Geological and Geochemical Surveys Cummins Creek Prospects

Assessment Report

Jesse and Cummins South Claims

Whitesail Lake Map-Area 93E/11E

Omineca Mining Division

British Columbia

Alpine Exploration Corporation

Anthony L'Orsa, FGAC, PGeo

11 December 1995

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SUMMARY

Exploration on the Jesse and Cummins South mineral claims in the Whitesail Lake area during 1995 included soil sampling, a re-examination of some of the known mineral occurrences, prospecting, and reconnaissance geological mapping. This work was directed to the further evaluation of quartz veins containing anomalous amounts of precious and base metals that occur in andesitic rocks of the Hazelton Group along Cummins Creek, between Troitsa Peak and Whitesail Lake.

The Cummins Creek quartz vein system belongs to the low-sulphidation style of epithermal mineralization, and the system has economic potential. Soil sampling over some of the veins during this program yielded generally poor results, except for patchy molybdenum anomalies. Anomalous amounts of molybdenum are associated with the epithermal veins. The next exploration step should be a study of system alteration mineralogy and zoning with the objective of determining the main paleoconduits of hydrothermal flow. No other work is recommended on these veins until this study is undertaken.

A porphyry copper system was identified on Cummins Creek. Soil geochemistry has yielded local anomalies over the porphyry (e.g. Cu $\leq$1,000 ppm; Mo $\leq$37 ppm). Grid preparation, geochemical and magnetometer surveys, mapping and sampling are recommended.

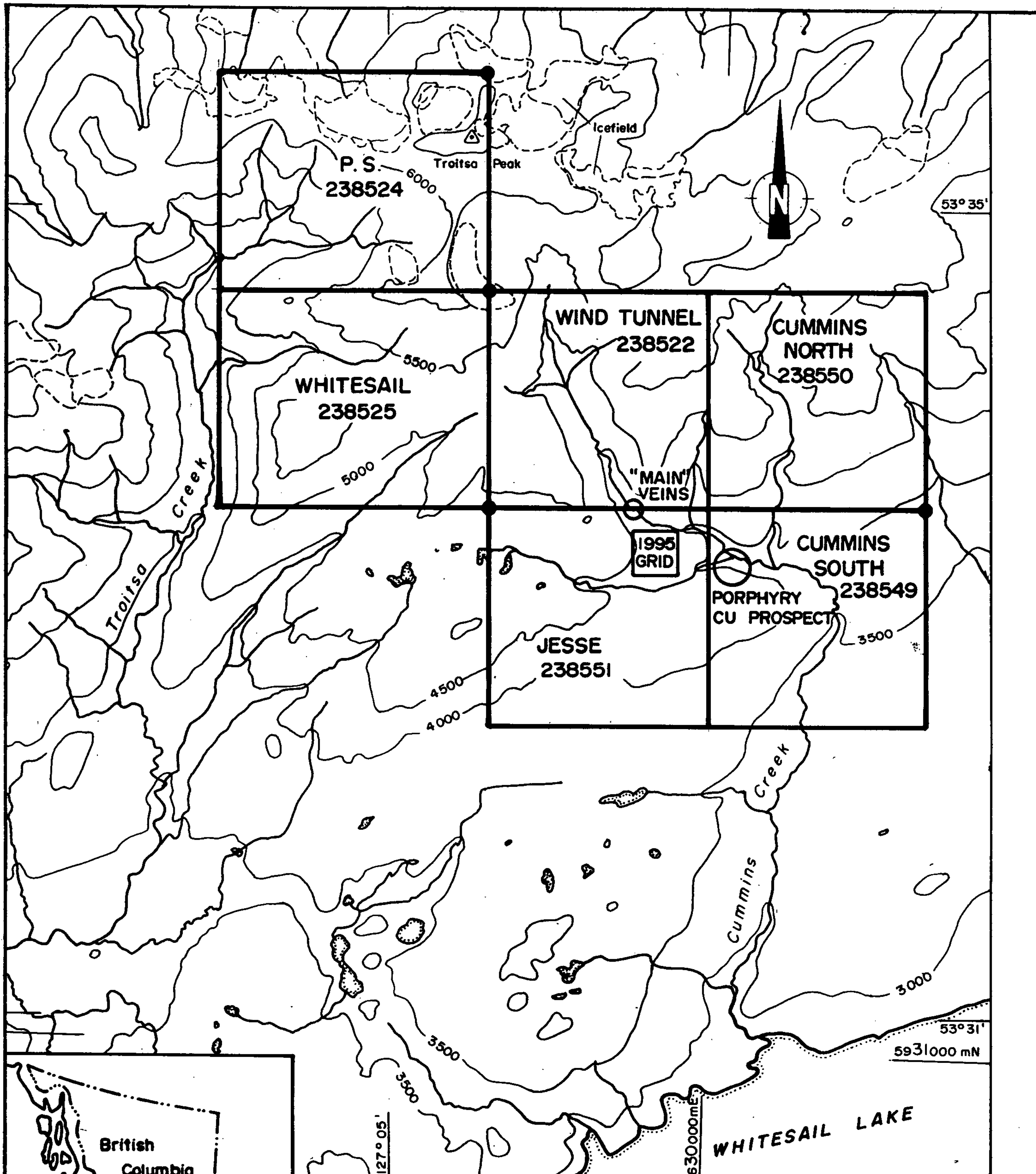
INTRODUCTION

During the period 14-19 August 1995, the author conducted a mineral exploration program on the Jesse and Cummins South mineral claims, accompanied by prospectors Pat Suratt and Paul Huel. Some of the epithermal veins on the Jesse claim were examined, and a rough, flagged, grid was laid out which provided control for soil sampling and mapping on a hill that is on strike south of the main veins on Cummins Creek (Figure 1). Some reconnaissance work was done in the area of a mineralized intrusive complex, and an area of extensive rhyolite outcrops in the western sector of the Jesse claim was examined.

LOCATION AND ACCESS

The area in which the work was done is centred at approximately 53° 33' north latitude and 127° 03' west longitude in the Whitesail Range (map 93E/11E), along Cummins Creek and about midway between Troitsa Peak and Whitesail Lake, in the Omineca Mining Division, British Columbia (Figure 1). The area is about 137 km south of Smithers, and 96 km southwest of Houston. The Huckleberry porphyry copper deposit lies about 16 km to the northwest. Easiest access to the claims is by helicopter from Smithers or Houston. Logging roads provide all-year access from Houston to Tahtsa Reach, about 15 km to the north, and logging has now started on the south side of Tahtsa Reach.

The claims are mostly free of snow from June until October. However, patches of snow were observed along Cummins Creek at 1300 m elevation in mid-August, 1995. Because of



93 E / 11

0 1 2 3 km

SCALE 1:50000 ELEVATIONS IN FEET

To accompany report by A. L'ORSA.

ALPINE EXPLORATION CORPORATION		
TROITSA AREA CLAIMS		
DATE: Oct. 1995	DRAWN BY: E.C.	FIG. 1

snow and high water conditions, the best time to work in the area is during August and early September.

PHYSIOGRAPHY

The Jesse and Cummins South claims range in elevation from timberline (± 1430-1500 m) to about 1000 m above sea level and cover steep hills in the upper Cummins Creek drainage system. There are some flat swampy areas in the southeastern part of the Cummins South claim. Cummins is a strong creek that drains southerly into Whitesail Lake (825 m above sea level), and that carries sufficient water for exploration and mining purposes.

Outcrops are generally rare on the claims, except along Cummins Creek and its tributaries. Most of the claims area supports good stands of alpine fir. A few pine and small hemlock trees were noted along Cummins Creek; there is little undergrowth.

CLAIMS AND OWNERSHIP

The Troitsa property comprises ~~104~~ 48 units in 6 3 claims, as listed below. The expiry dates shown below reflect the application of this work.

CLAIM	UNITS	TENURE	EXPIRY
~~Wind Tunnel~~	~~16~~	~~238522~~	~~13 Nov. 1996~~
~~P.S.~~	~~20~~	~~238524~~	~~13 Nov. 1996~~
~~Whitesail~~	~~20~~	~~238525~~	~~13 Nov. 1996~~
Cummins South	16	238549	22 April 199~~7~~5
Cummins North	16	238550	22 April 199~~7~~5
Jesse	16	238551	22 April 199~~7~~5

The claims are owned by Alpine Exploration Corporation, 900 - 475 Howe Street, Vancouver, B.C., V6C 2B3.

PREVIOUS WORK

Epithermal veins have been the main exploration target in this area since Tom Richards started his work in the Whitesail Range in 1981 (Richards, 1982). One of the results of this work has been the recognition of an epithermal quartz vein system, apparently associated with a Tertiary volcanic centre in the neighbourhood of Troitsa Peak. The veins discovered to date carry small amounts of pyrite, chalcopyrite, galena, sphalerite, and argentite. Some impetus was given to this program in 1982 by the discovery, in Cummins Creek, of a quartz boulder containing narrow bands of sulphide mineralization. A grab sample taken from the boulder assayed 1.34 oz/ton (45.89 g/tonne) gold and 293 oz/ton (10,034.25 g/tonne) silver. The discovery of the boulder was followed by the finding upstream of two substantial quartz veins (main Cummins Creek veins), both of which contain anomalous amounts of gold and silver (Cawthorn, 1982; Cawthorn *et al.*, 1984).

Exploration work conducted on the Jesse and Cummins South claims to date includes prospecting, trenching and sampling, geological mapping, and geochemical surveys (Cawthorn, 1982 and 1983; Cawthorn *et al.,* 1984; Harivel, 1988; Jamieson, 1982; Richards, 1982; and Richards, *et al.*, 1991).

There is little information about prospecting in the early years in the Whitesail Range (Duffell, 1959). Kennco Explorations (Western) Ltd, Amax Exploration Inc. and others were active in the district in the 1960s and 1970s.

GEOLOGICAL SETTING

The Whitesail Range lies in the Stikine terrane of the Intermontane Belt, about 10 km northeast of the Coast Plutonic Complex. The range is underlain mainly by volcanic and sedimentary rocks of the Hazelton Group (Jurassic) and Ootsa Lake Group (Tertiary). The geology has been mapped by Duffell (1959), Woodsworth (1980), and Diakow and Mihalynuk (1987). Volcanic rocks assigned to the Lower Jurassic Telkwa Formation of the Hazelton Group form the majority of outcrops on the lower southern slopes of the mountain range. These rocks vary in composition from rhyolite to basalt. Sedimentary rocks of the Middle Jurassic Smithers Formation, Hazelton Group, are locally well exposed on the western and northern flanks of the range, and include black siltstones and other epiclastic rocks, many of which contain marine fossils. Rhyolites, basalts, andesites and associated intrusions of the Ootsa Lake Group outcrop in a northeasterly trending belt at higher elevations in the range, apparently related at least in part to a volcanic centre at Troitsa Peak; and these rocks continue northeast to Whitesail Reach and beyond, obscuring much of the contact between the Telkwa and Smithers Formations. Stocks and plugs of Cretaceous age that range in composition from granite to diorite also outcrop in the Whitesail Range.

A particularly prominent fault zone, about 1 km in width, strikes northeasterly through the Whitesail Range and across the headwaters of Cummins Creek. The fault zone is marked by rusty, sheared and brecciated rocks. Calcite commonly occurs in this zone as veins, pods and disseminations (Jamieson, 1982), and the zone hosts numerous quartz veins, some of which contain anomalous amounts of precious and base metals (Richards *et al.,* 1991).

The Whitesail Range lies within a north-northwesterly trending belt of porphyry copper and molybdenum deposits that is associated with intrusions of Late Cretaceous or Tertiary age (Carter, 1982). An epithermal quartz vein system is exposed in the range, apparently genetically related to Tertiary igneous activity in the area of Troitsa Peak (Lambert, 1987).

GEOLOGY OF THE CLAIMS

The Jesse and Cummins South claims are underlain by volcanic rocks of the Telkwa Formation that range in composition from rhyolite to andesite and basalt (Diakow and Mihalynuk, 1987; Jamieson, 1982). The observed outcrops comprise mainly light to dark greenish-grey andesitic rocks, including amygdaloidal flows and volcaniclastics. No measurable bedding attitudes were found but previous work suggests the rocks generally strike northeasterly. The hematitic, subaerial, volcanic rocks observed higher up the mountain (Jamieson, 1982) were noted in only one outcrop here, although a few reddish clasts were seen in volcaniclastic rocks at two locations along the major tributary from the west that joins Cummins Creek at about 1155 m elevation above sea level. The lower part of this tributary follows an easterly-striking contact between a copper-bearing quartz feldspar porphyry/feldspar porphyry intrusive complex to the south and andesites to the north, partly shown in Figure 5; only the most preliminary of mapping has been done here to date. Within the southern half of the 1995 grid (Figure 4), the andesites are intruded by a medium to fine-grained, medium-grey diorite, porphyritic in part, that was noted in three outcrops. The diorite is moderately magnetic.

The volcanics are cut by a widespread, northerly striking, system of drusy quartz veins that include the main Cummins Creek veins described below, and many veins higher on the mountain that I have not seen. Float from drusy quartz veins, that locally contain minor amounts of sulphide minerals and anomalous amounts of gold and silver, is fairly common in the central 1995 grid area (for details see Harivel, 1988).

Rhyolites are well exposed on a hill in the central western part of the Jesse claim. These rocks are commonly a very light-grey colour and they exhibit a variety of volcaniclastic textures, as well as local flow layering. The rocks are cut by a few narrow, northerly striking and steeply dipping drusy quartz veins containing white to clear quartz crystals and, locally, amethysts. A few northwest and northeast-striking quartz veins were also observed. In places, small amounts of disseminated cubic pyrite were noted.

MINERALIZATION AND ALTERATION

Cummins Creek veins. Two substantial quartz veins outcrop in Cummins Creek at about 1280 and 1295 m elevation respectively. Both veins are northerly striking and steeply east-dipping drusy quartz veins that are exposed in, and north of, Cummins Creek (Figures 2, 3 and 4). The width of the veins is generally less than 1 m, and the lower vein has been traced for more than 150 m along strike. An iron carbonate (ankerite?) and calcite are locally common vein minerals, and bladed calcite was noted in the upper vein. White quartz predominates over generally late stage clear quartz. Quartz-filled fractures adjacent to the veins display at least two generations of drusy quartz with rock movement between generations, and a quartz-filled quartz breccia was noted in the lower vein. Chalcedony was noted in float, presumably from a source higher in the system. Sulphide minerals generally occupy much less than 3% of the vein and consist mostly of disseminated cubic pyrite. Minor amounts of chalcopyrite and an unidentified grey metallic mineral were also observed; galena, sphalerite, argentite, and a trace of apparently hypogene kaolinite have been identified petrographically. The veins have been trenched, blasted and sampled. The highest precious metals results obtained from 45 channel samples taken in these veins were 0.008 oz/ton (0.27 g/tonne) Au across 1 m, and 22.0 ppm Ag across 0.5 m (Cawthorn *et al.*, 1984). Other, smaller mineralized quartz veins have been found in and near the creek; the precious metals content varies, but all the veins are sub-economic and apparently similar in character.

Although weathering renders rock textures difficult to discern, amygdaloidal andesitic flows appear to be the most abundant rock type hosting the veins at this location. In places, the andesite adjacent to the lower vein is brecciated and carries iron carbonate in the breccia filling. Sericitized andesite clasts were noted in the veins. Pyrite appears to form a halo around the veins, and increases in amount (generally ± 1%, mostly cubic and disseminated; locally up to ± 5%) as the veins are approached, and there is also a small amount of pyrite fracture filling in the immediate vicinity of the veins. Carbonate and chlorite alteration extends an undetermined distance from the veins. A volcanic breccia with an apparently unaltered dusky red hematitic matrix outcrops 2.5 metres west of the central creek exposure of the lower vein. Fifty centimetres west of the vein, rocks of apparently the same unit are chloritized. No epidote was seen near the veins.

Mineralized Intrusive Complex. Disseminated pyrite and small amounts of disseminated chalcopyrite have been found in a quartz-rich intrusive porphyry complex in the general area of the junction between Cummins Creek and a major tributary from the west at about 1260 m elevation above sea level (Figs. 1 and 5). Intrusions of this complex extend for a distance in excess of 1 km in a westerly direction from the junction. Cawthorn (1983), who considered these rocks a single dyke, reported that soils in this area locally yielded up to 1,000 ppm Cu, and 37 ppm Mo, and he noted a few scattered Au (≤100 ppb), Ag (≤1.8 ppm), and Zn (≤660 ppm) anomalies. This is also the locality where float containing jordisite and native silver was discovered in 1982 (sample TR44R; Cawthorn, 1982).

Two principal porphyries were noted in creek exposures here, the most distinctive of which is a pale yellowish-grey quartz feldspar porphyry that appears to occur as a westerly striking dyke or sill. "Quartz eyes" in this porphyry are generally less than 2 mm in diameter, but some reach 5 mm in diameter and, in places, the "quartz eyes" occupy 10% of the rock. Feldspar phenocrysts up to 6.5 mm in length were seen. Locally, chloritized biotite is present and, in many outcrops, phyllic and/or argillic alteration is developed. Up to 1% disseminated cubic pyrite is common. The rocks are generally rusty, and irregular coatings of manganese oxides are found in places.

In the area of the creek junction, a feldspar porphyry is exposed in numerous outcrops. This rock carries plagioclase phenocryts, usually less than 5 mm in length, generally 10% or more quartz, and minor chloritized/sericitized biotite. Phyllic to argillic alteration is general but inconsistent. In places, fresh-appearing plagioclase phenocryts can be seen. Thin (<1 mm diameter) clear quartz veins were locally observed in the feldspar porphyry. Disseminated pyrite (±1-5%) is ubiquitous in the outcrops examined, and minor disseminated chalcopyrite is common. A sample (PS-151-F95) of quartz float collected near the mouth of the west tributary, in an area of porphyry outcrops, yielded 0.016 opt Au, and 1.6 opt Ag. A sample collected from the porphyry outcrops along Cummins Creek yielded 0.04% Cu and a trace of Au.

The outcrops I have seen suggest the porphyry system is surrounded by a well developed zone of alteration. In Cummins Creek, volcanics in the contact zone are silicified, and carry very fine-grained, disseminated, specular hematite (?) and magnetite; the samples tested show a sharp magnetic contrast with the porphyry. Beyond this zone is a propylitized zone (including epidote) that extends at least 300 m north of the contact into the volcanics. What appears to be a pyrite halo extends from within the porphyry system to the limits of the propylitized zone. Pyrite in amounts up to 7% was observed within the propylitized zone as disseminations and fracture fillings.

GEOCHEMISTRY

The soil sampling grid is shown on Figures 2 and 3. This grid setting was selected mainly because it covers part of a hill, on strike with the main Cummins Creek veins, upon which quartz float from epithermal veins is relatively abundant in an area of very limited rock exposure. The grid approximately follows the float-mapping grid lines established by Alpine Exploration Corporation in 1987 (Harivel 1988), although few of the 1987 grid markings are now legible. Overburden is shallow in many places on the hill; several soil sampling holes encountered bedrock or angular clasts near bedrock within a depth of 30 cm.

One hundred and seventy seven soil samples were collected on the grid at intervals of 25 m on flagged lines very approximately 50 m apart. Where possible, the samples were taken from the B soil horizon. The samples were retrieved with a soil auger, placed in standard gusseted kraft soil bags and were shipped wet by bus to Chemex Labs Ltd, North Vancouver, B.C. There the samples were analyzed for 32 elements by inductively coupled plasma-atomic emission spectroscopy (ICP-AES), and tested for gold by fire assay-atomic absorbtion spectroscopy (FA-AA). The laboratory procedures followed are shown in Appendix I, and the analytical results are listed in Appendix II. The geochemical thresholds determined by Cawthorn (1983) for the Cummins Creek section are accepted for this survey as follows: Au 20 ppb; Ag 0.8 ppm; Pb 25 ppm; Zn 200 ppm; Cu 100 ppm; and Mo 5 ppm. Comments on selected metals follow.

Gold. All but one of the Au results are below the detection limit of 5 ppb. That single result (15 ppb) is shown on Figures 2 and 3, and may be related to a quartz vein, 2 m in width, reported by Harivel (1988, p.11).

Silver. Ag is plotted on Figure 3, but only at stations where results exceed 0.5 ppm. There are 19 such stations of which 11 are anomalous. The highest amount of Ag recovered is 2 ppm in a weak 3-station anomaly that also may be related to a quartz vein reported by Harivel (1988). A little support is offered to this anomaly by Cu (95 ppm) and Mo (16 ppm). This anomaly appears to be spatially associated with a fine to medium-grained porphyritic diorite seen in outcrop about 150 m to the east and 150 m to the west of this sample site. The remaining Ag anomalies are scattered single point anomalies that offer even less encouragement.

Copper. With the anomaly threshold set at 100 ppm, there are no Cu anomalies on the grid. Three scattered sample sites in the southwest quadrant of the grid yielded results in excess of 90 ppm. At least some of this area is underlain by porphyritic diorite.

Molybdenum. Forty one samples, or 23% of the total, exceed the threshold of 5 ppm. Thirteen samples equal or exceed 11 ppm, which number marks the 98th percentile for Mo derived from stream sediment data on this map sheet (Johnson and Hornbrook, 1987). The anomalies are patchy, and may be related to transported material. However, the highest results (34 ppm) are spatially associated with the porphyritic diorite on the central hill; the N.S. site is a diorite outcrop. Also note sample sixty, in which anomalous Mo is associated with elevated Au, probably near an epithermal vein.

Lead. The lead threshold of 25 ppm admits a single anomalous sample of 46 ppm, on the east end of the central hill. There is no obvious support from other elements at this locality.

Zinc. The highest Zn analysis recovered from this grid is 168 ppm.

Other elements of particular interest here include As ($\leq$40 ppm) and Sb ($\leq$2 ppm, detection limit); both results are sub-threshold.

DISCUSSION

The soil survey on this grid has identified several patchy molybdenum anomalies. The highest molybdenum results came from areas probably underlain by a porphyritic diorite that may be related to an intrusive complex that carries copper mineralization, exposures of which are found 200 m east of the grid. Molybdenum anomalies are spatially associated with this complex (Cawthorn, 1983). However, Richards *et al.* (1991) also reported anomalous amounts of molybdenum ($\leq$2757 ppm) from quartz veins in an area about 300 m north of the 1995 grid (samples PS 127-133). These quartz veins also contain anomalous amounts of gold ($\leq$938 ppb) and silver($\leq$76.8 ppm), and are evidently part of the epithermal system. In addition, Cawthorn *et al.* (1984) report anomalous amounts of molybdenum in many quartz vein analyses. Molybdenum is clearly associated with the epithermal veins and, probably, with porphyry copper mineralization in this area.

The presence of calcite, drusy cavities, vein breccia and chalcedony is sufficient evidence to assign the Troitsa area epithermal veins to the low-sulphidation style of epithermal mineralization (White and Hedenquist, 1990, 1995). Bladed calcite and evidence of repeated fracturing and quartz sealing imply that boiling occurred in the hydrothermal system. The upper parts of the system are apparently represented by a northeast-trending zone of prospects near Troitsa Peak in which some of the upper epithermal zone indicators have been reported; these include chalcedony, celadonite, stibnite, and marcasite. The problem now is to attempt to decipher the zoning patterns of the system, using studies of alteration and vein mineralogy, in order to direct an effective exploration program. However, in this report we are concerned with the position in the epithermal system of the main and other veins in and near Cummins Creek. Is this a prospective area in the context of this system?

The main Cummins Creek veins are about 500 m vertically below the upper level showings near the top of the mountain and about 2 km horizontally southeast of the main trend of higher elevation prospects. These are not great distances in epithermal systems, but a thin section taken from the vein at 1295 m elevation on Cummins Creek apparently contains hypogene kaolinite; adularia and sericite were not reported (Cawthorn *et al.* 1984). This finding may be important because kaolinite is only stable in the lower temperature zones of the system (White and Hedenquist, 1995). Consider also that I saw no epidote in the andesitic wallrocks adjacent to the veins in the Cummins Creek area, and White and Hedenquist (1995) point out that epidote is absent from the <200°C part of these systems. This evidence suggests that the Cummins Creek veins are on the margin of the system, some unknown distance from the main zone of hydrothermal flow, and this is not the best place in the system to be looking for ore deposits. Furthermore, I do not recognize a zone of pervasive propylitization in the central Cummins Creek area, (e.g. Cawthorn, 1982; Harivel, 1988). Although carbonatization, chloritization and pyritization are associated with these lower veins, I suspect that most of the chlorite in the volcanics is related to the environment of deposition of the andesites rather than to alteration associated with an epithermal system. I should also mention again that a volcaniclastic unit that outcrops 2.5 metres west of the Cummins Creek vein at 1280 m elevation has a reddish (hematitic) matrix, and is apparently unchloritized.

The mineralized intrusive complex (Figure 5) appears to be a porphyry copper-molybdenum system probably associated with Bulkley intrusions of Late Cretaceous age, as are nearby copper-molybdenum deposits at Huckleberry Mountain, Coles Creek and Ox Lake (Carter, 1982). The prospect should be investigated with a porphyry copper model in mind. The presence of magnetite in the contact zone, and an apparently well-developed propylitized zone and pyrite halo, should make the initial exploration of this prospect relatively easy.

CONCLUSIONS

The epithermal veins at this prospect represent low-sulphidation style mineralization. The veins occupy fractures in andesitic rocks of the Telkwa Formation that underlie Tertiary volcanics, exposed higher on the mountain, to which the mineralizing hydrothermal system is apparently genetically related. Precious and base metals are present in the veins, and the system has economic potential. However, the system is little understood and more work is required, starting with a study of alteration mineralogy and zoning.

The Cummins Creek veins appear to not have been in the main zone of hydrothermal flow during this epithermal event. No more work should be done here until a zoning study is completed.

A quartz-rich feldspar porphyry intrusive complex on the claims hosts porphyry copper-molybdenum(?) mineralization and should be investigated.

Soil sampling on the 1995 grid identified patchy molybdenum anomalies, but the results for other metals are generally poor. Earlier work demonstrates that molybdenum is present in the veins of the epithermal system, and probably in the quartz-rich feldspar porphyry intrusive complex.

RECOMMENDATIONS

1. Alteration mineralogy and zoning of the epithermal system should be reviewed and key alteration minerals in selected areas of outcrops should identified and mapped. Consideration should be given to obtaining a portable infrared spectrometer, which would enable alteration minerals to be identified in outcrop; e.g. POSAM (Dowa, 1994) or PIMA II (White and Hedenquist, 1995).

2. An exploration program should be carried out on the porphyry copper system and the work should include a grid, geochemical and magnetometer surveys, mapping and sampling.

REFERENCES

Carter, N.C., 1982. Porphyry copper and molybdenum deposits, west-central British Columbia: B.C. Ministry of Energy, Mines and Petroleum Resources, Bulletin 64, 150 p.

Cawthorn, N. 1982. Geological and geochemical survey of the Troitsa Peak (North) and Troitsa Peak (South) claim groups, Omineca Mining Division, British Columbia: Geological Branch Assessment Report 10,875; submitted by Union Carbide Canada Ltd, 59 p. plus appendices.

Cawthorn, N. 1983. Troitsa Peak property (Cummins Creek grid area): Geological Branch Assessment Report 11,709; submitted by Canamax Resources Inc., 8 p. plus appendices.

Cawthorn, N.G., Hodgson, C.J. and Goad, B.E., 1984. Troitsa Peak property: Unpublished report for Canamax Resources Inc., 29 p. plus appendices.

Duffell, S., 1959. Whitesail Lake map-area, British Columbia: Geological Survey of Canada, Memoir 299, 119 p.

Dowa Mining Co., 1994. POSAM, and applied example of POSAM: Brochures published by Dowa Mining Co., Ltd, 4 p.

Harivel, C., 1988. 1987 exploration program on Cummins Creek vein system, Troitsa Peak property: Geological Branch Assessment Report 17,654; submitted by Alpine Exploration Corp., 19 p. plus appendices.

Jamieson, H.E., 1982. Geology of the Troitsa claims, central British Columbia: Draft of unpublished report for Union Carbide Canada Ltd, 19 p. This work essentially comprises the geology section of Cawthorn, 1982, above.

Johnson, W.M., and Hornbrook, E.H.W., 1987. Whitesail Lake, British Columbia (NTS 93E): Geological Survey of Canada, Open File 1360, (or Ministry of Energy, Mines and Petroleum Resources, B. C., BC RGS 16), 145 p. plus maps.

Lambert, E., 1987. 1987 drilling program and VLF EM survey, Troitsa Peak property, Whitesail Lake, map area 93 E: Geological Branch Assessment Report 17,792; submitted by Alpine Exploration Corp., 19 p. plus appendices.

Richards, T.A., 1982. Geology, mineralogy and alteration; precious metal reconnaissance, Whitesail Lake area, northcentral British Columbia: Unpublished report, 44 p. plus appendices.

Richards, T.A., Suratt, P. and Reding, R., 1991. Rock geochemistry report, TAR mineral claim, Whitesail Range (93E/11E): Geological Branch Assessment Report 21,720; submitted by Alpine Exploration Corp., 10 p. plus appendix.

White, N.C. and Hedenquist, J.W., 1990. Epithermal environments and styles of mineralization: variations and their causes, and quidelines for exploration: Journal of Exploration Geochemistry, v.36, n. 1/3, p. 445-474.

White, N.C. and Hedenquist, J.W., 1995. Epithermal gold deposits: styles, characteristics and exploration: SEG Newsletter, n. 23, p. 1, 9-13.

STATEMENT OF COSTS

1. Prospector's wages:	Pat Suratt, 6 days @ $250/day	$1,500.00
	Paul Huel, 6 days @ $250/day	1,500.00
2. Geologist:	A. L'Orsa, 6 days @ $500/day	3,000.00
	Report	2,500.00
3. Canadian Helicopters:		2,721.50
4. Food, camp gear rental:	1 x 6 days @ $41.67/day	250.00
	2 x 6 days @ $50/day	600.00
5. Analyses:	177 geochemical @ $14.05/sample	2,486.85
	4 assays @ $18.26/sample	73.04
6. Field supplies:		221.57
7. Truck rental:		209.50
8. Drafting and copying (Alpine):		279.35
9. Miscellaneous costs:	Greyhound (supplies)	18.40
	Greyhound (samples)	49.81
	Radio rental	42.76
	Survey pickets	14.50
	Telephone	43.05
	TOTAL	$15,510.33

STATEMENT OF QUALIFICATIONS

I, Anthony T. L'Orsa of Smithers, British Columbia, hereby certify that:

1. I am a geologist with business address at Adams Road, R.R. 2, Smithers, B.C., V0J 2N0.
2. I am a graduate of Tulane University, New Orleans, Louisiana, U.S.A., with the degrees of Bachelor of Science (1961) and Master of Science (1964) in geology.
3. I have practised my profession in mineral exploration since 1962 in western Canada, Australia and Mexico.
4. I am a fellow of the Geological Association of Canada, a member of the Society of Economic Geologists, a member of the Society for Geology Applied to Mineral Deposits, and a member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

A. L'Orsa

Anthony L'Orsa, P.Geo.

PROFESSIONAL GEOSCIENTIST
PROVINCE OF BRITISH COLUMBIA
A. T. L'ORSA

APPENDIX 1

Laboratory methods

32-Element Geochemistry Package (32-ICP)
Inductively-Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES)

A prepared sample (1.0g) is digested with concentrated nitric and aqua regia acids at medium heat for two hours. The acid solution is diluted to 25ml with demineralized water, mixed and analyzed using a Jarrell Ash 1100 plasma spectrometer after calibration with proper standards. The analytical results are corrected for spectral inter-element interferences.

Chemex Codes	Element	Detection Limit	Upper Limit
229	Digestion		
2119	* Aluminum	0.01 %	15 %
2118	Silver	0.2 ppm	0.02 %
2120	Arsenic	2 ppm	1 %
2121	* Barium	10 ppm	1 %
2122	* Beryllium	0.5 ppm	0.01 %
2123	Bismuth	2 ppm	1 %
2124	* Calcium	0.01 %	15 %
2125	Cadmium	0.5 ppm	0.05 %
2126	Cobalt	1 ppm	1 %
2127	* Chromium	1 ppm	1 %
2128	Copper	1 ppm	1 %
2150	Iron	0.01 %	15 %
2130	* Gallium	10 ppm	1 %
2132	* Potassium	0.01 %	10 %
2151	* Lanthanum	10 ppm	1 %
2134	* Magnesium	0.01 %	15 %
2135	Manganese	5 ppm	1 %
2136	Molybdenum	1 ppm	1 %
2137	* Sodium	0.01 %	10 %
2138	Nickel	1 ppm	1 %
2139	Phosphorus	10 ppm	1 %
2140	Lead	2 ppm	1 %
2141	Antimony	2 ppm	1 %
2142	* Scandium	1 ppm	1 %
2143	* Strontium	1 ppm	1 %
2144	* Titanium	0.01 %	10 %
2145	* Thallium	10 ppm	1 %
2146	Uranium	10 ppm	1 %
2147	Vanadium	1 ppm	1 %
2148	* Tungsten	10 ppm	1 %
2149	Zinc	2 ppm	1 %
2131	Mercury	1 ppm	1 %

* Elements for which the digestion is possibly incomplete.

Gold

Fire Assay Collection/ Atomic Absorption Spectroscopy (FA-AA)

Chemex Code: 983

A 30g sample is fused with a neutral lead oxide flux inquarted with 6mg of gold-free silver and then cupelled to yield a precious metal bead.

These beads are digested for 30 mins in 0.5ml diluted 75% nitric acid, then 1.5ml of concentrated hydrochloric acid are added and the mixture is digested for 1 hr. The samples are cooled, diluted to a final volume of 5ml, homogenized and analyzed by atomic absorption spectroscopy.

Detection limit: 5 ppb

Upper Limit: 10,000 ppb

APPENDIX 2

Analyses

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: ALPINE EXPLORATION CORP.

900 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

Project :
Comments: ATTN: BILL OSBORNE CC:A. L'ORSA

Certificate Date: 18-SEP-95
Invoice No. : I9527298
P.O. Number :
Account : LCE

CERTIFICATE OF ANALYSIS A9527298

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
001	201	229	9	0.01	12	1570	14	< 2	3	48	0.02	< 10	< 10	71	< 10	90
002	201	229	4	0.01	13	610	12	2	8	36	0.04	< 10	< 10	94	< 10	102
003	201	229	3	0.01	10	1070	14	2	3	15	0.04	< 10	< 10	74	< 10	86
004	201	229	2	0.01	8	860	14	< 2	3	22	0.06	< 10	< 10	99	< 10	70
005	201	229	1	0.01	11	1370	12	< 2	6	26	0.11	< 10	< 10	102	< 10	84
006	201	229	1	0.01	7	990	12	< 2	2	18	0.04	< 10	< 10	88	< 10	92
007	201	229	1	0.01	6	770	14	< 2	3	19	0.07	< 10	< 10	85	< 10	74
008	201	229	1	< 0.01	5	720	8	< 2	3	14	0.09	< 10	< 10	105	< 10	64
009	201	229	1	< 0.01	6	530	12	< 2	4	11	0.09	< 10	< 10	108	< 10	60
010	201	229	11	0.01	10	1450	14	< 2	1	15	0.01	< 10	< 10	66	< 10	62
011	201	229	< 1	0.01	5	840	8	< 2	4	13	0.06	< 10	< 10	112	< 10	66
012	201	229	1	0.01	10	1180	8	< 2	2	19	0.03	< 10	< 10	83	< 10	100
013	201	229	2	< 0.01	4	340	12	2	3	9	0.06	< 10	< 10	108	< 10	42
014	201	229	7	0.01	6	870	12	< 2	4	32	0.10	< 10	< 10	91	< 10	50
015	201	229	4	0.01	12	940	10	2	5	45	0.03	< 10	< 10	86	< 10	114
016	201	229	1	0.01	11	920	14	< 2	6	45	0.03	< 10	< 10	90	< 10	116
017	201	229	2	0.01	12	770	12	< 2	9	37	0.06	< 10	< 10	84	< 10	92
018	201	229	1	0.01	9	640	12	2	6	16	0.06	< 10	< 10	92	< 10	86
019	201	229	2	0.01	7	580	12	< 2	3	16	0.06	< 10	< 10	81	< 10	80
020	201	229	1	0.01	7	530	12	< 2	4	13	0.07	< 10	< 10	95	< 10	66
021	201	229	2	0.01	8	1410	12	< 2	1	14	0.04	< 10	< 10	102	< 10	64
022	201	229	2	0.01	8	1080	12	< 2	2	14	0.06	< 10	< 10	90	< 10	60
023	201	229	1	0.01	7	1270	12	< 2	< 1	21	0.02	< 10	< 10	79	< 10	78
024	201	229	7	0.01	8	1050	14	< 2	2	25	0.07	< 10	< 10	95	< 10	94
025	201	229	4	< 0.01	6	1050	12	< 2	< 1	24	0.05	< 10	< 10	94	< 10	76
026	201	229	1	0.01	4	720	10	< 2	1	16	0.06	< 10	< 10	75	< 10	54
027	201	229	1	0.01	7	1010	14	< 2	1	19	0.03	< 10	< 10	78	< 10	72
028	201	229	1	0.01	6	640	8	< 2	2	17	0.06	< 10	< 10	91	< 10	60
029	201	229	2	< 0.01	7	790	12	2	3	10	0.07	< 10	< 10	97	< 10	72
030	201	229	3	< 0.01	6	1050	12	< 2	3	17	0.13	< 10	< 10	86	< 10	60
031	201	229	1	< 0.01	4	710	12	< 2	1	14	0.07	< 10	< 10	83	< 10	42
032	201	229	5	0.01	8	840	12	2	1	17	0.03	< 10	< 10	68	< 10	56
033	201	229	1	0.01	9	1020	10	< 2	6	22	0.07	< 10	< 10	91	< 10	94
034	201	229	7	0.01	11	1060	14	< 2	6	27	0.09	< 10	< 10	86	< 10	94
035	201	229	5	0.01	10	1500	14	< 2	4	49	0.09	< 10	< 10	95	< 10	106
036	201	229	2	0.01	10	1040	10	< 2	5	39	0.10	< 10	< 10	80	< 10	126
037	201	229	7	< 0.01	8	1540	12	< 2	7	52	0.15	< 10	< 10	84	< 10	136
038	201	229	2	< 0.01	3	500	12	< 2	2	15	0.07	< 10	< 10	89	< 10	52
039	201	229	1	< 0.01	4	620	12	< 2	3	8	0.09	< 10	< 10	114	< 10	48
040	201	229	4	0.01	8	840	12	< 2	4	28	0.06	< 10	< 10	86	< 10	92

CERTIFICATION: [signature]

Chemex Labs Ltd.

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To: ALPINE EXPLORATION CORP.

900 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

Project :
Comments: ATTN: BILL OSBORNE CC:A. L'ORSA

Certificate Date: 18-SEP-95
Invoice No. : I9527298
P.O. Number :
Account : LCE

CERTIFICATE OF ANALYSIS A9527298

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
041	201	229	2	< 0.01	7	420	12	2	3	11	0.05	< 10	< 10	100	< 10	50
042	201	229	2	< 0.01	4	630	12	< 2	2	10	0.04	< 10	< 10	91	< 10	42
043	201	229	1	< 0.01	9	960	12	2	4	12	0.06	< 10	< 10	99	< 10	82
044	201	229	< 1	0.01	8	850	12	< 2	< 1	9	0.01	< 10	< 10	48	< 10	34
045	201	229	4	0.01	9	760	12	< 2	4	32	0.04	< 10	< 10	85	< 10	84
046	201	229	7	0.01	8	1200	14	2	3	26	0.04	< 10	< 10	81	< 10	66
047	201	229	2	0.01	10	840	12	< 2	3	17	0.05	< 10	< 10	85	< 10	70
048	201	229	3	0.01	19	1070	16	2	3	31	0.03	< 10	< 10	85	< 10	136
049	201	229	2	0.01	18	1390	14	2	4	19	0.03	< 10	< 10	88	< 10	144
050	201	229	2	0.01	12	1460	14	< 2	1	19	0.02	< 10	< 10	85	< 10	80
051	201	229	2	0.01	13	930	12	< 2	3	22	0.06	< 10	< 10	98	< 10	116
052	201	229	2	0.01	10	1440	12	2	1	12	0.05	< 10	< 10	93	< 10	80
053	201	229	1	< 0.01	11	1220	12	< 2	1	11	0.06	< 10	< 10	109	< 10	114
054	201	229	2	0.02	16	1240	12	< 2	4	13	0.03	< 10	< 10	52	< 10	74
055	201	229	2	0.01	9	1030	12	< 2	1	12	0.02	< 10	< 10	91	< 10	62
056	201	229	3	0.01	10	1010	14	< 2	3	13	0.04	< 10	< 10	84	< 10	74
057	201	229	3	0.01	7	1160	12	< 2	2	13	0.10	< 10	< 10	84	< 10	52
058	201	229	2	0.01	6	1100	14	< 2	< 1	13	0.02	< 10	< 10	66	< 10	46
059	201	229	1	< 0.01	8	1320	12	< 2	2	18	0.05	< 10	< 10	96	< 10	72
060	201	229	19	< 0.01	10	1950	12	2	2	12	0.01	< 10	< 10	66	< 10	88
061	201	229	4	0.01	8	960	14	2	2	13	0.04	< 10	< 10	73	< 10	62
062	201	229	4	0.01	11	1990	14	< 2	6	31	0.03	< 10	< 10	73	< 10	74
063	201	229	5	0.01	13	530	12	< 2	5	30	0.04	< 10	< 10	91	< 10	84
064	201	229	1	0.01	21	1340	4	< 2	6	10	0.04	< 10	< 10	185	< 10	64
065	201	229	3	< 0.01	12	740	12	2	3	20	0.03	< 10	< 10	100	< 10	66
066	201	229	2	< 0.01	7	1460	16	< 2	3	8	0.03	< 10	< 10	110	< 10	60
067	201	229	2	0.01	4	740	12	< 2	1	17	0.02	< 10	< 10	74	< 10	46
068	201	229	6	0.01	12	760	14	2	4	19	0.04	< 10	< 10	83	< 10	76
069	201	229	6	0.01	12	790	12	2	4	19	0.04	< 10	< 10	84	< 10	74
070	201	229	2	0.01	4	750	12	< 2	1	14	0.03	< 10	< 10	77	< 10	60
071	201	229	2	0.01	9	660	10	< 2	3	18	0.04	< 10	< 10	81	< 10	72
072	201	229	1	< 0.01	7	1700	12	< 2	3	12	0.04	< 10	< 10	85	< 10	58
073	201	229	1	< 0.01	3	580	8	< 2	2	8	0.10	< 10	< 10	97	< 10	26
074	201	229	3	< 0.01	6	830	12	< 2	3	7	0.07	< 10	< 10	96	< 10	60
075	201	229	3	0.01	7	1200	6	< 2	< 1	17	0.02	< 10	< 10	72	< 10	50
076	201	229	1	< 0.01	4	620	8	< 2	3	11	0.12	< 10	< 10	110	< 10	30
077	201	229	9	0.01	10	2090	16	< 2	1	27	0.01	< 10	< 10	58	< 10	60
078	201	229	1	< 0.01	4	1480	8	< 2	3	8	0.06	< 10	< 10	103	< 10	40
079	201	229	4	0.01	18	2760	16	< 2	2	29	0.01	< 10	< 10	72	< 10	132
080	201	229	10	0.01	13	1410	14	< 2	2	23	0.02	< 10	< 10	81	< 10	78

CERTIFICATION: Hart Bichler

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
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To: ALPINE EXPLORATION CORP. **

900 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

Project :
Comments: ATTN: BILL OSBORNE CC:A. L'ORSA

Certificate Date: 18-SEP-95
Invoice No. : I9527298
P.O. Number :
Account : LCE

CERTIFICATE OF ANALYSIS A9527298

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
081	201	229	12	0.01	14	1760	16	< 2	2	31	0.03	< 10	< 10	67	< 10	82
082	201	229	4	0.01	16	1330	12	< 2	1	19	0.02	< 10	< 10	72	< 10	88
083	201	229	15	< 0.01	20	950	18	< 2	3	10	0.01	< 10	< 10	74	< 10	74
084	201	229	14	< 0.01	10	1280	20	2	6	9	0.01	< 10	< 10	90	< 10	52
085	201	229	6	0.01	8	1270	12	< 2	< 1	24	0.01	< 10	< 10	59	< 10	66
086	201	229	6	< 0.01	10	820	22	2	2	15	0.02	< 10	< 10	66	< 10	72
087	201	229	8	0.01	7	1840	20	< 2	1	24	0.02	< 10	< 10	55	< 10	50
088	201	229	3	< 0.01	4	620	16	< 2	1	11	0.04	< 10	< 10	59	< 10	30
089	201	229	4	< 0.01	11	870	18	< 2	1	12	0.02	< 10	< 10	71	< 10	64
090	201	229	34	0.01	9	1140	18	< 2	8	29	0.07	< 10	< 10	70	< 10	80
091	201	229	3	0.01	7	1240	12	2	5	9	0.09	< 10	< 10	108	< 10	72
092	201	229	1	0.01	9	1510	12	< 2	2	9	0.03	< 10	< 10	92	< 10	52
093	201	229	2	0.01	11	1310	12	< 2	4	9	0.04	< 10	< 10	92	< 10	80
094	201	229	8	0.01	8	390	12	< 2	4	12	0.06	< 10	< 10	84	< 10	70
095	201	229	1	0.01	7	1490	14	< 2	3	10	0.06	< 10	< 10	99	< 10	60
096	201	229	1	< 0.01	4	1310	14	< 2	2	9	0.12	< 10	< 10	108	< 10	38
097	201	229	2	< 0.01	7	1610	12	< 2	6	9	0.07	< 10	< 10	83	< 10	58
098	201	229	2	< 0.01	12	1070	46	2	5	14	0.07	< 10	< 10	107	< 10	110
099	201	229	2	< 0.01	4	650	14	< 2	3	16	0.10	< 10	< 10	108	< 10	42
100	201	229	1	0.01	13	1970	18	2	5	19	0.07	< 10	< 10	98	< 10	104
101	201	229	< 1	< 0.01	1	250	8	< 2	1	9	0.08	< 10	< 10	38	< 10	18
102	201	229	7	0.01	10	1340	12	< 2	1	25	0.04	< 10	< 10	87	< 10	80
103	201	229	4	0.01	9	1910	14	2	1	24	0.03	< 10	< 10	72	< 10	74
104	201	229	1	< 0.01	6	1860	10	< 2	4	13	0.10	< 10	< 10	147	< 10	54
105	201	229	6	0.01	11	1550	24	< 2	3	27	0.06	< 10	< 10	73	< 10	78
106	201	229	3	0.01	10	650	14	< 2	3	18	0.03	< 10	< 10	69	< 10	64
107	201	229	1	< 0.01	3	560	8	< 2	1	8	0.04	< 10	< 10	78	< 10	32
108	201	229	< 1	0.01	2	590	6	< 2	< 1	10	0.02	< 10	< 10	33	< 10	30
109	201	229	1	0.01	4	680	8	< 2	2	10	0.02	< 10	< 10	62	< 10	34
110	201	229	2	0.01	6	1840	10	2	2	12	0.03	< 10	< 10	94	< 10	54
111	201	229	1	0.01	2	520	8	< 2	< 1	16	0.01	< 10	< 10	51	< 10	32
112	201	229	4	0.01	7	580	10	< 2	2	22	0.02	< 10	< 10	57	< 10	38
113	201	229	21	0.01	8	2070	14	< 2	4	40	0.08	< 10	< 10	70	< 10	58
114	201	229	5	0.01	7	790	16	< 2	3	11	0.08	< 10	< 10	107	< 10	54
115	201	229	1	0.01	9	1500	12	< 2	6	10	0.04	< 10	< 10	129	< 10	66
116	201	229	34	0.01	13	740	10	< 2	4	29	0.07	< 10	< 10	82	< 10	70
117	201	229	6	0.01	14	1650	12	2	3	16	0.04	< 10	< 10	77	< 10	64
118	201	229	2	0.01	8	560	18	< 2	2	14	0.06	< 10	< 10	77	< 10	44
119	201	229	< 1	0.01	11	820	8	< 2	3	13	0.04	< 10	< 10	86	< 10	70
120	201	229	1	0.01	12	500	10	< 2	5	25	0.04	< 10	< 10	90	< 10	98

CERTIFICATION: HartBichler

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CERTIFICATE OF ANALYSIS A9527298

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
121	201 229	< 5	< 0.2	2.13	6	230	< 0.5	< 2	0.19	< 0.5	7	19	19	4.35	< 10	< 1	0.08	< 10	0.40	375
122	201 229	< 5	< 0.2	2.97	6	130	0.5	< 2	0.11	< 0.5	9	23	17	3.86	10	< 1	0.06	< 10	0.62	765
123	201 229	< 5	< 0.2	2.28	6	90	< 0.5	< 2	0.10	< 0.5	8	24	18	4.42	< 10	< 1	0.07	< 10	0.43	610
124	201 229	not/ss	0.4	2.19	14	90	< 0.5	< 2	0.08	< 0.5	9	23	19	4.14	< 10	< 1	0.09	< 10	0.46	1015
125	201 229	< 5	0.8	3.42	14	140	2.0	< 2	0.51	0.5	14	29	92	4.15	< 10	< 1	0.09	60	0.59	2320
126	201 229	< 5	0.2	2.24	8	90	< 0.5	< 2	0.10	< 0.5	6	23	17	5.14	10	1	0.07	< 10	0.34	405
127	201 229	< 5	0.8	2.48	14	140	< 0.5	< 2	0.15	< 0.5	8	28	17	6.05	10	1	0.10	< 10	0.36	585
128	201 229	< 5	2.0	3.09	20	150	3.0	< 2	0.55	1.0	18	21	95	4.08	< 10	< 1	0.10	70	0.42	5390
129	201 229	< 5	0.6	3.36	14	160	2.0	< 2	0.42	0.5	17	21	51	3.82	< 10	< 1	0.10	40	0.55	2960
130	201 229	< 5	< 0.2	3.54	8	280	0.5	< 2	0.68	< 0.5	10	26	17	4.69	10	< 1	0.09	< 10	0.67	395
131	201 229	< 5	0.4	4.12	8	220	1.5	6	0.54	< 0.5	15	25	38	4.60	10	< 1	0.11	30	0.77	2120
132	201 229	< 5	0.4	3.30	12	120	< 0.5	2	0.20	< 0.5	7	22	20	4.51	10	< 1	0.09	< 10	0.50	280
133	201 229	< 5	< 0.2	3.08	8	120	0.5	< 2	0.31	< 0.5	9	19	32	3.67	< 10	< 1	0.09	< 10	0.70	1005
134	201 229	< 5	< 0.2	3.37	10	80	< 0.5	< 2	0.14	< 0.5	7	19	37	4.87	10	< 1	0.09	< 10	0.49	345
135	201 229	< 5	< 0.2	2.21	4	120	< 0.5	< 2	0.20	< 0.5	5	14	14	3.07	< 10	< 1	0.07	< 10	0.31	395
136	201 229	< 5	0.2	3.31	14	100	0.5	< 2	0.17	< 0.5	7	18	46	4.40	< 10	< 1	0.06	< 10	0.43	315
137	201 229	< 5	0.6	3.80	6	250	1.0	< 2	0.73	< 0.5	12	21	65	3.78	< 10	< 1	0.10	30	0.61	1850
138	201 229	< 5	< 0.2	2.93	16	110	< 0.5	< 2	0.15	< 0.5	9	26	20	5.67	< 10	< 1	0.07	< 10	0.57	435
139	201 229	< 5	< 0.2	4.22	18	140	0.5	< 2	0.16	< 0.5	11	25	56	4.75	10	< 1	0.09	10	0.87	500
140	201 229	< 5	0.4	2.83	12	90	< 0.5	< 2	0.12	< 0.5	7	23	24	5.26	10	< 1	0.07	< 10	0.55	360
141	201 229	< 5	0.2	2.50	6	160	0.5	< 2	0.24	< 0.5	9	23	18	5.81	10	< 1	0.11	< 10	0.35	570
142	201 229	< 5	< 0.2	2.88	14	150	< 0.5	< 2	0.27	< 0.5	9	26	19	5.62	10	< 1	0.10	< 10	0.54	720
143	201 229	< 5	< 0.2	2.59	12	160	< 0.5	< 2	0.16	< 0.5	13	23	26	4.56	< 10	1	0.10	< 10	0.53	3120
144	201 229	< 5	0.2	3.18	14	90	0.5	< 2	0.13	< 0.5	9	22	23	5.30	10	< 1	0.09	10	0.52	570
145	201 229	< 5	0.8	3.58	14	120	1.0	< 2	0.35	< 0.5	16	27	56	4.91	10	< 1	0.08	40	0.68	1790
146	201 229	< 5	< 0.2	2.90	10	120	0.5	< 2	0.43	< 0.5	10	17	28	3.79	< 10	< 1	0.09	10	0.68	670
147	201 229	< 5	0.2	3.38	14	300	0.5	< 2	0.83	< 0.5	13	21	35	4.46	< 10	< 1	0.13	10	0.87	1080
148	201 229	< 5	< 0.2	2.92	10	150	< 0.5	< 2	0.26	< 0.5	9	17	22	4.71	10	< 1	0.09	< 10	0.61	435
149	201 229	< 5	0.6	3.81	8	260	1.0	< 2	0.47	0.5	16	19	29	4.68	10	< 1	0.10	20	0.49	7850
150	201 229	< 5	< 0.2	3.07	12	130	0.5	< 2	0.17	< 0.5	8	20	22	5.29	10	< 1	0.08	< 10	0.42	620
151	201 229	< 5	< 0.2	3.35	8	210	0.5	< 2	0.34	< 0.5	10	18	25	4.55	10	< 1	0.10	10	0.69	1050
152	201 229	< 5	< 0.2	3.17	16	100	< 0.5	2	0.11	< 0.5	8	21	23	6.43	10	< 1	0.08	< 10	0.51	525
153	201 229	< 5	< 0.2	3.46	10	110	< 0.5	< 2	0.13	< 0.5	10	21	22	5.49	10	< 1	0.10	< 10	0.56	815
154	201 229	< 5	< 0.2	2.66	8	130	< 0.5	< 2	0.15	< 0.5	8	17	20	4.34	10	< 1	0.09	< 10	0.50	740
155	201 229	< 5	0.2	3.35	10	110	0.5	< 2	0.15	< 0.5	8	17	18	4.82	10	< 1	0.08	< 10	0.40	450
156	201 229	< 5	0.4	3.96	12	80	< 0.5	< 2	0.17	< 0.5	9	21	23	5.17	10	< 1	0.12	< 10	0.60	485
157	201 229	< 5	0.2	2.86	16	100	< 0.5	< 2	0.18	< 0.5	8	17	16	5.22	10	< 1	0.10	< 10	0.48	535
158	201 229	< 5	< 0.2	3.91	8	170	0.5	< 2	0.27	< 0.5	11	19	19	4.05	10	< 1	0.10	10	0.53	605
159	201 229	< 5	0.2	5.06	12	280	1.0	< 2	0.49	< 0.5	15	25	30	5.27	10	< 1	0.17	10	0.81	3370
160	201 229	< 5	< 0.2	2.67	6	180	0.5	< 2	0.15	< 0.5	7	17	16	4.61	10	< 1	0.07	< 10	0.30	525

CERTIFICATION: [signature]

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: ALPINE EXPLORATION CORP. **

900 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

Project :
Comments: ATTN: BILL OSBORNE CC:A. L'ORSA

Certificate Date: 18-SEP-95
Invoice No. : I9527298
P.O. Number :
Account : LCE

CERTIFICATE OF ANALYSIS A9527298

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
161	201	229	< 1	0.01	8	620	10	< 2	4	24	0.06	< 10	< 10	82	< 10	94
162	201	229	2	0.01	9	660	12	< 2	3	23	0.04	< 10	< 10	90	< 10	86
163	201	229	20	0.01	11	1540	14	< 2	8	37	0.03	< 10	< 10	145	< 10	108
164	201	229	4	0.01	8	850	8	< 2	4	37	0.05	< 10	< 10	79	< 10	96
165	201	229	2	0.01	6	1190	14	< 2	4	20	0.07	< 10	< 10	106	< 10	88
166	201	229	1	0.01	6	620	12	< 2	4	20	0.08	< 10	< 10	88	< 10	76
167	201	229	6	0.01	9	1590	10	< 2	6	42	0.04	< 10	< 10	88	< 10	156
168	201	229	3	0.01	7	1010	12	< 2	3	29	0.06	< 10	< 10	85	< 10	74
169	201	229	2	0.01	10	760	12	< 2	5	25	0.07	< 10	< 10	97	< 10	122
170	201	229	2	0.01	9	670	14	< 2	4	25	0.07	< 10	< 10	99	< 10	80
171	201	229	1	0.01	8	1050	14	< 2	6	27	0.11	< 10	< 10	108	< 10	80
172	201	229	2	0.01	4	1010	12	< 2	4	24	0.09	< 10	< 10	84	< 10	52
173	201	229	9	0.01	6	1190	14	< 2	6	30	0.04	< 10	< 10	84	< 10	70
174	201	229	4	0.01	7	830	14	< 2	4	30	0.08	< 10	< 10	107	< 10	62
175	201	229	2	0.01	6	940	14	< 2	4	14	0.12	< 10	< 10	118	< 10	68
176	201	229	8	0.01	11	1070	18	< 2	1	16	0.03	< 10	< 10	71	< 10	70
177	201	229	10	0.01	6	930	14	< 2	< 1	17	0.03	< 10	< 10	47	< 10	48

CERTIFICATION:

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: ALPINE EXPLORATION CORP. **
900 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

Project :
Comments: ATTN: BILL OSBORNE CC:A. L'ORSA

Page Number : 1
Total Pages : 1
Certificate Date: 12-SEP-95
Invoice No. : I9527299
P.O. Number :
Account : LCE

CERTIFICATE OF ANALYSIS A9527299

SAMPLE	PREP CODE		Au FA oz/T	Ag FA oz/T
PS-151-F95	208	226	0.016	1.6
PS-152-F95	208	226	< 0.002	< 0.1
PS-153-F95	208	226	< 0.002	< 0.1

CERTIFICATION: [signature]

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: ALPINE EXPLORATION CORP. **
900 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

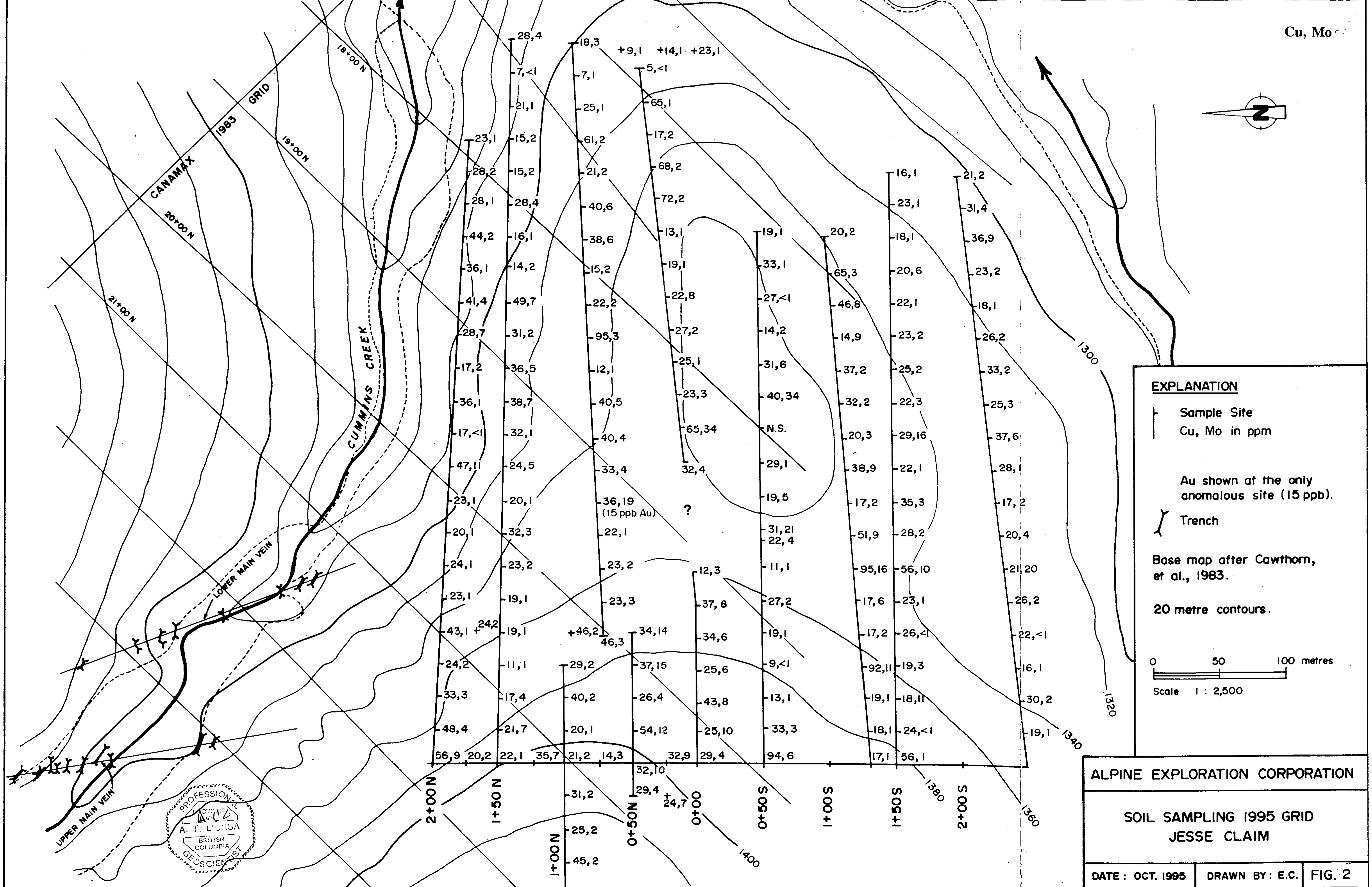
Project :
Comments: ATTN: BILL OSBORNE CC: A. L'ORSA

Page Number : 1
Total Pages : 1
Certificate Date: 18-OCT-95
Invoice No. : I9530416
P.O. Number :
Account : LCE

CERTIFICATE OF ANALYSIS A9530416

SAMPLE	PREP CODE	Au oz/T	Cu %								
T-1	208 226	< 0.001	0.04								

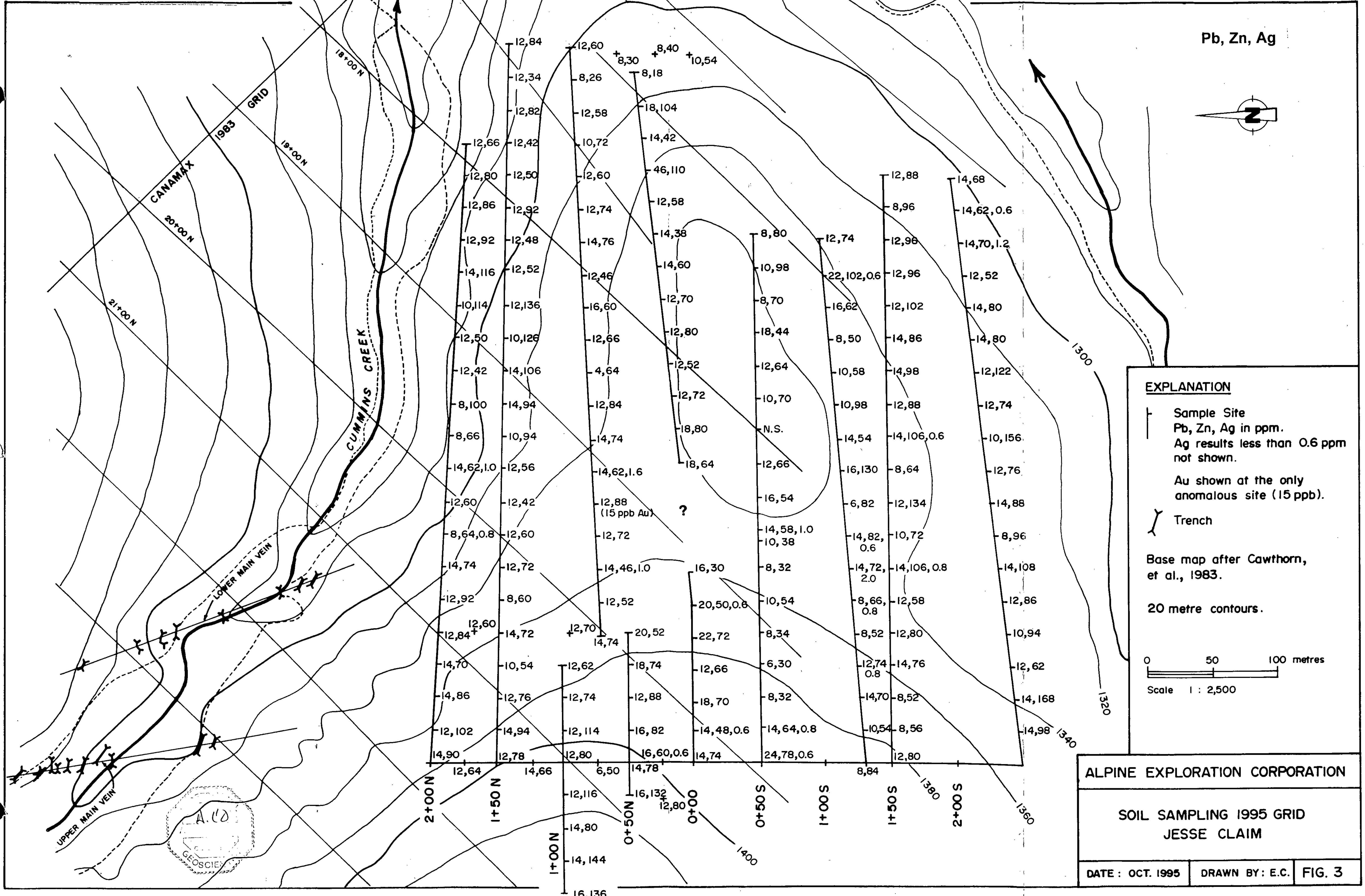
CERTIFICATION: Saint Peingal



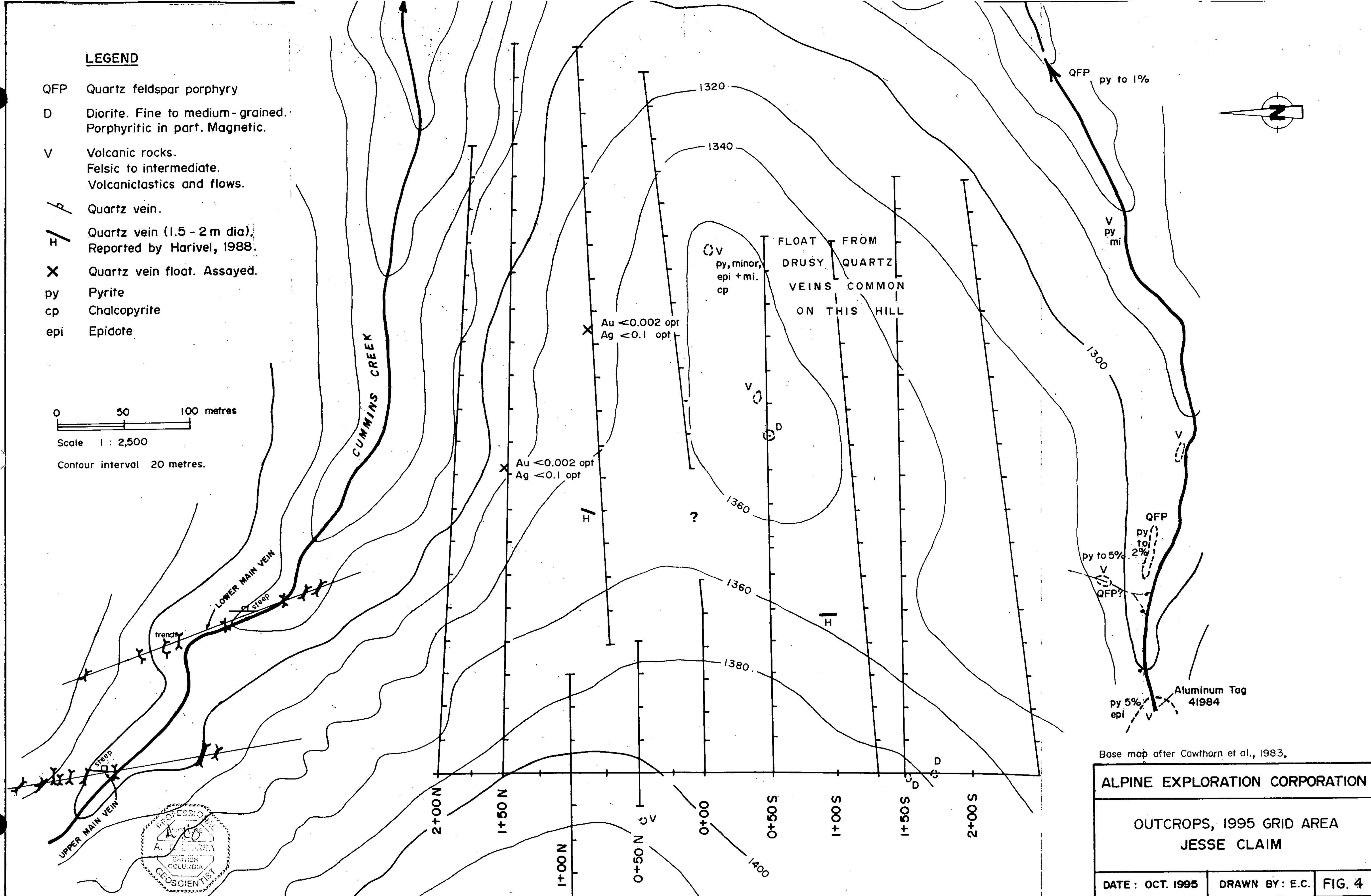
ALPINE EXPLORATION CORPORATION

SOIL SAMPLING 1995 GRID
JESSE CLAIM

DATE: OCT. 1995 | DRAWN BY: E.C. | FIG. 2



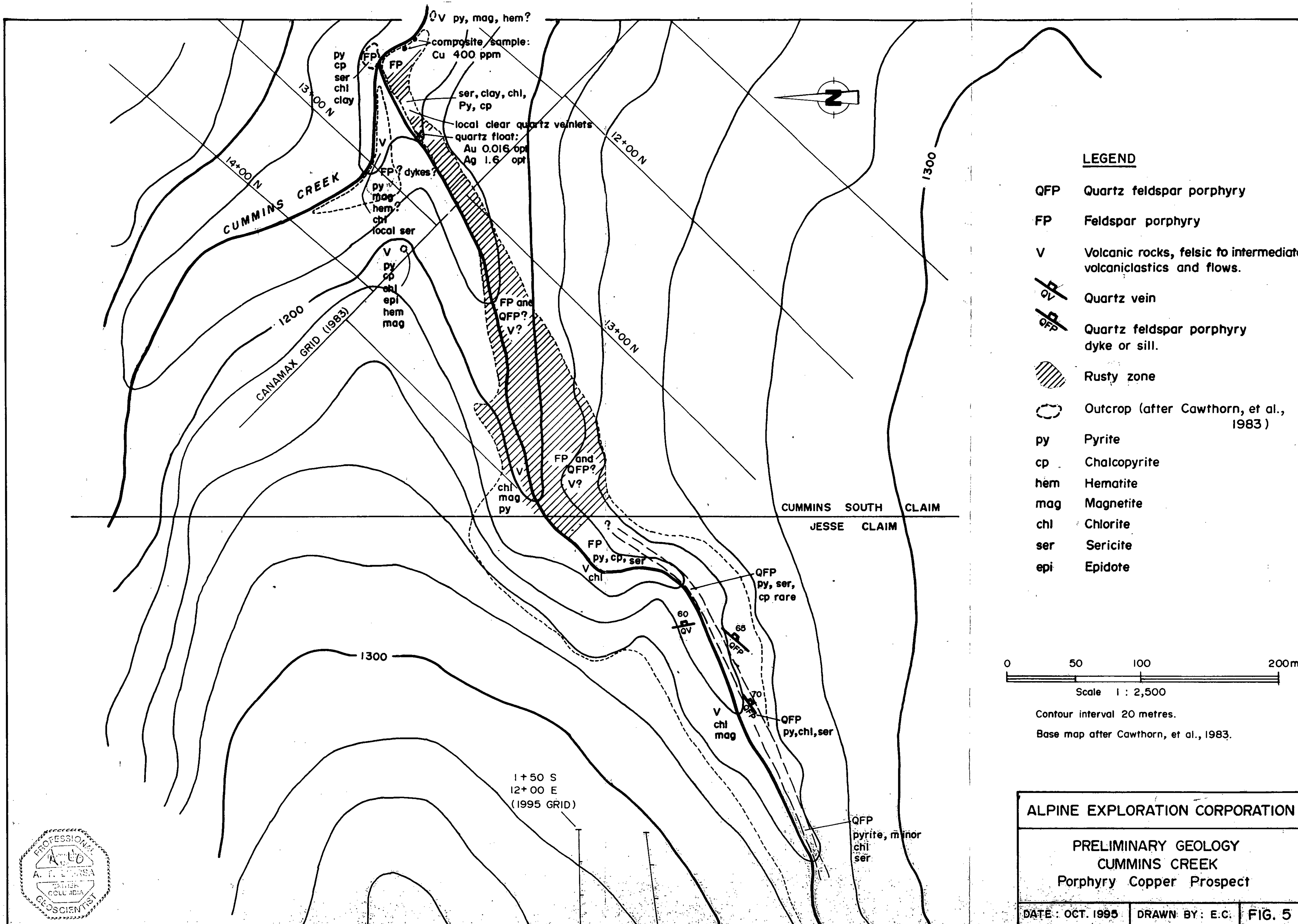
Pb, Zn, Ag
CANAMAX 1983 GRID
18+00 N
19+00 N
20+00 N
21+00 N
CUMMINS CREEK
LOWER MAIN VEIN
UPPER MAIN VEIN
2+00 N
1+50 N
1+00 N
0+50 N
0+00
0+50 S
1+00 S
1+50 S
2+00 S
1300
1320
1340
1360
1380
1400
12,88 (15 ppb Au)
N.S.
?
EXPLANATION
Sample Site
Pb, Zn, Ag in ppm.
Ag results less than 0.6 ppm not shown.
Au shown at the only anomalous site (15 ppb).
Trench
Base map after Cawthorn, et al., 1983.
20 metre contours.
0 50 100 metres
Scale 1 : 2,500
ALPINE EXPLORATION CORPORATION
SOIL SAMPLING 1995 GRID
JESSE CLAIM
DATE : OCT. 1995
DRAWN BY: E.C.
FIG. 3



ALPINE EXPLORATION CORPORATION

OUTCROPS, 1995 GRID AREA
JESSE CLAIM

DATE : OCT. 1995 | DRAWN BY : E.C. | FIG. 4



ALPINE EXPLORATION CORPORATION

PRELIMINARY GEOLOGY
CUMMINS CREEK
Porphyry Copper Prospect

DATE : OCT. 1995 | DRAWN BY : E.C. | FIG. 5