Golden Eagle Group — Falls Creek District — Lane County
(Formerly known as "Jumbo" or "Hyland" Mine)

Owners: George Thompson, Eugene, Oregon and R. K. Bushnell, 227 Washington Street, Eugene, Oregon.

Location: Mostly in the NW¼ of Sec. 13, T. 19 S, R. 3 E.W.M., between Billy and Purdue Creeks, at an elevation of 2800 feet.

Area: 11 unpatented lode claims

History: As outlined by Buddington and Callaghan (U.S. Geological Survey Bulletin #893, p. 128) the Falls Creek District was discovered in 1901, and was actively prospected until 1903. With the exception of some work at the Ironside and Blanket Claims, there has apparently been no production from the district.

Transportation: At the present time, a car may be driven over paved highway 43 miles from Eugene to Oakridge. Thence it is about 25 miles by fair forest and logging road and three miles by trail to the property. The logging road is being extended as operations proceed, and this last three miles may be reduced in the future. The trail crosses the 1000 foot canyon of Christy Creek.

Equipment: Log cabin, car, track and sluice boxes.

Development: Three tunnels cut a zone just west of a small creek. The middle tunnel is said to be 105 feet long (last 30 feet now caved) with crosscuts 40 feet in, of 70 feet left and 80 feet right (now inaccessible). The lower tunnel lies 150' S. 30° W. of the upper, at about 35 feet lower elevation. This tunnel was partially full of water when visited and was not entered. It is said to run N. 20° W. for 75 feet, then N. 30° E for 330 feet. A short tunnel and open cuts occur above (north of) the upper tunnel mouth for 75 feet, and 200 feet to the east.

Geology: The rocks of the area are mostly volcanic breccias, agglomerates, and tuffs, with necks and flows of porphyritic andesite. The valley of the North Fork was at one time filled with a thick flow of olivine basalt, which has been in part eroded, leaving a flat-topped ridge between this stream and Christy Creek and a small remnant north of Christy Creek in the Purdue Creek area. The top of this flow lies at from 2700 to 3000 feet. According to Bull.893 "A dike of augite-diorite occurs at the Jumbo, and at the contact of the dacite porphyry is a zone of spotted hornfels 10 feet wide." This diorite was seen 200 feet northeast of the middle tunnel, and is said to appear near the ends of both the middle and lower tunnels. Rock at the mouth of the middle tunnel is andesite porphyry. The mines of the Purdue creek area lie within a zone of altered rock, mapped by Buddington and Callaghan. (Figure 6, p. 126) According to these authors, the mineral deposits of this district are of low-grade and consist (1) of zones without definite veinlike appearance in weathered altered rock which, according to prospectors, yields a little gold on panning; (2) of silicified zones in altered rock that apparently do not yield any appreciable gold; and (3) of veins in altered rock with stringers of quartz in comb or cockade structure.

The three upper tunnels mentioned in Bull.893 are mapped, but the fourth tunnel was not mentioned by the owners. They are described as follows: "Three tunnels, 50 feet apart vertically, were driven on a vein on the west side of a ravine that slopes S. 70° W., and a fourth tunnel, apparently a crosscut 50 feet below the lowest tunnel on the west side, penetrates the east bank N. 75° E. The middle tunnel on the west side runs 50 feet N. 14° E. to what appears to be the intersection of two veins, one trending N. 50° W., the other N. 10° W., and both dipping south. The vein matter is leached and consists of numerous stringers of quartz in altered rock made up largely of clay minerals. No sulphides other than pyrite were seen. The vein in the upper tunnel trends N. 33° W. and dips 27°—40° NE. A pit over 100 feet east of the vein reveals pyrite in soft blue altered rock. Augite diorite appears in the dump, but the country rock is chiefly andesite and volcanic breccia."

Assays made by this Department on samples taken by the owners from this property vary from blank to $48.00 on ore, and up to $2700 on panned concentrates. Panning done on the ground showed definite values in fine gold. Pyrite could be panned from almost any place in the middle tunnel (except the quartz veins) and usually showed a few colors as well. The mineralized zone apparently runs about north-south, judging from the slump topography, and float showing fine pyrite can be picked up over a width of at least 200 feet. The altered zone is at least this wide.

A suggested sequence of events is as follows:

1. Intrustion of andesite by diorite dike or stock with intense brecciation and hydrothermal alteration of the area, with development of secondary clay minerals and almost complete alteration of much of the rock. The same intrusion was probably responsible for the wide dissemination of fine pyrite carrying some gold throughout the andesite. Pyrite is concentrated in a few places along fractures, but is usually found evenly disseminated or in irregular bands, patches or blebs. The brecciation may be associated with replacement of portions of the rock by grey silica. It is also possible that this silica is primary, representing the phenocrysts of the "dacite" mentioned by Buddington and Callaghan.

2. Emplacement of barren silica veins with coarse open texture and well-developed crystals in comb and cockade structure.

3. Final faulting with repeated movement along numerous rather closely spaced but irregular planes. Weathering has been accompanied by oxidation of surface sulphides and deposition of iron and manganese oxides along some of these planes.

Economics: The caved condition of most of the tunnels prevents an adequate sampling program at the present time. The crosscuts in the middle tunnel especially should be reopened. Samples already taken suggest that the values are irregular, although rather widespread. If detailed sampling of the property should show that moderate values are to be found over a width of several hundred feet, as is possible, the completely altered and decomposed nature of the material would make the milling of the entire zone much less

costly than were it in hard rock. Concentration of the pyrite carrying gold by flotation might be made difficult by the high clay content of the ore.

Transportation at present would be difficult as over five miles of road would probably be necessary. The logging operation will shorten this distance in the near future, and a logging railroad now reaches within six miles of the property.

June 6, 1940

John Eliot Allen, Geologist
State Department of Geology and
Mineral Industries
Portland, Oregon

Draft (?)

Golden Eagle Group (Calif) Falls Creek District → ~~Lane County~~
(Formerly known as "Jumbo" or "Hyland" Mine)

Owners: George Thompson, Eugene, Oregon and R. K. Bushnell, 227 Washington Street, Eugene, Oregon.

Location: Mostly in the NW¼ of Sec. 13, T. 19 S, R. 3 E.W.M., between Billy and Purdue Creeks, at an elevation of 2800 feet.

Area: 11 unpatented lode claims

History: As outlined by Buddington and Callaghan (1938:128) ~~(U.S. Geological Survey Bulletin #893, p. 128)~~ the Falls Creek District was discovered in 1901, and was actively prospected until 1903. With the exception of some work at the Ironside and Blanket Claims, there has apparently been no production from the district.

Transportation: ~~At the~~ In 1940 present time, a car could ~~may~~ be driven over paved highway 43 miles from Eugene to Oakridge. Thence it ~~is~~ was about 22 miles by fair forest and logging road and three miles by trail to the property. The logging road ~~is~~ was being extended as operations proceed, and this last three miles may be reduced in the future. The trail crosses the 1000 foot canyon of Christy Creek.

Equipment: Log cabin, car, track and sluice boxes.

Development: Three tunnels cut a zone just west of a small creek. The middle tunnel is said to be 105 feet long (last 30 feet ~~now~~ was caved in 1940), with crosscuts ~~40 feet in, of 70 feet left and 80 feet right~~ (~~now~~ inaccessible). The lower tunnel lies 150' S. 30° W. of the upper, at about 35 feet lower elevation. This tunnel was partially full of water when visited and was not entered. It is said to run N. 20° W. for 75 feet, then N. 30° E for 330 feet. A short tunnel and open cuts occur above (north of) the upper tunnel mouth for 75 feet, and 200 feet to the east.

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A suggested sequence of events is as follows:

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June 6, 1940

John Eliot Allen, Geologist
State Department of Geology and
Mineral Industries
Portland, Oregon

Ref. Callaghan 38p: 129 (Jurato)

Report by: J.E.A., 1940

[illegible]

RECEIVED
APR 20 1940
STATE DEPARTMENT OF GEOLOGY & MINERAL INDS.

STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
ASSAY LABORATORIES
SAMPLE INFORMATION REQUESTED.

Baker — Grants Pass

The law passed by the Legislature, governing the free assaying and analyzing of samples sent to the State Assay Laboratories, provides that certain information be furnished the Laboratory regarding samples sent for assay, etc. A copy of this law will be found on the back of this blank. Please read the law carefully. Will you please fill in the information called for on the following blank, as far as possible and return the same to the nearest State Assay Laboratory along with your sample? If you have made out a blank, this copy is for your future use. Keep a copy of the information on each sample for your own reference.

Your name in full G. W. Thompson . . . . . .

Postoffice address 227 Wash. St., Eugene, Oregon . . . . . .

Are you a citizen of Oregon? yes . . Date on which sample is sent 1/9/40 . . . .

Name (or names) of owners of the property same. . . . . .

Name of particular claim and date of location Gold Eagle Group, July, 1939. . .

Location of property or source of sample (describe as accurately as possible below):

(1) County Lane . . . . . (2) Mining district Christy Creek . .

(3) Township 19 S. (4) Range 4 E. (5) Section 13 . (6) Quarter Section NE¼ SE¼

How far from passable road? 7 miles. . . . . .

Do you wish the sample examined for commercial minerals? No. . . . . .

For what metals do you wish the sample assayed? gold and silver . . . . . .

Type of sampling: Channel (length) No. 1 Ore Grab . . . . Pipe No. 2 panned conc't.

IMPORTANT: A sample, to be of value, should be taken in an even channel across the vein from wall to wall. Its position in the workings should be marked and the width measured. Assays of unlocated samples, without widths, are of little value; they create little interest in the minds of experienced investors and engineers.

(signed) . . . . . .

DO NOT WRITE BELOW THIS LINE -- FOR OFFICE USE ONLY -- USE OTHER SIDE IF DESIRED

Description No. 1--(ore) Finely ground siliceous material. 2 oz.

No. 2--(Conc't.) Finely ground pyrite. 2 oz.

Sample	GOLD		SILVER					
Number	oz./ T	Value	oz./ T	Value	Percent	Percent		
1	0.23	8.05	Trace					
2	77.14	2699.90	39.6	27.72				

10

RECEIVED
APR 20 1940
STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
ASSAY LABORATORIES
Baker — SAMPLE INFORMATION REQUESTED. — Grants Pass

STATE DEPARTMENT OF GEOLOGY & MINERAL INDUSTRIES

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Your name in full G. W. Thompson . . . . . .

Postoffice address 227 Wash. St., Eugene, Oregon . . . . . .

Are you a citizen of Oregon? yes . Date on which sample is sent 3/13/40 . . . .

Name (or names) of owners of the property same . . . . . .

Name of particular claim and date of location Gold Eagle Group, 1939 . . . . . .

Location of property or source of sample (describe as accurately as possible below):

(1) County Lane . . . . . (2) Mining district Christy Creek .

(3) Township 19 S. (4) Range 4 E. (5) Section 13 . (6) Quarter Section NE¼ SE¼

How far from passable road? 7 miles . . . . . .

Do you wish the sample examined for commercial minerals? yes . . . . . .

For what metals do you wish the sample assayed? gold and silver . . . . . .

Type of sampling: Channel (length) 12 ft. Grab . . . . Pipe . . . . . .

IMPORTANT: A sample, to be of value, should be taken in an even channel across the vein from wall to wall. Its position in the workings should be marked and the width measured. Assays of unlocated samples, without widths, are of little value; they create little interest in the minds of experienced investors and engineers.

(signed) . . . . . .

DO NOT WRITE BELOW THIS LINE -- FOR OFFICE USE ONLY -- USE OTHER SIDE IF DESIRED

Description No. 1--Gray siliceous material containing a considerable amount of fine pyrite. ½ lb. 1 inch and smaller. No. 2--Finely ground rock containing a small amount of limonite.

Sample Number	GOLD oz./T	GOLD Value	SILVER oz./T	SILVER Value				
					Percent	Percent		
1	Trace		Blank					
2	0.14	4.90	Trace					

11

REPORT ON THE

LUCAS (1-27), GOLDEN EAGLE, AND RGO

(1-26), 53-71, 88-94)

MINING CLAIMS

SITUATED
IN THE

FALL CREEK MINING DISTRICT,
LANE COUNTY, OREGON

FOR

RANGER OIL LIMITED

AND

INVADER RESOURCES LTD.

by

MARVIN A. MITCHELL, P. Eng.
MINERALS EXPLORATION MANAGER
RANGER OIL LIMITED

November 7, 1984

HANS E. MADEISKY, B.SC.
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CONSULTING GEOLOGIST

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TABLE OF CONTENTS

1) INTRODUCTION

1.1 The Lucas 1 - 27, Golden Eagle, RGO 1 - 26, RGO 53-71, and RGO 88-94 mining claims are located in the Fall Creek Mining District, Lane County, Oregon.

The Lucas Claims were located by Rayner Geological Services Inc. in 1983 and the Golden Eagle claim was optioned in March 1984 from Baker and Roberts Mining. These claims were subsequently assigned through Blenheim Resources to Invader Resources Ltd. of Vancouver, B.C., Canada.

The RGO claims were located by Ranger Oil Limited of Calgary, Alberta, Canada in February and March 1984. Ranger's interest in the area was stimulated by Mr. H.E. Madeisky, of Invader Resources Ltd., who recognized the potential of the area for epithermal gold and silver mineralization.

1.2 A reconnaissance examination of the property was conducted on March 31, 1984 by Mr. D.R. Cochrane P. Eng.,Consulting Geologist in the presence of Mr. Madeisky, B. Sc., and Mr. Marvin A. Mitchell, P. Eng., of Ranger Oil Limited.

Mr. Cochrane, in his report of July 12, 1984, recommended an exploration programme on the Lucas claims totalling US $80,000, including apprxoimately US $20,000 for a reconnaissance geochemical soil survey of the claims.

Ranger Oil Limited and Invader Resources Limited signed a Joint Exploration Agreement On August 9, 1984, leading to a Joint Venture Agreement in November 1984 to cover work already in progress.

This work consisted of a reconnaisance geochemical soil survey over most of the total claims area with closer spaced geochemical survey work in areas that were thought to have anomalous values.

1.3 This report describes the results of this recommended work with recommendations for additional work.

2 SUMMARY AND RECOMMENDATIONS

2.1 Ranger Oil Limited and Invader Resources Ltd. have entered into a Joint Venture Agreement concerning the exploration of the Fall Creek Property located in the Western Cascade Mountains approximately 40 air miles east-south-east of Eugene, Oregon.

The Fall Creek property which is situated in the Fall Creek Mining District of Lane County consists of the Lucas (1-27), Golden Eagle, and RGO (1-26, 53-70, 88-94) mining claims which are located on Federal Lands managed by the U.S. Forest Service as part of the Williamette National Forest, Oakridge District.

2.2 The Fall Creek property is accessed from the town of Oakridge some 19 road miles to the south on State Highway 58. Oakridge is a town based on the forest industry and is capable of providing all services essential to an exploration program such as lodging, food, general supplies, and if needed, heavy equipment.

2.3 The property is currently being logged on a sustained yield basis, therefore, the network of logging roads to and on the property are in excellent condition. Water, timber and power are readily available for mining purposes.

2.4 Although the Fall Creek Mining District was originally discovered in 1901 and actively prospected in 1903, (Stafford, 1904), development on the six prospects in the area was minimal and no production is reported in government records. Cochrane, 1984, reports that most highly developed of the prospects was the Jumbo or Hyland gold mine now known as the Golden Eagle which had three adits presumably driven in 1909 and 1910 and that the upper and lower adits are in "fair" shape while the middle adit is caved.

2.5 The property area is underlain by a Tertiary sequence of basaltic, andesitic and dacitic flows with associated tuffs, breccias, lahars and other volcanic sedimentary rocks. These rocks have been intruded by plugs, dikes, and sills of diabase/diorite composition rocks. The southern end of the property has been covered by younger (Pleistocene) Canyon Flow Basalts.

2.6 Geological mapping along road cuts indicated several large zones of complex hydrothermal alteration and mineralization including clay, pyrite and wholesale replacement of host rock by silica. Additional prospecting in newly logged areas resulted in the discovery of breccia zones bearing drusy and chalcedonic quartz veins, jasper, and opalized encrustations typical of the high level mineralization described by Buchanan, Berger and Eimon in their proposed epithermal model.

2.7 A geochemical soil survey conducted on the property during the summer of 1984 indicated the presence of at least four large zones containing anomalous values in gold and silver. The largest of these zones is approximately 1500 ft. long and 400 ft. wide at its maximum width with values of 5ppb gold to a high of 620 ppb gold in soils. The other zones are incompletely sampled and therefore have no finite dimensions.

2.8 Accordingly, the author recommends that the following three stage exploration program be performed on the property.

A i) Completion of the geochemical soil survey over the entire property at 50 ft. intervals on lines spaced 500 ft. apart. Samples to be analysed for Au and Ag and other pathfinder elements such as Hg and Sb.
ii) Detailed geochemical sampling and geological mapping of areas that are thought to contain anomalous values. The sampling is to be done on a 50 ft. x 50 ft. grid

B) Detailed mapping of surface and underground, Golden Eagle area as recommended by Cochrane, 1984.

C) Contingent upon the success of stages A and B,Diamond drilling of the best anomalous zones or showings. Four or five holes of NQ wireline drilling totalling 3000 ft. are recommended. Hole size may be decreased if core recovery is satisfactory.

2.9 The budget estimate for this work is as as follows (U.S. funds):

A)	Geological Soil survey and mapping	$25,000
B)	Detailed Mapping - Golden Eagle Area	$10,000
C)	Diamond Drilling 3000 ft. @ $25.	$75,000
	Geology, Reports Etc.	$10,000
		$120,000
	Contingencies @ 10%	$12,000
	TOTAL	$132,000(US)

3 LOCATION, ACCESS AND PHYSIOGRAPHY

3.1 The claims are situated in the western foothills of the Cascade Range of west-central Oregon approximately 40 air miles east-southeast of Eugene, the seat of Lane County and are in Sec. 11, 12, 13, 24 and Sec. 7, 18, 19 T19S, R 3 & 4 E, W.M.

The claims may be accessed from the town of Oakridge which is located on State Highway 58 approximately 41 miles southeast of Eugene.

3.2 Accomodation meals and other services may be found in Oakridge which has a population of approximately 3700 and is 45 min. drive from the property.

From Oakridge the access to the property is north easterly through the town of Westfir via paved U.S.F.S. road 19, along the N. Fork of the Williamette R. 14 mi. to the Sinker Mtn. road (U.S.F.S. road 1925) at the Christie Cr. junction. The gravelled Sinker Mtn. Road follows the west and north-west slopes of the Christie Creek Valley and provides direct access to the south-central part of the property area approximately five miles from its start. Access to the rest of the property is via a well developed network of gravel logging roads connecting with the Sinker Mtn. Road.

3.3 The claims are on a ridge trending to the south east from Sinker Mtn. (el. 4,764 ft. A.S.L.) to Christie Cr. (el 2,000 ft. A.S.L.), a distance of 3 mi. The generally gently sloping ridge breaks into a series of 600 - 800 ft. high cliffs 1/2 mile north of Christie Cr. To the West and East the ridge is defined by Billy Cr. and Perdue Cr. which are deeply incised in contrast to the more gently rounded ridge top.

3.4 The claims area is well forested with stands of second growth, Spruce, Hemlock and Fir which are presently being logged on a sustained yield basis. Areas that have recently been logged and reforested tend to have Rhododendron and Manzanita thickets while unharvested areas are virtually free of undergrowth.

3.5 Precipitation is approximately 20 to 25 in. per year and the property is covered with snow from December through April.

3.6 Outcrop is less than 10% of the total area in the older stands of trees, but may be as much as 30% where tracked equipment has churned up the thin soil cover in the recently harvested areas.

4. HISTORY AND PREVIOUS WORK (from Cochrane, 1984)

4.1 "Stafford, (1904), reported that gold was discovered in the Fall Creek district in 1901, and the area was actively prospected in 1903. Brooks and Ramp, (1968), continue, "Prospects in the district have only a small amount of development work. The Ironside mine was worked for several years and the Blanket property was prospected as late as 1931. Production records are not reported".

4.2 There is no record of the date of development work on the Golden Eagle, however Allen, J.E. (1940), reported that the Golden Eagle (formerly known as the Jumbo or Hyland Mine), had three adit levels, approximately 50 ft. (vertically) apart in 1940, and the property was owned by G. Thompson and R.J. Bushnell of Eugene Oregon. Allen describes the lower tunnel as 405 ft. long; the middle tunnel as 105 ft. long with cross cuts at 40 ft. of 70 ft. left and 80 ft. right; and the upper tunnel as being "short". The State Department of Geology and Mineral

Industries report the Golden Eagle Group was located in 1939, and several assays were run on samples from the old workings.

4.3 There is no further reference to the Golden Eagle until recent assay data describes the claim in the name of Baker and Roberts Mining, Oakridge, Oregon. Currently the lower and upper levels are in fair shape, the middle level is caved. Recent work has included some rehabilitation of the lower level.

4.4 In 1983, an open file report was published on the mineral potential of the Fall Creek Mining District. This publication was a joint effort between the State Dept. of Geology and U.S. Forest Service (Gray, J.J. and Berri, D.A.). Work involved compiling a geological and alteration zone map, and the collection and analysis of 124 geochemical samples. The work stated that "The results of the study indicate that mineralization is more widespread than had been reported previously".

In 1983, Rayner Geological Services Inc., a Nevada Corporation, located the Lucas No. 1-27 (inclusive) claims and in March, 1984, Mr. H. Madeisky optioned the Golden Eagle claims from Baker and Roberts Mining.

4.5 Ranger Oil Limited (Minerals Exploration Division) currently holds several groups of mineral claims adjacent to the Golden Eagle and Lucas claims. "These claims, the RGO 1-26, 53-71 and 88-94 inclusive were staked in February 1984.

4.6 D.R. Cochrane, P. Eng., in his report dated July 12, 1984 confirmed the epithermal nature of the mineralization and reported assays from eight character and grab samples ranging from 10 ppb Au to 8070 ppb Au (0.27 o.p.t.) and 0.2

ppm Ag to 17.0 ppm Ag. Mr. Cochrane recommended a two phase exploration program consisting of geological mapping, geochemical soil surveys, and rehabilitation and sampling of old workings. The total estimated cost of this program was $80,000 US.

4.7 Ranger Oil Limited and Invader Resources Ltd. entered into a Joint Exploration Agreement on August 9, 1984 leading to a Joint Venture Agreement in November 1984 to cover work already in progress on the property.

5 PROPERTY INFORMATION

5.1 Ranger Oil Limited and Invader Resources Ltd. have entered into a Joint Venture agreement in regard to the exploration and development of the Golden Eagle, Lucas 1-27 and RGO 1-26, 53-71, 88-94 mining claims (all inclusive).

5.2 The following table lists pertinent claim information

CLAIM	LOCATION DATE	M.F. NO.	BLM (ORMC NO.)
Golden Eagle	June 11, 1979	1003	16190
Lucas No.1-27(INCL)	March 8, 1983	1235	57618-44 (INCL)
RGO 1-10 (INCL)	Feb. 11, 1984		72639-48 (INCL)
RGO 11-24 (INCL)	Feb. 9, 1984		72649-62 (INCL)
RGO 25-26 (INCL)	Feb. 19, 1984		72663-64 (INCL)
RGO 53-61 (INCL)	Feb. 16, 1984		72672-80 (INCL)
RGO 62-71 (INCL)	Feb. 17, 1984		72681-90 (INCL)
RGO 88-94 (INCL)	Mar. 7, 1984		76280-86 (INCL)

5.3 Additional information on these claims may be obtained from the Bureau of Land Management in Portland, Oregon or in Eugene, Oregon at the County Recorder's Office.

6 GEOLOGY AND MINERALIZATION

6.1 The geology of the Western Cascade Mountains and the area has been dsecribed since the turn of the century by such authors as Stafford 1904; Diller, 1914, Parks and Swartley, 1916, and Smith and Ruff, 1938. Callaghan and Buddington, 1938 produced a comprehensive report on the geology and mineral deposits of the Western Cascades. Perhaps the most valuable of the recent works on the general area is that by Brooks and Ramp, 1968 contained in Gold and Silver Deposits of Oregon and that by Priest and Vogt, 1983 which includes detailed stratigraphic and structural data for the nearby Hills Creek Reservoir area.

The most significant recent work from the economic geology standpoint is that of Gray and Berri, 1983. This work includes the results of a regional geochemical survey performed on the Fall Creek Mining District which not only reinforced H.E. Madeisky's concept of the area in general but also supported his choice of the Lucas claims as one of the most favourable of the target areas.

6.2 Cochrane, 1984, has provided an excellent general geological description, mainly derived from Brooks and Ramp which is quoted as follows.

"The Western Cascades are underlain by a complex Tertiary volcanic rock sequence which includes andesite flows, basalts and rhyolites with extensive tuff deposits and lenses of lacustrine and fluvial sediments. These rocks are quite recent, geologically speaking, and range in age from late Eocene (40 m.y.b.p.) to later Miocene (11 m.y.b.p.) These volcanic units have been locally folded and faulted and, in generally, have low to moderate dips to the east or northeast. Erosion and continued uplift produced steep walled canyons which were locally flooded

with Pliocene to early Pleistocene. (11 to 2 m.y.b.p.) andesites and basalts. Continued uplift and erosion has left many of these late volcanic flows as ridge cappings or valley flank caps. Gray and Berri report "Rocks of all ages were further intruded by diorites. The Pliocene rocks are also altered and mineralized". (pg. 8, 1983)"

6.3 A Correlation chart (fig. 3), derived by Cochrane, 1984, from Brooks and Ramp is also included.

6.4 Locally, on the Fall Creek property, the only rocks observed have been of Miocene, Pliocene and Pleistocene age. Oligocene rocks may be present near the south edge of the claims along Christie Cr. but are largely obscured by colluvium from the cliffs to the north.

Pliocene rocks occur in the northern third of the claims as basalts and flow banded diabasic material possibly originating from a vent located to the north of the north claim boundary. Associated laharic material is found in gullies and on slopes in the vicinity of this vent on either side of the main ridge. These rocks appear to be mineralized but do not have the appearance of heavy alteration associated with the underlying Miocene rocks. The central part of the property is underlain by Miocene basalt flows, diabasic material, and magnetite bearing diorite, the latter which weathers to a deep red soil. These rocks are highly altered in zones up to 800 ft. wide trending in a north-north westerly direction paralleling and partially obscuring what appears to be a wide, coarse grained green diorite dike.

The alteration takes two forms namely; propyllitization and silification associated with quartz mineralized zones and, where pyrite was present, Quartz

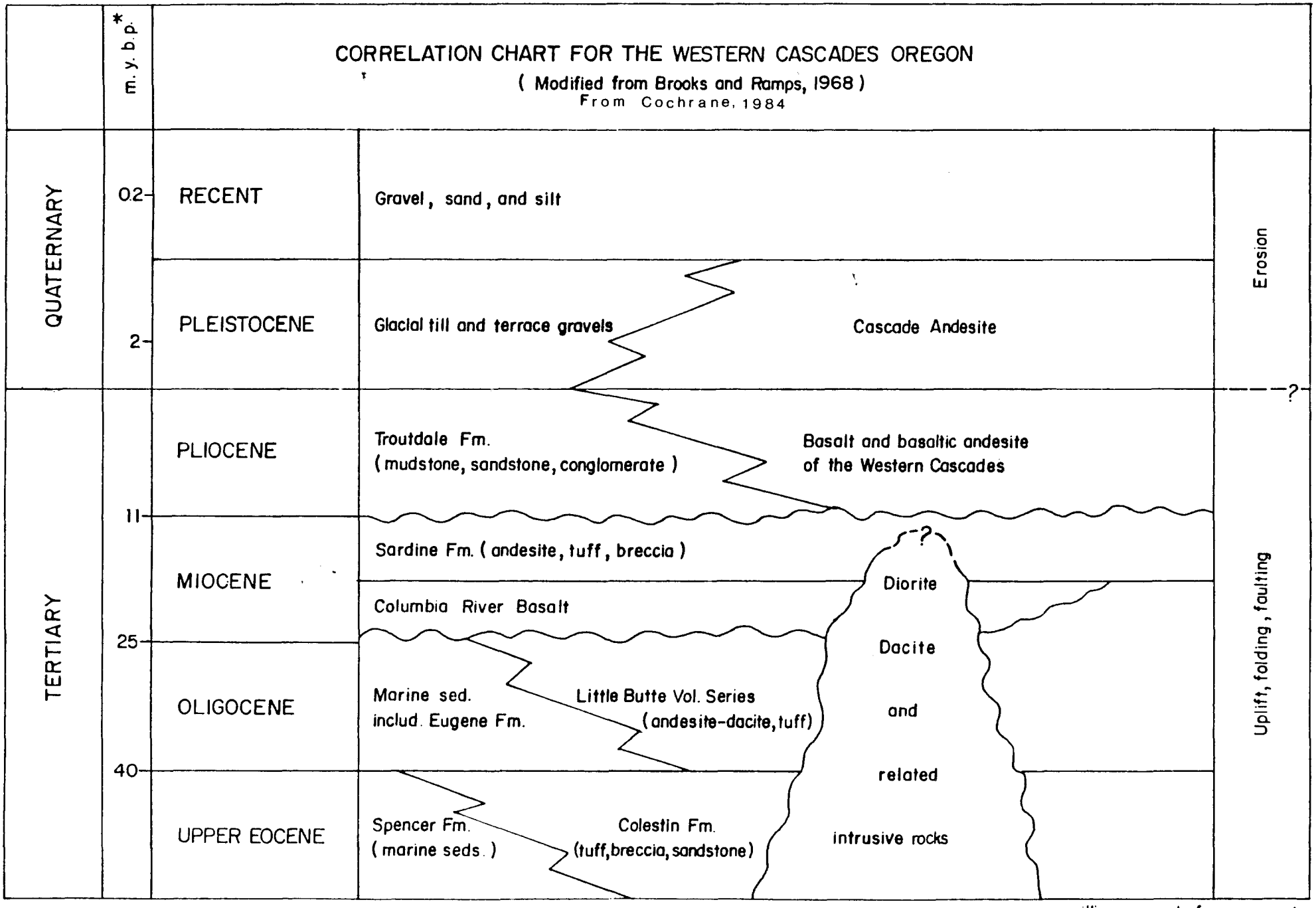

CORRELATION CHART FOR THE WESTERN CASCADES OREGON
(Modified from Brooks and Ramps, 1968)
From Cochrane, 1984
* m. y. b.p.
QUATERNARY
TERTIARY
0.2
2
11
25
40
RECENT
PLEISTOCENE
PLIOCENE
MIOCENE
OLIGOCENE
UPPER EOCENE
Gravel, sand, and silt
Glacial till and terrace gravels
Cascade Andesite
Troutdale Fm.
(mudstone, sandstone, conglomerate)
Basalt and basaltic andesite
of the Western Cascades
Sardine Fm. (andesite, tuff, breccia)
Columbia River Basalt
Marine sed.
includ. Eugene Fm.
Little Butte Vol. Series
(andesite-dacite, tuff)
Spencer Fm.
(marine seds.)
Colestin Fm.
(tuff, breccia, sandstone)
Diorite
Dacite
and
related
intrusive rocks
Erosion
?
Uplift, folding, faulting
* million years before present

fig. 3

Kaolinite, Alunite, Smectite, Gypsum zones indicative of the low pH leaching of mineralization described by Buchanan, 1978.

Pleistocene basaltic flows of the Canyon Series are found in the south one quarter of the claims area as weather resistant, cliff forming valley flank caps. These rocks appear to be entirely devoid of mineralization or alteration and the economic potential in this area is in the underlying Miocene and Oligocene exposed near the base of the cliffs in Christie Cr.

Mineralization and alteration zones within the district appear to be structurally controlled in the gross sense. The Eugene-Denio fault Lineament which trends north-west passes through the town of Oakridge and is reported to have had lateral movement. (Priest and Vogt, 1983.) Lineaments parallel to this zone are found north of Oakridge and are topographically expressed by Winberry Cr. to the South-West of the property, the N. Fork of the Willamette R. to the South-East of the property and Logan Cr. to the North West of the property. These major structures are connected by a conjugate series of north-northwest faults, two of which are topographically expressed by Billy Cr. and Perdue Cr. These two fault lineaments turn to the northwest in the upper creek drainages and project under the Pleiocene volcanic ridge cap into the Logan Cr. valley.

These north-northwest trending fault lineaments are the locus of a line of volcanic centers with associated hot springs extending from Salmon Cr. near Oakridge to the junction of Portland and Logan Creeks, 4 mi. north west of the property.

Notable examples of this hot springs activity may be found along this trend in the form of a silicified rhyolite plug just south of The Willamette R. North Fork at Tumble Cr., a wide leached zone straddling the N. Fork just north of the plug, an opaline-jasperoid sinter terrace in Pliocene river gravels (capped by Pleistocene flows) near the lower reaches of Christie Cr., a large leached zone on Portland Cr., and of course the mineralization on the property itself.

The mineralization on the property has not been mapped in detail, rather, outlined by the geochemical soil survey. Rubble found in the anomalous areas suggests that the mineralization is varied, ranging from pervasive silification, through quartz micro veining with opaline and jasperiod material in large brecciated zones, to braided white quartz veined zones. Pyrite may be present in any of these types which are suggestive of upper epithermal mineralization perhaps just below a sinter terrace.

7 GEOCHEMICAL SOIL SURVEY

7.1 Description of Survey

A total of 1124 soil samples were taken from the Fall Creek property during the summer of 1984. These samples were taken in three stages as follows:

1) at 50 ft. intervals along lines at 500 and 1000 ft. spacing crossing the 5+000 w baseline

2) after assaying of the first group, at 50 ft. intervals along lines at 500 and 250 ft. spacing in areas of what were thought to contain anomalous values

3) and finally, after assaying of the second group, samples were taken at 50 ft. intervals along lines at random 75,100 and 150 ft. spacing in the most favorable areas.

7.2 Samples were taken from the B soil horizon at a depth of 1 ft. and generally consisting of tan, orange/yellow to red residual volcanic soil, in some areas exhibiting examples of spheroidal weathering in the form of 1 cm pellets from weathered flows and tuffs. Notes were kept of drainage direction, soil colour, and the presence of quartz or other indications of mineralization such as pyrite or acid leached clays.

All samples were sent to the Bondar Clegg Company Ltd., in N. Vancouver, B.C. for analysis of gold and silver content. The method of analysis chosen was:

for gold; dry, crush to - 100 mesh assay 20g using Aqua Regia extraction, fire assay concentration, and AA finish.

for silver; assay 20g using HNO_3-HCL hot extraction and AA finish.

The detection limits of this processes were 5 ppb Au and 0.2 ppm Ag and the data were presented in 5 ppb Au and .2ppm Ag increments

7.3.1 Gold

After the final receipt of assay returns, it was recognized that 72.1% of the samples gave values of less than 5 ppb gold or below the detection limit of the apparatus and that a different assay technique

would have resulted in a detection limit of less than 1 ppb Au. Budgetary constraints precluded the re-assaying of the samples using a different technique.

Values of 60 ppb and higher were excluded for ease of plotting and data from lines of less than 500 ft. spacing were excluded so as not to weight the analysis in favour of the anomalous population or populations. A total of 954 assay values were used in the statistical analysis.

A histogram and a cumulative Log probability plot of the data was prepared (fig. 4 & fig. 5) resulting, in the latter graph, a plot of a trimodal poluation curve censored at the 5 ppb level. Resolution of this data into separate curves was impossible using the method detailed by Sinclair, A.J., 1981, in his pamphlet Probability Graphs. This was due to the bimodal nature of the population above the point of censoring and the high percentage of the total data that was below the point of censoring (78% of the 954 determinations).

The remaining 22% of the data, 209 determinations was replotted over 100% of the probability range (fig 6) and the resulting curve partitioned in the proportion 30% upper or A population to 70% lower or B population. It then became apparent that the B portion of the bimodal curve was truncated at the 5 ppb level. The degree of this truncation was graphically estimated at 5% and an arithmetic check was done, as follows, to estimate the amount of mixture with the censored or C population below the 5 ppb level.

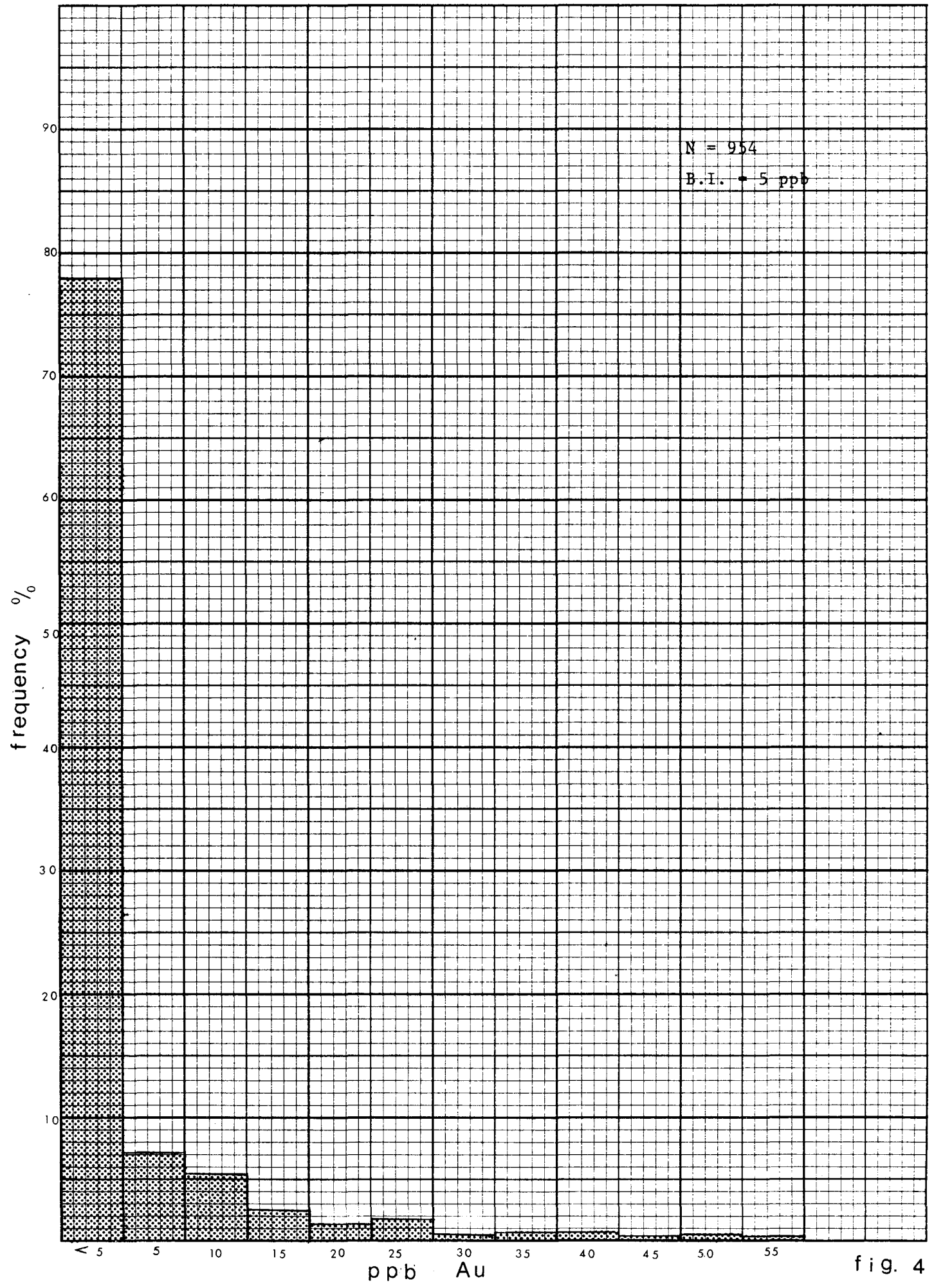


fig. 4

G-24 LOGARITHMIC PROBABILITY
SPECIFY TRACING OR DRAWING PAPER

GRAPHIC CONTROLS CANADA LTD.
MADE IN CANADA

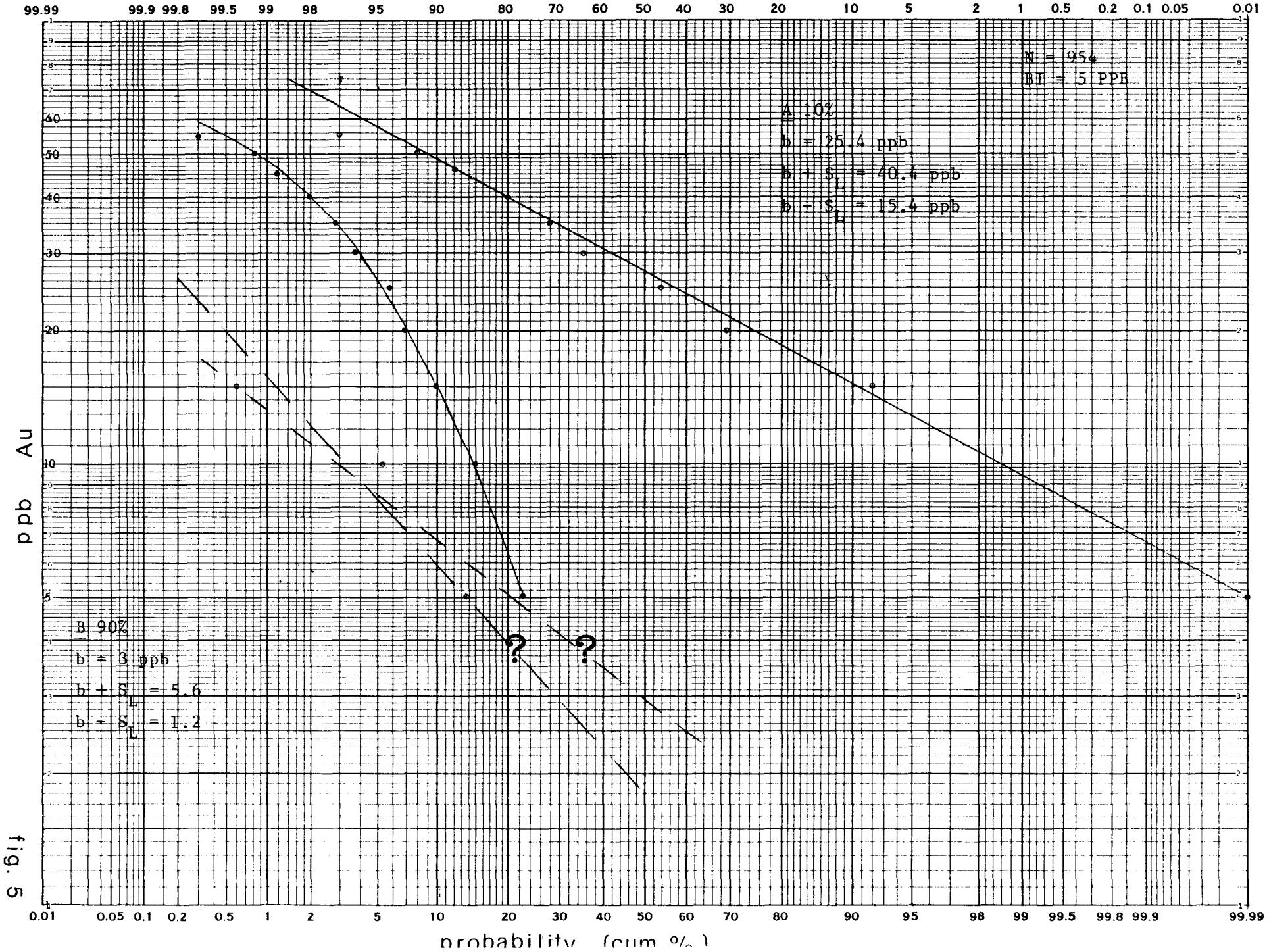
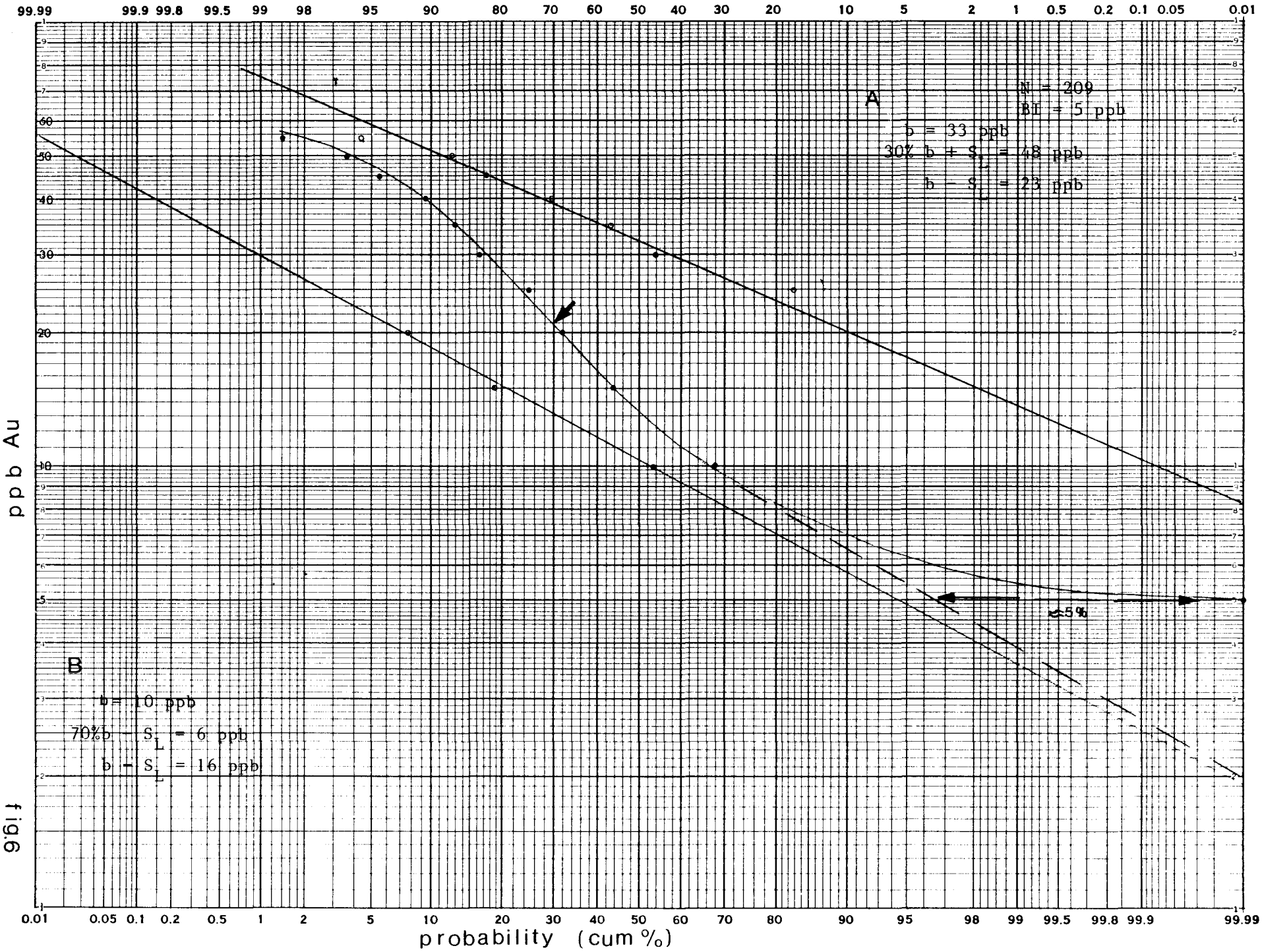


fig. 5

G-24 LOGARITHMIC PROBABILITY
SPECIFY TRACING OR DRAWING PAPER

GRAPHIC CONTROLS CANADA LTD.
MADE IN CANADA



$$n = f_B\ (f_{AB})\ (f\ mix)\ (N)$$

$$n_{<5ppb} = .7\ (1.00)\ (.05)\ (209) = 7$$

or 7/954 = 0.7% of the total population

The mixing of the C with the B and A populations above the 5 ppb level is thought to be very slight as the B curve is not bimodal. ie., a straight line throughout the percentiles where the C population could have an effect.

Therefore, the C population is considered to be discrete and below the 5 ppb level and the effective lower threshold of the anomalous population was set at 5 ppb.

The choice of this threshold is corroborated by the fact that when the data from the closely spaced anomalous survey lines were omitted from the statistical analysis the reduction of determinations at various levels was as follows:

< 5ppb - 8%
5ppb - 20%
10ppb - 26%
15ppb - 27%

This indicates that the 5ppb level is a part of the anomalous population and should be considered significant, otherwise, the reduction of the 5ppb determinations would be less than the reduction in the determinations below 5 ppb.

One possible explanation for the bimodalism of the lower part of the anomalous poulation is that a residual soil derived from a post-mineral volcanic event covers the old erosion surface. This soil is red/orange containing a fair proportion of spherical pellets. The highest geochemical gold values are obtained on ridges and spurs where this material has been removed, exposing the older soil profile. Greater thicknesses of the red soil on sidehills and gullies seem to have partially masked the underlying geochemical anomaly.

7.3.2. Silver

Similar to the distribution of gold values, the silver values can be demonstrated to have a censored trimodal population with the threshold of the anomalous populations set at 0.2 ppm Ag.

It should be noted, however, that the silver distribution while partly coincident with gold is more erratic and does not serve as a pathfinder element. This leads to the conclusion that not only is there a low silver content in the system underlying the anomalous area, but that these values are very erratically distributed throughout the system.

8 DESCRIPTION OF ANOMALOUS AREAS

These area are divided into first and second priority areas for exploration purposes bases on size, magnitude of anomalous values, and degree of delineation.

8.1 First Priority

8.1.1 Area-from 2+000N to 4=+500N
5+200W to 5+800W
Sample spacing - 50 ft. intervals on lines 75 to

500 ft. apart.
Sample magnitude 5 ppb-620 ppb Au.
Underlying mineralization - chalcedonic quartz micro veining in breccia zone.

8.2 Second Priority

8.2.1 Area - from 4+000N to 5+000N
6+000W to 6+400 W
Sample spacing 50 ft. intervals on lines 1000 ft. apart.
Sample magnitude 5 ppb - 310 ppb Au.
Underlying mineralization - braided quartz veined zone, possibly associated with east side of a diorite dike, highly leached near road.

8.2.2 Area - from 6+000N to 7+000N,
5+000W to 6+200W
Sample spacing - 50 ft. intervals on lines spaced 200 to 500 ft. apart.
Sample magnitude 5 ppb - 490 ppb Au.
Underlying mineralization - braided quartz veined zone, covers Golden Eagle workings, possibly associated with west side of a diorite dike.

8.2.3 Area - from 4+500N to 5+000N,
4+300W to 4+900W
Sample spacing - 50 ft. intervals on lines 250 ft. apart.
Sample magnitude 5 ppb - 210 ppb Au
Underlying mineralization - unknown.

8.3 Other areas of the property that have a low priority but do warrant additional work are noted as follows:

8.3.1 9+000N, 6+000W
8.3.2 Road points 268-272 inclusive
8.3.3 8+000N 5+100W 5+400W

9 ADDITIONAL OLD WORKINGS

The Christie workings are located just north-west of the confluence of Billy and Perdue Creeks. As yet, a search has not been made in this area but should be initiated with the possibility in mind of developing additional geochemical anomalies and drill targets.

10 CONCLUSIONS

The Fall Creek Property is an excellent example of Tertiary volcanic pile hosting upper level - epithermal, gold and silver bearing mineralization.

The geochemical results to date have outlined or partially outlined four large areas anomalous in gold and silver. These areas are thought to overlie the upper part of hydrothermal systems immediately below the sinter terraces of hot springs.

Further detailed geological mapping and geochemical work should define these areas and indicate drill targets to explore the systems at depth where higher mineralization might be expected.

Respectfully submitted October 31, 1984

Marvin A. Mitchell, P. Eng.
Exploration Manager - Minerals
Ranger Oil Limited

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11.12 Sinclair, A.J., 1976, Applications of Probability Graphs in Mineral Exploration, Special Volume No. 4, The Association of Exploration Geochemists, 95 p.

12 CERTIFICATE

I Marvin Alford Mitchell of Vancouver, British Columbia do hereby certify that:

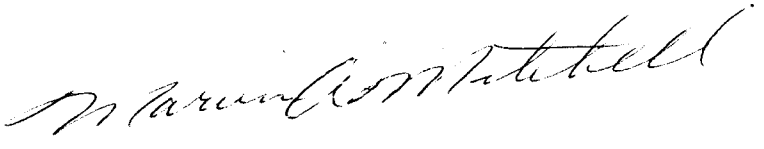
1) That I am a Geological Engineer employed in the capacity of Mineral Exploration Manager, by Ranger Oil Limited, of Calgary, Alberta, with Vancouver office at; Suite 860, 880 Dunsmuir St., Vancouver, B.C. V6C 1N5.

2) I am a graduate of Montana College of Mineral Science and Technology with a degree in Geological Engineering, (1968).

3) I have practiced my profession since graduation, the last seven years with Ranger Oil Limited.

4) I have no interest, either direct or indirect in the properties or securities of Invader Resources Ltd., nor do I expect to acquire any such interest.

5) I am a Member of good standing of the Association of Professional Engineers of the Province of British Columbia.



Marvin A. Mitchell, P.Eng.
November 2, 1984

SITE NAME: GOLDEN EAGLE COUNTY: LANE
SYNONYMS: HIGHLAND, JUMBO
OWNER:
MINING_DIS:FALL CREEK
BLM DISTRICT:EUGE
USFS DISTRICT:WIL
QUAD1: OAKRIDGE SCALE: 100000 TOWNSHIP: 19S
QUAD2: SARDINE BUTTE SCALE: 62500 RANGE: 03E
RIVER BASIN:02 SECTION: 13
PHYSIOG: 13 SECT_FRACT: E

USGS NUM: M025131 LAT: 43-55-02N
DOGAMI MLR: LONG: 122-23-32W
UPDATE BY: UTM_N: 4862650
DATE OF UPDATE: UTM_E: 548800
UTM_Z: +10
ALTITUDE:

YR_DISC: STATUS: 2
PRODUCTION:NO PRODUCTION SIZE:
COMMODITIES PRESENT:AU
YR 1ST PRO: YR LAST PRO:
COMMODITIES PRODUCED:
ORE_MAT: PYRITE
GANGUE:
DEPOS_TYP: SHEAR ZONE/DISSEMINATED
MIN_AGE:
HOST_ROCK: TUFF, AGGLOMERATE, ANDESITE
HOST_R_AGE:OLIGO-MIO
ALTERATION:
IGNEOUS_R: AUGITE DIORITE DIKE
IG_R_AGE: OLIGO-MIO
ORE_CNTRL:
DEP_DESCOM:
GEOL_COM: SOME CONCENTRATION OF PYRITE OCCURS ALONG FRACTURES IN A 200 FT WIDE ALTERATION ZONE.
TYPE OF WORKINGS:
WORKINGS DESCRIPTION:OVER 650 FT OF WORKINGS IN THREE TUNNELS

CUMULATIVE PRODUCTION (UNITS IN 1000'S)

ITEM1:	ITEM2:	ITEM3:
AMT1:	AMT2:	AMT3:
UNIT1:	UNIT2:	UNIT3:
YEAR1:	YEAR2:	YEAR3:
ITEM4:	ITEM5:	
AMT4:	AMT5:	
UNIT4:	UNIT5:	
YEAR4:	YEAR5:	

GENERAL COMMENTS:

REFERENCES:

BROOKS, H.C. AND RAMP, L., 1968, GOLD AND SILVER IN OREGON; ODGMI BULL. 61, P. 307

OREGON METAL MINES HANDBOOK, 1951, ODGMI BULL. 14-D, P. 86

This Copy Came from Portland off

State Department of Geology and Mineral Industries

1069 State Office Building
Portland 1, Oregon

To: File

From: Don A. Hull

Date: October 16, 1975

Subject: Fall Creek district
Lane County, Oregon

On October 15, 1975 Norman V. Peterson, Walter Youngquist and I spent two hours in the Fall Creek mining district during a geologic reconnaissance in the Willamette River drainage. The Fall Creek district is located in T. 19 S., R. 3 & 4 E., and is approximately 12 airline miles NNE from the town of Oakridge.

There is no current mining activity in the district. Logging roads expose extensive disseminated pyrite (cubes and pyritohedrons) in pale grey clayey tuff (?), pale greenish-grey lithic tuff and diorite (?). No copper, lead or zinc minerals were noted. A single sample was taken (no. H-51) for assay; it consists of a grab of disseminated pyrite (estimated 5 vol. %) in clayey tuff from a roadcut in NW¼ of the SW¼ of section 18, T. 19 S., R. 4 E.

The samples as analyzed by Rocky Mountain Geochemical Corp in Salt Lake City, Utah contains the following:

Cu	30 ppm
Pb	20 ppm
Zn	20 ppm
Au	not detected
Ag	0.5 ppm (= 0.015 oz/ton)

Reference: Callaghan, E., and Buddington, A.F., 1938, Metalliferous mineral deposits of the Cascade Range in Oregon: U.S. Geol. Survey Bull. 893, 141 p.

cc: N.V. Peterson - Grants Pass

Lode Mines and Prospects of the Fall Creek District

Blanket prospect — Fall Creek District, 1

Location: Lane County, SE¼ sec. 18, T. 19 S., R. 4 E., about 2900 feet elevation.

Development: Numerous trenches and pits.

Geology: No definite vein. Low gold content was found in altered, iron-stained tuff breccia associated with N. 10° W. fractures.

Production: Claim was being prospected in 1931. There is no record of production.

References: Callaghan and Buddington, 1938:128; Department Bulletin 14-D, 1951:85.

Christy prospect — Fall Creek District, 2

Location: Lane County, NW¼ sec. 19, T. 19 S., R. 4 E., about 2400 feet elevation.

Development: Workings inaccessible when examined in 1931.

Geology: Altered silicified tuff breccia with some vuggy quartz and fine-grained disseminated pyrite was found on the dump of the main tunnel.

Production: Not reported.

References: Callaghan and Buddington, 1938:128-129; Department Bulletin 14-D, 1951:85.

Fletcher prospect — Fall Creek District, 3

Location: Lane County, NW¼ sec. 13, T. 19 S., R. 3 E., about 2900 feet elevation on Billie Creek.

Development: Workings caved, amount not reported.

Geology: Veinlets and disseminated pyrite occur in light gray, silicified altered tuff.

Production: Not reported.

References: Callaghan and Buddington, 1938:129; Department Bulletin 14-D, 1951:85.

Golden Eagle (Jumbo or Highland) prospect — Fall Creek District, 4

Location: Lane County, E½ sec. 13, T. 19 S., R. 3 E., at about 3200 feet elevation.

Development: Three tunnels - the middle and the lower contain a total of about 650 feet of workings. Extent of the upper is not reported.

Geology: The country rocks described are various coarse- to fine-grained tuffs, agglomerates, porphyritic andesite, and a dike of augite diorite. A 200-foot-wide, mineralized

altered zone trends north. Some concentration of pyrite occurs along northwest-trending fractures in the altered zone. A few high-grade assays are reported from panned concentrates.

Production: Not reported.

References: Callaghan and Buddington, 1938:129; Department Bulletin 14-D, 1951: 86.

Ironside mine — Fall Creek District, 5

Location: Lane County, E½ sec. 18, T. 19 S., R. 4 E., at about 3120 feet elevation.

Development: There are three tunnels which have 210 feet of total workings.

Geology: Irregular streaks and masses have been mined from an area of altered and deeply weathered tuff breccia. No definite vein.

Production: The mine has been worked in a small way for several years. Ore was ground in a small five-stamp mill. Amount of production is not reported.

References: Callaghan and Buddington, 1938:129; Department Bulletin 14-D, 1951:87.