

673937

REPORT ON THE
TSEE PROJECT (~~SEE 1-4 CLAIMS~~)
104 0/16

LAT 59°53'N LONG 130°26'W

~~TOO~~ 1-4 CLAIMS - 69 UNITS
RECORD NOS 1824, 1825, 1826, 1827

hooked
file for
record
numbers

LC STEPHEN EXPLORATIONS LTD
1458 RUPERT ST
NORTH VANCOUVER, BC

AUGUST 1981

TSEE PROJECT

CLAIM GROUP

LOCATION: The ~~TSEE~~^{T00} Group consists of the ~~T00~~ 1-4 Mineral claims ~~listed below~~, located south and east of Tootsee Lake in Map Sheet 104 0/16 (FIGURE 1). The property lies 45 kilometres south east of Swift River on the Yukon - B.C. border and about 24 kilometres south of Mile 704 on the Alaska highway.

CLAIM NAME	⁵ No of UNITS	¹⁰ RECORD No.	¹⁵ RECORD DATE
T00 1	20	1824	April 1, 1981
2	20	1825	April 1, 1981
3	20	1826	April 1, 1981
4	9	1827	April 1, 1981

The claim group was staked by McCowry Holdings (Yukon) Ltd for J.C. Stephen Explorations Ltd and was transferred to Cominco under a letter of agreement.

Topography and Access

Topography is rugged with elevations ranging from 1125 metres at Tootsee Lake to peaks at about 1825 metres. Steep ridges are flanked by extensive talus slopes and the main ranges are separated by broad valleys with wide grassy areas.

Access was by means of helicopter from Swift River (45 km) although Tootsee Lake is suitable for use by fixed wing aircraft. An access road up the Tootsee River valley lies about 2 kilometres north of the north boundary of the property and a tractor trail extends south along the main valleys near the east boundary of the property. The Tootsee River road was being repaired to some extent for use by Cordilleran Engineering on their Midway Project.

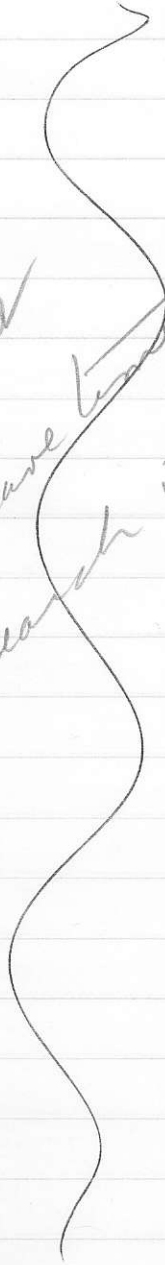
Drainage is to the north into Tootsee Lake and River and to the south east toward the Little Rancheria River.

Contoured base maps and air photos were supplied for this mapping project by Comico Ltd.

History.

Need a brief rundown on the Pb₂Ag adits north
of T00, the Ag - Convent? adits to the NE, Longstem
No. 5₂ expl'n 1978-80,

Leave this
Section out
till I have had
research it



During 1980 Cordilleran Engineering conducted exploration
in the district resulting in discovery of a barite
related lead-zinc showing. An exploration agreement
was arranged with ANMEX Minerals Exploration and a \$750,000
program was conducted as the Midway Project
in 1981.

Lead out

REGIONAL GEOLOGY

Geology of the district is shown on GSC map 18-1968 Jennings River and adjoining geology is shown on GSC Maps 10-1960 Wolf Lake to the north and Mc-Damme to the east. LOOK UP MAP NO 1110A Mc-DAMME MEMOIR GSC

In the immediate area of the claims Map 18-1968 indicates Unit 3 graptolitic shale, platy ^{SILT.} siltstone of lower Ordovician - Middle Silurian age which may be equivalent to the Road River formation in Selwyn basin area. Unit 4 consists of dolomite indicated to be of upper Silurian to lower Devonian age; unit 5 consists of Middle Devonian jetid dolomite and limestone and unit 6, upper Devonian (lower Silurian group) consists of slate, argillite, chert etc.

These rock units trend north west and are intruded by the Cassian batholith.

Several silver lead zinc occurrences are situated in these rock units to the north east of the claim group. Some of these are apparently vein type structures. ~~but the strata bound occurrences deposit also occur~~ prospecting done by Cordilleran appears to confirm that strata bound deposits also occur.

In the area north of the claims molybdenum occurs with quartz veins ~~is~~ within the Cassian batholith. Tungsten, as scheelite, occurs in skarn deposits and to the north of the Alaska highway tungsten (wolframite

^{SCHAEELITE}
scheelite) tin (^{CASSITERITE}
cassiterite) ~~copper~~ with some copper occur
at the Fiddler property near Boulder Creek.

The similarity of the rock formations in this region
to those in the Selwyn basin and Galena River areas
indicates the possibility of significant lead zinc
mineralization.

LOCAL GEOLOGY

Local Geology →

← Rock Units - see accompanying stratigraphic column

← Unit Descriptions (Field descriptions) (Youngest to Oldest)

UNIT 6 See below

(START TEXT BELOW HEADINGS)

UNIT 5
5. Lower Sylvester Formation: This is a recessive weathering black clastic unit that is characterized by abundant shaley talus and little outcrop.

The base of the formation is a very fine grained black mudstone - siltstone, with a characteristic silver-grey weathering, ~~is matched by its~~ deep black colour on fresh surfaces where quite often silty laminae are visible. As one rises above this base the clastics become much coarser and dirtier to the point of being gritty and conglomeratic in places. Particles were highly silicious and were probably quartz and chert fragments. Bedding becomes much more massive as amount of grit increases and chert fragments reach sand-size.

Unit 6

Abundant mafic, phaneritic dykes, averaging 1 to 2 metres in width were noted to frequently occupy fault zones. These dykes generally contain abundant magnetite.

Begin text below heading

UNIT 7

7. Platy Limestone: Blue-grey to beige weathering limestone with blue-grey to milky white fresh surfaces where highly calcified. ^{This} limestone unit is generally quite platy but ranges also to massive varieties and also a black and white banded phase with bands up to 4 inches thick. Large proportions of outcrops are strongly lineated, probably due to the tight folding of this unit. Contact with underlying dolomites is very gradational with alternating limestone and dolomite beds.

UNIT 7

3c Fetid Dolomite: This unit is characteristically dark-grey to brown in colour with a sugary texture on weathered surfaces, which gives it a somewhat pudgy texture. Large amounts of silicious nodules were noted in the form of black cherts and red-brown jasper, which tended to ~~be~~ follow bedding planes and may be silicified anhydrite nodules or some other ~~possible~~ silicification. Distinguishing features were the large amounts of calcified amphipora which tended to weather white against the dark-grey matrix and give the appearance of old spaghetti; hence the term 'Spaghetti Stone'. Also distinguishing was the very strong H₂S smell when large amounts of the rock was present and especially when struck with a hammer.

3b Laminated Dolomite: This unit is brown-grey in colour with very fine (2-3mm) laminae of muds or silts. Due to the strong (lineation) lamination the GSC has placed the term Rhythmite on this unit. Along bedding planes well developed foliation was noted and in some cases ^{this} gave a strong phyllitic texture. ~~along laminations.~~

UNIT

2a Sandy Dolomite: The most abundant rock type on the Too claims was an extremely resistant sandy Dolomite unit. Variations of this unit were quite extensive; ranging from a dark, black dolomitic sandstone to a very fine grained (aphanitic) buff-brown dolomitic quartzite. (When the large varieties were seen many distinguishing rock names went through the authors mind to relay the various types. These were sandy dolomites, calcareous sandstones, silicious dolomites, arenaceous dolomites to name a few.) Generally these types were seen to be interbedded and interfingering as colours and textures changed along bedding planes.

The dolomitic sandstone was generally black in colour with fine sand particles which are easily visible with the naked eye. Framework particles were dominately quartz grains with the majority of matrix and cement being dolomite. Cross bedding was frequently observed in this portion of the section and showed that bedding was right side up.

Very-fine grained, black dolomitic quartzites and brown-white dolomites were often interbedded to give exposed stratigraphy an alternating black and white banded appearance.

Overall bedding was quite massive and averaged approximately ^{1 metre} ~~3 feet~~, except near the top of the unit where the sandy dolomites got very platy and recessive with bedding planes of only a few inches. The platy dolomite weathered with a very characteristic nodular talus, as did the platy limestone mentioned previously.

UNIT

2. Road River Formation: This formation is a recessive weathering black shale-siltstone. Outcrops were generally strongly cleaved, making bedding difficult to distinguish. The Road River is supposed to contain large amounts of graptolites, however none were seen and may ^{have} possibly been covered by slight metamorphism. This unit was strongly calcareous giving it the appearance of a black shaley limestone.

Unit

7. Atan Formation: Very little of the Atan formation was observed at the claims but what was varied from clean to impure sandstones and derived quartzites. The quartzites were extremely gossanous (deep rust-red) on surface due to large amounts of disseminated pyrrhotite throughout. The uppermost section observed contained interbedded, dark grey to black, platy limestones and massive brown-white silicious dolomites.

STRUCTURAL GEOLOGY

~~Structural~~ Geology: Folding on the Toot claims was quite extensive and especially visible in the carbonate units on the property, where distinctive bedding allowed for the easy tracing of stratigraphy.

A series of gently, southerly plunging anticlines and synclines ~~were~~ ^{were} mapped in the central portion of the property in the carbonates underlying the black clastic unit. The folds were extremely well expressed by both bedding and surface topography.

More incompetent units, such as the platy limestones, laminated dolomite and shaly rocks were characterized by 'tight folding', well developed lineations, cleavages, and in many cases a strong phyllitic texture.

Faults on the property were generally quite regular with an average trend of north-south. A few of the faults appeared to be very strong with one in particular having at least 100 metres of vertical displacement visible, and it is highly possible that these ran for a long distance, although lack of outcrop in the valley did not allow for a definite confirmation of this. Location of outcrop in the field suggested that the majority of faults largely consisted of vertical displacements, with a small amount of horizontal displacement being due to the gentle, southerly plunge of folds and bedding.

MINERALIZATION

Mineralization was not observed on the claim group except for abundant disseminated pyrrhotite in the Atan rocks and minor leached pyrite and secondary limonite within the lower Sylvester black clastics.

being 50 units (11-2-2E-W) and 100+ being P units (3N-2-3E-W) Total size of the claim group as P units with 100, 15 and 3

under rock types

REGIONAL GEOCHEMISTRY

During 1977 J.C. Stephen Explorations Ltd conducted reconnaissance exploration in the ~~Tootsee Lake area~~ Jennings River map sheet. Two significant tungsten anomalies and an extensive zinc anomaly with some lead indications were found in the Tootsee Lake area. The funding joint venture partner decided not to provide funds for follow ups of these anomalies in 1978 and on 1979 and the data was released to J.C. Stephen Explorations, ~~etc~~

Further attempts to interest companies in the zinc anomaly in 1979 and early 1980 failed.

The GSC in conjunction with the BCDM carried out regional silt sampling in 1978 and data was published in 1979 and in revised form in 1980 as Open File 561. This published data shows silt values of 196 and 245 ppm in the north portion of the T00 claims and a value of 345 ppm in drainage to the southeast. Values from 96 ppm to 770 ppm occur in drainages to the east and northeast.

Cordilleran Engineering carried out exploration in 1980 and staked the CLIMAX claims which cover most of the favourable and anomalous geology. The anomaly located by JCS Explorations in 1977 lies within the CLIMAX claims east of the T00 claims.

1981 GEOCHEMICAL PROGRAM
LOCAL GEOCHEMISTRY

~~PROPERTY GEOCHEMISTRY~~

Three types of geochemical sampling were done on the 700 claims:-

(a) in the south east portion of the property creeks flow east and south east into the area indicated to be anomalous in 1977. This portion of the drainage had not been sampled ^{at that time and} Detailed silt sampling was conducted in this wide, relatively gentle valley during 1981.

Over the remainder of the property no silt samples were collected as the steep drainages, runoff conditions and generally wet weather made collection generally impractical.

(b) along all major hillsides ^{talus and soil} ~~talus~~ samples were collected at about 100 metre intervals except in some areas where slopes were too steep for travel. These samples consisted of the finest material available at the site and were generally of the nature of soil samples although soil horizons, as such, were not developed. ~~where~~

(c) rock geochemical samples were collected from several formations or occurrences of interest.

Method

Silt and talus samples were collected by hand into kraft paper sample bags. These were shipped to base camp where they were dried and sifted through 35 mesh screens. In the case of talus samples with significant coarse rock fragments the +35 mesh fraction was retained for possible future analysis.

All samples were submitted to Chemsheets Ltd

SILT SAMPLING METHOD

Silt samples were collected ~~by hand~~ at intervals of 100 to 150 metres on the creeks flowing easterly from the south portion of the T00 property.

These samples consisted of the finest available active stream sediment easily obtainable ~~from~~ by hand. ~~and~~ ~~samples~~ were collected in ordinary kraft wet strength ~~sample~~ paper sample bags.

Samples were dried at base camp and sifted through 35 mesh screens before shipment to Chemex Labs. Ltd.

Analysis was done by Chemex for lead zinc and silver

RESULTS

The main stream below the junction in central T00 3 claim shows ~~gradually decreasing~~ lead values gradually decreasing from 66 ppm to 32 ppm

DATA AND RESULTS

The main stream below the creek junction in south east claim T00 3 (samples T5-X-101 to X-106) is recorded as 3 metres in width and 25 cm in depth with medium to fast flow. Material varied from gravel and sand to sand and silt. ^{with organics ranging from} Lead values decrease gradually downstream from 66 ppm to 32 ppm; zinc values decrease somewhat more.

irregularly from 400 ppm to 200 ppm; while silver is consistently 0.1 ppm.

Above the creek junction the stream from the north west, (samples TSX-121 to X-130) returned lead values increasing from 10 to 18 ppm going down stream, zinc values range from 70 to 140 ppm but are generally in the 100 ppm range. Silver values remain at 0.1 ppm. The stream is described ~~at~~ as being ~~to~~ 2 metres wide, 25 to 50 cm deep, medium to slow flow with fine sand to silt material available. Organics range from 10% to 60%.

The central stream branch (samples TSX-114 to X-120) is described as 1 to 2 metres wide, 25 to 50 cm deep with varied flow from slow to fast. Material consisted mainly of fine sand and silt with 5% to 15% organics. Lead values range ~~from~~ ^{between} 90 ppm ~~to~~ ^{and} 68 ppm with a general downward trend downstream from 88 ppm to 73 ppm. Zinc values decrease from a high of 770 ppm downstream to 365 ppm. One sample returned 0.3 ppm silver.

The most southerly branch flows north east. Samples (TSX-108 to X-113) are described as being taken from a stream 1 to 2 metres wide, 10 to 25 cm deep with medium to fast flow. Material consisted of fine sand and silt with 5% to 45% organics. Lead values decrease downstream from 120 ppm to 73 ppm. Zinc values decrease from 520 ppm to 360 ppm and all silver values are 0.1 ppm.

These stream values appear to confirm the 1977 lead^{and zinc} values ~~and~~ to the south east. The central and ~~south~~ southern tributary streams are anomalous and appear to derive their anomalous values from high ground near the south west boundary of the claim group.

TALUS SAMPLING

087024ES10

METHOD

Soil and talus material was collected at ¹⁰⁰⁻²⁰⁰ ~~100~~ metre ~~to~~ intervals along contours of the main ridges. Distances between samples were measured by hip chain but location of the samples on the map is generally only approximate. W U

The finest available material was collected at each sample site. In the southern portion of the property ~~this~~ especially this material may be best described as soil although soil horizons are not ^{well} developed.

Material was collected in pleated kraft paper sample bags, shipped to base camp, dried and sifted to 35 mesh. In the case of samples with significant fresh coarse rock fragments (fine talus) the +35 mesh material was retained for possible future analysis.

The -35 mesh material was shipped to Chemex for determination of lead, zinc, silver and barium contents.

DATA AND RESULTS

The only significantly anomalous values obtained occur in the north west portion of claim T00 4 and the south west portion of claim T00 3. Some values, and probable source areas, occur outside claim boundaries.

TABLE 1.

<u>ELEMENT</u>	<u>STANDARD DEVIATION</u>	<u>MEAN</u>	<u>N.</u>
Pb	45.886	26.02	187
Zn	436.2	212.57	187
Ba	1010.8	1000.91	187

Frequency distribution graphs for lead zinc and barium^{in talus} are provided as Figures - - and - . There is a suggestion in this data of two families of anomalous results. One may be represented by values of 45 to 75 ppm lead; 300 to 500 ppm zinc and 1200 to 1800 ppm barium.

Those values of greater than 117 ppm lead (M + 2SD) are concentrated near the heads of the south and central tributary creeks in the south portion of T00 3. Lead values generally between 45 and 75 ppm are peripheral to the main anomalous zone but also occur as the most north easterly samples on the talus lines on T00 1 and 2.

212
872
1085

Those grades of greater than 1085 ppm zinc
(mt 2/50)

Virtually all zinc values of anomalous and threshold strength are concentrated in the main anomalous area at the heads of the southern and central tributary creeks. There is no significant pattern of higher zinc values at the northeast ends of the talus lines on T00 1 and 2.

Barium values between 1100 and 1200 ppm appear to form a sub group or family which occurs with the strongest portion of the main lead-zinc anomaly as well as ~~along~~ along the east trending ridge near the ~~to~~ boundary between claims T00 2 and 3. Lead, zinc values do not appear to be anomalous in this ridge area.

The highest values for barium occur on T00 4 east of the main lead zinc anomaly and may reflect stratigraphy. Zinc values ^(threshold) there are in the 220 to 660 ppm range while lead values vary from 14 to 23 ppm.

ROCK SAMPLING

Specimens of mineralized rock were taken at several points for rock geochem analysis. Results are listed in Table 2.

Sample 27674C is located near the boundary between T00 2 and T00 3. and gave the highest lead (175 ppm) and zinc (610 ppm) values.

Six samples are from the small canyon just west of T00 2 where sulphide mineralization is evident. No values of interest are indicated. Most of the mineralization consists of disseminated fine pyrrhotite in quartzites.

Four samples were taken some distance west of the property where massive pyrrhotite occurs in a cique and where carbonate rocks come in contact with the Cassiar batholith. No values of ~~any~~ significance are indicated.

CONCLUSIONS AND RECOMMENDATIONS

Mapping and geochemical sampling on the T001-4 claims failed to find ~~mineralization~~ significant mineralization in place. An area anomalous in lead zinc and barium is indicated in the south west portion of the property. Dark weathering rocks appear to occur in this area as indicated by interpretation of air photo PC 5734-153 (Figure -). These rocks could be the source of the anomalous values.

It is recommended that 12 additional units be staked to the southwest as indicated in Figure - and that additional soil and talus sampling be conducted together with prospecting and more detailed mapping.

Respectfully submitted
JC Stephen Explorations, NW

JCS.
August 18 1981