

TENURE NUMBERS

604912

882449

882469

Technical Report on the Sweet Spot Property, British Columbia, Canada

Fort Steele Mining District

By

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For

Kootenay Silver Inc. and Kootenay Resources Inc.
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LOCATION

NTS 82G/04
UTM Zone 11
577000E, 5429200N

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1 Summary

The *Sweet Spot Property*, contains two primary exploration targets (title page Illustration):

1. A 100+ m thickness of mineralized stratigraphy composed of 16.9 m at 4577.8 ppm (0.5%) combined zinc (Zn) plus lead (Pb), containing 9.3 m at 7330 ppm (0.73%) combined Zn + Pb; and 105+ m at 2620.4 ppm (0.3%) combined Zn + Pb; and,
2. a robust, plume-shaped, crustal scale (electrical) conductor that rises more than 2 kilometers from deep within the Lower Aldridge Formation into the Middle Aldridge.

Exploration by Cominco Ltd. (1989 to 2000), Kootenay Silver Inc. (2010 to 2015), and Teck Resources Ltd. (2016 to 2020) has contributed to target definition through application of geological mapping, soil and rock geochemistry, geophysics and diamond drilling for a cumulative exploration investment of approximately 1.7 million dollars. Of that total, \$1,174,650 was spent by Teck within the past 3 years: \$254,923 in 2018 and \$919,727 in 2019 (Boucher and Herron, 2019 and 2020).

Traditional exploration targeting in the Canadian portion of the Belt-Purcell basin has focused on “Sullivan Time”: the time-stratigraphic interval when the iconic Sullivan orebody formed on the Mesoproterozoic seabed approximately 1.47 billion years ago. The focus on “Sullivan time” has detracted from the pursuit of other exploration targets both younger and older. Crustal scale conductors having ‘pipe-like’ geometries which plumb 10’s of km of cratonic crust, are situated beneath some of the world’s largest and richest poly-metallic deposits, like Olympic Dam in Australia. Similar size and shape conductors also exist in the Sullivan mine region: the *South Hawkins Conductor* beneath the *Sweet Spot Property* is one example.

The *Property* consists of 3 contiguous claims totalling 1165.33 hectares and is located 15 km southeast from the hamlet of Yahk, British Columbia. It is underlain by metamorphosed, folded and thrust-faulted sedimentary rocks belonging to the Lower and Middle Aldridge Formations of the Mesoproterozoic Belt-Purcell Supergroup. The Aldridge Formation is host to the world-class Sullivan lead-zinc-silver mine (the *Sullivan*) located in the town of Kimberley, 70 kilometres north northeast of the *Property*. Production from the mine totalled: 160 million tonnes (*mt*) of ore containing 8 *mt* of lead (*Pb*), 7 *mt* of zinc (*Zn*) and 285 million troy ounces (8.9 x 10⁹ grams) of silver (*Ag*). Sullivan, which is owned by Teck Resources (formerly Teck-Cominco), operated continuously for 92 years, closing in 2001.

The *Sweet Spot Property* was staked as the Canam Property by *Cominco* in 1989 and explored until 2000 when the claims were allowed to lapse. Some of the claims were re-staked as the *Sweet Property* in 2009 by Robert Duncan Craig Kennedy representing the *Kennedy Group* (later the *Kennedy-Cook Group*) of Kimberley B. C.; the *Property* was optioned to Kootenay Silver Inc. (*Kootenay Silver*) who explored it until 2015. *Teck* re-entered the picture in 2016, optioned the *Property* and explored it until 2020. *Teck* withdrew from the option agreement in 2020, but continues to hold tenures conterminous with those comprising the *Property*. *Kootenay Silver* immediately (2020) optioned the *Property* from the *Kennedy-Cook Group* and has been granted exclusive and irrevocable right and option to earn a 100% ownership interest in the *Property*.

Kootenay Silver Inc. and Kootenay Resources Inc. (the *Companies*) require a technical assessment of the *Property* that complies with standards set out in National Instrument 43-101 and has retained RIT Minerals Corp. to provide said report. Dr. R. I. Thompson, PhD, PEng (the *Author*), has reviewed available data and concludes the *Sweet Spot* merits additional exploration, especially the two targets described above. A 2-phase exploration program has been recommended:

Phase 1, estimated to cost \$216,100.00, will consolidate and upgrade existing databases by providing for re-logging of core for *marker* identification purposes, compilation of existing databases, and field mapping, checking and prospecting. Acquisition of 9 line-km of additional magnetotelluric (*MT*) data will provide a better-constrained 3-D model of the shape and orientation of the *South Hawkins Conductor*.

If the phase 1 program verifies and compliments historical databases and interpretations, then a follow-up phase 2 program is recommended.

Phase 2, estimated to cost \$810,000.00, will provide for 2 DDHs: K-01, having an approximate length of 600, will test for the eastward (downslope) extension of the thick mineralized succession encountered in DDH C-91-01; and, K-02, having an approximate length of 1800 m, will test for mineralization within the *South Hawkins Conductor*.

2 Introduction

2.1 The Client

This technical report (the *Report*) for the *Sweet Spot Property* (the *Property*) was prepared for Kootenay Silver Inc. and Kootenay Resources Inc. (the *Companies*), a British Columbia corporations with a business address at: 1650 – 1075 West Georgia Street, Vancouver, British Columbia, Canada, V6E 3C9.

2.2 Purpose

The *Property* is held 100% by Robert Duncan Craig Kennedy on behalf of the Kennedy-Cook Group (the *Group*) of Kimberley, British Columbia. Kootenay Silver Inc. entered into an agreement with the *Group* on June 16, 2020 whereby it can earn 100% interest in the 3 contiguous mineral tenures that comprise the *Property*.

The *Companies* requires a technical assessment of the *Sweet Spot Property* (the *Property*) that complies with standards set out in National Instrument 43-101 and has retained RIT Minerals Corp. to provide said report.

2.3 Sources of Information

This NI43-101 Technical Report (the *Report*) is a compilation of public information assembled from references listed herein including: Geological Survey of British Columbia (*GSBC*) and Geological Survey of Canada (*GSC*) technical reports; papers published in peer-reviewed scientific journals; historical NI43-101 technical reports; and Government of British Columbia Ministry of Energy, Mines and Petroleum Resources Assessment Reports (*ARs*).

GSBC and GSC technical reports contain data collected and interpreted by persons holding post-secondary and graduate degrees in geology and geophysics, and are considered objective and reliable sources. Similarly, papers published in peer-reviewed scientific journals were authored by geologists and geophysicists with post-secondary degrees and are considered reliable information sources.

Historical NI43-101 reports were authored by Qualified Persons in compliance with Canadian Securities Administration guidelines and regulations; hence, they are deemed reliable information sources.

Assessment Reports (ARs) are vetted by Government of British Columbia personnel to ensure compliance with regulations relating to a “statement of exploration expenditures”. For example, property owners can only claim the cost of “on-the-ground exploration activities” for assessment purposes and must provide evidence of such in the form of certified analytical results, tables of sample coordinates; tables of coordinates for and descriptions of field observations; maps showing the spatial distribution of all point data; maps and databases generated from compilation of historical data pertaining to the Property; and a detailed accounting of personnel and logistical costs.

Proprietary information in the form of confidential reports, maps, databases and interpretations are referenced herein. This information was vetted by the author and used only if it added in a material sense to the evaluation of the *Property*.

All dollar amounts are stated in Canadian currency, measurements are metric, and projections are Universal Transverse Mercator and referenced to the North American Datum 1983 (NAD83) Zone 11 unless otherwise stated.

2.4 Scope of Property Inspection

Dr. R. I. Thompson, PhD., PEng. (*Author*), visited the *Property* on November 4th, 2020 and the East Kootenay Chamber of Mines Drill Core Repository on November 13th, 2020.

Access to the *Property* via 4-wheel drive vehicle (ref. tracks, Figure 1) along all-weather logging haul roads was confirmed. Slopes are moderate to steep and relatively open making them amenable to foot traversing. The core repository is located near the town of Fort Steele and is accessible by all-weather paved roads. Core racks are secured behind a locked, chain-link fence.

The purpose of the *Property* visit was twofold: 1) to observe the character of the host strata including alteration minerals and patterns associated with sulfide mineralization; and 2) to inspect 2019 Teck Resources Ltd. drill sites. Both objectives were met: a description of observations is provided in later sections (§7.3) of this *Report*. The purpose of the core repository visit was to inspect diamond drill hole (DDH) 91-1, drilled by *Cominco* in 1991, with emphasis on the character and intensity of alteration associated with the highest-grade intersection of zinc and lead mineralization. This objective was met: geological observations are discussed in later sections of the *Report* (§10, §11).

3 Reliance on other experts

All information relating to the 3 contiguous mineral tenures that comprise the *Property* (Table 1) is taken from the British Columbia Mineral Titles Online system (*MTO*; described below).

4 Property Description and Location

4.1 Location, Area, Tenure Type

The *Sweet Spot Property* (*Property*; Figure 1) consists of 3 contiguous mineral tenures¹ (*Claims*) totaling 1165.33 ha (Table 1) held by Robert Duncan Craig Kennedy of Kimberley, B. C., on behalf of the *Kennedy-Cook Group* (the *Group*). The *Property* is underlain by metamorphosed, Meosoproterozoic siliciclastic rocks belonging to the Belt-Purcell Supergroup which has a broad reach into the conterminous states of northwest Montana, Idaho and northeastern Washington. Seventy kilometers north northeast of the *Property* is the town of Kimberley, home of the iconic Sullivan orebody, “one of the largest Zn-Pb-Ag deposits in the world, originally containing more than 160,000,000 tons at 6.5% Pb, 5.6% Zn, and 67 g/t Ag.” (Lydon, 2000, p.1; Figure 1).

The *Property* is centered at: UTM Zone 11, 577000E, 5429200N in National Topographic System (*NTS*) map sheet 82G04. The nearest community, located 15 km to the north northwest, is Yahk, an unincorporated hamlet located on Highway 3/95 at the confluence of the Moyie and Yahk Rivers. In the early 1900’s it was a prosperous Canadian Pacific Railroad (*CPR*) lumber town; now it supports a (fence) rail mill and is a convenient rest-stop for tourists. *CPR* links Yahk with one of the world’s largest fully integrated zinc and lead smelting and refining complexes owned and operated by Teck Resources Ltd. It is 165 km east of the *Property* in the town of Trail, B.C. The nearest major logistical centers are: Cranbrook (population 19,259) 41 km to the northeast, and Creston (population 5,351) 64 km to the west (Figure 1).

4.2 Nature and Extent of Title, Obligations, Expiry Dates and Holders’ Rights

No two people can select the same cells simultaneously, since the database is live and updated instantly; once a cell selection is made it is no longer available to another person, unless payment is not successfully completed within thirty minutes.

The electronic Internet map allows selection of single or multiple adjoining grid cells to a limit of 100 selected cells per submission for acquisition as one claim; the number of submissions is not limited.

MTO calculates the exact area in hectares according to the cells selected and calculates the required fee. Upon confirmation of payment, a title is issued together with a tenure number for registration purposes (see for example, Table 1), and email confirmation of the transaction and title. *MTO* also provides GPS co-ordinates for the four corners of each cell in a claim.

Status of each mineral tenure comprising the *Sweet Spot Property* (the *Property*) is summarized in Table 1 including tenure number and name, issue and expiry dates, ownership, and area in hectares. The *Kennedy-Cook Group* does not hold surface rights because the interest of a

¹ A mineral tenure refers to the right to explore or develop minerals in a given area. There are two main types of mineral tenure: recorded claims and mineral leases.

recorded holder of a mineral claim issued pursuant to the Mineral Tenure Act of British Columbia is a chattel interest and therefore cannot be registered as an interest in real property.

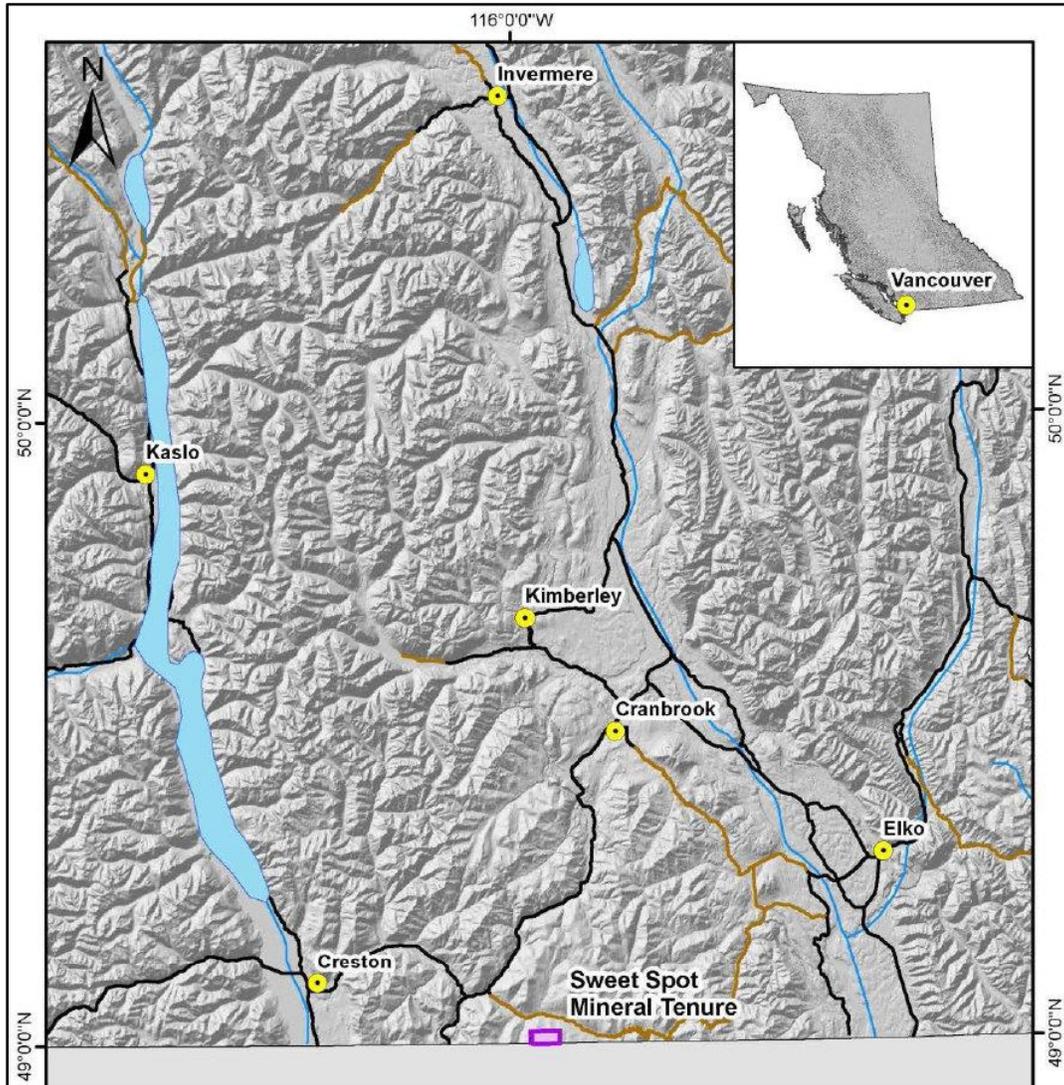


Figure 1. Location of Sweet Spot Property tenures relative to major physiographic features and population centers in the Cranbrook-Creston region. (Reproduced from: Bekham et al. 2016, p. 6.)

Table 1. Description of Sweet Spot mineral tenures.

Tenure No.	Tenure Name	Issue Date	Good to Date	Owner	Percent Ownership	Hectares
604912	SWEET SPOT	24/05/2009	17/10/2030	KENNEDY, ROBERT DUNCAN CRAIG	100%	423.76
882449	SWEET SPOT 04-11	05/08/2011	17/10/2030	KENNEDY, ROBERT DUNCAN CRAIG	100%	444.91
882469	SWEET SPOT 05-11	05/08/2011	17/10/2030	KENNEDY, ROBERT DUNCAN CRAIG	100%	296.67
Total Hectares						1165.33

In British Columbia, the holder of a mineral tenure (claim) acquires the right to the minerals available at the time of tenure acquisition as defined in the Mineral Tenure Act of British Columbia. Tenures are valid for one (1) year and the anniversary date is the annual occurrence

of the staking completion date for the tenure (the date of record). To maintain a tenure in good standing, the holder must, on or before the anniversary date, either: 1) submit a ‘statement of work’ that records the type and dollar value of work performed, accompanied by an ‘assessment report’ (technical report) containing geological, geophysical, and (or) geochemical data, results, compilations and interpretations resulting from the work; or, 2) pay cash in lieu of work.

The acquisition fee for mineral tenures is \$1.75 per hectare. The dollar value of assessment work is: \$5.00 per hectare for anniversary years 1 and 2; \$10.00 per hectare for anniversary years 3 and 4; \$15.00 per hectare for anniversary years 5 and 6; and \$20.00 per hectare for subsequent anniversary years.

All of the *Property* tenures were issued more than 6 years ago; therefore, assessment work going forward is valued at \$20 per hectare.

If the dollar value of assessed work exceeds that required for one anniversary year, the excess value can be carried forward into subsequent anniversary years. This is the case for the *Property* (Table 1, Figure 2): tenures 60492, 882449 and 882469 are in good standing until October 17, 2030.

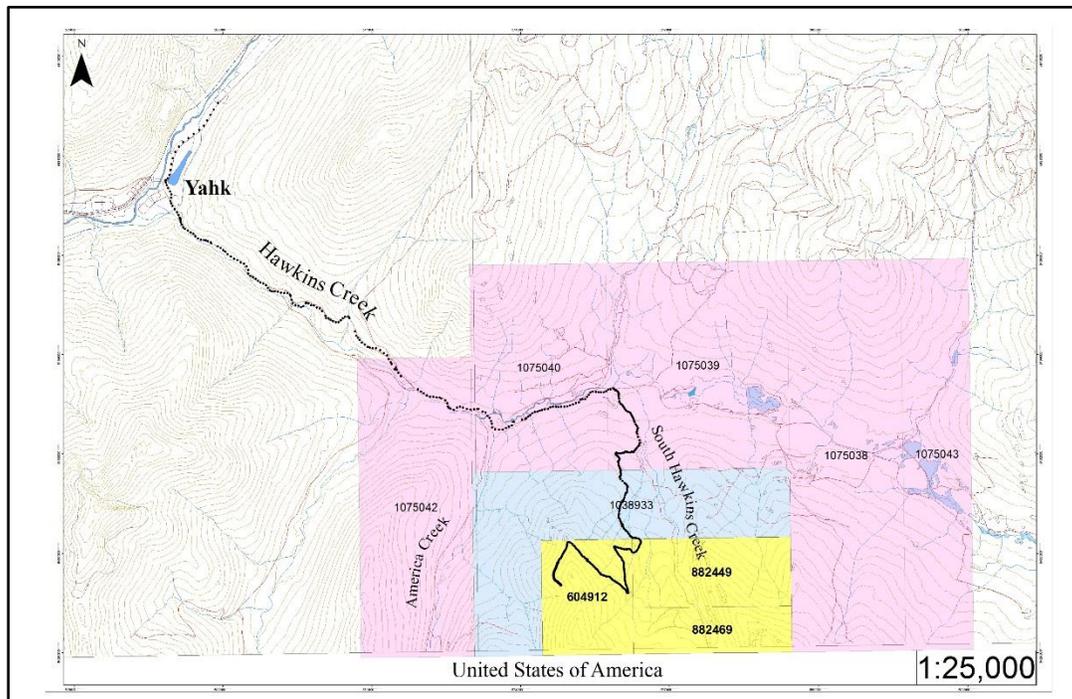


Figure 2. Sweet Spot Property tenures (yellow) relative to local topography and conterminous tenures (Blue is SSW Property, Teck Resources Ltd.; Pink is a portion of the *Moyie Anticline Properties*, Kootenay Silver Inc.). Line of black dots is route traveled by author to gain access to the *Property*. Tenure numbers in bold are referenced in Table 1.



Figure 3. The Property is a patch-work quilt of logging clear-cuts laced with haul roads and skidder trails. Logging has improved access and the number and extent of bedrock exposures. Topography is influenced by north-trending geological features such as fold and faults which control drainage patterns and the trends of intervening ridges. For the most part slopes are moderate, elevation gain is about 500 m, and the lodge pole pine forest relatively open and easy to navigate on foot.

4.3 Location of Mineralized Zones

Mineral showings consist of disseminated pyrite, pyrrhotite, sphalerite and galena spatially associated with an alteration mineral assemblage that includes spessartite (Mn-garnet), biotite, sericite, calcite, tourmaline and scapolite (and albite?). The host is, typically, a 'black quartzite' which, itself, is an alteration product of the quartzite, quartz wacke, siltstone and siliceous argillite assemblage that comprises the Middle Aldridge Formation. Hence, the search for mineralization is aided by the recognition of black quartzite and the alteration minerals within it.

Sulfide minerals occur as disseminations, thin laminations and as fillings within seams and narrow quartz- and sericite-filled veins (Anderson, 1991).

A more comprehensive description of alteration and mineralization is presented in section 7.3.2 of this report.



Figure 4. Bedding parallel lamination of galena (grey), sphalerite (red), spessartite (pinkish white) and biotite (black in groundmass) in black quartzite host in diamond drill core: DDH C-91-01, Box 74, Interval 540 m - 558.5 m. (Author visit to core storage facility, November 12, 2020).

4.4 Agreement between Robert Duncan Craig Kennedy (of the *Kennedy-Cook Group*) and Kootenay Silver Inc. (the *Company*)

Kootenay Silver Inc. (*Kootenay Silver*) entered into an agreement with the *Property* owner Robert Duncan Craig Kennedy of the *Kennedy-Cook Group (the Group)*, Kimberley British Columbia, whereby *Kootenay Silver* has been accorded the exclusive and irrevocable right and option to earn a 100% ownership interest in, and all right and title to, the *Sweet Spot* claims (a subset of the Moyie Anticline Claims) upon the following terms and conditions: 1) issue 25,000 shares of *Kootenay Silver*, divided equally among the six members of the *Group* on approval (*Effective Date*) of the option agreement by the TSX Venture Exchange (TSX.V); 2) issue the *Group* 25,000 common shares per year, on or before the first, second and third anniversaries of the *Effective Date*; 3) complete a minimum work of \$250,000 within one year of the *Effective Date* and maintain the claims in good standing; 4) Kennedy (on behalf of the *Group*) will retain a two (2.0%) percent net smelter royalty (*NSR*); 5) *Kootenay Silver* has a re-purchase right to 1.5% of the *NSR* in exchange for \$3,000,000 in cash or common stock; 6) *Kootenay Silver* will be the *Operator* during the term of the *Option*; and, 7) *Kootenay Silver* retains the right to sell, transfer or otherwise dispose of the *Property*.

4.5 Other Agreements and (or) Encumbrances

The author is unaware of any royalties, back-in rights, payments, or other agreements and encumbrances to which the *Property* is subject.

4.6 Environmental Liabilities

The author is unaware of any environmental liabilities associated with the Property.

4.7 Permits

Exploration activities that do not require a permit, because they do not disturb the surface and require the use of hand tools only, include for example: geological mapping, surface and airborne geophysical surveys, soil and rock geochemical surveys, hand trenching, grids (no tree cutting).

Activities that disturb the surface by mechanical means such as excavating, drilling, blasting, camp construction... require a Notice of Work (NOW) permit available from the District Inspector of Mines – a process that may require three months, or more. The Provincial Government is required to solicit First Nations' feedback on Permit applications and to consider that feedback in the application review and granting process. Likewise, applicants, in this case the *Company*, is advised to establish informal dialogue with local First Nations' communities, listen to their concerns and recommendations, and explore avenues of cooperation.

If road construction is required for property access, a Special Use Permit is required from the Chief Inspector of Mines. A *Special Use Permit* gives non-exclusive authority to a company or an individual to occupy and use an area of Crown Land, within the Provincial Forest, when they have demonstrated to the District Manager that the intended use is in accordance with the Provincial Forest Use Regulation and related legislation.² Annual rent and taxes are payable. No Special Use Permits have been requested by the *Company*.

5 Accessibility, Climate, Local Resources, Infrastructure and Physiography

5.1 Accessibility

Maps showing up-to-date road access for the region are available from Front Counter BC located at 1902 Theatre Rd, Cranbrook, BC, V1C 7G1 (telephone: 1.250.426.1766; email: FrontCounter BC@gov.bc.ca).

The Property is accessible using logging road systems accessible from the hamlet of Yahk located on Highway 3/95 between the communities of Creston on the west and Cranbrook on the east (Figures 1 and 2). If approaching from the east, turn left onto Yahk-Meadow Creek Road and proceed to the end of pavement (about 1 km) where the Hawkins South Forest Service Road commences. This is an active logging haul road and a radio-equipped vehicle having appropriate frequencies is strongly advised. Proceed on the Hawkins South Road, veer right at 10 km (from the turnoff on Highway 3/85) and at 10.5 km turn right off Hawkins Road; at 13.2 km continue straight; the Property boundary is at 14.4 km. Continue onto Property up moderate to steep switch backs (Figure 2).

²The reader is referred to the "Forest Practices Code of British Columbia Act":
https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/96159_01

5.2 Climate

The climate is temperate and agreeable. At Yahk, daily average temperatures range from 20 C in July to -6 C in January; rainfall averages 5 mm in July and August, and 140 mm in November; snow accumulations can reach 1.5 m in January. Most summer days are sunny. At higher elevations near the Property one can expect greater total snowfall with deeper, more persistent accumulations during winter months.

5.3 Local Resources and Infrastructure

Yahk, population 127, has few amenities applicable to mineral exploration save a gas station, convenience store, limited accommodation and an ice-cream parlor.

The nearest major logistics center is the City of Cranbrook, population 19,259, located 64 km to the northeast of Yahk. It has diamond drilling, technology and constructions companies, heavy machinery rental outlets, and trained personnel to support all aspects of mineral property development. An international airport provides ready access to the area, Canadian Pacific operates a section office, and the network of well-maintained highways facilitate travel to Alberta and the United States. The economy is fueled by the forest industry, agriculture, mineral exploration, construction, health care, a college and government offices that include the Ministry of Energy and Low Carbon Innovation.

Creston, population 5,351, is located 41 km west of Yahk. Its primary economic drivers are agriculture and forestry while education and tourism are an important source of local jobs.

The region has a long tradition of mining and logging, hence, personnel expert with heavy equipment and experience operating in the field are available.

5.4 Physiography

The Property is part of the Purcell Mountains physiographic region and is underlain by north-trending ridges and stream networks that reflect the north-trending fold and thrust belt structures that characterize the geology of this region (Mathews, 1986). Elevation gain from the valley bottom of Hawkins Creek at 1000 m to the highest ridges on the *Property* at 1940 m is 940 m. Slopes are gentle to moderate at lower elevations but steepen upward into the subalpine regions of the *Property*. Tree cover is relatively open making foot traverses enjoyable; the extensive areas of clear-cut logging are, for the most part, easy to travel through except in those areas of 'juvenile' new growth where trees are closely spaced and natural thinning has created a network of downed obstacles.

Tree species include the dominant Lodgepole Pine (*Pinus contorta* var. *latifolia*), Larch (*Larix occidentalis*), Subalpine Fir (*Abies lasiocarpa*) and Engelman Spruce (*Picea engelmannii*). Scrub brush comprising Black Huckleberry (*Vaccinium membranaceum*), Dwarf Blueberry (*Vaccinium caespitosum*) and Kinikinik (*Arctostaphylos uva-ursi*) cover the forest floor. Forest cover is relatively open away from stream and creek courses, allowing for straight-forward foot traversing, save local cliffs.

6 History

The historical exploration record for *Sweet Spot Property* reveals the following observation and conclusions expanded upon in subsequent subsections:

1. A significant thickness (100+ m) of very anomalous Zn- and Pb-bearing strata was intersected in DDH C-91-01. Five additional holes were drilled on the *Property* but none tested this mineralized interval located at and below the *Moyie marker interval*.
2. Stratigraphic thicknesses internal to the Middle Aldridge Formation for the Kimberley area may apply to the *Property* over some intervals (based on limited drill core intersections and surface exposures). Calibrating inter-marker stratigraphic thicknesses is viewed, by the author, as an important exploration objective and tool.
3. The *Canam Fault* or *Fault Zone*, has little evidence of offset; however, it is coincident with several geological features such as alteration, anomalous mineralization, and evidence for mud volcano activity, all of which support the notion of hydrothermal fluid flow; hence, the term *Canam Structural Zone* or *Disturbed Zone* are considered more appropriate descriptions of this feature
4. A gravity high spatially coincident with the *Canam Structural Zone*, is not easily explained by two relatively thin east-dipping gabbro sills; or sills at depth, because Teck DDHs SWE-91-01, 02 did not encounter a significant volume of gabbro; however, it may link to the zone of anomalous mineralization seen in DDH C-91-01.
5. A large, near-vertical *MT* conductor remains untested despite close spatial linkage with a gravity high.
6. There is no single, comprehensive geological map onto which each generation of field mapping has been compiled; structural data (e.g. bedding, cleavage) have not been compiled or analysed for estimates of structural plunge, and there is no set of reasonably spaced structural cross-sections.
7. Presence of a Sullivan-like *gabbro arch* is suggested on one map.

6.1 Introduction

The *Property* was staked by Cominco Ltd.³ (*Cominco*) in 1989 as the Canam. Abitibi optioned it from *Cominco* in 1998, returned it in 2000, after which, *Cominco* allowed the claims to lapse. In 2009, Robert Duncan Kennedy (for the *Kennedy Group*) staked some of the former Canam claims and renamed it *Sweet Spot* (the *Property*). The *Kennedy Group* optioned it to Kootenay Silver Inc.⁴ (*Kootenay Silver*) from 2010 to 2015, then to Teck Resources Ltd. (*Teck*) from 2016 to 2020, and now to *Kootenay Silver* effective the 16th of June, 2020. During this 30-year period of intermittent exploration, \$1,635,745.30 has been expended⁵ on geological mapping, rock- and

³ Now Teck Resources Ltd.

⁴ Formerly Kootenay Gold Inc.

⁵ The expenditures are those filed with the BC Ministry of Energy, Mines and Low Carbon Innovation (formerly: Energy, Mines and Petroleum Resources) for assessment purposes and made available to the public.

soil-geochemical sampling and analysis, geophysical surveys -- HLEM, UTEM, MT, gravity, magnetic and radiometric -- and six (6) *DDHs* totalling 2913 m (*Table 2*). In the past three (3) years, exploration expenditures by Teck amounted to \$1,174,650: \$254,923 in 2018 and \$919,727 in 2019 (Boucher and Herron, 2019 and 2020).

Table 2: Summary of assessment work, Sweet Spot Property (*Reproduced from: Boucher and Herron, 2020, p. 6*)

Year	Company	Exploration Work
1989 - 1993	Cominco Limited	Claims staked, Soil Geochemical Survey, Geological Mapping (1:20,000), UTEM ground geophysical survey.
1989	Cominco Limited	23.5 km of reconnaissance UTEM
1990	Cominco Limited.	Line-cutting, 396 soil samples, 42.3km of UTEM and 17.6km of HLEM Surveys
1991	Cominco Limited	3 Diamond Drill holes (868.9m total) (C-91-1, C-91-2 and C-91-3)
1992	Cominco Limited	19.9km of UTEM and 12.2km HLEM Surveys
1993	Cominco Limited	31.5km UTEM Survey
1994	Cominco Limited	1 Diamond Drill hole: (C-94-1 for 132.3m) and access road
1998	Abitibi Mining Corp.	Property Optioned from Cominco Limited
2000	Abitibi Mining Corp and Cominco Limited	1 Diamond Drill hole (CA-00-1 for 540m).
2009	Sara Kennedy	Prospecting and rock geochemistry (17 samples)
2010	Craig Kennedy	Mapping and Prospecting
2012	Kootenay Silver Inc.	Prospecting, geochemical and biogeochemical sampling (7 rock samples, 19 bark samples)
2013	Kootenay Silver Inc.	18km ² Geological Mapping
2016	Teck Resources Limited	Geologic Mapping, Rock sampling, pXRF and Spectral analysis of surface samples.
2017	Teck Resources Limited	Magnetotelluric (MT) geophysics survey on a single line.
2018	Teck Resources Limited	BC-horizon soil survey, rock sampling, mapping, ground gravity survey, airborne magnetic and radiometric surveys.
2019	Teck Resources Limited	2 diamond drill holes and pXRF geochemistry (SWE-19-01 to 900m and SWE-19-02 for 471m)

6.2 Geological Context and a Cross Section as aids for following “the thread” of Historical Exploration

The rationale behind historical exploration is often difficult to follow and appreciate without access to the local lexicon of key geological terms and visual representations of spatial relations between *Property* geography and geology, and the exploration programs that were undertaken. For the purposes of this section, two aids are provided, a stratigraphic column for the Middle Aldridge Formation on which are plotted many of the *marker intervals* (*markers*; Figure 5) that are key to establishing where, in the succession, one is located (Figure 6); and, a west-to-east structural cross-section of the *Property* onto which marker intervals are plotted together with drill-hole profiles and other relevant information (Figure 8).

The Middle Aldridge Formation is a ca. 2100 m thick homogenous succession of metamorphosed turbidites of predominantly greywacke composition (field term). Fortunately, the succession is punctuated by a series of laminated to thin-bedded intervals, some less than a meter thick, others several meters thick, each with a distinctive internal stratigraphy that persists basin-wide.

In other words, a marker succession can be matched, much like a “bar code”, between localities some of which may be more than 100 km distant (Figure 5). Over time, a sequence of marker

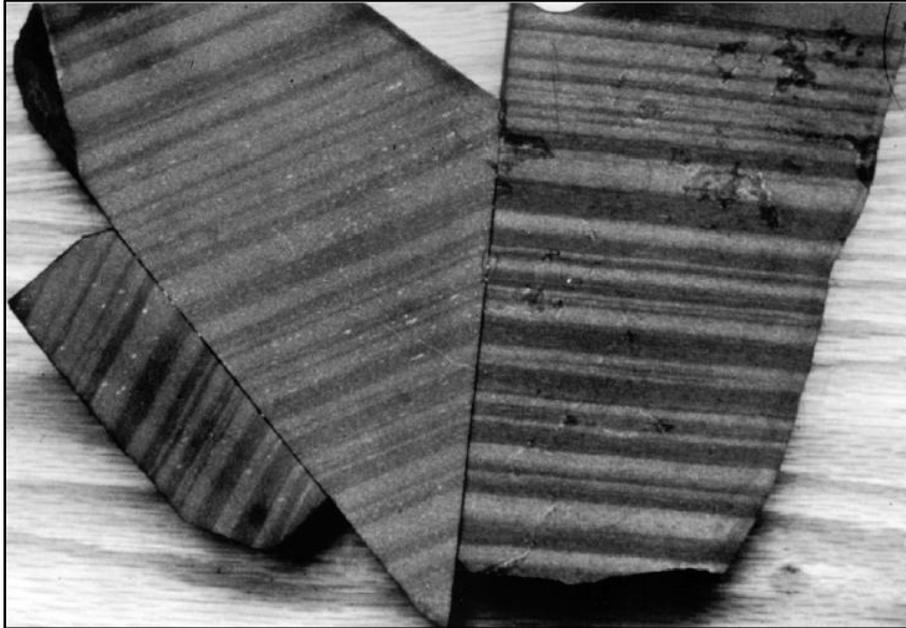


Figure 5. Examples of “matching markers” from Kimberley, British Columbia and Pend Oreille Lake, Idaho. Approximately 20 cm of stratigraphy is shown. (Reproduced from: Hamilton et al., 2000, p. 9, Figure 2-5.)

intervals have been compiled from bedrock exposures and *DDH* intersections, thicknesses of turbidite separating them measured, and a (relative) time-stratigraphic column constructed (Figure 6). Remarkably, thickness of turbidite successions separating some marker intervals is similar over the 70 km that separates the “type” column derived for the Kimberley area and the *Property*.

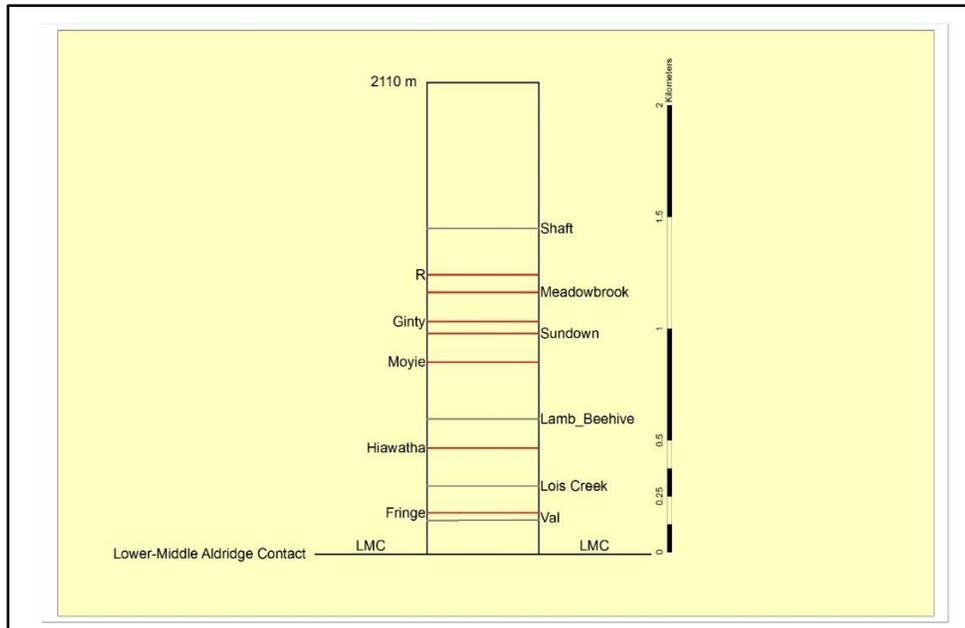


Figure 6. Reference column for the Middle Aldridge Formation, drawn to scale, showing the relative positions of *marker intervals* relevant to the *Sweet Spot Property* (in red) and some others not observed on the *Property* (as yet).

6.3 1989 – 1995: The *Cominco* Era

After two years of systematic geological mapping, soil (Figure 7) and rock geochemical sampling and analysis, and geophysical surveying (HTEM and UTEM) in 1989 and 1990, Cominco Ltd. had identified 2 primary drill targets: a strong *Zn-Pb* soil anomaly along the upper east-facing slope of South Hawkins Creek (zone labeled in Figure 8), and a relatively strong conductor trending north from the International Boundary and located within and east of upper South Hawkins Creek drainage (the area proximal to DDH C-19-02, Figures 8 and 9). In 1991, three *DDHs* were completed, C-91-01 and C-91-03 to test the soil anomaly, and C91-02 to test the electrical conductor (Figures 8 and 9).

DDH C-91-01 was collared stratigraphically above the Sundown Marker (Figures 6, 8 and 9) and intersected long intervals of disseminated *Zn - Pb* mineralization (Table 3; Figure 8: Yellow intervals shown on trace of *DDH* C-91-01). Most notable are: 16.9 m at 4577.8 ppm (0.5%) combined *Zn - Pb* containing 9.3 m at 7330 ppm (0.73%) combined *Zn-Pb*; and 105 m at 2620.4 ppm (0.3%) combined *Zn-Pb* (Table 3). The highest grades over a 1 m interval are 1.7% *Zn* and 1.45% *Pb*; and, occasionally there are grades to 5% combined *Zn-Pb* contained in 1 to 4 cm intervals (Anderson, 1991b). The *DDH* was ended in mineralization at the base of the 105 m mineralized interval described above (Table 3), hence, there is no way of knowing whether or not grades might have increased as one drilled deeper into the succession.

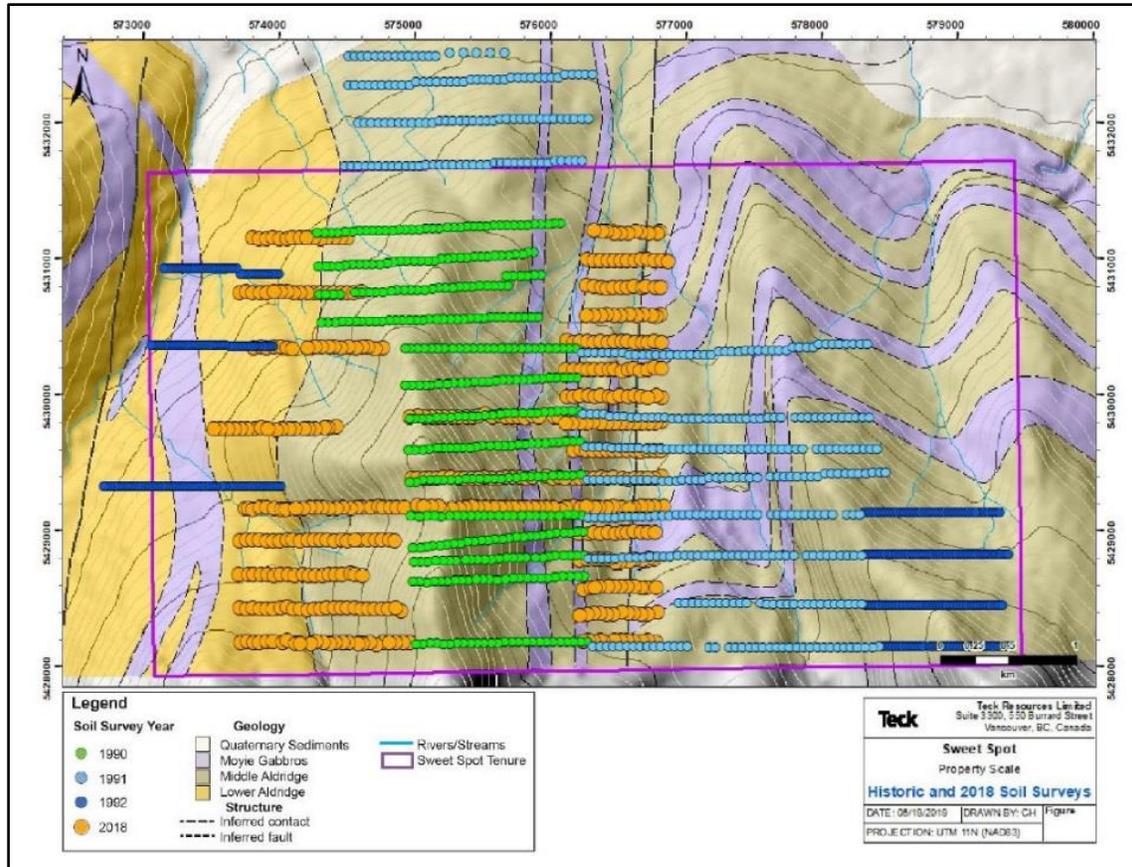


Figure 7. Summary of historic soil sample grids (*Reproduced from: Boucher and Herron, 2019, p. 19, Figure 10*). The Cominco grids are green, and light- and dark-blue; later Teck grids are colored orange.

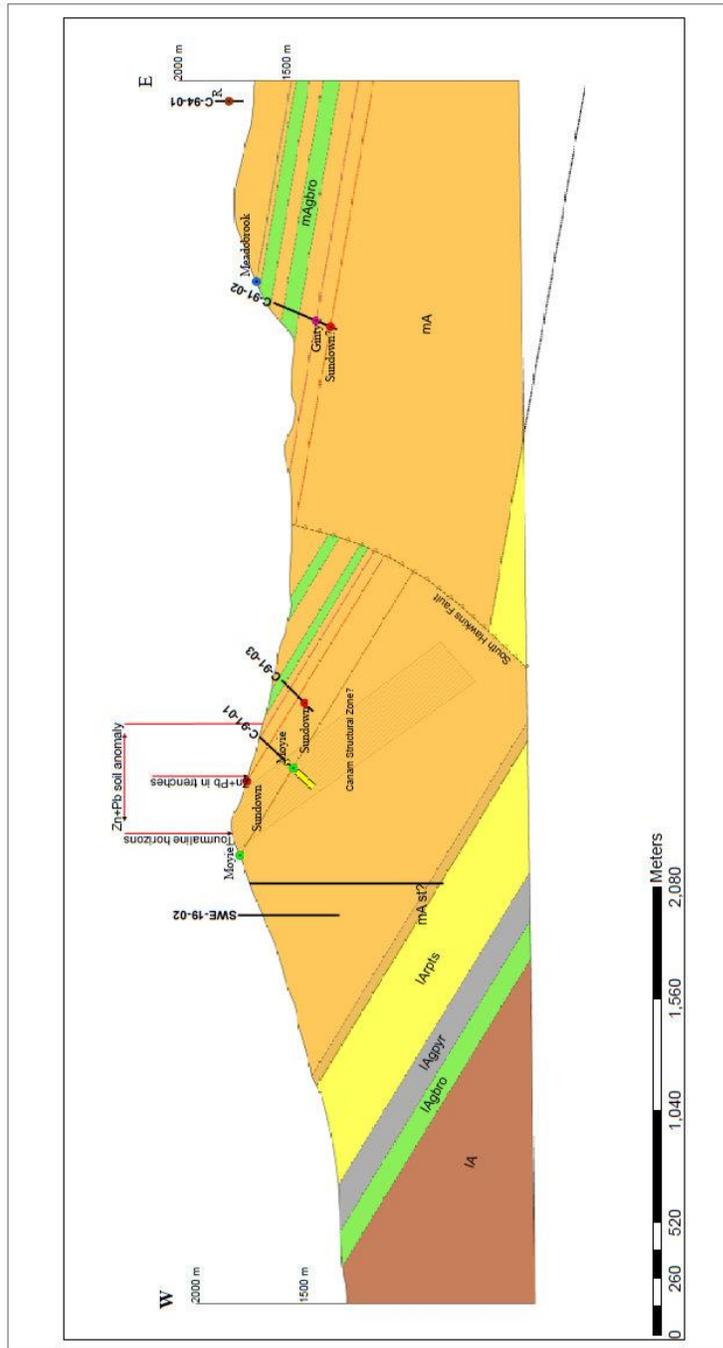
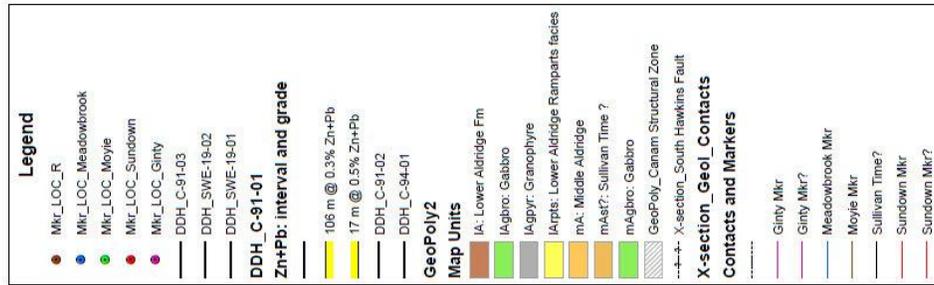


Figure 8 (previous page). Geological cross section of Sweet Spot Property, viewed to the north. Map units are: IA = Lower Aldridge Formation; lAgbro = Lower Aldridge gabbro, lAgpyr = Lower Aldridge granophyre, lArpts = Lower Aldridge Ramparts facies, mA = Middle Aldridge Formation, mA gbro = Middle Aldridge gabbro. Marker intervals are labeled and color coded as are marker localities at surface and in drill core. Trajectory of the South Hawkins Fault is hypothetical as is the shape and orientation of the Canam Structural Zone.

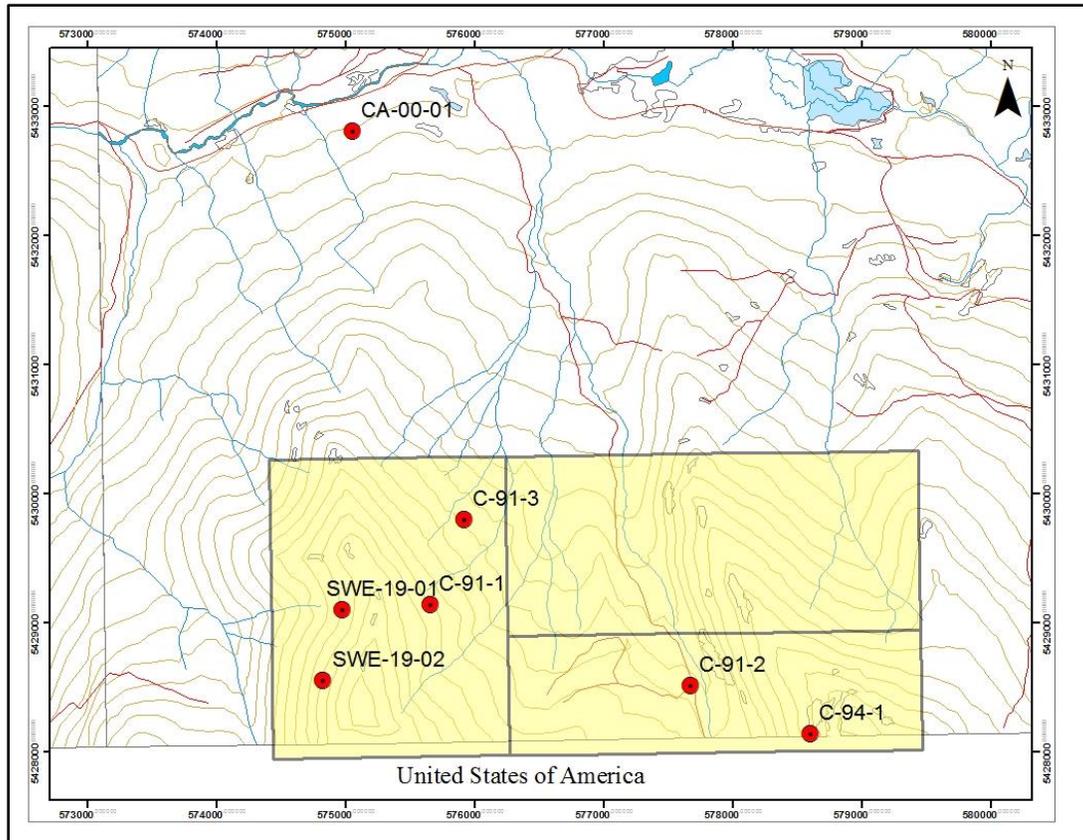


Figure 9. Locations for all DDHs on Sweet Spot Property. Hole CA-00-01 is also shown because it contains important time-stratigraphic information and it was part of the Cominco Canam Property at the time of drilling in 2000 (ref. text).

DDH C-91-03 was collared 709 m north northeast from C-91-01 to test the northward extension of the Zn-in-soil anomaly (Figures 7 and 8). The DDH was collared down-slope from C-91-01 which placed it significantly higher in the stratigraphic succession, well above the *Sundown marker* (Figure 6). Mineralization is restricted to two intervals, 2.06 m and 1.8 m in width, grading between 1204 and 1484 ppm Zn, and between 148 and 704 ppm Pb respectively. The DDH was stopped within the *Sundown marker* succession (Figures 6 and 8); hence, it did not test any of the mineralized stratigraphic interval intersected by DDH C-91-1.

DDH C-91-2 was collared to test the strongest and longest of 5 geophysical conductors that extend south, along and east of South Hawkins Creek to the International Border (Figures 8 and 9). The DDH was a technical success in that 24 pyrrhotite laminations were intersected over a drilled width of 40 m (from 175 m to 224 m); they are interpreted as the conductor(s) responsible for the UTEM surface anomaly. Stratigraphically, this DDH intersected the *Ginty*

marker (216.7 m - 218.4 m) and additional, unmatched, marker segments between 286.28 m and 289.02 m (interpreted here to be the *Sundown marker*). The hole was ended (319 m) about 200 to 250 stratigraphic meters above the mineralized zones encountered in C-91-01; hence, like DDH C-91-3, which did not determine whether or not the long intervals of mineralization encountered in C-91-01 extended to the north northwest, C-91-02 did not test for southeast extension of the mineralized intervals.

Table 3. Normalized grade calculation for Zn, Pb and Zn+Pb concentrations in DDH C-91-01.

DDH_ID	From_m	To_m	Interval_m	Σ Zn_ppm	Σ Pb_ppm	Σ Intervals	Zn_Normalized Grade_ppm	Pb_Normalized Grade_ppm	Zn-Pb combined
C 91-01	165.09	174.4	9.3	50386.8	30243.5	11	4580.6	2749.4	7330.0
C 91-01	165.09	182.0	16.9	54743.5	32236.1	19	2881.2	1696.6	4577.8
C 91-01	235.86	341.7	105.8	89273.5	15545.0	40	2231.8	388.6	2620.4

Drill results provided useful geological information that aided follow-up surface evaluation for additional drill targets. For example, it is apparent in drill core that sphalerite and galena are associated with an alteration mineral assemblage consisting of: black (biotite) quartzite containing biotite, spessartite (Mn-garnet), chlorite, sericite, calcite and scapolite? (Anderson, 1992). At the time, Cominco struggled to distinguish between green schist and (or) amphibolite metamorphic facies alteration associated with regional metamorphism, from that specific to mineralization; petrographic study suggested no evidence of hydrothermal fluid activity which left geologists wondering at the origin of such large concentrations of disseminated Zn and Pb mineralization. However, the spatial relationship between mineralization and alteration (dark quartzite) was confirmed in 1992 when trenching demonstrated that anomalous metal concentrations in soil, when compared spatially to the extent of altered quartzite, were spatially coincident: an abrupt change from black altered quartzite to its grey, unaltered equivalent coincided with an abrupt decrease in metal-in-soil values (Anderson, 1993).

Stratigraphic information in the form of *marker* intersections, provided information that helped constrain geological cross-sections (Figures 6 and 8). For example, the *Ginty Marker* was intersected in DDH C-91-02 between 216.7 m and 218.4 m. When projected up-dip to surface, it helped affirm the presence of a west-dipping normal fault -- *South Hawkins Fault* -- trending north along South Hawkins Creek. DDH C-91-01 was positioned stratigraphically above surface exposures of the *Sundown* and *Moyie markers* and should have intersected both; however, only the *Moyie* was observed (subsequent field examination showed the collar location has *marker* lithologies associated with it; cross-section preparation (by the author) suggests they may belong to the *Ginty marker*).

The 1991 drill program results were considered enigmatic, yet encouraging (Anderson, 1993). The significant amount of mineralization intersected in DDH C-91-01, though sub economic and difficult to rationalize geologically, added impetus to undertake additional mapping, sampling and geophysical sounding with the aim of identifying additional drill targets.

In 1992 and 1993, soil and rock sampling initiatives together with detailed mapping failed to vector into a suitable drill target. Trenching (noted above) did clarify the relationship between mineralization and alteration in quartzite, but did not help with drill target generation – alteration is widespread but could not be used to vector towards a source of, for example, a

conduit responsible for fluid transport. Geophysical surveys carried out during the 1992-93 field seasons, over previously identified conductive zones, provided additional clarity. Several crossover conductors, sub-horizontal crossover conductors and contact responses defined north-striking zones extending from the International Border along the west-facing slopes of South Hawkins Creek (Jackisch, 1992, 1993). One strong, gently east-dipping conductor (0.5 to 1 km strike length; 0.3 to 0.4 km down dip extent) straddling the International Border, was identified as a possible, conformable, massive-sulfide target, and DDH C-94-01 was proposed (Jackisch, 1993).

In 1994, DDH C-94-01, located approximately 50 m north of the International Boundary (Figure 9), was drilled vertically to a depth of 132.32 m; the *R marker* (Figures 6 and 8) was intersected at 64.6 m. Probable conductors intersected were two thin pyrrhotite laminations at a depth of 32 m. Otherwise mineralization is restricted to disseminated pyrrhotite, especially near the base of turbidite units. Cominco geologists could not decide whether or not the pyrrhotite laminations represent the UTEM conductor observed at surface (Anderson, 1995).

Cominco Ltd. did not file assessable work with the B.C. Government after 1995 and the author presumes that Cominco Ltd. had ceased field-related exploration.

In 1998, Abitibi Mining Corp. entered into an option agreement with Cominco for the Canam Property. It is not clear whether Abitibi undertook exploration in 1998 and 1999, no assessment reports were filed. In 2000, a single drill hole, CA-00-01 was collared 1 km west southwest of the junction of Hawkins with South Hawkins Creek (Figure 9). The purpose was: "...to test an area of deformed sediments east of granophyric sediments⁶ found in lower America Creek in the vicinity of the stratigraphic projection of the Hiawatha marker and to possibly test Sullivan Time." (Rogers, 2000, p.7). This hole does not lie within the *Sweet Spot* tenures; however, the author includes it in the inventory of relevant work because it represents a stratigraphic test of the lower portion of the Middle Aldridge Formation. Seven samples were submitted for analysis (intervals not provided) and none had Zn or Pb values above 100 ppm.

Like all other holes drilled subsequent to C-91-01, it did not test the mineralized stratigraphy but was collared approximately 150 stratigraphic meters below it. A test of this statement is provided in Figure 10 where drill holes are plotted relative to the *marker* column (Figure 6).

⁶ Granophyre is normally used to describe the texture of high-level quartz-alkali feldspar intrusions wherein feldspar and quartz crystals are intergrown, resulting in a granophyric or graphic texture which looks like branching quartz rods set in a single feldspar crystal; hence, all rods go extinct at the same time when viewed under crossed Nicols (Winter, 2001, p. 34). In this report, granophyre and granofels are used to describe a highly-altered sediment which takes on the appearance of an intrusive (Anderson, 2013); this rock-type occurs proximal to, or within, a thick gabbro sill which intrudes thick-bedded to massive quartzite -- Ramparts facies -- which characterizes the upper part of the Lower Aldridge Formation.

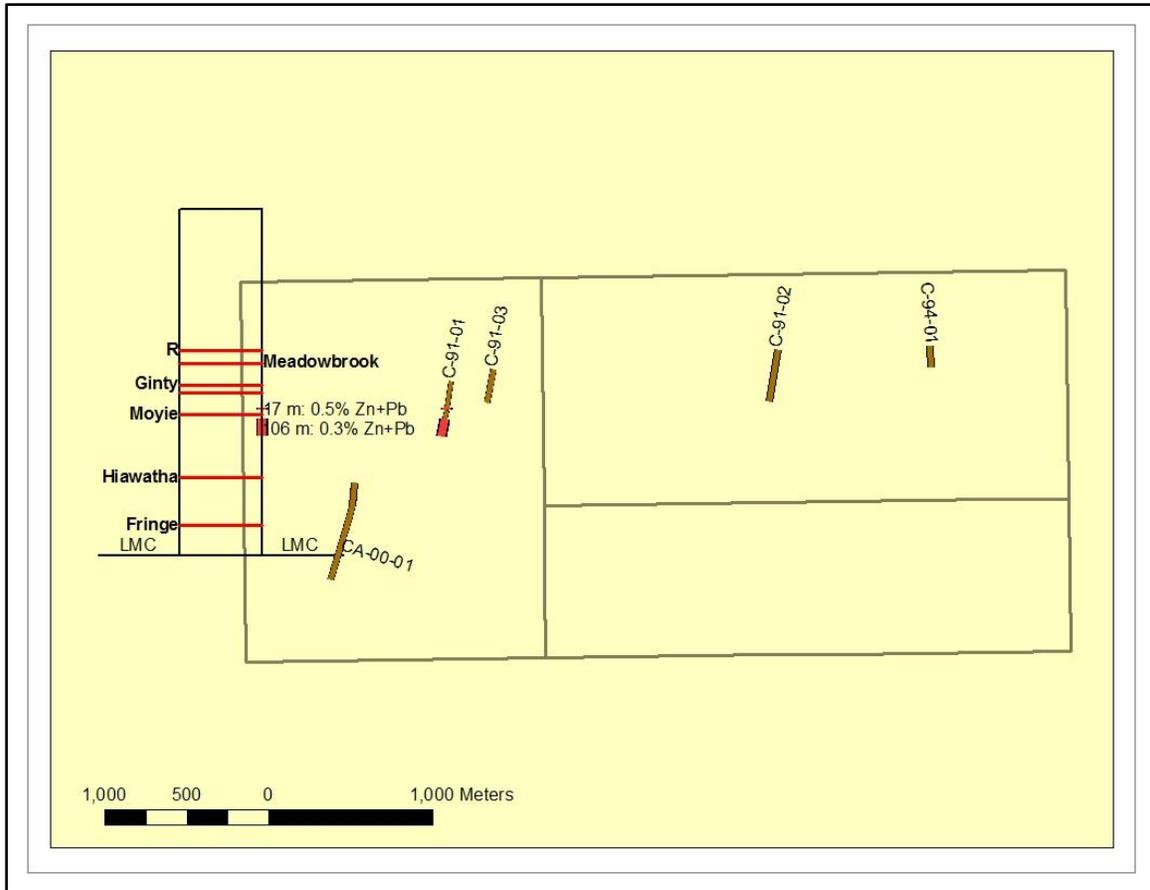


Figure 10. Plot of DDHs (sub-vertical brown lines) plotted relative to stratigraphic position of marker intervals (horizontal red lines). Spacing between DDHs reflects northward or southward projection of DDH collar location into a vertical plane. DDH plotting protocol is explained in text. The mineralized interval shown in DDH C-91-01 (thick red line) and on the vertical axis of the stratigraphic column (labeled) was not tested by any subsequent DDHs: This conclusion supports cross-section relationships shown in Figure 8.

Since the markers are maintained on the horizontal, each drill hole is plotted at the appropriate bedding-casing angle noted in drill logs; and, each drill hole is projected into a single (arbitrary) plane of section to show relative positions across structural strike. Plotting procedure relied on the marker intersections noted in drill logs: For example, since C-91-01 intersected the Moyie marker at 202 m (core length) then the DDH was plotted by measuring up from the marker a distance of 202 m, and down from the marker 141.6 m for a combined total of 343.6 m – the total length of the DDH. Since there is a surface exposure of the Moyie marker (Figure 8), joining it with the DDH intersection provides a marker (bedding) dip of 31° east. Using this dip value and projecting the surface exposure of Sundown marker into the plane of section shows where C-91-01 is predicted to intersect it and, measuring from that calculated intersection up 53 m – the distance between Sundown and overlying Ginty markers (Figure 6) – provides an estimate of where C-91-01 should have intersected Ginty marker, in this case, 5 m below the collar. The important implications of this exercise are:

1. The stratigraphic intervals separating *marker intervals* shown in Figure 6, which was prepared using information gained from the Kimberley area, may apply to the *Sweet Spot Property* as well (an hypothesis to be tested); and,
2. *marker* recognition in drill holes is, and will be, key to anticipating the depth to new drill targets. The 2 *DDHs* drilled by Teck in 2020 (discussed below) do not have documented *markers* or *marker matches*, which is unfortunate.

Abitibi Mining Ltd. returned the Canam Property to Cominco Ltd.

No further work was undertaken by Cominco and the property was allowed to lapse.

6.4 2009 – 2015: The Kootenay Silver Inc. Era

The initial *Sweet Spot* claim was staked by Robert Duncan Craig Kennedy in May, 2009 and ownership then transferred to Sara Kennedy (R. D. C. Kennedy remained the Operator). Two additional tenures were added in August 2011, Sara Kennedy as owner. These 3 tenures, staked over what was once Cominco Ltd.'s Canam Property, is the current *Sweet Spot Property* (the *Property*). In 2011, the *Property* was acquired by Kootenay Silver Inc. and held until 2015 when it reverted to R. D. C. Kennedy.

Reconnaissance geology and prospecting was completed in 2009 (R. D. C. Kennedy, 2011) with seventeen samples collected for analysis. Several returned Zn and Pb values consistent with those intersected in DDH C-91-1. The highest Zn value was 4469 ppm and Pb 10000+ ppm. The report's author concluded the mineralization is fracture controlled and consistent in character with massive-sulfide vein occurrences. He noted the presence of tourmaline-rich rocks in close association with *fragmentals*, which he interpreted to be spatially associated with a paleo-fluid conduit (mud volcano; subsequently named the *Canam Fault* by Anderson, 2013).

Reconnaissance geology was undertaken in 2010 (R. D. C. Kennedy, 2011). A summary of observations from the inspection of bedrock and float include: 1) Quartz-vein float is associated with gabbro float which may contain chlorite and epidote; 2) pyrite and pyrrhotite occurs in *marker* lithologies; 3) garnet, patches of pyrrhotite and pyrite, and rare chalcopyrite occur in fine-grained quartzite float; 4) calcareous-siltstone and -quartzite float is present though atypical for Middle Aldridge strata; and 5) fragmental siltstone, characteristically associated with mud-volcano activity, is present.

Geological mapping was accompanied by rock geochemistry (7 samples) and biogeochemistry (19 bark samples) in 2012 (Sean Kennedy, 2012). Two rock types: medium- to thick-bedded quartzite, and thin-bedded argillaceous siltstone, were mapped, where possible, as subdivisions within an otherwise monotonous Middle Aldridge succession of metamorphosed quartzite (quartz arenite), dirty quartzite (quartz wacke and greywacke), siltstone and argillite. Other observations included: 1) Conglomerate composed of thin plate-shaped rock clasts in a silt- to sand-sized matrix; they are unsorted, lack stratification, and outcrop has resistant mound-shaped features. 2) A steep east-dipping cleavage was measured and is consistent with north-trending folds; folds were not observed but occasional west-dipping bedding inclinations were. 3) Significant biotite, spessartite (Mn-garnet) and chlorite alteration was mapped in the stratigraphic interval between *Sundown* and *Moyie markers*; the host quartzite was noted as

black and “extremely silicified”. These observations are also noted in C-91-01 drill core logs from this stratigraphic interval (discussed above). Lead and zinc mineralization occur as conformable lenses: one 30 cm thick lens assayed 1.28% Zn. Near the base of the altered quartzite succession, laminations of the Moyie marker are replaced by black aphanitic tourmaline. These and other field observations of pervasive alteration and mineralization within the quartzite host support the notion that metal-bearing (hydrothermal?) fluids permeated this rock succession.

In 2013 a second (1:10,000 scale) mapping program covering 21 square kilometers was undertaken (Anderson, 2013). The map is best described as a west-to-east transect, beginning with the oldest (lowest) stratigraphy belonging to the Ramparts facies of the Lower Aldridge Formation (Figure 8) and progressing up section, through an east-dipping succession of Middle Aldridge quartzite and meta-greywacke like that described from earlier maps. New to this map is recognition of the Canam Fault Zone (recognized as a zone of structural disturbance in previous studies; referred to herein as the *Canam Structural Zone - CSZ*) which trends north northeast oblique to the ridge-top separating South Hawkins Creek on the east from America Creek on the west. CSZ is interpreted as an east dipping interval of hypothesized width and shape (Figure 8) interpreted to link the mineralized intervals intersected in DDH C-91-01 with the surface evidence of mineralization, alteration and disruption discussed above. A second interesting mapped relationship is the northward trace of the Meadowbrook sill along the west-facing slope of Hawkins Creek: It abruptly changes attitude from gently east-dipping, to steeply east-dipping before returning to a shallow dip – consistent with a kink geometry. Two vertical faults are shown projecting to the north northwest within the kink. This is significant in that a similar ‘kink-like’ geometry in a gabbro sill beneath the Sullivan orebody – the *gabbro arch* – has attracted the attention of geologists familiar with the details of Sullivan orebody geology (e.g. Hamilton et al., 1982). In general, this mapping project confirmed earlier mapping studies. The distribution of gabbro sills, bedding measurements, and alteration assemblages noted on Anderson’s map (2013) map would be a useful addition to a compiled version of all mapped data.

6.5 2015 – 2020: The Teck Resources Ltd. Era

In 2015, Teck Resources Ltd. examined historical drill core (holes C-91-01 to -03 and C-94-01) providing a general description of core lithologies as strip logs in Appendix II, and results from 436 samples examined with portable X-Ray Fluorescence (*pXRF*) in Appendices II and IV and short wave infrared (*SWIR*) spectra (TerraSpec™ Explore ASD machine) in Appendix V⁷ (Beckman et al., 2015). It appears this project was aimed at evaluating *pXRF* and *ASD* as exploration tools, the former to provide *real-time* elemental abundances in the field, especially *Zn* and *Pb*, and, the latter (spectral analysis) as an aid in characterizing alteration minerals that might prove useful vectors for mineral exploration purposes. The *pXRF* provided a fast and efficient first approximation of *Zn* and *Pb* concentrations (along with elements *As*, *Hg*, *Mn* and *Fe*): results, were comparable with laboratory analyses obtained in 1991 and 1994 by Cominco Ltd. (Anderson, 1991b, 1994). *SWIR* spectral analysis using the *ASD* suggested the presence of a poorly crystalline muscovite with subtle spectral shifts in *Al* and *Fe/Mg*; however, a clear *SWIR*

⁷ Appendix III -- strip logs and *pXRF* Results -- appears to be missing

vector was not identified⁸. Presumably, the shite mica identified as sericite in the field is synonymous with the poorly crystalline muscovite identified using *SWIR* spectra.

Prospecting in 2015 (Kennedy, 2015) focused on rock types, especially rocks interpreted to indicate disruption, during and after sedimentation, such as fragmental lithologies (sharp-stone breccia and (or) conglomerate), mud-chip conglomerate, and alteration assemblages (especially spessartite, biotite, sericite, chlorite and carbonate minerals) associated with *Zn* and *Pb* mineralization. This effort was a continuation of earlier prospecting and mapping forays designed to identify features synonymous with focused fluid flow such as growth faults and mud volcanoes. The prospecting map (1:10000) included in AR 35667 (*op. cit.*) contains useful observations that warrant inclusion in any geological map compilation and provide additional evidence that the *Canam Structural Zone* is an important feature worthy of follow-up testing.

In 2016 Teck Resources Ltd (*Teck*) entered into an option agreement with the Kennedy Group, owners of the *Property*. Teck also staked the Sweet Spot West Property (*SSW Property*) that borders the Sweet Spot on west and north (Figure 2).

Teck's 2016 work program consisted of mapping and rock and rock-chip sampling complimented by *pXRF*, and spectral analysis (*ASD*) to assist with characterization of lithologies useful for vectoring toward mineralization on the *Properties* (Loughrey et al., 2017). The status of some geological features within the *Property* changed over time, for example: The South Hawkins Fault morphed from an inferred feature based on the up-dip projection of the *Ginty marker* from DDH C-94-01 and the down-dip projection of the *Sundown marker* from the vicinity of DDH C-91-01 to: "...a prominent, north-south trending extensional fault." (Loughrey et al., 2017, p. 22); however, there does not appear to be any additional field evidence to support this statement.

Field-rock descriptions such as siltite, quartzite and quartzite arenite were analysed and bulk chemistry was used to generate a geochemical classification using the Herron (1998) "SandClass system". Both the quartz arenite and quartzite plotted in the litharenite classification field with some spread into the wacke field; the siltite had slightly lower *Si* concentrations and higher *Mn* concentrations and slightly higher *Al*, *K*, *C* and *S* concentrations causing it to plot (largely) in the shale and wacke fields. It was acknowledged that circulation of hydrothermal fluids would have altered rock chemistry and perhaps biased classifications.

Maximum surface rock *Zn* and *Pb* concentrations were ~6799 ppm and 1% respectively. Sulfide concentrations of *Zn* and *Pb* are associated with elevated *As*, *Fe*, *S*, *Hg* ± *Cu* and *Mn* concentrations. Hence, this suite of elements represents the best proxy available (to now) for vectoring purposes. Spectral analysis easily discriminated between gabbroic Moyie sill and the sandstone-siltite rock succession. However, it was not useful when trying to discriminate between the latter rock types and provided equivocal data for *Zn*- and *Pb*-enriched samples. A low-crystallinity index for these rocks may reflect circulation of hot, hydrothermal fluids and

⁸ The lack of a clear *SWIR* vector was thought due to the poorly mineralized intersections of sulfides within *DDH C-91-01*; however, in the author's opinion, the point of this approach is to identify alteration minerals in rocks having little or no metal content as a means of vectoring toward areas of significant metal content.

attendant crystallization of hydrous minerals. The *spectral* approach did not yield clear trends for vectoring purposes.

The northward flexure of the “Sundown sill” west of South Hawkins Creek noted on the Anderson geology map (2013; described above) appears to be documented on the *Teck* geology map (Loughrey et al., 2017, Appendix III).

In 2017, Teck conducted Magnetotelluric (*MT*) Geophysical measurements using 46 recording stations distributed at 100 and (or) 200 m intervals along a 5.1 km line oriented east-west (Figure 11: Boucher and Thompson, 2018). Several conductive anomalies were observed:

1. On the west are two conductive zones, one at 200 m below surface and having a horizontal dimension of approximately 400 m and a vertical dimension of about 200 m; the second, much larger conductor occurs at approximately 500 m below surface, has a vertical dimension of 1.5 km and extends beyond the eastern limit of the survey (Figure 31).
2. In the central portion of the surveyed area where 2 anomalies of interest to *Teck*, one located adjacent to and west of the South Hawkins Fault, interpreted as an extension of the mineralized succession intersected in DDH C-91-01, and a second conductor farther west and deeper which appears to occur below the Lower- Middle Aldridge contact (Figure 31). This data is discussed in greater detail below (§8.2)

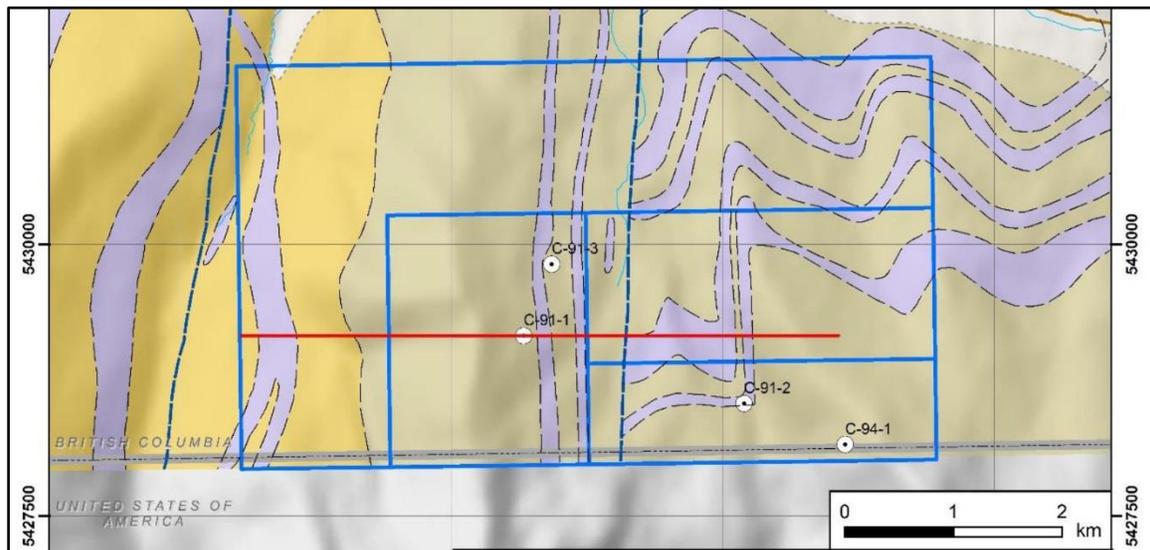


Figure 11. Location of MT grid line relative to *Sweet Spot Property* boundary. The survey line has the same horizontal position (latitude) as the cross-section profile shown in Figure 8.

The 2018 field program was multi-faceted (Boucher and Herron, 2019):

Four hundred and sixty-nine (469) soil samples were collected on a grid that overlapped with historic grids and filled gaps between them (Figures 7 and 12); the results confirmed those from earlier sampling programs and, in addition, identified an anomalous *Zn-Pb* zone, west of *DDH* C-91-01: the *Zn* anomaly extends 600 m up slope and 1000 m along slope having values up to 2378 ppm (Figure 12), the *Pb* anomaly extends 700 m up slope and 500 m along slope with values up to 879 ppm.

A field mapping program included measurement of numerous bedding and cleavage attitudes⁹, analysis of 20 rock samples, and magnetic susceptibility measurements as a proxy for pyrrhotite concentration in outcrop. The field maps do not show the distribution of rock types tabulated in separate data tables and the bedding and cleavage observations are not analysed for interpretative purposes. Gabbro sills had the highest magnetic susceptibility, followed by siltite; quartzite and litharenite had the lowest readings. Rock sample analyses did not add additional insights to existing rock geochemical studies.

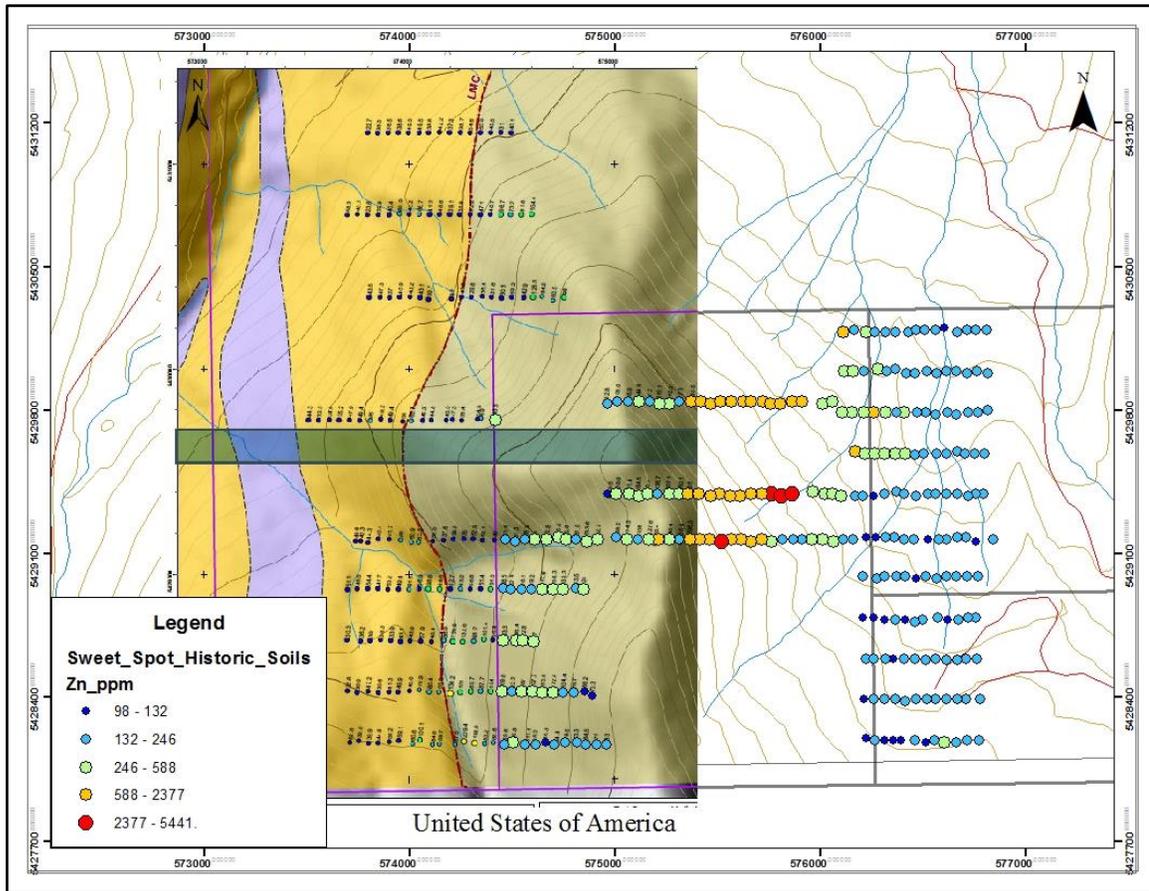


Figure 12. Graphic depiction of Zn results from 469 soil samples collected by Teck in 2018. The data are represented in halves, the eastern half comprising sample results plotted by the author in *Arcmap*, the western half as a georeferenced map (Boucher and Herron, 2019). The highest values (in orange and red colors) mimic the soil anomaly identified by Cominco in 1989-90 (Anderson, 1991b; Cominco sample sites are shown in Figure 7); Teck also identified a Zn and Pb anomaly to the west (pale green sample sites having Zn concentrations between 246 ppm and 588 ppm; results for Pb are not shown).

Three hundred and seventy-eight (378) gravity measurements were taken on 64 km of grid lines oriented east-west and spaced 400 m apart; the station interval was 200 m. According to Boucher and Herron (2019), north-trending gravity highs mimic the distribution of shallow-dipping gabbro sills; and a northwest-trending high that traverses the central portion of the

⁹ The data tables list significantly more measurements than are shown on the maps provided in Appendix IV.

Property coincides with the surface expression of Zn-Pb mineralization. These results and interpretations are discussed below (§8.2).

An airborne survey consisting of 270 line-km of magnetic and radiometric observations were collected. A correlation between magnetic highs and gabbro sills beneath areas of overburden was postulated.

Teck drilled 2 vertical DDHs in 2019 (Figure 9), SWE-19-01 collared 900 m west of DDH C-91-01 and drilled to a depth of 900 m, and SWE-19-02 collared 550 m south southwest of SWE-19-01 and drilled to a depth of 471 m.

The stated objectives for *DDH SWE-19-01* were: 1) to test a *MT* conductivity anomaly at a depth of approximately 650 m; and 2) to test favourable host stratigraphy for sediment hosted massive sulfide (*SHMS*) *Pb-Zn* mineralization below the Lower- Middle-Aldridge contact (*LMC*) at approximately 700 m (Boucher and Herron, 2020).

The stated objectives for *DDH SWE-19-02* were: 1) to test the stratigraphic succession down dip (east of) from the *Pb-Zn* soil anomaly located (at surface; Figure 12) approximately 300 m above the inferred *LMC*.

A *pXRF* instrument was used to collect (semi quantitative) geochemical data: 2 to 2.5 m sample spacing or, 1 to 1.5 spacing in pyrrhotite-rich layers; “hot spot” analyses were obtained from altered and mineralized core intersections. Magnetic susceptibility measurements were obtained using a 5-measurements-per- 3-m (drill core) interval protocol. Eight lithological units were identified (with additional sub units where appropriate). Seven of the eight are distinguished primarily on the basis of lithology and bedding style: massive- to thin-bedded “muddy sandstone”; roughly equal proportions of sandstone and siltstone; and, siltstone. Bedding characteristics, types of sedimentary structures, and proportions and character of (mainly pyrrhotite) sulfide minerals vary. The eighth lithological unit was gabbro. The two holes intersected similar lithologies at similar relative depths; SWE-19-02 encountered more and thicker intervals of pyrrhotite-bearing siltstone.

SWE-19-01 had an initial azimuth of 172.85° and dip of 88.5°; within 66 m its azimuth was 259° having a dip of 87.8°; at 900 m (end of hole) the azimuth was 274.7° and dip of 78°. The swing to a westward azimuth and decreased inclination were (in the author’s opinion) a response to steep, (presumed) west-dipping foliation (schistosity?), fractures, fracture zones and veins. SWE-19-02 underwent a similar change in azimuth and dip. Based on a review of the drill logs, bedding-casing angles were not observed/measured.

Alteration styles included the following: 1. Pervasive to patchy silica-albite ± white mica; 2) patchy to fracture- quartz veinlet- controlled albite and white mica ±silica; 3) patchy to fracture/veinlet -controlled quartz-chlorite-white mica; and 4) silica-albite-garnet ± amphibole-biotite-white mica-chlorite bearing concretions. Concretions are most common in thick-bedded quartzite successions. Quartz veins are sparse. Of the alteration minerals identified: albite, amphibole, biotite, chlorite, garnet, silica, vein quartz, sericite, carbonate, Fe-oxide, Mn oxide and clay, the most common and volumetrically important were: albite, biotite, garnet, silica, vein quartz, and sericite; carbonate is restricted to short intervals of about a meter.

Structures recorded on logs include: fractures, fracture zones and veins; shears, breccia, foliation (schistosity?) and gauge. However, casing-bedding angles (α) are absent – important information that should be recorded. As well, there is no reference to marker intervals – an omission worth rectifying

No significant (>5% sulfide) stratabound sphalerite or galena was observed. Of the sulfide minerals identified: arsenopyrite, chalcopyrite, galena, pyrite, pyrrhotite and sphalerite, only pyrrhotite is ubiquitous throughout both holes, typically as discrete (replacement?) laminae, and as blebs, disseminations and vein filling; concentrations vary from 0.05% up to 5% with values in the 1% to 2% range common. Remainder of the sulfide minerals occur sporadically primarily as vein fillings (e.g. Figure 26) within intervals less than 0.5 m long and often centimetre- to millimetre-scale. Sphalerite occurs in veins, and as selective replacements of siltstone laminations (up to 0.25%) in the hanging wall of a gabbro sill. Galena is hosted in veins. Arsenopyrite with pyrrhotite and chalcopyrite occur in quartz veins. Maximum Zn concentration was 1243 ppm (*pXRF*) in SWE-19-01 and 540 ppm in SWE-91-02. Background (mode or 50% of samples) Zn and Pb values in both DDHs are low: <66.3 ppm Zn and <7.2 ppm Pb in SWE-19-01, and <95.9 ppm Zn and <17.7 ppm Pb in SWE-19-02.

The highest magnetic susceptibility values correlated with visible pyrrhotite replacements and one may infer a linear relationship between magnetic susceptibility values and pyrrhotite concentration.

No *marker stratigraphy* was identified in either DDH; hence, there is no means of establishing time-stratigraphic control within the 900 m of Middle Aldridge strata intersected. DDH SWE-19-01 is purported to have crossed from Middle Aldridge into Lower Aldridge; however, some of the key stratigraphic intervals characteristic of the transition from Middle to Lower Aldridge Formation are missing, namely: 100's of meters of thick-bedded to massive Ramparts facies quartzite and 300± m of gabbro and interlayered granofels (described above: Kennedy, 2012; Anderson, 2013).

The 2020 *Teck AR* did not recommend additional exploration.

7 Geological Setting and Mineralization

7.1 Regional Setting

The *Property* is underlain by the Middle Aldridge Formation, a thick succession of regionally metamorphosed sand- and silt-stone turbidite belonging to the Mesoproterozoic Belt-Purcell Supergroup: Four stratigraphic groups comprise the *Supergroup* of which the Aldridge Formation (Prichard Formation in the United States) comprises the oldest 'rift' component (Höy et al., 2000). The *Supergroup* was deposited into an intracratonic basin created by extension and thinning of cratonic crust. It had a west-northwest trend (present-day coordinates), opened towards the north and received sediment from eastern and western margins (Figure 13). The Sullivan Pb-Zn-Ag Deposit, 8th largest in the world, formed atop 8 km (including gabbro sills) of Lower Aldridge Formation turbidite (Cook and van der Velden, 1995; Lydon 2007).

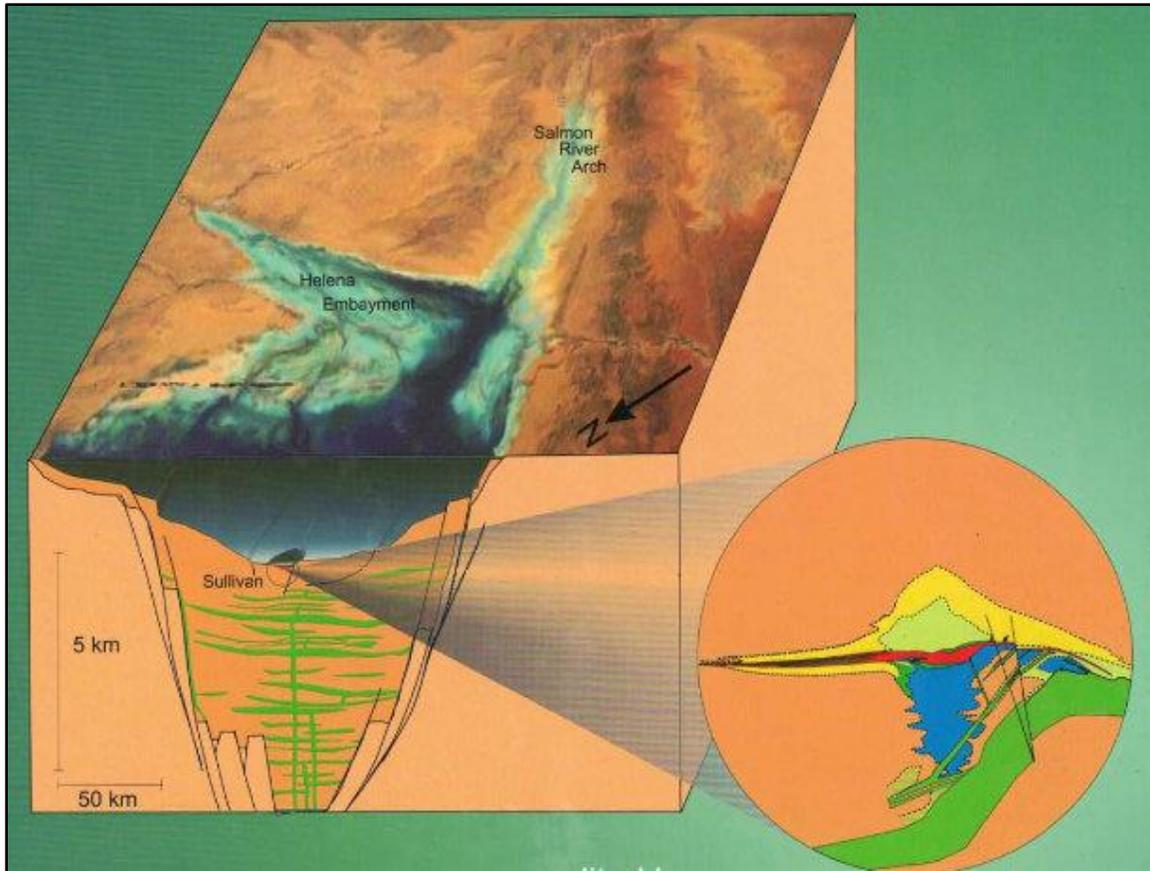


Figure 13: Schematic 3-D rendering of Belt-Purcell Basin at the end of Lower Aldridge Formation deposition. The inset (circle, lower right) illustrates the primary features of the Sullivan *Pb-Zn-Ag* Deposit. The International Boundary is a dashed line at middle-left of block diagram. (Copied from: Lydon, et al., 2000, cover illustration).

Today, outcrop limit of the *Supergroup* extends from southeastern British Columbia and southwestern Alberta into conterminous western Montana, north-central Idaho and north-eastern Washington; Canada accounts for only 10% of the area within the outcrop limit (Chandler, 2000; Figure 14)

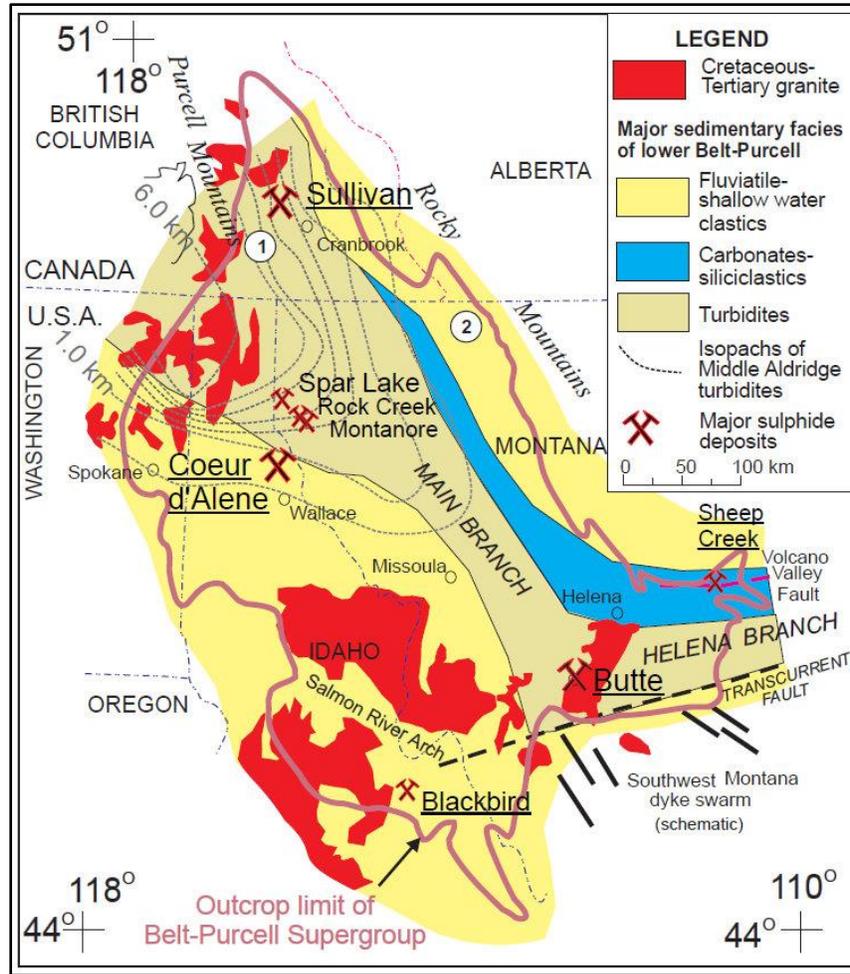


Figure 14. Surface extend of Belt Purcell Basin strata (purple line) showing major rift (brown) and “sag” (yellow and blue) lithofacies, and the location of major mineral deposits (Sullivan, Butte) and (or) Districts (Coeur d’Alene). (Copied from Lydon, 2007).

Deposition was initiated between 1543 Ma and 1497 Ma (Anderson and Parrish, 2000); gabbro sills are voluminous within the Lower Aldridge and intrusion persisted throughout Aldridge Formation deposition (Brown unit, Figure 14). Two sills intruded into the Upper Aldridge Formation give radiometric ages of 1468 ± 3 Ma (*op. cit.*); and, since soft-sediment deformation of strata adjacent to the sills is apparent, it suggests intrusion at shallow levels into ‘wet’ poorly lithified sediments thereby effectively dating Upper Aldridge Formation deposition. New, U-Pb dates for cassiterite sampled from the Sullivan ore body yield three age peaks: 1475 ± 4 Ma, 1366 ± 10 Ma and 1074 ± 7 Ma (Slack et al., 2020). The oldest age is interpreted to correspond to the time of ore body formation, the two younger ones represent thermal events attributed to the East Kootenay Orogeny and the Grenvillian Orogeny respectively. Since *Sweet Spot Property* lithologies belong to the Middle Aldridge Formation, the best age estimate for it is the 7 million-year interval between 1475 Ma (age of the Sullivan ore body) and 1468 Ma (age of Upper Aldridge Formation).

The northwestern North American margin, viewed in cross-section (Figure 15), is a composite of five margin-scale overlapping basins spanning 1.8 billion years: Lower Mesoproterozoic

(Wernicke), Middle Mesoproterozoic (Belt-Purcell), Upper Neoproterozoic (Windermere), Lower Paleozoic (Miogeocline assemblage), and Devonian-Lower Jurassic (Thompson et al., 2007 and references therein). The Belt-Purcell basin is the second oldest. Each basin (crustal depression) was a consequence of subsidence initiated by lateral extension of cratonic crust. Once filled, the basins remained isostatic 'highs' that were too buoyant to accumulate significant additional sediment: For example, the Belt-Purcell Basin retains a thin, condensed, unconformity-laced record for each subsequent basin-forming event, but once filled, it remained a shallow water or exposed platform. Mineral deposits are associated with each basin forming event; hence, the *Sweet Spot Property* occupies one of the key stratigraphic intervals linked to Pb-Zn mineralization in the Belt-Purcell Basin – Sullivan Deposit being the best developed example. Figure 15 also shows the effects of Late Jurassic through Paleogene mountain-building (orogeny). The Belt-Purcell Basin was transported more than 200 km to the east on a through-going décollement at or near the sedimentary wedge - cratonic basement interface, representing the cumulative total shortening across thrust faults and folds within the Rocky Mountains and Foothills belt (Price and Sears, 2000 and references therein); as well, the *Basin* was internally deformed and shortened by overlap across thrust faults (Figure 16; Cook and van der Velden, 1995). Hence, it is important to recognize that any basement structures active during Belt-Purcell Supergroup deposition are located more than 200 km to the west relative to present day coordinates.

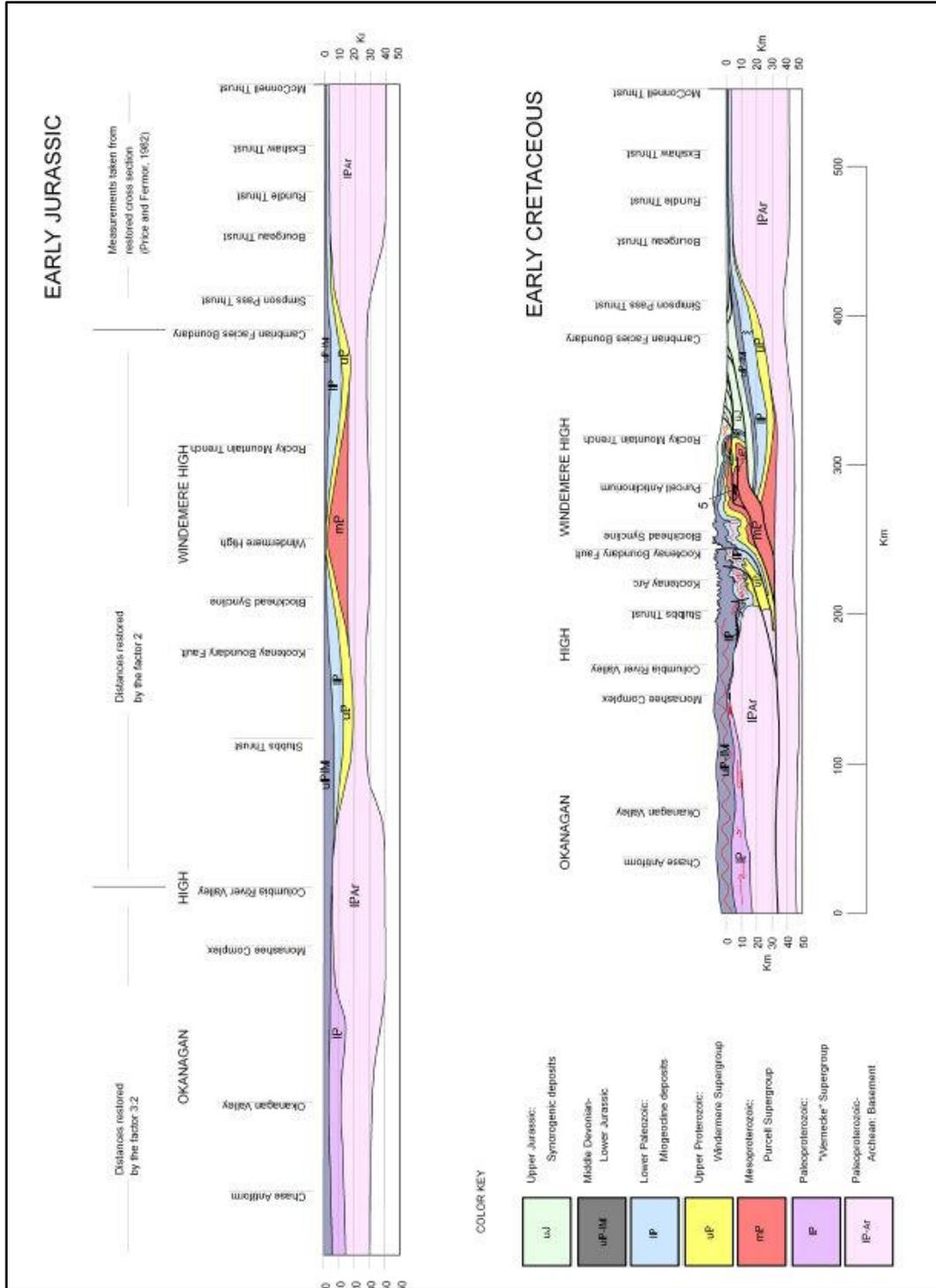


Figure 15: Stratigraphic character of the Cordilleran margin showing the major basin-fill successions: Wernicke Supergroup, Purcell Supergroup, Windermere Supergroup, Lower Paleozoic miogeoclinal assemblage, and Devonian Lower Jurassic assemblage. Later Jurassic to Paleocene orogeny contracted (shortened) supracrustal rocks more than 200 km from west to east (Thompson et al., 2006).

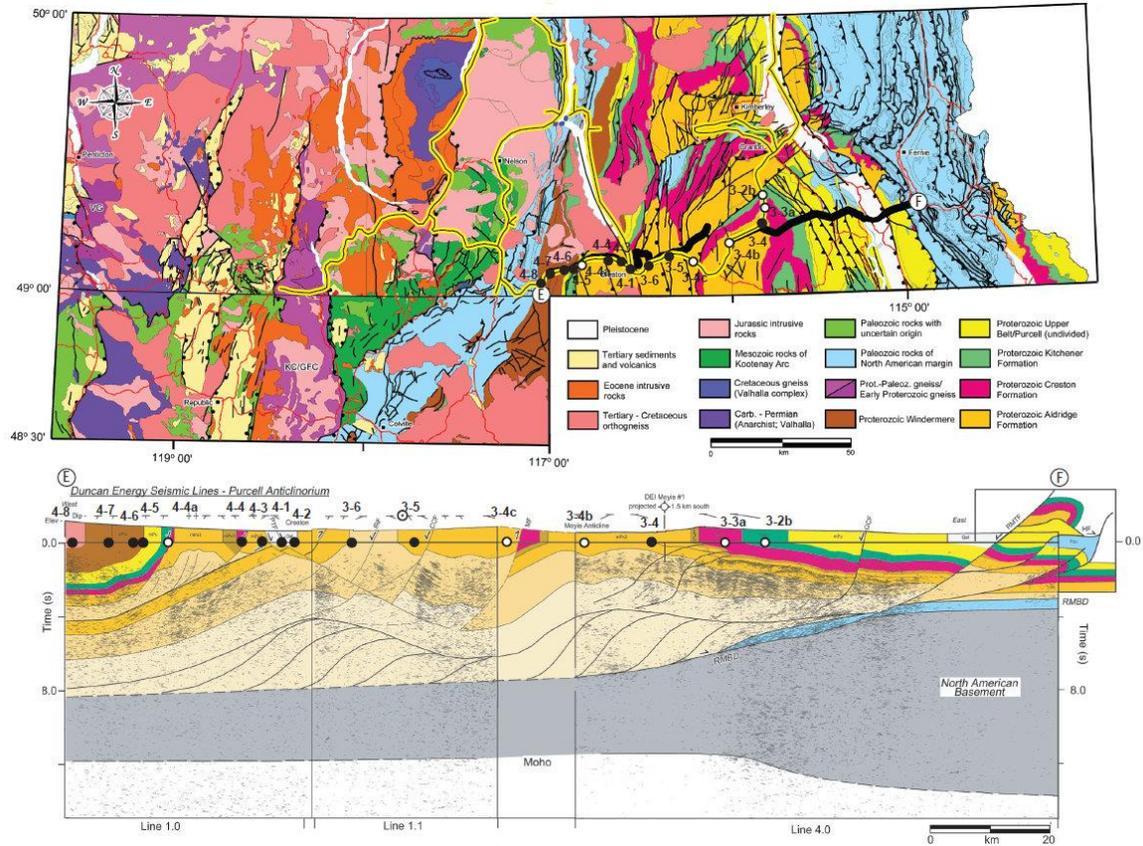


Figure 16. Geological map and cross-section across the southern Purcell Mountains (exposed part of Belt-Purcell Basin in Canada) based on Lithoprobe seismic imaging and surface geological mapping (modified from Cook and van der Velden, 1995 and Travis, 2006). Sweet Spot Property is located 23 km south of “stop 3-4b”, adjacent to the International Boundary.

7.2 Local Geology

The *Property* is part of the eastern limb of the north northeast plunging Moyie Anticline (Figure 17). The *Anticline* exposes all of the Upper and Middle Aldridge Formations as well as a portion of the Lower Aldridge; hence this large structure contains the Lower-Middle Aldridge contact (LMC) – stratigraphic interval of the Sullivan Deposit – and the remaining upper portion of the turbidite-rich and metal prone “rift assemblage”.

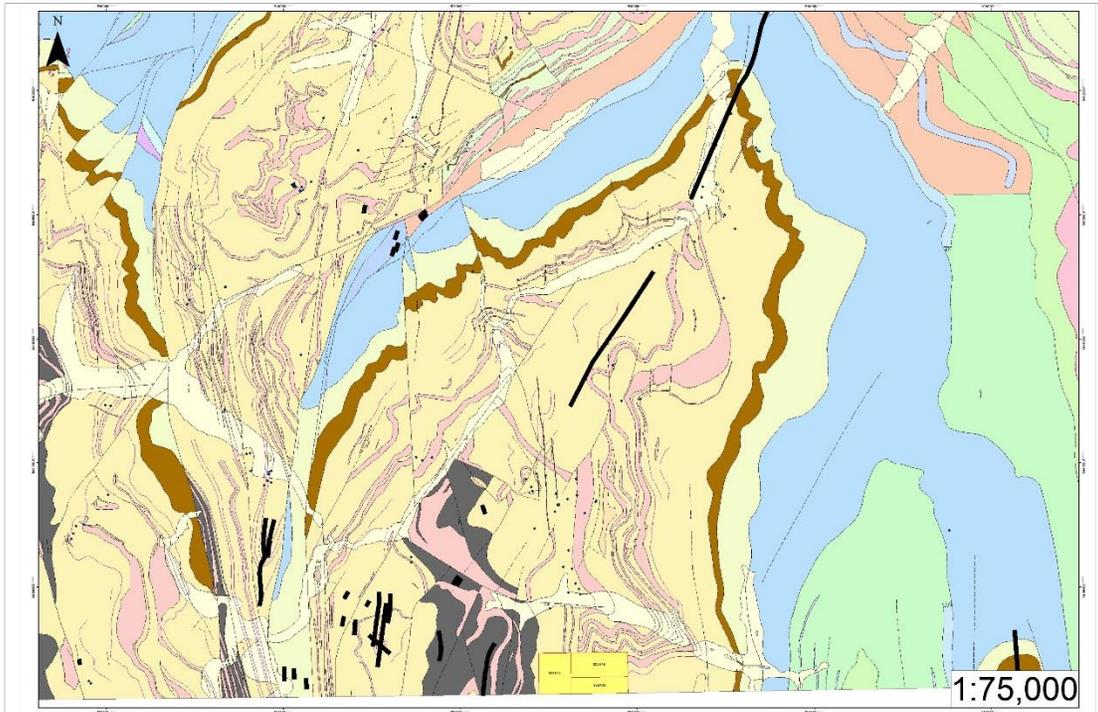


Figure 17: Map showing the north plunging Moyie Anticlinorium (fold axis in black) with the Sweet Spot Property (yellow with red outline) on the eastern limb underlain by the Middle Aldridge Formation (light tan) and adjacent to the Lower Aldridge Formation (grey). The Lower and Middle Aldridge Formations are intruded by numerous Moyie sills (pink; Joseph et al. 2011.)

Spatial relationship between the *Property* when viewed in cross-section (Cook, 2020) provides a useful perspective, especially as it relates to the total thickness and major structures affecting the Aldridge and younger formations comprising the local geology.

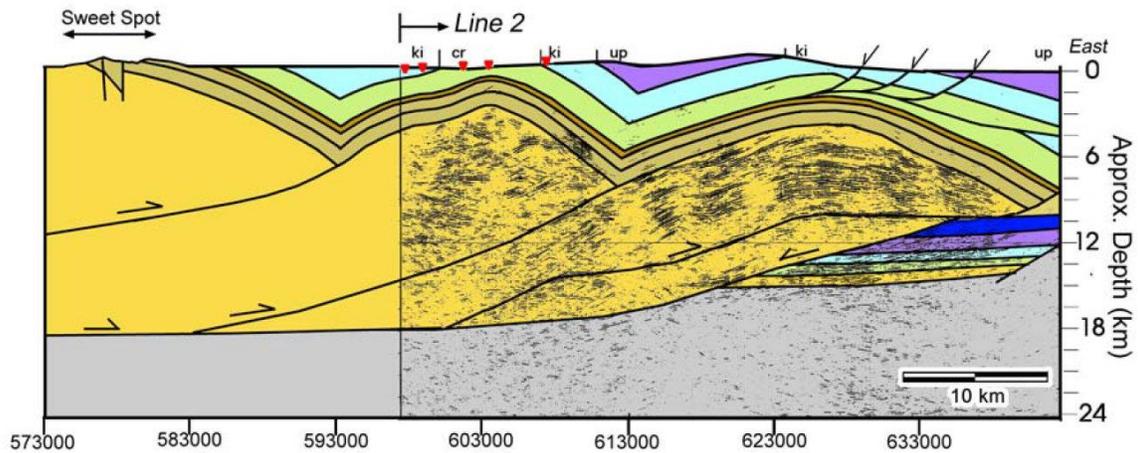


Figure 18. Cross section, looking north, showing location of Sweet Spot Property near the crest of the Moyie Anticline. Each of the major the anticlines owes its geometry to displacement across major thrust faults that cut up section in the Lower Aldridge Formation (copied from Cook, 2020; modified from van der Velden and Cook, 1996).

The *Property* is situated on the eastern flank of the Moyie Anticline, near its axis. The Anticline is interpreted as a folded thrust sheet dominated by Lower and Middle Aldridge Formation turbidite (meta-greywacke) and intercalated (voluminous) gabbro sills. The *Anticline* is one of three major fault-bend folds, all sharing the same fault-bend fold geometry forced by displacement over footwall ramps (ramps occur where the thrust fault cuts up through stratigraphy). The *Moyie Anticline* is the only structure along the line of section where the Lower Aldridge Formation is at or close enough to surface for cost-effective mineral exploration (drilling).

7.3 Property Geology

7.3.1 Summary

The *Sweet Spot Property* occupies a gentle to moderate, east-dipping homocline of Middle Aldridge Formation quartzite, lithic quartzite, meta-greywacke and meta-siltstone intruded by Moyie gabbro sills.

The north northeast striking *South Hawkins Fault (SHF)* bisects the *Property* (Figure 8). It is an inferred west-side-down normal fault having approximately 500 m of dip displacement based on the offset of projected *Ginty and Sundown marker intervals (CFZ; Anderson, 2013)*. The *Canam Structural Zone (CSZ; term used herein)*. It is defined by surface exposures of breccia, tourmaline replacement, intense alteration, elevated Zn and Pb in soil and rocks, and the steepening of bedding inclinations between it and *SHF* (C. Kennedy, 2010 and 2011; S. Kennedy, 2012). Displacement across *CSZ* is not determined but is likely minimal based on *DDH* intersections and *Marker* locations; however, the features that define it are consistent with a zone of disruption along which metal-bearing hydrothermal fluids gained access.

Bedding attitudes on the *Property* have a consistent north strike and east dip with few exceptions. West of *CSZ*, dips are consistently 25° – 35° (Boucher and Herron, 2020); between *CSZ* and *SHF* dips increase to approximately 45°, then flatten to about 10° or less east of *SHF* (Figure 8; Anderson, 2013 and references therein). If the *SHF* is a west-dipping listric normal fault (its dip decreases with depth) a flexure in the hanging wall, perhaps coincident with *CSZ*, would account for the steepening of dips toward *SHF*; if the *SHF* is steep-dipping, then block rotation between *CSZ* and *SHF* is implied.

There is a spatial relationship between mineralization and alteration. One drill hole (C-91-01) has thick intersections of Zn- and Pb-enriched quartzite and meta-greywacke, which is associated with black (biotitic) quartzite-garnet-biotite-sericite-scapolite alteration (§6.2). Prospecting, trenching and drilling demonstrate an empirical relationship between mineralization and alteration interpreted as flow of Zn- and Pb-bearing hydrothermal fluids within selected stratigraphic units.

Marker intervals have been mapped at surface and in drill core and provide time-stratigraphic boundaries that relate to stratigraphic position within the Middle Aldridge Formation (discussed in detail in §6.2). From oldest to youngest, the western margin of the *Property* is proximal to the inferred Lower-Middle Aldridge contact (*LMC*) but outcrop is poor and no markers have been mapped at surface; *DDH SWE-19-01*, drilled to 900 m depth (Boucher and Herron, 2020), is

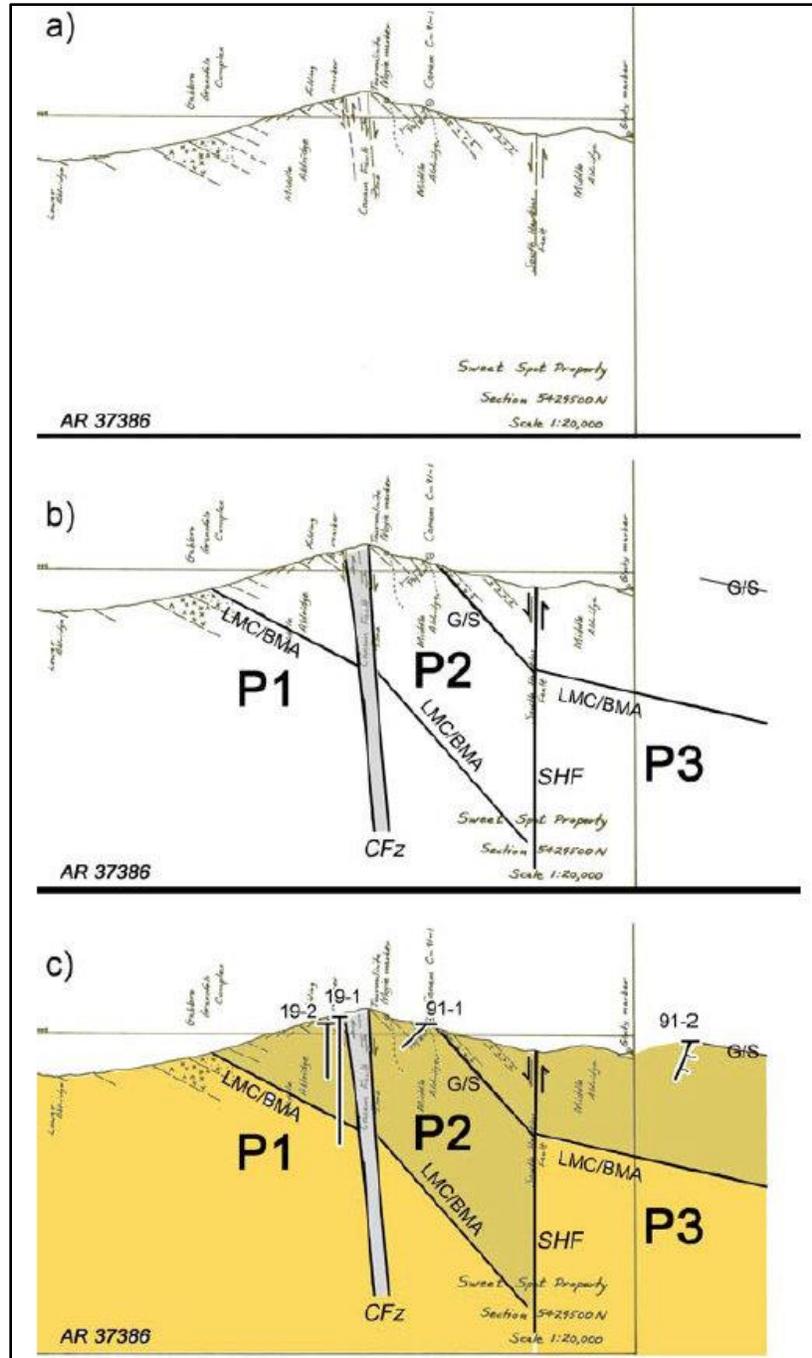


Figure 20: Geologic cross section of the Property: a) Anderson (2013); b) Cook (2020) showing position of Ginty/Sundown markers (G/S) and LMC or base of Middle Aldridge (BMA); and c) equivalent of b) with DDHs and color. P1, P2 and P3 refer to panels bounded by Canam and South Hawkins faults. (Reproduced from: Cook, 2020, p. 4).

Mapping and drilling results leave no room for unidentified (significant) thrust faults that repeat stratigraphy, or for significant gaps in stratigraphy caused by normal faults. There is sufficient surface and subsurface data to constrain cross-section interpretations to within 100 stratigraphic meters (or less) accuracy (Figure 8).

7.3.2 Alteration and Mineralization

There is a characteristic alteration mineral assemblage that accompanies Zn-Pb mineralization: black quartzite-biotite-spessartite (Mn-garnet)-sericite-carbonate-albite (scapolite?) ± chlorite. When this alteration assemblage is strongly developed, it is very likely that disseminated sphalerite and galena will be present. This alteration assemblage may occur as spheroidal or globular (concretion-like) masses that grow across bedding or as bedding parallel features (Figures 21 and 22).



Figure 21. Elongate curvilinear outline of alteration "concretion" consisting of spessartite in biotite-rich quartz surrounded by a pale brown sericite halo. Host rock is black (biotitic) quartzite. (Author photo from Property visit, November 4, 2020).

Early in the exploration history, this alteration was considered the product of regional (upper green schist) metamorphism (Anderson, 1991); however, the spatial association of alteration with mineralization in quartzite, and anomalous metal concentrations in soil samples caused a recalibration of thinking, and a trenching program in 1992 demonstrated a spatial connection between alteration and mineralization in rocks, and anomalous metal concentrations in overlying soils (Anderson, 1993).

Texture and composition of typical mineralized black quartzite is shown in Figures 23 and 24. A typical modal analysis for mineralized black quartzite is (Anderson, 1993): Quartz: 65%; Biotite: 15%; Garnet (spessartite): 5%; Amphibole: 5%; Feldspar: 5%; Calcite: 1%; Opaques: 3-4%; Epidote: Tr.



Figure 22. Bedding-parallel alteration. Scapolite (or albite?): thin light-colored layers; spessartite: scattered throughout as white-appearing crystals, biotite: disseminated in quartzite imparting black color; sericite: light tan layers. (Author photo from Property visit, November 4, 2020).

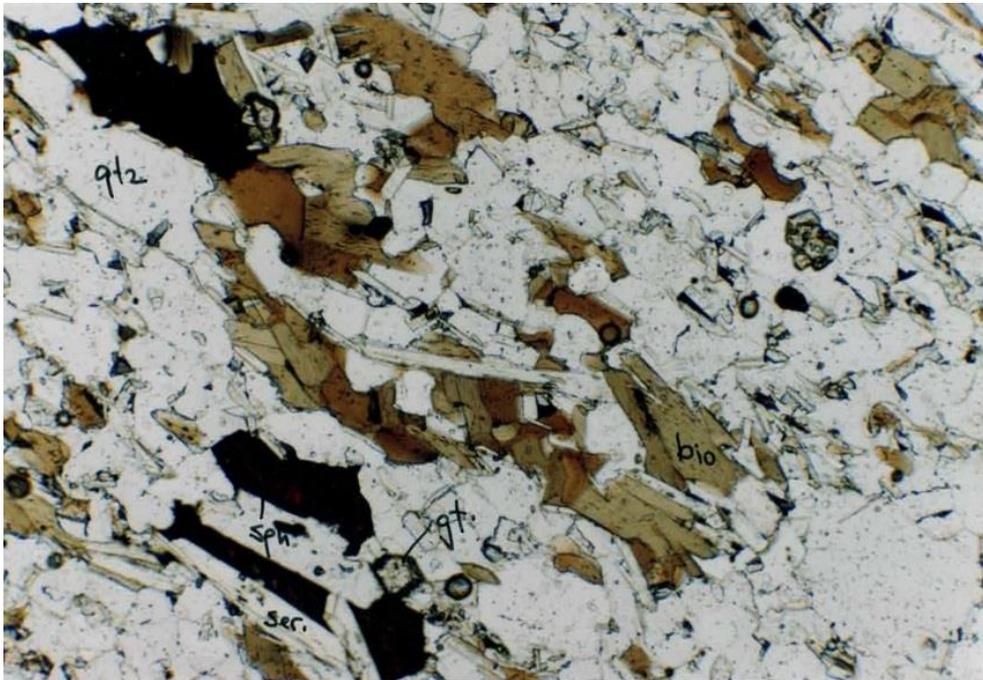


Figure 23. Photomicrograph of sphalerite (black laths at lower left); spessartite (high relief euhedral crystals, disseminated); biotite (tan- to reddish-brown laths); sericite (thin white laths); quartz (subrounded white intergrown crystals). (Reproduced from: Anderson, 1991b.)

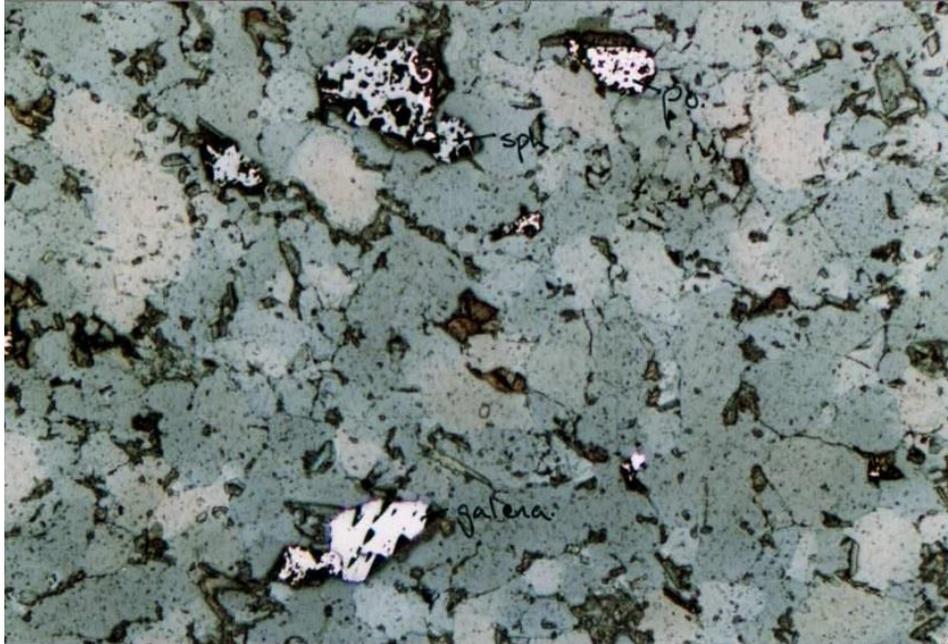


Figure 24. Photo micrograph of galena (reflective white bottom center), sphalerite (light grey, upper left); pyrrhotite (reflective grey, upper right) biotite (amorphous brown along quartz crystal boundaries); quartz (medium to pale grey with sutured boundaries). (Reproduced from: Anderson, 1991b.)



Figure 25. Bedding parallel, sphalerite-galena-pyrrhotite replacement, in black (biotite rich) quartzite. DDH C-91-01, core box 74, Interval 540 m - 558.5 m. (Author photo from core facility visit, November 12, 2020.)

The alteration seen at surface also occurs with mineralization at depth where, for example, DDH C-91-01 intersects mineralized black quartzite (Figures 25 and 26).



Figure 26. Narrow, bifurcating vein filled by sphalerite, galena and pyrrhotite. DDH C-91-01, Box 74, Interval 540 m - 558.5 m. (Author photograph from visit to core storage facility, November 12, 2020).

Textures support the transport of metal-rich fluids through the rock mass, selectively replacing the host quartzite and (or) occupying early diagenetic porosity.

8 Deposit Types

8.1 Introduction

Sweet Spot Property has significant disseminated mineralization, but no massive sulfide has, as yet, been intersected. Recent *MT* results, when interpreted in conjunction with recent gravity measurements, suggest that finding a Sullivan replica, situated at the *LMC* is one of several possibilities that might explain the “halo” of disseminated mineralization. The Belt-Purcell Basin has both a rich mineral endowment and a variety of deposit types of different origins and ages. In other words, there are several degrees of freedom available when exploring *Sweet Spot*.

Sullivan and Bunker Hill were the most prolific mines in the Belt Purcell Basin and testament to the Basin’s considerable base- and precious-metal endowment; other less-well developed or smaller endowments include, Spar Lake District (stratabound copper), Blackbird (stratabound cobalt-copper; and Sheep Creek (copper-cobalt bedded sulfide horizons in calcareous shale). Together, these deposits span a spectrum of host formations, ages of mineralization, and deposit characteristics (Figures 14 and 27). For example, Sullivan and Bunker Hill are “end member” examples of deposit types (Figures 28 and 29): The former is a sedimentary exhalative type deposit (*SEDEX*) which formed at the Lower-Middle Aldridge Formation contact (*LMC*)

when upwelling metal rich-fluids pooled into a small basin (depression) and precipitated pyrrhotite, sphalerite and galena together with an assemblage of alteration products (Figures 13 and 28); the latter is a composite of steep-dipping, narrow, long veins that are structurally complex and multi-phase; they intrude Aldridge-equivalent Prichard Formation, as well as the Prichard- Burke Formation transition and the Revett- St. Regis Formation transition above it (Figure 29). Age of mineralization at Sullivan is tightly constrained at 1475 ± 4 Ma (Slack et al. 2020), whereas that at Bunker Hill may be as old as Mesoproterozoic (1400 Ma to 1500 Ma; Zartman and Stacey, 1971) and (or) as young as Cretaceous (~90 – 110 Ma; Leach, 1998): structural analysis suggests an older phase associated with N-NW trending fold development and a younger phase related to brittle deformation associated with uplift of the east-trending Big Creek Anticline.

The search for “another Sullivan” located at the Lower- Middle Aldridge contact has been the focus of more than 100 years of exploration on the Canadian side of the border. However, since the international boundary has no geological significance, it is perhaps wise to keep an open mind, and entertain the possibility that Bunker Hill-type vein deposits occur in the Canadian portion of the Belt-Purcell Basin (not to mention the stratabound Spar Lake and Blackbird style copper and copper-cobalt deposits). For example, the past-producing St. Eugene mine, located 33 km south southeast of the Sullivan Deposit, is one example of a steep-dipping vein deposit north of the border between *Sweet Spot* and *Sullivan Mine*¹⁰. Other past-producing *Pb-Zn-Ag* vein deposits are located within the Sullivan Mine structural corridor at North Star Mountain.

In its lifetime (1909 – 2001), the *Sullivan* produced over 160 mt of ore at 6.5% Pb, 5.6% Zn, and 67 g/t Ag, containing 8 mt (million tonnes) Pb, 7 mt Zn, and 285 mto (million troy ounces) Ag (8.9×10^9 g). Between 1887 and 1981, *Bunker Hill* produced 35.9 mt of ore at 8.76% Pb, 3.76% Zn and 141.4 g/t Ag. Prior to its closure in 1981, the mine complex was responsible for 20 percent of US refined lead and zinc production and 25 percent of silver. The Sullivan Deposit is iconic and its cross-section interpretation a type example of the SEDEX deposit class (Figure 28; e.g. Lydon, 2000b, 2007; Goodfellow, 2000; Turner et al., 2000).

¹⁰<https://minfile.gov.bc.ca/Summary.aspx?minfilno=082GSW025>

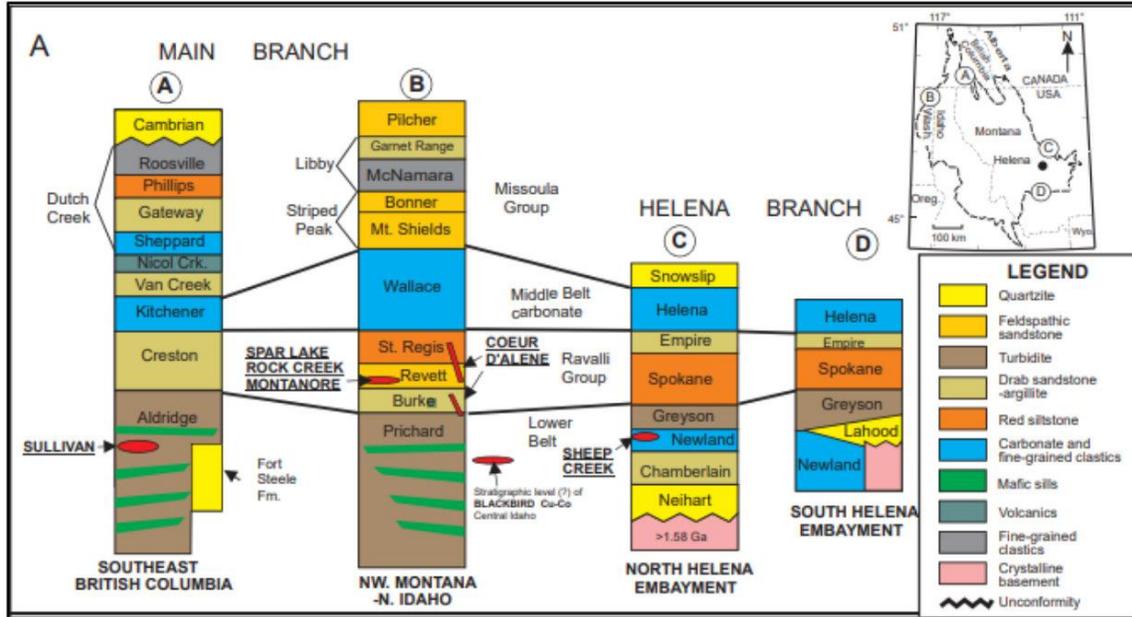


Figure 27. Time-stratigraphic position of major base-metal mineral systems in the Belt Purcell Basin (refer to Figure 10 for map view of stratigraphic column locations). (Reproduced from: Lydon, 2007).

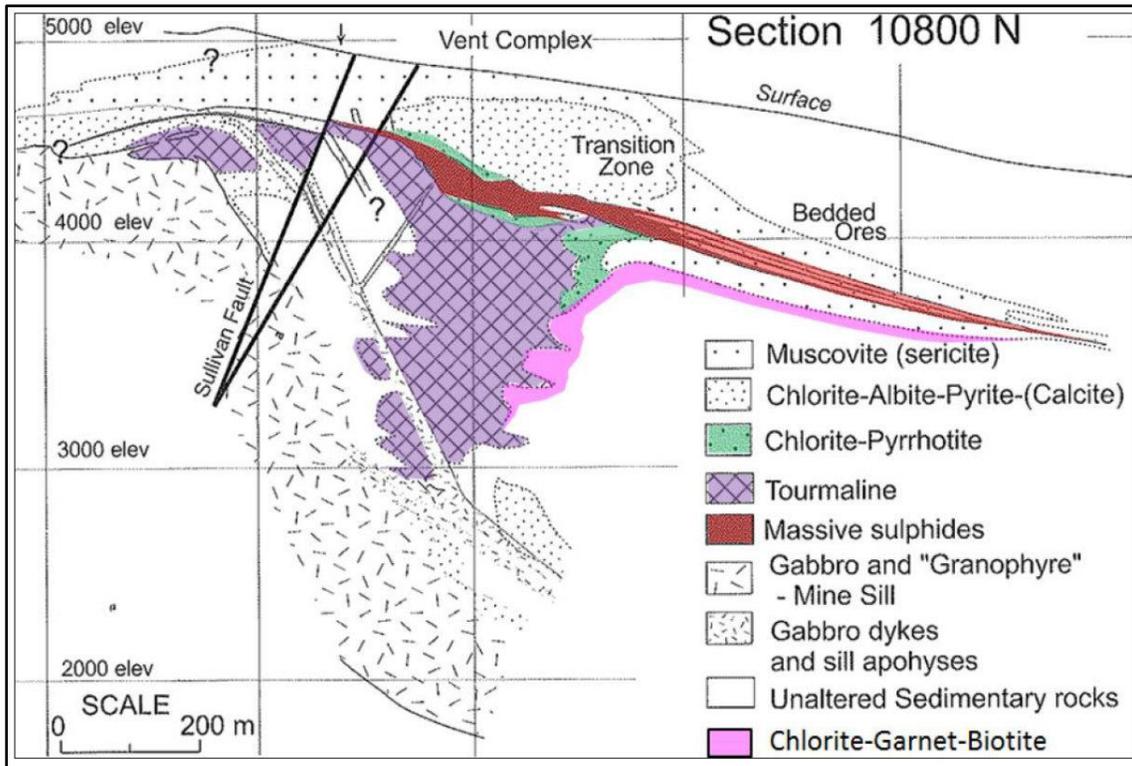


Figure 28. Cross-section of the Sullivan Deposit, viewed northward, showing the major geological elements, alteration mineral assemblages and sulfide ore. (Reproduced from: Lydon, 2007).

The Bunker Hill cross-section (Figure 29) is in stark contrast to *Sullivan*, with more than 1000 m of cross-cutting vertical extent, and multiple types and phases of veins (Wilson, 2020).

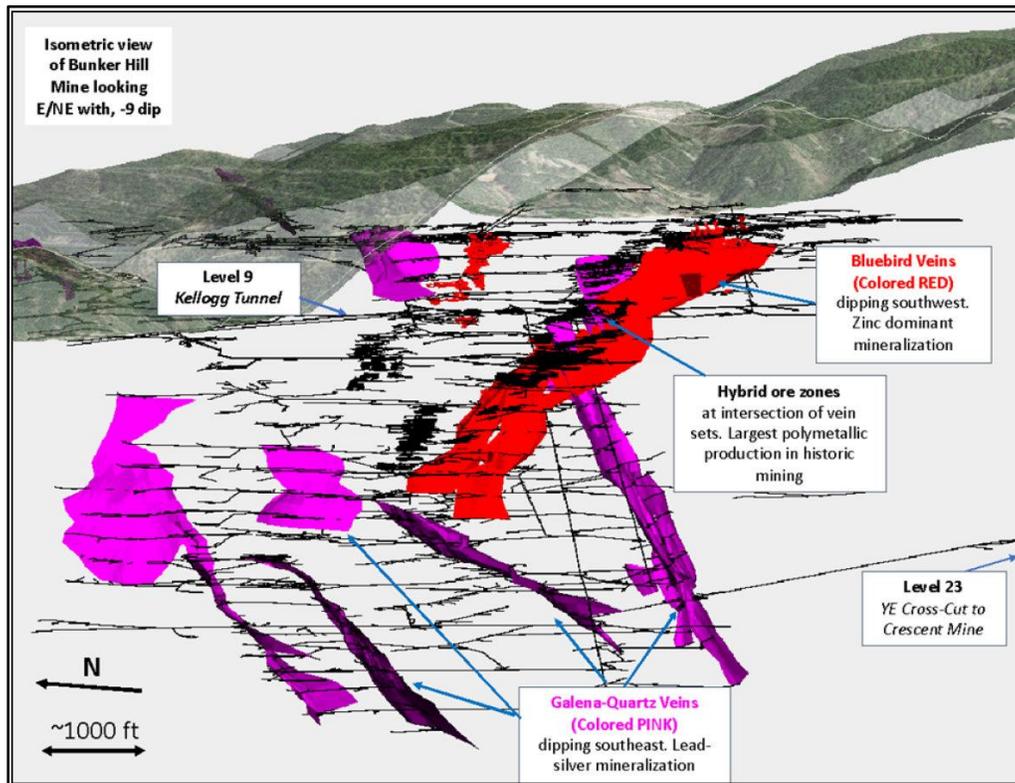


Figure 29. Bunker Hill mine workings with 3D vein models showing vein systems. Isometric view looking east northeast with -9° dip. (Reproduced from: Wilson, 2020, p. 80, figure 7-11).

Exploration of the *Sweet Spot Property* was initially driven by the relatively shallow (within reach of a diamond drill) depth to *LMC*, the presence of anomalous concentrations of *Zn* and *Pb* in soil, and geophysical conductors, one of which was layer parallel. Applying the *Sullivan model*, disseminated *Zn* and *Pb* in DDH C-91-01 was thought to be symptomatic of a *Sullivan*-type deposit at depth, at or near the *LMC*; however, constraining a drill target proved problematic. Most recently, Teck Resources Ltd., targeted a *MT* anomaly thought to be at, or just above, the *LMC* (DDH SWE-91-01). It was not successful. However, it can be argued that a different model is in order (Cook, 2020) based on the most recent geophysical results provided by Teck Resources Ltd. (Boucher and Thompson, 2018). That discussion follows, and draws on the knowledge, discussed above, that the Belt-Purcell Basin contains the potential for several types of metal deposits.

8.2 Implications Regarding Exploration at Sweet Spot

The 2017 *MT* survey acquired by Teck Resources Ltd. (Figure 30) consisted of a single east-west line (§6.3) designed to map subsurface electrical conductivity structure (Boucher and Thompson, 2018). The contractor, Quantec, undertook 2-D inversions of the data using background

resistivity values of 100 Ω-m (10 mS/m) and 1000 Ω-m (1 mS/m)¹¹. The model results are shown in Figure 31 as overlays onto geological contacts from Figure 20 (Cook, 2020).

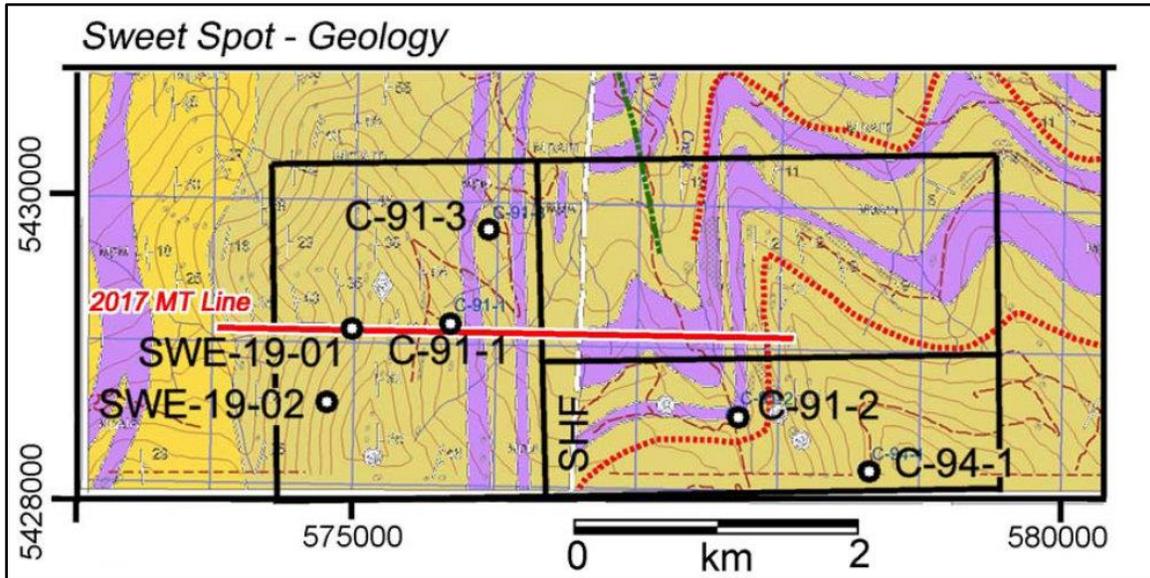


Figure 30. MT profile line (2017) shown in red relative to 1991 and 2091 DDHs on a 1:50,000 geology underlay of the Sweet Spot Property. (Reproduced from: Cook, 2020, p. 2, Figure 1b).

The results illustrate an important difference between the models: The geometry and magnitude of modelled conductivity are dependent on the background resistivity value used. This applies primarily to deep features (500m – 2000 m depth) since near-surface (~200 m) conductivity is similar between the two models. For example, MT13 (Figure 31a) located on the east side of the x-section, has higher conductivity (purple color) in the 100 Ω-m version than in the 1000 Ω-m version (Figure 31b); as well, the shapes of the conductors are somewhat different. However, the conductor is robust in both models (Figure 31). Henceforth, this conductor is named and referred to as the South Hawkins Conductor.

If a conductor at depth is present in one model but disappears or is displaced on the other, the exploration geologist is faced with a dilemma – which version is most consistent with reality? Anomaly labeled MT7 is a case in point. It is present as a relatively small feature near the projected level of the LMC in the 100 Ω-m model *a*, but disappears from that location in model *b*. About 1000 m below it is a broader anomaly. Teck DDH SWE 19-01 targeted the anomaly on version *a* -- it failed to intersect sulfides (Figure 31; Boucher and Herron, 2020). The implication is: Regional background resistivity is closer to 1000 Ω-m than 100 Ω-m; and there is evidence this is the case elsewhere in the Belt-Purcell Basin (Cook, personal communication, 2020).

Anomaly MT12 is small, near surface, and present on both MT models, though weaker and somewhat displaced in version *b* (Figure 31); as well, it coincides with a large UTEM anomaly observed by Cominco in 1991 (§6.2). The UTEM anomaly was tested (DDH C-91-02) and intersected 24 pyrrhotite laminations (from 175 m to 224 m) – the presumed conductors

¹¹ Typically, the starting model is a half space with a single electrical resistivity (= 1/conductivity) value.

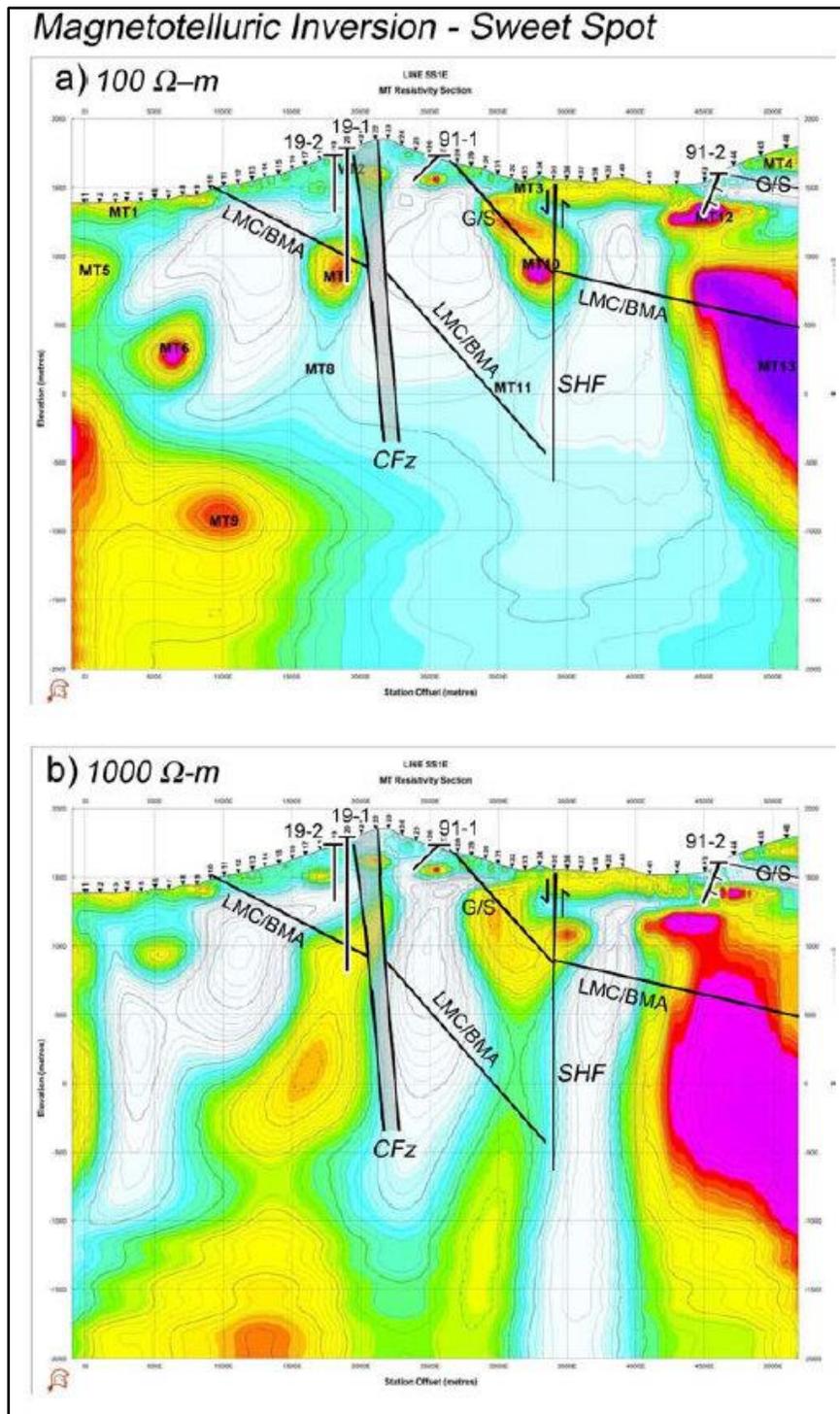


Figure 31. 1) MT inversion for the 2017 Teck MT survey using a starting (background) resistivity of 100 Ω -m; b) inversion of the same section using a background of 1000 Ω -m. (Reproduced from: Cook, 2020, p. 6, Figure 3).

(Anderson, 1991). In this case the near-surface MT conductor is present in both model versions and accords spatially with the historic UTEM conductor.

The significance of the *South Hawkins Conductor* (MT13 in Figure 31) requires attention. Its shape differs slightly between model versions *a*, and *b*. Calculated conductivity on the 100 Ω-m version is somewhat higher, nonetheless, it is large (crustal scale) and strong on both.

In the author’s opinion, the *South Hawkins Conductor* is worthy of testing: its size and shape is consistent with a sub-vertical, mineralized plumbing system.

Having identified a conductor of size, depth, and (calculated) strength, it is helpful if an independent data set lends credence to the anomaly. Fortunately, *Teck* performed a gridded Gravity survey in 2018 (Boucher and Herron, 2019; §6.3) and although the raw data are not available, a residual map (Figure 32) was provided (i.e. corrected for latitudinal variations, elevation variations and Bouger corrections including topographic correction).

There are two north-trending gravity anomalies: one parallel to the Canam Fault Zone (CFZ) on the west, and another above conductor *MT13* on the east (Figure 32). In Figure 33 the gravity profile is plotted above the conductivity profile. The spatial relationship between conductor *MT13* and gravity is compelling and supports strong arguments favoring:

1. a causative association between high gravity and elevated conductivity; and,
2. an anomaly source that is both conductive and dense.

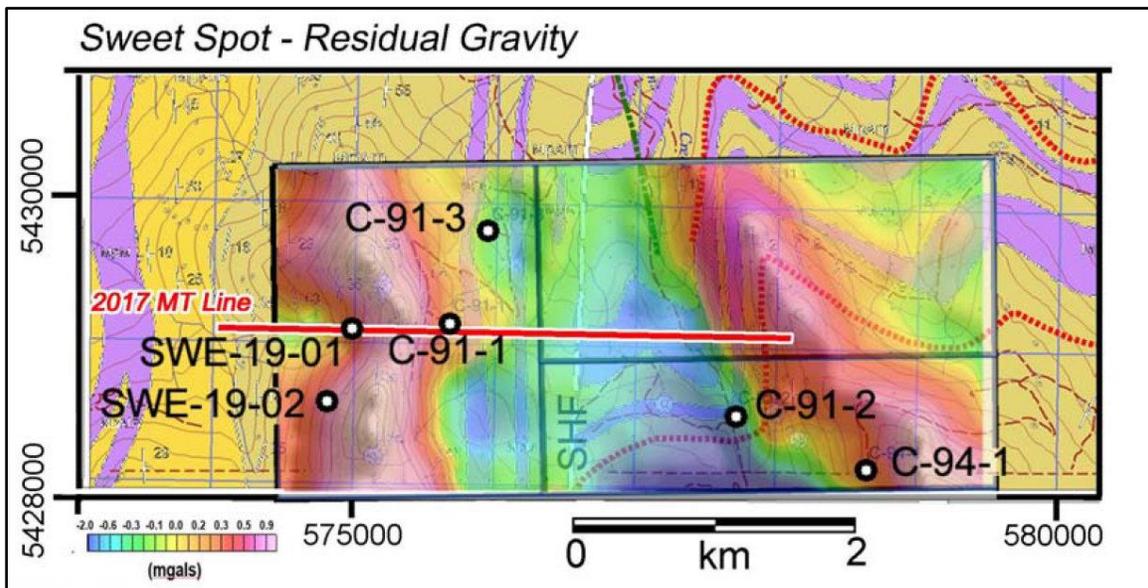


Figure 32. Ground-based gravity results (2018) on Sweet Spot geology (1:20,000 scale). MT survey line is shown in red. Two gravity anomalies are evident, one on the east that correlates spatially with MT conductor *MT13* (Figure 31) and one on the west which correlates with the Canam Structural Zone (Figures 8 and 33).

The gravity anomaly above the Canam Structural Zone has at least three explanations (Cook, 2020, personal communication):

1. There are two small conductors beneath the east facing topographic slope, one small elliptical one directly beneath DDH C-91-1, and a second down dip from it which follows the trace of the Ginty-Sundown (G/S) markers to SHF; the conductors are spatially consistent with two gabbro sills, exposed at surface, that dip east at about 45° (Figure 8); hence, the dense, conductive gabbro sills may be responsible for both electrical and gravitational responses.
2. A second interpretation is that the disseminated mineralization intersected in DDH C-91-01 is a (sulfide) halo proximal to massive sulfide located down-dip from it.
3. And, a third interpretation is that the deeper anomaly labeled '?' (Figure 33) is a conductive sulfide source within CSZ which implies CSZ dips steeply west rather than east.

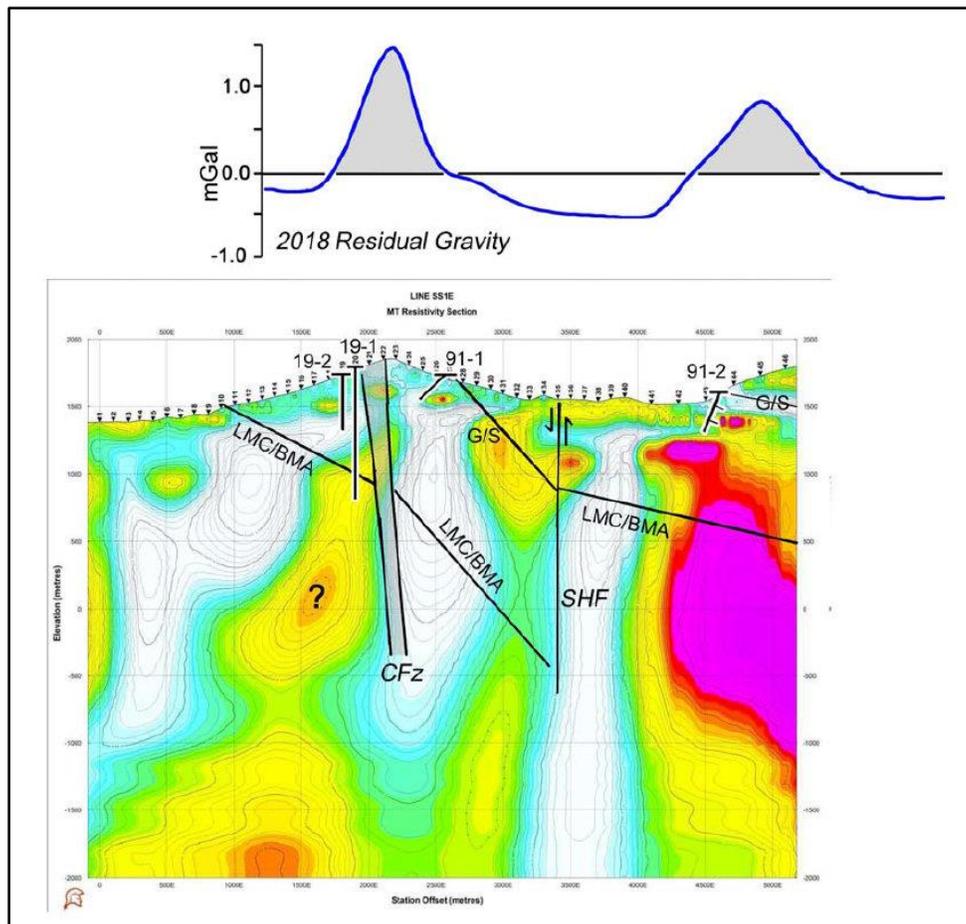


Figure 33. Gravity profile plotted above MT-geology profile. The eastern gravity high plots directly above the MT anomaly suggesting they are related and that the conductor is dense relative to surrounding rocks. The western gravity high may correlated with conductor '?' but this is less obvious. (Reproduced from: Cook, 2020).

8.3 Examples of Other Large, Steep-Dipping, Conduit-Shaped Conductors in the Canadian Portion of the Belt-Purcell Basin

The *South Hawkins Conductor* (MT13 on Figure 31) is notable because of its size, geometry and strength, and its strong spatial relationship to a gravity anomaly. Since it cuts the *LMC* (Figure 33) then perhaps it is a conductive feeder system to a Sullivan-style massive sulfide deposit at Sullivan time. Alternatively, given its geometry and significant depth, it might be a network of Bunker Hill-like sulfide veins, or, a feeder system to structurally controlled orebodies like those of Mount Isa. Without drill testing, the exploration geologist is left to speculate.

Geometry and size of the *South Hawkins Conductor* – plume-like with an axis extending deep into the Lower Aldridge Formation, if not deeper – is not unique, to the Belt-Purcell Basin, or to metal-rich basins elsewhere on the globe.

Several examples have been recently described from the Canadian portion of the Belt-Purcell Basin (Cook, 2018): For example, north-northeast from the *Property* along the axis of the Moyie Anticline is a large plume-like conductor ascending from deep in the Lower Aldridge Formation, across the Middle Aldridge and to surface where disseminated copper has been located in Creston Formation rocks (Figure 34); closer to the *Property*, superposition of an *MT* conductor onto seismic line 2 (Figures 35 and 36) outlines a conductive zone that cuts from deep in the Lower Aldridge into the Middle and Upper Aldridge Formations. The latter case also demonstrates the strategic location of the *Property* well within the reach of a diamond drill: 400 m to center of shallowest part of conductor, ~1200 m to *LMC*, ~1700 to core of *South Hawkins Conductor* (Figure 33).

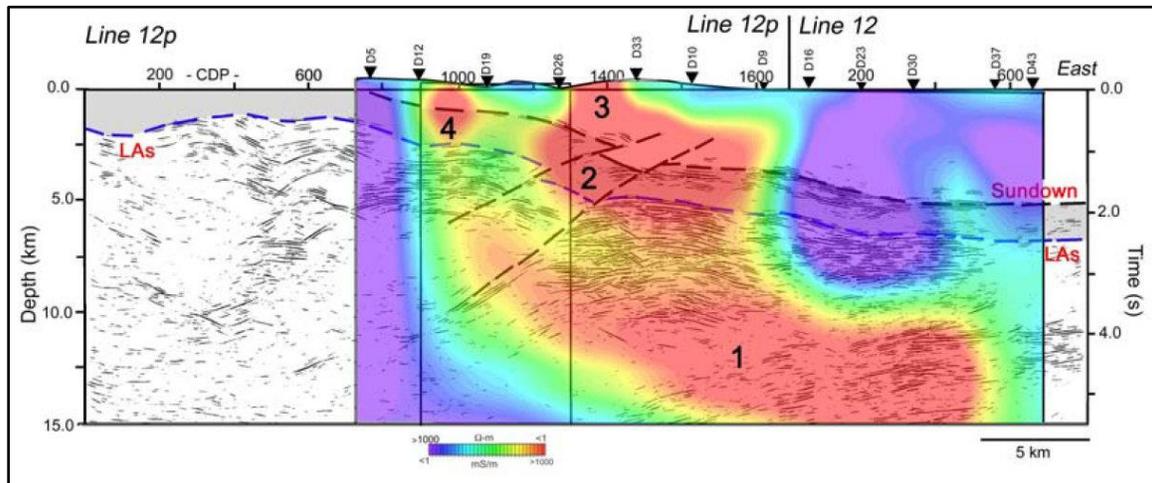


Figure 34. MT line (P4) projected approximately 1.25 km from the south onto seismic line 12 (Figure 35). The conductive plume cuts the Lower Middle Aldridge contact, located between *LAs* (Lower Aldridge sill package) and the *Sundown Marker*, then proceeds to surface where the Gilnockie copper showing is located (Cook, 2018).

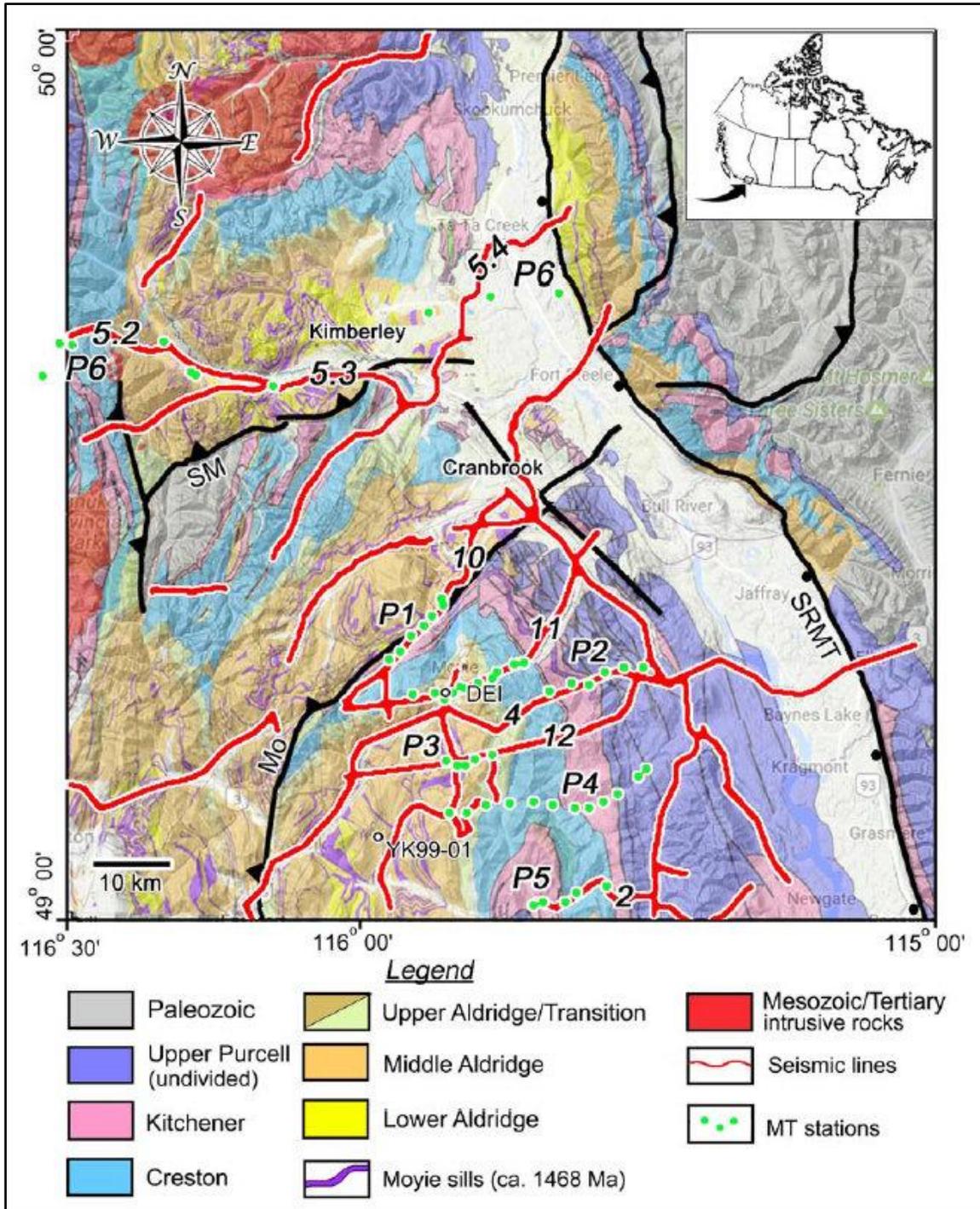


Figure 35. Map showing distribution of regional MT lines and seismic reflection lines in the southern portion of the Purcell Basin. Approximate location of the Sweet Spot Property is: 116°00', 49°00' (end of red line). MT stations are green and line numbers have the prefix 'P', seismic reflection lines do not. Seismic line 2 is closest to the U.S. border. (Reproduced from: Cook, 2018, Figure 1.)

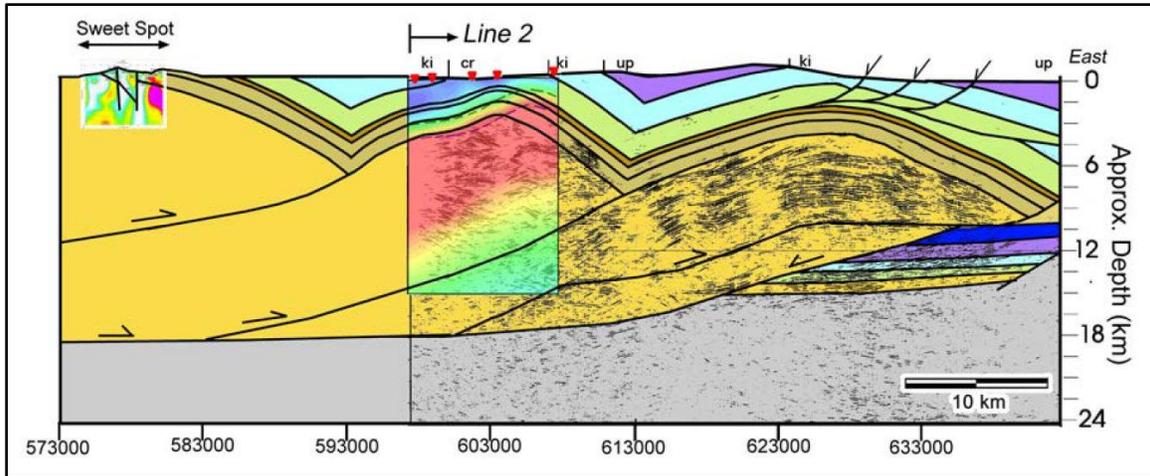


Figure 36. Seismic line 2 (Figure 35; van der Velden and Cook, 2006) with inversion of *MT* survey results superimposed. The conductor, colored red, cuts up section through a thick interval of Lower Aldridge Formation and into the Middle and Upper Aldridge Formations. On the left are well-defined conductors superimposed on a cross section of the *Sweet Spot* Property illustrating the same upward, cross-cutting geometry.

Similar plume-shaped *MT* conductors are present beneath the Meachen Bend Property, located near St. Mary Lake, west of Kimberley (Cook, 1918 b; Figure 35). A short, 10-station magnetotelluric survey was completed in 2017, the results processed to provide an approximate image of the electrical conductivity structure in the subsurface; variations in conductivity were then correlated with seismic reflection images (Figure 37).

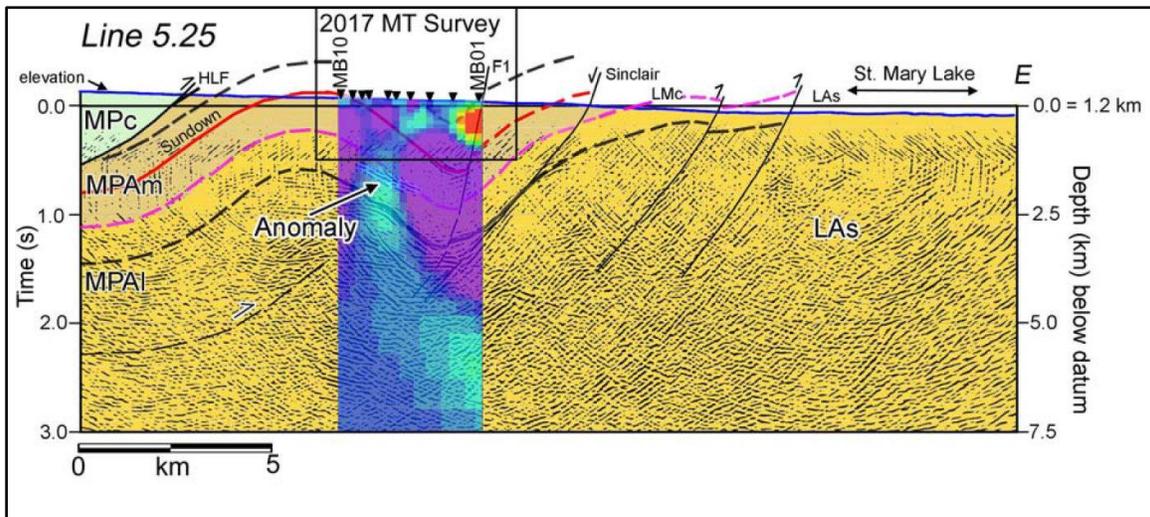


Figure 37. Seismic cross section 5.25 (St. Mary's Valley; Figure 35) with inversion of 2017 *MT* profile (P6) superimposed in color, to more than 7 km depth. The weak conductor that appears to rise to surface can be interpreted as a 'conduit' for fluid movement and distribution of metals. The 'conduit' appears to separate into several branches near the surface where the interpretation of a conduit is enhanced by correlating the 'branches' to conductors delineated by VLF survey. (Reproduced from: Cook, 2018.)

Results demonstrate a near vertical conductor measured in kilometers, which rises to near surface where it branches: one of the branches becomes a strongly conductive near-surface zone which has not been drilled. All three branches project into conductors detected on a *VLF* survey (Cook, 2017).

8.4 The Relationship between Crustal-scale Conduits and Major Ore Deposits

Olympic Dam is one of the largest, richest copper-gold iron oxide (IOCG) deposits worldwide. Crustal-scale *MT* and reflection seismic investigations of the crust beneath it revealed a remarkable spatial association between low resistivity “conduits” and three ore deposits, Olympic Dam among them (e.g. Heinson et al., 2018; Heinson, et al., 2006; Figure 38). The importance of these findings to the Belt-Purcell Basin and *Sweet Spot Property* in particular is the similarity in conductor shape and size: Deep, steep dipping, pipe-like geometry, and spatial association with mineralization and (or) *VLF* conductors in the near surface. In the case of Olympic Dam, which is located at the edge of the Gawler Craton, Australia, current surface location has not changed relative to underlying deep crustal features; whereas, the *Sweet Spot Property* is part of a fold and thrust belt which was displaced eastward relative to the underlying cratonic crust (§7.1). Hence, conductors will have been truncated by a through-going basal décollement and one can only speculate how deep into the underlying (autochthonous) cratonic crust the conductors extended prior to Late Cretaceous-Paleogene thrust displacement.

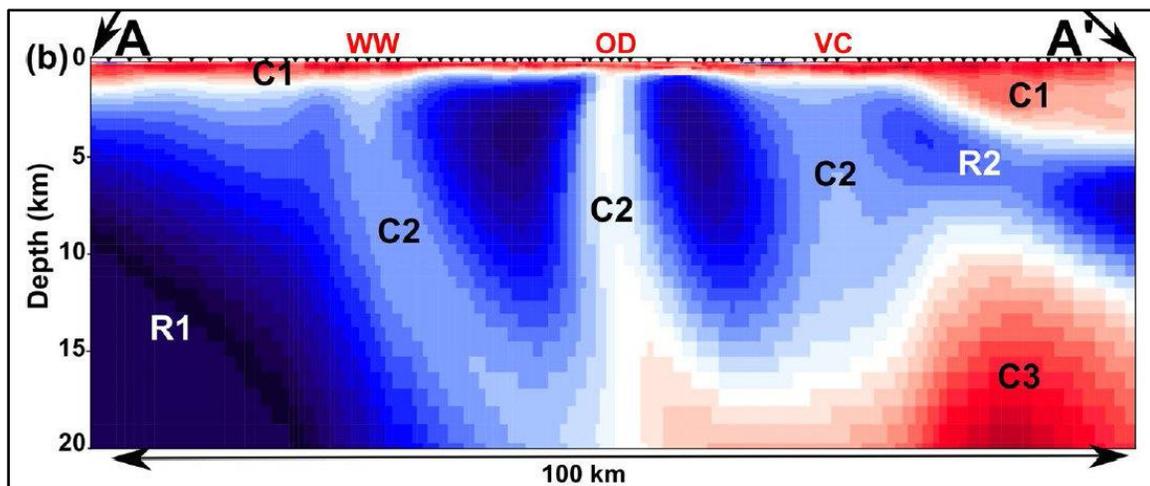


Figure 38. Crustal profile with *MT* inversions superimposed. Three narrow conductive pathways link lower crust with major IOGC-U mineral deposits: Wirrda Well (WW), Olympic Dam (OD) and Vulcan (VC). (Reproduced from: Heinson et al., 2018).

The Sullivan ore body is not classified as an *IOCG* deposit; however, it is associated with a steep-dipping paleo conduit (Figures 13 and 28) containing extensive zones of alteration and mineralization indicative of fluid flow that ‘day lighted’ at the seafloor. Recognition of steep-dipping conductors, like at *Sweet Spot Property*, together with an overlapping gravity anomaly, and nearby historical drill intersections of thick, anomalous *Zn* and *Pb* concentrations, are three independent and convergent observations that constrain, in the author’s opinion, an important exploration target. This implies two important degrees of freedom when considering exploration

models: 1) that orebody formation could have occurred both before and after “Sullivan time”, and 2) orebody shape and character could define a steep-dipping and complex structural zone (paleo-conduit) that did not surface. Ernest Henry deposit, Australia, provides a visual demonstration of what such an orebody might look like (Figures 39 and 40) when exposed – not unlike Bunker Hill (Figure 29).



Figure 39. Open pit cross-section profile of the Ernst Henry orebody, looking south, showing steep, southeast dipping shear zones parallel to mineralization. (*Reproduced from: Northwest Mineral Province Deposit Atlas Prototype, Ernest Henry, Chapter 3, p. 64.*)

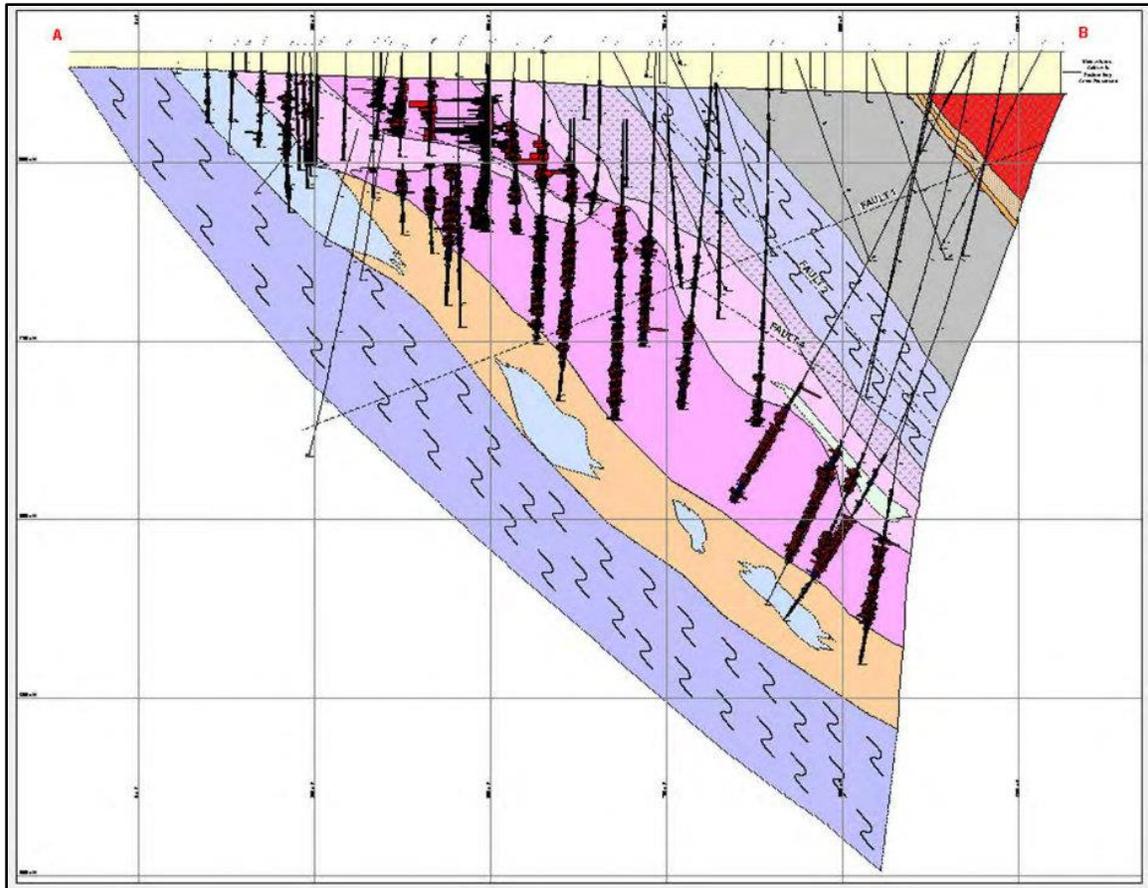


Figure 40. Profile of Ernest Henry orebody, looking north, illustrating steep southeast dipping shear zones (purple) bounding the orebody (dark pink), breccia (light pink), marble matrix breccia (light blue) and footwall meta-volcanic breccia (salmon). (Reproduced from: Northwest Mineral Province Deposit Atlas Prototype, Ernest Henry, Chapter 3, p. 46, see footnote 13).

9 Exploration

The *Sweet Spot Property* is a “listing property,” hence the Issuer has not undertaken any recent exploration activities with the exception of some mapping and prospecting during the summer of 2020. Historical exploration activities and results described in *Section 6.3* were conducted by, or on behalf of, the issuer.

10 Drilling

Core from the 6 DDHs completed on the *Property* is racked, dry and securely stored at the East Kootenay Chamber of Mines Core Library. This facility is intended for geologists and mining company personnel to examine archived core from the Sullivan Mine and some parts of the Aldridge Formation (Figures 41 and 42).

Reports and drill logs are available in the following ARs: Anderson, 1991; Anderson, 1994; Rogers, 2000; Boucher and Herron, 2020.



Figure 41. East Kootenay Chamber of Mines Core Library, Fort Steele, British Columbia. Gates are kept locked except for visits from authorized geologists and mining company personnel. (Image taken by Author, 12 November 2020).



Figure 42. Racks containing Sweet Spot Property core. (Image taken by Author, 12 November 2020).

11 Sample Preparation, Analyses and Security

11.1 Sampling Method and Approach

11.1.1 Methods, Location, Number, Type, Nature, Spacing, Density, Area Covered

Soil sample grids (Figure 7) were established by Cominco (Anderson 1991) and Teck (Boucher and Herron, 2019). Line spacing varied from 200 m (most common) to 500+ m; sample spacing was 50 m. Coverage focused west of South Hawkins Creek. Cominco collected 396 B-horizon soil samples, the Kennedy Group collected 7 Bark Samples, and Teck collected 469 B-horizon soil samples (Table 2).

Rock samples were collected by Cominco (Anderson, 1990, 1993), the Kennedy Group (17 samples, C. Kennedy, 2010; 7 samples, S. Kennedy, 2012) and Teck (20 samples; Boucher and Herron, 2019). Sample density varied according to field-based geological parameters such as intensity of alteration, presence of soil anomalies requiring follow-up, and geological reconnaissance. Sampling density was greatest west of South Hawkins Creek where the combination of anomalous metal concentrations in soil samples and intensity of alteration were most significant (Table 2).

11.1.2 Drilling, Sampling or Recovery Factors that could Materially Impact the Accuracy and Reliability of Results

The author reviewed drill logs, recovery percentages (when available) and examined core from DDH C-91-01 (Figure 43). Records for DDHs SWE 19-01, -02 included a comprehensive geotechnical assessment: Core recovery was typically >95% (Boucher and Herron, 2019).



Figure 43. Example of recovery for slabbled and analysed core from DDH C-91-01, core box 74, interval from ~542 m to ~558 m. (Image taken by Author, 12 November, 2020).

11.1.3 Sample Quality and Possible Biases

Sample quality was excellent (Figure 42) and it is unlikely any biases were introduced

Surface samples were cleanly broken from bedrock exposures and secondary reference samples collected at many locations.

11.1.4 Rock Types, Geological Controls, Widths of Mineralized Zones and Other Parameters used to Establish Sampling Intervals and Identification of Significantly Higher Grade Intervals within Lower Grade Intersections

The author's review of drill logs combined with a field site inspection confirms that the *Property* is underlain by very competent, quartzite, quartz-rich meta wacke and metasiltstone. Photo micrographs illustrate sutured contacts between quartz crystals aggregates, and samples taken with a 4 kb sledge are testament to the very tough, competent nature of outcrops.

Drill core sample intervals were ~1 m and were decreased to 0.5 m or less across zones having semi-massive phyrrotite laminae and (or) beds. The author performed a normalized grade calculation for mineralized zones within DDH C-91-01 and found the majority of samples from intervals approximating 1 m (Table 3). In the author's opinion, sampling was done responsibly across intervals designed not to bias results. Except for rare instances, mineralized intervals and composites of mineralized intervals had grades less than 0.6 % Zn + Pb.

11.2 Methods and Quality Control in the Field and to the Lab

Preparation and quality control methods for drill core samples taken prior to 2013 are not described in published reports.

It is the *Author's* understanding, based on personal communication with the Kennedy Group, that rock samples taken in the field adhered to the following protocol: 1) Two fist-sized samples were collected at each site, one for analysis and the other for reference, each was placed in a separate polyurethane bag; 2) sample numbers, coordinates (GPS) and a brief lithological description were entered into a notebook; 3) an assay ticket was completed in duplicate, one copy inserted into the sample bag (sample intended for analysis) and the other maintained in the lab sample booklet, the sample field number was written onto the outside of each polyurethane sample bag and the bags secured with orange flagging tape; 4) flagging tape annotated with the appropriate sample number was secured at each field location; 5) at days end, sample data was uploaded into a spreadsheet;; 6) upon completion of the sampling program, samples were sent by courier to Bureau Veritas Canada Ltd. (formerly Acme Labs Ltd.) in Vancouver, B.C. together with sample shipment forms listing the sample numbers.

The *Author* is not aware of soil sample protocols employed by Cominco; however, when analytical results were compared with those for proximal samples collected by Teck, they were comparable.

11.2 Analytical Procedures

Bureau Veritas uses proper and secure handling procedures prior to, and during, preparation and analysis of samples. Sample analysis was the sole responsibility of the accredited laboratory.

A total of 24 rock samples were submitted by the Kennedy Group. Each sample was dried, crushed to a nominal <10 mesh (1.7mm), mechanically split (riffle) to obtain a representative sample (250g) and then pulverized in a hardened steel mill to at least 95% passing a 150-mesh (106 microns). Clean sand was milled between each sample. The samples were then analysed. The Kennedy Group relied on internal standards used by Bureau Veritas for QC/QA purposes. Since these were outcrop samples taken to identify the distribution and overall grade of surface mineralization, the Author is satisfied with the quality of results.

Cominco soil samples were processed and analysed in Cominco's Exploration Research Laboratory in Vancouver. A 0.5 g sample of -80 mesh material was digested in 3 ml of nitric acid and 1 ml hydrochloric acid. The mixture was heated, agitated and then diluted to 20 ml by 'vortexing'. About 50 samples (of 396) were analysed by 19 element ICP, the remaining samples by 9-element ICP.

Teck soil samples were processed and analysed by Bureau Veritas Labs. Laboratory certificates are provided (469 samples) as well as a comprehensive QC report completed by Teck. Each sample batch was accompanied by a set of standards provided by Teck. The failure rate on the part of Bureau Veritas was 0% for most sample batches, there were three exceptions: 1 analysis of 21 sample standards analysed, failed; 4 of 49 failed; and, 11 of 35 failed. The latter exception is considered unacceptable by the Author, otherwise, accuracy of analytical results is considered good to excellent.

11.4 Accreditation

Bureau Veritas Canada Ltd. is accredited under ISO 9002; it is a participant in the CAEAL Proficiency Testing Program; and is registered by the BC Ministry of Water, Land and Air Protection under the Environmental Data Quality Assurance (EDQA) Regulation. Bureau Veritas also participates regularly in the CANMET and Geostats round robin proficiency tests.

11.5 "Arms-Length" Association

No employee, officer, director or associate of the *Company* (the issuer) was involved with the collection of soil samples by Cominco or Teck, this applies to collection of rock samples by Teck. The Kennedy Group (*Property owner*) was involved with the collection of rock samples (ref. *section 6.2*) on behalf of the *Company* in 2011.

11.6 Author's Statement

It is the author's opinion that sample preparation, security and analytical procedures met industry standards.

12 Data Verification

12.1 2013 Data

Laboratory analytical certificates from Bureau Veritas were vetted by the author for unreasonable values caused by typographical errors, mistaken units, or corrupted data entries. Results were also checked against internal Bureau Veritas standards for both accuracy and precision. The author did not identify any quality control (QC) or quality assurance (QA) issues. Each batch of samples submitted by Teck was accompanied by a set of company standards for

QC/QA purposes; as well, Teck submitted duplicate field samples. Analyses were then scrutinized statistically to ensure accuracy, precision. Duplicate samples were not sent to other laboratories.

In the author's opinion, data quality meets or surpasses industry standards and is satisfactory for the purposes of this *Technical Report*.

13 Mineral Processing and Metallurgical Testing

n/a

14 Mineral Resource Estimates

n/a

15 Mineral Reserve Estimates

n/a

16 Mining Methods

n/a

17 Recovery Methods

n/a

18 Project Infrastructure

n/a

19 Market Studies and Contracts

n/a

20 Environmental Studies, Permitting and Social or Community Impact

n/a

21 Capital and Operating Costs

n/a

22 Economic Analysis

n/a

23 Adjacent Properties

There are two properties conterminous with the *Sweet Spot Property* (Figure 2): On the north and west is the *SSW 1038933 Property* belonging to Teck Resources Ltd.; on the east is the *MA*

06-20 Claim owned by Kootenay Resources Inc. The latter is one of a plethora of claims that encompass the Moyie Anticline (Figure 17), all of which are owned by Kootenay Resources Inc.

24 Other Relevant Data and Information

The author is not aware of other data and (or) information that may be relevant to assessment of the mineral potential at *Sweet Spot Property*.

25 Interpretation and Conclusions

25.1 Conclusions of the Qualified Person

It is the author's assessment that *Sweet Spot* is a property of merit having significant potential for the discovery of base metal mineralization. This conclusion is based upon the following independent yet conjunctive lines of information and inquiry:

1. A hundred-meter thickness of anomalous Zn and Pb mineralization, drilled in the Middle Aldridge Formation immediately below the *Moyie marker* (Cominco, 1991), remains to be tested down-dip and along strike;
2. the South Hawkins Conductor, a crustal scale, robust, steep-dipping conductor that extends from deep in the Lower Aldridge Formation upward into the Middle Aldridge Formation;
3. a strong gravity anomaly spatially linked to the *South Hawkins Conductor*;
4. evidence for steep-dipping conductors elsewhere in the Canadian portion of the Belt-Purcell Basin, some of which link to near-surface VLF conductors and others to mineralization at surface; and,
5. spatial linkage between crustal scale conductors and major poly-metallic base metal deposits (viz. Olympic Dam) in other cratons composed of Archean and Paleoproterozoic crystalline rocks overlain by Mesoproterozoic (metamorphosed) sedimentary strata – like the Belt-Purcell Basin.

The exploration opportunity at *Sweet Spot* will require a willingness to step beyond conventional wisdom – that significant base-metal potential is inextricably linked to “Sullivan Time” -- to recognize that deposits of different ages and character are also “in play”. Metallogeny of the Belt-Purcell Basin demonstrates this (§8).

The geological, geochemical, geophysical, and DDH databases from *Sweet Spot* are robust and of high quality. Most of the exploration programs and expenditures were undertaken by Cominco Ltd.¹² and most recently Teck Resources Ltd., owners of the now closed, world-class Sullivan Mine. These companies have excellent exploration track-records and a significant stake in exploring the base-metal potential of the Belt-Purcell basin. Their emphasis, to now, has been the potential of “Sullivan time” as evidenced by their 2016-2020 exploration efforts and expenditures at *Sweet Spot*. Interestingly, they chose not to pursue the mineralized stratigraphic interval intersected in DDH C-91-01 and they did not pursue the *South Hawkins Conductor* but

¹² Teck Resources was formed from the amalgamation of Teck and Cominco in 2001.

instead, drilled two vertical holes on the western side of the *Property*, one 900 m long targeting a small conductor located at about “Sullivan Time”¹³, and a second hole 471 m long testing a surface soil-geochemistry anomaly.

Teck has chosen to retain claims conterminous with *Sweet Spot Property*. The author views this as a positive undertaking relative to the future of the *Property*.

26 Recommendations

A 2-phase exploration program is proposed. The phases are sequential and the second phase is conditional on positive results from the first.

Phase 1 is designed to accomplish the following objectives:

1. Capitalize on existing databases through systematic compilation of all field-based and analytical data (mapping, sampling) with the objective of producing a comprehensive and integrated set of geological maps and cross-sections;
2. re-log the *Teck* (2019) *SWE DDHs* with emphasis on recognizing and matching *marker intervals* thereby making the *DDHs* better proxies for estimating depth to the Lower-Middle Aldridge contact;
3. complete at least 2 additional *MT* survey lines (Figure 44) to better assess the along-strike character of the *South Hawkins Conductor*; and,
4. undertake a systematic mapping and prospecting program to better define the limits of alteration and hydrothermal fluid conduits, and to add surface control regarding the distribution of *markers*; and,
5. apply *Phase 1* compilations and interpretations to fine-tune the locations of *DDHs* proposed (below) in *Phase 2*.

Phase 2 is a drill program designed to test the following targets:

1. Proposed *DDH K-01* is located down dip from the thick intersections of mineralization in *DDH C-91-01*. This new location (proposed in the absence of information from *Phase 1*) will test for an extension of *DDH C-91-01* mineralization where it projects into a near-surface *MT* anomaly (Figures 44 and 45).
2. Proposed *DDH K-02* will test for mineralization atop and within the *South Hawkins Conductor*. Location of the hole is subject to results derived in *Phase 1* of the exploration program, and it is recommended drilling proceed if results from the *Phase 1 MT* survey demonstrate the conductor persists as a robust anomaly to the north and south of the *Teck MT* line (Figures 44 and 45).

¹³ This conductor is present on the *MT* inversion of the *Teck MT* survey using a background resistivity of 100 Ω -m; however, this anomaly becomes very weak on the inversion using 1000 Ω -m background resistivity. According to Cook (personal communication, 2020) there is good evidence to support using the higher 1000 Ω -m background resistivity when inverting *MT* data for the Belt-Purcell Basin.

Specifications and costs for each phase of the proposed program are summarized in Table 4.

Table 4. Proposed budget, exploration going forward on Sweet Spot Property. These are “all in” estimates. Numbers were derived, in part, from “Statement of Expenditures” in *Teck Assessment Reports* (Boucher and Thompson, 2018; Boucher and Herron, 2020).

Activity	Days	Cost per day	DDH_ID	Cost/m	Σ m	Σ line length_km	Est. Cost/km	Total Cost
Phase 1								
Map and Database Compilation	12	\$ 800.00						\$ 9,600
Map and cross-section preparation	7	\$ 1,000.00						\$ 7,000
Core relogging and marker matching	10	\$ 1,000.00						\$ 10,000
MT Survey						9	\$ 18,000	\$ 162,000
MT data interpretation	5	\$ 1,000.00						\$ 5,000
Field Mapping and Prospecting	15	\$ 1,500.00						\$ 22,500
Estimated Total Cost								\$ 216,100
Phase 2								
Drilling			K-01	\$300.00	600			\$ 180,000.00
Drilling			K-02	\$350.00	1800			\$ 630,000.00
Estimated Total Cost								\$ 810,000.00

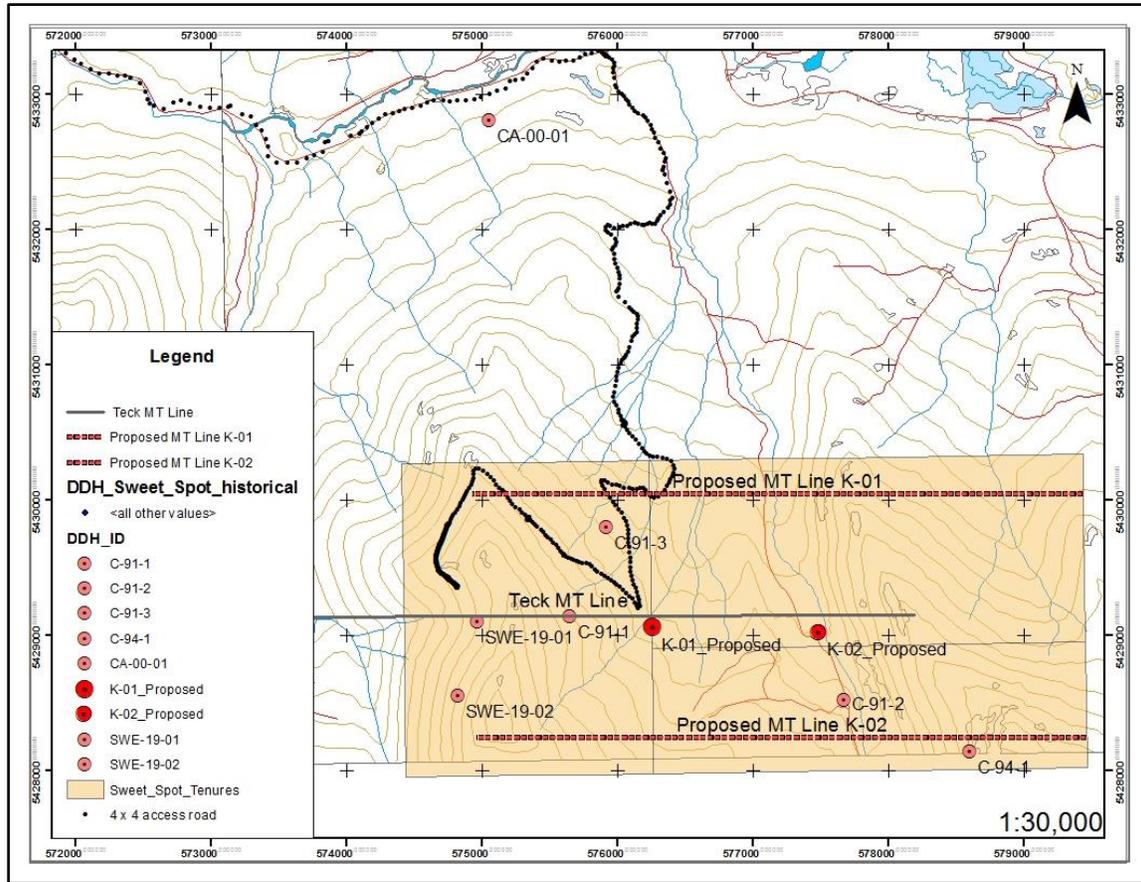


Figure 44. Location of Proposed MT lines K-01 and K-02 and proposed DDHs K-01 and K-02.

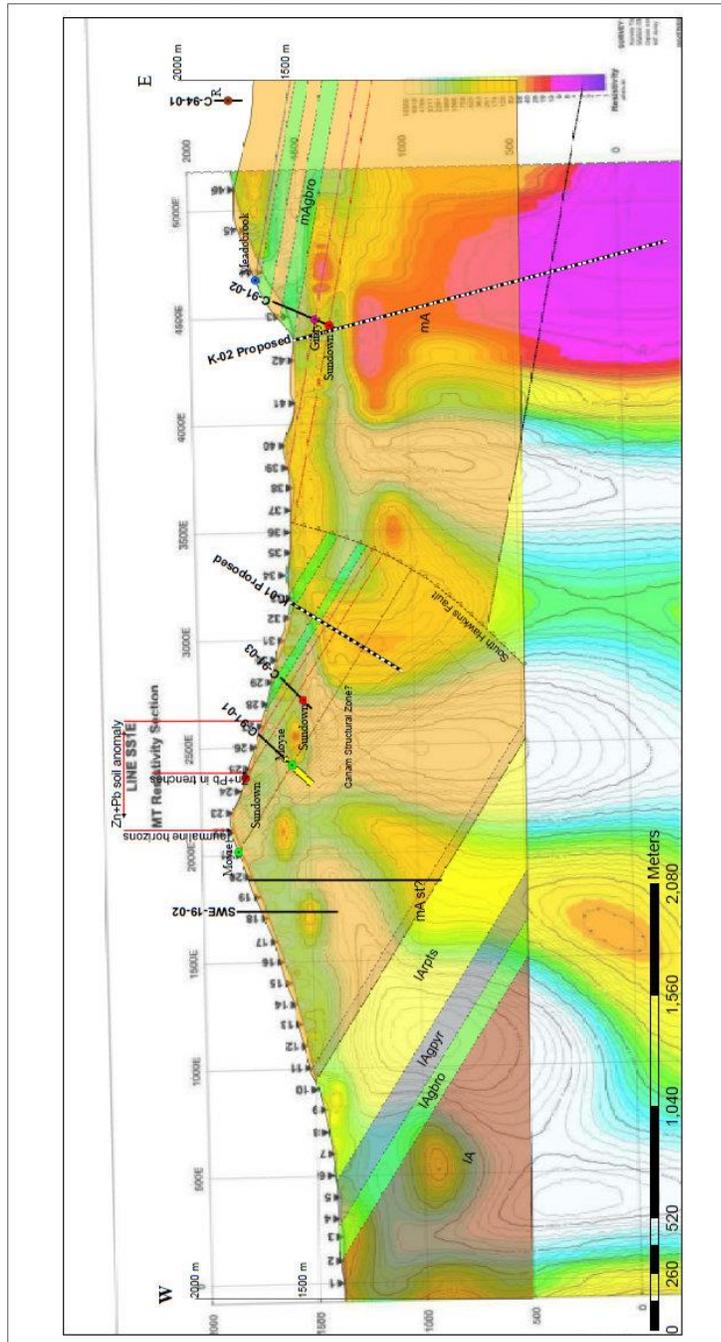
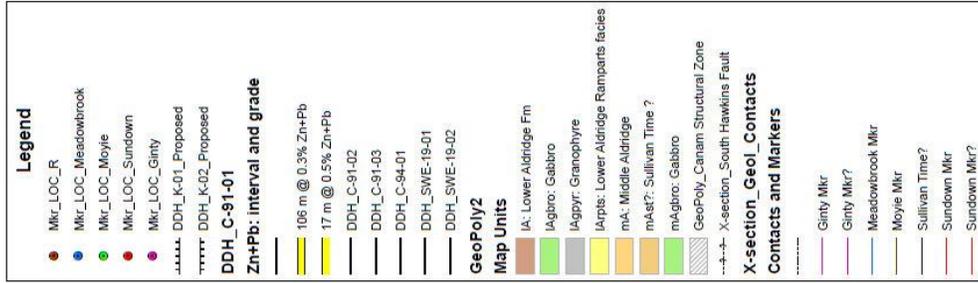


Figure 45 (previous page). *MT* conductors (from Figure 31b) overlain by geological cross section (from Figure 8) showing location of proposed DDHs K-01 and K-02 (Phase 2). Proposed specifications and coordinates for K-01 are: azimuth 270°; dip -58°; length 600 m; location NAD 83, UTM Zone 11, 576260 E, 5429060 N. Specifications and coordinates for K-02 are: azimuth 90°; dip -75°; length 1800 m; location NAD 83, UTM Zone 11, 577493 E, 5429024 N.

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Certificate of Author

- a. Robert I. Thompson, residing in North Saanich, British Columbia, Canada, do hereby certify that: I am President of RIT Minerals (RITM) Corp., 10915 Deep Cove Rd., North Saanich, British Columbia, Canada; I have practiced geology continuously since 1972.
- b. This certificate applies to the Technical Report titled “Technical Report on the Sweet Spot Property, British Columbia, Canada”, with an effective date of December 31, 2020.
- c. I am a graduate of Queen’s University, Kingston Ontario having received BSc (Hon) and PhD degrees in geology in 1968 and 1972 respectively; I am a Professional Engineer (PEng) registered with Engineers and Geoscientists BC (No. 115741); I am a member of the Geological Association of Canada. My relevant experience includes: Senior Research Scientist (Geological Survey of Canada, 1974 – 2008) responsible for regional mapping and mineral resource evaluation programs in British Columbia and Yukon; I practice as a consultant to the mineral exploration industry (2008 – present) and provide field services such as geological mapping, geochemical and geophysical surveys, planning and oversight of exploration drill programs, data compilation and evaluation, property evaluation, and technical report writing. I am a “qualified person” in relation to the subject matter of this Technical Report.
- d. I visited the Sweet Spot Property, which is the subject of this report, for one day on November 4th, 2020, on behalf of the *Companies*; and, I visited the East Kootenay Chamber of Mines Core Library to inspect Sweet Spot Property core, for one day on November 12th, 2020 on behalf of Kootenay Silver Inc. and Kootenay Resources Inc.
- e. I am responsible for all sections of the Technical Report.
- f. I am independent of the Kennedy – Cook Group (Property owners), and of Kootenay Silver Inc. and Kootenay Resources Inc., applying all of the tests in section 1.5 of National Instrument 43-101.
- g. I have read and understand National Instrument 43-101 and Form 43-101FI and the Report has been prepared in compliance with the instrument.
- h. 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 this 31st Day of December, 2020.

signed and sealed at Cranbrook, B.C.

Dr. Robert I. Thompson, PhD, PEng (Engineers and Geoscientists, BC, Reg. No. 115741)

Robert I. Thompson

Printed name of Qualified Person