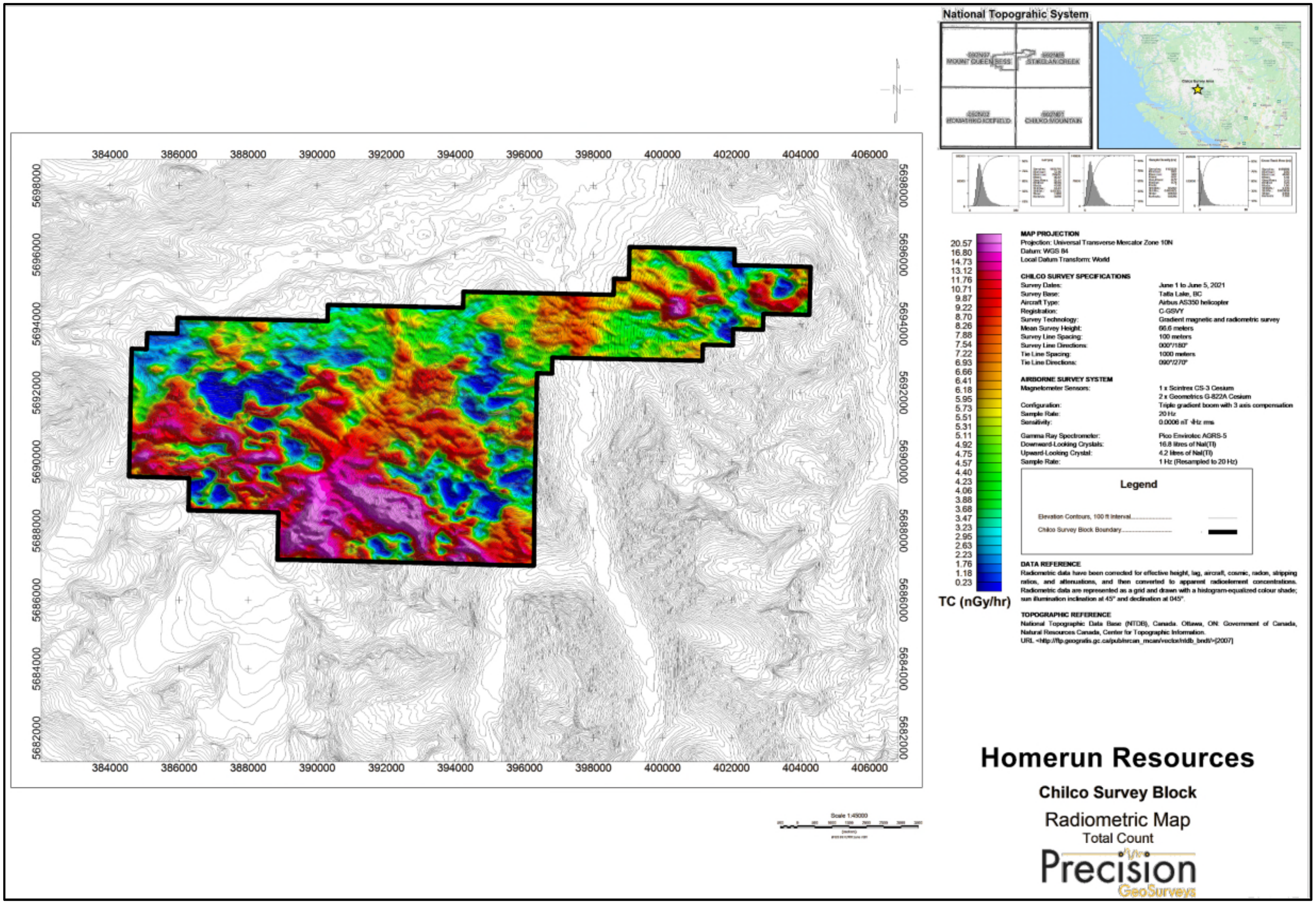

Figure 9 Radiometric map (Total Count); June 2021.

Falconbridge returned and staked 30 claims on the Property in May of 1965. During July of 1965, two workers established a camp near the main showing. In addition to prospecting of the surrounding area and sampling of many veins, pitting, trenching and sluicing was done on veins around the discovery area. Trenching, done by ground sluicing and blasting, along 20 m of the 'main vein' included the removal of approximately 175 m^3 of talus and rock. An additional 120 m^3 of material was removed pitting and trenching partially exposed veins.

In total, about 90 samples were analysed for gold and silver. From the Discovery zone, 24 assays taken of 9 or 10 veins averaging 15 cm in width returned an average grade of approximately 0.5 opt (17.1 g/t) Au. The highest assay from this group was 11.2 opt Au and 5.7 opt Ag (384 g/t Au and 195 g/t Ag).

Pacific Petroleums Ltd., 1970

In the southern area of the expanded claim block, Pacific Petroleums Ltd of Vancouver, B.C. spent approximately three weeks mapping the Ben 1 to Ben 143 claims. The purpose of the investigation was to outline a known area of mineralization and to estimate the copper and molybdenum content of the deposit.

Between June 8 and August 26, 1970, two geologists and two assistants spent a total aggregate of 56 days prospecting and mapping the area. Subsequently, an additional 17 days involving the two assistants and a single geologist was used to map portions of the property in detail utilizing a picketed grid to create a 1:2400 map.

According to the associated assessment report, coarse-grained chalcopyrite and molybdenite occur in fracture-controlled, pegmatitic quartz veins in granite and granodiorite. The work identified a deposit covering an area of approximately 120m x 900m estimated to contain 0.1% copper and 0.002% molybdenum. Geologists W.D. Cowan and M.J. Linn recommended that certain claims be retained and additional work be done to test the possibility of an increase in grade with depth. No additional work is recorded.

New Pyramid Gold Mines Ltd., 1975

According to BC MINFILE 092N 049, Gerhard Von Rosen, a professional engineer, was commissioned by New Pyramid Gold Mines Ltd. In 1974. In 1975, samples from the '11 ounce' vein yielded up to 581.4 g/t Au over 20 centimetres. Documentation for this reported work was not located by the author of this Technical Report.

R.R. Dion, 1983 (ARIS Property File #11770)

In 1984 a fracture density analysis and interpretation was undertaken on aerial photography of the property by Gerhard von Rosen for R.R. Dion.

Golden Rule Resources Ltd., 1989 (ARIS Property File #18977)

Golden Rule recorded nine days spent working on the property in July of 1989. Activities included helicopter-assisted and ground based reconnaissance and mapping, prospecting, and sampling. Thirty rock samples were submitted for multi-element analysis. The highest returned grade during this program was 64.46 g/t Au and 10.10 g/t Ag from chip sample taken along a quartz-ankerite + arsenopyrite, pyrite vein. Another arsenopyrite-rich float collected near a blasted trench (done by Falconbridge in 1965) assayed 49.7 g/t Au and 13.58 g/t Ag. Six of the other samples assayed between 3.34 and 16.45 g/t Au.

Transition Metals Corporation, 2010 (ARIS Property File #32197)

In July of 2010, representatives of Transition metals established a fly camp near the discovery zone and conducted six days of ground-based and helicopter-assisted mapping and prospecting. A total of 58 rocks samples across various lithologies were collected during the program. Elevated gold and silver grades were found associated with quartz carbonate veining in close proximity to the quartz diorite sill over an approximate strike length of 1.5 km. The highest value obtained was 87.5 g/t Au and 45 g/t Ag.

Transition Metals Corporation, 2011 (ARIS Property File #33110)

During October, 2011, representatives of transition metals undertook a program of mapping and sampling with the stated objective of determining the controls on observed mineralization at the Property. Work focused on mapping and prospecting the north eastern flank of Mount Homathko and conducting a preliminary investigation of the eastern flank of Naden Mountain. Heli-assisted traverses were conducted and a total of 42 rock samples were collected.

Transition Metals Corporation, 2012 (ARIS Property File #34198)

A three-person team working for Transition in 2012 conducted a single day of exploration around the discovery zone in August, 2012 with the objective to further investigate the style of mineralization and to prospect for additional mineral occurrences. A total of 12 rock samples were collected from various lithologies. Results confirmed the 1.3 km trend of elevated gold values. The highest grade returned from this exploration was 53.1 g/t Au.

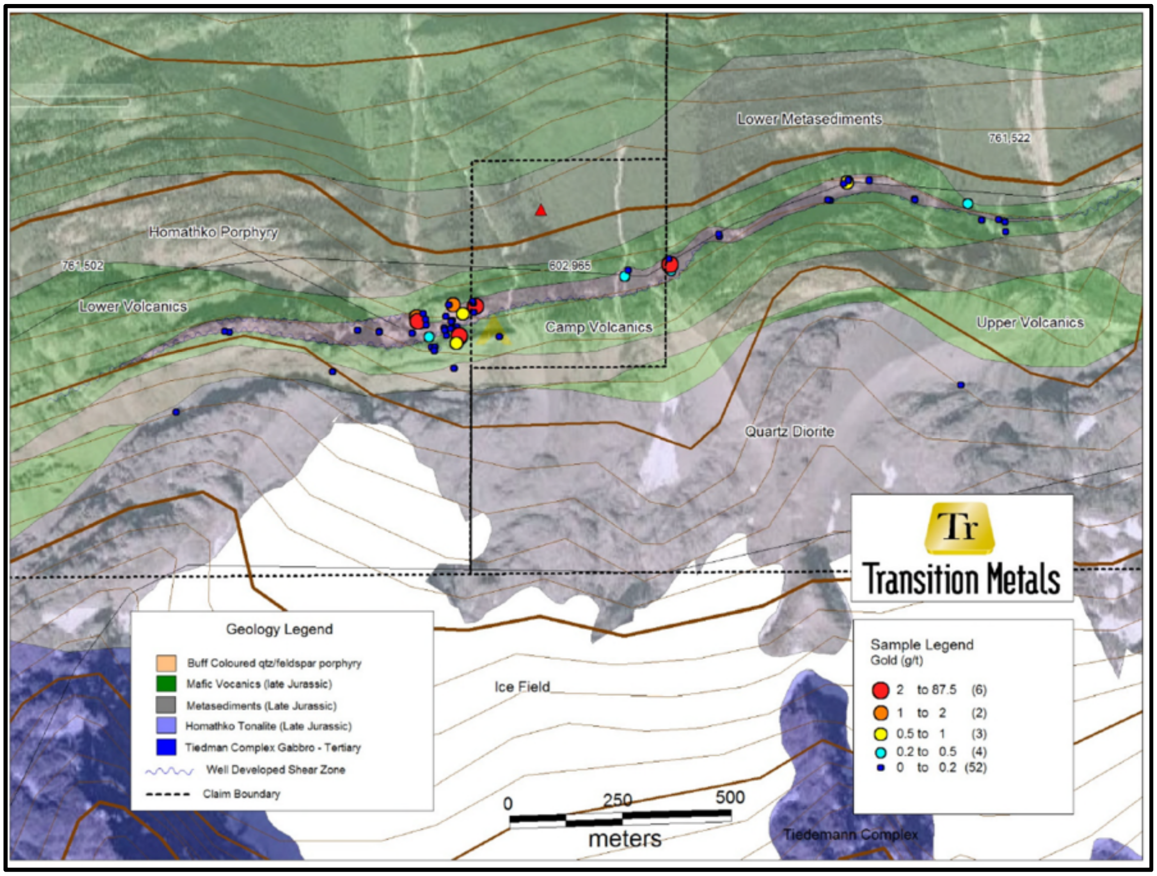

Figure 10 Map showing the relative locations of sampling by Transition Metals in 2010; recreated from ARIS Property Report 32197

<u>Transition Metals Corporation, 2015</u> (ARIS Property File #35546)

In April, 2015 Transition Metals completed a lineament and hyperspectral satellite imagery study using Google Earth and publicly available Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) data. This study highlighted a number of structural trends which might have implications of the control of gold mineralization at the Homathko Property.

<u>Shamrock Resources Ltd., 2017</u> (ARIS Property File #37245)

The property was optioned to Shamrock Resources Ltd. In 2017, a senior geologist and a helper spent two days of heli-assisted prospecting and sampling on the claims. A total of nine rock samples were collected from various lithologies near the contact zone. The two highest samples from the group assayed 11.45 and 11.5 g/t Au. Additional work to further characterise the extent of the alteration system and mineralization was recommended.

Homerun Resources Inc., 2020

In November, 2020, a representative of Homerun Resources Inc. and the author conducted a due diligence site visit. Helicopter reconnaissance of the property and a ground-based examination of the discovery zone were conducted. Of eleven rock samples collected and analyzed, one significant assay measured 57.9 g/t Au and two others exceeded 1 g/t Au.

Expenditures by Homerun were $3,700 for the site visit and an additional $15,750 for a subsequent technical report, for a total of $19,450.

Table 4. Results of sampling by author, November 2020.

Sample No.	UTM X	UTM Y	Sample Type	Au g/t	Ag g/t
67184	387204	5692834	Rock outcrop	57.93	5.3
67185	387191	5692837	Rock outcrop	0.05	0
67186	387201	5692823	Rock outcrop	0.16	0
67187	387198	5692829	Rock outcrop	0.02	0
67188	387199	5692829	Rock outcrop	1.04	0.2
67189	387185	5692835	Rock outcrop	0.01	0
67190	387198	5692844	Rock outcrop	1.24	0.6
31512	387217	5692886	Rock outcrop	0.13	0.6
31513	387182	5692893	Rock outcrop	0.04	2.5
31514	387183	5692845	Rock outcrop	0.33	0
31515	387191	5692849	Rock outcrop	0.04	0.2

9 DRILLING

No drilling has been conducted at the Homathko Property.

10 SAMPLE PREPARATION, ANALYSES AND SECURITY

The author was unable to verify the sample data collection and handling procedures or Assurance/ Quality Control (QAQC) practices employed by previous operators but assumes these met industry standards for the time.

During the 2020 site visit, rock samples were obtained using a "Geotool" rock hammer and documented in the field using a hand-held Global Positioning System (GPS) instrument with NAD 83 UTM Zone 10 coordinates. Samples were placed in plastic "poly" bags designed specifically for rock sampling. A tag with a unique sample number was inserted with each and that number was documented into a field book along with location data and a brief description of the sample.

The program included standard chain-of-custody and QAQC protocol. The samples were in the possession of the author from the time of sampling until submission to the Bureau Veritas Prep lab in Whitehorse, Yukon on December 20, 2020. Along with the 11 samples, two assay standards, one assay blank and a pulp duplicates were analyzed, all with acceptable results. Assay certificates for this program are included in Appendix 2.

At the Bureau Veritas Whitehorse prep lab, rock samples underwent preparatory crushing to ensure that greater than 85% of the sample is pulverized to smaller than 75 µm. After preparation, samples were sent to the Bureau Veritas laboratory in Vancouver for analysis. Fifteen grams of the crushed material was digested in 1:1:1 aqua regia and then analyzed by inductively coupled plasma mass spectrometry (ICP-MS) for 37 elements (Ag, Al, As, Au, B, Ba, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, Hg, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Se, Sr, Te, Th, Ti, Tl, U, V, W, and Zn). Finally 50 g of each sample was fire-assayed for gold using a “Inductively Coupled Plasma Emission Spectrometer” (ICP-ES) analysis.

Bureau Veritas Commodities is an analytical laboratory with ISO 14001 environmental certification and ISO 45001 certification for safety. Bureau Veritas is fully independent of Homerun Resources Inc. and of the author.

It is the author’s opinion that the sample preparation, security and analytical procedures employed in 2020 are in accordance with good industry standard practice and appropriate for making inferences and statements with regards to the data generated by it.

11 DATA VERIFICATION

The author has reviewed the historical exploration data in assessment reports and, to the extent possible, assessed their reliability by their internal consistency with respect to the quality controls described and in relation to known geology of the areas surveyed. Assay certificates for 112 rock samples collected and submitted to ALS Chemex Laboratory are included in ARIS Property Files. No other raw, unprocessed data was available and therefor only verified to a partial extent by examining the internal consistency of the maps and sections and reading the logistics and methodology reports accompanying the data. The author can verify that the information has been presented accurately as reported in those files and reports.

The property was visited by Mr. Case Lewis, a representative of Homerun and the author on November 3rd, 2020 and a selection of 11 rock samples were submitted to Bureau Veritas Laboratory in Whitehorse, Yukon Territory for assay on November 20, 2020. The visit was successful in its stated objective to: 1) visually confirm details regarding the geology and physiography as described in historic reports; 2) collect a suite of Property samples for analysis and to determine with certainty the presence of reported mineralization; 3) confirm evidence for the existence of prior exploration related activities on the property; 4) conduct a brief examination of the Project towards a determination of the potential for the existence of further mineralization.

In is the authors opinion that all stated objectives of the site visit were satisfied, that the data collected in 2020 and from previous reports is sufficient for the purposes of this report, and that the Homathko Property is a project of merit.

12 MINERAL PROCESSING AND METALLURGICAL TESTING

To the authors' knowledge, no mineral processing or metallurgical testing has been done at the Homathko Property by Homerun or any previous operators.

13 MINERAL RESOURCE ESTIMATES

No resource estimate has been calculated for the Homathko Property.

14 ADJACENT PROPERTIES

Two claims covering 241.98 Ha are surrounded by the Homathko Property at its easternmost extent, approximately 13 km from the Discovery Creek area (Figure 9). These are owned by in equal parts by Turnagain Resources Inc. and 1240089 BC Ltd.

Three BC MINFILES are located on the claims including two Developed Prospects and one Prospect. The following information was gathered entirely from ARIS Property Files.

The historic Morris occurrence consists of several gold-silver-antimony- bearing quartz veins. The veins have been explored intermittently since their discovery in 1907 but, despite considerable development effort between 1910 to 1924, the deposit has never been a producer. The Morris occurrence lies within Lower Cretaceous sedimentary rocks with some interbedded volcanics, just north of a south-dipping thrust sheet comprising Upper Triassic rocks. Approximately six kilometres south lies the Tiedemann pluton. The gold and silver-bearing quartz veins are mainly hosted in folded and sheared mudstone, argillite, greywacke, sandstone, and minor quartzite, quartz-pebble conglomerate and limestone. Quartz diorite intrusions, which locally also host mineralized quartz veins, are common and are probably related to the Coast Plutonic Complex. Sparse, disseminated pyrite is widespread.

At least 4 major veins have been explored, partly underground (Assessment Report 10520; Minister of Mines Annual Reports 1921, 1935). The Number 1 vein averages 40 cm in width, has been traced on the surface for 260 metres, and has been drifted on underground for 187 metres. The average assay of 8 samples taken over a strike length of 95 metres and width of 40 centimetres was 18.5 g/t Au, 252 g/t Ag, and 10 per cent antimony (Assessment Report 8320).

Seven diamond-drill holes were completed in 1981 to test the Number 1 and Number 3 veins; several smaller veins were penetrated in the process (Assessment Report 10520). Sporadic mineralization in a variety of host rocks was encountered, with a wide range of gold and silver grades.

The high values of gold and silver at the Morris occurrence led to a program of bulk sampling and metallurgical tests. A 90 kilogram, composite bulk sample from Number 1 and Number 3 veins assayed 27 g/t Au, 431 g/t Ag, 2.92 per cent antimony, and 4.92 per cent arsenic (Assessment Report 10520).

Approximately 750 m northwest of the Morris occurrence lies the Spokane copper occurrence which consists of a zone of copper mineralization hosted in volcanic rocks. Most of the mineralization is confined to one 60-metre thick unit of andesite which extends, somewhat erratically, for over 600 metres, with a surface width varying from 1 and 15 metres.

The mineralization consists of chalcopyrite and bornite, with rare chalcocite. These minerals are disseminated in the andesite, and locally occur as fracture-fillings, associated with calcite and epidote (Assessment Reports 1663, 10520). Malachite is abundant. Various assay results are given in the reports cited. While results from individual samples may be high, a more representative average of 11 chip samples taken over the strike length of the zone, with an average width of 6 metres, was 1.04 per cent copper (Assessment Report 1663).

Approximately 1 km east of the Morris Prospect, the ICT occurrence consists of gold-silver showings a fault zone, which strikes east and dips south between 30 and 70 degrees. The fault zone varies between 3 and 9 metres in thickness and consists of highly brecciated, silicified and oxidized rocks. Pyrite, arsenopyrite and stibnite are present in minor amounts in the showings, associated with quartz and locally calcite. Similar mineralization also occurs in narrow widths in northwest-striking fractures to the south of the fault, some of which cut the quartz diorite. At the main showing, a selected grab sample assayed 0.7 gram per tonne gold, 34 g/t Ag, and 16 per cent "stibnite" (Property File - O'Grady, B.T., 1937).

The most recent, publicly available, documentation of work conducted on this ground is ARIS Property Report #27531 which documents four days of work by three workers for Firestone Ventures Inc. in 2004.

These two mineral claims are underlain by six crown granted mineral leases totaling 116.2 Ha. A very small portion of these leases underlies claims of the currently Homathko claims also (Figure 9). The leases are currently active (in good standing) and have precedence to mineral rights on this land as long as they remain so. The author was not able to determine ownership of the leases.

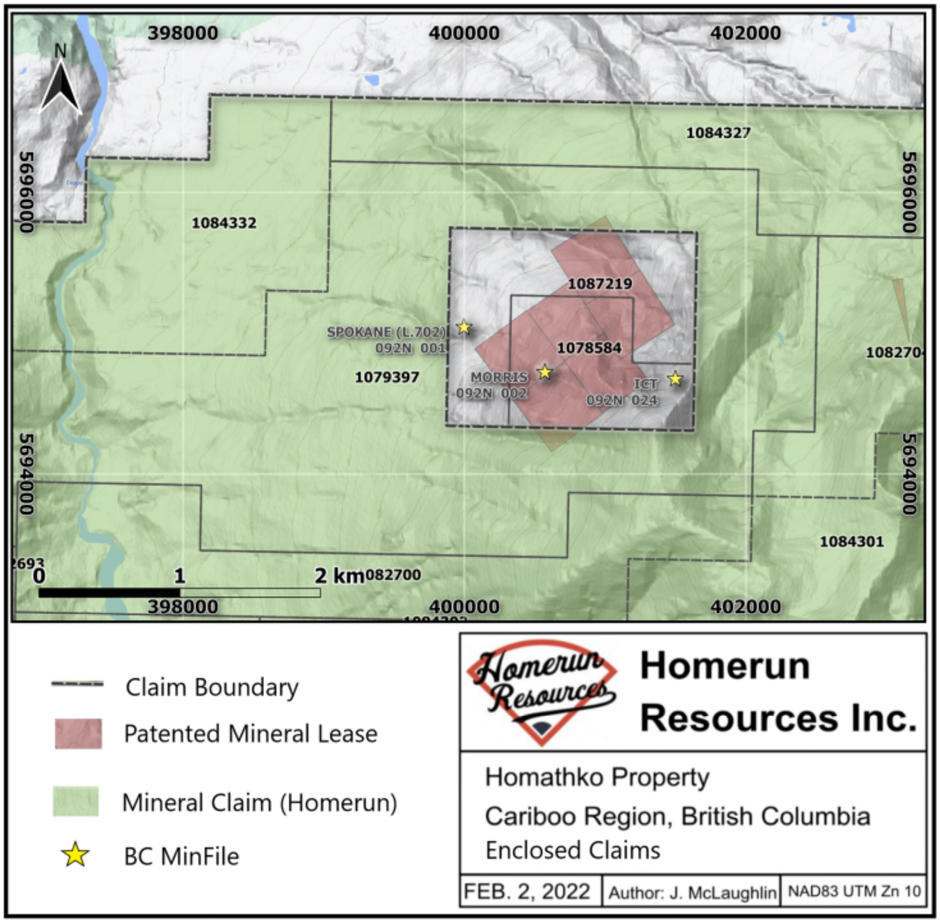

Figure 11 Two claims surrounded by the Homathko Property and the eight patented mineral leases underlying them. Three MINFILES also shown. Data from Mineral Titles Online.

15 OTHER RELEVANT DATA AND INFORMATION

To the best of this author's knowledge, there are no other data or information pertinent to the filing of this Technical Report.

16 INTERPRETATION AND CONCLUSIONS

The Homathko Property is an early-stage project that has undergone very limited exploration despite the established presence of high-grade gold mineralization.

The Property lies in a zone of complex structural geology where transpressional forces caused by terrane accretion during the Cretaceous have resulted in widespread thrust faulting. Large scale plutonism during the Late Cretaceous to Paleocene related to the nearby Coast Plutonic Complex is demonstrated by the presence of nearby intrusions and the very large Tiedemann Pluton roughly 6 km to the south of the Property. A mineralized sill of quartz-diorite in the western part of the Property is probably related to these intrusions. Extensive veining within and proximal to the sill is evidence that significant volumes of fluid exploited this system of fractures and fluid pathways. Veining appears to comprise at least three different generations and suggest that the forces driving fluid interactions, probably nearby plutons, were long-lived, probably episodic and possibly introduced multiple fluid sources. Additional evidence of this is given by discontinuous quartz carbonate veinlets oriented in the plane of shearing at the upper and lower contacts of the quartz-diorite which shows reactivation along this structure.

The prospective tectonic setting of the Homathko Property, presence of structure, clear mineralogical assemblage and mode of occurrence firmly establish the potential for hosting significant orogenic lode gold mineralization. Deposits of this type present attractive targets due to their relatively high grades and mining camp potential. Examples of this come from the Mother Lode Belt in California which produced over 13 M oz gold, the Bralorne-Bridge River regions of British Columbia just 130 km to the southeast which produced over 4 M oz gold, and the Juneau Gold Belt which produced almost 7 M oz gold.

Sampling of outcropping veins at the Property by previous workers has returned numerous assay results showing extremely anomalous gold mineralization on the property including 223.7 g/t Au and 383.0 g/t Au in 1964 and 1965 by Falconbridge Ltd., 581.4 g/t Au sampled by New Pyramid Gold Mines in 1975, 64.5 g/t Au sampled by Golden Rule Resources Ltd. in 1989, 87.5 g/t Au sampled for Transition Metals Corp. in 2010, and most recently, 57.9 g/t Au sampled by the author in December of 2020. All of the mineralization identified to date is related to the intrusive sill north of Homathko Mountain. This unit strikes east and pinches and swells in width between 20 m and 60 m. Mapping by Transition Metals has traced this unit on surface for 2 km and sampling has confirmed anomalous gold values along 1.5 km of it.

Despite the demonstrated presence of highly anomalous gold on the property, very little time has been spent on the Property by various companies since the Discovery Vein was first located by Falconbridge in 1964. Work on the property to this point has been limited to mapping, analysis of aerial photography, sampling and minor hand trenching/ pitting. No systematic exploration of the Property has been done. No work has been undertaken to determine the extent of mineralization below the surface.

The Homathko Property is a highly prospective and very underexplored project with excellent potential for additional high-grade gold mineralization. Additional exploration is recommended.

17 RECOMMENDATIONS

Additional exploration of the Homathko Property is recommended. The exploration should have two primary goals:

1. Explore the property for additional mineralized units/ occurrences within the claim group.

2. Determine the subsurface expression of the quartz-diorite sill and evaluate the mineralization within this unit.

17.1 Phase 1 – Prospecting/ Geochemical Surveys

A first order recommendation for the Homathko Property is an extensive program of systematic, grid-based geochemical surveys and combined prospecting.

It is recommended that promising results regarding structural features and potential extensions to mineralized units north of Homathko peak are prioritized for this program. Where soil development allows, soil sampling on a grid basis should be conducted; grid lines should be spaced no more than 100 m apart in a roughly east-west dimension and sampling stations should be spaced at no more than 25m distance along north-west oriented lines.

The author recommends a minimum three-week program utilizing two geologists and two assistants to conduct this program.

<u>Proposed Budget</u>

Expense	Proposed Cost
Mobilization	$5,000
Wages	$37,800
21 days food/ lodging	$11,000
Assay costs	$75,000
TOTAL COST	**$128,800**

17.2 Phase 2 - Five-hole, 750 m drill Program

Highly anomalous and promising gold grades have been identified within the quartz diorite sill north of Homathko Mountain. To evaluate the extent, grade and continuity of mineralization, and dependent on the success of Phase 1, a small drill program consisting of five drill holes totalling 750 m is proposed. This is an initial exploration of a project where geological controls on mineralization are well understood, helicopter support is required, the terminal depth of drill holes is unlikely to exceed 150 m, and water sources are likely to be problematic; rotary percussive ("RC") drilling is highly suggested as a practical alternative to diamond drilling for logistical and budgetary reasons.

At least three of these holes should test the known mineralization identified at the Discovery zone. One hole should be collared immediately south of the Discovery zone and angled towards the north to intercept the body of mineralized quartz-diorite sill. This hole should be located 10 m south of any recognized mineralization and drilled at -65°. Subsequent holes should step out from this hole by 50 m to each of the east and west.

If any promising new structures or mineralized bodies identified by Phase 1 of this program, should be explored and if deemed worthwhile, drilled at this time.

Including mobilization, this project is slated to require two weeks. Accommodations are recommended to utilize facilities available at Bluff Lake where White Saddle Helicopters is based. Facilities here will be ideal for staging equipment, housing staff and processing core.

Proposed Budget

The following is a estimated cost for 750 m drill program at the Homathko Property

Expense	Proposed Cost
Personnel, including preparation and wrap-up costs	$18,500
Helicopter support	$55,000
RC Drilling 10 days @ $10,000/day all in	$100,000
Assaying: 500 1.5 m samples @ $40 including shipping	$20,000
Accommodations, including meals, 150 @ $200/day	$30,000
Truck rental and fuel	$4,000
Miscellaneous	$20,000
Estimated total	**$247,500**

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BC Parks: https://bcparks.ca

Bureau Veritas 2019 fee schedule: http://acmelab.com/wp-content/uploads/2009/03/BVM_Fee-Schedule-2019_CAD_v1_Jan2019.pdf

Environment Canada: https://weather.gc.ca/canada_e.html

Google Maps: https://www.google.com/maps

INFOMINE: https://www.infomine.com/ MapPlace BC:https://www2.gov.bc.ca/gov/content/industry/mineral-exploration-mining/british-columbia-geological-survey/mapplace

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Multi-Year Area-Based Permitting (MYAB), Mines and Mineral Resources Division, Ministry of Energy and Mines: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/mineral-exploration-mining/documents/exploration/myab_proponent_guide_feb2014.pdf

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Appendix I

CERTIFICATE OF QUALIFICATIONS, CONSENT, DATE AND SIGNATURES

I, Jason McLaughlin, of 51-2562 Whiteley Court in the city of North Vancouver, British Coumbia, V7J 2R5, hereby certify that:

1. I am an independent consulting geologist providing exploration services to the mineral exploration community.

2. This certificate applies to the technical report titled: "NI 43-101 Technical Report, Homathko Property, British Columbia, Canada" dated effective February 15, 2022 (the "Technical Report").

3. I am a graduate of the University of British Columbia ("UBC"), Bachelor of Science Degree in Geology, 1999. I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (EGBC), License No. 49260. I have worked as a geologist for a total of 20 years since my graduation from UBC. I have worked extensively in Yukon, British Columbia, and Alaska, as well as the northern Ontario, Northwest Territories, Saskatchewan and Manitoba. I have acted in various capacities with numerous private and publicly traded mining and exploration companies.

4. 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 requirement to be a "qualified person" for the purposes of NI 43-101.

5. I visited the Homathko Property on November 3rd, 2020 during which time I completed a helicopter-assisted reconnaissance of the project area and collected due diligence samples for assay.

6. I am responsible for all sections of the Technical Report.

7. I am independent of the issuer applying all of the tests in Section 1.5 of NI 43-101.

8. I have not had any prior involvement with the property that is the subject of the Technical Report.

9. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that Instrument and Form.

10. As of the date of this certificate, 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.

Dated at Vancouver this 15th day of February, 2022.

National Instrument 43-101

CONSENT OF QUALIFIED PERSON

To: British Columbia Securities Commission

Alberta Securities Commission

Canadian Securities Exchange

Re: National Instrument 43-101 Technical Report for Homerun Resources Inc. (the "Company")

I**, Jason McLaughlin, P. Geo,** of Vancouver, Canada, am the sole author of the technical report entitled "Technical Report on the Homathko Property, British Columbia, Canada" prepared for Homerun Resources. and dated effective February 15th, 2022 (the "Technical Report") I hereby consent to the public filing of the Technical Report and the use of extracts from, or a summary of, the Technical Report by the company.

Dated in Vancouver this 15th day of February, 2022.

Jason McLaughlin, BSc, P. Geo.

Association of Professional Engineers and Geoscientists of British Columbia, License #49260

Appendix 2

AIRBORNE GEOPHYSICAL REPORT AND DATA

AIRBORNE GEOPHYSICAL SURVEY REPORT

Chilco Survey Block

Tatla Lake, BC

Homerun Resources

Precision GeoSurveys Inc.
www.precisiongeosurveys.com
Hangar 42 Langley Airport
21330 - 56th Ave., Langley, BC
Canada V2Y 0E5
604-484-9402

Jenny Poon, B.Sc., P.Geo.

June 2021
Job# 21134

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List of Chilco Survey Block Plates

1.0 Introduction

This report outlines the geophysical survey operations and data processing procedures taken during the high resolution helicopter-borne gradient magnetic and radiometric survey flown over the Chilco survey block for Homerun Resources. The survey block is located in southwestern British Columbia (Figure 1) and it was flown from June 1 to June 5, 2021.

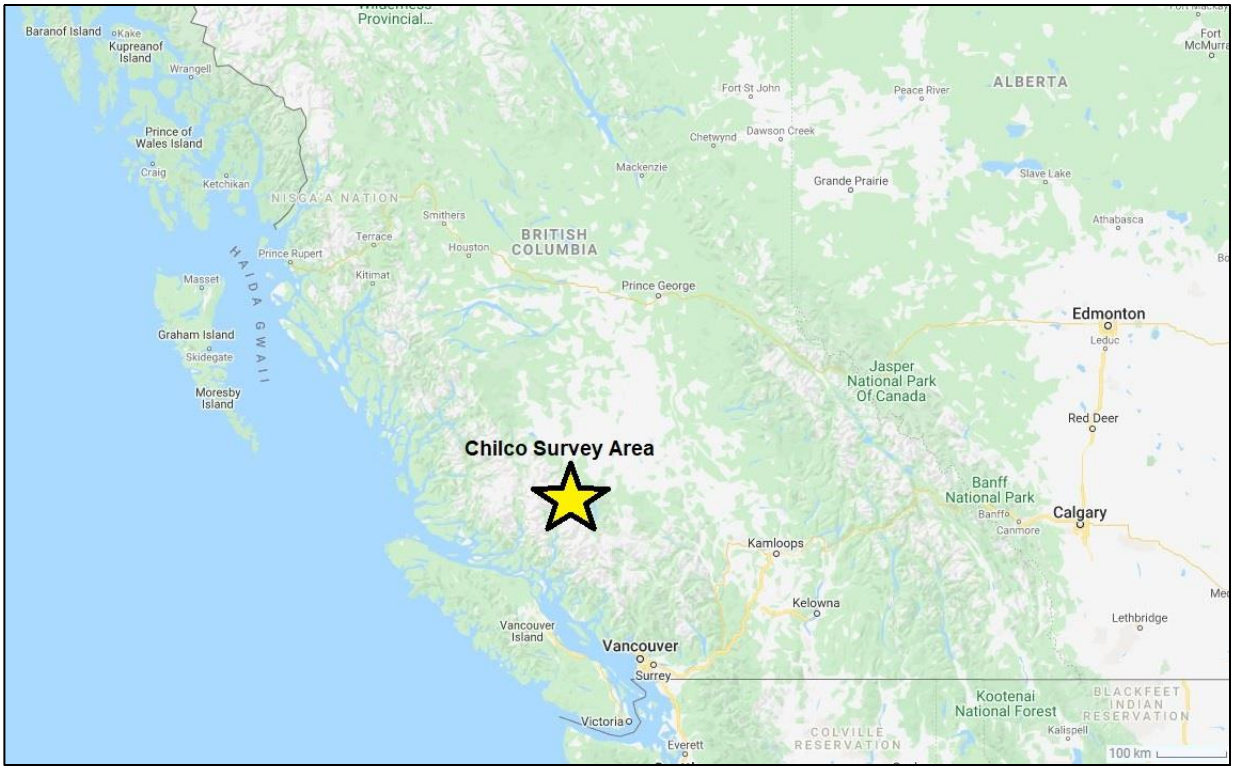

Figure 1: Chilco survey area located in southern British Columbia.

1.1 Survey Area

The Chilco survey block is located approximately 60 km south of Tatla Lake and 198 km northwest of Lillooet, British Columbia (Figure 2).

Figure 2: Chilco survey block northwest of Lillooet and south of Tatla Lake, British Columbia.

The Chilco survey block was flown at 100 m line spacing at a heading of 000°/180°; tie lines were flown at 1000 m spacing at a heading of 090°/270° (Figures 3 and 4).

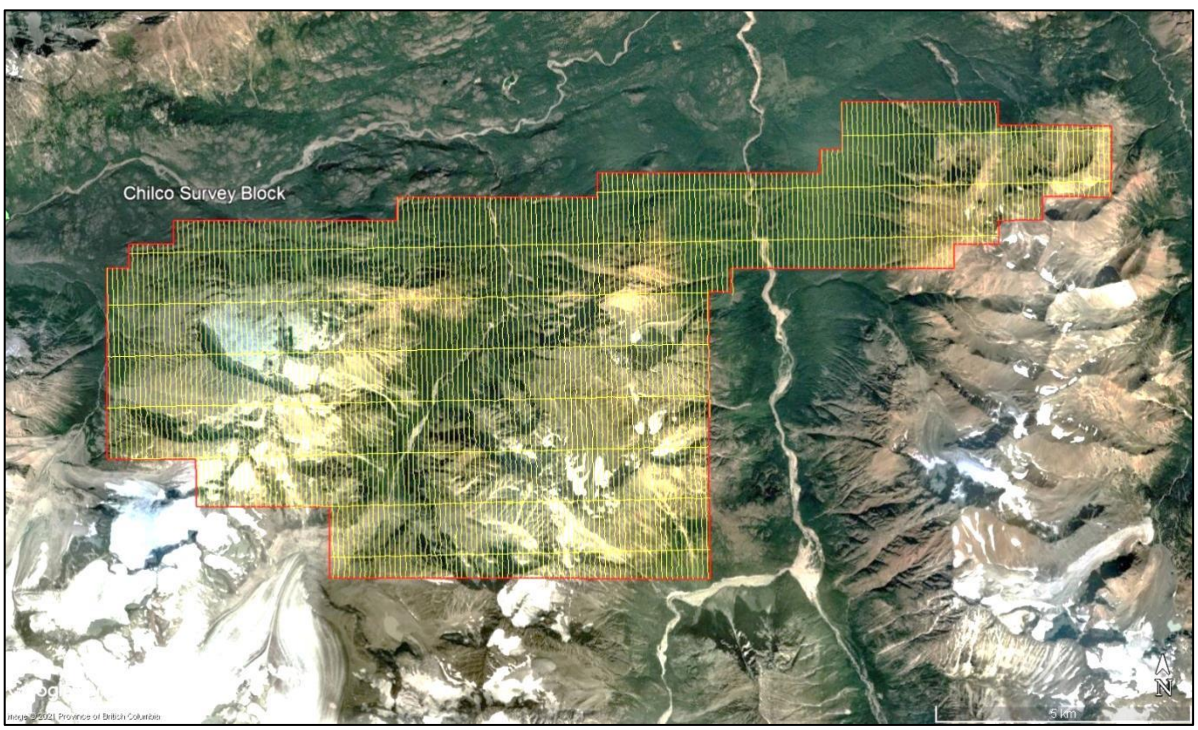

Figure 3: Plan View – Chilco survey block with actual flight lines in yellow and survey block boundary in red.

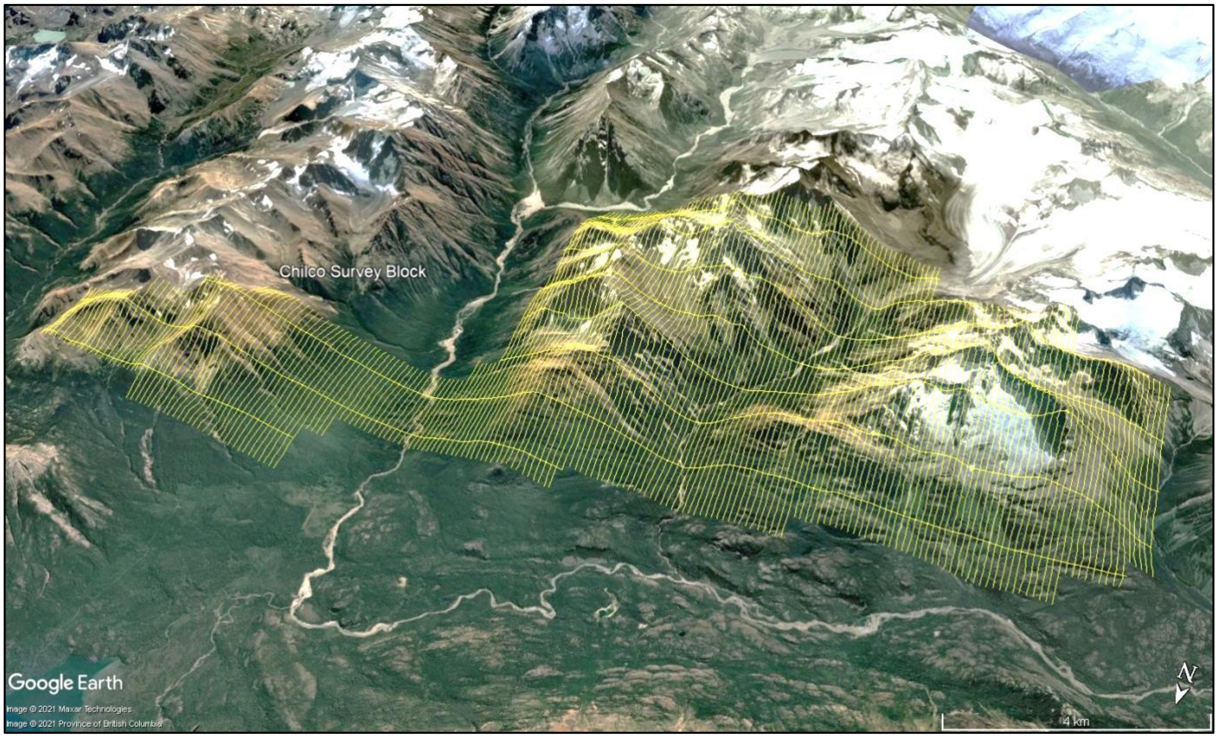

Figure 4: Terrain View – Chilco survey block with actual flight lines displayed in yellow.

1.2 Survey Specifications

The geodetic system used for the geophysical survey was WGS 84 in UTM Zone 10N. A total of 1055 line km was flown over one block with a total area of 95.3 km^2 (Table 1). An additional 6 km was flown to retain data from flight lines flown outside the survey block margins for efficiency. Polygon coordinates for the Chilco survey block are specified in Appendix A.

Survey Block	Area (km^2)	Line Type	No. of Lines Planned	No. of Lines Completed	Line Spacing (m)	Line Orientation (UTM grid)	Total Planned Line km	Total Actual km Flown
Chilco	95.3	Survey	197	197	100	000°/180°	954	959
		Tie	9	9	1000	090°/270°	95	96
		Total:	**206**	**206**			**1049**	**1055**

Table 1: Survey flight line specifications for Chilco survey block.

2.0 Geophysical Data

Geophysical data are collected in a variety of ways and are used for many purposes including aiding in the determination of geology, mineral deposits, oil and gas deposits, geotechnical investigations, contaminated land sites, and UXO (unexploded ordnance) detection.

For the purposes of this survey, airborne gradient magnetic and radiometric data were collected to serve in geological mapping and exploration for mineral deposits.

2.1 Magnetic Data

Magnetic surveying is the most common airborne geophysical technology used for both mineral and hydrocarbon exploration. Aeromagnetic surveys measure and record the total intensity of the magnetic field at the magnetometer sensor, which is a combination of the desired geomagnetic field as well as influences from the constantly varying solar wind and the aircraft's magnetic field. By subtracting temporal and aircraft magnetic effects, the resulting aeromagnetic maps show the spatial distribution and relative abundance of magnetic minerals - most commonly the iron oxide mineral magnetite - in the upper levels of Earth's crust, which in turn are related to lithology, structure, and alteration of bedrock. Survey specifications, instrumentation, and interpretation procedures depend on the objectives of the survey. Magnetic surveys are typically performed for:

- Geological Mapping - to aid in mapping lithology, structure, and alteration.
- Depth to Basement Mapping - for exploration in sedimentary basins or mineralization associated with the basement surface.

2.1.1 Gradient Magnetic Data

In addition to high resolution total magnetic field data, horizontal magnetic gradient data were collected by using a triple magnetic gradient boom with 3 axis compensation. Direct measurement of the magnetic gradient has the following benefits:

- Enhanced definition of near-surface anomalies.
- Emphasis on short wavelength spatial components of magnetic anomalies from horizontal variations of the gradients.
- Attenuation of long wavelength spatial components associated with regional trends and large scale anomalies.
- Reduction of high frequency temporal variations in the Earth's magnetic field due to micro-pulsations.
- Immunity to diurnal fluctuations.
- Reduction of aircraft/sensor movement errors.

2.2 Radiometric Data

Radiometric surveys are used to determine either the absolute or relative concentrations of the naturally occurring radioelements uranium (U), thorium (Th), and potassium (K) in surface rocks and soils using radioactive emanations. Gamma radiation is utilized due to its greater penetration depth compared with alpha and beta radiation. Radiometric data are useful for mapping lithology, alteration, and structure as well as providing insights into weathering. For example, individual radioelements follow very different pathways of evolution during alteration of rocks, natural radioactivity of igneous rocks generally increases with SiO_2 content, and clay minerals tend to fix the natural radioelements.

Gamma rays are electromagnetic waves with frequencies between 10^{19} and 10^{21} Hz emitted spontaneously from an atomic nucleus during radioactive decay, in packets referred to as photons. The energy E transported by a photon is related to the wavelength λ or frequency ν by the formula:

$$E = h\nu = hc/\lambda$$

where: c is the velocity of light
h is Planck's constant (6.626 x 10^{-34} joule)

All detectable gamma radiation from Earth materials comes from the natural decay products of three primary radioelements: U, Th, and K. Each individual nuclear species (element) emits gamma rays at one or more specific energies, as shown in Figure 5. Of these elements, only potassium (^{40}K) emits gamma energy directly, at 1.46 MeV. Uranium (^{238}U) and thorium (^{232}Th) emit gamma rays through their respective decay series; ^{214}Bi at 1.76 MeV for uranium and ^{208}Tl at 2.61 MeV for thorium. Accordingly, the ^{214}Bi and ^{208}Tl measurements are considered equivalents for uranium (eU) and thorium (eTh), as the daughter products will be in equilibrium under most natural conditions.

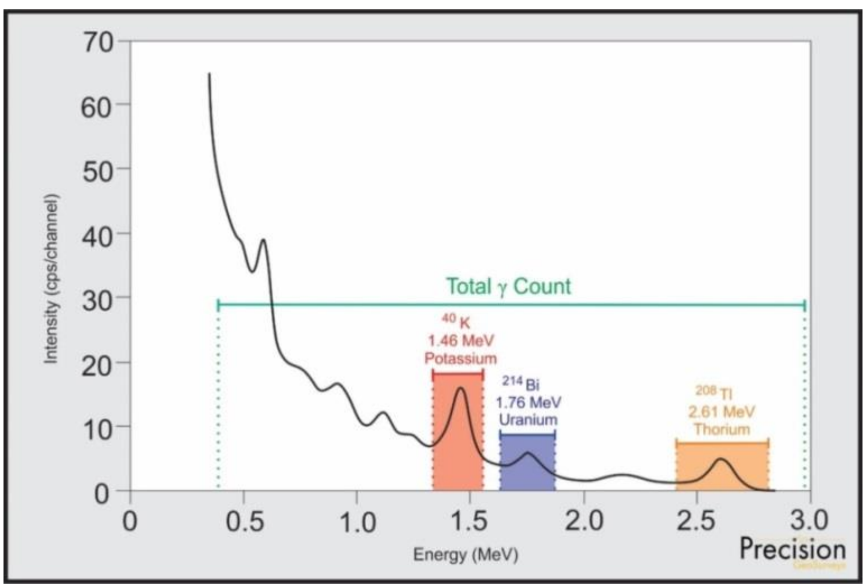

Figure 5: Typical natural gamma spectrum showing the three spectral windows (^{40}K 1.37-1.57 MeV, ^{214}Bi 1.66-1.86 MeV, ^{208}Tl 2.41-2.81 MeV) and total count (0.40-2.81 MeV) window.

Surficial debris, vegetation, standing water (lakes, marshes, swamps), ice, and snow can effectively attenuate gamma rays originating from underlying rocks. Therefore, variations in gamma counts must be evaluated with respect to surficial conditions before they are attributed to changes in underlying geology. An increase in soil moisture can also significantly affect gamma radiation concentrations. For example, a 10% increase in soil moisture can decrease the measured gamma radiation by about the same amount. Radon isotopes are long-lived members of both the U and Th decay series and Ra mobility can influence radiometric surveys. In addition to being directly radioactive, ^{226}Ra and ^{222}Rn can attach to dust particles in the atmosphere. Precipitation of these radioactive dust particles by rain can lead to apparent increases of more than 2000% in uranium ground concentration (IAEA, 2003). Therefore, gamma data should not be collected during a rainfall, or shortly after a rainfall.

In this case, U, Th, and K gamma energy has been attenuated by the presence of glaciers and snow coverage above 2000 m ASL, especially over north facing slopes. For example, 2 cm of snow can reduce the penetration of gamma radiation by 35% (IAEA, 2003). Therefore, radiometric data were locally compromised and should be used with discretion.

3.0 Aircraft and Equipment

All geophysical and subsidiary equipment were carefully installed on an aircraft by Precision GeoSurveys to collect gradient magnetic and radiometric data.

3.1 Aircraft

Precision GeoSurveys flew the survey using an Airbus AS350 helicopter, registration C-GSVY.

3.2 Geophysical Equipment

The survey aircraft (Figure 6) was equipped with a data acquisition system, GPS navigation system, pilot guidance unit (PGU), laser altimeter, triple magnetic gradient boom system, fluxgate magnetometer, gamma ray spectrometer, barometer, and temperature/humidity probe. In addition, two magnetic base stations were used to record temporal magnetic variations. Technical specifications for the geophysical equipment are provided in Appendix B.

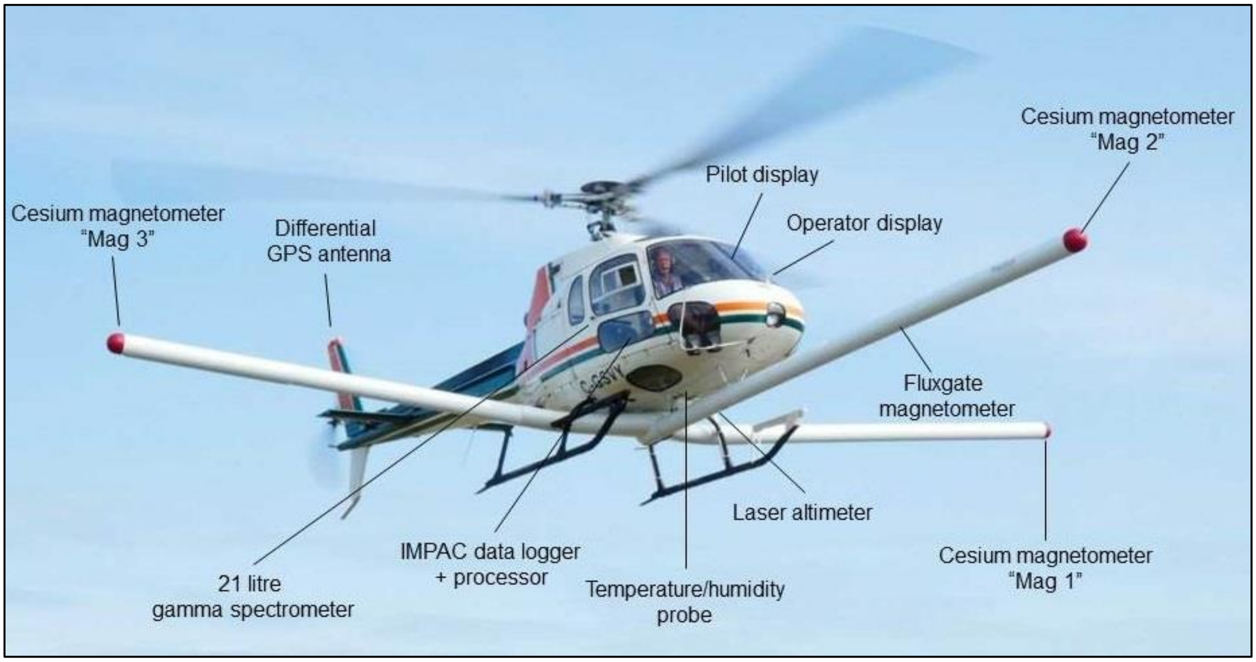

Figure 6: Survey helicopter equipped with three magnetic sensors for gradient magnetic data acquisition and gamma spectrometer.

3.2.1 IMPAC

The Integrated Multi-Parameter Acquisition Console (IMPAC) (Figure 7), manufactured by Nuvia Dynamics Inc. (previously Pico Envirotec Inc.), is the main computer used in integrated data recording, data synchronizing, providing real-time quality control data for the geophysical operator display, and the generation of navigation information for the pilot and operator display systems.

Figure 7: IMPAC data acquisition system.

IMPAC uses the Microsoft Windows operating system and geophysical parameters are based on Nuvia's Airborne Geophysical Information System (AGIS) software. Depending on survey specifications, information such as magnetic field, electromagnetic response, total gamma count, counts of various radioelements (K, U, Th, etc.), cosmic radiation, barometric pressure, atmospheric humidity, temperature, aircraft attitude, navigation parameters, and GPS status can all be monitored on the AGIS on-board display (Figure 8).

While in flight, raw magnetic response, magnetic fourth difference, compensated and uncompensated data, radiometric spectra, EM response, aircraft position, survey altitude, cross track error, and other parameters are recorded and can be viewed by the geophysical operator for immediate QC (quality control). Additional software allows for post or real time magnetic compensation and radiometric calibration.

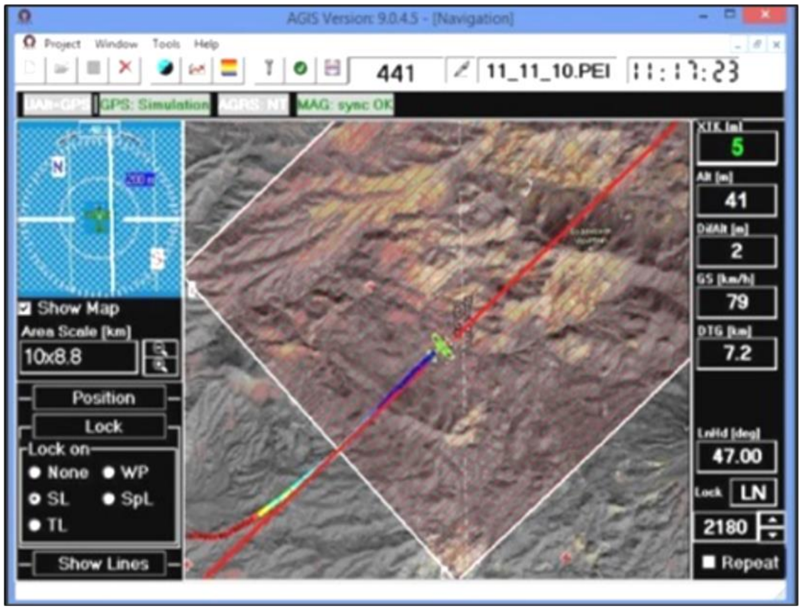

Figure 8: AGIS operator display showing real time flight line recording and navigation parameters. Additional windows display real-time geophysical data to operator.

3.2.2 GPS Navigation System

A Hemisphere R330 GPS receiver (Figure 9) and a Novatel GPS antenna on the tail of the aircraft integrated with the AGIS navigation system and pilot display (PGU) provide accurate navigational information and position control. The R330 GPS receiver supports fast updates at a rate of up to 10 Hz (10 times per second); delivering sub-meter positioning accuracy in three dimensions. It receives GNSS (GPS/GLONASS) L1 and L2 signals.

The receiver supports differential correction methods including L-Band, RTK, SBAS, and Beacon. The R330 employs innovative Hemisphere GPS Eclipse SureTrack technology, which allows it to model the phase on satellites that the airborne unit is currently tracking. With SureTrack technology, dropouts are reduced and speed of the signal reacquisitions is increased; enhancing accurate positioning when base corrections are not available.

Figure 9: Hemisphere R330 GPS receiver.

3.2.3 Pilot Guidance Unit

Steering and elevation (ground clearance) information is continuously provided to the pilot by the Pilot Guidance Unit (PGU). The graphical display is mounted on top of the aircraft's instrument panel, remotely from the data acquisition system. The PGU is the primary navigation aid (Figure 10) to assist the pilot in keeping the aircraft on the planned flight path, heading, speed, and at the desired ground clearance.

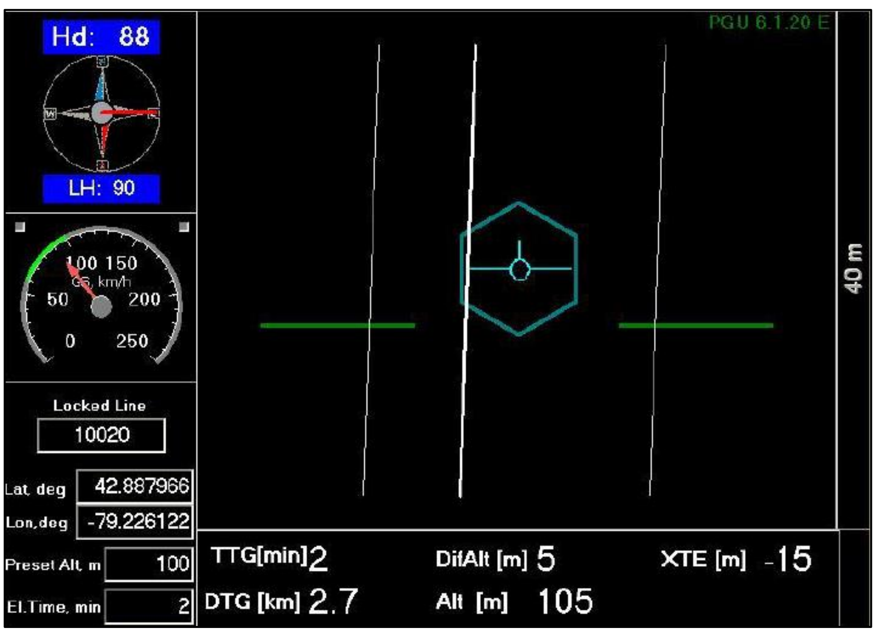

Figure 10: PGU screen displaying navigation information.

PGU information is displayed on a full VGA 600 x 800 pixel 7 inch (17.8 cm) LCD display. The CPU for the PGU is contained in a PC-104 console and uses Microsoft Windows operating system control, with input from the GPS antenna on the aircraft, laser altimeter, and AGIS.

3.2.4 Laser Altimeter

Terrain clearance is measured by an Opti-Logic RS800 Rangefinder laser altimeter (Figure 11) attached to the belly of the forward magnetometer boom. The RS800 laser is a time-of-flight sensor that measures distance by a rapidly modulated and collimated laser beam that creates a dot on the target surface. The maximum range of the laser altimeter is 700 m off natural surfaces with accuracy of ±1 m on 1 x 1 m diffuse target with 50% (±20%) reflectivity. Within the sensor unit, reflected signal light is collected by the lens and focused onto a photodiode. Through serial communications and digital outputs, ground clearance data are transmitted to an RS-232 compatible port and recorded and displayed by the AGIS and PGU at 10 Hz in meters.

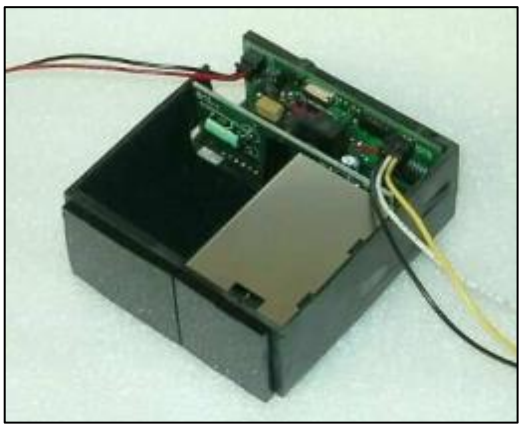

Figure 11: Opti-Logic RS800 Rangefinder laser altimeter.

3.2.5 Magnetic Gradiometer

The primary geophysical technology used on this survey was a magnetic gradiometer system (Figure 12). Three widely-spaced split-beam cesium vapor magnetometers mounted in a non-magnetic and non-conductive triple boom configuration provide total magnetic intensity as well as magnetic gradient in the cross-line (X or lateral or transverse) and in-line (Y or longitudinal) directions (Table 2). The magnetometer sensors were orientated 45 degrees from vertical to couple with local magnetic field at the Chilco survey area.

Figure 12: View of triple magnetic boom system.

Magnetometer	Model	Serial No.	Gradient Direction	Separation (m)
Mag 1	Geometrics G-822A	75656	X or Cross-line	11.5
Mag 2	Scintrex CS-3	612211	Total Field and In-line	7.3
Mag 3	Geometrics G-822A	823063	X or Cross-line	11.5

Table 2: Magnetometer details. Cross-line gradient measured between Mag 1 and Mag 3.

3.2.6 Fluxgate Magnetometer

As the survey helicopter flies along a survey line, small attitude changes (pitch, roll, and yaw) are measured by a triaxial fluxgate magnetometer (Figure 13). The fluxgate consists of three magnetic sensors, X, Y, and Z, operating independently and simultaneously. Each sensor has an analog output corresponding to the directional component of the ambient magnetic field along its axis. Response of the sensors is proportional to the cosine of the angle between the applied field and the sensor's sensitive axis.

Figure 13: Billingsley TFM100G2 triaxial fluxgate magnetometer.

3.2.7 Magnetic Base Station

Temporal variations of Earth's magnetic field, particularly diurnal, were monitored and recorded by two GEM GSM-19T base station magnetometers. They were operated at all times while airborne data were being collected. The base stations were located in an area with low magnetic gradient, away from electric power transmission lines and moving ferrous objects, such as motor vehicles, that could affect the survey data integrity.

The GEM GSM-19T magnetometer (Figure 14) with integrated GPS time synchronization uses proton precession technology with absolute accuracy of ±0.20 nT and sensitivity of 0.15 nT at 1 Hz. Base station magnetic data were recorded on internal solid-state memory and downloaded onto a field laptop computer using a serial cable and GEMLink 5.4 software. Profile plots of the base station readings were generated, updated, and reviewed at the end of each survey day.

Figure 14: GEM GSM-19T proton precession magnetometer.

3.2.8 Spectrometer

Gamma radiation data were collected by an Advanced Gamma Ray Spectrometer (AGRS-5) manufactured by Nuvia Dynamics. The AGRS is an intelligent, self-calibrating, fully integrated gamma detection system (Figure 15) containing five thallium-activated synthetic sodium iodide crystals; 16.8 litres (four crystals of 4.2 litres each) downward-looking and 4.2 litres upward-looking (one crystal of 4.2 litres), with user-selectable 256, 512, or 1024 channel output at 1 Hz sampling rate. The downward-looking crystals are designed to measure gamma rays from below the aircraft. The upward-looking crystal is mounted directly on top of the four downward-looking crystals to measure cosmic and solar gamma radiation originating from above the survey aircraft and is shielded from terrestrial radiation by the downward-looking crystals. The AGRS system is installed in the rear passenger cabin of the helicopter away from the fuel tank to minimize variable gamma attenuation from fluctuating fuel levels.

Figure 15: AGRS-5 gamma spectrometer system with five detectors (four down, one up).

4.0 Survey Operations

The Chilco geophysical survey was flown from June 1 to June 5, 2021 in cloudy, wet, and windy conditions. The experience of the pilot ensured that data quality objectives were met, and that safety of the flight crew was never compromised given the potential risks involved in airborne geophysical surveying. Field processing and quality control checks were performed daily.

4.1 Operations Base and Crew

The base of operation for the Chilco survey was at Tatla Lake, British Columbia, north of the survey block.

Precision's geophysical crew consisted of three members (Table 3):

Crew Member	Position
Kim Flament	Helicopter pilot
Ryan Snow	Geophysical technician and helicopter mechanic
Jenny Poon, B.Sc., P.Geo.	Geophysicist – data processor, mapping, and reporting (off-site)

Table 3: List of survey crew members.

4.2 Magnetic Base Station Specifications

Changes in the Earth's magnetic field over time, such as diurnal variations, magnetic pulsations, and geomagnetic storms, were measured and recorded by two stationary GEM GSM-19T proton precession magnetometers. The magnetic base stations were installed north of the survey block in an area (Table 4; Figures 16 and 17) of low magnetic noise away from metallic items such as ferromagnetic objects, vehicles, and power lines that could affect the base stations and ultimately the survey data.

Station Name	Easting/Northing	Latitude/Longitude	Datum/Projection
GEM 5 S/N 1094678	401459 m E 5727652 m N	51° 41' 28.21" N 124° 25' 32.34" W	WGS 84, Zone 10N
GEM 6 S/N 5087249	401469 m E 5727652 m N	51° 41' 28.21" N 124° 25' 31.80" W	WGS 84, Zone 10N

Table 4: Magnetic base station locations.

Magnetic readings were reviewed at regular intervals to ensure that no airborne data were collected during periods of high magnetic activity (in excess of 10 nT from a linear chord of five minutes).

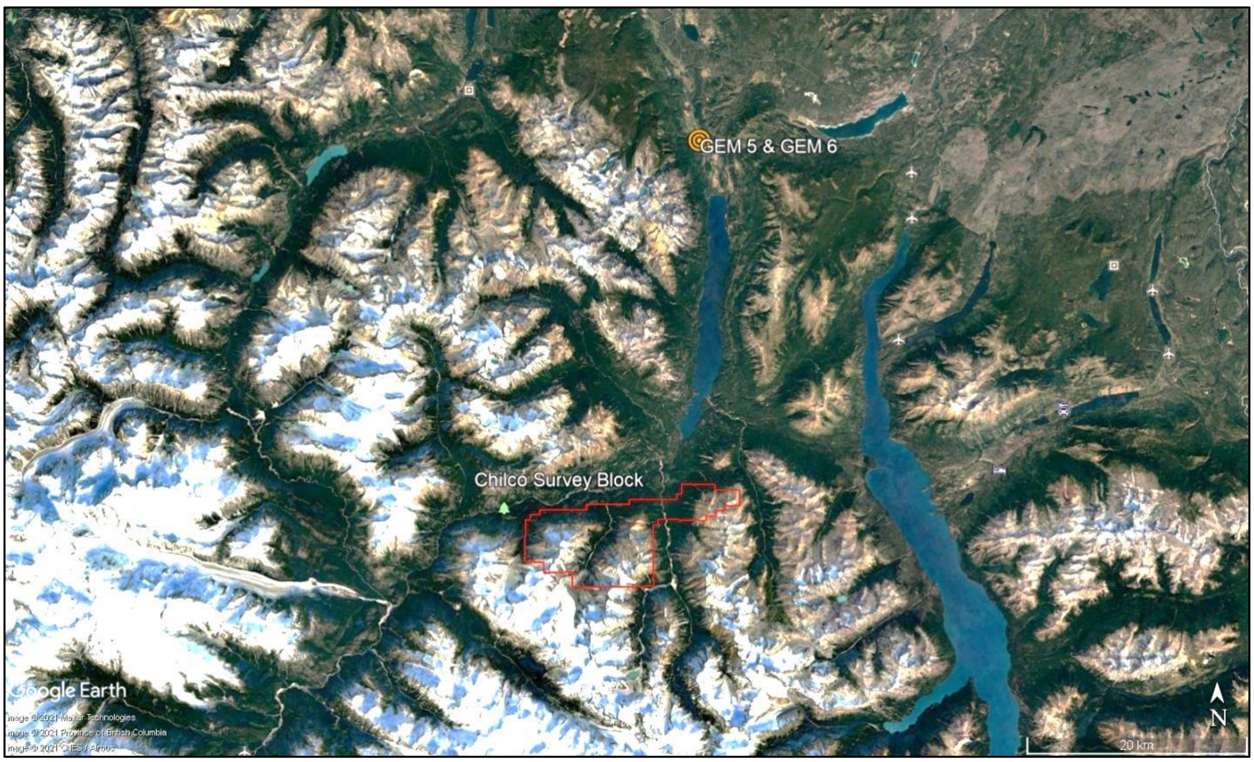

Figure 16: Location of GEM 5 and GEM 6 magnetic base stations north of the survey block.

Figure 17: GEM 5 (L) and GEM 6 (R) magnetic base stations.

4.3 Field Processing and Quality Control

Survey data were transferred from the aircraft's data acquisition system onto a USB memory stick and copied onto a field data processing laptop on a flight-by-flight basis. The raw data files in PEI binary data format were converted into Geosoft GDB database format. Using Geosoft Oasis Montaj 9.9.1, the data were inspected to ensure compliance with contract specifications (Table 5; Figures 18 to 20).

Parameter	Specification	Tolerance
Position	Line Spacing	Flight line deviation within 8 m L/R from ideal flight path. No exceedance for more than 1 km.
	Height	Nominal flight height of 50 m above ground level (AGL) with tolerance of ±10 m. No exceedance for more than 1 km, provided deviation is not due to tall trees, topography, mitigation of wildlife/livestock harassment, cultural features, or other obstacles beyond the pilot's control.
	GPS	GPS signals from four or more satellites must be received at all times, except where signal loss is due to topography. No exceedance for more than 1 km.
Magnetics	Temporal/Diurnal Variations	Non-linear temporal magnetic variations within 10 nT of a linear chord of length 5 minutes.
	Normalized 4th Difference	Magnetic data within 0.05 nT peak to peak. No exceedance for distances greater than 1 km or more, provided noise is not due to geological or cultural features.
Radiometrics	Moisture Conditions	No delays shall be incurred due to unfavourable radiometric survey conditions.

Table 5: Contract survey specifications.

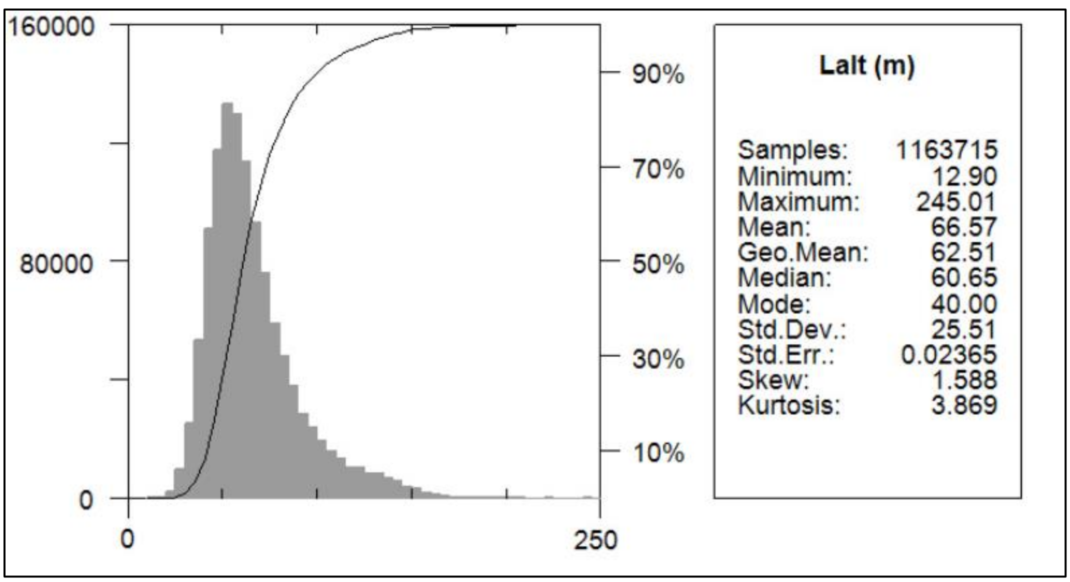

Figure 18: Histogram showing survey elevation vertically above ground.

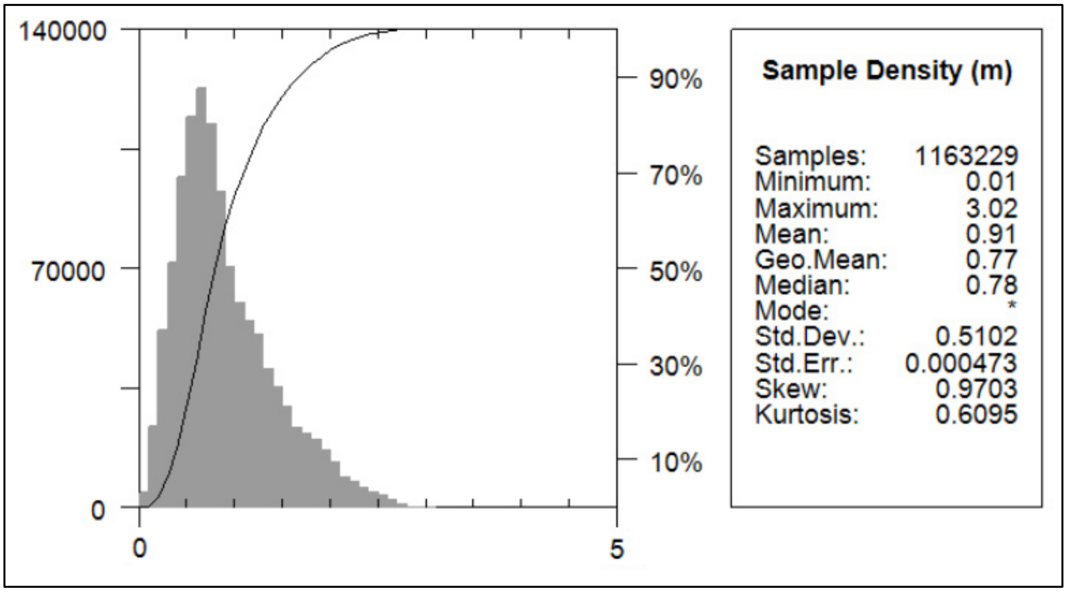

Figure 19: Histogram showing magnetic sample density. Horizontal distance in meters between adjacent measurement locations; magnetic sample frequency 20 Hz.

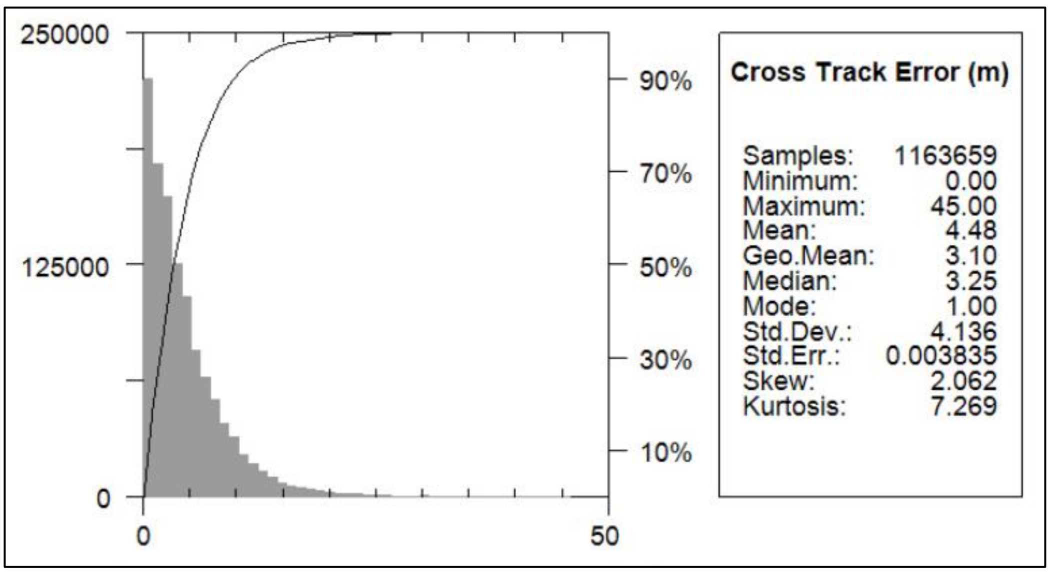

Figure 20: Histogram showing cross track error of survey helicopter.

5.0 Data Acquisition Equipment Checks

Equipment tests and calibrations were conducted for the laser altimeter, magnetometers, and spectrometer at the start of the survey to ensure compliance with contract specifications and to deliver high quality airborne geophysical data. A lag test was conducted for all sensors. For the airborne magnetometers, compensation and heading error test flights were flown. There were three tests conducted for the gamma spectrometer: calibration pad test, cosmic flight test, and altitude correction and sensitivity test.

5.1 Laser Altimeter Calibration

The Opti-Logic RS800 laser altimeter used on the survey helicopter was tested and calibrated in accordance with manufacturer's instructions prior to starting the survey. This ensured that heights reported by the laser were accurate within the normal survey operating range.

5.2 Lag Test

A lag test was performed to determine the difference in time the digital reading was recorded for the magnetometers, laser altimeter, and spectrometer with the position fix time that the fiducial of the reading was obtained by the GPS system resulting from a combination of system lag and different locations of the various sensors and the GPS antenna. The test was flown in reciprocal headings over identifiable features at survey speed and height to isolate position changes. The resulting data (Table 6) were used to correct for time and position.

Instrument	Source	Lag Fiducial	Correction (sec)
Mag 1	Logging machinery	7	0.35
Mag 2	Logging machinery	9	0.45
Mag 3	Logging machinery	7	0.35
Laser	Sharp gully	18	0.90
Spectrometer	Lake edge	17	0.85

Table 6: Survey lag correction values. Spectrometer and laser altimeter were resampled to 20 Hz.

5.3 Magnetometer Tests

The magnetometers were tested and calibrated with a series of dedicated flights specifically for removing instrument offset errors and undesired effects of aircraft movement, speed, and heading direction.

5.3.1 Compensation Flight Test

During aeromagnetic surveying, a small but significant amount of noise is introduced to the magnetic data by the aircraft itself, as the magnetometers are within the aircraft's magnetic field. Changes in aircraft attitude combined with the permanent magnetization of certain ferrous aircraft parts contribute to this noise. The aircraft was degaussed using proprietary technology prior to starting the survey and the remaining magnetic noise was removed by a process called magnetic compensation.

A magnetic compensation flight was completed for this survey. The process consists of a series of prescribed maneuvers (±10° roll, ±10° pitch, and ±10° yaw) where the aircraft flies in the four orthogonal headings required (000°/090°/180°/270° in the case of this survey) at a sufficient altitude (typically > 2,500 m AGL) in an area of low magnetic gradient where Earth's magnetic field becomes nearly uniform at the scale of the compensation flights. In each heading direction, three specified roll, pitch, and yaw maneuvers (total 36) are performed by the pilot at constant elevation so that any magnetic variation recorded by the airborne magnetometers can be attributed to aircraft movement. These maneuvers are determined by the airborne fluxgate magnetometer and provide the data that are required to calculate the necessary parameters for compensating the magnetic data for each of the three magnetometers to remove aircraft noise from survey data. Compensation flight test results are summarized in Tables 7 to 9.

Pre-Compensation (nT)					Post-Compensation (nT)				
Heading	**Roll**	**Pitch**	**Yaw**	**Total**	**Heading**	**Roll**	**Pitch**	**Yaw**	**Total**
000°	1.0692	0.6031	0.4476	2.1199	000°	0.3164	0.2804	0.2657	0.8625
090°	1.8955	0.7984	0.9196	3.6135	090°	0.2208	0.1721	0.2132	0.6061
180°	1.5331	0.8671	0.8420	3.2422	180°	0.2412	0.3251	0.2723	0.8386
270°	1.1390	0.5310	0.5921	2.2621	270°	0.4102	0.4129	0.3425	1.1656
FOM = 11.2377					**FOM = 3.4728**				

Table 7: Results of compensation flight for Mag 1.

Pre-Compensation (nT)					Post-Compensation (nT)				
Heading	**Roll**	**Pitch**	**Yaw**	**Total**	**Heading**	**Roll**	**Pitch**	**Yaw**	**Total**
000°	0.3077	0.4773	0.2732	1.0582	000°	0.1799	0.1659	0.1653	0.5111
090°	0.2793	0.3701	0.2554	0.9048	090°	0.1881	0.1557	0.1886	0.5324
180°	0.3251	0.3186	0.2310	0.8747	180°	0.2328	0.2337	0.1939	0.6604
270°	0.2783	0.2774	0.2367	0.7924	270°	0.1586	0.1508	0.1382	0.4476
FOM = 3.6301					**FOM = 2.1515**				

Table 8: Results of compensation flight for Mag 2.

Pre-Compensation (nT)					Post-Compensation (nT)				
Heading	**Roll**	**Pitch**	**Yaw**	**Total**	**Heading**	**Roll**	**Pitch**	**Yaw**	**Total**
000°	1.5533	0.8227	0.5978	2.9738	000°	0.3364	0.2889	0.2871	0.9124
090°	0.9561	0.3696	0.4593	1.7850	090°	0.2299	0.1603	0.2151	0.6053
180°	1.1089	0.5175	0.3505	1.9769	180°	0.3043	0.4146	0.3163	1.0352
270°	1.8001	0.8301	1.4305	4.0607	270°	0.4204	0.3518	0.3997	1.1719
FOM = 10.7964					**FOM = 3.7248**				

Table 9: Results of compensation flight for Mag 3.

5.3.2 Heading Correction Test

To determine heading errors and other offsets, a cloverleaf pattern flight test was conducted at high altitude to minimize the effect of natural magnetic gradient. The cloverleaf test was flown in the same orthogonal headings as the survey and tie lines (000°/090°/180°/270°in the case of this survey) at >2500 m AGL in an area with low magnetic gradient. For all four directions of the cloverleaf test the survey helicopter must pass over the same point, at the same elevation, with the aircraft in straight and level flight. The difference in magnetic values obtained in reciprocal headings is the heading error. Heading correction values derived from the test flight for each of the magnetometers are summarized in Table 10.

Heading	Mag 1 Heading Correction (nT)	Mag 2 Heading Correction (nT)	Mag 3 Heading Correction (nT)
000°	-1.76	-0.34	-0.12
090°	-3.62	-0.93	-5.77
180°	-2.66	-0.06	-6.60
270°	8.04	1.33	12.49
Total:	**0.0000**	**0.0000**	**0.0000**

Table 10: Magnetic sensor heading corrections.

5.4 Gamma-ray Spectrometer Tests and Calibrations

Calibration and testing of the AGRS-5 airborne gamma-ray spectrometry system was carried out prior to starting the survey. Spectrometer calibration involved three tests which enabled the conversion of airborne data to ground concentration of natural radioactive elements. These tests were the calibration pad test, cosmic flight test, and the altitude correction and sensitivity test. Procedures were generally in accordance with IAEA technical report series No. 323, *Airborne Gamma Ray Spectrometer Surveying*, and AGSO Record 1995/60, *A Guide to the Technical Specifications for Airborne Gamma-Ray Surveys*.

5.4.1 Calibration Pad Test

The calibration pad test was conducted using Geological Survey of Canada (GSC) portable calibration pads. The pads are slabs of concrete containing known concentrations of the natural radioelements K, Th, and U and are used to simulate ideal geological sources of radiation. The measurements collected from the calibration pad test were used to determine Compton scattering and Grasty backscatter (spectral overlap between element windows) coefficients.

5.4.2 Cosmic Flight Test

While the background source of gamma radiation from the aircraft itself is essentially constant, the amount of signal detected from ground sources varies with ground clearance. As the height of the aircraft increases, the distance between the ground and the spectrometer crystals increases, and the proportion of cosmic radiation in each spectral window increases exponentially. The cosmic flight test is conducted to determine the aircraft's background attenuation coefficients for the detector crystal packs and the cosmic coefficients. The pilot is required to fly over the same low gamma source location (such as a large lake) repeatedly in opposite directions at 4000, 5000, 6000, 7000, and 8000 feet (1220, 1520, 1830, 2130, and 2440 m) above ground, for approximately two minutes each, to collect gamma data used to determine the amount of non-terrestrial signal present in the total gamma signal.

5.4.3 Altitude Correction and Sensitivity Test

The altitude and sensitivity test is similar to the cosmic flight test but is conducted at lower elevations. The aircraft is required to fly over the same location at 30, 40, 50, 70, and 90 m above ground, for two minutes each. As the distance between the gamma detectors on the aircraft and the radioactive ground source increases, the source signature exponentially degrades. As a result, this test is used to determine the altitude attenuation coefficients and the radio-element sensitivity of the airborne spectrometer system.

6.0 Data Processing

After all data were collected, several procedures were undertaken to ensure that the data met a high standard of quality. Magnetic and radiometric data recorded by the AGIS were converted into Geosoft or ASCII file formats using Nuvia Dynamics software. Further processing (Figure 21) was carried out using Geosoft Oasis Montaj 9.9.1 geophysical processing software along with proprietary processing algorithms.

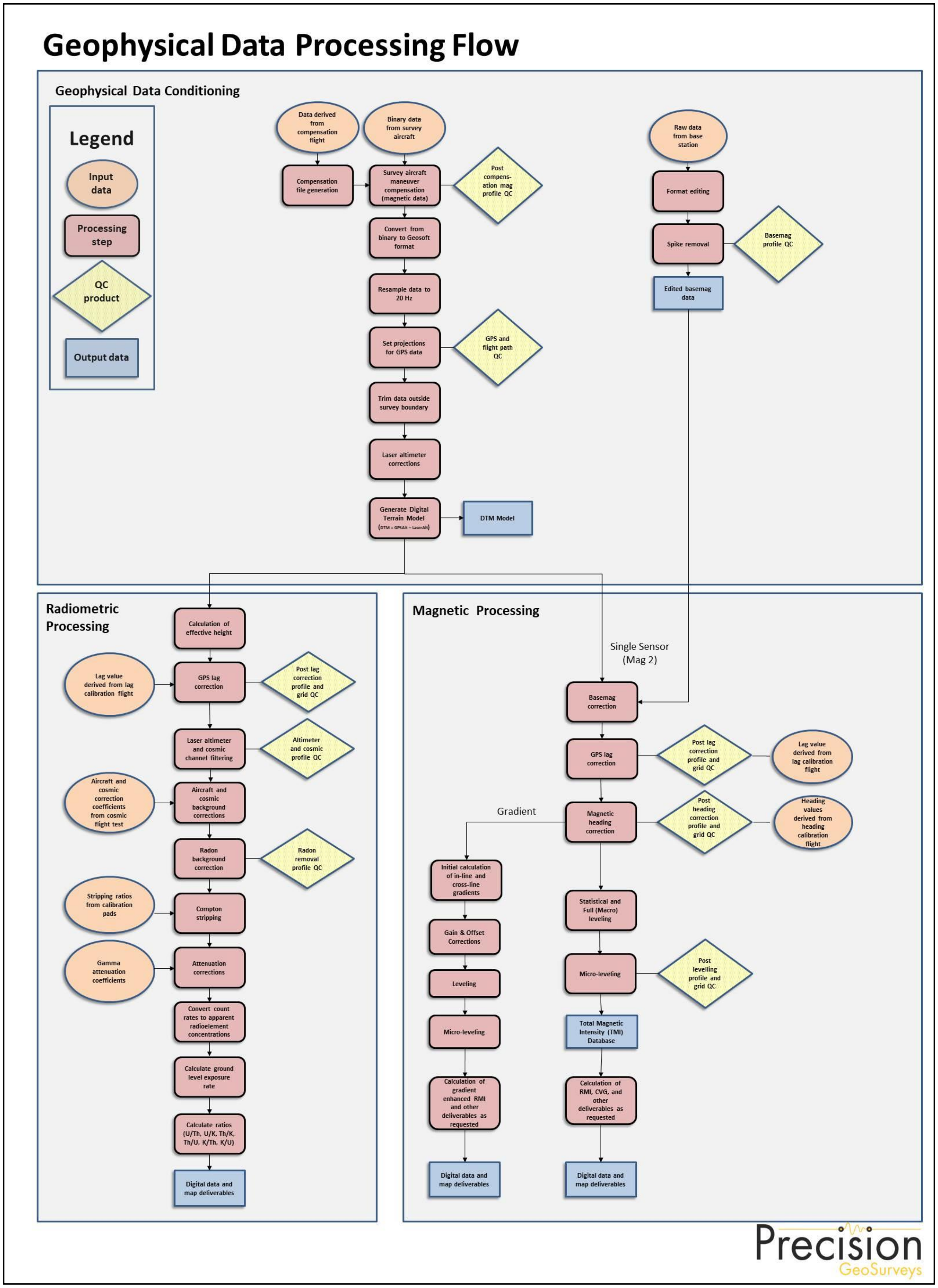

Figure 21: Magnetic and radiometric data processing flow.

6.1 Position Corrections

In order to collect high resolution geophysical data, the location at which the data were collected and recorded accurately.

6.1.1 Lag Correction

A correction for lag error was applied to the geophysical data recorded at each individual sensor to compensate for the combination of lag in the recording system and the sensing instrument flying in a different location from the GPS antenna, as determined during the lag test. Validity of the lag corrections was confirmed by the absence of grid corrugations in adjoining reciprocal lines.

6.2 Flight Height and Digital Terrain Model

Laser altimeters are unable to provide valid data over glassy water or fog which dissipate the laser so that a "zero" reading is obtained. In these cases, estimates of correct height are inserted manually. Dense vegetation generates high frequency variations from leaf and branch reflections. A Rolling Statistics filter is applied to the lag corrected (0.90 seconds lag) laser altimeter data to remove vegetation clutter followed by a Low Pass filter to smooth out the laser altimeter profile to eliminate isolated high frequency noise and generate a surface closely corresponding to the actual ground profile.

As the GPS antenna is on the tail of the helicopter, altitude data were corrected by subtracting 3.1 m to place it in the same plane as the laser altimeter. A Digital Terrain Model (DTM) was determined by subtracting the laser altimeter data from the filtered GPS altimeter data defined by the WGS 84 ellipsoidal height. DTM accuracy is affected by the attitude of the aircraft, slope of the ground, sample density, and satellite geometry. Small inconsistencies in recorded flight height at the intersection points of survey lines and tie lines resulted in small spatial variabilities in the digital terrain model. Conventional leveling and micro-leveling were applied to correct for these variations and a fully leveled digital terrain model was generated.

6.3 Magnetic Processing

Magnetic data from each individual sensor were corrected for temporal variations (including diurnal) and lag. The data were examined for magnetic noise and spikes, which were removed as required. Survey and tie line data of the resulting total magnetic field were leveled and the background magnetic field, International Geomagnetic Reference Field (IGRF) of the Earth was removed to derive the residual magnetic field. Magnetic gradients in the X and Y axes were determined to provide cross-line and in-line gradients, respectively.

6.3.1 Temporal Variation Correction

The intensity of Earth's magnetic field varies with location and time. The time variable, known as diurnal or more correctly temporal variation, is removed from the recorded airborne data to provide the desired magnetic field at a specified location. Magnetic data from base station GEM 6 were used for correcting the airborne magnetic survey data, and GEM 5 data were retained for backup. The data were edited, plotted, and merged into a Geosoft database (.GDB) on a daily basis.

Base station measurements were averaged to establish a magnetic reference datum of 54370.98 nT. Magnetic deviations relative to the reference datum were used to calculate the observed variations of the Earth's magnetic field during the time it took to complete the survey. The airborne magnetic data were then corrected for temporal variations by subtracting the base station deviations from the data collected on the aircraft, effectively removing the effects of diurnal and other temporal variations.

6.3.2 Heading Correction

For each survey heading, changes in the apparent magnetic field due to instrumental heading error are measured and recorded. These values are used to construct a heading table (.TBL) file. For the entire dataset, the overall average magnetic field value was calculated. For each of the four headings, the averages were calculated and then compared to the overall average to determine four values which were used to correct heading and offset errors in each flight direction for each magnetometer.

6.3.3 Leveling and Micro-leveling

Small inconsistencies in flight height and line orientation result in small spatial variabilities in magnetic intensity measured at the intersection points of survey lines and tie lines. Using the initial Total Magnetic Intensity (TMI) data from Mag 2, data from survey and tie lines were leveled to each other. Two types of leveling were applied to the corrected data: conventional leveling and micro-leveling. There were two components to conventional leveling: statistical leveling to level tie lines and full leveling to level survey lines. The statistical leveling method corrected the SL/TL intersection errors that follow a specific pattern or trend. Through the error channel, an algorithm calculated a least-squares trend line and derived a trend error curve, which was then added to the channel to be leveled. The second component was full leveling. This adjusted the magnetic value of the survey lines so that all lines matched the trended tie lines at each intersection point.

Following statistical and full leveling, micro-leveling was applied to the corrected conventional leveled data. This iterative grid-based process removed low amplitude components of flight line noise that still remained in the data after tie line and survey line leveling and resulted in fully leveled TMI data.

6.3.4 IGRF Removal

The International Geomagnetic Reference Field (IGRF) model is the empirical representation of Earth's dynamic magnetic field (main core field without external sources) collected and disseminated from satellite data and from magnetic observatories around the world. The IGRF has historically been revised and updated every five years by a group of modellers associated with the International Association of Geomagnetism and Aeronomy (IAGA).

The leveled Residual Magnetic Intensity (RMI) was calculated by taking the difference between the 13^{th} generation IGRF (IGRF-13, released in December 2019) and the leveled Total Magnetic Intensity (TMI) to create a more valid model of individual near-surface magnetic anomalies. This model is independent of time to allow for other magnetic data (previous or future) to be more easily incorporated into each survey database.

6.4 Magnetic Gradient

When magnetic values are obtained simultaneously from two or more sensors at a fixed separation, gradient of the magnetic field can be measured. Dividing the difference in magnetic values between the sensors by the distance between the sensors yields the magnetic gradient. The units are commonly reported as nT/m and, by convention, positive magnetic polarity is defined as to the north and east, and negative to the south and west. For vertical gradient, positive is defined as downwards. The sensors and the separations that were used to determine the various gradients are listed in Table 11.

Direction	Sensors	Separation (m)
Lateral (X)	Mag 1 and Mag 3	11.5
Longitudinal (Y)	Sequential TMI values (Mag 2)	0.91*

Table 11: Magnetic sensor relationship used to calculate magnetic gradients. Total magnetic intensity (TMI) was determined from Mag 2, and successive values of the TMI were used to determine the longitudinal (Y axis) gradient.
*average separation between sequential TMI values shown; actual value varied according to aircraft speed.

6.4.1 Horizontal Gradients

Horizontal magnetic gradients were determined in the in-line (Y axis) and cross-line (X axis) directions. Gradients were calculated with respect to the magnetometer array with units provided as nT/m.

In-line gradient (ILG) is determined from successive magnetic values of Mag 2 referenced to the distance between data points in accordance with the following formula:

$$ILG = \frac{a(i+1) - a(i-1)}{d(i+1) + d(i-1)}$$

where: a is the total magnetic intensity of Mag 2
d is the distance between measurements
i is the record number for the location

Cross-line gradient (XLG) was measured directly by dividing the difference between Mag 1 and Mag 3 by the sensor separation in accordance with the following formula:

$$XLG = \frac{\text{Mag 1} - \text{Mag 3}}{d_x}$$

where: d_x is the transverse sensor separation, 11.5 m

Gain corrections were applied to the initial cross-line gradient. If the ratio of the TMI between Mag 1 and Mag 3 does not equal one, a gain correction needs to be applied to account for instrument error and asymmetric magnetic fields. The mean of the ratio between the TMI values for Mag 1 and Mag 3 for each line was calculated and applied to each Mag 3 value along the line. The cross line gradient was then re-calculated from the gain-corrected Mag 3 values.

Offset corrections were then applied to the cross-line gradient to reduce line-to-line errors (striping) in the gradient grid. The resulting data were then micro-leveled to remove any remaining striping.

Total Horizontal Gradient (HG) is the magnitude of the combined in-line and cross-line gradients. It is used to estimate contact locations of magnetic bodies at shallow depths, reveal anomaly textures, and highlight anomaly-pattern discontinuities.

Horizontal Gradient (HG) is calculated as:

$$\text{HG}(x, y) = \sqrt{ILG^2 + XLG^2}$$

where: ILG is the in-line gradient
XLG is the cross-line gradient

6.4.2 Calculation of Vertical Gradient

Calculated Vertical Gradient (CVG) is the first order vertical derivative of the leveled Residual Magnetic Intensity (RMI) data determined from Mag 2. It is the vertical rate of change in the magnetic field per unit distance (m). The vertical gradient is used to enhance shorter wavelength signals; therefore, edges of magnetic anomalies are highlighted, and deep geologic sources in the data are suppressed.

The filter, L, used to produce the n^{th} vertical derivative is described by:

$$L(r) = r^n$$

where: r is the radial component in the wavenumber domain

6.4.3 Analytic Signal

Analytic Signal (AS) is the magnitude of the total magnetic gradient in three axes, determined as the square root of the sum of the squares of the measured horizontal gradients (in-line and cross-line) and calculated vertical gradient. Analytic signal is useful in locating the edges of magnetic source bodies.

If M is the magnetic field, then Analytic Signal (AS) is calculated as:

$$\mathrm{AS}(x, y, z) = \sqrt{\left(\frac{\partial M}{\partial x}\right)^2 + \left(\frac{\partial M}{\partial y}\right)^2 + \left(\frac{\partial M}{\partial z}\right)^2}$$

6.4.4 Gradient Enhanced Magnetic Intensity

Using the measured gradients (in-line and cross-line directions), the initial enhanced Total Magnetic Intensity (TMIge) was generated. A Butterworth high-pass filter was applied to this initial enhanced TMI to extract the short wavelength signals and a low-pass filter was applied to the measured TMI to extract the long wavelength signals. These wavelengths are then summed together to generate the final enhanced Total Magnetic Intensity. By subtracting the IGRF, the gradient enhanced Residual Magnetic Intensity (RMIge) was generated.

6.4.5 Gradient Enhanced Reduction to Magnetic Pole

Gradient enhanced Reduced to Magnetic Pole (RTPge) data were determined from the gradient enhanced Residual Magnetic Intensity (RMIge) data. The RTP filter was applied in the Fourier domain and rotates the observed magnetic inclination and declination field to what the field would look like at the north magnetic pole, to allow observation of magnetic trends and patterns independent of magnetic inclination and declination.

Inclination and declination were calculated by using the “Date” channel. The derived values were used in the following formula:

$$RTP\ (\theta) = \frac{[\sin(I) - I\ \cdot \cos(I) \cdot \cos(D-\theta)]^2}{[\sin^2(I_a) + \cos^2(I_a) \cdot \cos^2(D-\theta)] \cdot [\sin^2(I) + \cos^2(I) \cdot \cos^2(D-\theta)]}$$

where: I is geomagnetic inclination in ° from horizontal
D is geomagnetic declination in ° azimuth from magnetic north
I_a is the inclination for amplitude correction (never less than I). Default is ± 20°. If $|I_a|$is specified to be less than$|I|$, it is set to I

6.5 Radiometric Processing

Radiometric surveys map gamma rays from the concentration of radioelements at or near Earth’s surface; typically up to 1 m below surface. Before airborne radiometric data are processed, the spectrometer system is calibrated with the calibration pad test, cosmic flight test, and altitude correction and sensitivity test. Once calibration of the system was completed, radiometric data were processed by windowing the full 256 channel spectrum to create individual channels for U, Th, K, and total count (TC).

Potassium (^{40}K) is measured directly at 1.461 MeV, and is reported as %K. Secular equilibrium in the decay chains of uranium (^{238}U determined from the radon daughter ^{214}Bi) and thorium (^{232}Th determined from ^{208}Tl) is assumed and the ground concentration results are reported as equivalent uranium (eU, ppm) and equivalent thorium (eTh, ppm). Total gamma count (TC) data (energy range from 0.41 to 2.81 MeV) is reported in dose rate (nGy/hr).

Radiometric processing generally followed the procedures provided by the International Atomic Energy Agency (IAEA) report 1363, *Guidelines for Radioelement Mapping using Gamma Ray Spectrometry Data*.

6.5.1 Calculation of Effective Height

Effective height (h_{ef}) in meters was determined using laser/radar altimeter, temperature, and pressure data, according to the formula below:

$$h_{ef} = h * \frac{273.15}{T + 273.15} * \frac{P}{1013.25}$$

where: h is observed laser/radar altitude in meters

T is measured air temperature in degrees Celsius
P is barometric pressure in millibars

6.5.2 Aircraft and Cosmic Background Corrections

Aircraft background and cosmic stripping corrections are applied to total gamma count and all three individual radioelements using the following formula:

$$C_{ac} = \mathrm{a}_c + b_c * Cos_f$$

where: C_{ac} is the background and cosmic corrected channel
a_c is the aircraft background for this channel
b_c is the cosmic stripping coefficient for this channel
Cos_f is the filtered cosmic channel

6.5.3 Radon Background Correction

Atmospheric radon can influence the gamma response of airborne radiometric data. The upward-looking detector provides directional sensitivity and the ability to discriminate between radiation from the atmosphere and radiation from the ground, to allow the removal of atmospheric radon effects from the downward-looking detectors.

Radon contribution to the uranium window of the “downward” uranium window is given by:

$$U_r = \frac{u - a_1U - a_2T + a_2b_t - b_u}{a_u - a_1 - a_2a_t}$$

where: U_r is radon background in the “downward” U window
u is count rate in the “upward” U window
U is count rate in the “downward” U window
T is count rate in the “downward” Th window
a_1, a_2, a_u, a_t, b_u, and b_t are constants derived by calibration

6.5.4 Compton Stripping

Spectral overlap corrections are applied to potassium, uranium, and thorium as part of the Compton stripping process. This is done by using the stripping ratios that have been calculated for the spectrometer by prior calibration.

For each of the stripping ratios α, β, and γ, height corrections at STP are made by using the following formulas:

$$\alpha_h = \alpha + h_{ef} * 0.00049$$

$$\beta_h = \beta + h_{ef} * 0.00065$$

$$\gamma_h = \gamma + h_{ef} * 0.00069$$

where: α, β, and γ are the Compton stripping coefficients
α_h, β_h, and γ_h are the height-corrected Compton stripping coefficients
h_{ef} is the effective height above ground in metres at STP

Stripping corrections are then carried out using the following formulas:

$$Th_c = Th_{bc}(1 - g\beta_h) + U_{bc}(b\gamma_h - a) + K_{bc}(ag - b)/A$$

$$U_c = Th_{bc}(g\beta_h - \alpha_h) + U_{bc}(1 - b\beta_h) + K_{bc}(b\alpha_h - g)/A$$

$$K_c = [Th_{bc}(\alpha_h\gamma_h - \beta_h) + U_{bc}(a\beta_h - \gamma_h) + K_{bc}(1 - a\alpha_h)]/A$$

where: U_c, Th_c, and K_c are stripping-corrected uranium, thorium, and potassium
α_h, β_h, and γ_h are height-corrected Compton stripping coefficients
U_{bc}, Th_{bc}, and K_{bc} are background corrected uranium, thorium, and potassium
a is the spectral ratio Th/U
b is the spectral ratio Th/K
g is the spectral ratio U/K
$A = 1 - g\gamma_h - (\alpha_h - g\beta_h) - b(\beta_h - \alpha_h\gamma_h)$ is the backscatter correction

6.5.5 Attenuation Corrections

Total count, potassium, uranium, and thorium data are then corrected to a nominal survey altitude (corrected to remove vegetation clutter from radar/laser altimeter data); in this case the nominal survey height was 50 m AGL. This is done according to the equation:

$$C_a = C * e^{\mu(h_{ef} - h_0)}$$

where: C_a is the output altitude-corrected channel
C is the input channel
μ is the attenuation correction for that channel
h_{ef} is the effective altitude
h_0 is the nominal survey altitude used as datum

6.5.6 Conversion to Apparent Radioelement Concentrations

With all corrections applied to the radiometric data, the final step is to convert the corrected potassium (^{40}K), uranium (from ^{214}Bi), and thorium (from ^{212}Tl) to apparent radioelement concentrations using the following formula:

$$eE = C_{cor}/S$$

where: eE is the element concentration of K (%) and equivalent element concentration of U (ppm) & Th (ppm)
S is the experimentally determined sensitivity
C_{cor} is the fully corrected channel

Conversion of total count to natural exposure rate (Grasty et al, 1984) is determined by using the following formula:

$$\text{Natural Exposure} = [(1.505 * K) + (0.625 * eU) + (0.31 * eTh)]$$

where: Natural Exposure is in µR/hr
K is the concentration of potassium (%)
eU is the equivalent concentration of uranium (ppm)
eTh is the equivalent concentration of thorium (ppm)

6.5.7 Radiometric Ratios

Common radiometric ratios (U/Th, Th/K, U/K, and their inverses) were calculated using the guidelines of the IAEA. Due to statistical uncertainties in the individual radioelement measurements, care was taken during ratio calculation in order to obtain statistically significant values. The following guidelines were used to determine the ratios:

1. For each concentration, the lowest corrected count rate is determined.
2. Element concentrations of adjacent points on either side of each data point are summed until they exceed a pre-determined threshold value.
3. The ratios are calculated using the accumulated sums.

With these guidelines, errors associated with the calculated ratios are minimized and comparable for all data points.

6.5.8 Ternary Radioelement Image Map

Ternary images are a graphic representation of the relative proportion of the radioelement concentrations of %K, eTh, and eU components in proportion to the respective colours red (magenta), green, and blue (cyan). Since each distinct colour is used to represent each ternary ratio on the map, zones with similar ratios will be represented by a unique colour. This distinct relationship between colour and ternary ratio allows the map to show surficial radioelement concentration and distribution. Dark and light colours indicate high and low values for all three radionuclides, respectively. Areas of low radioactivity, and consequently low signal to noise ratios, can be masked and are shaded in white. Because the ternary image is a three-way ratio, topographic and physiographic effects are suppressed and a visualization of the relative concentrations of the individual radioelements are presented to help discriminate between different zones of lithology and alteration.

7.0 Deliverables

Chilco survey block data are presented as digital databases, grids, maps, and a logistics report.

7.1 Digital Data

Digital files have been provided in three formats:

- GDB file for use in Geosoft Oasis Montaj,
- XYZ file,
- CSV Excel comma separated file.

Full descriptions of the digital data and contents are included in Appendix C.

7.1.1 Grids

The digital data were represented as grids as listed below:

- Digital Terrain Model (DTM)
- Total Magnetic Intensity (TMI)
- Residual Magnetic Intensity (RMI) – removal of IGRF from TMI
- In-Line Gradient (ILG)
- Cross-Line Gradient (XLG)
- Horizontal Gradient (HG) – total magnitude of the horizontal gradients (in-line and cross-line)
- Calculated Vertical Gradient (CVG)
- Analytic Signal (AS)
- Gradient enhanced Total Magnetic Intensity (TMIge)
- Gradient enhanced Residual Magnetic Intensity (RMIge) – subtraction of IGRF
- Gradient enhanced Reduced to Magnetic Pole (RTPge) – reduced to magnetic pole of RMIge
- Potassium – Percentage (%K)

- Thorium – Equivalent Concentration (eTh)
- Uranium – Equivalent Concentration (eU)
- Total Count (TC)
- Total Count – Exposure Rate (TCexp)
- Potassium over Thorium Ratio (%K/eTh)
- Potassium over Uranium Ratio (%K/eU)
- Uranium over Thorium Ratio (eU/eTh)
- Uranium over Potassium Ratio (eU/%K)
- Thorium over Potassium Ratio (eTh/%K)
- Thorium over Uranium Ratio (eTh/eU)
- Ternary Image (TI)

Digital magnetic and radiometric data were gridded and displayed using the following Geosoft parameters:

- Gridding method: minimum curvature
- Grid cell size: 25 m
- Low-pass desampling factor: 2
- Tolerance: 0.001
- % pass tolerance: 99.99
- Maximum iterations: 100

The gradient and gradient enhanced magnetic grids were drawn with a wet-look colour shade and all other magnetic and radiometric grids were drawn with a histogram-equalized colour shade. All maps were shaded with the sun illumination inclination at 45° and declination at 045°. DTM grid was drawn with a linear topographic colour scale.

7.2 KMZ

Gridded digital data were exported into .KMZ files which can be displayed using Google Earth. The grids can be draped onto topography and rendered to give a 3D view.

7.3 Maps

Digital maps were created for the Chilco survey block. The following map products were prepared:

Overview Maps (colour images with elevation contour lines):

- Actual flight lines, with topographic features
- DTM

Magnetic Maps (colour images with elevation contour lines):

- TMI, with actual flight lines and topographic features
- TMI
- RMI
- ILG
- XLG
- HG
- CVG
- AS

Gradient Enhanced Magnetic Maps (colour images with elevation contour lines):

- TMIge
- RMIge
- RTPge

Radiometric Maps (colour images with elevation contour lines):

- %K – Percentage
- eTh – Equivalent Concentration
- eU – Equivalent Concentration
- TC
- TCexp – Exposure Rate
- %K/eTh Ratio
- %K/eU Ratio
- eU/eTh Ratio
- eU/%K Ratio
- eTh/%K Ratio
- eTh/eU Ratio
- Ternary Image

All survey maps were prepared in WGS 84 in UTM Zone 10N.

7.4 Report

A .PDF copy of the logistics report is included along with digital data and maps. The report provides information on acquisition, processing, and presentation of the Chilco survey block data.

8.0 Conclusions and Recommendations

The Chilco survey resulted in the collection of 1055 line km of high resolution gradient magnetic and radiometric data over one survey block. The data have been processed and plotted on maps as a representation of the magnetic and radiometric features of the survey area.

Gamma ray energy is attenuated by snow and glacier cover. As the Chilco block contains many glaciers and snow was present above 2000 m ASL on north-facing slopes, radiometric data have been locally compromised and should be used with discretion.

Geophysical data processing, particularly leveling and data interpolation routines, may tend to smooth the original data so that resolution is reduced. In addition, gridding algorithms are not always able to properly calculate grids where flight height between adjacent flight lines varied due to cultural obstacles or steep terrain, where geological structures are acute to flight lines, where line spacing exceeds the size of the causative anomaly, or near grid margins as in “edge effects.” Therefore, subtle geophysical features in gridded and derivative-enhanced products or near the survey margins may introduce artifacts and must be evaluated with discretion.

The airborne geophysical data were acquired to map the geophysical characteristics of the survey area, which are in turn related to the distribution of magnetic minerals and radioactive elements in the Earth. Magnetic patterns correspond to the concentration and distribution of magnetite and other magnetic minerals in Earth’s subsurface. Radiometric data are influenced by topographic features and surficial effects, and ratios can be used to evaluate the near-surface radioelement geochemistry of the survey area. When magnetic and radiometric data are integrated into a single-pass airborne survey, they provide complementary information that serves as a durable geophysical/geochemical framework. Therefore, the geophysical data will be useful in mapping lithology, structure, and alteration, which will benefit mineral exploration initiatives and geological studies.

Geophysical data are rarely a direct indication of mineral deposits and therefore interpretation and careful integration with existing and new geological, geochemical, and other geophysical data are recommended to maximize value from the survey investment.

Respectfully submitted,
Precision GeoSurveys Inc.

Jenny Poon, P.Geo.
June 2021

Appendix A

Chilco Polygon Coordinates

Chilco Survey Block – WGS 84 Zone 10N

Latitude (deg N)	Longitude (deg W)	Easting (m)	Northing (m)
51.38737	124.63904	385953	5694178
51.38320	124.63903	385943	5693714
51.38320	124.65154	385073	5693734
51.37903	124.65153	385063	5693270
51.37903	124.65778	384628	5693280
51.34567	124.65767	384552	5689570
51.34564	124.63278	386285	5689528
51.33729	124.63266	386273	5688599
51.33724	124.59531	388874	5688537
51.32482	124.59523	388850	5687155
51.32491	124.58912	389276	5687156
51.32479	124.51412	394501	5687032
51.32469	124.50771	394947	5687012
51.32471	124.48864	396276	5686987
51.34154	124.48901	396288	5688859
51.37491	124.48899	396365	5692570
51.37487	124.48277	396798	5692557
51.37904	124.48277	396807	5693020
51.37904	124.46402	398112	5692994
51.37904	124.42026	401157	5692934
51.38320	124.42026	401166	5693397
51.38321	124.40778	402035	5693381
51.38737	124.40777	402044	5693844
51.38741	124.40138	402489	5693840
51.38742	124.39526	402915	5693833
51.39154	124.39527	402923	5694291
51.39146	124.37616	404252	5694257
51.40391	124.37598	404291	5695641
51.40404	124.40777	402080	5695697
51.40821	124.40777	402089	5696161
51.40820	124.45152	399046	5696220
51.39987	124.45152	399028	5695293
51.39987	124.45777	398593	5695302
51.39571	124.45777	398584	5694839
51.39571	124.52027	394236	5694927
51.39153	124.52027	394226	5694463
51.39154	124.57653	390312	5694546
51.38737	124.57653	390302	5694083

Appendix B

Equipment Specifications

- GEM GSM-19T Proton Precession Magnetometer (Magnetic Base Station)
- Hemisphere R330 GPS Receiver
- Opti-Logic RS800 Rangefinder Laser Altimeter
- Scintrex CS-3 Survey Magnetometer
- Geometrics G-822A Survey Magnetometer
- Billingsley TFM100G2 Ultra Miniature Triaxial Fluxgate Magnetometer
- Setra Model 276 Barometric Pressure
- Rotronic HygroClip HC-S3 Relative Humidity and Temperature Probe
- Nuvia Dynamics Advanced Gamma-Ray Spectrometer (AGRS-5)
- Nuvia Dynamics IMPAC data recorder system (for navigation and geophysical data acquisition)

GEM GSM-19T Proton Precession Magnetometer (Magnetic Base Station)

Sensitivity	0.15 nT @ 1 Hz
Resolution	0.01 nT (gamma), magnetic field and gradient
Absolute Accuracy	±0.2 nT @ 1 Hz
Operating Range	20,000 nT to 120,000 nT
Gradient Tolerance	Over 7,000 nT/m
Operating Ranges	Temperature: -40°C to +50°C Battery Voltage: 10.0 V minimum to 15 V maximum Humidity: up to 90% relative, non-condensing
Storage Temperature	-50°C to +50°C
Dimensions	Console: 223 x 69 x 40 mm Sensor Staff: 4 x 450 mm sections Sensor: 170 x 71 mm dia. Weight: console 2.1 kg, sensor and staff assembly 2.2 kg
Integrated GPS	Yes

Hemisphere R330 GPS Receiver

GPS Sensor	Receiver Type	L1 and L2 RTK with carrier phase	
	Channels	12 L1CA GPS 12 L1P GPS 12 L2P GPS 12 L2C GPS 12 L1 GLONASS (with subscription code) 12 L2 GLONASS (with subscription code) 3 SBAS or 3 additional L1CA GPS	
	Update Rate	10 Hz standard, 20 Hz available	
	Cold Start Time	<60 s	
	Warm Start Time 1	30 s (valid ephemeris)	
	Warm Start Time 2	30 s (almanac and RTC)	
	Hot Start Time	10 s typical (valid ephemeris and RTC)	
	Reacquisition	<1 s	
	Differential Options	SBAS, Autonomous, External RTCM, RTK, OmniSTAR (HP/XP)	
Horizontal Accuracy		RMS (67%)	2DRMS (95%)
	RTK [1, 2]	10 mm + 1 ppm	20 mm + 2 ppm
	OmniSTAR HP [1, 3]	0.1 m	0.2 m
	SBAS (WAAS) [1]	0.3 m	0.6 m
	Autonomous, no SA [1]	1.2 m	2.5 m
L-Band Sensor	Channel	Single channel	
	Frequency Range	1530 MHz to 1560 MHz	
	Satellite Selection	Manual or Automatic (based on location)	
	Startup and Satellite Reacquisition Time	15 seconds typical	
Communications	Serial Ports	2 full duplex RS232	
	Baud Rates	4800 – 115200	
	USB Ports	1 Communications, 1 Flash Drive data storage	
	Correction I/O Protocol	Hemisphere GPS proprietary, RTCM v2.3 (DGPS), RTCM v3 (RTK), CMR, CMR+NMEA 0183, Hemisphere GPS binary	
	Timing Output	1 PPS (HCMOS, active high, rising edge sync, 10 kΩ, 10 pF load)	
	Event Marker Input	HCMOS, active low, falling edge sync, 10 kΩ	
Environmental	Operating Temperature	-40°C to +70°C	
	Storage Temperature	-40°C to +85°C	
	Humidity	95% non-condensing	
Power GPS Sensor	Input Voltage Range	8 to 36 VDC	
	Consumption, RTK	<3.5 W (0.30 A @ 12 VDC typical)	
	Consumption, OmniSTAR	<4.3 W (0.36 A @ 12 VDC typical)	

[1] Depends on multipath environment, number of satellites in view, satellite geometry and ionospheric activity.
[2] Depends also on baseline length.
[3] Requires a subscription from OmniSTAR.

Opti-Logic RS800 Rangefinder Laser Altimeter

Accuracy	±1 m on 1x1 m^2 diffuse target with 50% reflectivity, up to 700 m
Resolution	0.2 m
Communication Protocol	RS232-8, N, 1 ASCII characters
Baud Rate	19200
Data Raw Counts	~200 Hz
Data Calibrated Range	~10 Hz
Data Rate	~200 Hz raw counts for un-calibrated operation; ~10 Hz for calibrated operation (averaging algorithm seeks 8 good readings)
Calibrated Range Units	Feet, Meters, Yards
Laser	Class I (eye-safe), 905 nm ± 10 nm
Power	7 - 9 VDC conditioned required, current draw at full power (~ 1.8 W)
Laser Wavelength	RS100 905 nm ± 10 nm
Laser Divergence	Vertical axis – 3.5 mrad half-angle divergence; Horizontal axis – 1 mrad half-angle divergence; (approximate beam “footprint” at 100 m is 35 cm x 5 cm)
Dimensions	32 x 78 x 84 mm (lens face cross section is 32 x 78 mm)
Weight	<227 g (8 oz)
Casing	RS100/RS400/RS800 units are supplied as OEM modules consisting of an open chassis containing optics and circuit boards. Custom housings can be designed and built on request.

Scintrex CS-3 Magnetometer

Operating Principal	Self-oscillating split-beam Cesium Vapor (non-radioactive ^{133}Cs)
Operating Range	15,000 nT to 105,000 nT
Gradient Tolerance	40,000 nT/m
Operating Zones	15° to 75° and 105° to 165°
Hemisphere Switching	a) Automatic b) Electronic control actuated by the control voltage levels (TTL/CMOS) c) Manual
Sensitivity	0.0006 nT √Hz rms
Noise Envelope	Typically 0.002 nT peak to peak, 0.1 to 1 Hz bandwidth
Heading Error	±0.20 nT (inside the optical axis to the field direction angle range 15° to 75° and 105° to 165°)
Absolute Accuracy	<2.5 nT throughout range
Output	a) Continuous signal at the Larmor frequency which is proportional to the magnetic field (proportionality constant 3.49857 Hz/nT) sine wave signal amplitude modulated on the power supply voltage b) Square wave signal at the I/O connector, TTL/CMOS compatible
Information Bandwidth	Only limited by the magnetometer processor used
Sensor Head	Diameter: 63 mm (2.5”) Length: 160 mm (6.3”) Weight: 1.15 kg (2.6 lb)
Sensor Electronics	Diameter: 63 mm (2.5”) Length: 350 mm (13.8”) Weight: 1.5 kg (3.3 lb)
Cable, Sensor to Sensor Electronics	3 m (9’ 8”), lengths up to 5 m (16’ 4”) available
Operating Temperature	-40°C to +50°C
Humidity	Up to 100%, splash proof
Supply Power	24 to 35 VDC
Supply Current	Approx. 1.5 A at start up, decreasing to 0.5 A at 20°C
Power Up Time	Less than 15 minutes at -30°C

Geometrics G-822A Magnetometer

Operating Principal	Self-oscillating split-beam Cesium Vapor (non-radioactive ^{133}Cs)
Operating Range	20,000 nT to 100,000 nT
Operating Zones	Earth's field vector should be at an angle greater than 6° from the sensor's equator and greater than 6° away from the sensor's long axis.
Hemisphere Switching	Automatic
Sensitivity	<0.0005 nT √Hz rms.
Noise Envelope	Typically 0.002 nT peak to peak at a 0.1 second sample rate (90% of all readings falling within the peak to peak envelope) using a 822A super-counter
Heading Error	<0.15 nT over entire 360° polar and equatorial spin
Absolute Accuracy	Better than 3 nT throughout range
Output	Cycle of Larmor frequency = 3.498572 Hz/nT, RS-232 data at 9600 baud, concatenated data streams from up to 6 sensors
Sensor Head	Diameter: 60.32 mm (2.375") Length: 158.75 mm (6.25") Weight: 680 g (24 oz)
Sensor Electronics	Diameter: 63.5 mm (2.5") Length: 279.4 mm (11") Weight: 680 g (24 oz)
Cable, Sensor to Electronics	Standard: 2.77 m (109") Cable length can be increased by 1.10 m (43") for a total length of 3.87 m (152")
Cable, Sensor Electronics to Counter	Standard: 10 m (33') Cable length can be increased up to 50 m (164')
Operating Temperature	-35°C to +50°C (-30°F to +122°F)
Storage Temperature	-45°C to +70°C (-48°F to +158°F)
Altitude	Up to 9,000 m (30,000 ft)
Water Tight	Sealed for up to 0.9 m (2 ft) water depth
Supply Power	24 to 35 VDC, 0.75 amp at turn-on and 0.5 amp thereafter

Billingsley TFM100G2 Ultra Miniature Triaxial Fluxgate Magnetometer

Axial Alignment	Orthogonality better than ±1°
Input Voltage Options	15 to 34 VDC @ 30 mA
Field Measurement Range Options	±100 μT = ±10 V
Accuracy	±0.75% of full scale (0.5% typical)
Linearity	±0.015% of full scale
Sensitivity	100 μV/nT
Scale Factor Temperature Shift	0.007% full scale/°C
Noise	≤12 pT rms/√Hz @ 1 Hz
Output Ripple	3 mV peak to peak @ 2^{nd} harmonic
Analog Output at Zero Field	±0.025 V
Zero Shift with Temperature	±0.6 nT/°C
Susceptibility to Perming	±8 nT shift with ± 5 Gs applied
Output Impedance	332 Ω ± 5%
Frequency Response	3 dB @ >500 Hz (to >4 kHz wide band)
Over Load Recovery	±5 Gs slew <2 ms
Random Vibration	>20 G rms 20 Hz to 2 kHz
Temperature Range	-55°C to +85°C
Acceleration	>60 G
Weight	100 g
Size	3.51 cm x 3.23 cm x 8.26 cm
Connector	Chassis mounted 9 pin male "D" type

Setra Model 276 Barometric Pressure

Performance	Accuracy RSS[1] (at constant temp)	±0.25% FS[2]
	Non-Linearity (BSFL)	±0.22% FS
	Hysteresis	0.05% FS
	Non-Repeatability	0.05% FS
	Thermal Effects[3]	Compensated range: 0°C to +55°C (+30°F to +130°F) Zero shift (over compensated range): 1% FS Span shift (over compensated range): 1% FS
	Resolution	Infinite, limited only by output noise level (0.0005% FS)
	Time Constant	10 msecs to reach 90% final output with step function pressure input
	Long Term Stability	0.25% FS / 6 months
Environmental	Temperature	Operating[4]: -18°C to +79°C (0°F to +175°F) Storage: -55°C to +121°C (-65°F to +250°F)
	Vibration	2 g from 5 Hz to 500 Hz
	Shock	50 g (Operating, 1/2 sine 10 ms)
	Acceleration	10 g
Electrical	Circuit	3-Wire[5] (Exc, Out, Com)
	Power Consumption	0.20 W (24 VDC)
	Output Impedance	5 Ω
	Output Noise	<200 µV RMS (0 to 100 Hz)

[1] RSS of non-linearity, hysteresis, and non-repeatability.
[2] FS = 300 mb for 800 – 1100 mb range; 500 for 600 – 1100 mb range; and 20 PSI for 0 to 20 PSIA.
[3] Units calibrated at nominal 70°F. Maximum thermal error computed from this datum.
[4] Operating temperature limits of the electronics only. Pressure media temperatures may be considerable higher or lower.
[5] The separate leads for +EXC, -EXC, +Out, -Out are commoned internally. The shield is connected to the case. For best performance, either the -Exc or -Out should be connected to the case. Unit is calibrated at the factory with -Exc connected to the case. The insulation resistance between all signal leads are tied together and case ground is 100 Ω minimum at 25 VDC.

Rotronic HygroClip HC-S3 Relative Humidity and Temperature Probe

Relative Humidity	Operating Range	0 to 100% RH
	Accuracy at 23°C	±1.5% RH
	Output	0 – 1 VDC
	Typical Long-Term Stability	Better than ±1% RH per year
Temperature	Measurement Range	-40°C to +60°C
	Temperature Accuracy	-30°C to +60°C ±0.2°C -50°C to +60°C ±0.6°C (worst case)
	Output	0 – 1 VDC
Power	Supply Voltage	3.5 to 50 VDC (typically powered by data logger's 12 VDC supply)
	Current Consumption	<4 mA
Dimensions	Diameter	1.53 cm (0.60")
	Length	16.8 cm (6.6")
	Housing Material	Polycarbonate

Nuvia Dynamics Advanced Gamma-Ray Spectrometer (AGRS-5)

Crystal Volume	Four 4.2 L NaI(Tl) synthetic downward-looking and one 4.2 L NaI(Tl) upward-looking crystals. Total volume of 21 L
Resolution	256/512/1024 channels
Data Handling	Individual detector processing and calibration
Energy Resolution	< 9% (@ 662 keV)
Differential Non-linearity	< 0.1%
Integral Non-linearity	< 0.01%
Gain Stabilization	Automatic multi-peak on natural radioisotopes
Calibration	Automatic using natural background radiation
Dynamic Input Range	250,000 cps (counts/sec) per detector
Baseline Restoration	Digital Individual Pulse Baseline Restoration (IPBR). The baseline is established for each individual pulse for maximum pulse height accuracy
Sampling Rate	0.1 – 10 secs user defined
Pulse Shaping	Digital Pulse Shaping
Power	9 to 40 VDC, 15 W
Detector Power	3 W per detector
Operating Temperature	-20°C up to +50°C
Downward Shielding	6 mm thick lead plate is used for downward-shielding
Upward Shielding	RayShield® non-radioactive shielding on downward-looking crystals
Spectra	20 keV to 3 MeV (plus cosmic)
System Stabilization	Cold start-up: less than 40 secs on the ground
GPS Connectivity	Time and position synchronization; additional add-on
Weight	~115 kg

Nuvia Dynamics IMPAC data recorder system

(for navigation and geophysical data acquisition)

Functions	Integrated Multi-Parameter Airborne Console (IMPAC) with integrated dual Global Positioning System Receiver (GPS) and all necessary navigation guidance software. Inputs for geophysical sensors - portable gamma ray spectrometer GRS-10/AGRS, MMS4/MMS8 Magnetometer, Herz Totem-2A EM, A/D converter, temperature/humidity probe, barometric pressure probe, and laser/radar altimeter. Output for the multi-parameter PGU (Pilot Guidance Unit)
Display	Monitor display 600 x 800 pixels; customized keypad and operator keyboard. Multi-screen options for real-time viewing of all data inputs, fiducial points, flight line tracking, and GPS channels by operator
Navigation	Pilot/operator navigation guidance. Software supports preplanned survey flight plan, along survey lines, way-points, preplanned drape profile surfaces
Data Sampling	Sensor dependent
Data Synchronization	Synchronized to GPS position. Supports dual GPS
Data File	PEI Binary data format
Storage	80 GB
Software	DataView: Allows fast data verification and conversion of PEI binary data to Geosoft GBN or ASCII formats MAGConv: For survey preparation, calibration and conversion of maps, and survey plot after data acquisition MAGComp: For calculation of magnetic compensation coefficients AGRS/GRS10 Calibration: High voltage adjustment, linearity correction coefficients calculation, and communication test support AGIS: Real time data acquisition and navigation system. Displays chart/spectrum view in real-time for fast data Quality Control (QC)
Electrical	Multiple ethernet connections, RS232 serial ports, USB ports, and 16-bit differential analog input channels. It can support up to 4 magnetometer sensors
Power Requirement	24 VDC

Appendix C

Digital File Descriptions

- Magnetic Database
- Radiometric Database
- Geosoft Grids
- Maps

Magnetic Database:

Abbreviations used in the GDB/XYZ/CSV files are listed below:

CHANNEL	UNITS	DESCRIPTION
X_WGS84	m	UTM Easting – WGS84 Zone 10N
Y_WGS84	m	UTM Northing – WGS84 Zone 10N
Lat_deg	Decimal degree	Latitude – WGS84
Lon_deg	Decimal degree	Longitude – WGS84
Date	yyyy/mm/dd	Dates of the survey flight(s) – Local
FLT		Flight number(s)
LineNo		Line numbers
STL		Number of satellite(s)
GPSfix		1 = non-differential 2 = WAAS/SBAS differential
Heading	degree	Heading of the aircraft
GPStime	HH:MM:SS	GPS time (UTC)
Geos_m	m	Geoidal separation
XTE_m	m	Cross track error
Galt	m	GPS height – WGS84 Zone 10N (ASL)
Lalt	m	Laser altimeter readings (AGL)
DTM	m	Digital Terrain Model
Sample_Density	m	Horizontal distance in meters between adjacent measurement locations; sample frequency is 20 Hz
Speed_km_hr	km/hr	Ground speed of aircraft in km/hr
basemag	nT	Base station temporal variation data
IGRF	nT	International Geomagnetic Reference Field, IGRF-13
Declin	Decimal degree	Calculated declination of magnetic field
Inclin	Decimal degree	Calculated inclination of magnetic field
XFg_Step	step	X - fluxgate
YFg_Step	step	Y - fluxgate
ZFg_Step	step	Z - fluxgate
Mag1_Head	nT	Mag 1 – Diurnal, lag, and heading corrected
Mag2_Head	nT	Mag 2 – Diurnal, lag, and heading corrected
Mag3_Head	nT	Mag 3 – Diurnal, lag, and heading corrected
TMI	nT	Total Magnetic Intensity (Mag 2)
RMI	nT	Residual Magnetic Intensity (Mag 2)
ILG	nT/m	In-Line Gradient (Mag 2)
XLG	nT/m	Cross-Line Gradient (Mag 1 and Mag 3)
HG	nT/m	Total horizontal gradient (in-line and cross-line)
CVG	nT/m	Calculated Vertical Gradient of RMI
AS	nT/m	Analytic Signal (in-line, cross-line, and CVG)
TMIge	nT	Gradient enhanced Total Magnetic Intensity
RMIge	nT	Gradient enhanced Residual Magnetic Intensity

Radiometric Database:

Abbreviations used in the GDB/XYZ/CSV files are listed below:

CHANNEL	UNITS	DESCRIPTION
X_WGS84	m	UTM Easting – WGS84 Zone 10N
Y_WGS84	m	UTM Northing – WGS84 Zone 10N
Lat_deg	Decimal degree	Latitude – WGS84
Lon_deg	Decimal degree	Longitude – WGS84
Date	yyyy/mm/dd	Date of the survey flight(s) – Local
FLT		Flight number(s)
LineNo		Line numbers
STL		Number of satellite(s)
GPStime	HH:MM:SS	GPS time (UTC)
Geos_m	m	Geoidal separation
GPSFix		1 = non-differential 2 = WAAS/SBAS differential
Heading	degree	Heading of the aircraft
XTE_m	m	Cross track error
Galt	m	GPS height – WGS84 Zone 10N (ASL)
Lalt	m	Laser altimeter height (AGL)
DTM	m	Digital Terrain Model
Sample_Density	m	Horizontal distance in metres between adjacent measurement locations; sample frequency is 20 Hz
Speed_km_hr	km/hr	Ground speed of aircraft in km/hr
BaroSTP_kPa	kPa	Barometric altitude (pressure and temperature corrected)
Temp_degC	°C	Air temperature
Press_kPa	kPa	Atmospheric pressure
COSFILT	counts/sec	Spectrometer – Filtered Cosmic
UPUFILT	counts/sec	Spectrometer – Filtered Upward Uranium
Kcor	%	Concentration in Percentage - Potassium
Thcor	ppm	Equivalent Concentration - Thorium
Ucor	ppm	Equivalent Concentration - Uranium
TCcor	nGy/hour	Total Count
TCexp	µR/hour	Exposure Rate
KThratio		Spectrometer –%K/eTh ratio
KUratio		Spectrometer –%K/eU ratio
ThKratio		Spectrometer – eTh/%K ratio
ThUratio		Spectrometer – eTh/eU ratio
UKratio		Spectrometer – eU/%K ratio
UThratio		Spectrometer – eU/eTh ratio

Grids:

Chilco, WGS 84 Zone 10N, cell size at 25 m

FILE NAME	DESCRIPTION
21134_Chilco_DTM_25m.grd	Digital Terrain Model gridded at 25 m cell size
21134_Chilco_TMI_25m.grd	Total Magnetic Intensity gridded at 25 m cell size
21134_Chilco_RMI_25m.grd	Residual Magnetic Intensity gridded at 25 m cell size
21134_Chilco_ILG_25m.grd	Measured In-Line Gradient (Mag 1 and Mag 2) gridded at 25 m cell size
21134_Chilco_XLG_25m.grd	Measured Cross-Line Gradient (Mag 1 and Mag 2) gridded at 25 m cell size
21134_Chilco_HG_25m.grd	Total Horizontal Gradient (in-line and cross-line) gridded at 25 m cell size
21134_Chilco_CVG_25m.grd	Calculated Vertical Gradient of RMI gridded at 25 m cell size
21134_Chilco_AS_25m.grd	Analytic Signal (in-line, cross-line, and CVG) gridded at 25 m cell size
21134_Chilco_TMIge_25m.grd	Gradient enhanced Total Magnetic Intensity (in-line and cross-line gradients) gridded at 25 m cell size
21134_Chilco_RMIge_25m.grd	Gradient enhanced Residual Magnetic Intensity (in-line and cross-line gradients) gridded at 25 m cell size
21134_Chilco_RTPge_25m.grd	Gradient enhanced Reduced to Magnetic Pole of RMIge gridded at 25 m cell size
21134_Chilco_K_25m	Potassium (%K) – in percentage gridded at 25 m cell size
21134_Chilco_eTh_25m	Thorium (eTh) – equivalent concentration gridded at 25 m cell size
21134_Chilco_eU_25m	Uranium (eU) – equivalent concentration gridded at 25 m cell size
21134_Chilco_TC_25m	Total Count (TC) gridded at 25 m cell size
21134_Chilco_TCexp_25m	Total Count (TCexp) – exposure rate gridded at 25 m cell size
21134_Chilco_KThRatio_25m	Potassium over Thorium ratio (%K/eTh) gridded at 25 m cell size
21134_Chilco_KURatio_25m	Potassium over Uranium ratio (%K/eU) gridded at 25 m cell size
21134_Chilco_UThRatio_25m	Uranium over Thorium ratio (eU/eTh) gridded at 25 m cell size
21134_Chilco_UKRatio_25m	Uranium over Potassium ratio (eU/%K) gridded at 25 m cell size
21134_Chilco_ThKRatio_25m	Thorium over Potassium ratio (eTh/%K) gridded at 25 m cell size
21134_Chilco_ThURatio_25m	Thorium over Uranium ratio (eTh/eU) gridded at 25 m cell size

*Grids are exported as Geotiffs (.tiff)

Maps:

Chilco, WGS 84 Zone 10N (jpegs, pdfs, and georeferenced pdf)

Plate Number	Plate Name	FILE NAME	DESCRIPTION
1	FL	21134_Chilco_ActualFlightLines	Plotted actual flown flight lines
2	DTM	21134_Chilco_DTM_25m	Digital Terrain Model gridded at 25 m cell size
3	TMI_wFL	21134_Chilco_TMI_wFL_25m	Total Magnetic Intensity gridded at 25 m cell size with actual flown flight lines
4	TMI	21134_Chilco_TMI_25m	Total Magnetic Intensity gridded at 25 m cell size
5	RMI	21134_Chilco_RMI_25m	Residual Magnetic Intensity gridded at 25 m cell size
6	ILG	21134_Chilco_ILG_25m	Measured In-Line Gradient gridded at 25 m cell size
7	XLG	21134_Chilco_XLG_25m	Measured Cross-Line Gradient gridded at 25 m cell size
8	HG	21134_Chilco_HG_25m	Total Horizontal Gradient gridded at 25 m cell size
9	CVG	21134_Chilco_CVG_25m	Calculated Vertical Gradient of RMI gridded at 25 m cell size
10	AS	21134_Chilco_AS_25m	Analytic Signal gridded at 25 m cell size
11	TMIge	21134_Chilco_TMIge_25m	Gradient enhanced Total Magnetic Intensity gridded at 25 m cell size
12	RMIge	21134_Chilco_RMIge_25m	Gradient enhanced Residual Magnetic Intensity gridded at 25 m cell size
13	RTPge	21134_Chilco_RTPge_25m	Gradient enhanced Reduced to Magnetic Pole of RMIge gridded at 25 m cell size
14	%K	21134_Chilco_K_25m	Potassium (%K) – in percentage gridded at 25 m cell size
15	eTh	21134_Chilco_eTh_25m	Thorium (eTh) – equivalent concentration gridded at 25 m cell size
16	eU	21134_Chilco_eU_25m	Uranium (eU) – equivalent concentration gridded at 25 m cell size
17	TC	21134_Chilco_TC_25m	Total Count (TC) gridded at 25 m cell size
18	TCexp	21134_Chilco_TCexp_25m	Total Count (TCexp) – exposure rate gridded at 25 m cell size
19	%K/eTh	21134_Chilco_KThRatio_25m	Potassium over Thorium ratio (%K/eTh) gridded at 25 m cell size
20	%K/eU	21134_Chilco_KURatio_25m	Potassium over Uranium ratio (%K/eU) gridded at 25 m cell size
21	eU/eTh	21134_Chilco_UThRatio_25m	Uranium over Thorium ratio (eU/eTh) gridded at 25 m cell size
22	eU/%K	21134_Chilco_UKRatio_25m	Uranium over Potassium ratio (eU/%K) gridded at 25 m cell size
23	eTh/%K	21134_Chilco_ThKRatio_25m	Thorium over Potassium ratio (eTh/%K) gridded at 25 m cell size
24	eTh/eU	21134_Chilco_ThURatio_25m	Thorium over Uranium ratio (eTh/eU) gridded at 25 m cell size
25	TI	21134_Chilco_TernaryImage_25m	Ternary ratio of all three elements (%K, eTh, eU) gridded at 25 m cell size

Plates

Chilco Survey Block

- Plate 1: Chilco – Actual Flight Lines (FL)
- Plate 2: Chilco – Digital Terrain Model (DTM)
- Plate 3: Chilco – Total Magnetic Intensity with Actual Flight Lines (TMI_wFL)
- Plate 4: Chilco – Total Magnetic Intensity (TMI)
- Plate 5: Chilco – Residual Magnetic Intensity (RMI)
- Plate 6: Chilco – In-Line Gradient (ILG)
- Plate 7: Chilco – Cross-Line Gradient (XLG)
- Plate 8: Chilco – Horizontal Gradient (HG)
- Plate 9: Chilco – Calculated Vertical Gradient (CVG) of RMI
- Plate 10: Chilco – Analytic Signal (AS)
- Plate 11: Chilco – Gradient Enhanced Total Magnetic Intensity (TMIge)
- Plate 12: Chilco – Gradient Enhanced Residual Magnetic Intensity (RMIge)
- Plate 13: Chilco – Gradient Enhanced Reduced to Magnetic Pole (RTPge) of RMIge
- Plate 14: Chilco – Potassium - Percentage (%K)
- Plate 15: Chilco – Thorium - Equivalent Concentration (eTh)
- Plate 16: Chilco – Uranium - Equivalent Concentration (eU)
- Plate 17: Chilco – Total Count (TC)
- Plate 18: Chilco – Total Count - Exposure Rate (TCexp)
- Plate 19: Chilco – Potassium over Thorium Ratio (%K/eTh)
- Plate 20: Chilco – Potassium over Uranium Ratio (%K/eU)
- Plate 21: Chilco – Uranium over Thorium Ratio (eU/eTh)
- Plate 22: Chilco – Uranium over Potassium Ratio (eU/%K)
- Plate 23: Chilco – Thorium over Potassium Ratio (eTh/%K)
- Plate 24: Chilco – Thorium over Uranium Ratio (eTh/eU)
- Plate 25: Chilco – Ternary Image (TI)