2019 PLACER GEOPHYSICAL ASSESSMENT REPORT

McMillan Gulch

MAYO MINING DISTRICT, YUKON TERRITORY

Anni 1-17 Western Heavy Haul Inc. P 524737 to P 524753

Auliv, Auliv 1-33 Western Heavy Haul Inc. P 524054 to P 524087

For

Earth & Iron Inc.

By

William LeBarge
Geoplacer Exploration Ltd.

and

Selena Magel
Earth & Iron Inc.

Location: 63°55’23” N to 63°54’15” N; 135°09’06” W to 135°04’48” W
NTS: 105M14
Mining District: Mayo
Date: September 15, 2019
Dates of Work: July 6, 2019

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Executive Summary

The following is an assessment report on the placer exploration program conducted on placer claims Lightning Creek-McMillan Gulch in 2019. The property is located in central Yukon approximately 480 km by road from Whitehorse. Access to the claims is gained from Whitehorse via Stewart Crossing on the Klondike Highway (353 km), followed by a distance of 52 km east on the Silver Trail to Mayo. From Mayo to Keno City the road runs a distance of 65 km. From that point, a 9.8 km long four-wheel drive road runs from Keno City, northwest along the Lightning Creek road. It continues past McNeil Gulch to the confluence of Lightning Creek with McMillan Gulch.

Water License PM17-023 is held on Lightning Creek/McMillan Gulch and is valid until June 6, 2027.

Mount Hinton is the locale for a significant bedrock gold source (MINFILE 105M052) which consists of a series of mineralized vein-faults hosted in both the Triassic Galena Suite Gabbro and the Carboniferous Keno Hill Quartzite. It lies at the headwaters of several major drainages including Upper Duncan Creek, Keystone Creek, Granite Creek, McNeil Gulch, McMillan Gulch and Allen Creek.

The most prospective sediments for placer gold in the project area are interglacial paleochannels, however, other more dispersed sediments such as glacial till may also host economic concentrations of placer gold. The potential for this stratigraphy to host placer gold is demonstrated on Granite Creek, where coarse nuggets of placer gold have been mined from the McConnell alpine glacial till, with reported gold royalties of over 4000 crude ounces in the last three years. There is a strong possibility that all other nearby drainages including Upper Duncan Creek, Keystone Creek, McNeil Gulch, McMillan Gulch, Allen Creek and McKim Creek have similar placer gold potential.

The 2019 placer exploration program consisted of 600m of electrical resistivity surveys as well as a drone imagery survey, and general prospecting. High surface resistivity values corresponded with interpreted McConnell glacial till, permafrost, or colluvial blankets and slide material units on the ground surface. Low surface resistivity units were associated with water-saturated ground surrounding the creeks or bogs in the region. The resistivity values in the medium range are interpreted as possible paleochannel material such as sands and gravel.

A total of 3 drill targets were chosen on the profiles in locations which may be paleochannels, or depressions in the bedrock with placer gold potential. The drill targets are at estimated depths between 20-27m. A 2 km^2 drone image was also surveyed in the project area.

Further exploration is warranted throughout the entirety of the claims in McMillan Gulch. This should include additional drone imagery, additional resistivity geophysical surveys and drilling of paleochannel targets using either auger, R/C (reverse circulation) and/or RAB (rotary air blast) methods. High value targets should then be explored by excavator test pitting and/or shafting, detailed sampling and processing of gravel for gold content.

Introduction

The following is an assessment report on the 2019 exploration program conducted on the Anni and Auliv claims in the Lightning Creek-McMillan Gulch area. The exploration program included resistivity geophysical surveys and a drone imagery survey. The geophysical and drone surveys are herein documented and claimed for assessment credit.

Location and Access

The property is located in central Yukon approximately 480 km by road from Whitehorse (Figure 1). Access to the claims is gained from Whitehorse via Stewart Crossing on the Klondike Highway (353 km), followed by a distance of 52 km east on the Silver Trail to Mayo. From Mayo to Keno City the road runs a distance of 65 km. From that point, a 9.8 km long four-wheel drive road runs from Keno City, northwest along the Lightning Creek road. It continues past McNeil Gulch to the confluence of Lightning Creek with McMillan Gulch.

Dates of Work and Personnel

The 2019 exploration program was conducted on July 6th, 2019. The field crew consisted of supervisor William LeBarge, M. Sc., P. Geo (Geoplacer Exploration Ltd.), Selena Magel, B.Sc., G.I.T., and Allegra Webb.

Placer Mineral Tenure

The Auliv Claims and the first tier Anni bench claims on McMillan Creek are held by Western Heavy Haul Inc. (P 524054 – P 524087 and P 524737 – P 524753, respectively).

Permitting

Earth & Iron Inc. currently holds Type B Water Use Licence Water License PM17-023 and Placer Mining Land Use Permit LP01184 on the project area on Lightning Creek/McMillan Gulch. Both permits are valid until June 6, 2027.

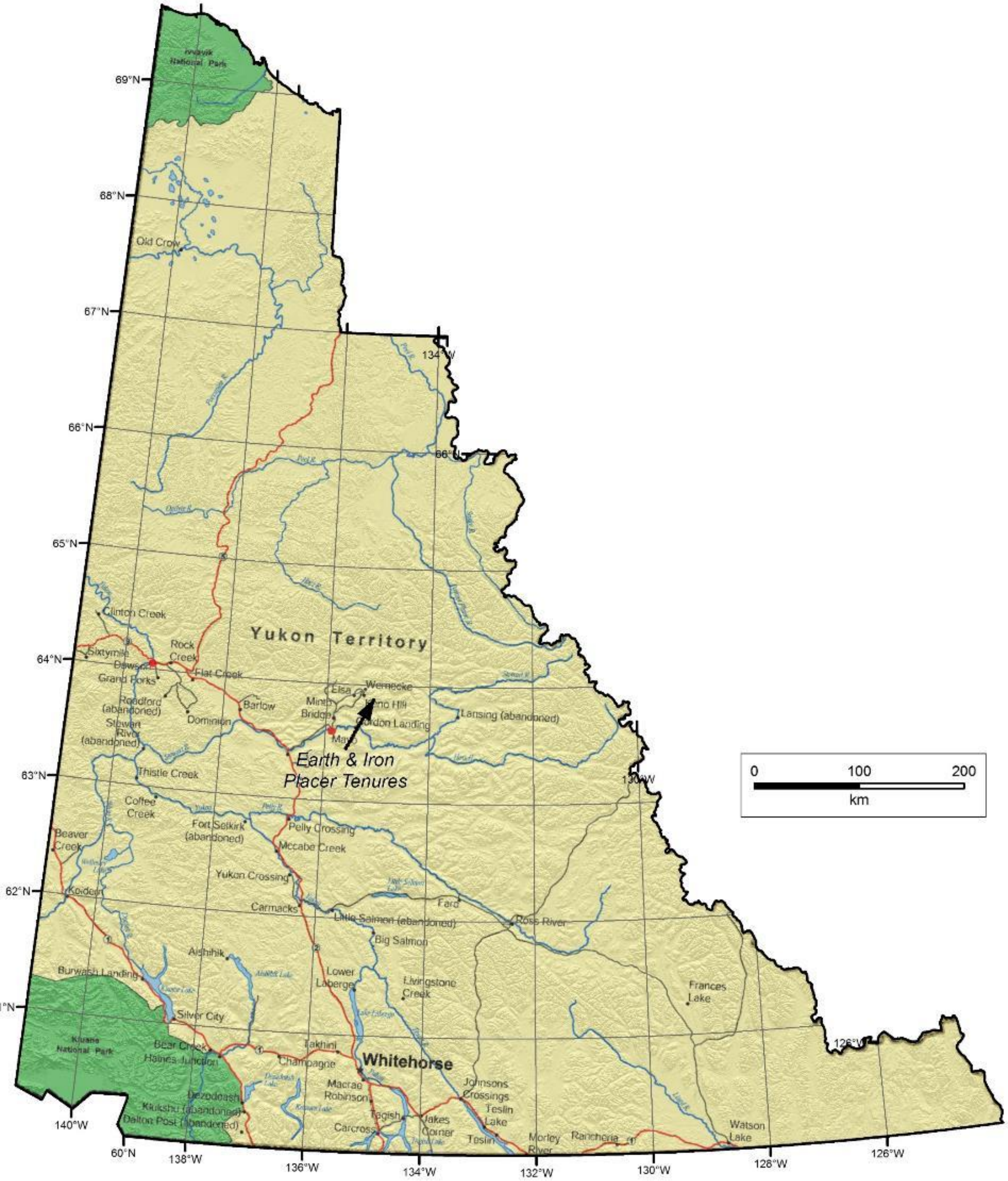


Figure 1 - General Location of Earth & Iron Placer tenures, Mayo, Yukon.

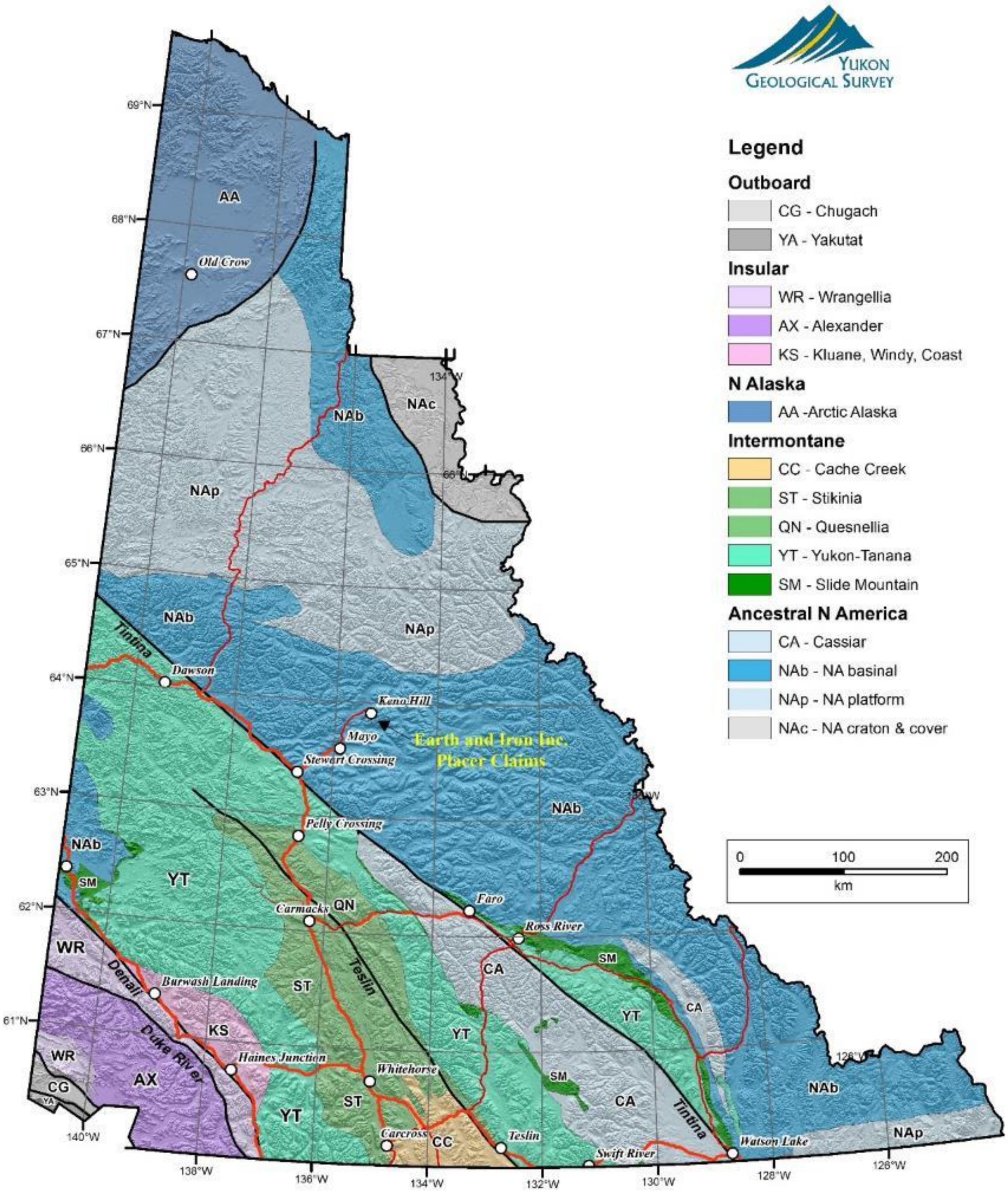


Figure 2 - Geological Map of Yukon, showing major bedrock terranes and structural elements. Modified after Yukon Geological Survey, 2018.

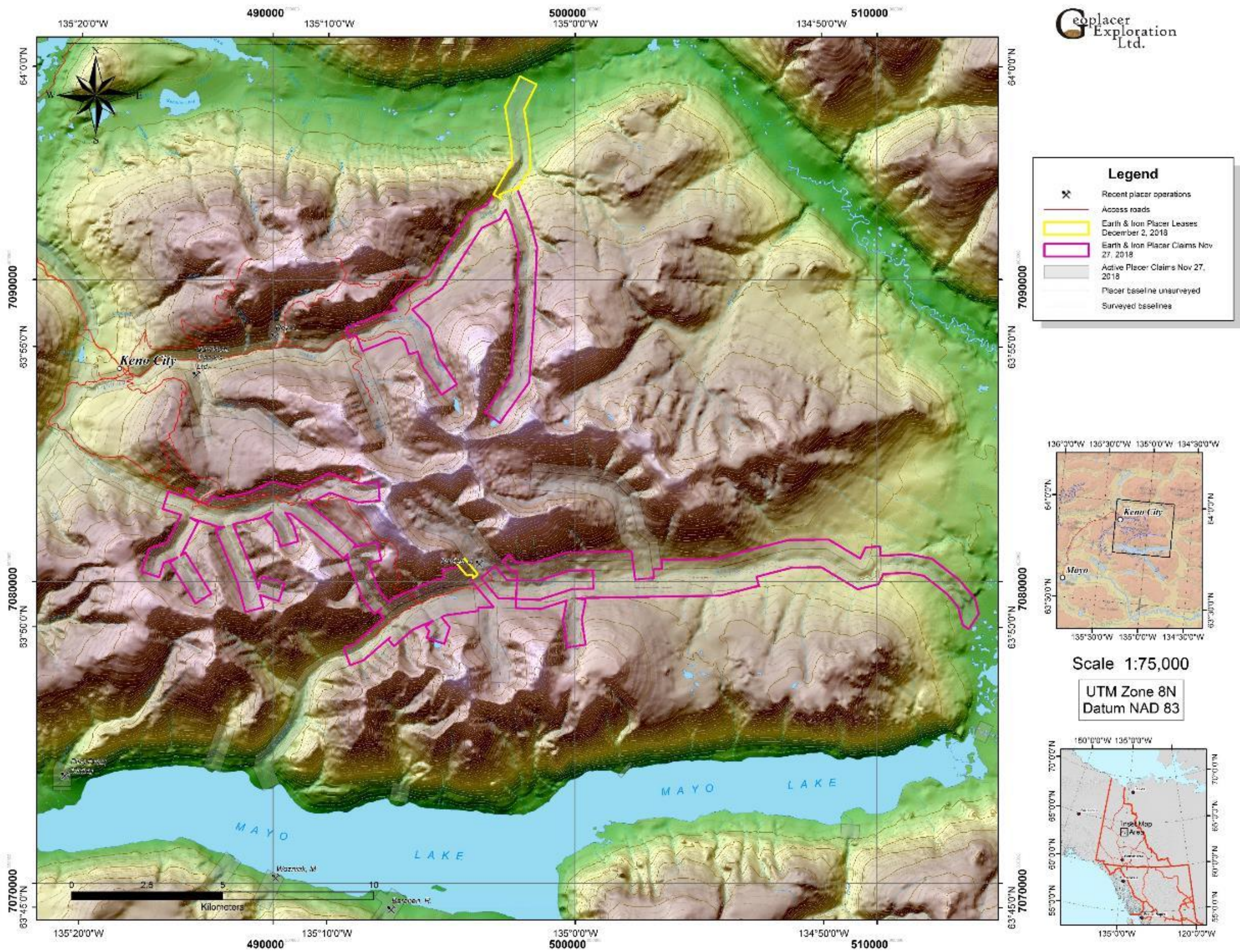


Figure 3– Location of the Upper Duncan Creek, Lightning Creek and Granite Creek areas showing Earth and Iron Inc. holdings and other placer claims and prospecting leases.

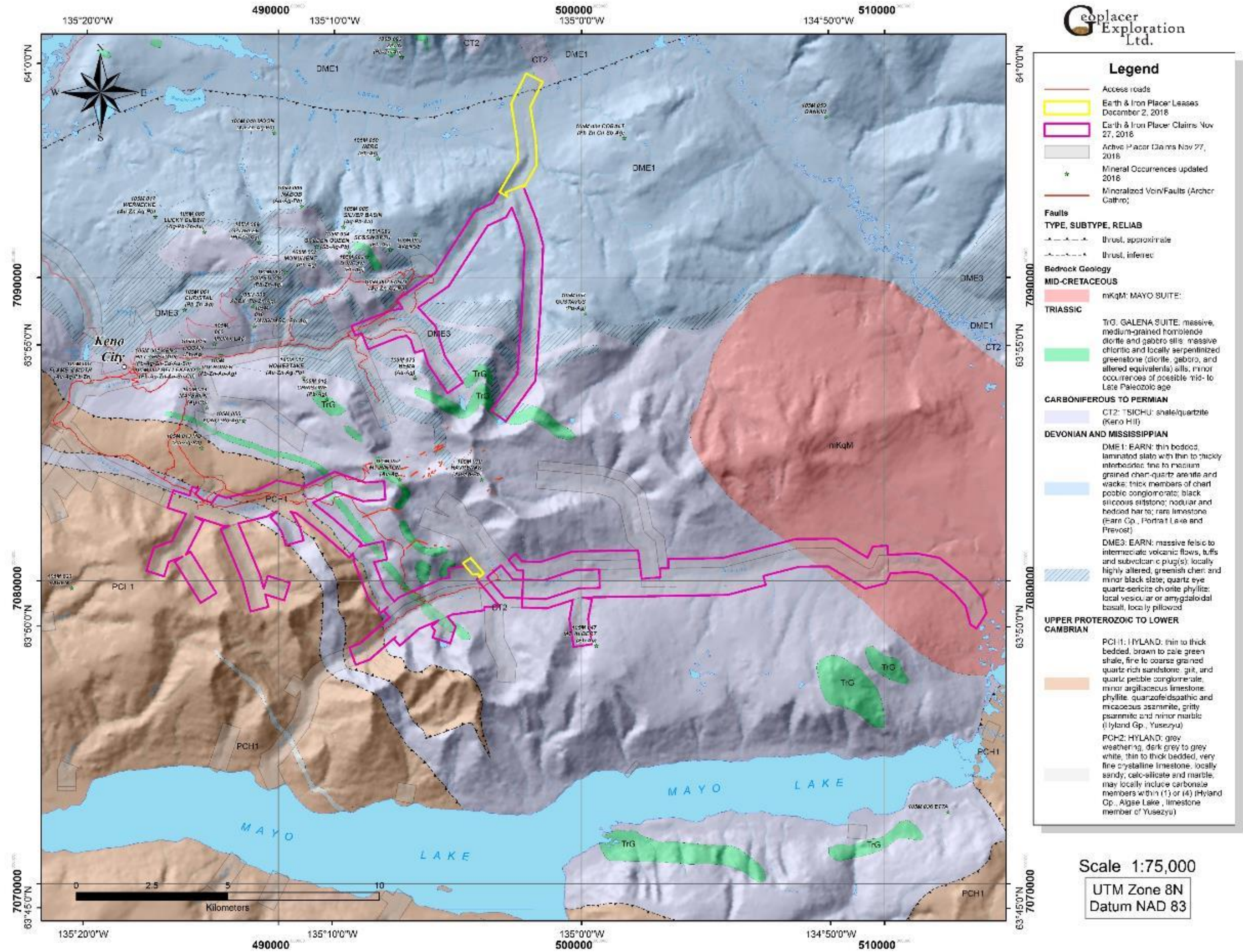


Figure 4 - Bedrock geology and mineral occurrences of Upper Duncan Creek, Lightning Creek and Granite Creek areas, Mayo Mining District, after Yukon Geological Survey, 2018. Mineralized vein-faults digitized from Wengzynowski, 2008 (EMR Assessment report 095613).

Regional Bedrock Geology

Murphy (1997) and Roots (1997a, 1997b) mapped and described the McQuesten and Keno Hill area, and various researchers (Stephens et al., 2004; Hart et. al., 2002; Colpron and Ryan, 2010) have described the tectonic setting and mineral deposits throughout the region.

Figure 2 is a geological map of Yukon, showing major bedrock terranes and structural elements. The Earth and Iron Inc. properties in the Keno Hill district lie east of the Tintina Fault, within Ancestral North America in the *Nab* (North American basinal) terrane. In that part of the western Selwyn basin, dominantly clastic sedimentary rocks were deposited in an off-shelf setting in a period from the latest Neoproterozoic to the Carboniferous (Stephens et al., 2004).

The Keno Hill district is part of the Tombstone Gold Belt (Stephens et al, 2004), a subset of the Tintina Gold Province (Hart et al., 2002). This area is characterized by a northerly-directed, fold-and-thrust belt which developed in the Late Jurassic to Early Cretaceous (Roots, 1997a, 1997b; Murphy, 1997). The Dawson, Tombstone and Robert Service thrusts are the products of this deformation across the northern part of the basin (Murphy and Roots, 1996; Roots, 1997a).

The Robert Service Thrust sheet contains Hyland Group (Late Proterozoic to Cambrian) sandstone and grit with rare limestone and minor maroon argillite, overlain by a Cambrian to Middle Devonian succession of dark coloured siltstone, limestone and chert. These strata, a component of the regional Selwyn Basin, are unconformably overlain by Upper Devonian Earn Group argillite, chert and chert pebble conglomerate (Murphy, 1997; Roots, 1997a, 1997b).

To the north, the Tombstone Thrust sheet consists of highly strained Earn Group carbonaceous phyllite, felsic meta-tuff and metaclastic rocks, succeeded by Carboniferous Keno Hill quartzite that is thickened by internal recumbent folds or thrusts in the north central part of the map area. These units host the Ag-Pb-Zn veins of the Elsa-Keno Hill camp and the Au veins of the Mount Hinton area (Roots, 1997a, 1997b).

Jurassic (?) and Cretaceous contraction produced regionally developed penetrative fabrics and folds of various scales as well as thrust faulting. A domain of intensely-developed foliation and lineation underlies the northern half of the map area, imparted during two or more phases of movement on the Tombstone Thrust (Roots, 1997a, 1997b).

Two main intrusive suites of rock were emplaced into the western Selwyn basin after the regional deformation; the McQuesten Intrusive Suite, and the Tombstone Plutonic Suite (Murphy, 1997). The Tombstone Suite was emplaced around 92 Ma, and its rocks are associated with the Tombstone Gold Belt deposits in Yukon (Brewery Creek, Dublin Gulch, Scheelite Dome and Clear Creek) as well as the Pogo, Fort Knox and Donlin Creek deposits in Alaska (Hart et al., 2002).

Mineral Occurrences

The Roop Lakes batholith, which outcrops in the eastern part of the project area, is a late Cretaceous granite, quartz monzonite and granodiorite intrusion of the Tombstone Suite. It is widely-held to be the probable heat source for epi- and meso-thermal veins of the Elsa-Keno Hill mining camp (Roots, 1997a, 1997b).

Table 1 lists YUKON MINFILE (Yukon Geological Survey, 2018) mineral occurrences in the Upper Duncan/Keno Hill district. Most of these occurrences are polymetallic veins, consisting of silver, lead and zinc with various amounts of accessory gold. The host rock is mainly the Carboniferous Keno Hill Quartzite, however some veins are hosted in carbonaceous phyllite, felsic meta-tuff and metaclastic rocks of the Devonian Earn Group. A few mineralized polymetallic veins are hosted in the metaclastic rocks of the Late Proterozoic to Cambrian Hyland Group.

Table 1 – Selected Mineral Occurrences, Keno Hill and Upper Duncan area, from MINFILE (Yukon Geological Survey, 2018).

MINFILE NUMBER	DEPOSIT TYPE	STATUS
105M 001 KENO HILL - HISTORIC (Pb-Ag-Zn-Cd-Au-Sn)	Vein Polymetallic Ag-Pb-Zn+/-Au	Past Producer
105M 002 FAITH (Au-Zn-Ag-Pb)	Vein Polymetallic Ag-Pb-Zn+/-Au	Showing
105M 003 DUNCAN (Pb-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Past Producer
105M 004 GOLDEN QUEEN (Sb-Ag-Pb)	Vein Polymetallic Ag-Pb-Zn+/-Au	Drilled Prospect
105M 005 SILVER BASIN (Ag-Pb-Au)	Vein Polymetallic Ag-Pb-Zn+/-Au	Prospect
105M 006 NABOB (Au-Ag-Pb)	Vein Polymetallic Ag-Pb-Zn+/-Au	Showing
105M 007 MONUMENT (Pb-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Showing
105M 008 COMSTOCK (Pb-Zn-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Past Producer
105M 009 APEX (Pb-Zn-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Showing
105M 010 VANGUARD (Pb-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Past Producer
105M 011 HOMESTAKE (Au-Zn-Ag-Pb)	Vein Polymetallic Ag-Pb-Zn+/-Au	Drilled Prospect
105M 012 CHRISTINE (Pb-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Prospect
105M 013 MO (Au-Ag-Pb)	Vein Polymetallic Ag-Pb-Zn+/-Au	Showing
105M 014 MAYBRUN (Ag-Pb)	Vein Polymetallic Ag-Pb-Zn+/-Au	Past Producer
105M 015 HOGAN (Pb-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Showing
105M 016 RUNER (Pb-Zn-Au-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Past Producer
105M 017 WERNECKE (Au-Zn-Ag-Pb)	Vein Polymetallic Ag-Pb-Zn+/-Au	Drilled Prospect
105M 018 FORMO (Pb-Zn-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Past Producer
105M 020 PADDY (Pb-Ag-Zn-Au)	Vein Polymetallic Ag-Pb-Zn+/-Au	Past Producer
105M 021 EAGLE (Pb-Zn-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Drilled Prospect
105M 022 FISHER (Au-Zn-Ag-Pb)	Vein Polymetallic Ag-Pb-Zn+/-Au	Anomaly
105M 023 PARENT	Unknown	Anomaly
105M 024 CREAM AND JEAN (Pb-Zn-Cu-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Past Producer
105M 025 NORD (As-Zn-Ag-Pb-Au)	Vein Polymetallic Ag-Pb-Zn+/-Au	Drilled Prospect

MINFILE NUMBER	DEPOSIT TYPE	STATUS
105M 047 MT ALBERT (Pb-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Showing
105M 050 NERO (Pb-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Showing
105M 052 MT HINTON (Au-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Drilled Prospect
105M 053 AVENUE	Vein Polymetallic Ag-Pb-Zn+/-Au	Showing
105M 055 YONO (Pb-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Showing
105M 061 CHRISTAL (Pb-Zn-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Showing
105M 062 SEGSWORTH (Pb-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Past Producer
105M 063 IRON CLAD	Vein Polymetallic Ag-Pb-Zn+/-Au	Drilled Prospect
105M 069 GAMBLER (Pb-Zn-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Past Producer
105M 070 HAVRENAK (Au-Ag-Pb)	Vein Polymetallic Ag-Pb-Zn+/-Au	Drilled Prospect
105M 073 BEMA (Au-Ag)	Vein Polymetallic Ag-Pb-Zn+/-Au	Showing
105M 082 BELLEKENO (Pb-Ag-Zn-Au-Sn-Cd)	Vein Polymetallic Ag-Pb-Zn+/-Au	Producer
105M 084 ONEK (Ag-Pb-Au-Zn-In)	Vein Polymetallic Ag-Pb-Zn+/-Au	Deposit
105M 085 LUCKY QUEEN (Ag-Pb-Zn-Au)	Vein Polymetallic Ag-Pb-Zn+/-Au	Deposit
105M 087 FLAME & MOTH (Au-Ag-Pb-Zn)	Vein Polymetallic Ag-Pb-Zn+/-Au	Deposit

Local Bedrock Geology

Figure 4 shows the bedrock geology and mineral occurrences of the Lightning Creek, Upper Duncan creek and Granite Creek area, modified from Roots, 1997b and Yukon Geological Survey, 2016. Mineralized vein/faults have been added from Wengzynowski, (2008).

Figure 5 shows the bedrock of the Lightning-McMillian and Faith-Allen creek areas in more detail. The area of claims on Lightning Creek-McMillan Gulch is mapped as CT2 (Carboniferous to Permian Keno Hill Quartzite) and DME3 (Devonian-Mississippian Earn Group felsic to intermediate volcanic flows and tuffs). In the area of the Faith and Allen Creek claims, underlying bedrock is mapped as including the above mentioned units as well as an extensive zone of DME1 (Devonian-Mississippian Earn Group slate, wacke, conglomerate and siltstone). The headwaters of both creeks contain outcrops of the Triassic Galena Suite hornblende diorite and gabbro.

The closest mineral occurrences to the Lightning-McMillan and Faith-Allen drainages include the Faith gold-zinc-silver- lead vein (MINFILE 105M002), the Gustavus lead-zinc vein (MINFILE 105M057), the Bema gold-silver vein (MINFILE 105M073) and the northern extent of the Mt. Hinton gold-silver veins (MINFILE 105M 052).

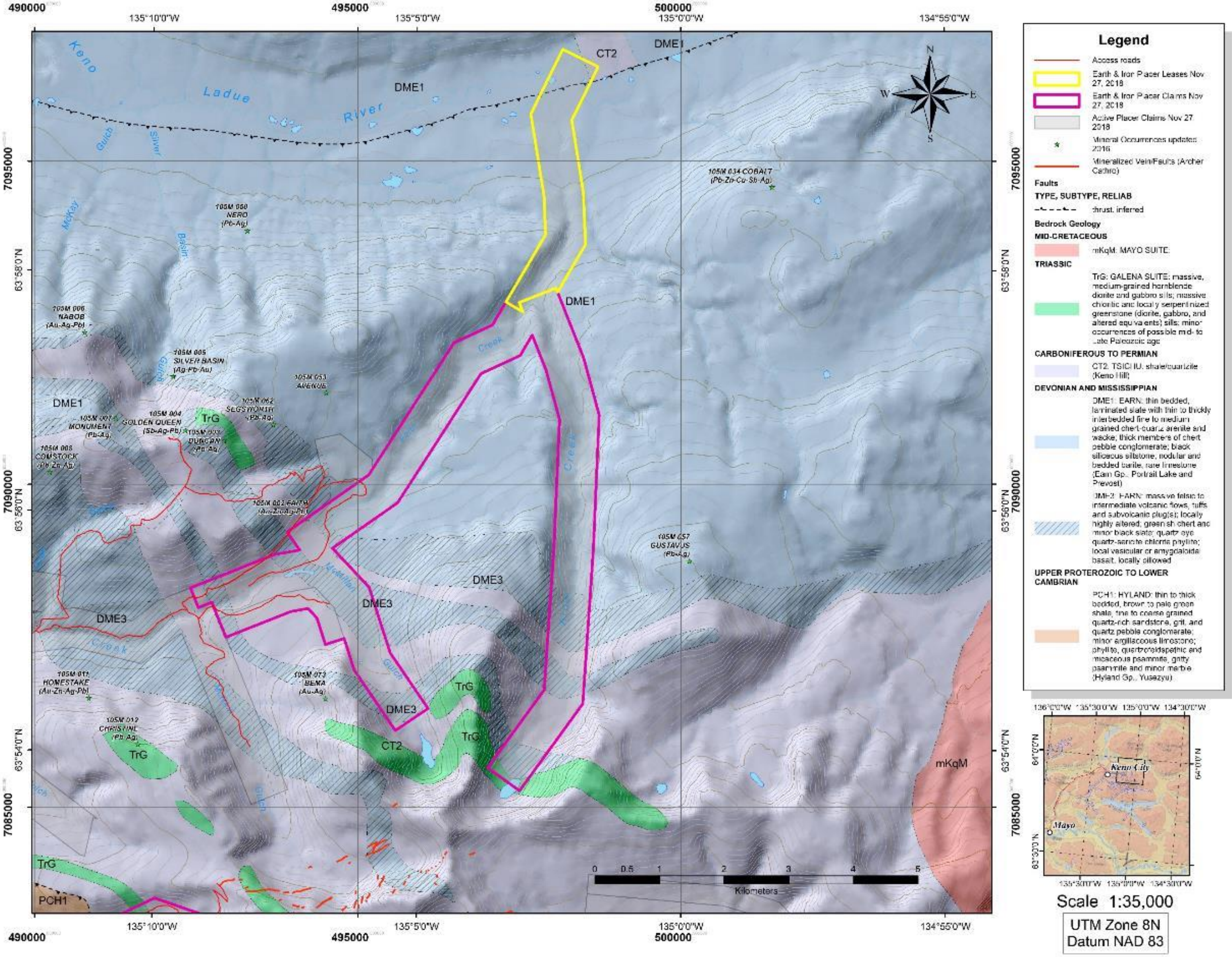


Figure 5 - Bedrock geology of the Lightning-McMillan and Faith-Allen creek area, including mineral occurrences from Yukon Minfile (Yukon Geological Survey, 2018).

Quaternary History

In the Mayo area, a minimum of four regional glaciations and two interglacial periods have influenced the deposition and erosion of sediments over the last 2.5 million years (Duk-Rodkin et. al., 2010; LeBarge et. al., 2002; Bond, 1996, 1997; Jackson et al., 2001). Glaciations include the pre-Reid (multiple early to mid-Pleistocene glaciations), Reid (130,000 years), and McConnell (14,000 -29,600 years). Warm, interglacial periods are indicated by relict paleosols such as the pre-Reid Wounded Moose paleosol (Tarnocai and Schweger, 1991) and the Reid Diversion Creek paleosol (Bond and Lipovsky, 2010).

During their maximum extent, pre-Reid ice sheets completely covered the Mayo/Keno Hill area. Undifferentiated pre-Reid surficial materials (moraine, glaciofluvial and glaciolacustrine deposits) are thick in the lowlands of Klondike Plateau and Tintina Trench, especially in areas proximal to the terminus of the pre-Reid glaciations.

During the subsequent Reid glaciation, glacial ice advanced from cirques formed in topographic highs such as Mount Hinton and Mt. Haldane, and coalesced with Cordilleran ice lobes which were advancing up-valley into the alpine areas. This resulted in a complex overlap assemblage of local alpine glacial sediments and more regionally-derived glacial sediments.

During the most recent (McConnell) glaciation, ice once again advanced from cirques in mountainous centres, however their advance was much less extensive than during previous glaciations. In most cases, McConnell ice advanced only short distances down-valley from their origins in the valley heads, depositing terminal moraines in the upper reaches of most valleys.

Figure 6 shows glacial limits and ice-flow directions in the Mayo area, after Bond (1999). This map indicates that McConnell ice advanced up-valley into the lower reaches of Allen and to the headwaters of Faith Creek, while only local alpine ice advanced down McMillan Gulch and McNeil Gulch. Allen Creek also hosted a local alpine ice advance during the McConnell which did not meet the up-valley advance of the regional McConnell ice.

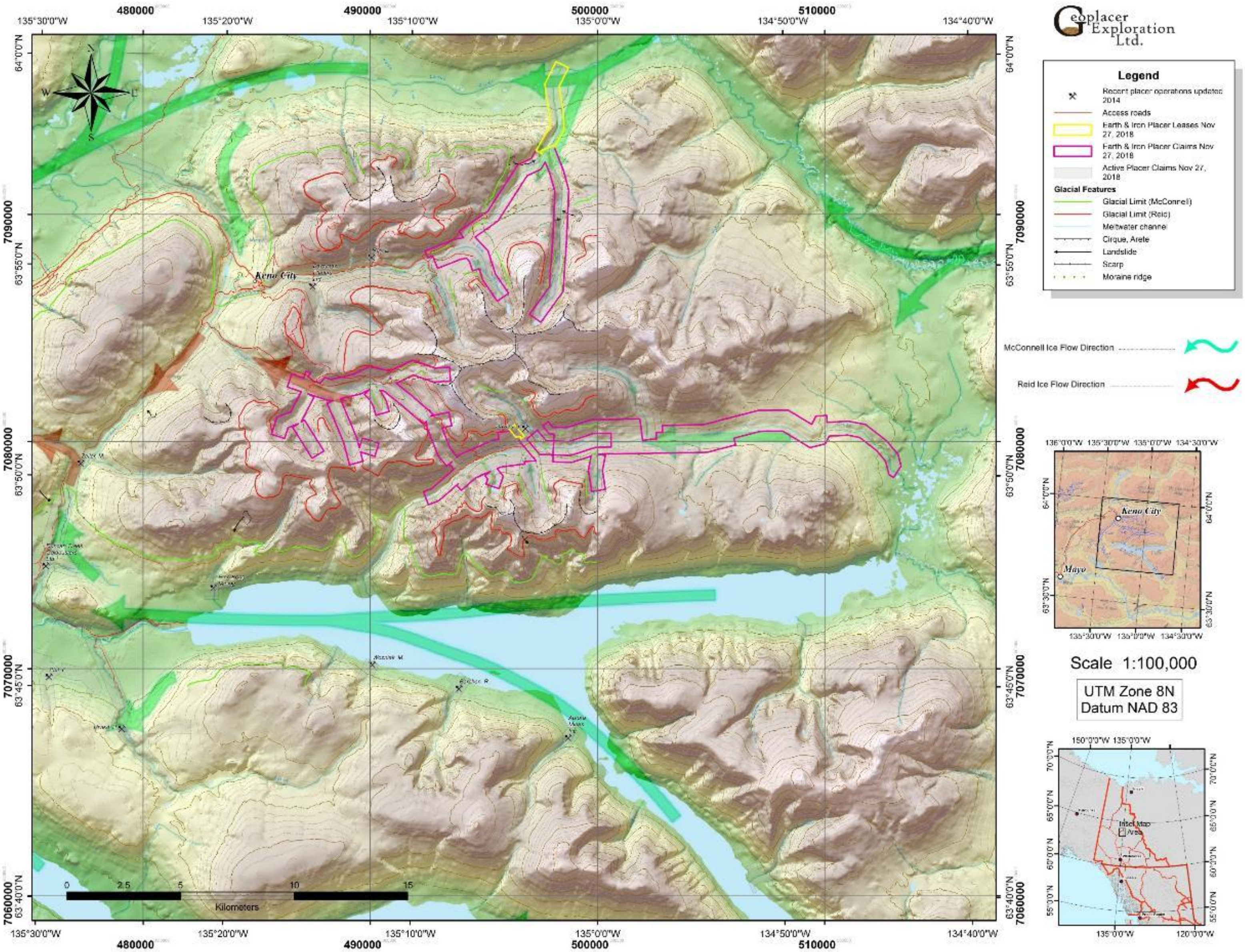


Figure 6 – 1: 100 000 scale map of glacial limits and ice-flow directions, Upper Duncan Creek, Lightning Creek and Granite Creek area, Mayo Mining District (after Bond, 1999). Recent placer operations are also shown, from Van Loon and Bond (2014).

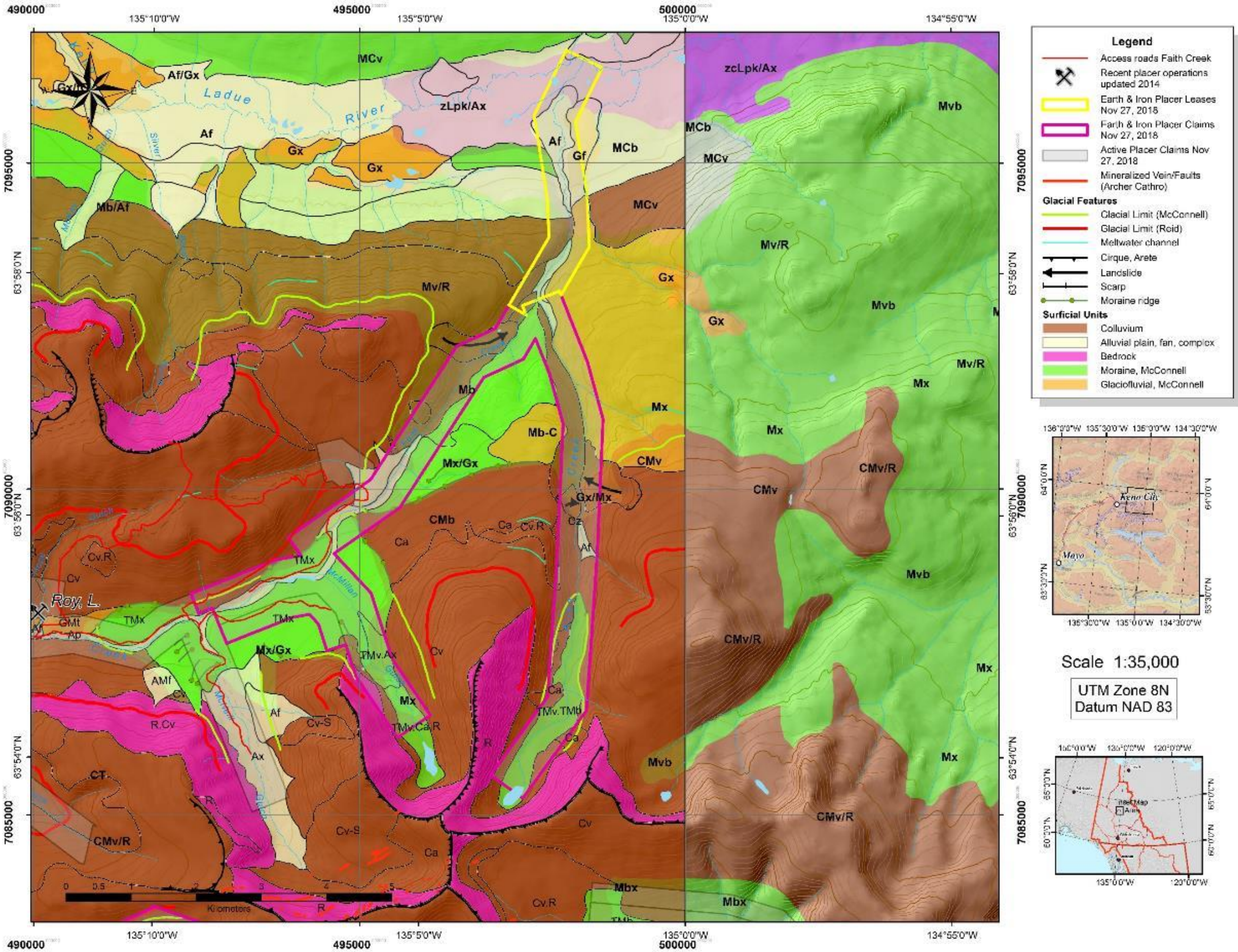


Figure 7 – 1: 35 000 scale map of surficial geology, Lightning-McMillan and Faith-Allen creeks, Mayo Mining District (after Bond, 1998).

Surficial Geology

Figure 7 is a 1:35,000 scale surficial map of the Lightning-McMillan and Faith-Allen creek drainages (modified after Bond, 1998). Differences in units between the east and west sides of the map are attributable to the different scales of mapping which were conducted on each side.

Unconsolidated sediments in the Gustavus Range and the surrounding plateaus consist mainly of deposits from Cordilleran valley glaciers (continental ice sheet), alpine glaciers (local montane glaciers), colluvium, and minor alluvium. The surficial geology of the project area is complex, which is a result of the multiple glacial events that have occurred there over the last 1.5 million years.

The hills above the main drainages of Duncan, Upper Duncan, Lightning and Granite creeks are mantled with colluvial deposits (veneers, blankets and aprons), while glacial erratics are found in the ridge tops and uppermost slopes. These were deposited when the pre-Reid glacial ice overtopped the hills in the region (LeBarge et.al., 2002; Bond, 1998).

Within and below the Reid glacial limit (shown as the red line in Figures 7 and 8), remnant deposits of Reid-age till line the valley bottoms and edges, and Reid glaciofluvial outwash channels lie along valley edges and on intervalley divides between third and fourth order drainages. In the lower reaches of Upper Duncan Creek, Reid-age till lies at the surface and confines the extent of the modern alluvial plain.

McConnell-age till forms moraines in the headwaters of most local drainages including Upper Duncan Creek (Mount Hinton), Lightning Creek-McMillan Gulch, Allen Creek and Granite Creek. Deposits of McConnell glaciofluvial outwash lie as terraces along the valleys of Lightning Creek, Duncan Creek and lower Granite Creek.

McConnell-age and younger alluvial and periglacial fans occur on the left limit of Faith Creek along the McConnell glacial limit, and on Allen Creek between the down-valley flowing local alpine McConnell glacial advance and the up-valley flowing regional McConnell glacial limit.

Modern alluvial fans, plains and complexes occur in all valleys, but are most prominent in larger, third to fourth order drainages. In some cases, alluvial fans have formed from re-activation and reworking of older deposits such as glaciofluvial terraces and eskers of Reid to McConnell age.

Recent colluvial aprons and landslides occur along the margins of many steep-sided valleys including Allen Creek.

Placer Exploration and Mining History

The discovery of placer gold in the Mayo district began on the Stewart River in 1883, when a party of prospectors worked from the mouth of the Stewart River to the McQuesten River (Mayo Historical Society, 1990). Between 1885 and 1886, it is estimated that up to 14,500 fine ounces (451 000 g) was recovered by hand (Mayo Historical Society, 1990).

In 1892, Ray Stewart discovered gold on the McQuesten River, and in 1895 placer gold was noted on Haggart Creek. Discovery claims were recorded on Johnson and Haggart Creeks in 1898, and around then a Swedish trio named Gustavson were hand mining at the canyon on Duncan Creek, approximately 15 km upstream from its confluence with the Mayo River. The Gustavsons mined the canyon deposit however had avoided recording their claim for fear of initiating another stampede. In 1901, some Dawson stampeders discovered their camp and the Gustavson trio lost their ground (Mayo Historical Society, 1990).

Soon the entire length of Duncan Creek was staked. Exploration in surrounding regions began shortly thereafter, and discoveries were posted on creeks flowing into Mayo Lake and in the Minto Creek region in 1903. Highet Creek was found to contain a significant quantity of gold. Rudolph Rosmusen and partners acquired an area of the bench opposite Rudolph Gulch and found the richest bench ground on the creek, yielding upwards of US$140 000 or 6773 fine ounces (210 664 g) of gold at US$20.67 per ounce. The amounts on these claims alone surpassed the total gold taken out of Duncan Creek in its first 14 years.

In 1920 the Highet Creek Dredging Co. attempted to dredge Highet Creek, however, this lasted only a year and a half due to the inability of the dredge to handle large boulders. Intermittent activity continued until an upsurge of mining occurred following the dramatic rise in the price of gold in the late 1970’s and early 80’s.

Modern methods of mining, utilizing large bulldozers and excavators have become prevalent, especially in areas that were once considered to be too deeply buried by barren glacial overburden. Although most modern mining is still concentrated on the creeks which were initially mined at the turn of the century, some new ground has been explored and mined on a few non-traditional creeks.

No mining history could be found in Government records for Faith and Allen creeks, however Nugget Drilling staked claims on Allen Creek during an exploration program in 1982 (LeBarge et al.,2002). Anecdotal evidence also suggests that McMillan Gulch had some limited prospecting by miners who were testing nearby McNeil Gulch and Lightning Creek.

Government placer gold royalty records prior to 1978 are incomplete, however more detail can be found in subsequent years, which are given in Table 2. This table shows that over 165,000 crude ounces have been recorded in the Mayo Mining District between 1978 and 2015.

Table 2 - Placer gold production from reported gold royalties, Mayo Mining District. Figures are in crude (raw) ounces.

STREAM or RIVER	Tributary to	2011	2012	2013	2014	2015	1978-2015
Anderson	Mayo Lake	319.51	80.48	13.58			938
Bear (Van Bibber)	McQuesten						1448
Carlson	Minto						105
Davidson	Mayo River		113.9	310.6	884.6	735.46	4432
Dawn	Mayo Lake						15
Dirksen	Mayo Lake						31
Dublin Gulch	Haggart		3.2	16.3			13099
Duncan	Mayo River	294.54	236.44	241.7	246.03	279.36	34718
Empire	No Gold				7.54		1012
Gem	Sprague						428
Goodman	South McQuesten						37
Granite Creek	Mayo Lake					1249.16	1249
Haggart	McQuesten	3.05		3.7	2.8	2.39	24508
Highet	Minto		117.82	30.62	84.9	29.96	40450
Hope Gulch	Lightning						8
Jarvis	Minto			10.67			17
Johnson	McQuesten						5437
Ledge	Mayo Lake						5815
Lightning	Duncan		304.78			0.83	11624
McQuesten	Stewart					9.24	114
Minto	Mayo River			27.31	65.13	199.42	1547
Morrison	Seattle						16
Murphy's Pup	South McQuesten	5.35	18.294	21.5	15.56		159
Owl	Mayo Lake	153.01					3642
Russell	Macmillan						287
Seattle	McQuesten					83.6	292
Secret	Swede	79.16	148.81	155.3	224.92	20.77	693
Steep	Mayo Lake						709
Stewart	Yukon						872
Swede	Haggart		16.3				4347
Thunder	Lightning	532.96	394.29		578.8	508.06	5006
Vancouver	McQuesten						928
Various Mayo Creeks		10.3					1589
Total Mayo District		1397.88	1434.314	831.28	2110.28	3118.25	165569

Rationale for Exploration

Known bedrock gold sources in the Keno Hill district are significant, and are spatially associated with both the Carboniferous Keno Hill quartzite and the Triassic Galena Suite diorite/gabbro. This is at least in part due to their brittle nature and related predisposition to host mineralized quartz veins (Roots, 1997a, 1997b). Splay faults within the Keno Hill quartzite, or the thrust faults which mark the boundaries of the unit, are also likely to host mineralization which can supply gold to the local alluvium.

Surficial mapping by Bond (1998) and placer studies by LeBarge et.al. (2002) have allowed a basic stratigraphic framework to be constructed, which is a key component to any placer exploration program. Mount Hinton is the locale for a significant bedrock gold source (MINFILE 105M052) which consists of a series of mineralized vein-faults hosted in both the Triassic Galena Suite Gabbro and the Carboniferous Keno Hill Quartzite. It lies at the headwaters of several major drainages including Upper Duncan Creek, Keystone Creek, Granite Creek, McNeil Gulch, McMillan Gulch and Allen Creek. This area has been subjected to several episodes of glacially-induced erosion and deposition dating back to the first pre-Reid glaciation in the early Pleistocene. Bedrock gold would be released into surrounding regions in a complex process of physical and chemical weathering, slope and mass-movement transport, entrapment in glacial ice and/or movement in flowing water, and finally deposition into glacial, glaciofluvial and alluvial sediments. During each of the three known episodes of glaciation (pre-Reid, Reid and McConnell), these processes would have repeated and prior unconsolidated material would be reworked and re-deposited along with sediments from newly-eroded bedrock. If the bedrock gold source is significant in size and extent, virtually all unconsolidated material derived from it will have some potential for placer gold. The most prospective sediments would be those that have had several episodes of reworking, winnowing and concentration in the form of interglacial paleochannels, where sediment influx is adequately offset and accommodation space is reduced by fluvial concentration processes. However, other more dispersed sediments such as glacial till may also host economic concentrations of placer gold, especially in local alpine settings where transport distances from bedrock sources are small (LeBarge, 1995; Eyles and Kocsis, 1989).

The potential for this stratigraphy to host placer gold is clearly demonstrated on Granite Creek, where a stratigraphic sequence consisting of several overlying glacial tills has been exposed on the east side of Mt. Hinton (Bond, pers. comm.) Coarse nuggets of placer gold have been mined from the McConnell alpine glacial till by the Jim Davies operation (Van Loon and Bond, 2014), with reported gold royalties of over 4000 crude ounces in the last three years. There is a strong possibility that all other nearby drainages including Upper Duncan Creek, Keystone Creek, McNeil Gulch, Lightning Creek/McMillan Gulch, Allen Creek and McKim Creek have similar placer gold potential. However, testing in these areas to date has been very limited, and not of sufficient depth or volume to sufficiently evaluate this potential.

Further testing of all drainages centred on Mount Hinton is recommended, with attention given to bedrock characteristics and structures that may act as potential gold sources, and a focus on the stratigraphy and sedimentology of the sediments which may host economic placer gold deposits.

2018 Geophysical Exploration Program

Overview

A total of 17 resistivity lines totalling 3.86 km were conducted and interpreted for Earth & Iron Inc. by Allegra Webb, Selena Magel and William LeBarge, with field assistance from Steve Kramer. The surveys were conducted between July 12- September 6th, 2018 in the McMillan, Faith, and Allen Creek claims and leases in Mayo Mining District, YT.

Survey Results

Table 3 outlines the lengths, locations and coordinates of the resistivity surveys conducted in the McMillan Gulch claims. Good data and contact resistance were obtained in most surveys due to a combination of water saturated ground and adding salt water to each electrode location to improve the conductivity to the ground.

Figure 8 is a compilation map of the bedrock and surficial geology of Lightning-Faith and Allen Creeks (after YGS, 2018 and Bond, 1998) which also outlines the general location of the 2018 surveys.

Figure 9 is a map showing the location of the 2018 surveys in the McMillan Creek/Lightning Creek area as well as the glacial features in the vicinity.

The drill target locations and expected bedrock depths are plotted on the pseudosection resistivity profiles in Figures 10-12. Table 4 outlines the depth to bedrock interpreted by the resistivity surveys.

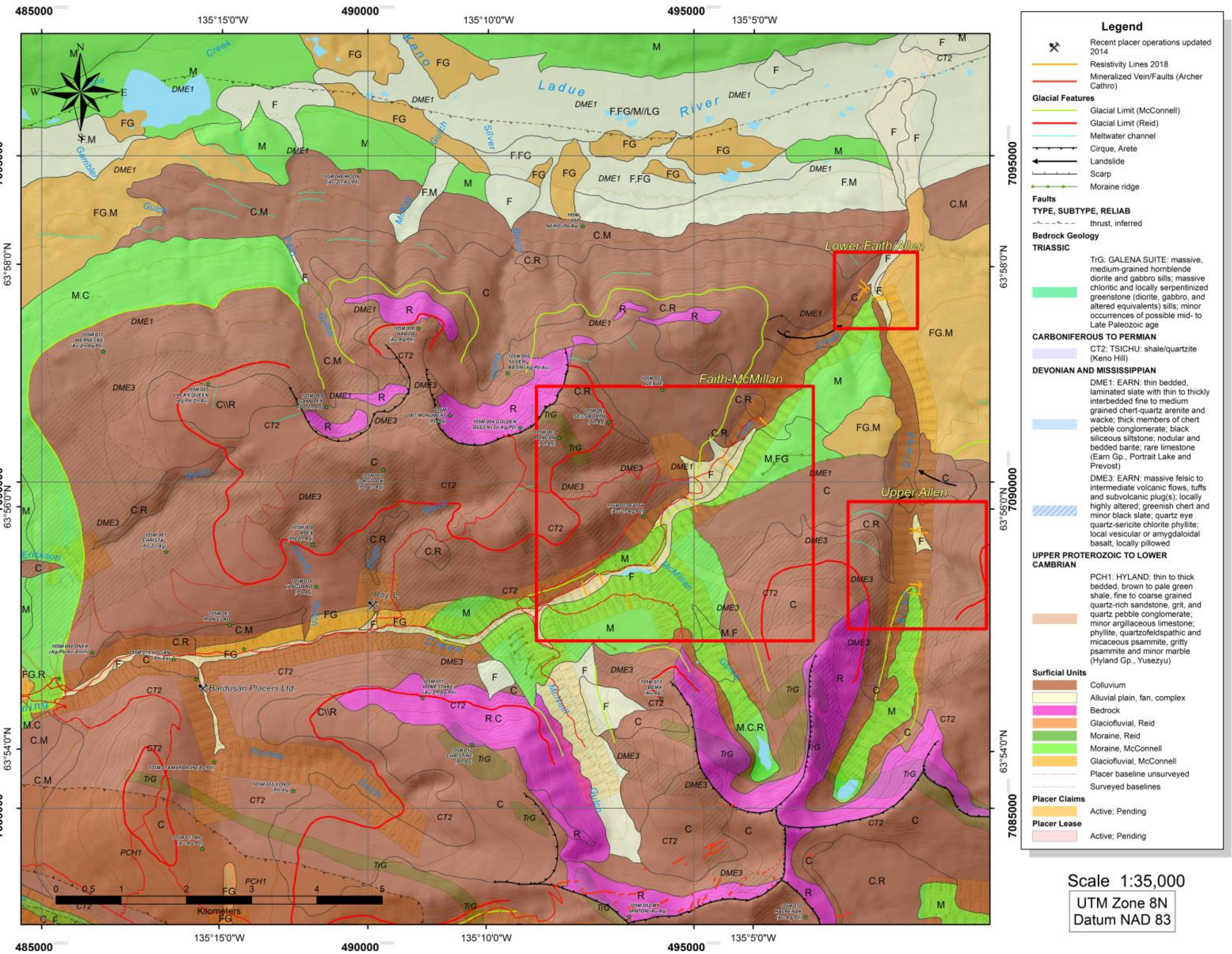


Figure 8 – Compilation bedrock and surficial geology map (after YGS, 2018 and Bond, 1998) of Lightning-Faith and Allen Creeks showing areas of 2018 resistivity surveys. Inset maps (Figure 9, following) are shown, which include more details on the survey locations.

Table 3 – Compilation table showing length, orientation, coordinates and dates of 2018 resistivity surveys in Allen, McMillan, and Faith Creeks.

McMillan Creek 2018								
					Start Point		End Point	
Name	Claim Number	Length (m)	Orientation	Date Surveyed	Latitude	Longitude	Latitude	Longitude
RES18-AULIV13-01	Auliv 13	200	NW-SE	July 27/2018	63.92628	-135.11611	63.92504	-135.11349
RES18-AULIV7-01	Auliv 7	200	NW-SE	July 27/2018	63.92457	-135.13166	63.92300	-135.13045
RES18-AULIV5-01	Auliv 5	300	NW-SE	July 27/2018	63.92335	-135.13694	63.92116	-135.13505
	2018 Total	700						

Table 4 - Coordinates and estimated depths of 2018 drill targets chosen in and McMillan Gulch.

Target Name	Symbol on maps	Claim Name	Resistivity Line	Latitude	Longitude	Approximate depth to bedrock (m)
McMillan #1	M1	AULIV 5	RES18-AULIV5-01	63.922815	-135.13663	11
McMillan #2	M2	AULIV 5	RES18-AULIV5-01	63.921713	-135.135733	17
McMillan #3	M3	AULIV 7	RES18-AULIV7-01	63.92335	-135.130689	8
McMillan #4	M4	AULIV 13	RES18-AULIV13-01	63.925825	-135.115262	13
McMillan #5	M5	AULIV 13	RES18-AULIV13-01	63.925418	-135.114395	5

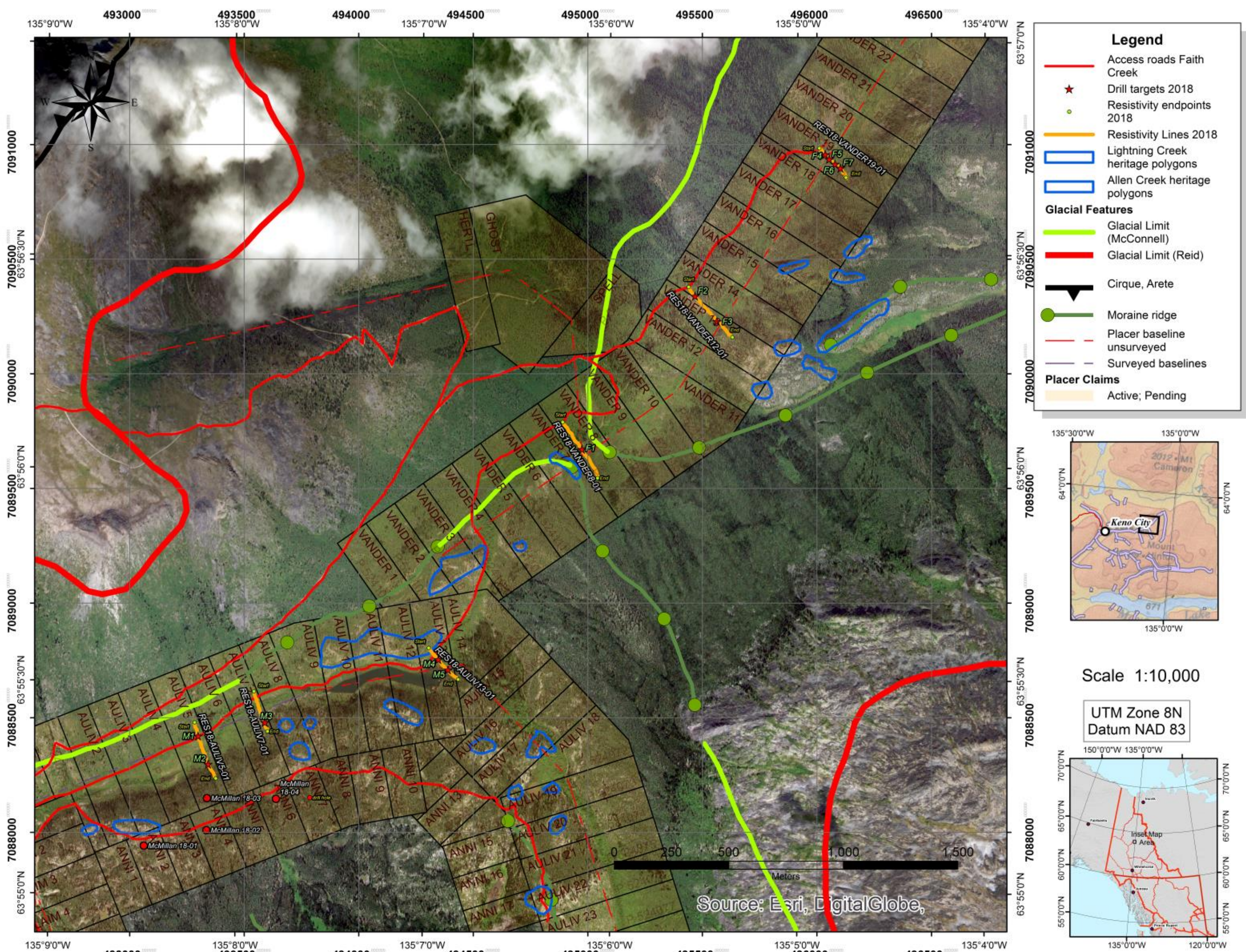


Figure 9 - Map of the Auliv claims (McMillan Creek) and Vander claims (upper Faith Creek), showing the location of 2018 resistivity surveys and major glacial features.

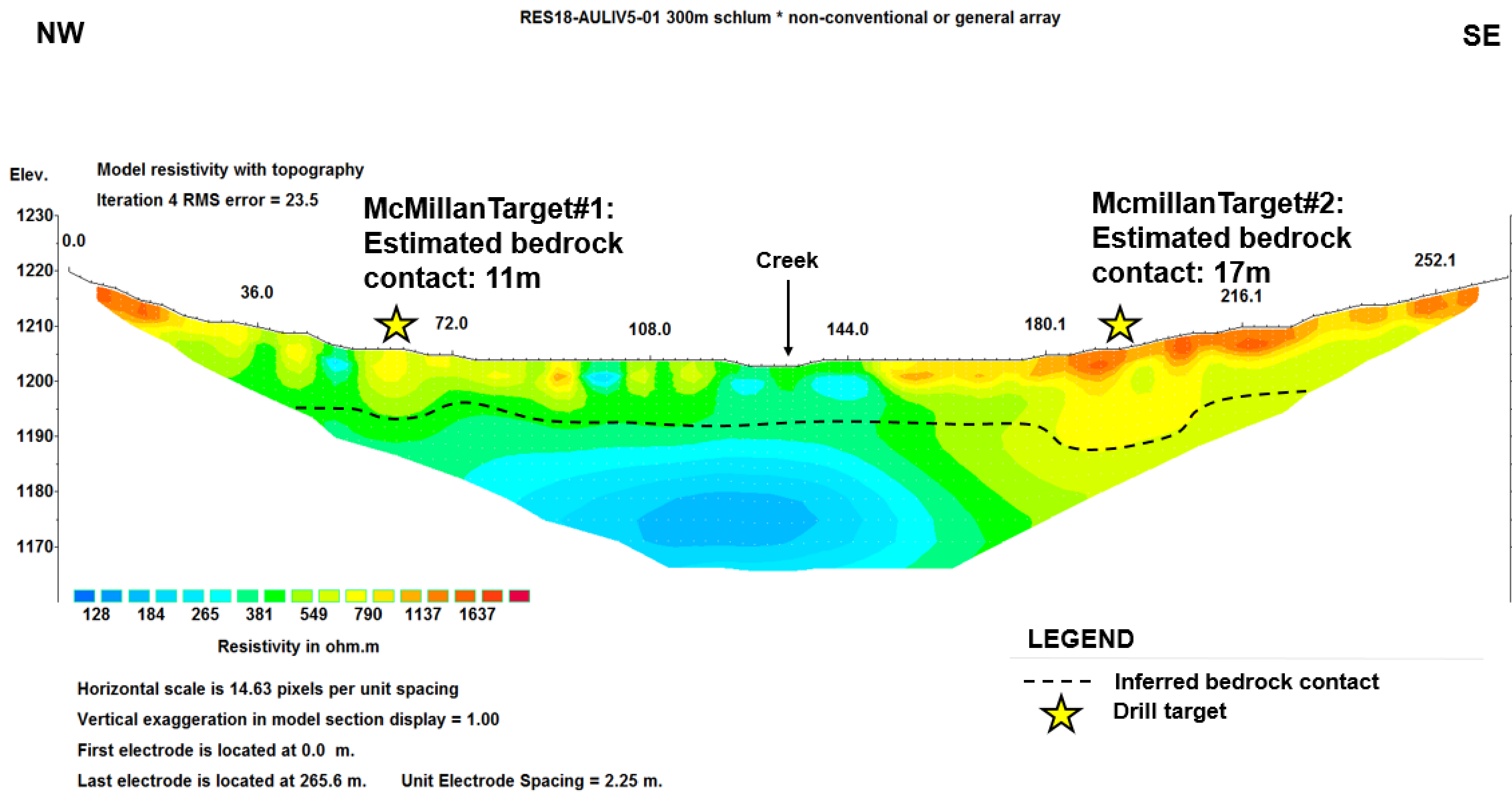


Figure 10 - Resistivity line RES18-AULIV5-01 is surveyed from northwest to southeast across the McMillan Creek valley. The profile displays a potentially undulating bedrock contact with higher surface resistivity to the sides interpreted as colluvium on the NW side and McConnell till on the SE side. In the bottom of valley, there is lower surface resistivity due to the water saturation of the ground surrounding the creek as well as the interpreted alluvial complex material. The depth of the interpreted bedrock contact ranges between 10m in the valley bottom and undulates as deep as 17m at the SE slope base. Drill targets are chosen in the depressions of the interpreted bedrock contact. The depressions in the bedrock could indicate a paleochannel in the valley with reworked sediment, giving these areas a higher placer gold potential.

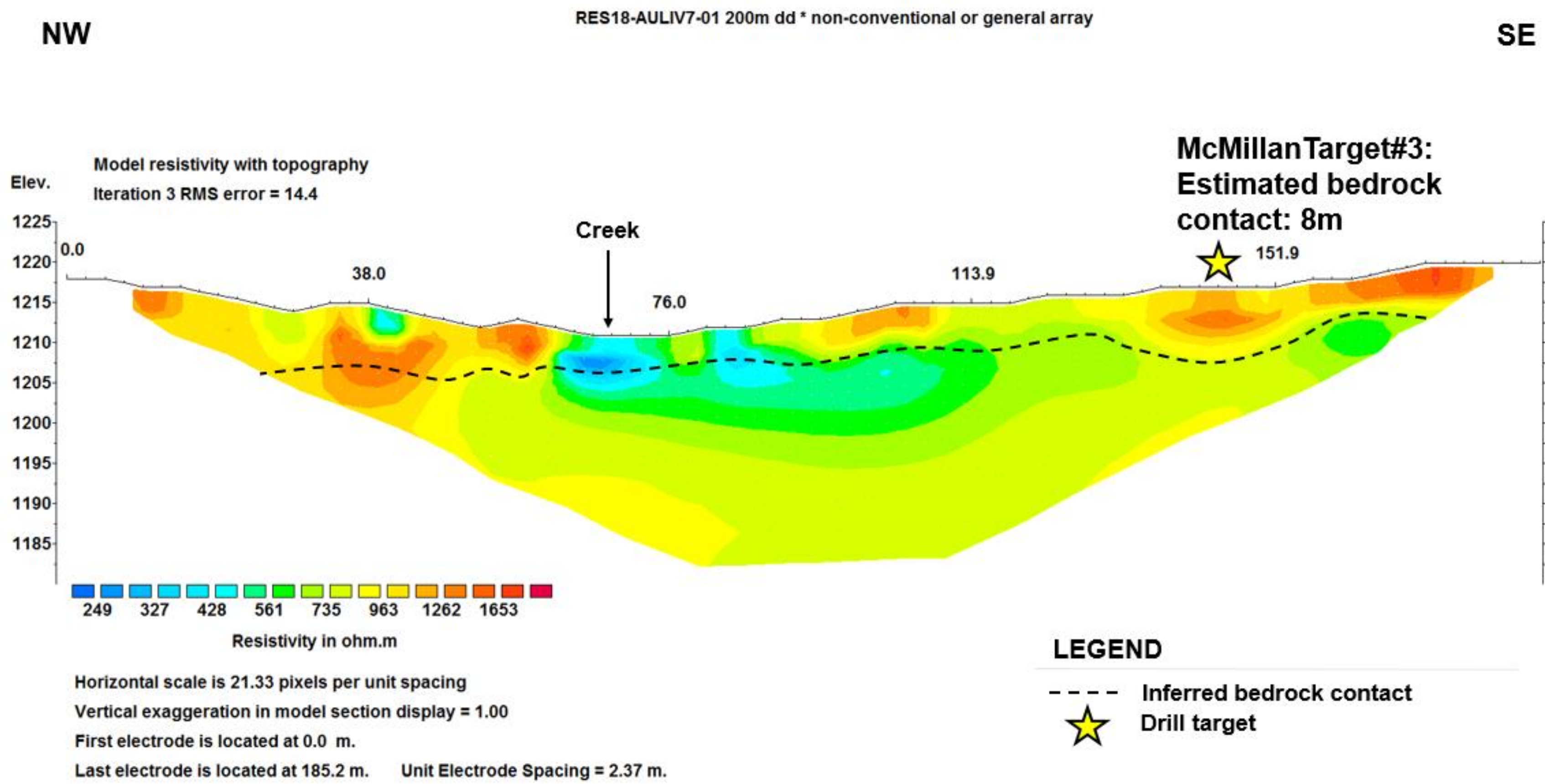


Figure 11 - Resistivity line RES18-AULIV7-01 is surveyed from northwest to southeast across the McMillan Creek valley alluvial complex material. The profile displays a shallow, undulating potential bedrock contact. In the bottom of valley there is lower surface resistivity due to the water saturation of the ground surrounding the creek. The depth of the interpreted bedrock contact ranges between 5m in the valley bottom and undulates as deep as 10m under the NW hillside. One drill target is chosen in the depression of the interpreted bedrock contact. The depression in the bedrock could indicate a paleochannel.

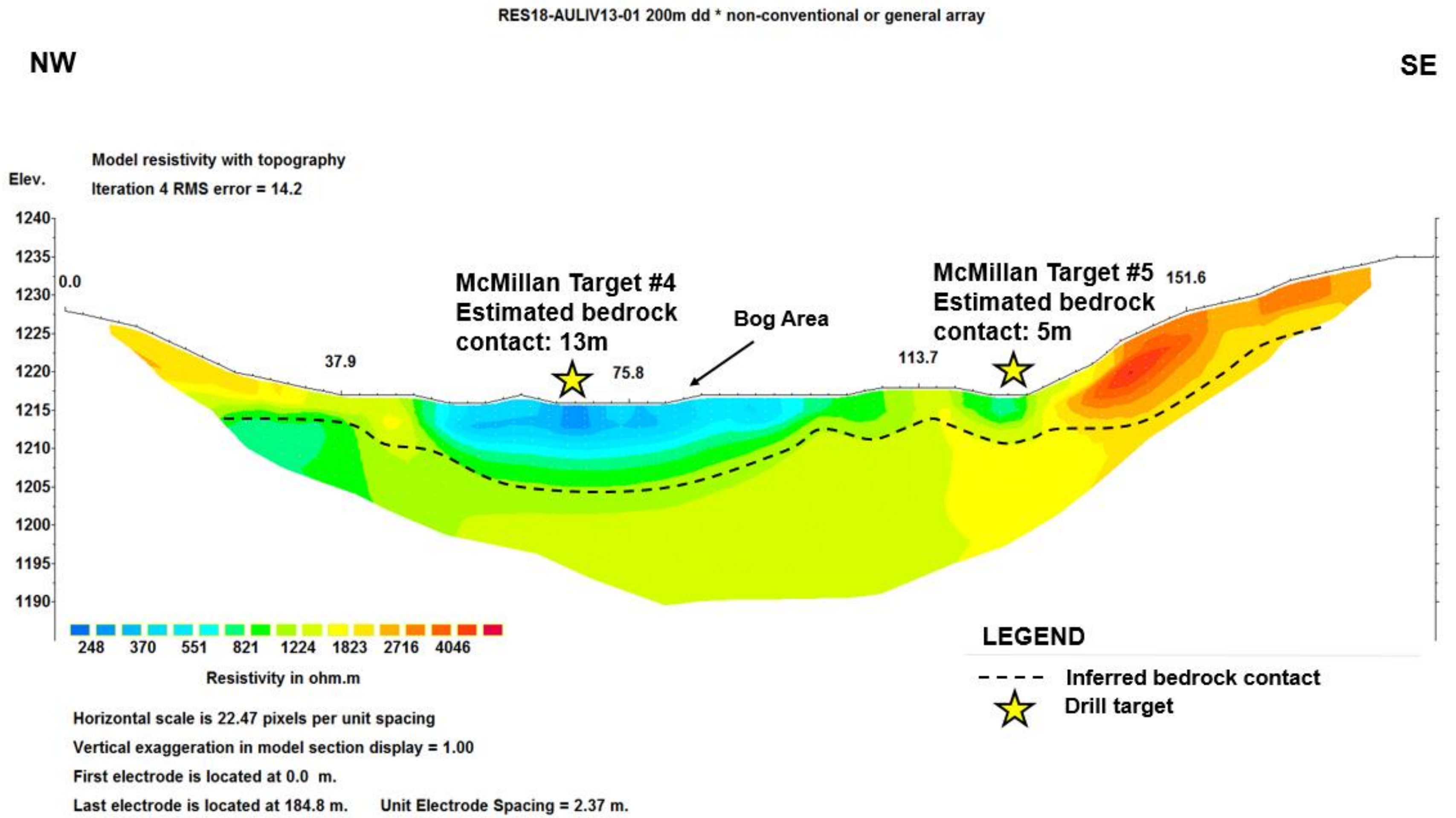


Figure 12 - Resistivity line RES18-AULIV13-01 is surveyed from northwest to southeast across the McMillan Creek valley downstream of a small lake. The profile displays a potentially undulating bedrock contact with higher surface resistivity to the SE side interpreted as McConnell till. In the bottom of valley, there is lower surface resistivity due to water saturation of the ground surrounding a bog area as well as the alluvial complex material. The depth of the interpreted bedrock contact ranges between 5m at the SE slope base and undulates as deep as 13m in the valley bottom. Drill targets are chosen in the low regions of the interpreted bedrock contact. The depressions in the bedrock could indicate paleochannels.

Conclusions and Recommendations 2018

In 2018, a total of 5 drill targets were chosen on the profiles in locations which may be paleochannels, or depressions in the bedrock with placer gold potential. Estimated depths of the targets varied from 5 to 17 metres, as is shown in Table 4. These targets are planned to be investigated in the upcoming years by drilling or test pitting.

2019 Exploration Program

Overview

On July 6, 2019, two 300m resistivity geophysical surveys and a drone imagery survey were conducted on the McMillan Creek claims. The geophysical surveys were interpreted for Earth & Iron Inc. by Allegra Webb, Selena Magel and William LeBarge.

Resistivity Surveys

Methodology

The Lippmann 4-Point Light Resistivity System was used to conduct the surveys. The resistivity technique injects an electrical current into the subsurface through stainless steel spikes and then measures the remaining voltage at various distances away from the injection point. Ground materials have different resistances to the current and give data points in a cross section of the subsurface. With the data points, a tomogram or pseudo section can be created representing changes of resistivity in the ground. Data was collected using Geotest software, while the inversion and data filtering was completed with RES2DINV software. Data points with poor data quality were exterminated and noisy data was filtered statistically with root mean squared data trimming. Two-dimensional tomograms were produced using least squares damped inversion parameters to display the resistivity properties and to display potential contacts.

The two-dimensional images are used for preliminary interpretations of bedrock structure. The images were interpreted by Selena Magel, Allegra Webb and William LeBarge.

General principles and assumptions of electrical resistivity

1. Low resistivity can indicate thawed and water saturated areas, as well as fine grained material.
2. Very high resistivity values can be due to ice rich material and frozen or highly disturbed ground.
3. Dry gravels, cobbles and boulders generally have high resistivity values.
4. The contrasts between values is more important in determining contacts than the absolute values found with resistivity data.

Limitations and Disclaimer

The interpreted sections provide an estimate of the conditions beneath the surface to the depths conducted and are within the accuracy of the system and methods. The data becomes more uncertain with depth and are more accurate toward the surface and is further complicated with permafrost present in the region. The materials are interpreted based upon local geology observed, as well as geologic knowledge of the area. Certain materials may be similar in composition and result in uncertain results. The accuracy of the information presented is not guaranteed and all mine development is the client’s responsibility. William LeBarge, Allegra Webb and Selena Magel accept no liability for any use or application by any and all authorized or unauthorized parties.

Resistivity Survey Results

The resistivity surveys were conducted to find bedrock depths and to target potential paleochannels buried beneath the McConnell till. Good data and contact resistance were obtained in most surveys due in part to a combination of water saturated ground and the addition of salt water to each electrode location to improve the conductivity to the ground.

Table 5 outlines the lengths, locations and UTM coordinates of the endpoints of the resistivity surveys conducted on the Anni claims.

Figure 13 is a map of the Anni and Auliv claims on McMillan Gulch and Lightning Creek, which shows the drone survey area and resistivity survey line locations.

Figure 14 is a compilation map of the bedrock and surficial geology (after YGS, 2018 and Bond, 1998), which also outlines the location of the 2019 surveys and the interpreted drill targets.

Three potential paleochannel drill targets were chosen based on the interpretation of the contacts on the resistivity geophysical surveys. These range in estimated depths from 20 to 27 metres, and are plotted on the pseudosection resistivity profiles, shown as Figures 15 and 16. The UTM coordinates and estimated depths of the drill targets are also shown in Table 6.

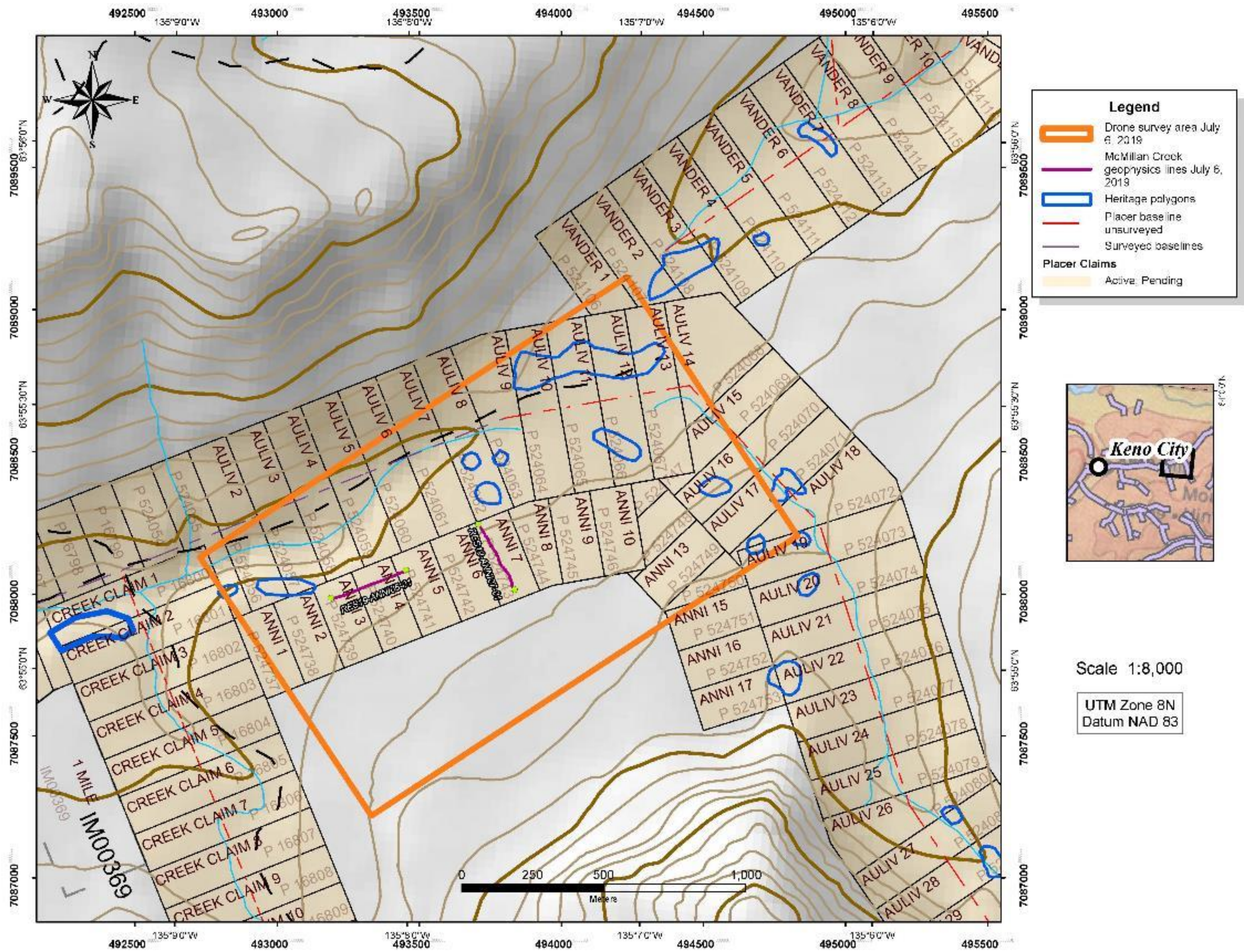


Figure 13 - Locations of the resistivity surveys RES19-ANNI07-01 and RES19-ANNI05-01 in purple, including the drone imagery area which is outlined in orange.

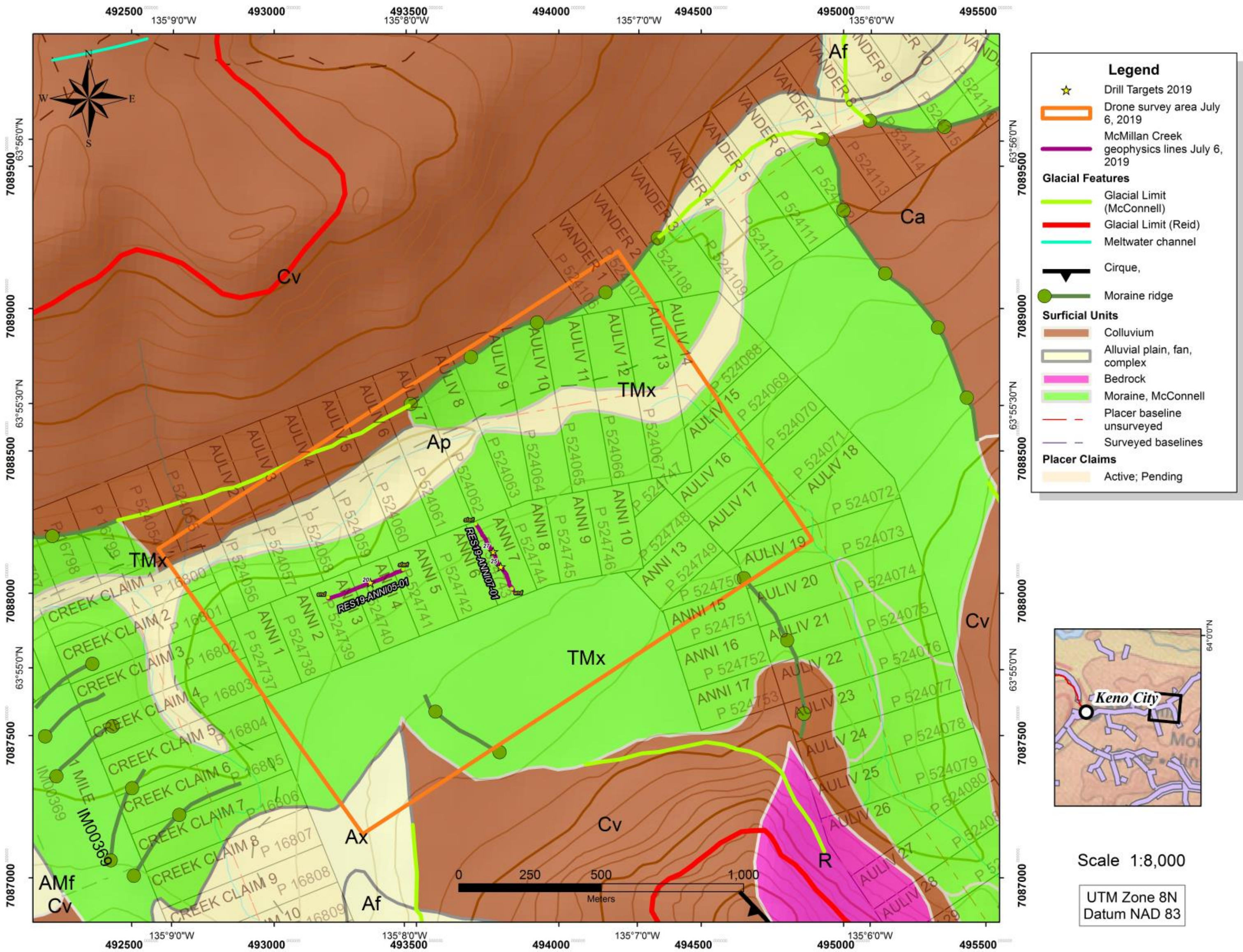


Figure 14 - Surficial geology map of McMillan Creek placer claims (map modified from YGS, 2018, and Bond, 1998) showing the area surveyed with drone imagery and the traces of the geophysical lines surveyed in 2019. The yellow stars are the drill targets identified by the geophysical surveys.

Table 5 - Locations of the resistivity surveys done in 2019 in McMillan Gulch – Lightning Creek.

Name	Claim	Length (m)	Surficial Unit (Bond, 1998)	Start Point		End Point	
RES19-ANNI05-01	Anni 3-5	300	McConnell Moraine	0493452	7088085	0493188	7087986
RES19-ANNI07-01	Anni 7	300	McConnell Moraine	0493707	7088244	0493834	7088017

Table 6 - Locations and approximate depth to bedrock of the targets identified in McMillan Gulch – Lightning Creek in 2019.

Target Name	Symbol on map	Claim name	Resistivity line	UTM E	UTM N	Approximate depth to bedrock (m)
MC#1	★	Anni 4	RES19-ANNI05-01	0493337	7088037	20
MC#2	★	Anni 7	RES19-ANNI07-01	0493769	7088146	27
MC#3	★	Anni 7	RES19-ANNI07-01	0493795	7088093	25

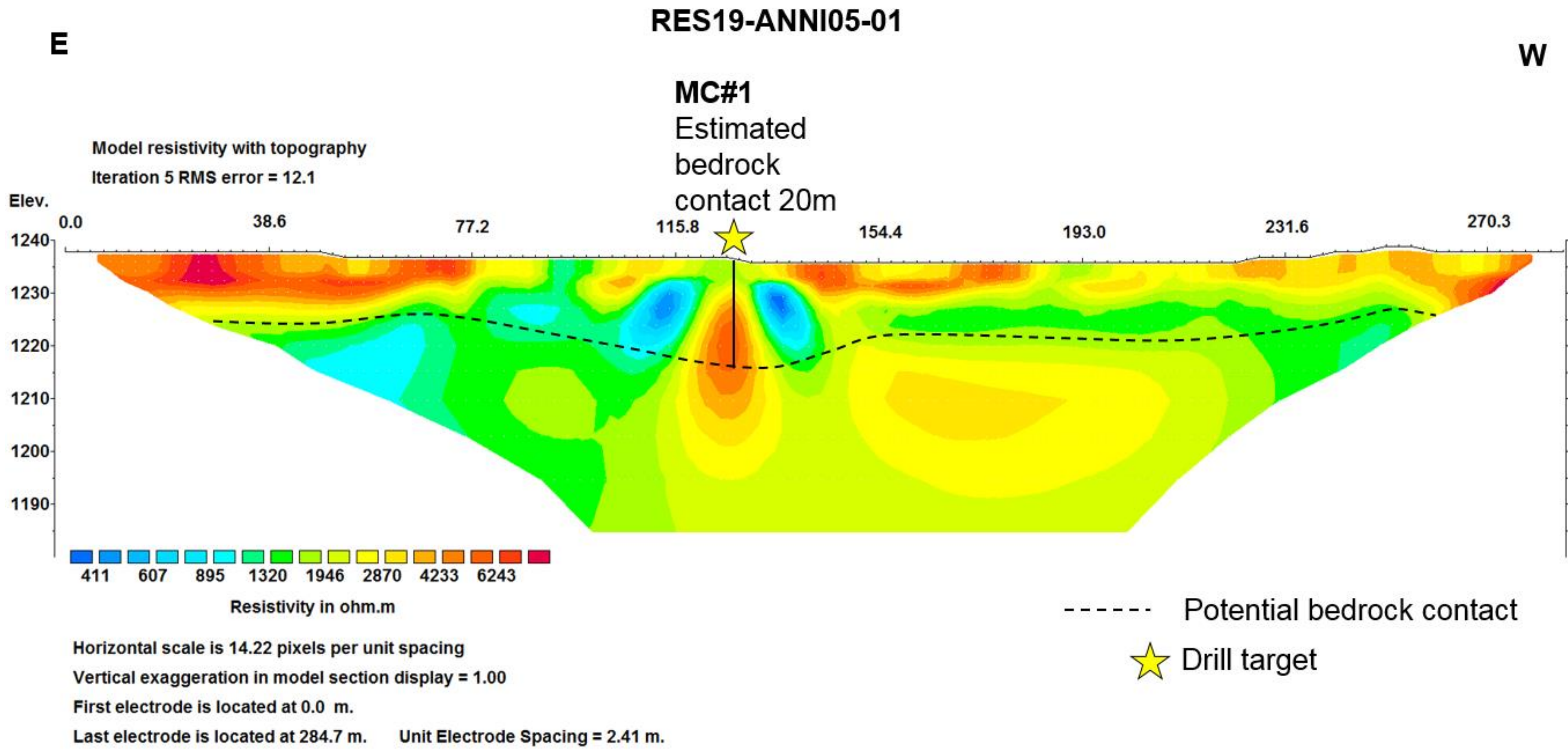


Figure 15 – RES 19-ANN05-01 is a resistivity survey done east to west parallel to the main Lightning Creek Valley. The profile aimed to be parallel to a potential buried paleochannel that could host placer gold. The target identified in this profile is estimated to be 20m deep and could be a deep section in the buried paleochannel. The McConnell moraine mapped in the location was also observed in the field. The till gives a higher resistivity value reading than the bedrock below.

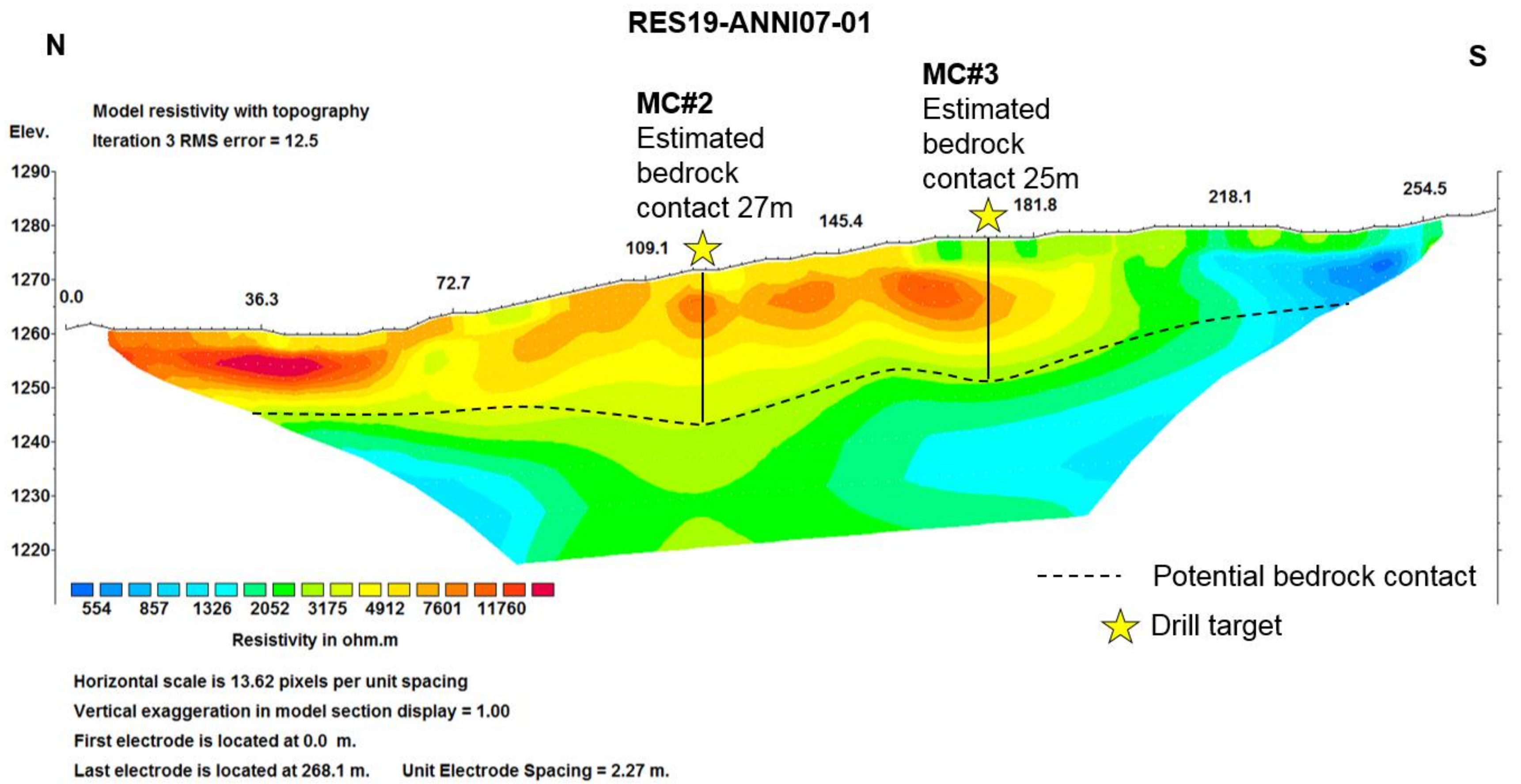


Figure 16 - RES19-ANNI07-01 is a resistivity survey conducted from north to south across the bench claim of Lightning Creek perpendicular to the main valley. The survey was to target high buried paleochannels that could be host to placer gold. The bedrock contact interpreted in this profile is gently undulating. The two drill targets chosen in this section are in the deepest parts of the bedrock and are estimated to be 25 and 27m deep. The McConnell aged moraine is mapped here and was observed in the field. This till gives a higher resistivity reading than the bedrock below.

Figure 17 - Drone survey image of project area, showing traces of geophysical surveys conducted in July, 2019.

Drone Imagery

Methodology

The drone used is a DJI Phantom 4 Pro. The images are collected by flying the drone in a grid shape over the desired area to be mapped. Once the flying is complete, the images are imported into a processing software called Pix4D. The program creates an orthomosaic, point cloud, digital surface and terrain models, contour lines and a Google Earth .kml file. The orthomosaic can be imported into a mapping software and combined with other data.

Results

The drone image is shown in Figure 17, and as Appendix A. An area with dimensions of 1.1 km by 1.8 km was surveyed, totalling 1.4 creek-miles of survey. A high-resolution image was produced which can be used as a base map for the Auliv 1-14 and Anni 1-14 placer claims.

Conclusions and Recommendations, 2019 Exploration Program

Resistivity geophysical surveys are a low-impact method of placer exploration which is highly portable, fast and relatively cost-effective. However, the methodology may reflect permafrost and groundwater conditions which do not directly correlate to lithological contacts. In this respect, results are dramatically improved if other data such as drill holes, test pits or bedrock outcrops are used to corroborate interpreted results. During the surveys, few bedrock outcrops were observed in the survey areas and no drill holes with known depths were present in the McMillan - Lightning Creek area.

Throughout the surveys, high surface resistivity values corresponded with interpreted McConnell glacial till, permafrost, or colluvial blankets and slide material units on the ground surface. Low surface resistivity units were associated with water-saturated ground surrounding the creeks or bogs in the region. The resistivity values in the medium range are interpreted as possible paleochannel material such as sands and gravel.

A total of 3 drill targets were chosen on the profiles in locations which may be paleochannels, or depressions in the bedrock with placer gold potential. These are shown in Table 6. Estimated depths of the targets varied from 20 to 27 metres below surface.

Further exploration is warranted throughout the entirety of the claims in McMillan, Faith, and Allen Creeks. This should include additional UAV drone imagery, additional resistivity geophysical surveys and drilling of paleochannel targets using either auger, R/C (reverse circulation) and/or RAB (rotary air blast) methods. High value targets should then be explored by excavator test pitting and/or shafting, detailed sampling and processing of gravel for gold content.

Statement of Expenditures, 2019 Placer Exploration Program

Table 7 outlines the expenditures claimed for McMillan Gulch in 2019. A total of $9030 of eligible work was completed.

Table 7 - Statement of expenditures for McMillan Gulch – Lightning Creek, 2019 Exploration Program.

Name	Claim Number	Length (m)	Date Surveyed	Cost @ $12,000/line-km	GST	Total
RES19-ANNI07-01	ANNI 7	300	July 6 2019	$3,600.00	$180.00	$3,780.00
RES19-ANNI05-01	ANNI 3-5	300	July 6 2019	$3,600.00	$180.00	$3,780.00

Name	Claims Included	Area	Date Surveyed	Cost @ $1,000/Creek Mile	GST	Total
Drone Imagery Survey	ANNI 1-14, AULIV 1-14	1.1 km x 1.8 km	July 6 2019	$1,400.00	$70.00	$1,470.00
			Grand Total	**$8,600.00**	**$430.00**	**$9,030.00**

Statements of Qualifications

William LeBarge

I, William LeBarge, of 13 Tigereye Crescent, Whitehorse, Yukon, Canada, DO HEREBY CERTIFY THAT:

1. I am a Consulting Geologist with current address at 13 Tigereye Crescent, Whitehorse, Yukon, Canada, Y1A 6G6.
2. I am a graduate of the University of Alberta (B.Sc., 1985, Geology) and the University of Calgary (M.Sc., 1993, Geology – Sedimentology)
3. I am a Practicing Member in Good Standing (#37932) of the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC).
4. I have practiced my Profession as a Geologist continuously since 1985.

Dated this 15th day of September, 2019

William LeBarge, P. Geo.

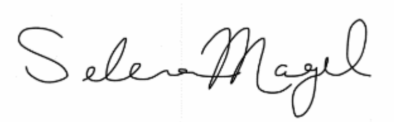
Selena Magel

I, Selena Magel of 10-35 Normandy Road N, Whitehorse, Yukon, Canada, DO HEREBY CERTIFY THAT:

1. I am a Geologist in Training, registered with APEGA with current address at 10-35 Normandy Road N, Whitehorse, Yukon, Y1A0L4
2. I am a graduate of the University of Calgary (B.Sc., 2017, Geology).
3. I have practiced Geology since May 2017.
4. I have conducted and interpreted over 70 km of resistivity surveys since the summer of 2017.

Dated this 15th day of September, 2019

Selena Magel, G. I. T.



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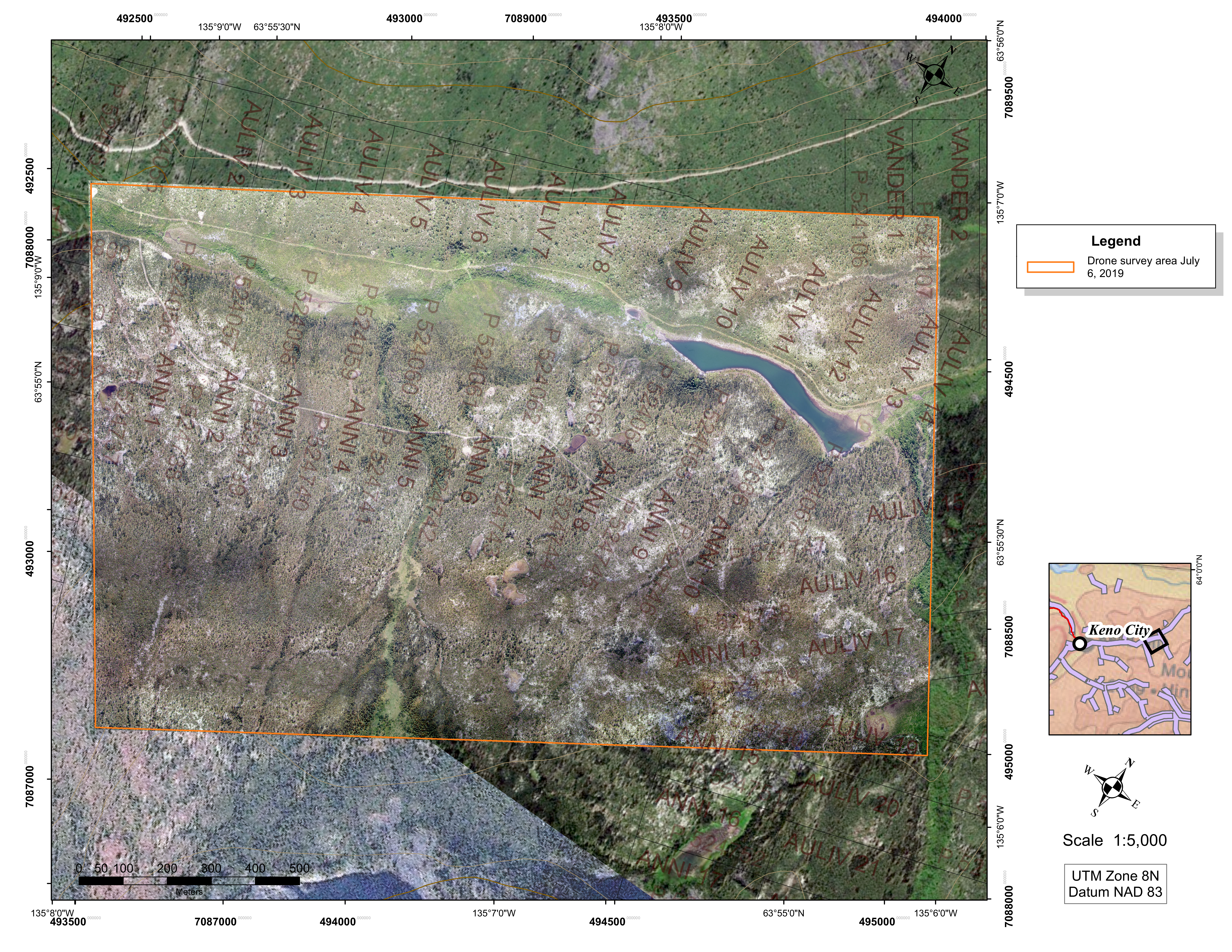
Appendix A – Drone Survey Image


Legend
Drone survey area July 6, 2019
Keno City
Scale 1:5,000
UTM Zone 8N
Datum NAD 83
0 50 100 200 300 400 500
Meters
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AULIV 3
AULIV 4
AULIV 5
AULIV 6
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