Geological Mapping of the Silver Fox/St. Eugene Claim Holdings Southeastern British Columbia

NTS Map Sheet 082G/4 BCGS Map Sheet 082G021,022,031,032,033,023,013

Fort Steele Mining Division

Year of Work 2013

UTMs near centre 586000E 5459500N

Latitude near centre 49° 17'

Longitude 115° 49'

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<u>Geological Mapping of the Silver Fox/St. Eugene Claim Holdings</u> <u>Southeastern British Columbia</u>

1.0 Introduction

The Silver Fox – St. Eugene property includes a large block of continuous claims from south of the St.Eugene Mine area north to Barkshanty Creek then ESE into the Teepee Creek area. It is a consolidation of two blocks of claims into one geologically inter-related unit for exploration and discussion purposes. The composite property comprises 18932.75 hectares owned by S. Kennedy and D. Lavoie, optioned to Kootenay Silver Inc. It covers rocks of the Aldridge and Creston Formations with potential for Pb-Zn-Ag veins, Sedex Pb-Zn-Ag, and stratabound Cu/Ag.

This report is based on continued mapping at 1:20000 scale of the northern portion of the Silver Fox property and 1:10000 scale mapping inclusive of the St. Eugene area.

2.0 Claims

A total of 44 mineral tenures (Figure 2) comprise the property with a listing supplied in Appendix 1. The claims are registered to S.J. Kennedy and D.E. Lavoie. Operator of exploration is Kootenay Silver Inc.

3.0 Location and Access

The Silver Fox/St.Eugene property encompasses an arcuate block of claims ranging from the east side of the lower Moyie Lake through to Teepee Creek then southeast across the west ends of Haller and Gilnockie creeks. The claims end on the southeast side of Gilnockie park. These southern Purcell Mountains are subdued, rounded mountains ranging from 900 metres at Moyie Lake to 2400 metres at the summit of Yahk Mountain. They are extensively forested, although a high percentage of logging has impacted a very large area extending well beyond these claims. Access is excellent because of the widespread logging activity with roads and clearcuts in most drainages. The network of roads are principally accessed through the Glencairn and Sunrise creek roads from the west and the Teepee creek road from the east.



FIGURE 1 – LOCATION MAP FOR THE COMBINED ST. EUGENE – SILVER FOX PROPERTY



FIGURE 2

4.0 Mining and Exploration History for the region

The St. Eugene portion of the claim block has a long and varied history. Mining of the vein system was earliest from the late 1890's through to 1916. Production totalled 1.47 million tonnes of about 7.7% Pb, 124 g/tonne Ag, 1% Zn (very low recovery), and 0.05 g/tonne Au. Small tonnages were extracted from extensions on the west side of the lake (Aurora and Guindon) and to southeast at the Society Girl. The operators of the day did exploration underground and later in the 1930's, 1940's, and 1960's more mapping and drilling was done but records are poor to non-existent.

The St. Eugene Vein System is comprised of several cross-cutting veins which transect the upper part of the Middle Aldridge, becoming less pronounced up into the Upper Aldridge. The northwest-striking, steeply south dipping veins extend from the Aurora/Guindon on the west side of the lower Moyie Lake southeast about 5 kilometres, over a vertical range of at least 1200 metres. It is primarily a lead-zinc-silver system with a variety of trace elements including copper, gold, arsenic, antimony, and mercury. The mine produced primarily lead and silver with the sphalerite discarded for most of the production history. Most of the tonnage was contained within the north and south veins, particularly where the south vein converged on the north vein and cross structures (linking shears) yielded significant production as well. The best developed veins and mineralization were confined to two intervals of quartzite-dominated stratigraphy designated the Lakeshore and Moyie zones.

Early exploration at the St. Eugene is generally described but specific results are lacking. During mining levels were extended and a few holes drilled from surface. Later in the 1930's and 1940's several reviews were conducted of the property and some dewatering of workings took place. During the late 1940's mapping was conducted and a magnetometer survey completed. In 1964 and 1965 exploration consisting of mapping, soil geochem, trenching on the upper St. Eugene area and across the lake at the Aurora. Two drill holes were done on the upper St. Eugene Baltimore claim.

In 1988, after completion of the d-8-c well hole by Duncan Oil and Gas at the south end of the lower Moyie Lake, the cuttings from 3 metre intervals were sampled and analyzed. This identified some anomalous Pb-Zn intervals and a deeper anomalous copper zone. In 1990, a UTEM geophysics survey was completed over the St. Eugene mine area. Also in 1990, Noranda completed a one year program of mapping and soil geochem on the Beach property, 4 kilometres to the north, in response to anomalous copper in an RGS sample. In 1992, Cominco Ltd. did some soil sampling on the Cherry claims just to the south, again in response to a positive RGS sample, in this instance for lead,zinc, and silver. In 2005, St. Eugene Mining Corp. launched a four year program including: EM on the ground; an airborne EM and Mag in 2006; diamond drilling on the Society Girl area and across at the Aurora in 2007; and diamond drilling on a structural zone north of the mine in 2008.

For the Silver Fox north area of 2013, considerable exploration has been done in the vicinity of the Silver Pipe showing, northwest towards Moyie Lake and southeastward across Teepee Creek towards the KRL (Sara) vein. The Silver Pipe (Pipeline showing) was originally staked following construction of the gas pipeline in the mid to late 1960s. The property, originally called the Dirk property, was later renamed the Teepee property and comprised the Erdaco and Dirk claims. These were optioned to Mercury Exploration in 1969 who conducted some geological mapping, a ground magnetometer survey and trenching which defined the Gossan vein system with widths up to 5 meters and a strike length of approximately 400 meters (*see* summary in Yeager and Ikona, 1983). Yeager and Ikona (*op. cit.*) also note an EM survey done by Cominco in 1971 (J. Hamilton, internal Cominco Report, 1971).

The claims were allowed to lapse and subsequently restaked in 1980, then vended to R.G. Gifford who in turn vended them to Gulf International Ltd. Work by Pamican Development Ltd for Gulf International included a soil geochemical program, trenching, geological mapping and sampling (Yeager and Ikona, 1983). A geological map included in this 1983 report shows the location of 1982 diamond drill holes, although no reference is made to them in the text. The collars, with casing, are still visible.

Kokanee Exploration staked claims in the northern part of the Silver Pipe area in the late 1980s and conducted some reconnaissance geochemical and geological mapping (*see* summary in Stephenson, 1999). Prospecting by C. Kennedy in 1989 discovered the Jake showing south of Teepee Creek. Stephenson (1999) and Pighin (2009) both report that Auckland Resources drilled 7 holes totaling 307.7 metres in the area of the KRL property. and intersected "low-grade silver base metal mineralization associated with gabbro dykes". However, as noted by Pighin (2009), the exact locations of these holes are not known.

The Erin claims were staked by L. Stephenson in 1992 to locate and evaluate the projected trend of the Pipeline showing and soil sampling, mapping and prospecting were subsequently carried out (Stephenson, 1999a). Considerable more work was done by Stephenson in the mid to late 1990s on the Erin and Dek claims; the Dek claims, staked in 1997 covered both the KRL and Silver Pipe veins. This work included geological mapping, additional prospecting and ground VLF and magnetometer surveys (*see* Stephenson, 1999a, 1999b).

D. Lavoie and S. Kennedy staked the area around the Jake and Silver Pipe veins in 2005 and optioned them to Grandeur Resources Ltd. who conducted a program of prospecting and rock and soil geochemistry, mainly in the vicinity of the KRL (renamed Sara) showings (Kennedy, 2005; 2006; 2008). Many of the collected rock samples were float but returned high values in lead (>10,000 ppm), zinc (up to 4903 ppm, silver (>100 ppm) and gold (up to 4226 ppb). Detailed mapping by Pighin (2009) in the vicinity of the Sara vein differentiated the Creston Formation, outlined areas of intense alteration, defined structural controls and better defined and delineated the Sara vein.

A regional exploration and prospecting program, carried out mainly by Craig and Sean Kennedy for Kootenay Gold, recognized extensive alteration in the Creston Formation that locally extended south to the United States border. Further prospecting and reconnaissance mapping, with discovery of stratabound copper mineralization, led to comparisons with stratabound copper-silver mineralization in northern Montana and subsequently a large tract of land, the Silver Fox property, was staked.

Work during the 2011 field season included a reconnaissance silt geochemical program (Jackaman, 2012), additional prospecting (Kennedy, 2012) and geological mapping (Hoy et al, 2012). Mapping at 1:20000 scale continued in 2012 (Anderson, 2013).

5.00 Regional Geology

5.1 Stratigraphy

The property lies within the Purcell anticlinorium, a gently north plunging structure that is cored by Paleoproterozoic sedimentary and minor volcanic rocks of the Purcell Supergroup and flanked by unconformably overlying Neoproterozoic clastic and carbonate rocks of the Windermere Supergroup. These are generally overlain by either Cambrian or Devonian rocks, part of the North American "miogeoclinal" sequence.

The Purcell Supergroup, and correlative Belt Supergroup in the United States, comprises a synrift succession, the Aldridge Formation, and an overlying, generally shallow water post-rift or rift fill sequence, including the Creston and Kitchener Formations, and younger Purcell rocks (Höy, 1993) (Figures 3, 4).

The exposed part of the Aldridge Formation comprises more than 3000 meters of mainly turbidite deposits and numerous, laterally extensive gabbroic sills referred to as the Moyie intrusions. The gabbroic sills are laterally extensive, typically up to several hundred meters thick and can be traced over hundreds of square kilometers. Locally, particularly in areas of growth faulting, they cut across stratigraphy as dykes. Some of the Moyie sills have contact features that suggest intrusion into wet and partially consolidated sediments (Höy, 1993).

The Creston Formation (Figures 3, 4), host to mineralization on the Silver Fox property, is described in considerable more detail below. It comprises dominantly green, mauve and grey siltstone, argillite and quartzite with numerous structures indicative of shallow-water to subaerial

deposition. It conformably overlies upper Aldridge argillite and siltstone and is overlain by carbonate rocks of the Kitchener Formation. The Creston Formation correlates with the Burke Revett and St. Regis formations of the Ravalli Group in the United States (Harrison, 1972; Winston, 1986) and the Appekunny and Grinnel formations in the southwestern Clark Range (Price, 1964). In the Purcell Mountains, the Creston Formation comprises three main subdivisions: a basal silty succession of thin-bedded grey to green siltstone and argillite, a middle succession of mauve, green and grey, thin to medium bedded siltstone quartzite and quartz arenite, and an upper succession of intermixed green argillaceous siltstone and minor quartz arenite (Hoy, 1993).

The Kitchener Formation is dominantly a carbonate unit between the Creston Formation and overlying siltites of the Van Creek Formation. It correlates with Empire and Helena Formations in western Montana (Winston, 1986) and the middle part of the Siyeh Formation in the Galton and Clark Ranges (Price, 1964). The formation is divisible into two members, a lower green dolomitic siltstone and an upper dark grey, carbonaceous, silty dolomite and limestone (Höy, 1993).

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Late Proterozoic								
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				Roosville	McNamara	<u>a</u>		
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				Sheppard	Shepard			
			\backslash	Nicol Creek	Purcell lava	e	elt	
cell		Siyeh		Van Creek	Snowslip	/alla	ă	
Pure		Kitchener		Kitchener	Helena Empire	3		
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Figure 3 : Correlation chart of Middle Proterozoic Purcell Supergroup (Canada) and Belt Supergroup (United States).

5.2 Structure and tectonics

The Silver Fox property is within the Foreland Thrust and Fold belt, the most eastern physiographic belt in the Canadian Cordillera (Monger *et al.*, 1982). The belt is characterized by shallow, east verging thrust faults and generally broad open folds in rocks that range in age from the middle Proterozoic Purcell Supergroup to Phanerozoic miogeoclinal rocks. The Purcell Supergroup is mainly exposed in a broad, shallow north plunging anticlinal structure, the Purcell anticlinorium in the Purcell Mountains west of the Rocky Mountain trench.

Structures within the Purcell anticlinorium include east verging thrust faults, northeast trending, right lateral reverse faults, and open to tight folds (Höy, 1993). A complex array of normal faults

that trend dominantly northward parallel to the Rocky Mountain trench cut the earlier thrust faults and associated faults.

The northeast-trending structures, including the St. Mary and Moyie faults, are within or parallel to a broad structural zone that cuts the Purcell anticlinorium, crosses the Rocky Mountain trench and extends northeastward across the Foreland thrust belt (Kanasewich, 1968). This zone is marked by a conspicuous change in the structural grain, from northerly north of the zone to northwesterly south of the zone, and by pronounced and fundamental changes in the thickness and facies of sedimentary rocks that range in age from Middle Proterozoic to early Paleozoic (Höy, 1993). Furthermore, the zone appears to have focused a variety of deposit and metallotects that range in age from the stratiform middle Proterozoic Sullivan deposit to Paleozoic carbonate replacement base metal deposits to gold and copper mineralization related to Jurassic and Cretaceous magmatism (Höy, 1982). The Silver Fox property lies along the southern edge of this structural zone, south of the east-northeast trending Moyie fault.

Closer in to the St. Eugene, the claims cover the east limb of the north-plunging Moyie Anticline closer to the fold closure. Strata includes the upper Middle Aldridge through Upper Aldridge into Lower Creston and the basal part of the Middle Creston. The anticlinal axis is northerly at the US border, curving to the northeast maintaining a parallelism with the regional Moyie fault. There is evidence of secondary folding of the east limb of the Moyie anticline to the southeast where a broad south-plunging syncline is separated from the main fold by faulting. Additionally, the drainages to the south of the St. Eugene contain abundant outcrop with visual evidence of folding of the Middle Aldridge (not mapped). Folding at the St. Eugene is restricted to small scale, narrow fold zones trending north.

6.0 Part I - Property Mapping for the St. Eugene Area (2013)

6.1 Structure

The vein structures observed in outcrop are fracture zones over 1 to 15 metre widths which do not display much apparent movement but the structures do disrupt adjacent bedding and as noted later did allow for considerable fluid movement during sedimentation. The assumption is there has been later movement(s) sealing the structures.

The North and South veins trending NW-SE show a lack of continuity from the mine in either direction. There are numerous indications on the property of N to NN-striking faults which offset the veins. There are references during mining and outcrop mapping also indicates that the intersection locales for the NW-SE and N-trending structures were important for mineralization.

The mapping has documented four main NW-SE faults over the seven kilometers of strike length. More detailed mapping would undoubtedly identify more of these faults. It is known that at least two of these structural zones have significant lead-zinc developed within, based on the mine workings and exploration drilling (Klewhuk,2008). The faults appear to be normal faults but undoubtedly also have a strike-slip component. The north-bounding Jake Hill fault is a wider zone of shearing which may represent the near surface expression of a deep-seated thrust fault (Cook, 2011).

6.2 Stratigraphy

The St. Eugene area covers from about Shaft marker time in the Middle Aldridge to the lower part of the Middle Creston. This sequence represents from deeper water rift to shallow water rift-fill environments.

The Middle Aldridge is dominated by approximately 1500 metres of grey to brownish-grey, siliciclastic turbidites ranging from argillaceous quartzites to quartzites which are thin to thick bedded. There are 10 to 20% inter-turbidite intervals of laminated to thin bedded argillites, some of which contain markers.

Above is about 250 to 300 metres of thin-bedded to laminated argillite to siltstone of the Upper Aldridge. These rusty weathering rocks (disseminated and bedded pyrrhotite) have bedforms which are planar siltite-argillite couplets with lesser lenticular beds.

The Lower Creston is typically non-rusty weathering, lighter colored grey to greenish-grey, thin bedded siltstone to argillite with features reflecting a shallow-water to subaerial exposure depositional environment. Lenticular bedding is common with current marks.

The Middle Creston is typically more quartzitic with thin to medium to thick bedded quartzites and argillaceous quartzites. Shallow water depositional features such as current ripples, cross-bedding, lenticular beds and dessication cracks occur. In the upper part, a variety of colors from grey to green to purple are common.

The Upper Creston was not encountered during 2013 work. It is defined by green, thin bedded argillites and siltstones with less quartzite.

6.3 Local Sedimentary Facies

Within the upper Middle Aldridge through to at least the base of the Middle Creston there are unique, locally developed sedimentary facies. The stratigraphic distribution of these facies is based on current studies, it is very likely they occur through more of the section and over a greater area.

The five separate facies identified to date occur as lenticular units juxtaposed on the St. Eugene northwest-oriented set of faults. The largest unit (Facies A) is a dark grey weathering, massive (non-bedded), compositionally uniform, argillaceous siltstone which contains small clasts. This facies is at least 150 metres thick and from outcrops and a 1965 drill hole (Falconbridge internal report, 1965) is known to be crudely graded, with increasing clast content toward its base. It can be described as a fragmental contained within Upper Aldridge stratigraphy. The unit tapers to the north and south. North five hundred metres, the lateral equivalent is a massive black sediment package which breaks conchoidally and has elevated boron. This facies is interpreted as a vent facies straddling the St. Eugene system.



Figure 4 -Facies A - Massive Unit to Fragmental within Upper Aldridge



Figure 5 - Facies A – Lateral equivalent to above unit – black with elevated boron – Lower Creston above (light grey colored).

Up section, typical Lower Creston is missing, replaced by facies B which is an estimated 80 metres of light colored, medium to thick bedded quartzites and argillaceous quartzites. This vent facies passes laterally into Upper Aldridge or typical thin bedded argillites and siltstones of Lower Creston. Above this facies are sediments more representative of the Lower Creston. Within the Lower Creston and occurring over an approximate four kilometre strike length are three more local sedimentary facies at variance with normal Lower Creston sedimentation. The first, facies C occurs to the north but near the base of the Lower Creston. It is about 8 to 10 metres thick of greenish, massive argillaceous quartzite with some remnant bedding. There is soft sediment deformation within the unit. There are orange-weathering carbonate lenses within and sericite alteration can be quite intense. Stratigraphically above this facies in the middle of the Lower Creston is cyclic sedimentation of facies D: thin bedded Lower Creston sediments; and then massive, green argillaceous quartzites. Up section and continuing to the south at least three kilometers is facies E. Again cyclic sedimentation (similar to facies D) with dark and light grey weathering argillite and siltstones with Creston-style bed forms in each.

Above these variations in the stratigraphy is typical Lower Creston – grey, thin bedded, argillaceous rocks with irregular bedding styles. The Middle Creston succeeds this estimated 500 metres of Lower Creston with consistent presence of thin to medium bedded clean quartzites containing disseminated magnetite. Mapping has not continued to the southeast along the projection of the St. Eugene structures.

6.4 Moyie Intrusions

There are several gabbro dykes on the property, proximal to the structural zone. There are no silllike bodies but then none are expected at this stratigraphic level. The dykes appear to occupy faults which are north to northeast trending.

6.5 Mineralization

The St. Eugene Mine (Minfile 082GSW025) produced 1.47 million tons of ore at grades of about 7.6% Pb, 124g/t Ag, 1% Zn and 0.05g/tonne Au. At the Aurora (1.5kms to the northwest across the lake) 3763 tonnes were produced at grades of 7% Pb, 14% Zn, and 109g/tonne Ag. To the southeast 1.5 kms at the Society Girl, production 14otaled 2984 tonnes of 17% Pb, 1%Zn, and 144g/tonne Ag. These occurrences are undoubtedly along the same NW-striking structural systems but not necessarily on the same fault, as the system is likely a set of sub-parallel structures. Alteration along these structures is consistently a combination of sericite, chlorite, garnet, and carbonate.

Continuing to the southeast from the Society Girl are two additional locales with mineralization including the John Dee (800m), explored by an adit and drill hole (2007) which is described as a narrow shear with galena and sphalerite. About 1500 metres SE is the Farr showing of oxides in an altered (chlorite and epidote) breccia, also explored by an adit.

In total along the St. Eugene system, mineralization in NW-SE oriented structures occurs over at least 5 kilometres of strike length from Middle Aldridge through to Lower Creston. There are additional lead-zinc sulfide occurrences at the North Break structure (1.3 kms north) which was drilled in 2007 (AR#29810) – best 20cms of 8.49% Pb+Zn. A further 800 metres north is probably another structural zone with a small showing (Old Yeller) anomalous in Pb,Zn,Cu,Ag,As,Cd,Sb and Hg.



Figure 6 – St. Eugene Area Geology

6.6 Summary and Conclusions for the St. Eugene Area

The area has a long (>100years) and varied production and exploration history. The mineralized structural system (recognized faults and shears) includes several sub-parallel structures with veins along 5 kilometres and through at least 1300 metres vertically. There are indications from the mapping of numerous NW-SE structural zones, three of which are established with on-strike continuity. Lead-zinc mineralization is known to occur within at least two of these other structural zones. In addition, there are north to northeast striking faults identified in the mine but also on surface which are important for localization of mineralization.

The fault zones are important in the formation of unusual sedimentary facies within the upper Middle Aldridge to upper Lower Creston sequence. These vent facies appear primarily along the St. Eugene system but are also present along and adjacent to parallel structures to the north. They appear as massive to fragmental rocks to non-bedded facies which indicate the structures (both NW and NE) were active focusing fluid movement.

Lead-zinc-silver mineralization is present in significant amounts on the NW-trending structural zones, particularly at the upper Middle Aldridge stratigraphic level where there are intervals of thicker bedded quartzites which responded favorably to deformation producing openings for the hydrothermal fluids.

There are exploration opportunities along any of the NW-striking structural zones, particularly so at the St. Eugene where one or more of the structures could intersect more quartzitic sequences at depth, especially where proximal to north-trending faults.

7.0 Part II – Mapping on the Silver Fox Property

The two 2013 mapping projects are inter-related spatially and geologically. In this case, the Silver Fox is the extension of the claims from the north end of the St.Eugene claim block to the southeast into the Teepee Creek drainage. The 2013 work was 1:20000 property mapping as an addition to and refinement of mapping completed in 2011 and 2012.

The program was limited by poor weather and ground conditions in late September with traverses in a 3 by 9 kilometre area. Access has been greatly enhanced by logging in the two seasons. Mapping was first done north of the Barkshanty creek to enable carrying the stratigraphy and structure to the south. This area was explored by Noranda in 1990 as the Beach property (A.R.# 20483) as follow-up to an anomalous RGS sample for copper. Upper Middle Creston(C2) is present with some white, coarse grained quartzites present. The NW strikes and moderate NE dip directions continue into this quadrant of the map area. It appears the Upper Creston is thinning to the northwest but more mapping is needed to clarify.

Moving southeast into the headwaters of Gold creek and down into Oke creek (southeast flowing tributary to Teepee creek) the Jake Hill fault is the prominent structure juxtaposing upper C2 against lower C2 then C3 against C2. Despite widespread logging roads and a large clearcut, there is a paucity of outcrop in the entire Oke drainage. Middle Creston (C2) is present throughout with a basal, consistently thin to medium bedded series of grey quartz wackes. Poor outcrop above these basal quartzites suggests thin to medium bedded argillites to argillaceous quartzites without good, clean quartzite sequences. At the top of the C2 is a series of clean, white weathering, thick bedded quartzites on either side of the Jake Hill fault.

The 2013 mapping is a continuation of previous efforts and using all information it appears there is a fundamental shift in the sedimentation patterns and lithologies of the



Figure 7 – Geology – Silver Fox Property

Creston Formation across the Teepee Creek fault. Whereas south of Teepee creek the Creston is about 2000 metres thick and the C2 contains at least four quartzite packages, to the northwest the Creston is thinner (~1500m) with some middle C2 missing (including some quartzite intervals) and thinning of the basal C1 and upper C3. This suggests a fundamental shift in source area and overall sediment flow from south to north which shifts across the Teepee creek area to southeast to northwest. This is a preliminary conclusion and needs sedimentary detail to confirm. The

7.1 Mineralization

No significant new mineralization was located in 2013. The recognized showings including the Silver Pipe, KRL, and Jake Hill were described in previous assessment reports (AR#32645 and #33379). A re-examination of the SaraAnn showing confirms the presence of two structural orientations – E/W and NW/SE. The anomalous elements for each of the known mineralized settings is included on the map. All contain multiple anomalous elements suggesting a common origin but each array has been influenced by the local geological setting.

7.2 Summary and Conclusions for the Silver Fox Property

The Jake Hill fault and Teepee Creek fault are considered central to the geological setting in this northern section of the Silver Fox property. They appear to control sedimentation within the Creston Formation with a fundamental shift from a southerly source to a southeastly source for the northern half of the property. Thinning of the Creston is evident. Structurally the Jake Hill fault may be a controlling factor for mineralization as is the continuation of the St. Eugene system. The inter-relationship amongst the various showings is not completely understood but there are clearly genetic links evidenced structurally but also by a common trace element suite.

8.0 Statement of Costs for the St. Eugene to Silver Fox Property

Tenure where work was done: 835953,865960,836264,836265,1019533,1019579,1019682,1019683,1022509.

Type of work: Geological mapping at 1:10,000 and at 1:20,000

Work completed by: Douglas Anderson, P.Eng.

Periods of work 2013: June 1,2,4-8,10,12; Sept. 15,19-23,27,29; Oct.2-4,14,22,25,28,30.

24.5 man days at \$500.00 per day		\$12250.00
Vehicle Charges		2445.00
Assistant for 5 days at \$200/d		1000.00
Compilation and map production		2570.00
Report preparation – 3 days (DA)		<u>1500.00</u>
	Total Cost	=\$19765.00

9.0 References:

Smith A. 1947 Geology Report on the Moyie Groups, St. Eugene Mining Corp., BCEMPR, A.R.00001, 6 pages.

Smith A. 1948 Magnetometer Report on the Moyie 1 – 6 Groups, St.Eugene Mining Corp., BCEMPR, A.R. 00041, 11 pages.

BCEMPR Property File – Falconbridge Files – St. Eugene Project. Internal reports 1930's and 1940's – several attempts at initiating exploration at the mine site.

1964 St. Eugene Mining Corp., Exploration at the St. Eugene Property, Moyie BC. Mapping and soil geochem grids, A. Burgoyne.

1965 St. Eugene Mining Corp., Summary Report of 1965 Exploration at St. Eugene Property, Moyie BC. Included trenching and diamond drilling on the Baltimore Claim. Trenching and road building at the Aurora.

Yeager D.A. 1983 Diamond Drilling and soil geochemistry on the Silver Pipe, Gulf International, BCEMPR, A.R. 10907.

Anderson D. and Schultze H.C. 1987/88 Rock Geochem of Well Cuttings from Well Hole d-8-c, Cominco Ltd., BCEMPR, two A.R. 16681 and 18128.

Stephenson, L. 1990 Mapping and Prospecting, Look property, Kokanee Exploration, BCEMPR, A.R. 20753.

Jackisch, I. 1990 Geophysical Report on the St. Eugene Mine property, Cominco Ltd., Utem grid and survey, BCEMPR, A.R. 20705, 24 pages.

Erdman, L.R. 1990 Geology and Soil Geochem Survey on the Beach Group of claims, Noranda Mining and Exploration Inc., BCEMPR, A.R. 20483, 40 pages.

Ransom, P.W. 1992 Geochemistry Report on the Cherry Claims, Cominco Ltd., BCEMPR, A.R. 22503, 17 pages.

Stephenson, L. 1999 Magnetometer and VLF Survey, Erin Property, Kokanee Exploration, BCEMPR, A.R. 25799.

Stephenson, L. 1999 Magnetometer and VLF Survey, DEK Property, Kokanee Exploration, BCEMPR, A.R. 26018.

Kennedy, C. 2005 Prospecting, Silver Pipe Property, BCEMPR, A.R. 28069.

Klewchuk, P. 2005 Geophysics Report on the 505101 Claim, St. Eugene Property Mining, BCEMPR, A.R. 27805, 10 pages.

Klein, J. 2006 Airborne EM and Mag Survey on the Moyie Lake and Monroe Lake Grids, St. Eugene Mining, BCEMPR, A.R. 28450, 41 pages.

Klewchuk, P. 2007 Diamond Drilling Report on the Society Girl, St. Eugene Mining, BCEMPR, A.R. 29290, 29 pages.

Klewchuk, P. 2007 Diamond Drilling Report on the Moyie Lake property (Aurora), St. Eugene Mining, BCEMPR, A.R. 29809, 17 pages.

Klewchuk, P. 2008 Diamond Drilling Report on the North Structure Area, St. Eugene, St. Eugene Mining, BCEMPR, A.R. 29810, 33 pages.

Kennedy, C. 2008 Prospecting around the KRL Property, BCEMPR, A.R. 29609

Pighin, D.L. 2009 Geological Mapping, Silver Pipe and KRL Properties, Grandeur Resources, BCEMPR, A.R. 30660.

Kennedy, S. 2010 Prospecting, KRL Property, Kootenay Gold, BCEMPR, A.R. 31658.

Hoy, T. 2011 Geological Mapping and Rock Geochem, Silver Fox Property, Kootenay Gold, BCEMPR, A.R. 32645

Kennedy, C. 2012 Prospecting, Silver Fox Property, Kootenay Silver, BCEMPR, A.R. 33261.

Anderson, D. 2012 Geological Mapping, Silver Fox Property, Kootenay Silver, BCRMPR, A.R. 33379.

Hoy, T. and Diakow, L. 1979-1980 Geology of the Moyie Lake Area, Preliminary Map #49, BC Ministry of Energy and Mines, Scale 1:50000.

Brown, D. 1998 Geoscience Map 1998-3 Geological Compilation of the Grassy Mountain (E half) and Moyie Lake (W Half) Scale 1:50000.

Hoy, T. 1993 Bulletin 84, Geology of the Purcell Supergroup in the Fernie W-Half Map Area, Southeast BC; BCEMPR, 157 pages.

Appendix 1 – List of Claims

	Tenure Number	Claim Name	Map Number	Orig. Stake Date	Good To Date	Status	Area
1.	515408	SP	082G.022	Jun-27-2005	Aug-29-2014	GOOD	126.5350
2.	519022	KRL	082G.022	Aug-13-2005	Aug-29-2014	GOOD	527.4060
3.	519048	KRL 2	082G.022	Aug-14-2005	Aug-29-2014	GOOD	400.8020
4.	519679	KRL 3	082G.022	Sep-04-2005	Aug-29-2014	GOOD	189.9460
5.	704424	KRL 04-10	082G.022	Jan-23-2010	Aug-29-2014	GOOD	527.5704
6.	704425	KRL 05-10	082G.012/022	Jan-23-2010	Aug-29-2014	GOOD	379.9387
7.	835422	KRL 06-10	082G.012	Oct-08-2010	Aug-29-2014	GOOD	527.935
8.	835423	KRL 07-10	082G.012	Oct-08-2010	Aug-29-2014	GOOD	528.1525
9.	835424	KRL 08-10	082G.012	Oct-08-2010	Aug-29-2014	GOOD	528.3202
10.	835425	KRL 09-10	082G.012	Oct-08-2010	Aug-29-2014	GOOD	528.4385
11.	835426	KRL 10-10	082G.012/013	Oct-08-2010	Aug-29-2014	GOOD	528.4733
12.	835427	KRL 11-10	082G.012	Oct-08-2010	Aug-29-2014	GOOD	464.8987
13.	835948	KRL 12-10	082G.022	Oct-14-2010	Aug-30-2014	GOOD	527.3183
14.	835949	KRL 13-10	082G.022	Oct-14-2010	Aug-30-2014	GOOD	506.4601
15.	835951	KRL 14-10	082G.012	Oct-14-2010	Aug-30-2014	GOOD	527.8481
16.	835952	KRL 15-10	082G.012	Oct-14-2010	Aug-30-2014	GOOD	507.0073
17.	835953	KRL 16-10	082G.022	Oct-14-2010	Aug-30-2014	GOOD	527.1879
18.	835954	KRL 17-10	082G.022	Oct-14-2010	Aug-30-2014	GOOD	421.6778
19.	835955	KRL 18-10	082G.012	Oct-14-2010	Aug-30-2014	GOOD	524.5569
20.	835956	KRL 19-10	082G.012	Oct-14-2010	Aug-30-2014	GOOD	528.0383
21.	835958	KRL 20-10	082G.013	Oct-14-2010	Aug-30-2014	GOOD	422.7539
22.	835960	KRL 21-10	082G.022	Oct-14-2010	Aug-30-2014	GOOD	484.9516
23.	836264	KRL 22-10	082G.022	Oct-19-2010	Aug-30-2014	GOOD	526.9818
24.	836265	KRL 23-10	082G.022	Oct-19-2010	Aug-30-2014	GOOD	526.9791
25.	836267	KRL 24-10	082G.012/022	Oct-19-2010	Aug-30-2014	GOOD	527.6424
26.	836268	KRL 25-10	082G.022	Oct-19-2010	Aug-30-2014	GOOD	316.3192
27.	836269	KRL 26-10	082G.002/012	Oct-19-2010	Aug-30-2014	GOOD	528.7888
28.	836270	KRL 27-10	082G.002/012	Oct-19-2010	Aug-30-2014	GOOD	483.4412
29.	836272	KRL 28-10	082G.003/013	Oct-19-2010	Aug-30-2014	GOOD	507.5639
30.	836273	KRL 29-10	082G.002/003	Oct-19-2010	Aug-30-2014	GOOD	528.9604
31.	836275	KRL 30-10	082G.002/003	Oct-19-2010	Aug-30-2014	GOOD	524.2431
32.	836276	KRL 31-10	082G.003	Oct-19-2010	Aug-30-2014	GOOD	529.1933
33.	837422	KRL 100-10	082G.012	Nov-03-2010	Aug-30-2014	GOOD	527.0675
34.	851684	KRL 111-11	082G.022	Apr-13-2011	Aug-30-2014	GOOD	527.3772
35.	898049	KRL 113-11	082G.002/012	Sep-19-2011	Aug-30-2014	GOOD	528.7672
36.	986834	KRL 114-12	082G.022	May-16-2012	Aug-30-2014	GOOD	337.4181
37.	986838	KRL 115-12	082G.022	May-16-2012	Aug-30-2014	GOOD	505.999
38.	999062	KRL 116-12	082G.022	Jun-19-2012	Aug-30-2014	GOOD	400.3609
39.	1019533	KRL 117-13	082G.021/022	May-16-2013	Aug-30-2014	GOOD	252.9734
40.	1019579	KRL 118-13	082G.021	May-17-2013	Aug-30-2014	GOOD	294.9824
41.	1019682	KRL 119-13	082G.031	May-21-2013	Aug-30-2014	GOOD	21.0726
42.	1019683	KRL 120-13	082G.031/032	May-21-2013	Aug-30-2014	GOOD	168.5311
43.	1020525	KRL 121-13	082G.021	Jun-26-2013	Aug-30-2014	GOOD	147.4793
44.	1022509	KRL 122-13	082G.021	Sep-22-2013	Sep-22-2014	GOOD	484.7929

Appendix 2 – Statement of Qualifications

Author's Qualifications

I, Douglas Anderson, Consulting Geological Engineer, have my office at $#100 - 2100 \ 13^{\text{th}}$ St. South in Cranbrook, B.C. V1C 7J5.

I graduated from the University of British Columbia in 1969 with a Bachelor of Applied Science in Geological Engineering.

I have practiced my profession since 1969, mainly with one large mining company, in a number of capacities all over Western Canada and since 1998 within southeastern B.C. as a mineral exploration consultant.

I am a Registered Professional Engineer and member of the Association of Professional Engineers and Geoscientists of B.C., and I am authorized to use their seal.

D. Anderson Douglas Anderson, P. Eng.



