

**ASSESSMENT REPORT  
ON  
GEOLOGY AND GEOCHEMISTRY  
OF C-ANOMALY  
JEAN PROPERTY**

**WORK ON: JW 162, JW 300, 302 MINERAL CLAIMS  
CHUCHI LAKE-AREA, OMINECA MINING DIVISION,  
BRITISH COLUMBIA**

**LAT. 55°05' N; LONG. 124°56' W**

**NTS 93N/2W; DIGITAL MAPS: 93N.006, 93N.016**

**WORK CARRIED OUT: JULY 24 TO SEPTEMBER 26, 2007**

**OPERATOR: NEWSTRIKE RESOURCES LTD.**

**OWNERS: R.U. BRUASET & ASSOCIATES LTD., D.L. COOKE  
& ASSOCIATES LTD.**

**REPORT BY: R. U. BRUASET, B.Sc.**

**FEBRUARY 02, 2008**

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### APPENDIX 1

Eco Tech Laboratory Ltd.: ICP Certificate and Certificate of Assay No. AK 2007-1311

Analytical Procedures for ICP and ASSAY

Rock sample descriptions

### APPENDIX 2:

Stereograms



LEGEND

-  Jean Property Location
-  Highway
-  River

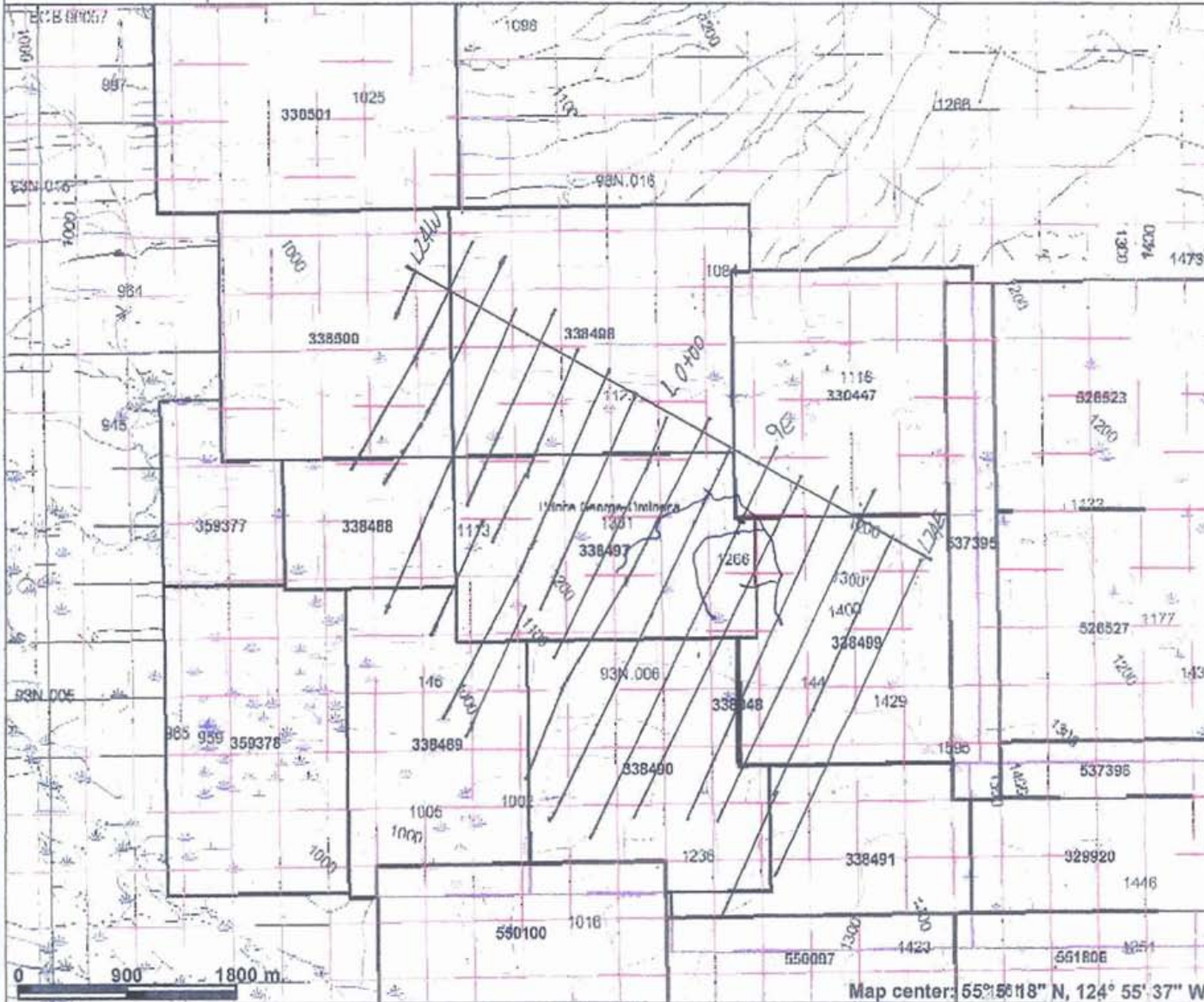
**JEAN PROPERTY  
PROJECT LOCATION MAP  
British Columbia, Canada**

Date: June 2006

Figure: 1



# Jean Property



## Legend

- Indian Reserves
- National Parks
- Parks
- Mineral Titles Grid (LRDW)
- Mineral Tenures (Mineral - LRDW)
- Mineral Claim
- Mineral Lease
- Reserves (Mineral - LRDW Sites)
- Placer Claim Designation
- Placer Lease Designation
- No Staking Reserve
- Conditional Reserve
- Release Required Reserve
- Surface Restriction
- Recreation Area
- Others
- BCGS Grid
- Contours (1:250K)
- Contour - Index
- Contour - Intermediate
- Area of Exclusion
- Area of Indefinite Contours
- Transportation - Points (TRIM)
- Helipad
- Transportation - Lines (TRIM)
- Airfield
- Airport
- Airstrip
- Airport/Abandoned
- Ferry Route
- Road (Gravel Undivided) - 1 Lane
- Road (Gravel Undivided) - 2 Lanes
- Road (Gravel Undivided) - U/C - 1 Lane



Scale: 1:50,000  
(Approx.)

Map center: 55° 55' 18" N, 124° 55' 37" W

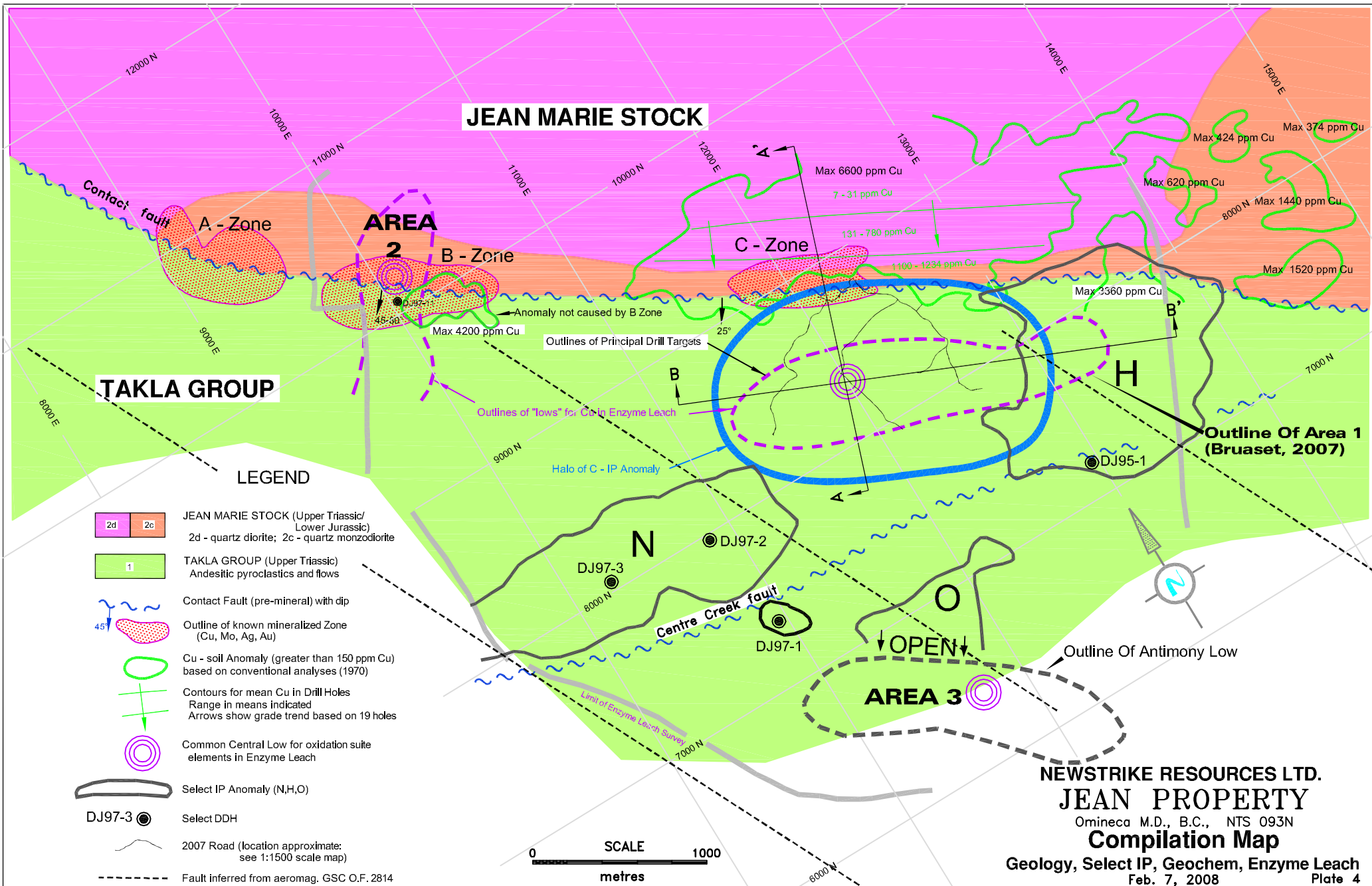
This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Roads  
built 2007  
approx.



2006 ENZYME LEACH GRID

PLATEZ



## INTRODUCTION

The Jean copper-molybdenum-silver-gold porphyry prospect is located in northcentral British Columbia at latitude 55°05'N., longitude 124°56'W. This is approximately 190 km northwest of City of Prince George and about 50 km west of the Mt. Milligan Cu-Au porphyry deposit. The local physiographic division is Nechako Lowland.

The area of economic interest on Jean occurs along the southwest contact of Jean stock, a calc-alkaline pluton thought to be of Upper Triassic/Lower Jurassic age. The intrusion is considered to be coeval with intermediate and basic island arc volcanics of the Takla Group. The pluton is zoned and elongate west-northwesterly. Jean stock appears to be composite. While the older phases are calc-alkaline, the younger include monzonite, which is alkaline, and felsic rock whose chemistry is less precisely known. The diorite border phase of the stock, including lesser quartz diorite, wraps around the north, the east and the south sides of a quartz monzodiorite pluton "core". Contact fault, a normal fault, striking west-northwesterly and dipping southwesterly, truncates the "core" of the stock and brings Takla country rocks into contact with the "core". The downthrown Takla rocks, which are contact metamorphosed, are unroofed into hornblende hornfels facies for at least one half km southwest from the "core". Pyroxene hornfels facies is not developed in the immediate vicinity of the "core", nor has it been encountered by the maximum depth of metamorphic investigation. All known deposits in the Jean mineralizing system, and many of its untested drill-targets, cluster along Contact fault. Contact fault is clearly pre-mineral, and apparently a key "plumbing" component in this hydrothermal system. Breccia pipes are good channel-ways for hydrothermal solutions. Such a pipe occurs under the centre of the B-Zone, the principal deposit on the property. The pipe was intersected in JDH 97-11, the last drill hole completed. The J 97-11 breccia contains high-grade copper mineralization and bottoms in higher-grade Cu-Mo mineralization hosted by a felsite dyke. B-Zone is likely genetically related to the breccia.

Current exploration interest is centered on the so-called C-Anomaly, an elliptical Induced Polarization anomaly, about 1 km wide and 2 km long located on the southwest side of Contact fault. A Cu-Mo deposit known as the C-Zone was discovered in the 1974 percussion drilling program in what is now considered to be the northern pyrite halo of the C-Anomaly. Selective extraction Enzyme Leach geochemistry has also assisted targeting. Approximately coincident with the centre of the C-Anomaly, is the common central low of 10 oxidation suite of elements. The common central lows of the rare-earth elements and the high-field strength elements, cluster with the aforementioned. The Enzyme Leach survey, covering 15 square kilometers of the Jean property, was carried out by the author in 2006. Close coincidence exists between the clustering of various common central lows from the Enzyme Leach and the center of the C-Anomaly. Two independent targeting methods are indicating the same general target although the Enzyme Leach is indicating, as expected, more specific parts of the target for follow up. Other geological, geochemical and geophysical parameters enhance the merits of this target.



The 2007 project encountered encouraging levels of Cu-Ag and Au in dyke and vein occurrences, respectively, over narrow widths, within C-Anomaly. Dyke sample No. 99064 contains 7.16% Cu, 97.9 g/t Ag and 75 ppb Au over 0.4 m and vein sample No. 99067 contains 21.0g/t Au, 2590 ppm Cu and >10,000 ppm As over 0.2 m.

In the course of the subject program, new roads, about 4 km in total within C-Anomaly, were mapped at a scale of 1:1,500. A total of 17 rock samples comprising intrusive and volcanics, were obtained for geochemical analyses. The mapping encountered fine grained pyroclastic rocks, generally lithic and fine grained tuffs of the Takla Group. Several varieties of intrusive, including the quartz monzodiorite "core" of Jean stock and various dykes, including felsic and monzonite compositions were mapped .

Trace to minor chalcopyrite, with heavier associated pyrite, is typical for the map area. The principal copper, gold and silver anomalies indicated, suggest potential for these metals in the subsurface. Gossan development is widespread. Propylitic alteration, indicated by chlorite and calcite, and potassic, indicated by secondary biotite, are the principal alteration facies evident in the volcanics of the map area.

The current work indicates low magnetic susceptibility in the volcanics of the C-Anomaly. The fact that an aeromagnetic high is located over the targets indicates that higher susceptibility intrusive rocks probably occur at shallow depth within the downthrown block.

The work carried out is preparatory to a drilling program recommended by Robert H. Pinsent, PhD., P.Geol. in his report of June 10, 2007.

### **LOCATION, ACCESS, TOPOGRAPHY AND VEGETATION**

The Jean Property is located 190 km northwest of the City of Prince George in north central B.C.

The physiographic division is northern Nechako Lowland (Mathews, 1986). The property straddles the Pacific-Arctic continental divide with drainage to both Fraser and Mackenzie Rivers.

Access from Fort St. James, the nearest population centre, is partly by paved public roads and partly by gravel surfaced logging roads, a total distance of 115 km, including Jean road. Jean-access; involves the following roads: North Road or Germansen Road, Tachie Road, Leo Creek Road, 100 Road, Blue Road. The first 51 km, from Fort St. James to the start of Leo Creek Road, is paved.

The terrain has been glaciated and the direction of ice-movement is from west to east (Armstrong, 1949). Elevations range from about 1,000 m in the southern extremity of the property to 1,600 m in the central part. The southern part of the property lies on the east side of the prominent NW trending valley in which the regional Pinchi Fault occurs. The



northern part of the property spans the 0.6 to 1.5 km wide valley of Jean Creek (unofficial name).

The property is forested by mixed spruce, balsam fir and lodgepole pine. The valley floors are mainly spruce and lodgepole pine while the higher areas are spruce and balsam. The pine beetle epidemic has destroyed practically all lodgepole pine stands.

### PROPERTY

The Property consists of a total of about 11,700 hectares of mineral land in 33 mineral tenures, both Legacy and Cell-based. The registered owners are D.L. Cooke & Associates Ltd., D.L. Cooke and Ragnar U. Bruaset & Associates Ltd. The entire property is beneficially owned 50:50 by D.L. Cooke and Ragnar U. Bruaset companies. The property is a partial relocation of the former J.W. and Jean claims held by NBC Syndicate variously during the period 1969 to 1991.

### LIST OF CLAIMS

CLAIM NAME	TENURE NUMBER	AREA
JW 162	330447	400.0
JW 201	329920	375.0
JW 300	338497	375.0
JW 301	338498	500.0
JW 302	338499	400.0
JW 303	338500	400.0
JW 304	338501	500.0
JW 305	338488	300.0
JW 306	338489	375.0
JW 307	338490	500.0
JW 308	338491	375.0
JW 309	359377	150.0
JW 309 FR	338948	25.0
JW310	359378	375.0
JW 400	526527	370.324
JW 401	526523	370.175
JW 405	537395	166.62
JW 406	537396	92.605
JW 411	550100	444.661
JW 410	550097	444.707
JW 112	550107	333.652
JW 403	550480	463.406
JW 404	550484	463.645
JW 405	550487	445.077
JW 413	551806	444.703
JW 414	551807	222.355

JW 415	551808	370.725
JW 416	551809	426.541
JW 417	551810	315.365
JW 418	555102	444.849
JW 419	555103	445.01
JW 420	555104	445.148
JW 421	555105	445.287

### GROUND CONTROL

The ground control survey was conducted along the approximate centre of roads and included tie-in of mapping stations. Equipment used included NCI hip-chain and plastic Brunton set at declination 20°57'E. This up to date declination was obtained from the GSC Geomagnetic Laboratory in Ottawa. Each road-station consisted of flagging tied to a rock and each was front and back-sighted. The plotting direction of a segment of road is the average of front and back sights. Local grid lines from the 2006 Enzyme Leach survey were tied in, including percussion hole PH 74-18. The grid appearing on Plates 3 and 4 is a map grid with true north orientation.

### REGIONAL GEOLOGY

The Jean property is situated near the western edge of Quesnellia, occasionally called Quesnel Trough in pre-terranic vernacular. This terrane is separated from Cache Creek Terrane, the next accreted terrane to the west, by regional Pinchi Fault system (GSC Map 1712 A: Tectonic Assemblage Map of the Canadian Cordillera and Adjacent Parts of U.S.A.)

Jean Marie Stock, or simply Jean Stock, is considered by Garnett, 1978, to be an intrusive outlier of the Southern Hogem Batholith. It is located south of Tchentlo Lake, about 6 km due south of Mount Alexander. According to Garnett, p. 17: "The Hogem granodiorite is a distinctive leucocratic felsic division predominantly granodioritic in composition but also containing the rock varieties quartz monzodiorite, quartz monzonite, and, more rarely, quartz diorite, tonalite, and granite".

Known copper-gold mineralization in Southern Hogem Batholith is spatially associated with syenitic rocks of Lower/Middle Jurassic age. Examples include Lorraine and Tam in the Duckling Creek Syenite Complex (Garnett, pp. 42-51). The more recently discovered Cu-Au prospect of High Ridge Resources on Chuchi Mountain occurs in an area described by Garnett, 1978 ( Fig. 3) as leucocratic granite, quartz syenite, alaskite, and leucocratic syenite of Lower Cretaceous, Lower/Middle Jurassic and Upper Triassic/ Lower Jurassic age. A description of the High Ridge property by Mark Rebagliati indicates the geology is complex and the property highly prospective for alkaline copper-gold porphyry (Rebagliati, 2005). The Kwanika Creek Cu-Au porphyry prospect of Serengeti Resources Inc., in its 3<sup>rd</sup> year of testing, is situated about 50 km NW of Jean near Pinchi Fault.

Unlike the Kamloops map-area of southern B.C., where calc-alkaline and alkaline facies of the Takla Group-equivalent Nicola Group occur as separate belts, it appears that the same rocks in the Southern Hogen Batholith-area overlap giving rise to potential for Upper Triassic/Lower Jurassic mineralizing systems involving all of Cu, Mo, and Au.

## PROPERTY GEOLOGY

The Jean Property is underlain by Jean stock and Upper Triassic Takla volcanics. The age of the stock is unknown, but assumed to be Upper Triassic/Lower Jurassic. The interpretations of the K/Ar dates of  $136\pm 4$  Ma (biotite) and  $131\pm 4$  Ma (hornblende) on Jean granodiorite, in Garnett, 1978, are equivocal.

This zoned pluton is 11 km long by 3 km wide; is elongate west-northwesterly. Its central phase is quartz monzodiorite and the border phase is diorite. A pre-mineral fault, known as Contact fault, forms the southwest contact of the stock trending west-northwest and dipping variously 25 to 80° SW. Contact fault brings Upper Triassic Takla volcanics against the "core" of the stock.

JoAnne Nelson, Senior Project Geologist with Geological Survey Branch of Ministry of Energy, Mines and Petroleum Resources has made a brief examined of several thin sections prepared from a suite of Takla rocks from the area southwest of Jean stock. Three of the sample sites fall within the current map area. Nelson described the rocks as typical Takla (Witch Lake succession) fine grained pyroclastics of basalt, augite plagioclase phyric parentage (Nelson, written communication, 1995; also refer to MRDGSB Open File 1991-3). Ms. Nelson indicated the widespread occurrence of secondary biotite in the area is important because this type of alteration forms major halos at all known porphyry systems in the Tchentlo Lake-Mt. Milligan area.

The plutonic rock classification in use in 1973, during the initial mapping of the Jean Property was D. W. Peterson, AGI 23 (Bruaset, 1973). Typical modes of the principal plutonic rocks from Jean are given in Table 1 which includes the IUGS classification of intrusive from the "core" of Jean stock. The table includes 3 samples of intrusive rock from 2007.

Quartz monzodiorite in the "core" of the stock, as well as quartz diorite in its border phase, host fracture controlled chalcopyrite, molybdenite and pyrite. Percussion drill hole JPH 74-17, situated near Enzyme Leach grid point L3E, 4+50S indicates that the C-Zone extends under the volcanics.

Table 1. PLUTONIC ROCK CLASSIFICATION OF SELECT JEAN ROCKS

M	O	D	E	CLASSIFICATIONS		
% biot. +hbl	% Quartz	% KSpar	% Plag.	IUGS (Geotimes (Oct. 1973) MODE NORMALIZED TO 100% e.g. for K in sample J07- 550:20x100/85=23.5 % (Q+K+P=100) OBTAIN NAME FROM TERNARY DIAGRAM	D.W.Peterson AGI 23 (Geotimes #5, 1960) NAME (Jean classification of 1970s.	Ref. A-F: see ternary diagram
10	15 (total	15 is:	60 90%)	Quartz monzodiorite (16.7 +16.7 +66.6=100)	Granodiorite	Garnett, 1978 A
6	14 (total	12 is:	68 94%)	Quartz monzodiorite (14.9 +12.8 + 72.3=100)	Granodiorite	Bruaset, 1974* B
6	6 (total	5 is:	83 94 %)	Quartz diorite (6.4+5.3+88.3=100)	Diorite	Bruaset, 1974* C
15	5 (total	20 is:	60 85%)	Quartz monzodiorite (5.9+23.5+70.6=100%)		station J07- 550* D
5	5 (total	15 is:	75 95%)	Quartz monzodiorite (5.3+15.8+78.9=100%)		J07- 800* E
5	0 (total	50 is:	45 95%)	Monzonite (0+52.6+47.4=100%)		J07- 182* F

\* Sawn surfaces were etched and stained with HF and sodium cobaltinitrite- see below for details. Textures are granitic. The rocks are massive medium grained and leucocratic.

The current mapping along the new roads in C-Anomaly encountered fine-grained, massive, pyroclastics of the Upper Triassic Takla Group (Plate 3). These rocks are crystal-lithic tuffs and fine grained tuff, based on the Compton classification, Table 2, (Compton, 1962).



JEAN PROPERTY

Brusard, 2008 A.R.

QUARTZ 46 4490

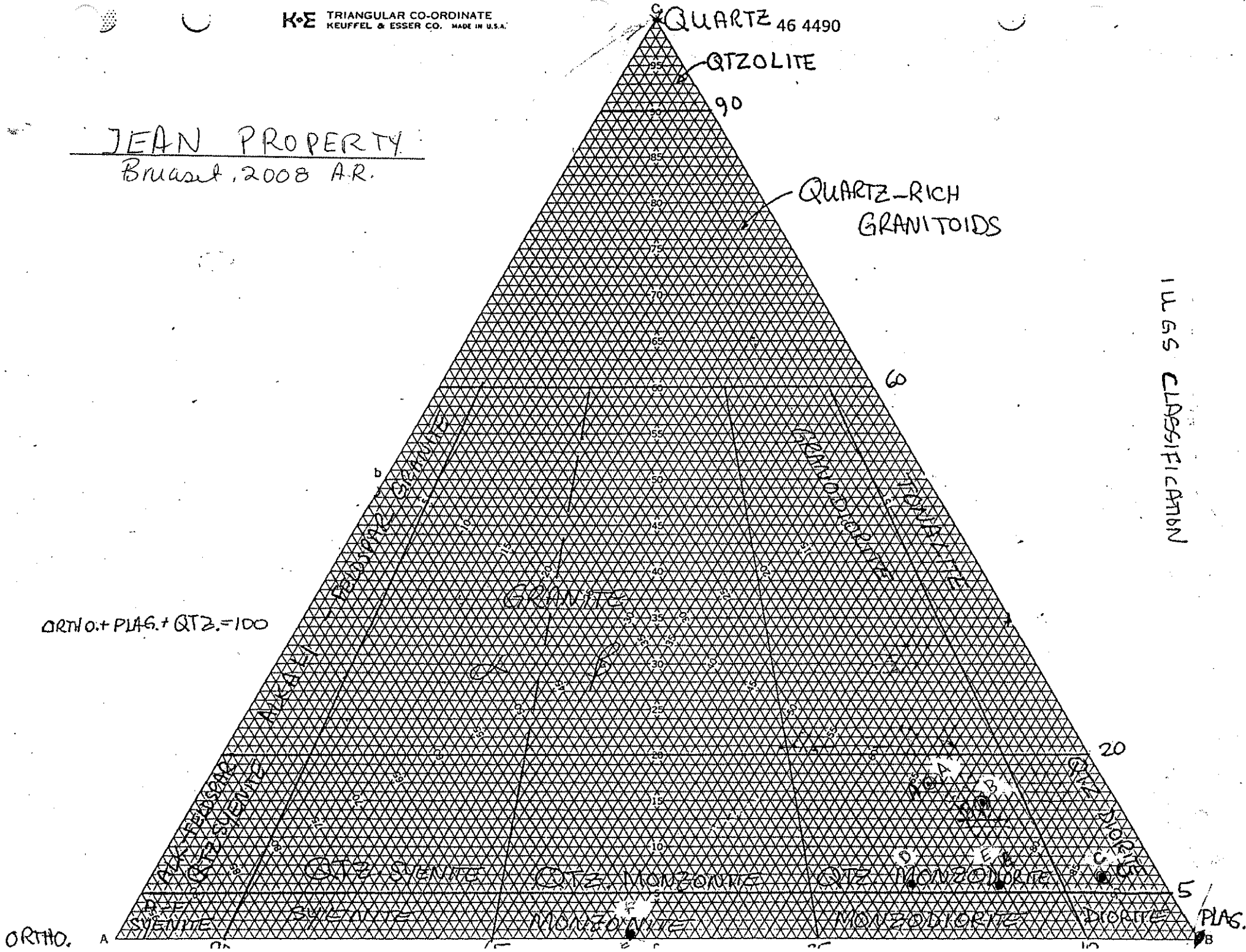
QTZOLITE

90

QUARTZ-RICH  
GRANITOIDS

IUGS CLASSIFICATION

$ORTHO. + PLAG. + QTZ. = 100$



ORTHO.

A

C

B

PLAG.

Table 2. Part of Compton's classification of pyroclastic rocks.

Compton's classification applying to rocks mapped. Compton, 1962 p. 256
<p>b. Clasts from 64 mm to 4 mm.</p> <p>Fragments are LAPILLI; aggregates also LAPILLI, and lithified aggregate LAPILLI TUFF. SCORIACEOUS and PUMICEOUS LAPILLI are commonly rounded or drawn out during eruption; LITHIC lapilli are typically angular, while ACCRETIONARY lapilli are pellets formed by accretion of fine ash usually around raindrops, during eruption.</p>
<p>c. Clasts from 4 mm to ¼ mm.</p> <p>Loose aggregates are COARSE ASH, lithified aggregate COARSE-GRAINED TUFF. The larger ash particles may have discernable textures, structures, and shapes, as for LAPILLI. If most fragments are glass, rock is VITRIC TUFF; if most are crystals, rock is CRYSTAL TUFF, and if most are rock fragments, rock is LITHIC TUFF; nearly equal mixtures are CRYSTAL-VITRIC TUFF, etc.</p>
<p>d. Fragments smaller than ¼ mm.</p> <p>Loose aggregate is FINE ASH or VOLCANIC DUST; lithified aggregate is FINE-GRAINED TUFF; compositional adjectives used as in c. above.</p>

The map area is drift covered. Overburden thickness averages less than 2 m, and only exceeds 5 m rarely.

During the current program, about 70 rock specimens were sawn. Samples of pyroclastics were examined with the aid of binocular microscope. All volcanic rocks underwent feldspar-etching and staining in search of fracture controlled Kspar. The feldspar-etching and staining involved first a quick hydrofluoric acid etch- about 10 seconds, to distinguish plagioclase from quartz: plagioclase is etched and quartz is unaffected. After washing, the etched surface was re-immersed, this time, in sodium cobaltinitrite solution for about 1 minute. Any potassium feldspar present stains yellow. Granite from a dimension stone was periodically stained to test the strength of the solution. Staining of Takla rock indicated that they are generally devoid of Kspar selvages or other concentrations of Kspar attributable to alteration.

No thin-section was prepared from the current samples. Each sample was subject to a cursory test of relative magnetic susceptibility by means of pencil magnet.

It has not been possible to determine the attitude of the Takla volcanics in the C-Anomaly, or elsewhere on the property. No flow banding or marker horizon has been recognized in the map area.

Samples of Takla rocks were found to be non-magnetic with the exception of sample No. 189 which was moderately magnetic. Samples of quartz monzodiorite readily attract the pencil magnet and are classified as moderately to strongly magnetic. The single monzonite sample, J 07-182, was found to be non-magnetic, a little surprising perhaps, but not unique. Each sample was also tested for calcite by means of 10% HCl. Any sample containing abundant calcite is indicated by CA on Plate 3. Calcite is assumed to be indicative of propylitic alteration along with chlorite. No epidote was observed. In the course of binocular microscope examination, the type and amount of sulphide present was assessed, and noted (Plate 3). Samples were also checked for secondary biotite, an earlier recognized form of potassic alteration, variously present in Takla rocks on Jean. Quartz monzodiorite samples contain Kspar selvages, although this potassic alteration is generally weakly developed. Chloritization of mafics in quartz monzodiorite is ubiquitous. Weak silicification by quartz veining in quartz monzodiorite is indicated.

The most intense fracturing and oxidation occur in an area 600 by 700 m (Plate 3). The highest analyses for Cu-Ag and Au-Cu-As occur in samples from the northern part of this area.

## MINERALIZATION

Pyrite and chalcopyrite, respectively, are the most abundant sulphides in the map area. Disseminated magnetite occurs in local exposures of quartz monzodiorite core of Jean stock but magnetic minerals are seldom found in the volcanics. Horizontal to gently dipping fractures are particularly favourable controls of heavy chalcopyrite in the map area, a feature also noted in the volcanics of the A and B-Zones. This is not to say that steeper fractures are not mineralized with copper; they are, but tend to be less "juicy". Property-wide, gently dipping dykes, are favourable hosts of copper mineralization. Station No. 400, located on Middle Road, features a deeply weathered and fault-deformed dyke 0.4m wide which dips gently southwesterly. The dyke hosts heavy chalcopyrite, malachite and azurite. The hanging and footwall volcanics at the Dyke-showing are intensely fractured. Chip sample No. 99064 containing heavy chalcopyrite, malachite and azurite, gave 7.16 % Cu, 97.9 g/t Ag and 75 ppb Au over 0.40 m. The dyke can be traced a total distance of 7.5 m to the ditch; beyond which it is obscured by Takla volcanics and the road. The original biogeochemical reconnaissance sample line run by the author in 1993 across the areas that are now called the C- and N- Anomalies included the anomalous sample at station No. J 93-16. This station was located a short distance down-hill from the station No. 400 copper showing and apparently detected its dispersion (Bruaset, 1994).

At station No.120 on the north-side of Centre Road, a vertical vein of semi-massive arsenopyrite, with chalcopyrite, is about 0.2 m wide. The vein is located between two

faults and appears to be truncated. A grab sample of approximately 2 kg of vein material contains 21.0 g/t Au, 2590 ppm Cu, and 1.4 ppm Ag over 0.2m.

At station No. 402, a short distance east of the station No. 400 Cu showing, a fragment of intrusive containing chalcopyrite was found in a fault cutting Takla volcanics.

At station No. 500 along the N-S section of Centre Road, a felsic dyke has been found to contain a possible epithermal calcite breccia. Comb structure is displayed by calcite crystals growing from the sides of fragments. This material is not anomalous in gold, at the applicable detection limit of 5 ppb. This material is, however anomalous in As and Mo, both considered pathfinders in epithermal systems; where As, and possibly Mo, form primary halos. Frequently, high structural levels of epithermal systems contain little gold.

A prominent layer of siliceous Takla rocks with an average thickness 0.5 m occurs at station No. 700 about 400 m easterly of station No.500. Two samples yielded weakly anomalous Au at 15 ppb as well as 25 and 62 ppm Mo; some of the highest geochemical values in Mo in this survey. Mo in this case could be a pathfinder of epithermal gold.

## STRUCTURE

The mapping indicates intense fracturing and numerous faults in Takla rocks in a large part of C-Anomaly (Plate 3). Appendix 2 contains three stereograms of poles to fractures for rocks occurring along the three roads built in 2007. The principal clusters of poles are circled and the average attitude represented by each cluster is indicated in a table at the bottom of each stereogram. Table 3 lists the principal faults mapped along each road and Table 4 lists known, or inferred faults, in the general Jean property area. It is not possible at this stage to determine how, any of this strain developed since little is known about movements on local faults.

If the high fracture intensity seen in large parts of the map area extended to the zone of capillary water above the ground-water table, and a copper deposit extended above the groundwater table, oxidation of that deposit could be expected in the capillary zone. Decrease in partial pressure of oxygen below the water table should bring on reducing conditions which would tend to make sulphides stable. Metals such as copper that migrated to the reducing environment below the water table would react with hypogene sulphides to form supergene sulphide enrichment. Several Cordilleran porphyry deposits are known to have some supergene enrichment; examples include Newman (Bell), Berg, Gibraltar and Casino.

Important structures on the Jean include Contact fault. At least two cross faults are inferred. These are referred to in Table 4. with the designation: "Miscellaneous GSC faults". They trend nearly parallel to Pinchi Fault. One of these structures appears to intersect Contact fault at the centre of B-Zone and this may account for the extraordinarily wide zone of faulting, 150 m, indicated on cross section 48 W near the deposit-centre. The most easterly of the Miscellaneous GSC faults is projected to intersect Contact fault in the vicinity of the east end of the C-Zone.



Three of the faults mapped have the general trend of Contact fault which also parallels the long axis of the copper-low in the Enzyme Leach (Plate 3). This low is the principal target for Cu in this data. The author's recommendation is to test the common central low of the oxidation suite with a vertical hole to a depth of 400 m. The common central low of the oxidation suite is indicated on Plate 3. Due to the position of this feature, near a creek, the recommended location for the initial testing should be a convenient spot to the east along Centre Road, or, at a point 120 m NNE of the common central low of the oxidation suite. Tests of common central lows of oxidation suite elements on other properties known to the author consistently demonstrated Enzyme Leach as an effective targeting tool. In fact, every time one of these anomalies was tested, and we have done so three times, tests have given highly encouraging results. Interesting mineralization and /or favourable alteration was always encountered and the need for ongoing drilling strongly indicated. ENZYME LEACH is, in the author's estimation a powerful targeting tool. However, it is not a "black box". It is still necessary to THINK and to DRILL. The author has found that it is possible to explore more effectively and efficiently by applying Enzyme Leach technology.

Contact fault has been intersected in numerous diamond drill holes in the B-Zone. This structure is shown on Plate 3, for reference; its position being based on a plan prepared after the 1974 percussion drilling program. Percussion drill hole JPH 74-17 situated near 4+50 S on Enzyme Leach grid Line 3E penetrated Contact fault. This hole was collared in barren Takla and bottomed in mineralized quartz monzodiorite.

Sub-horizontal to gently dipping fractures in Takla volcanics control the bulk of copper mineralization in known deposits on Jean. Sub-horizontal mineralized fractures also occur in the quartz monzodiorite core. A good example of this is found at Station No. 750 located at the north-end of West Road. Here, heavy chalcopyrite occurs in horizontal fractures. The principal mineralized structure in the Plate 3 map area, station No. 400, is a felsite dyke with a dip of about 15° SW.

TABLE 3: Faults mapped; their locations and attitudes

LOCATION		LOCATION		LOCATION	
WEST	TRAIL	CENTRE	TRAIL	EAST	TRAIL
Strike °	Dip °	Strike °	Dip °	Strike °	Dip °
068	75N	042	33E	014	45W
062	60S	298	15S	061	75N
062	68S	329	ND	009	46E
		329	ND	009	46E
		273	68S	021	74E
		071	ND	293	56S
		074	30S	315	ND
		016	73W	027	42E
		297	80N		
		327	85E		
		052	80N		

		353	74W		
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TABLE 4: Major known, or inferred, faults in the general Jean-area, with references.

Fault name	Trend °	References
Contact fault	289 to 317	Plate 3
Centre Creek Fault	287	Jean Plans: Inferred from Aeromagnetic trend. Walker, 1981. This fault intersects the SE corner of the pyrite halo of C-Anomaly. Refer to insert map in centre of Plate 3 of the current report and Plate 4.
Pinchi Fault	329	Garnett, 1978, Fig.3
Misc. GSC Faults	334	Plate 4. A series of 3 faults inferred from aeromagnetic map in GSC O.F. 2814. Residual Magnetic Total Field. NOTE: Common trend of these faults is nearly parallel to Pinchi. The C-Anomaly is located generally between the two most easterly faults. The most easterly fault is projected to intersect Contact fault a short distance east of the east end of the C-Zone. Note: Apparent right-lateral displacement of an aeromagnetic high by one of the faults.

## ROCK GEOCHEMISTRY

A total of 17 rock samples were collected from road-cut exposures of Takla volcanics and intrusive rocks. Samples were designed to elucidate the general geochemical patterns of the C-Anomaly area. All, but the first sample in the present program came from a 600 m by 700 m area characterized by strong fracturing and intense oxidation (Plate 3).

The principal deposit on the property, the B-Zone, exhibits geochemical associations such as Cu-Au-Ag-Pb in the portion of the deposit hosted by Takla volcanics and Cu-Mo in the intrusive portion (Bruaset, 1995). Little is known about the trace element signature of the intrusive portion of the deposit because of lack of ICP analyses. Most of the drilling in the intrusive portion was carried out during the 1970s with a percussion drill. Cu and Mo assaying at 10-foot intervals with whole-hole composite-assays for Au and Ag, were the standard of day. A most striking zonation with respect to Cu and Mo in the two major hosts of the A and B-Zones is apparent. High Cu, and low Mo, characterizes the volcanics of these zones, while lower Cu and significant Mo occur in the intrusive.

TABLE 5. Current geochemical data is compared to Levinson's average concentrations in comparable rocks. Average abundance, or range, of select minor and trace elements, in basalt and granodiorite was obtained from Table 2-1, p.43 in Levinson, 1980. Thresholds considered applicable for Jean data are indicated. All values are in ppm, except for gold.

LEVINSON: Averages

JEAN THRESHOLDS ASSUMED\*  
 {Detection limit in current data}. Note:  
 The end of the table gives some  
 indication of the frequency of anomalous  
 samples for different elements.

ELEMENT	In basalt averages	In granodiorite averages	In Takla volc.	In any intrusive
Mo	1	1	2 {1}	2
Au	4 ppb	4 ppb	10 ppb {5 ppb}	10 ppb
Ag	0.1	0.07	0.4 {0.2}	0.4
As	2	2	10 {5}	10
Pb	5	15	5 {2}	15
Zn	100	60	100	60
Mn	2200	1200	2200	1200
			Cu: 13 out of total 17 samples anomalous	
			Mo: 8 " " "	
			Au: 8 " " "	
			Ag: 7 " " "	
			As: 16 " " "	
			Pb: 15 " " "	
			Zn: 6 " " "	
			Mn: 4 " " "	

\*For the purposes of the Jean data, any analysis above the average values of Levinson is considered to be anomalous provided that the value is significantly higher than the detection limit for that element. In the case of gold, where the detection limit in the current data is 5 ppb, only values greater than 10 ppb would be considered as anomalous. The latter provides for the  $\pm 100\%$  error that is inherent in the definition of detection limit (Ivor Elliott, personal communication.)

In order to reduce the risk of contamination in the lab, indicated or suspected, high-grade samples were positioned near the end of the sample sequence.

Initial analyses were by ICP screening. Samples that reported high geochemical levels in Cu, Au and Ag were assayed. Analytical data appears in two-page Eco Tech Laboratory report number AK 2007-1311 (Appendix 1).

Some observations based on Table 5:

1. Most of the sample sites in this program, are located in the most intensely fractured and oxidized portions of C-Anomaly (Plate 3). The limits of this deformed area are poorly defined. It is apparent that this deformation could extend westward under the "high ground" shown on the geological map. It also remains open to the east. The outline of the central low for copper on the insert in Plate 3 gives an estimate of the size potential of the Cu target as well as its orientation. The general orientation of the copper-low in the Enzyme Leach is parallel to Contact fault. The coincidence of copper and gallium lows, both chalcophile elements, enhances the copper outline on Plate 3 as a first approximation of the size of the copper target (Bruaset, 2007). Disseminated and fracture controlled chalcopyrite occurs in Takla volcanics along bark sampling Line 88E where that line crossed the Cu-low in the Enzyme Leach. Line 88E is located about 1 km ESE of the south end of East Road. To test the common central low of the Enzyme Leach according to conventional Enzyme Leach theory, a vertical hole is typically drilled first at or near the common central low for the oxidation suite. An Examination of Plate EL 61 in Bruaset, 2007, indicates the common central lows of the high-field strength elements Hf, Nb and Ta, as well as that of rare-earth elements, cluster close to the common central low of the oxidation suite.

2. Common porphyry halo elements appearing in the current analyses are Ag, Pb, Zn, Mn and As (Jerome, 1966). In the case of the Jean, Ag is a persistent associate of Cu in the volcanics hosted portion of the main deposit. The two dominant halo elements in the current data are: As and Pb. Only sample No. 99054 was non-anomalous in As and samples No. 99054, 58, 59 were the only non-anomalous samples for Pb.

3. The three highest Mo analyses cluster generally in an area partly underlain by felsic intrusive, minor diorite and monzonite. Assay data for Cu, Mo, Au and Ag, only, exists for the five drill hole to date on Plate 3. Geochemical (ICP) data on drill holes in the A and B Zones, and elsewhere, can be found in Bruaset, 1995, and Cooke and Bruaset, 1998.

## CONCLUSIONS

The current mapping and sampling of the C-Anomaly indicates widespread, weak, disseminated and fracture controlled chalcopyrite in Takla volcanics.

While the occurrences of copper, gold and silver mineralization in the map-area are low-grade they are pervasive and suggest the existence of more substantial copper-gold-silver mineralization in the subsurface. The objective is to find economic explanations for the large IP anomaly known as the C-Anomaly; for the strong coincident Enzyme Leach



responses; for the broad enhancement of copper in conifer-outer-bark, and for the strong southwest trend of increasing Cu in drill holes in the direction of C-Zone.

Occasionally, dykes and veins carry high values in copper-silver and gold-copper. Other important indicator elements, such as As, Mo, Pb, Zn are variously anomalous. Alteration in the map area is dominantly propylitic facies. Potassic alteration, in the form of secondary biotite in the volcanics, or as selvages in intrusive, is observed.

Insufficient sulphide appears to be present in the map area to explain the observed IP responses. That suggests the possibility of higher sulphide concentrations with depth and with that possibly better-grade mineralization.

The C-Anomaly area is part of an aeromagnetic high. The widespread occurrences of generally non-magnetic Takla in the map-area suggests the existence at depth of higher susceptibility rocks, likely intrusive.

The next stage of exploration should be a preliminary drill-test of the C-Anomaly. The first hole recommended should be a vertical hole to 400 m collared as close as possible to the common central low of the oxidation suite. Sites for about ten drill holes have been prepared. The general pattern of drilling recommended is that of 3 fences oriented generally north-south.

Report by:  
  
Ragnar U. Bruaset, B.Sc.


February 02, 2008

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## STATEMENT OF QUALIFICATION

1. I graduated in 1967 from the University of B.C. with a B. Sc. degree in Geology. I have been engaged in mining exploration since graduation. I worked approximately 14 years for Cominco Ltd. and about 3 years for Chevron Minerals.
2. I carried out geological mapping of the Jean prospect in 1973, 1977 and 1979. I supervised the 1974 percussion drilling program on Jean and diamond drilling programs in 1975 and 1995. I logged drill core during the 1975, 1995 and 1997 programs.
3. I completed a comprehensive Induced Polarization compilation for Jean.
4. I carried out biogeochemical surveys involving conifer outer bark on the Jean on three occasions and completed the 2006 Enzyme Leach survey.

  
Ragnar U. Bruaset, B.Sc.  
February 02, 2008

## STATEMENT OF COST

Ocock River Contracting. Contract charges for road work including equipment hire and part of culvert acquisition cost	\$68,760.43
Road work misc. balance of culvert-costs, satellite radio rental	\$4296.48
Surface transportation: pick-up rental, fuel, insurance, repairs	\$12,039.92
Domicile (Accommodation and sustenance)	\$3073.74
Analytical work	\$549.77
Geological salaries	\$21,357.00
Drafting and reproductions, mylar	\$3085.53
Interpretation, reporting	\$3,483.90
TOTAL	\$116,646.77



**APPENDIX 1**  
**ANALYSES**  
**ROCK SAMPLE**  
**DESCRIPTIONS**

12-Sep-07

**ECO TECH LABORATORY LTD.**  
 10041 Dallas Drive  
**KAMLOOPS, B.C.**  
 V2C 6T4

**ICP CERTIFICATE OF ANALYSIS AK 2007- 1311**

**R. U. Bruaset**  
 5851 Halifax Street  
**Burnaby, BC**  
 V5B 2P4

Phone: 250-573-5700  
 Fax : 250-573-4557

No. of samples received: 17  
 Sample Type: Rock  
**Project: R.U.B.**  
 Submitted by: R. U. Bruaset

Values in ppm unless otherwise reported

Et #.	Tag #	Au(ppb)	Ag	Al %	As	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	La	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sb	Sn	Sr	Ti %	U	V	W	Y	Zn
1	7R-99051	15	0.6	3.68	325	80	30	2.17	<1	56	45	315	8.05	<10	1.63	1255	<1	0.08	25	690	44	25	<20	59	0.25	<10	213	<10	11	54
2	7R-99052	5	<0.2	2.91	115	430	<5	0.60	<1	32	55	98	5.52	<10	1.53	814	<1	0.03	24	740	20	5	<20	32	0.25	<10	237	<10	15	33
3	7R-99053	30	0.4	1.93	165	100	<5	0.88	<1	17	44	133	3.45	<10	1.11	933	2	0.15	19	1060	40	5	<20	77	0.13	<10	101	<10	10	70
4	7R-99054	<5	<0.2	0.45	10	165	<5	0.36	<1	2	60	11	1.04	<10	0.08	564	4	0.02	10	590	8	<5	<20	12	<0.01	<10	11	<10	6	19
5	7R-99055	<5	<0.2	1.69	105	215	10	5.94	<1	33	102	104	4.95	<10	0.85	1326	<1	0.02	88	1380	18	10	<20	116	0.02	<10	115	<10	15	60
6	7R-99056	<5	<0.2	1.52	50	285	10	9.40	<1	21	155	90	6.23	<10	1.05	2234	<1	0.02	60	1210	18	5	<20	223	0.03	<10	135	<10	24	91
7	7R-99057	<5	0.6	1.69	145	280	10	0.77	<1	31	113	381	7.22	<10	0.82	1179	2	0.05	122	1370	18	10	<20	28	0.02	<10	140	<10	11	115
8	7R-99058	<5	<0.2	0.68	30	105	15	5.51	<1	33	126	101	6.75	<10	0.39	1925	6	0.02	95	1550	12	5	<20	96	<0.01	<10	218	<10	20	59
9	7R-99059	<5	<0.2	0.56	70	35	5	9.55	<1	24	51	52	4.18	<10	3.41	1753	<1	0.02	89	1130	12	20	<20	407	<0.01	<10	80	<10	12	32
10	7R-99060	10	<0.2	0.18	30	45	<5	>10	<1	8	19	14	3.01	<10	0.82	1312	61	0.01	26	290	30	15	<20	243	<0.01	<10	35	<10	19	95
11	7R-99061	15	1.9	0.72	90	110	<5	0.45	1	24	67	846	6.45	<10	0.20	1150	1	0.02	83	940	20	10	<20	18	<0.01	<10	87	<10	12	110
12	7R-99062	15	0.3	0.33	55	105	<5	8.74	<1	8	24	48	3.53	<10	1.58	855	25	0.01	18	190	36	10	<20	252	<0.01	<10	35	<10	8	48
13	7R-99063	15	0.9	0.37	30	130	<5	9.76	1	12	14	61	3.52	<10	1.70	1056	62	0.01	21	330	258	35	<20	221	<0.01	<10	36	<10	15	76
14	7R-99064	75	>30	0.84	85	60	1010	0.21	9	19	98	>10000	>10	<10	0.28	294	24	0.02	11	550	1266	35	<20	14	<0.01	<10	37	<10	6	195
15	7R-99065	<5	3.1	4.31	105	130	<5	1.10	4	69	65	>10000	6.88	<10	2.18	1525	1	0.05	54	590	88	<5	<20	32	0.03	<10	180	<10	13	479
16	7R-99066	570	0.4	3.94	2575	150	10	1.39	<1	41	85	468	9.03	<10	1.60	983	5	0.11	36	780	26	25	<20	64	0.06	<10	215	<10	8	62
17	7R-99067	>1000	1.4	0.41	>10000	65	80	0.05	<1	20	47	2590	>10	<10	0.09	148	4	0.04	19	210	46	135	<20	26	<0.01	<10	18	<10	<1	12

**QC DATA:**

**Repeat:**

1	7R-99051	20	0.6	3.51	320	80	30	2.24	<1	55	44	321	7.88	<10	1.64	1224	<1	0.08	25	670	40	25	<20	57	0.24	<10	215	<10	11	51
16	7R-99066	550																												

**Resplit:**

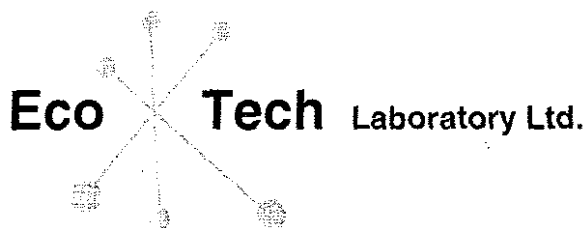
1	7R-99051	15	0.5	3.33	360	80	25	2.12	<1	53	42	311	7.57	<10	1.54	1194	<1	0.08	24	650	36	25	<20	58	0.23	<10	208	<10	11	64
---	----------	----	-----	------	-----	----	----	------	----	----	----	-----	------	-----	------	------	----	------	----	-----	----	----	-----	----	------	-----	-----	-----	----	----

**Standard:**

Pb113		11.8	0.26		40	55	<5	1.79	43	2	6	2318	1.10	<10	0.10	1549	66	0.02	<1	90	5530	15	<20	85	0.02	<10	8	<10	<1	6914
SE29		605																												

JJ/jl/nl  
 dl/1311  
 XLS/07

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 Jutta Jealous  
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 E-mail: info@ecotechlab.com  
 www.ecotechlab.com

**CERTIFICATE OF ASSAY AK 2007-1311**

**R. U. Bruaset**  
 5851 Halifax Street  
 Burnaby, BC  
 V5B 2P4

13-Sep-07

No. of samples received: 17  
 Sample Type: Rock  
 Project: **R.U.B.**  
 Submitted by: *R. U. Bruaset*

ET #.	Tag #	Au (g/t)	Au (oz/t)	Ag (g/t)	Ag (oz/t)	Cu (%)
14	7R-99064			97.9	2.855	7.16
15	7R-99065					3.25
17	7R-99067	21.0	0.612			

**QC DATA:**

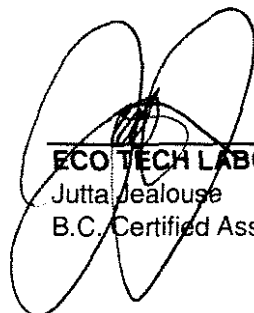
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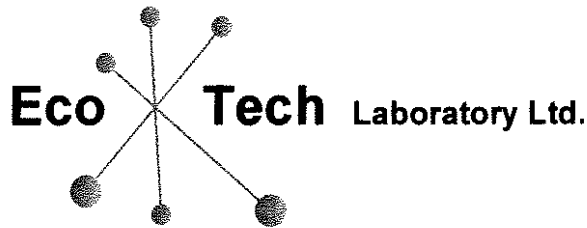
14	7R-99064					7.10
----	----------	--	--	--	--	------

**Standard:**

Pb113				22.3	0.650	0.48
Ox154		1.87	0.055			

JJ/jl  
 XLS/07

  
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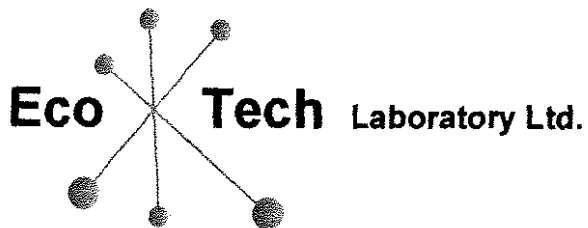
## Analytical Procedure Assessment Report

### *MULTI ELEMENT ICP ANALYSIS*

A 0.5 gram sample is digested with 3ml of a 3:1:2 (HCl:HN03:H2O) which contains beryllium which acts as an internal standard for 90 minutes in a water bath at 95°C. The sample is then diluted to 10ml with water. The sample is analyzed on a Jarrell Ash ICP unit.

Results are collated by computer and are printed along with accompanying quality control data (repeats and standards). Results are printed on a laser printer and are faxed and/or mailed to the client.

Detection Limit			Detection Limit		
	Low	Upper	Low	Upper	
Ag	0.2ppm	30.0ppm	Fe	0.01%	
Al	0.01%		Mg	0.01%	10.00%
As	5ppm	10,000ppm	Mn	1ppm	10,000ppm
Ba	5ppm	10,000ppm	Mo	1ppm	10,000ppm
Bi	5ppm	10,000ppm	Na	0.01%	10.00%
Ca	0.01%	10,00%	Ni	1ppm	10,000ppm
Cd	1ppm	10,000ppm	P	10ppm	10,000ppm
Co	1ppm	10,000ppm	Pb	2ppm	10,000ppm
Cr	1ppm	10,000ppm	Sb	5ppm	10,000ppm
Cu	1ppm	10,000ppm			
Sn	20ppm	10,000ppm			
Sr	1ppm	10,000ppm			
Ti	0.01%	10.00%			
U	10ppm	10,000ppm			
V	1ppm	10,000ppm			
Y	1ppm	10,000ppm			
Zn	1ppm	10,000ppm			



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## Copper Assay

### Method Outline

Samples and standards under go an aqua regia digestion in 200 ml phosphoric acid flasks. The digested solutions are made to volume with RO water and allowed to settle. The metals of interest are determined by Atomic absorption procedures. Instrument calibration is done by verified synthetic standards, which have undergone the same digestion procedure as the samples.

### Digestion

1. Weigh 0.5g sample into 200 ml phosphoric acid flask.
2. Add 20 ml conc. HNO<sub>3</sub> to flasks using a calibrated dispenser.
3. Remove flasks from hot plate and when cool, add 60 ml conc. HCL from a calibrated dispenser. Put flasks on hot plate and digest for 60 minutes
4. Remove flasks from hot plate, allow to cool to room temperature and bulk to 200 ml mark with RO water.
5. Allow assay to settle or clarify by centrifuging an aliquot for analysis.

### Analysis

- Run the analysis by Atomic Absorption using the instrument parameters in the following table.
- Set up calibration with verified synthetic standards.
- Verify instrument calibration after every 10 samples.
- Perform analysis in the linear range of the absorbance curve. It may be necessary to dilute some samples or rotate the burner to do this.
- Standards used narrowly bracket the absorbance value of the sample for maximum precision.

## **GOLD ASSAY**

Samples are sorted and dried (if necessary). The samples are crushed through a jaw crusher and cone or rolls crusher to -10 mesh. The sample is split through a Jones riffle until a -250 gram sub sample is achieved. The sub sample is pulverized in a ring & puck pulverizer to 95% - 140 mesh. The sample is rolled to homogenize.

A 30 g sample size is fire assayed using appropriate fluxes. The resultant dore bead is parted and then digested with aqua regia and then analyzed on a Perkin Elmer AA instrument.

Appropriate standards and repeat sample (Quality Control Components) accompany the samples on the data sheet.



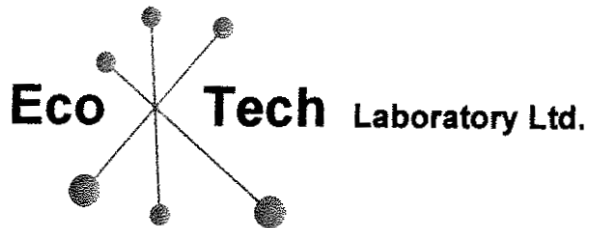
## Analytical Procedure

### *BASE METAL ASSAYS (Ag, Cu, Fe)*

A suitable sample weight is digested in triplicates with aqua regia. The sample is allowed to cool, bulked up to a suitable volume and analysed by an atomic absorption instrument, to .01 % detection limit.

Appropriate certified reference materials accompany the samples through the process providing accurate quality control.

Result data is entered along with standards and repeat values and are faxed and/or mailed to the client.



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Phone (250) 573-5700 Fax (250) 573-4557  
E-mail: info@ecotechlab.com  
www.ecotechlab.com

### Quality Control

- Standard quality control procedures are used for these determinations. (ie repeat every 9 samples)
- Run one Can Met CRM/WCM CRM for each batch of 35 or less samples (one CRM per work sheet)
- The following Can Met CRMS/WCM CRM are available in this laboratory.

CRM	Cu%
CZn-1	0.144±0.003
CZn-3	0.685±0.008
KC-1a	0.629±0.015
Su-1A	0.967±0.005
CCU-1a	26.78±0.07
CCU-1b	24.67±0.03
Cu106	1.43
Cu107	0.28
PB106	0.62

### Reporting

Minimum reportable concentration is as follows:

Cu 0.01%

**DESCRIPTION OF ROCK SAMPLES FROM 2007 JEAN PROGRAM**  
 To accompany Eco-Tech Laboratory Ltd.: ICP and Assay Certificates AK 2007-1311  
 (2 pages)

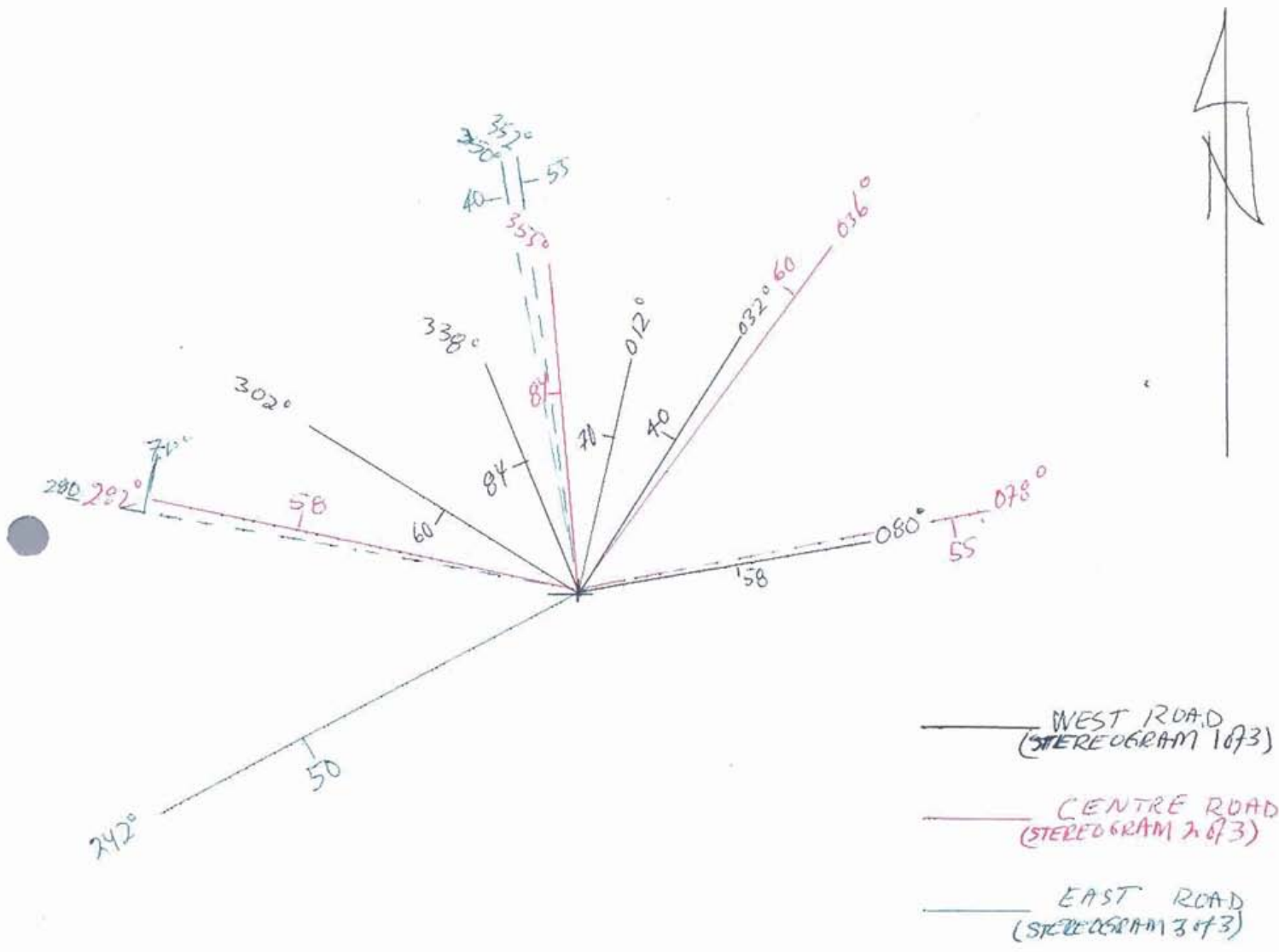
NOTE: Samples containing abundant ore minerals were placed last in the sequence to reduce opportunities for contamination of less well mineralized samples elsewhere in the the sample sequence.

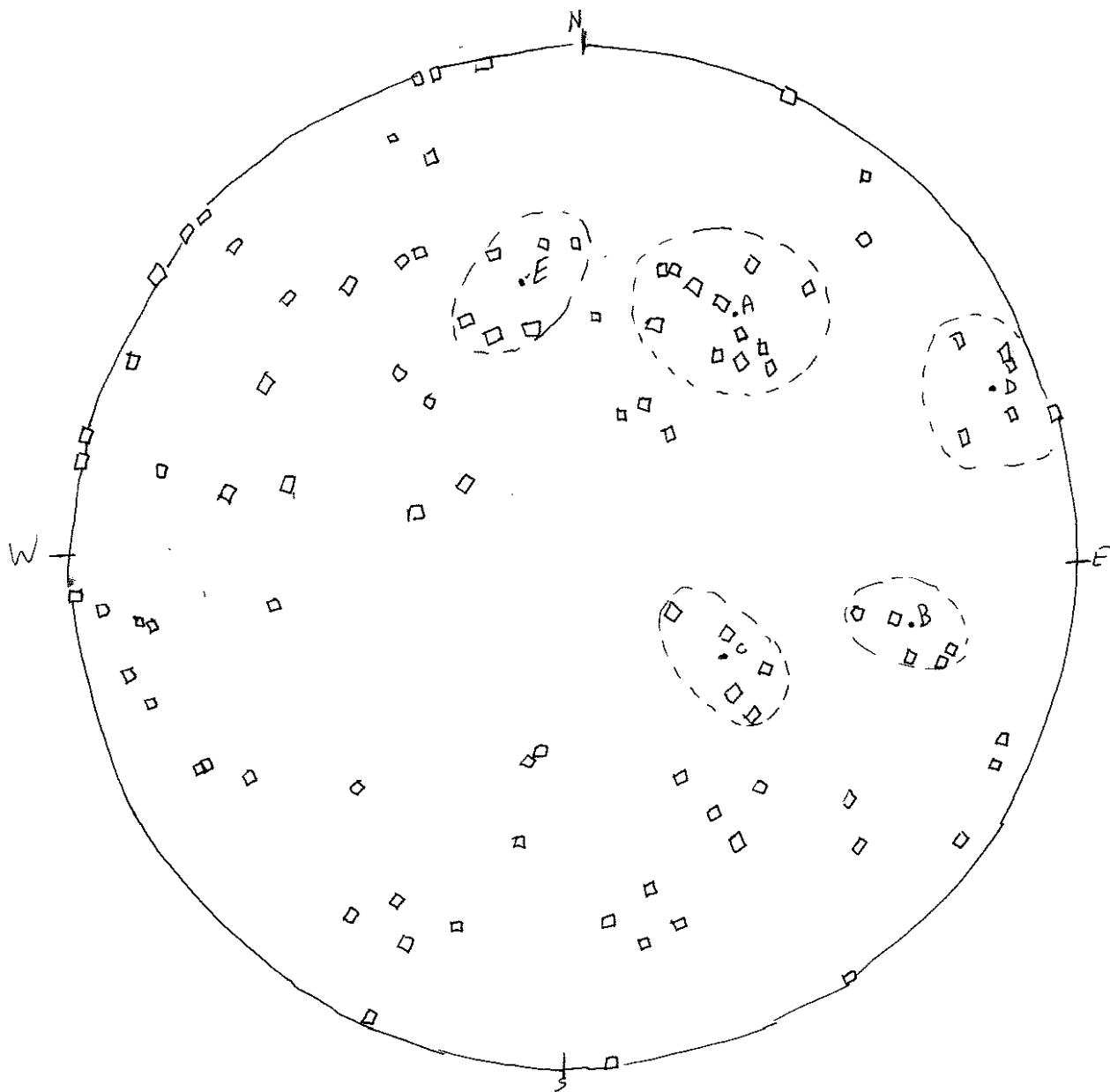
ECO TECH LAB TAG #7R-	FIELD # J 07-	SAMPLE LENGTH (m)	DESCRIPTION
99051	103R	2.5	Chip sample along strike of favourable flat shear zone
99052	183A	0.25	Chip sample of fault gouge in broad gossan area
99053	184B	0.25	Chip sample of hanging wall of fault (see 183A)
99054	186A	0.3 X 0.3 m area	Chip sample of strongly oxidized fault zone; the freshest material available was sampled.
99055	210	2	Chip sample of oxidized felsite or f.g. volcanic
99056	211	Grab	Chunk of less oxidized material in strongly oxidized fault zone
99057	213	3	Chip sample across strongly oxidized fault zone
99058	222	1.5	Strongly oxidized intrusive; looking for epithermal signature.
99059	500A	2.5	Chip sample of altered felsic dyke which is host to apparent epithermal calcite veining and breccia.
99060	500B	0.15	Grab sample of apparent epithermal calcite breccia
99061	501	1.5	Chip sample of gouge in weathered felsite or f.g. volcanic
99062	700C	0.2	Chip sample from layer of very hard and calcite veined volcanic rock
99063	700D	0.2	Chip sample of very hard tuffaceous volcanic at base of siliceous volcanic rock
99064	401	0.4	Channel sample across oxidized dyke of unknown composition contains abundant malachite, azurite and chalcopyrite.
99065	505	0.2	Chip sample of heavy malachite in intensely fractured volcanics in footwall of dyke J07-401
99066	120E	5.6	Chip sample along oxidized fault zone which hosts arsenopyrite vein at station J07-120E.
99067	120F	0.2	Approx. 2 kg chunk from semi-massive arsenopyrite-pyrite-chalcopyrite vein occurring in fault zone; different vein from sample 99066

# **APPENDIX 2**

# **STEREOGRAMS**

Principal fracture orientations inferred from stereograms





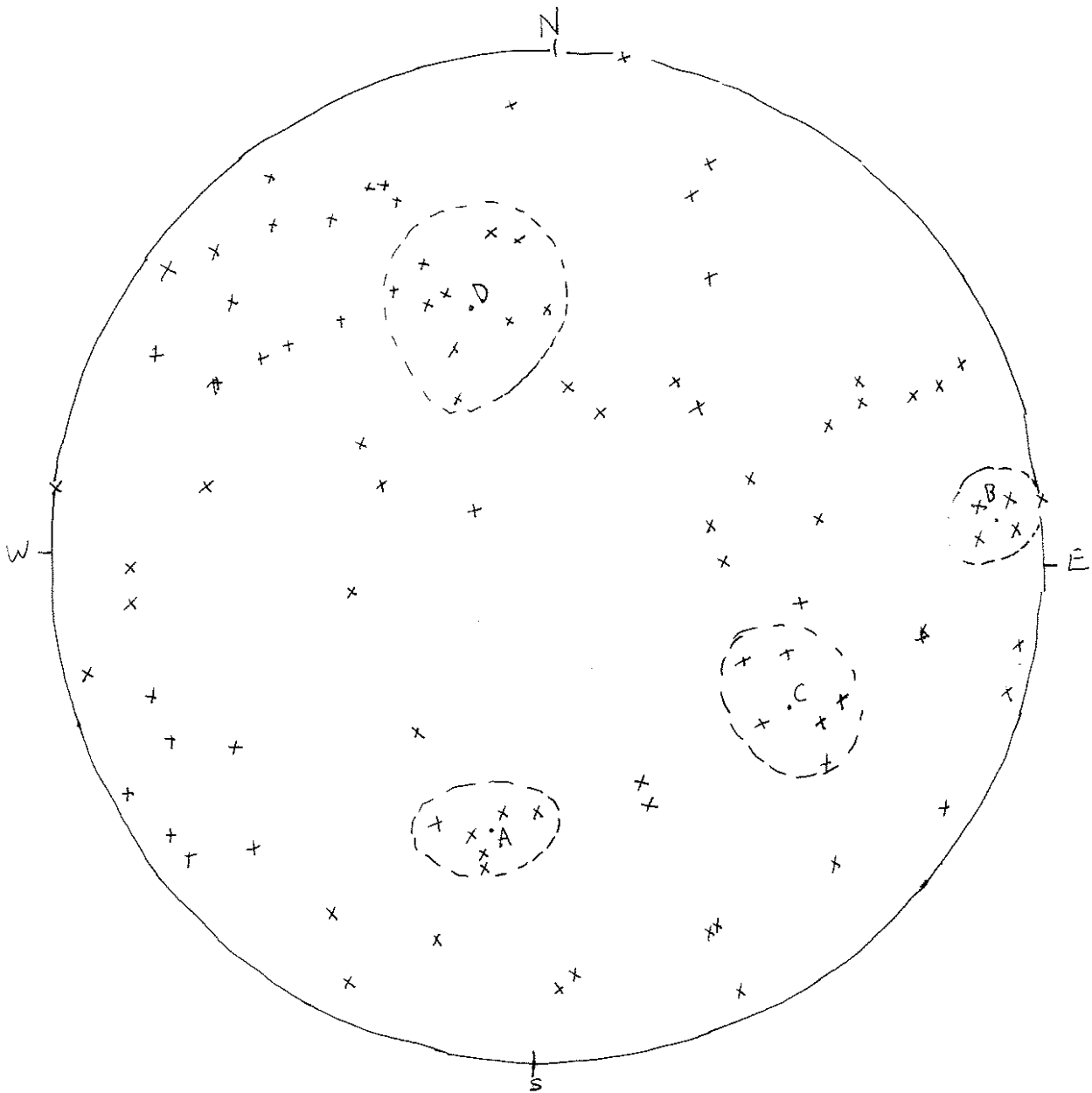
JEAN 2007: C-ANOMALY: Principal fracture orientations inferred along WEST ROAD  
 based on Stereogram 1 of 3

STEREONET: Wulff meridional

PLOT: Poles of unclassified fractures; all data; N=99

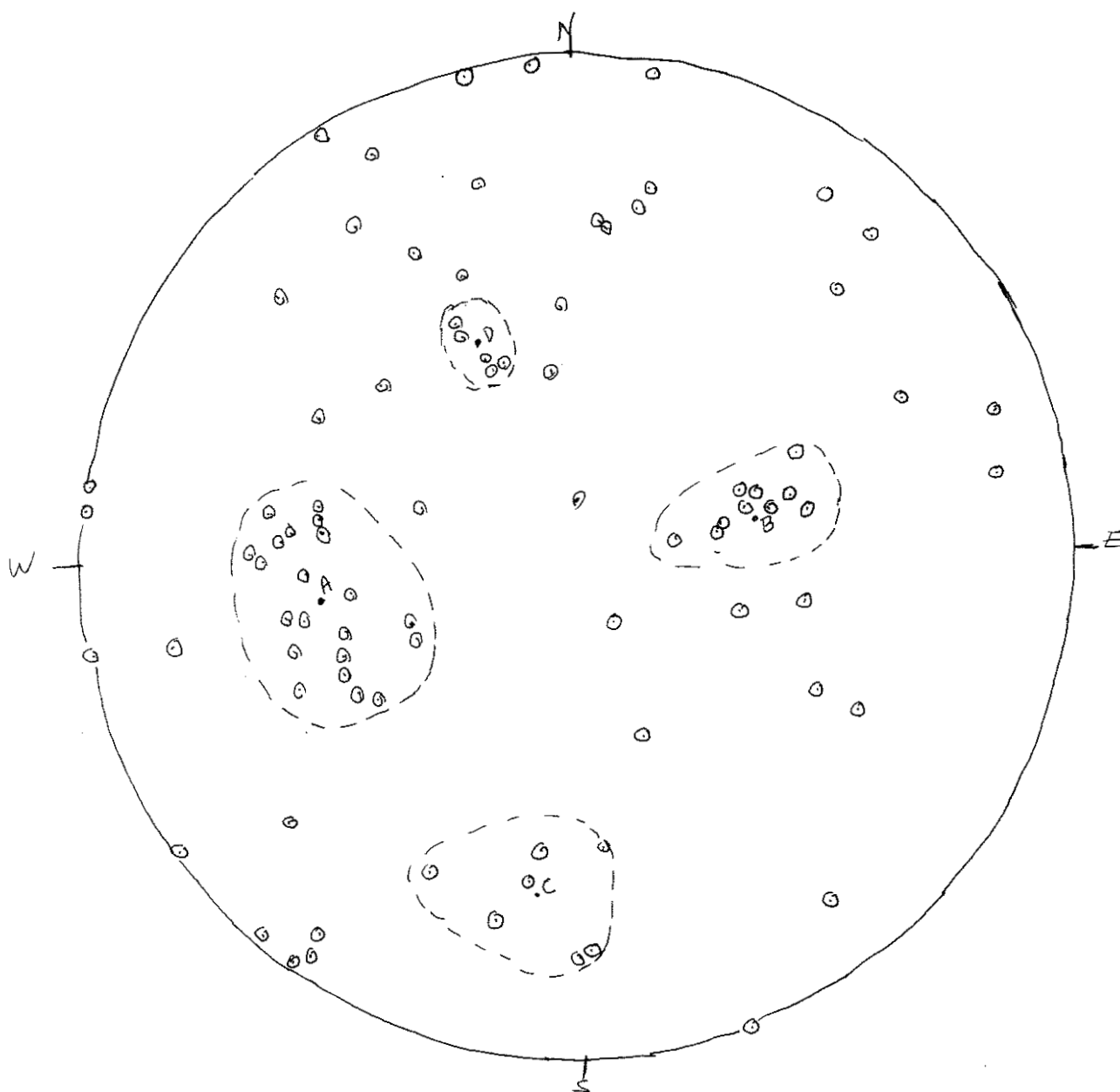
Location	Strike ° (Approx.)	Dip ° (Approx.)
A	302	60 SW
B	012	70W
C	032	40W
D	338	84W
E	080	58S





**JEAN 2007: C-ANOMALY: Principal fracture orientations inferred along CENTRE ROAD based on Stereogram 2 of 3**  
**STEREONET: Wulff meridional**  
**PLOT: Poles of unclassified fractures; all data; N=95**

Location	Strike ° (Approx.)	Dip ° (Approx.)
A	282	58 N
B	355	84W
C	036	60W
D	078	55S



JEAN 2007: C-ANOMALY: Principal fracture orientations inferred along EAST ROAD based on Stereogram 3 of 3.

STEREONET: Wulff meridional

PLOT: Poles of unclassified fractures; all data; N=87

Location	STRIKE ° (approx.)	DIP ° (approx.)
A	352	55 E
B	350	40W
C	280	70N
D	242	50SE

# GRAPHIC METHODS IN STRUCTURAL GEOLOGY

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### *Use of Poles of Planes*

The stereographic construction necessary for the solution of problems involving many planes can be greatly simplified by the use of points representing *poles* of planes, in place of the projections of entire planes. Remember that a plane is projected as a curved line on the stereogram, because such a line is really the projection of the great circle formed by the intersection of a dipping plane with the hemisphere of projection. Imagine a line perpendicular to a dipping plane and passing through the center of the hemisphere of projection, as shown in Figure 93A. Line  $OQ$  normal to plane  $APB$  intersects the hemisphere at point  $Q$ . Thus, angle  $QOP$  and its arc  $QP$  must be 90 degrees, and point  $Q$  is designated the pole of the plane  $APB$ . Clearly, every plane with a given orientation has a unique pole, and every pole on the hemisphere is uniquely associated with a given plane. Note that the projection of the pole is always a point, as  $Q'$ . Therefore, we can work with the one-dimensional pole-point projection, always remembering that it represents a two-dimensional plane. In the projection (Figure 93B)  $Q'$  defines the plane  $A'P'B'$ , and points  $P'$  and  $Q'$  are separated by 90 degrees. Note, therefore, that the plunge of a pole is always the complement of the dip of its plane.

**Example:** Let us solve the previous problem, using poles instead of planes, and note the greater simplicity in construction.

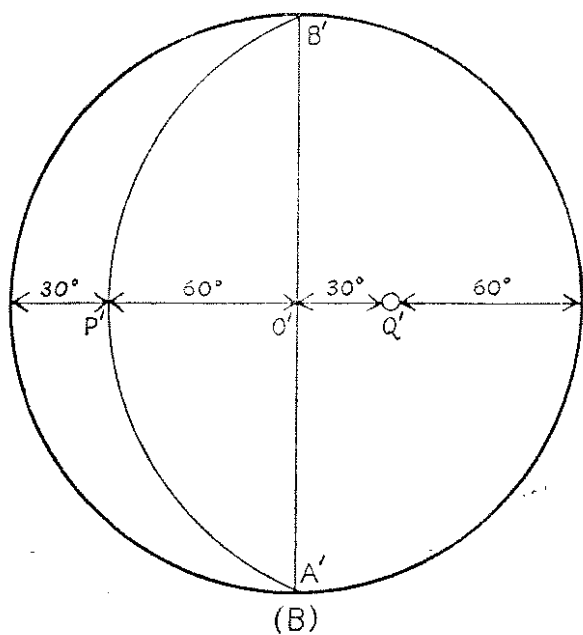
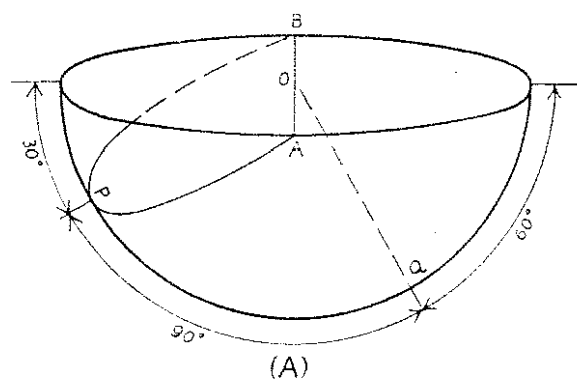
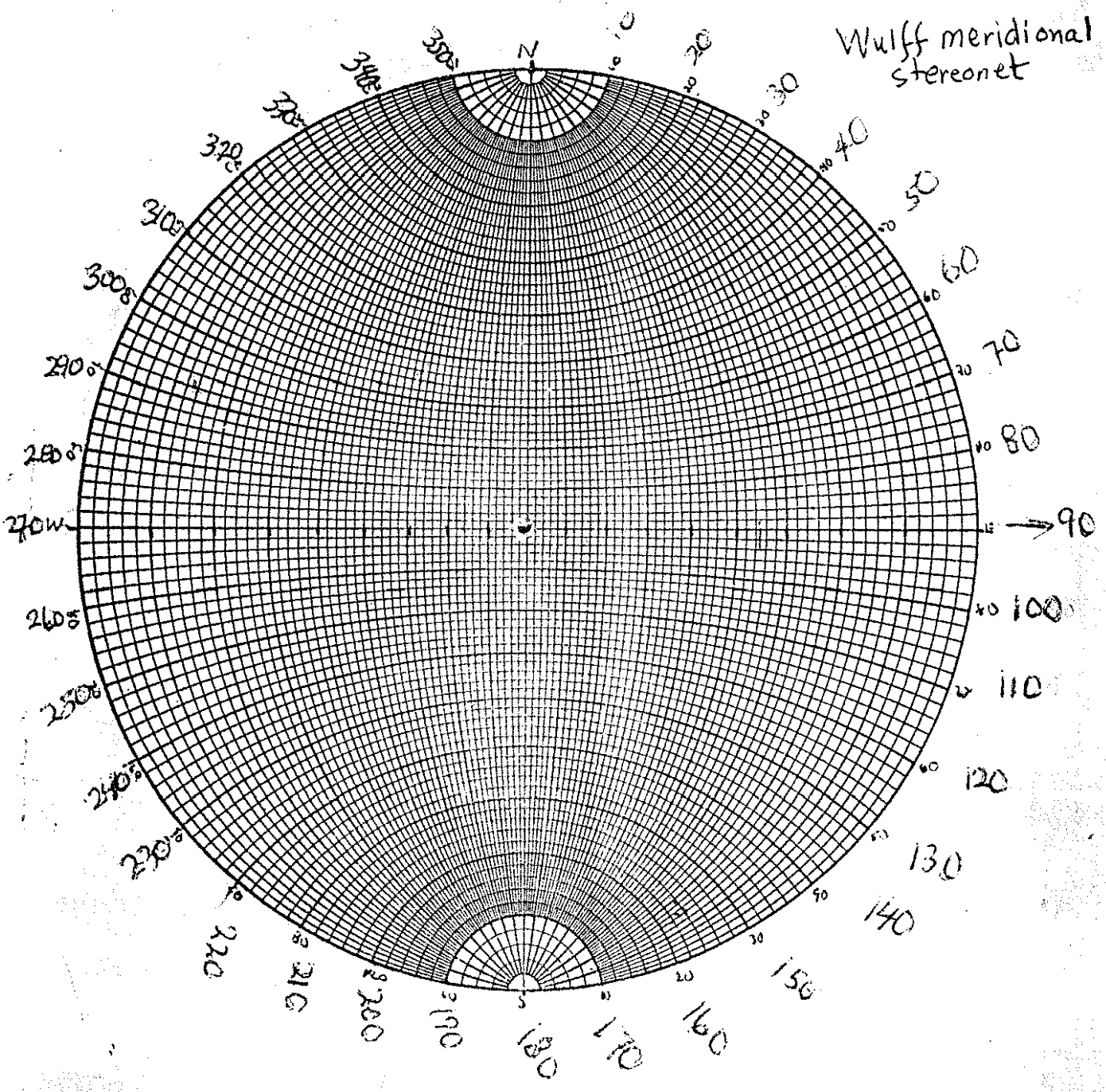
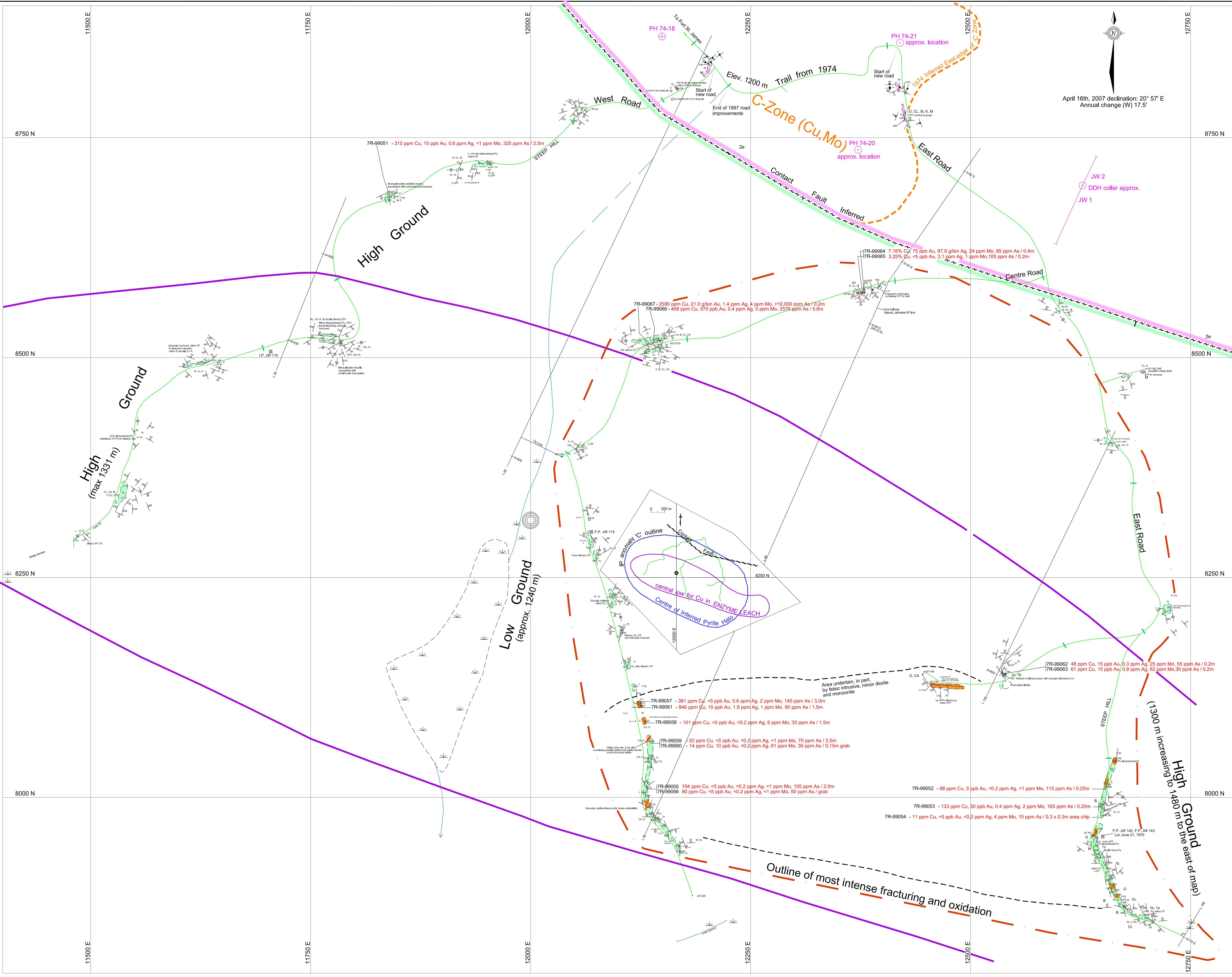


Fig. 93. Diagrams illustrating the principle of "poles" of planes.

Wulff meridional stereonet







April 16th, 2007 declination: 20° 57' E  
 Annual change (W) 17.5"

**LEGEND**

**Lower / Middle Jurassic**

- 3 Felsite, minor diorite (non Jean var.)
- 3d Monzonite

**Upper Triassic / Lower Jurassic (Jean Stock)**

- 2e Quartz Monzodiorite,

**Upper Triassic Takla Group**

- 1a Lapilli tuff
- 1b Lithic tuff
- 1c Fine grain tuff
- 1d Andesite flow, augite porphyry
- 1 Unclassified volcanics

**Symbols**

- Fracture with essential chalcopyrite
- Fracture unclassified
- Shear zone
- Horizontal fracture containing CPY
- Culvert
- Road
- Fault

**Mineralization**

- PY Pyrite
- CPY Chalcopyrite
- ML Malachite
- AZ Azurite
- AS Arsenopyrite

**Alteration**

- BL Bleaching
- SI Silicification

**Potassic**

- K Kspar selvage
- B Secondary biotite

**Propylitic**

- CL Chlorite
- CA Strong calcite presence

- O Strong gossan (generally yellowish-orange)
- M Readily attracts pencil magnet, volcanics are generally non-magnetic.

**PH 74-18** Tied in percussion hole

- Swamp
- Field number (prefix J07-)
- Lab number
- Optional Proposed Drill Site and alternate
- 2006 Enzyme Leach Line

Approximate outer limit of central low of copper in ENZYME LEACH (Bruaset, 2007 Plate EL 19)

Common central low for oxidation suite elements in ENZYME LEACH (Bruaset, 2007)

Scale 1:1500

0 50 100 METRES

**NEWSTRIKE RESOURCES**

**JEAN PROJECT - "C" ANOMALY**  
 British Columbia, Canada

**GEOLOGY and ROCK SAMPLE LOCATIONS**  
 Incl. Select I.P. and ENZYME LEACH ANOMALIES

Reference for analyses: Eco Tech Lab - certificates AK2007-13112 (pages)

Scale: 1:1500 Drafted By: BBX DRAFTING SERVICES INC.

Date: Feb. 7, 2008 NTS: S3N2W, S3N40E Page: 3