GEOCHEMICAL ASSESS	MENT REPORT
REDBIRD AND NOR	CLAIM GROUPS
Nor 2 and 3	claims
Caviar 1, 2, and 1	Lead Cup C.G's
Lat 49-49 lON/Long.17 Nelson Mining Divi	
NTS 82 F	3
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for:

# Annex Exploration Corp.

305 - 850 West Hastings Street Vancouver VLOGICA'L BRANCH VACS1S1ESSMENT REPORT

by:

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June 21, 1992.

# REDBIRD AND NOR CLAIM GROUPS

Nelson Mining Division, B.C.

NTS 82 F-3

for:

# Annex Exploration Corp.

# SUMMARY

This assessment report has been prepared at the request of Victor Guinet, President of Annex Exploration Corp.

The Redbird property, held by Annex Exploration Corp. has a known deposit of zinc-lead-silver mineralization in up to 4 zones defined by surface workings, subsurface geology extended from the adjacent Reeves Macdonald Mine, and a number of recent drill-holes. The mineralized zones are stratabound mantos in Cambrian carbonate rocks of the Reeves and Prospect members of the Laib Formation and in the carbonate units of the Nelway Formation. The Reeves Mc'Donald mine produced about 7 million tons of zinc-lead-silver ore.

The property is located immediately north of the Canada/U.S.border and south of Pend D'Oreille River, about 8 kilometers west of the Customs Station at Nelway, B.C. The property is 50 kilometers (24 miles) southeast of Trail, B.C., site of the lead-zinc smelter of Cominco Ltd., and 20 kilometers southwest of the town of Salmo, B.C.

The property comprises a number of crown granted mineral claims held under lease from Hecla Mining, the Nor 2 and Nor 3 claims optioned from G.H.Klein, and additional claims staked by the company.

In the claims area, southeasterly dipping rocks of the Reno and Laib Formations, of Cambrian age, are overlain by argillites of the Active Formation (Ordovician), which have been thrust over top of the Cambrian section from the south. Russian Creek marks an important northeast trending fault, south of which zinc-lead showings occur in the Middle Cambrian Nelway Formation.

The 1991-92 work program included several reconnaissance soil and silt-sampling traverses in the Church Creek, Harcourt Creek and Russian Creek areas, mapping and sampling of the western Caviar area showings, a bulk sampling program on the oxidized portion of the Redbird zinc deposit, a mineralogical study of the oxide material by J.Harris, Ph.D., and technical research by B.C.Research and Fluor Daniel Wright, Consulting Engineers, into the feasibility of leaching and solvent extraction of leachable zinc from the large tonnage of oxide material exposed at surface above the Redbird workings. An itemized cost statement describes work done to the amount of \$18,730.13, which allowed 2 years work to be filed on the Nor 2 and Nor 3 claims.

Soil sampling geochemical traverses were done by V.Guinet, J.Boutwell, J.Rasmussen, prospectors under the supervision of R.Yorston, B.Sc., Geologist from August 1 to November 30, 1991, and technical petrographic, mineralogic and metallurgical reports done by other contractors from January to March, 1992. A total of 109 soil and silt samples and 3 rock assays were done by Analytical laboratories Ltd. The writer did not participate in the field work or the technical work, but is sufficiently familiar with the work of the subcontractors to determine that the work was done in a professional manner. The writer has done a number of previous assessment reports and summary geological reports on the property.

A bulk sample was taken by prospector Vic. Guinet from the "Beer Bottle" zone, at a road cut on the access road to the Redbird Adit, as shown on the accompanying map. The bulk sample weighed 100 kg and was taken for metallurgical and petrographic studies.

The material sampled is mostly limonite with relatively high grade in zinc and lead. A chip sample taken by G.Klein about 1984 assayed 18.5% zinc and 2.2% lead over 31 feet, which compares with the average grade of 18.5% zinc and 6.5% lead over dimensions of 600 feet strike length and average 20 feet width in the adjacent Redbird underground workings.

From the bulk sample, a crushed composite sample was submitted to J.Harris, Ph.D. for mineralogical studies. Harris determined that the material contains 40% limonite, 58% bladed silicate and 2% carbonate. An X-ray diffraction analysis of the silicate indicated that the mineral is <u>Hemimorphite</u>, a hydrated zinc silicate (previously known as Calamine, H2(Zn2O)SiO4. When pure, this mineral contains 67.5% zinc, 25% silica and 7.5% water.

A brief test program was done on the Limonite-Hemimorphite material from the bulk sample, by B.C.Research, and results were reviewed by R.O.McElroy, Senior Metallurgist at Fluor Daniel Wright. In brief, the material is easily reduced to a fine pulp by rod milling. Zinc from the sample is readily soluble in dilute sulphuric acid, with recoveries of over 80% (pH 2) or over 97% (Ph 3).

Results to date indicate that zinc can be recovered from the material with currently available acid leaching and solvent extraction techniques.

A reconnaissance style soil grid established by Klein in 1989, at the head of Harcourt Creek provides an effective comparison for the 1991 sample results. Seventy nine soil samples taken in 1989 outline a pronounced but irregular Zn-Ag-Cd anomaly centered on the creek. Maximum values are 4,000 ppm Zinc, 65.1 ppm Cd and 10.2 ppm Silver in soil, and 6000 ppm Zinc, 65.4 ppm Cadmium and 4.5 ppm silver in silt. In comparison, the 1991 samples, for the most part, lesser values. Some individual samples have comparable or higher Zinc or Cadmium values. However, no cohesive multi-element anomaly has resulted from the 1991 sampling.

The results of the 1991 geochemical soil, silt and rock sampling program are inconclusive for the Church Creek area: soil sampling at the western Caviar showing shows potential as an exploration tool in this area.

The technical research into the leachability of the oxide zones at the Redbird zone has shown promise, and this research should be continued.

Depth of the Active argillite "capping" above the "Argillite Fault" precludes any geophysical methods of exploring for mineralized zones in the Reeves or Prospect members in the Church or Harcourt Creek areas, however, stratigraphic test diamond drill holes are recommended for these locations.

Compilation of geology on the U.S. side of the International Boundary should be undertaken, and considering the presence of mineral deposits and showings in the same package of Cambrian rocks in Stevens County, (Derkey et al., 1990), perhaps the area south of the border should be mapped, prospected, and if warranted, staked.

Continued research into the feasibility of zinc recovery from the Redbird oxidized zone by acid leaching and solvent extraction is strongly recommended.

respectfully submitted Bamlonce Barry J.Price, M.Sc., FGAC. Consulting Geologist. June 21, 1992.



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#### GEOCHEMICAL ASSESSMENT REPORT

# REDBIRD AND NOR CLAIM GROUPS

Nelson Mining Division, B.C.

NTS 82 F-3

#### INTRODUCTION:

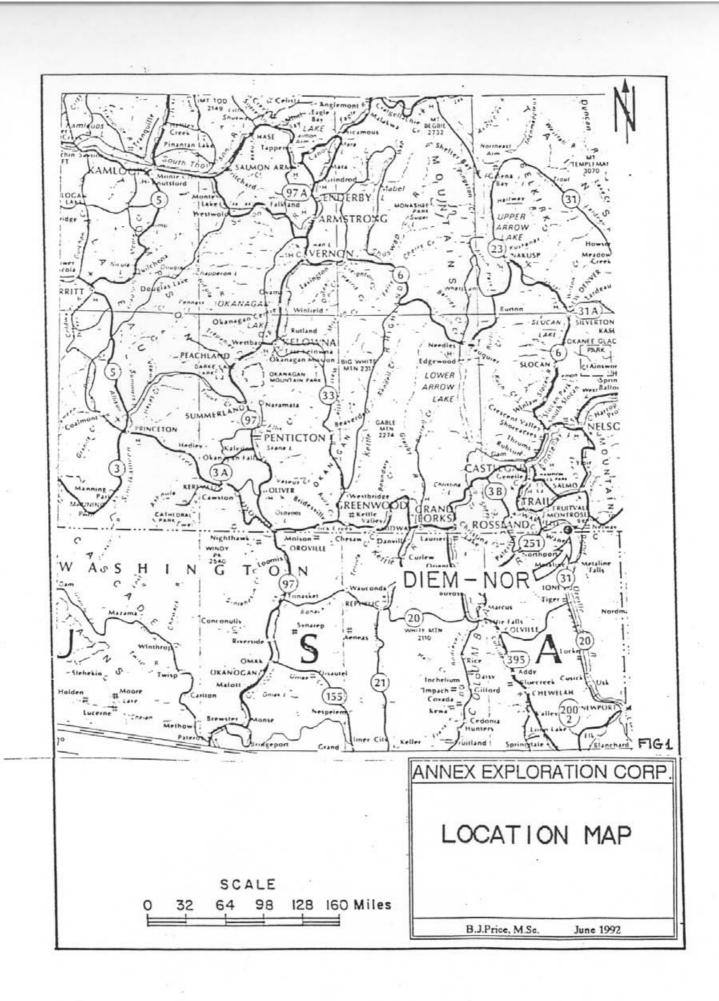
This assessment report has been prepared at the request of Victor Guinet, President of Annex Exploration Corp., and incorporates soil sampling geochemical traverse results from work done by V.Guinet, J.Boutwell, J.Rasmussen, prospectors under the supervision of R.Yorston, B.Sc., Geologist from August 1 to November 30, 1991, and technical petrographic, mineralogic and metallurgical reports done by other contractors from January to March, 1992. A total of 109 soil and silt samples were taken and 3 rock assays; these were analysed by Acme Analytical Laboratories, Vancouver, B.C. The writer did not participate in the field work or the technical work, but is sufficiently familiar with the work of the subcontractors to determine that the work was done in a professional manner.

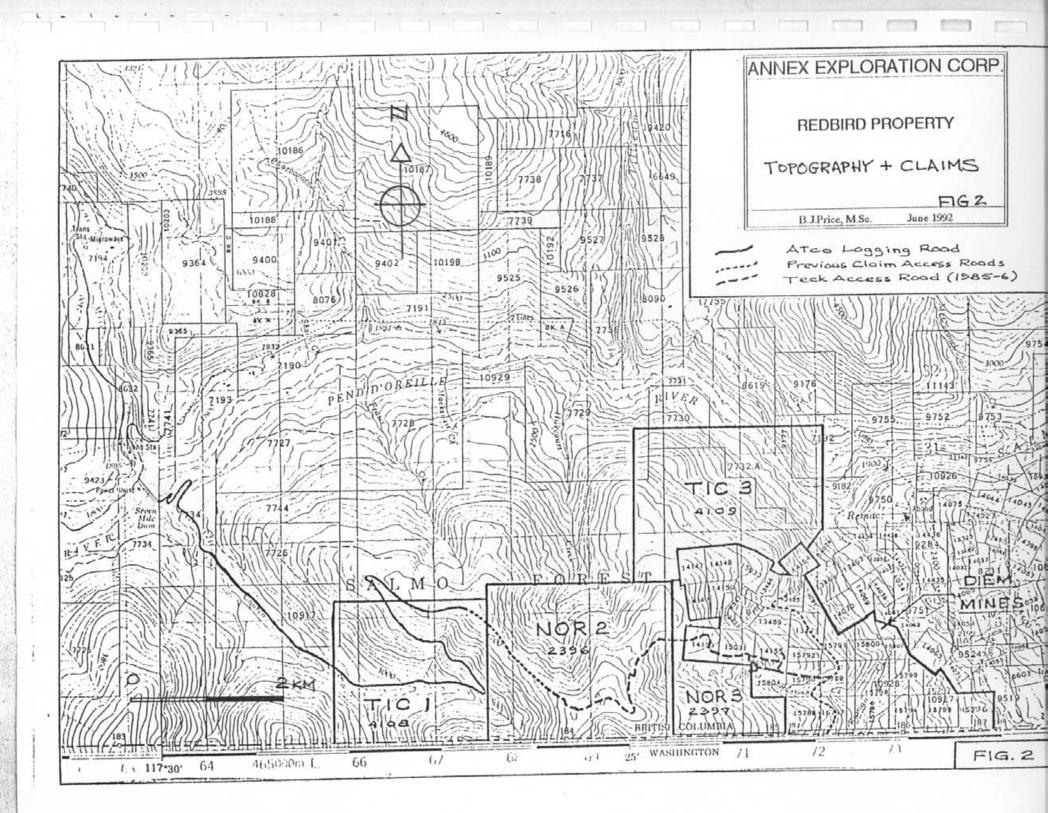
The technical reports by J.Harris and by R.O.McElroy of Fluor Daniel Wright are appended to this report, as are all geochemical analyses done by Acme Analytical Laboratory, Vancouver, B.C.

#### LOCATION AND ACCESS:

The property is located immediately north of the Canada/U.S.border and south of Pend D'Oreille River, about 8 kilometers west of the Customs Station at Nelway, B.C. The property is 50 kilometers (24 miles) southeast of Trail, B.C., site of the lead-zinc smelter of Cominco Ltd., and 20 kilometers southwest of the town of Salmo, B.C.

The claims are most easily reached by paved road 38 kilometers south of Trail, B.C. to the Seven Mile Dam on Pend D'Oreille River, from which point logging and mining roads lead a further 12 kilometers to the





property. Four wheel drive vehicles and/or chains may be necessary at some times of the year, dependant on weather.

#### CLAIMS:

The property covers a large area adjacent to the Canada/U.S. border. The 1991-1992 work filed for assessment was done on the following claims as listed below:

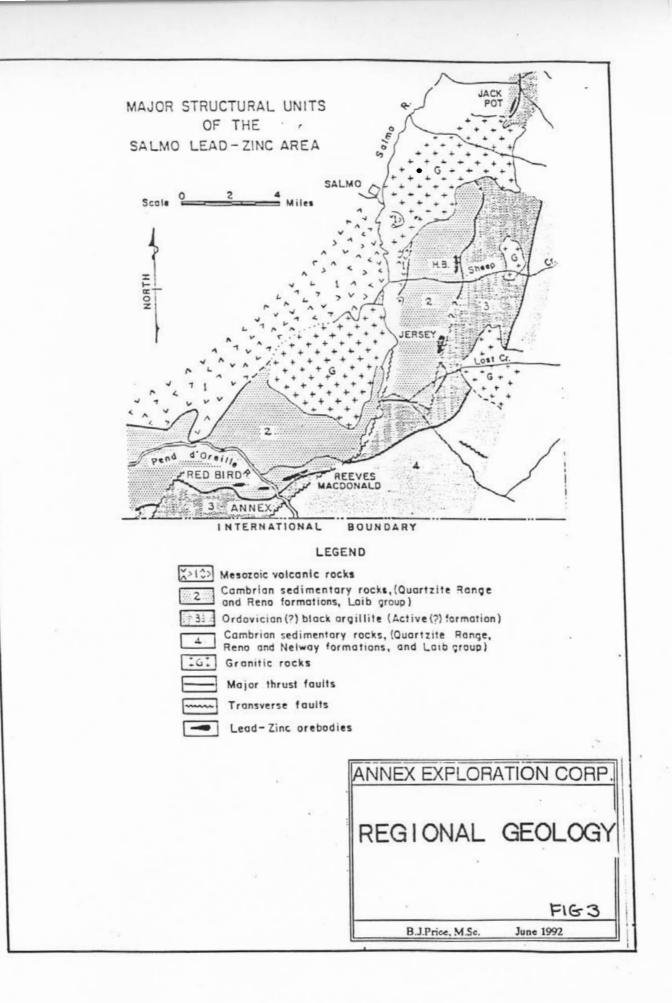
NAME	<u>NO UNITS</u>	RECORD NO.	EXPIRY
TIC 1	20	4108	June 16,1996
NOR 2	20	2396	17 JUL 1998
NOR 3	12	2397	17 JUL 1998
CAVIAR #1	1	L 15786	crown grant
CAVIAR #2	1	L 15787	crown grant
LEAD CUP	1	L 13466	crown grant

The Nor claims are registered in the name of Gerald H.Klein, but are subject to an option agreement between Klein and Annex Exploration Corp., dated August 3, 1989. The Caviar 1, 2 and Lead Cup claims are crown-granted claims held under lease from Hecla Mining Ltd.

Work applied permits the advancement of expiry dates on Nor 2 and Nor 3 claims by 2 years to July 17, 1998.

#### BRIEF HISTORY OF THE CLAIMS:

The Redbird property, on the west side of Pend D'Oreille River and adjacent to the Reeves Mc'Donald claims, was staked about 1924 by S.Coulter and A.J.Campbell of Ymir, as the result of a large gossanous zone similar to the surface mineralization at the Reeeves-Mc'Donald mine. Considerable underground work was done from 1928 to 1929 after which the property was dormant until 1947, when it was acquired by Hecla Mining Company of Wallace, Idaho. Golden Eye Minerals Ltd., (later re-



named Annex Exploration Ltd. arranged a lease of the Redbird Property in 1985.

The area of the <u>Nor claims</u> was staked as the Bar claims in 1959, and explored by The Consolidated Mining and Smelting Company of Canada (Cominco) from 1950 to 1957. Geochemical prospecting was done in 1950 and a geological mapping program completed in 1951. Late in 1951 a deep (1,281 ft.) diamond drillhole on Church Creek, explored for the continuation of the Reeves limestone, host to mineralization farther east along strike at the Redbird, Annex, and Reeves Mc'Donald mines. Although the Reeves member was intersected, no mineralization was found.

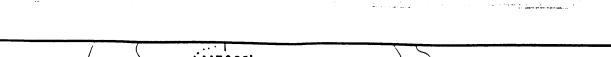
The claims were abandoned by Cominco and the area lay dormant until 1981, when G.H.Klein recognized the potential for additional mineralized zones in the Reeves member along strike from the Redbird property.

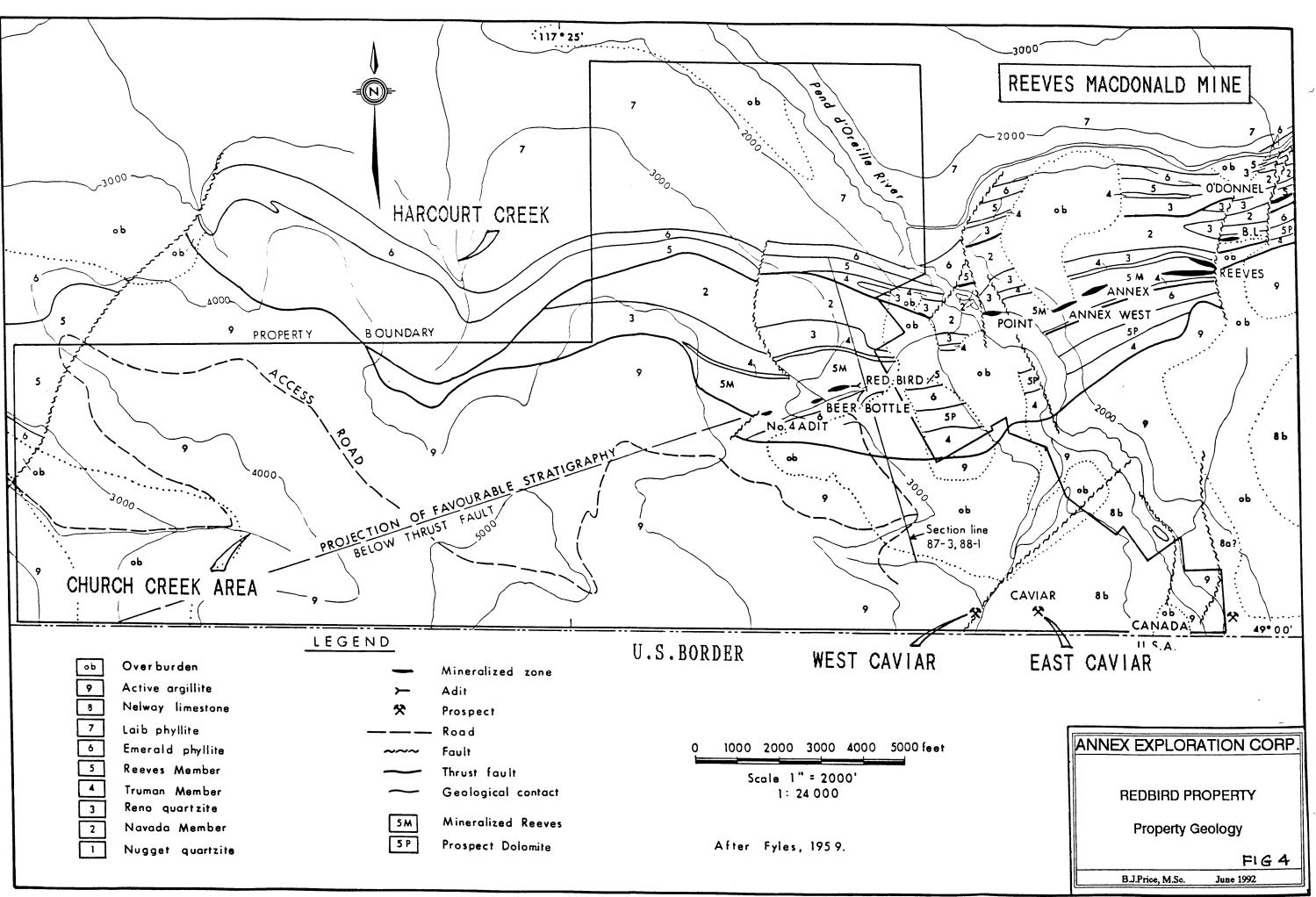
The claims were explored between 1981 and 1984 by Northgane Minerals Ltd. of Calgary, who completed airborne geophysical surveys for the purpose of assessment work.

The property was acquired by the current optionor, Annex Explorations Inc. in 1985, and assessment work was filed on the claims as the result of an extensive drilling program on the adjacent Redbird property which is held by them under lease from Hecla Mining.

#### PROPERTY GEOLOGY:

In the claims area, southeasterly dipping rocks of the Reno and Laib Formations, of Cambrian age, are overlain by argillites of the Active Formation (Ordovician), which have been thrust over top of the Cambrian section from the south. This thrust panel of Active argillite, from 1,000 to 3,000 feet thick, covers the favorable Reeves member of the Laib Formation. Mapping by G.H.Klein in 1989 suggested that dark argillaceous rocks at the head of Harcourt Creek, on the Nor 2 claim may actually be the Emerald Member, a 500 ft thick unit which overlies the Reeves member, as shown in the accompanying stratigraphic table.





Both the Active argillite and the Emerald member of the Laib Formation are soft, incompetent units, and slumping of both units has probably obscured any exposures of Reeves member carbonates.

At the eastern end of the claims, drilling by Teck Exploration and Golden Eye Minerals Ltd. on the adjacent Redbird Property has outlined significant stratabound zinc-lead silver mineralization in at least three separate mineralized zones as described in reports by Betmanis (1986), Price, (1988) and Bailes, (1990).

In the Redbird zone, which outcrops approximately 1,000 ft (300 m) from the east boundary of the Nor 3 claim, and is explored by a number of surface and underground workings, drillhole 86-5 intersected 59 feet of partly oxidized massive sulphides 1,700 feet (518 m) below surface and 1250 feet below the Redbird Adit (2,650 Level). Although formal geologic reserves have not been calculated for the oxide mineralization in the Redbird Zone, sampling of the zinc-rich oxides in the Redbird Adit outlined an area 600 feet long by 20 to 25 feet wide averaging 18.5 % zinc and 6.5 % lead., and judging from the depth of oxidation in DDH 86-5, the zone may continue to a significant depth below the workings.

Reconnaissance geochemical traverses in 1989 outlined at least one area of interest in Harcourt Creek, and similar windows may exist elsewhere on the property where Reeves member limestones or dolomites may outcrop or subcrop beneath till or thin cover.

# 1991 WORK PROGRAM:

#### Church Creek Area:

The Church Creek area was recognized as having potential for extensions of the Redbird mineralized zones as early as the early 1950's, when the Consolidated Mining and Smelting Company (now Cominco) staked a large area adjacent to Church Creek as the Bar claims in 1950.

Geochemical prospecting was done in 1950 and a geological map was made in 1951. Late in 1951 a vertical diamond drill hole 1,281 feet deep adjacent to Church Creek at 3,275 feet elevation was designed to

test for Mineralized Reeves Limestone at depth. Although the hole intersected the target horizon, only a sliver of the unit was intersected, from 1,119 to 1,151 feet, the interval was unmineralized.

Core boxes still remain at the site although the core is mixed and depth markings are no longer visible.

Initial sampling was done along the road northwest of Church Creek toward the northwest corner of the claim block. These samples appear to cross a stratigraphic contact at sample number GK 12. At this sample Calcium content dramatically increases from an average of 0.35% to values in excess of 2.5%, probably indicating a limestone substrate in contrast to a probable shale substrate for the first 11 samples. This change is also marked by sudden increase in background levels of copper, lead, zinc, silver, arsenic, and strontium, and sudden decrease in Aluminum, titanium and phosphorus.

While heavy metals are somewhat higher in the last three samples, there is no real indication that the amounts are present in anomalous levels. However, Tungsten values, (up to 15 ppm) are likely moderately anomalous, considering that average tungsten value in soils from the rest of the property is 1 ppm.

The soil sampling traverse GK 30-55 crosses the anticipated strike extension of the Reeves Member limestone believed to sub-crop under the Active Formation, but little outcrop is present. Fyles and Hewlett have mapped much of the area as Ordovician Active Formation argillites. A portion of this map is reproduced on the accompanying figure.

The samples cross a slope along the north bank of Church Creek with sampling interval 100 meters. The area is blanketed with a cover of slumped Active argillite, numerous lamprophyre dykes, and mixed soils eroded and crept from this cover. One outcrop area of Active argillite was seen, and several areas where cold springs have deposited travertine material.

The presence of lamprophyre material in surface debris is surmised from the relatively high nickel and copper values in the soils ( maximum 254 ppm Ni and 231 ppm copper. The Active argillites are known to be graphitic, and have retained or adsorbed relatively great amounts of heavy metals such as molybdenum, (3-24 ppm), zinc; (404-3981 ppm) and

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cadmium; (2.7-224.2 ppm), and silver; (0.1-4.7 ppm). This makes interpretation of the results somewhat difficult.

The highest zinc, nickel and cadmium values occur in sample GK 47, with 3,981 ppm zinc, 224.2 ppm cadmium, 3.2 ppm silver and 254 ppm nickel. These values correlate with a very high calcium content, suggesting that a mineralized Reeves limestone boulder may be present in the soil at this locality. Several blast pits should be dug at this locality to determine the source of the high metal content. This should also be done at sites GK 35, GK 39, and GK 53-54.

An additional line of soils numbered from GK 77-91 and GK 101-104 were taken higher on the slope about 100 meters above the previously described line. These show scattered elevated levels of silver (4.8-5.9 ppm), and cadmium (14.1-26.8 ppm), but no particular significance is attached to these as the lead and zinc values are , with the exception of GK 85 (2127 ppm zinc) at background levels.

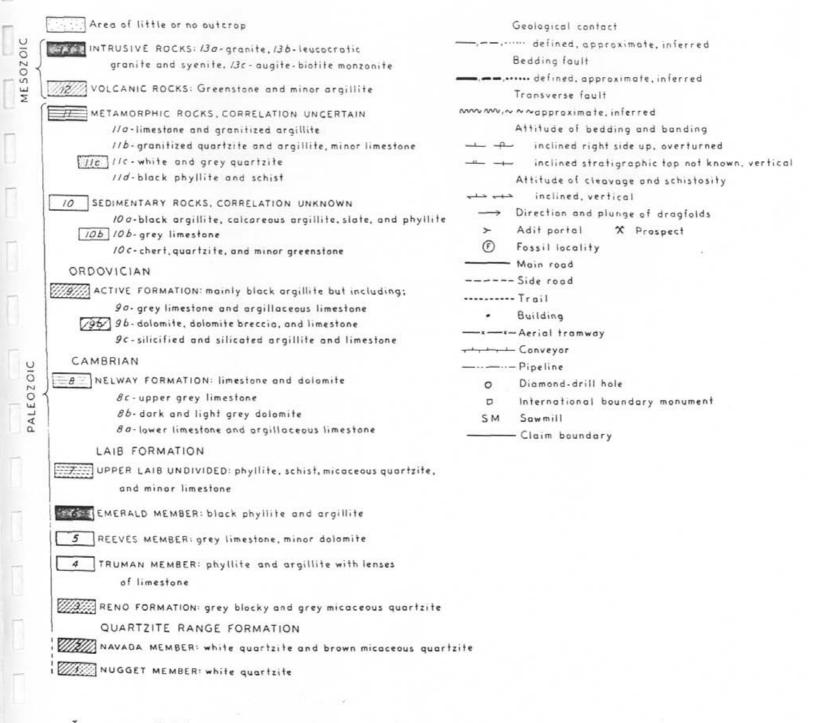
Silt samples taken along Church Creek, (Nos GK 57-63) have higher means and lower standard deviations for zinc, cadmium and one sample has strongly anomalous Antimony (1980 ppm); this value is related to nearby quartz veins which contain small amounts of tetrahedrite.

Silt samples GK 70-73 were taken at roughly 200 meter spacing along the south branch of Church Creek. These show anomalous lead values (137-211 ppm) and weakly anomalous silver values (1.9-2.7 ppm) and possibly anomalous antimony (18-25 ppm) and cadmium (7.1-9.0 ppm). Zinc values are likely at background levels (746-1026 ppm), considering the higher levels obtained in other silts along the main branch of creek (1048-2084 ppm).

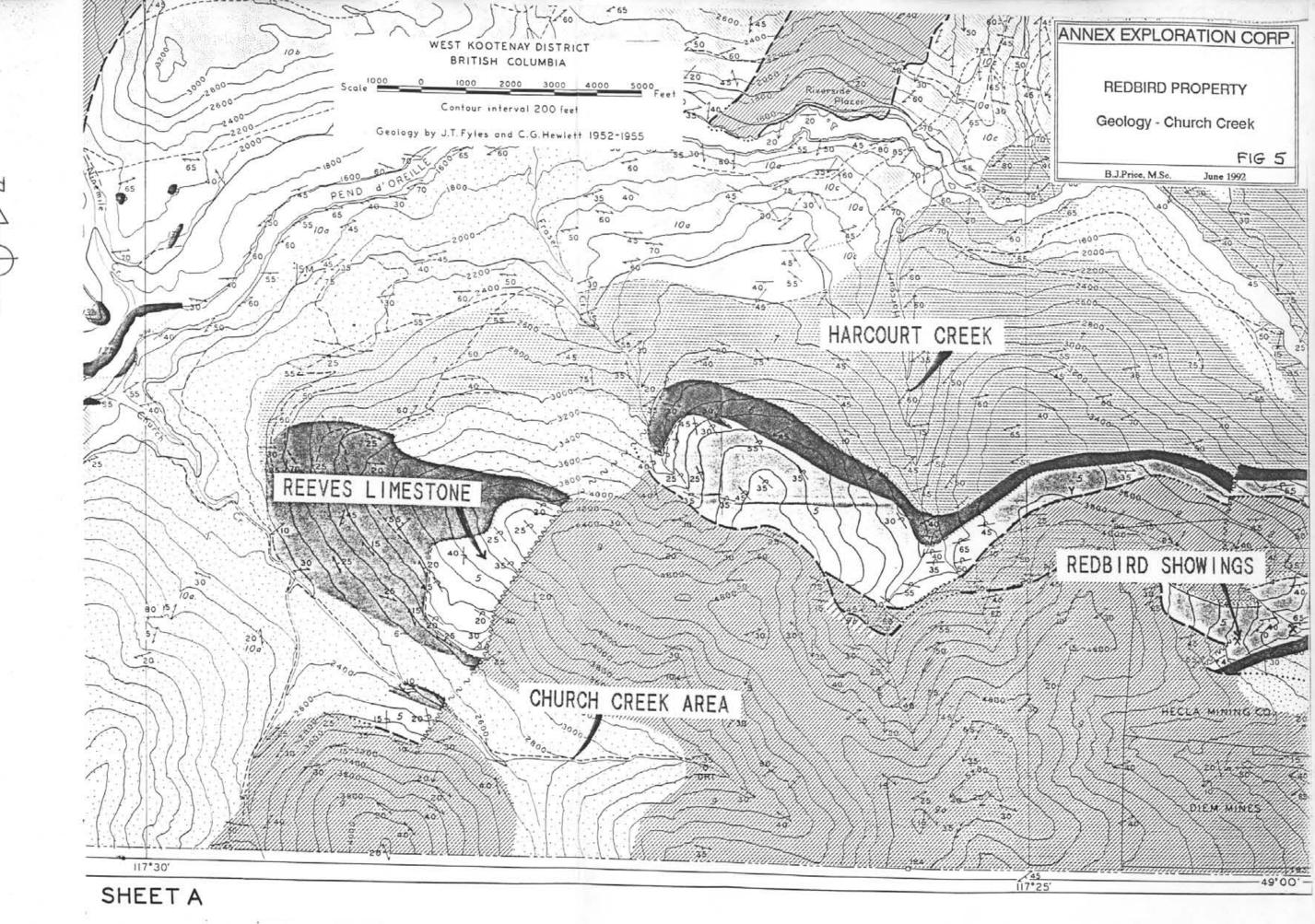
A cluster of rock samples GK 92, 93, 101 and 102 and soil samples GK 74-77 were taken on both banks of the main branch of Church Creek between silt samples G K 59 and GK 60. Two soil samples GK 74 and 75 have strongly elevated levels of the following elements:

SAMPLE	COPPER	ZINC	SILVER	NICKEL	CADMIUM
GK 74	354	5493	2.8	444	180.2
GK 75	247	1644	5.0	185	26.3

# LEGEND



To accompany B.C. Department of Mines Bulletin 41. "Stratigraphy and Structure of the Salmo Lead-Zinc Area," 1959



These elements may reflect the presence of mineralization in or associated with lamprophyre dykes cutting the Active Formation argillites. The rock samples taken nearby are pieces of limy argillite with background levels of lead, zinc, copper and nickel, but moderately anomalous levels of arsenic (18-77 ppm), molybdenum (3-22 ppm), strontium (up to 252 ppm) and strongly elevated levels of cadmium (up to 34.4 ppm) No sulphides are visible in the rock and no particular significance is attached to the anomalous values, as the Active argillite is a "collector" of heavy metals.

## Caviar Area work:

Zinc mineralization was found in the Nelway Formation at two places on the Caviar No.1 claim in 1949 by Diem Mines Ltd. (Fyles and Hewlett, 1959).

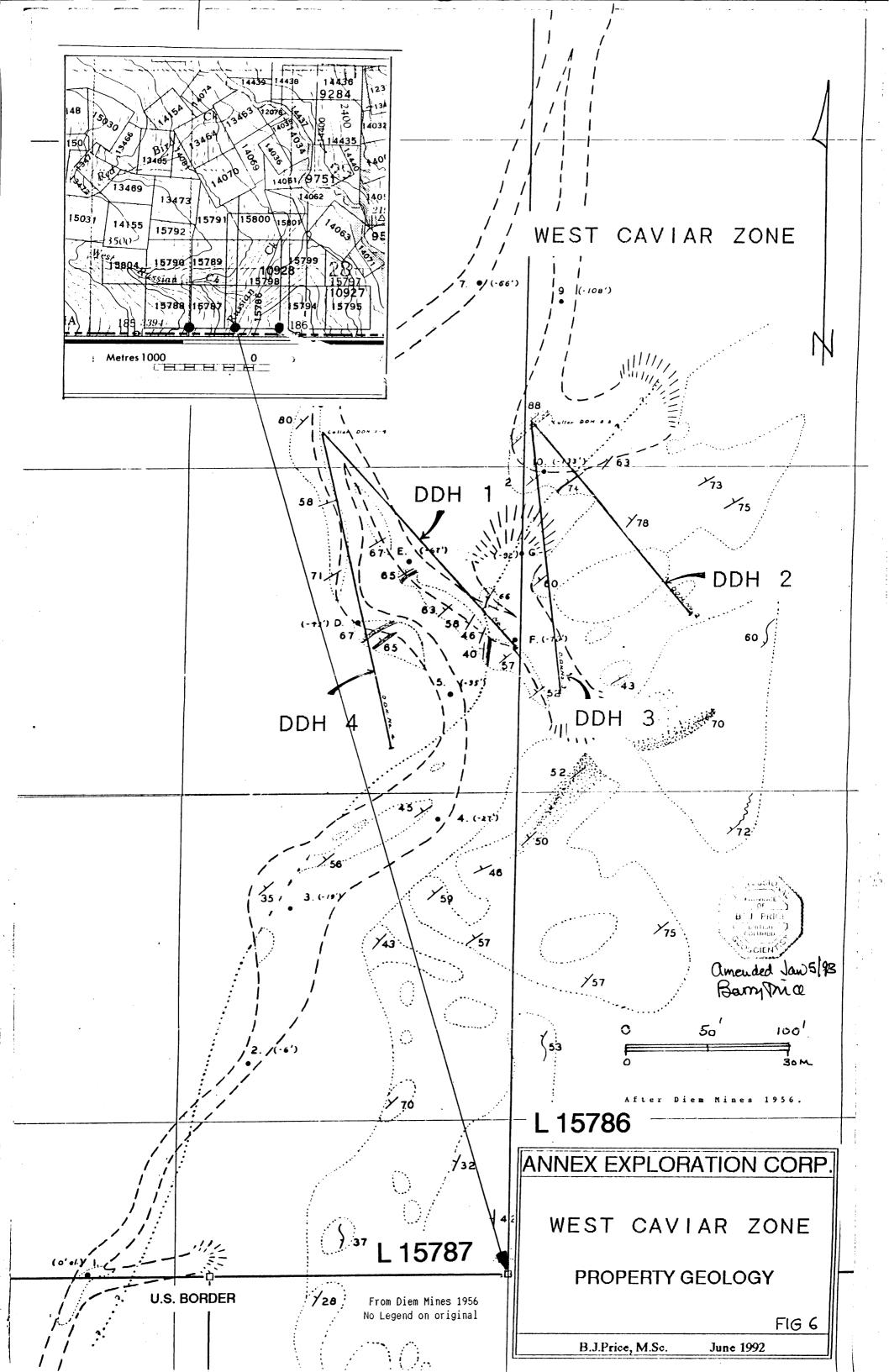
The western showing is on the west side of Russian Creek, about 700 feet north of the International Boundary; a road was bulldozed to the showings and some stripping and diamond drilling was done by Diem Mines Ltd. The showing is described as honey-coloured sphalerite occurring as finely disseminated grains in grey and white banded limestones of the upper member of the Nelway Formation.

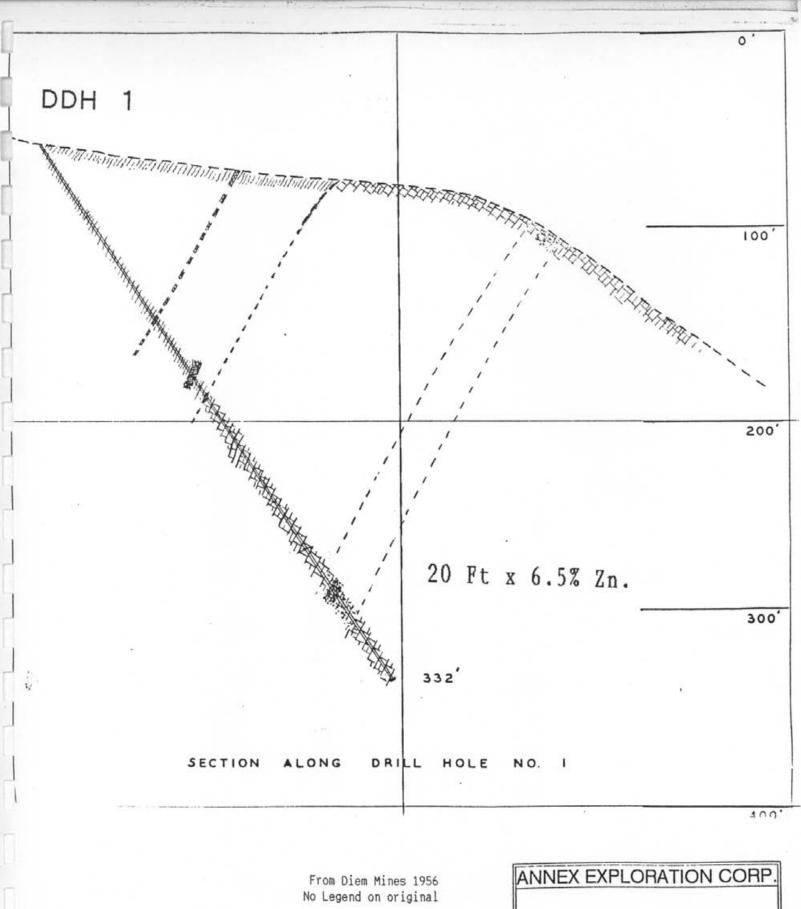
The eastern showing is east of Russian Creek about 600 feet north of the International Boundary on the ridge northwest of Monument 186. Fyles and Hewlett 1959 describe a flat area a few hundred feet square that was stripped by a bulldozer. Zinc rich gossanous material occurs in pockets in limestone and dolomite near the top of the middle member of the Nelway Formation.

#### <u>Western Caviar Zone</u>

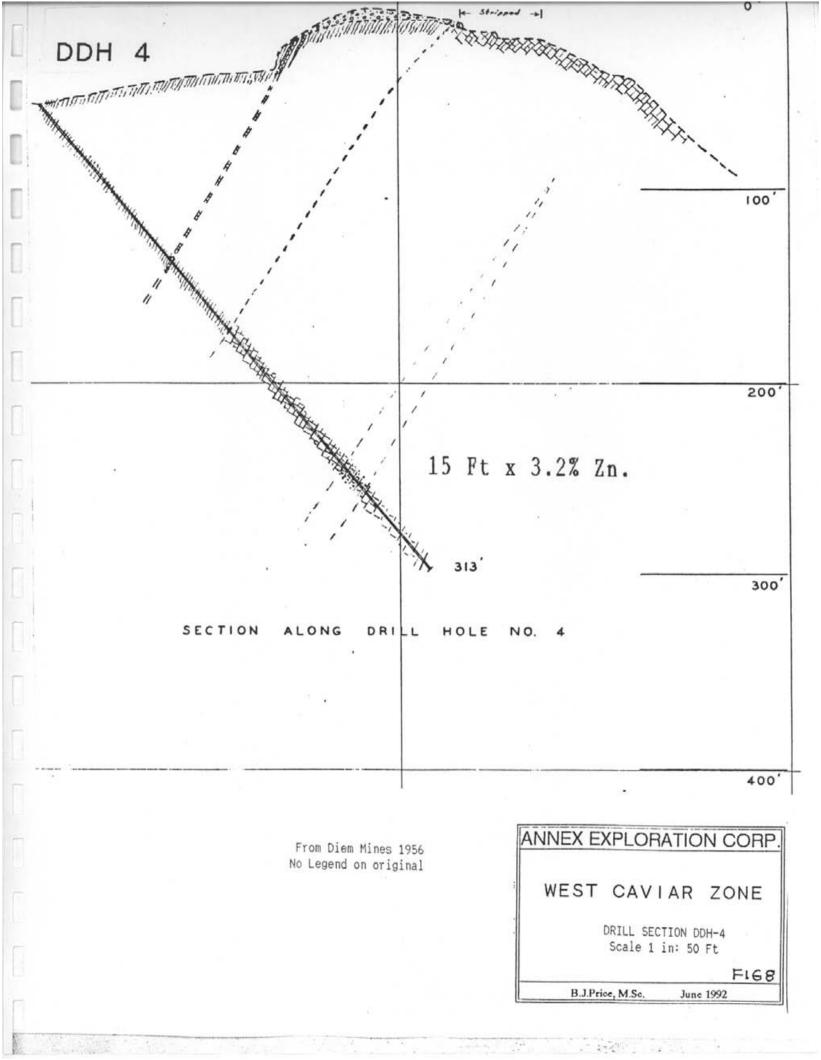
Work done on the showing in 1991 included mapping by R.Yorston geologist, sampling the mineralization (RBR 1 and 2) and 10 soil samples numbered RB SO 1-10 spaced at 15 meter intervals southwest to the International Border.

Regional mapping by Fyles and Hewlett in 1959 indicates the Russian Creek fault separates rocks of the Nelway Formation, on the south from





WEST	CAVIAF	ZONE
	DRILL SECTION Scale 1 in:	
	ce MSc. J	FIG7



black argillites of the Active Formation on the north. This fault must cross the area of the western Caviar zinc showing. The eastern showing appears to be well within the Nelway outcrop area.

Two samples taken by Geologist Robert Yorston, B.Sc. across the Caviar zone mineralization exposed in the previous trench, assayed as follows:

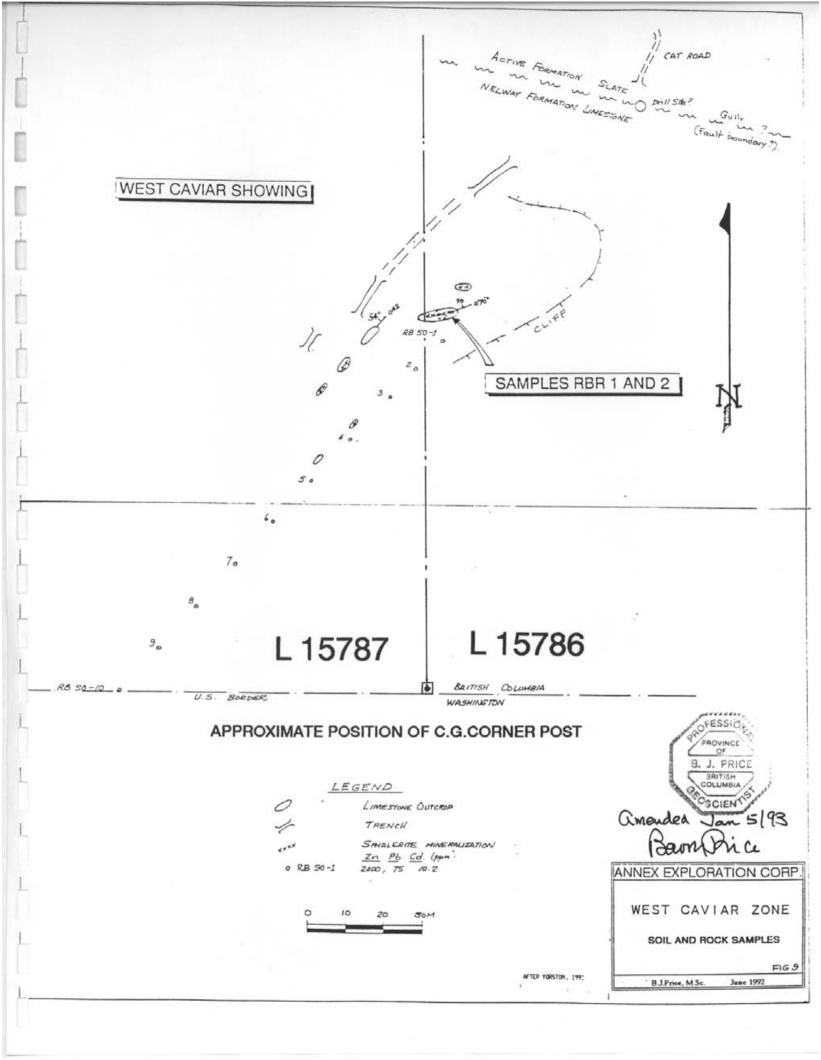
# Caviar Zone Samples

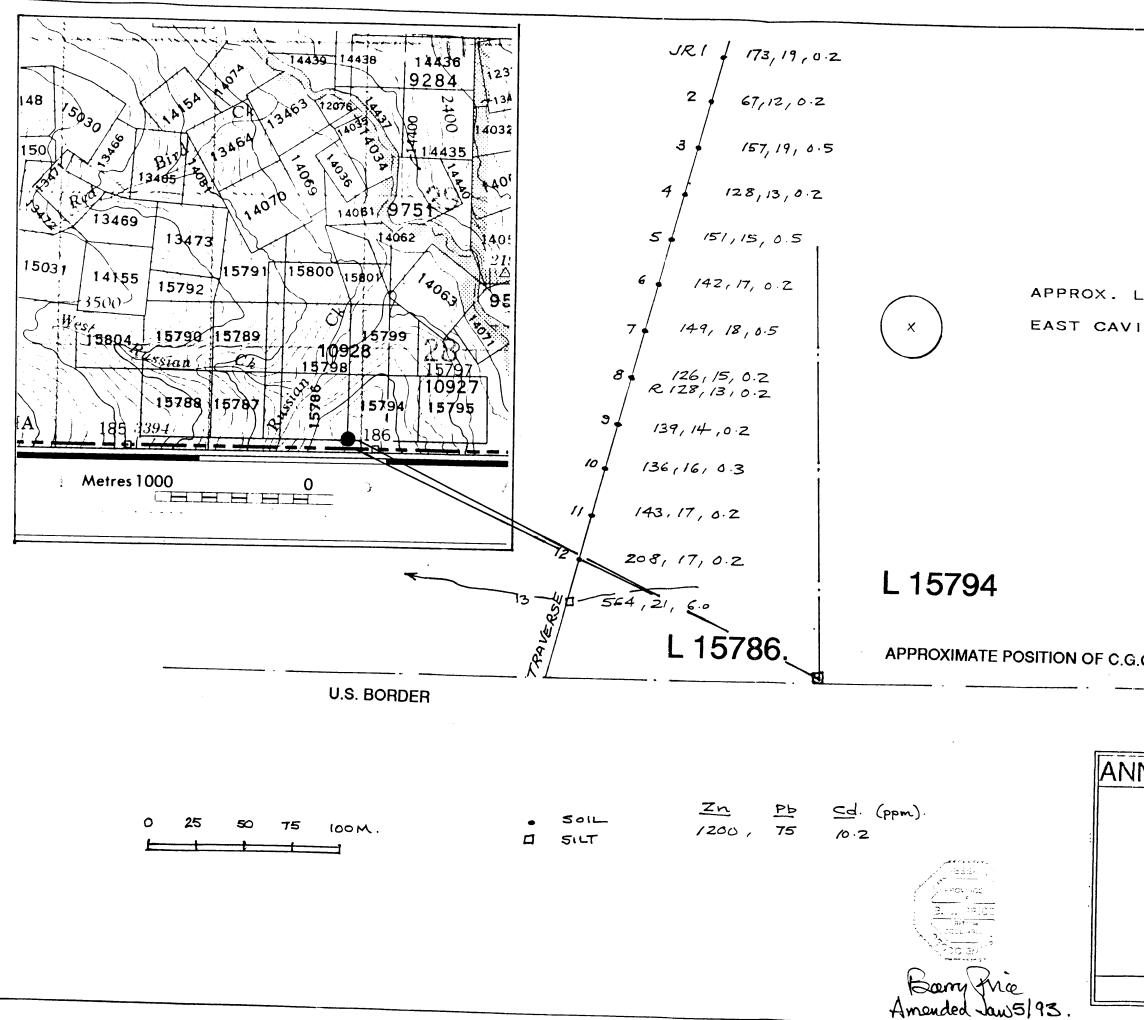
SAMPLE	TYPE	WIDTH ====================================	ZINC	LEAD SI	LVER	CADMI	UM ======
RBR-1	Chip	0.80m.	16.84%	0.77%	0.0	5 opt	0.04 %
RBR-2	Grab	na.	16.10%	0.60%	0.0	4 opt	0.04 %
RBR-2	Repeat	na.	16.58%	0.60%	0.0	3 opt	0.05 %

Subsequent to the 1991 program, an old map of the Caviar trench site and drill sections were obtained. These are included for reference. Of the 4 drillholes, 2 intersected significant zinc mineralization. Drillhole No.1 cut 20 ft of mineralization averaging 6.5% zinc, and Drillhole No.4 cut 15 feet of mineralization averaging 3.2% zinc. (Day Mines Inc. office memorandum dated Jan 24, 1956).

Background levels in soil samples RB SO 1-10 are high for Zn, Pb, and Cd, but are normal for all other elements. Values above 1000 ppm Zinc, 100 ppm lead, and 10 ppm Cadmium are considered anomalous in this area. Clearly, the first four samples are anomalous, which is to be expected considering their proximity to mineralization exposed in the trenches. In this area, additional geochemical soil sampling would be expected to outline mineralized areas well, providing that overburden is not too deep.

Additional mapping and prospecting is warranted in the area. A detailed soil-sampling program on grid lines would likely outline areas of interest, following which, backhoe trenching would be useful to better explore the zinc mineralization. Additional diamond drilling recommended in 1956 by Diem Mining Co. was never done, and the opportunity still remains to develop geological reserves in this area.





OCATION		
	M	
CORNER POST		
NEX EXPLORATION	CORP.	
EAST CAVIAR ZONE		
Soil and Silt Traverse		
	FIG 10	
B.J.Price, M.Sc. June 199	92	
		1 <b>1</b>

# Eastern Caviar Zone:

A line of 12 soil samples (JR 1-12) passes to the west of the Eastern Caviar showing. The samples have only background levels of Zinc (67-208 ppm) Cadmium (0.2-0.5 ppm), and lead (12-19 ppm). One silt sample from the drainage at the end of the traverse has weakly anomalous zinc (564 ppm) and cadmium (6.0 ppm). Evidently the traverse did not cross any mineralized zones, and it is possible the showing area was some distance away.

### Bulk Sampling:

A bulk sample was taken by prospector Vic. Guinet from the "Beer Bottle" zone, at a road cut on the access road to the Redbird Adit, as shown on the accompanying map. The bulk sample weighed 100 kg and was taken for metallurgical and petrographic studies.

The material sampled is mostly limonite with relatively high grade in zinc and lead. A chip sample taken by G.Klein about 1984 assayed 18.5% zinc and 2.2% lead over 31 feet, which compares with the average grade of 18.5% zinc and 6.5% lead over dimensions of 600 feet strike length and average 20 feet width in the adjacent Redbird underground workings.

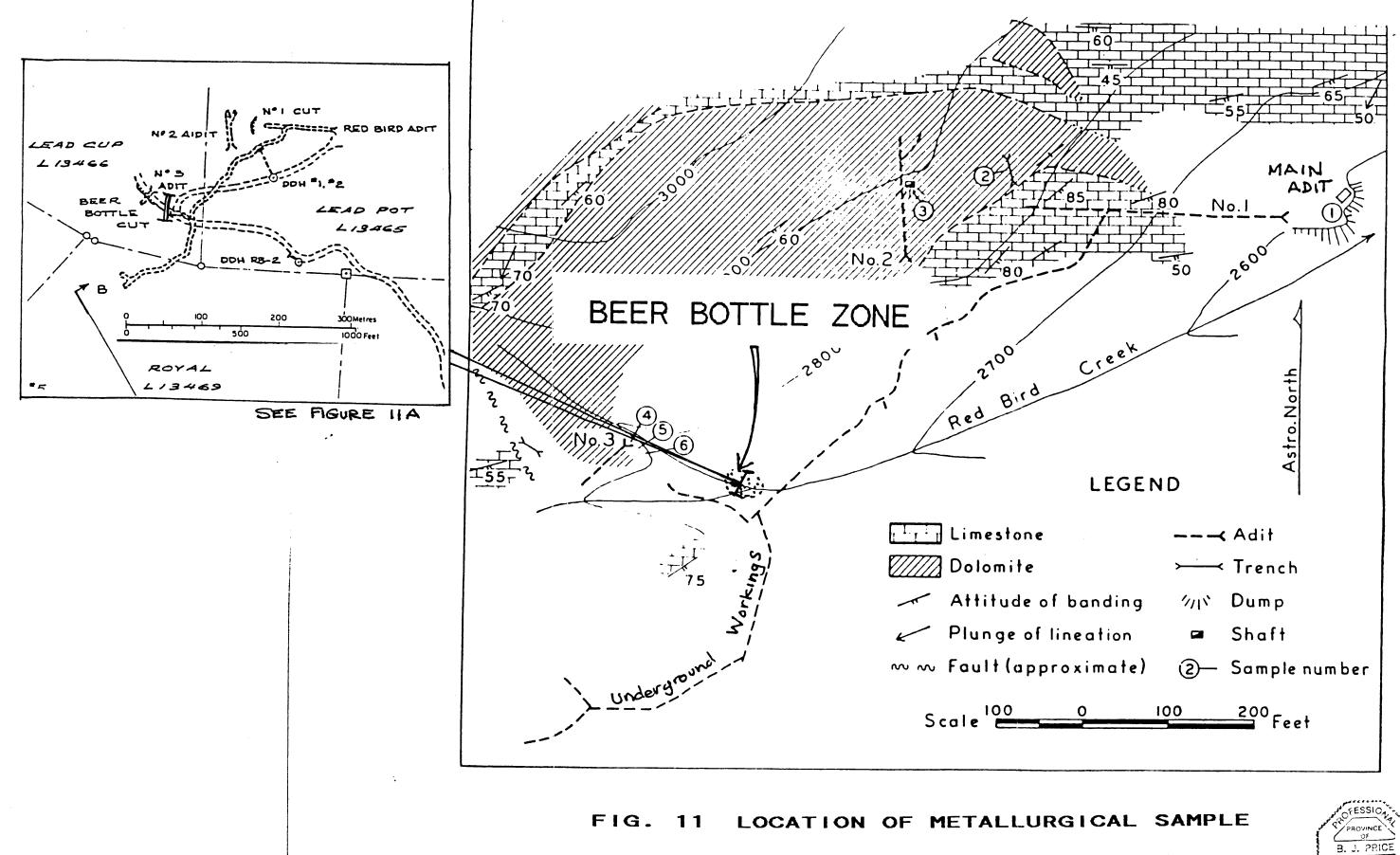
# Mineralogic study:

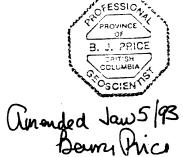
From the bulk sample, a crushed composite sample was submitted to J.Harris, Ph.D. for mineralogical studies. Harris determined that the material contains 40% limonite, 58% bladed silicate and 2% carbonate. An X-ray diffraction analysis of the silicate indicated that the mineral is <u>Hemimorphite</u>, a hydrated zinc silicate (previously known as Calamine, H2(Zn20)SiO4. When pure, this mineral contains 67.5% zinc, 25% silica and 7.5% water.

Harris' report is copied verbatim in Appendix II.

## <u>Metallurgical study:</u>

A brief test program was done on the Limonite-Hemimorphite material from the bulk sample, by B.C.Research, and results were reviewed by R.O.McElroy, Senior Metallurgist at Fluor Daniel Wright.





SAMPLE TAKEN AS A CONTINUOUS CHIP BY V.GUINET, 1991 121-DOLGMITE IOM

REDBIRD PROPERTY

TO ACCOMPANY PANORAMIC PHOTOS & ASSAYS SKETCH OF BEER BOTTLE ZONE WHICH IS 1000' WSW OF MAIN REDBIRD ADIT

FLAG TAPE VERTICAL RIBBONS ARE @ 5W INTERVALS.

5M

LOOKING AZ 230° @ CENTRE.

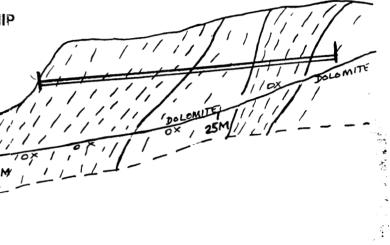
ORIGINAL PHOTOS ÉSAMPLING JAN 17.19EG

 $\cap$ 

G. KLEIN P.ENG.

- - OXIDIZED ZONIES





9.5M 2.19% Pb 18.47% Zn

\*\*\*\*\* SESSIO. PROVINCE B. J. PRICE init Ge CLUMBI Amender Jan 5/93 Barry Price

FIGURE 11A.

In brief; the material is easily reduced to a fine pulp by rod milling. Zinc from the sample is readily soluble in dilute sulphuric acid, with recoveries of over 80% (Ph 2) or over 97% (Ph 3).

Results to date indicate that zinc can be recovered from the material with currently available acid leaching and solvent extraction techniques. The report by McElroy is reproduced in Appendix III

#### DISCUSSION:

A reconnaissance style soil grid established by Klein in 1989, at the head of Harcourt Creek provides an effective comparison for the 1991 sample results. Seventy nine soil samples taken in 1989 outline a pronounced but irregular Zn-Ag-Cd anomaly centered on the creek. Maximum values are 4,000 ppm Zinc, 65.1 ppm Cd and 10.2 ppm Silver in soil, and 6000 ppm Zinc, 65.4 ppm Cadmium and 4.5 ppm silver in silt. In comparison, the 1991 samples, for the most part, lesser values. Some individual samples have comparable or higher Zinc or Cadmium values. However, no cohesive multi-element anomaly has resulted from the 1991 sampling.

#### CONCLUSIONS:

The results of the 1991 geochemical soil, silt and rock sampling program are inconclusive for the Church Creek and Harcourt Creek areas; soil sampling at the western Caviar showing shows potential as an exploration tool in this area.

The technical research into the leachability of the oxide zones at the Redbird zone has shown promise, and this research should be continued.

### **RECOMMENDATIONS:**

Depth of the Active argillite "capping" above the "Argillite Fault" precludes any geophysical methods of exploring for mineralized zones in

the Reeves or Prospect members in the Church or Harcourt Creek areas, however, stratigraphic test diamond drill holes are recommended for these locations.

Compilation of geology on the U.S. side of the International Boundary should be undertaken, and considering the presence of mineral deposits and showings in the same package of Cambrian rocks in Stevens County, (Derkey et al., 1990), perhaps the area south of the border should be mapped, prospected, and if warranted , staked.

Continued research into the feasibility of zinc recovery from the Redbird oxidized zone by acid leaching and solvent extraction is strongly recommended.

respectfully submitted empre

Barry J.Price, M.Sc., FGAC. Consulting Geologist.



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WALKER, J.F., (1934); Geology and Mineral Deposits of Salmo Map Area, British Columbia.

#### CERTIFICATE:

I, Barry James Price, M.Sc., hereby certify that:

I am an independent Consulting Geologist residing at 820 East 14th Street, North Vancouver B.C., with my office at 716 - 850 West Hastings Street, Vancouver, B.C. (Telephone: 682-4488

I graduated from University of British Columbia, Vancouver B.C., in 1965 with a Bachelors Degree in Science (B.Sc.) Honours, in the field of Geology, and received a further Degree of Master of Science (M.Sc.) in Economic Geology from the same University in 1972.

I have practised my profession as a Geologist for the past 27 years since graduation, in the fields of Mining Exploration, Oil and Gas Exploration, and Geological Consulting.

I have worked in Canada, the United States of America, in Mexico, and in The Republic of the Phillipines.

I am a Fellow of the Geological Association of Canada, and am entitled to use the Seal, which has been affixed to this report. I am a member of the Society of Exploration Geologists, the Canadian Institute of Mining, and Society of Mining Engineers.

I am a shareholder of Annex Exploration Corp., having been a director of the company from 1984 to 1990. I hold directly and indirectly, a total of 200,649 shares of the company.

I will receive only normal consulting fees for the preparation of this report.

I have based this report on work done by R.Yorston, B.Sc., whose credentials are listed on the following page, on work done by J.Harris, Ph.D., and R.O McElroy, Senior Metallurgist with Fluor Daniel Wright, and on numerous property visits and review of the literature.

Dated at Vancouver B.C. this 21th day of June, 1992.

respectfully submitted

Barry Price, Consy ing Geo R J PRICE M.S FELLON

M.Sc., FGAC.

# ROBERT YORSTON

Robert Yorston, B.Sc., residing at 5970 Stolz Road, RR #2 Duncan B.C., graduated from the University of B.C. in 1972 with a Bachelor of Science Degree in Geology.

••••

He has practised his profession since 1972.

Directors,

Annex Exploration Corp.

305 - 850 West Hastings Street, Vancouver, B.C., V6C 1E1

Gentlemen,

This letter is authorization for you to use this report for submission to the Ministry of Mines and Petroleum regulatory authorities for the purposes of providing recommendations for your company to proceed with fulfilment of its obligations to the vendor of the Nor property.

This report may be used by the company for any purpose, subject to retaining material from the report in its proper context.

Dated at Vancouver B.C. this 21th day of June, 1992

respectfully submitted

James

Barry

Price,

Consulting Geologist



M.Sc.,FGAC.

# ITEMIZED COST STATEMENT

Redbird and Nor claims, Nelson M.D. 1991-1992 Exploration.

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# WAGES AND FEES:

R.Yorston, B.Sc., Geologist, 3 days @ \$300 V.Guinet, Prospector, 5 days @ \$200 J.Boutwell, Prospector 2 days @ \$200 J.Rasmussen, Prospector 2 days @ \$200	\$900.00 1,000.00 400.00 400.00
SUBTOTAL	\$2,700.00
RENTALS:	
\$-Wheel Drive Vehicle (Guinet) All Terrain Vehicle	\$455.00 135.00
SUBTOTAL	\$590.00
TECHNICAL CONSULTING:	
B.C.Research - Metallurgical Work Fluor Daniel Wright Engineers Harris Exploration Services (Petrologic)	\$5,000.00 5,453.00 207.58
SUBTOTAL	\$10,660.58
REPORT PREPARATION:	
Murray McLaren, B.Sc. B.J.Price, Geological Consultant	\$1,000.00 \$1,375.00
SUBTOTAL	\$2,375.00
DISBURSEMENTS:	
Motel and Meals Fuel Field Supplies Acme Analytical Lab Drafting SUBTOTAL	\$513.52 275.80 300.00 669.12 636.11 \$2,394.55
TOTAL OF ALL COSTS	\$18,720.13
	<i>410,120.13</i>

Respectfully Submitted

ASSOCIATIO cO Barry J.Price, M June 21, 1992 OLOGP B. J. PRICE, M.Se.

# SAMPLING PROCEDURES

SOILS: Soil samples were taken with a prospectors pick or mattock. Soils were organic due to the deep rainforest cover, but where possible, this material was removed and samples were taken from the underlying B Horizon. Some of the material on steeper and rocky slopes was actually talus fines.

Samples are placed in a gusseted kraft paper envelope, partially dried in camp and then transported to the analytical laboratory. All samples were analyzed by Acme Analytical Laboratory using 32 element ICP-AES techniques on dry sieved -80 mesh fractions.

<u>ROCK SAMPLES:</u> Samples were taken as a number of chips from the outcrop face and placed in clean plastic rock-sample bags. At the lab., samples were crushed to -35 mesh and then pulverized. Analysis was done as listed on the analytical sheet.

# SILT SAMPLES:

Silt samples were taken from active stream sediment and placed in a gusseted kraft paper envelope, partially dried in camp and then transported to the analytical laboratory. All samples were analyzed by Acme Analytical Laboratory using 32 element ICP-AES techniques on dry sieved -80 mesh fractions.

#### BULK SAMPLE

The bulk sample was taken as a 100 kg continuous chip from oxidized material in a road-cut, put into several plastic bags and processesd by B.C.Research; results were discussed by Fluor Daniel Wright based on discussion with B.C.Research. To the writers knowledge, no formal report was prepared by B.C.Research.

# APPENDIX I

ROCK AND SOIL GEOCHEMICAL RESULTS

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852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 ACME ANALYTICAL LABORATORIES LTD. PHONE (604) 253-3158 FAX (604) 253-1716 **ASSAY CERTIFICATE** Annex Exploration Corp. PROJECT RED BIRD FILE # 91-5361 Page 2 305 - 850 W. Hastings St., Vancouver BC V6C 1E1 Attn: V. GUINET Cd SAMPLE# Pb Zn Ag % ક્ષ oz/t 8 .04 .77 16.84 .05 RBR-1 .60 16.10 .04 .04 RBR-2 .60 16.58 .05 .03 RE RBR-2 - 1 GM SAMPLE LEACHED IN 50 ML AQUA - REGIA, ANALYSIS BY ICP. - SAMPLE TYPE: P1 SOIL P2 ROCK P1 GEO/P2 ASSAY Samples beginning 'RE' are duplicate samples. Nov 8/91. DATE REPORT MAILED: DATE RECEIVED: NOV 4 1994 SIGNED BY .D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

ACME ANALYTICAL LABORATORIES LTD.

852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6

PHONE(604)253-3158 FAX(604)253-1716

#### GEOCHEMICAL ANALYSIS CERTIFICATE

Annex Exploration Corp. PROJECT RED BIRD File # 91-5361 Page 1 305 - 850 W. Hastings St., Vancouver BC V6C 1E1 Submitted by: V. GUINET

									<u></u>					<u></u>		<u></u>												<u></u>		
SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	v	Ca	Ρ	La	Cr	Mg	Ba	Ti	8	AL	Na	ĸ	
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	*	ppm	ppm	ppm	ppm	ррп	ppm	ppm	ppm	ppm	*	*	ppm	ppm	*	ppm	*	ppm	%	*	*	ppm
JR-1	1	10	19	173	1	22	8	546	2.40	2	5	ND	4	28	.2	2	2	35	.39	.138	10	20	.38	187	.16	53	.82	.05	.09	1
JR-2	1	34	12	67	1	28	10		2.50	2	5	ND	8	32	.2	2	2	46	.45	.084	22	30	.69	92	.12	3 1	.67	.03	.12	1
JR-3	1	24	19	157	.1	25	9	356		2	5	ND	6	28	.5	2	2	42	.36	.114	16	25	.50	179	.14	53	.19	.03	.09	1
RE JR-8	1	19	13	128	1	29	ģ	233		2	5	ND	6	37	.2	2	2	39		.188	13	24	.43	224	.17	64	.27	.05	.13	1
JR-4	1	14	17	182	.1	25	9			3	5	ND	5	32	.5	2	2	36		.254	11	22	.38	315	.15			.04	. 13	1
JR-5	1	20	15	151	.3	24	8	509	2.37	2	5	ND	5	32	.5	2	2	34	.31	.226	12	20	.35	253	.16	54	.07	.04	.12	1
JR-6	. 1	16	17	142	1	30	8	723		2	5	ND	5	34	.2	2	2	37		.172	13	23	.41		.16			.04	.12	1
JR-7	i	13	18	149	.3	31	õ	621		2	5	ND	6	37	.5	2	2	34		.196	14	22	.34	290	.17		.85	.05	.10	f
JR-8	i	22	15	126	1	30	ģ	239		2	5	ND	6	36	.2	2	2	38		187	14	23	.41	221	.17	84		.05	.15	1
JR-9	1	14	14	139	1	25	9			2	5	ND	5	31	.2	2	2	36		,201	12	22	.36		.15			.03	.09	1
	•	•••	••				•				-		-	•••		-	_			1.199										
JR-10	1	18	16	136	.3	23	8	267	2.33	2	5	ND	5	39	.3	2	2	34	.41	.152	13	19	.30	185	.16	63	.76	.05	.09	1
JR-11	1	20	17	143	.2	32	10			2	5	ND	5	31	.2	2	2	41	.27	.121	11	26	.38	211	.15	53	.81	.03	.10	1
JR-12	1	12	17	208	.3	22	9	317	2.47	3	5	ND	5	30	.2	2	2	37	.25	.296	10	21	.30	200	.13	43	.07	.03	.09	1
JR-13 SILT	5	42	21	564	.9	59	10	305	2.61	11	5	ND	7	47	6.0	4	2	53	1.06	.169	21	23	.64	169	.07	51	.10	.02	. 14	1
RBSO-1	1	33	677	11378	.9	51	10	729	3.11	12	5	ND	7	34	27.1	2	2	44	.97	.301	22	44	.52	237	.15	84	.33	.04	.14	1
RBSO-2		23	599	6599			10	652	2 77	,	F	ND	7	24	14.9	2	2	48	40	.252	19	34	.44	215	.12	5 7	. 16	.04	1/	2
RBSO-2 RBSO-3	2	30	760	7146	1.0	44 63	11	754		4	5	ND ND	8		11.7	2	2	40		.176	24	37	.66		.13			.04	.15	
RBSO-4	2	29	105	1399	.5	66	12			0	2	ND	8		5.7	2	2	59		.288	21	29	.57		.12				.16	
RBSO-5	1	50	44	672	.6	68		262		7	5	ND	ş	27	3.6	2	2	56		.172	27	27	.59	253	.13			.03	.15	
RBSO-6	4	36	32	529	.9	70	12			7	5	ND	9 8	24	3.1	2	2	52		.131	21	29	.55	262	.13			.02		
KB30-0	•	20	32	529	•7	70	12	252	5.00	4	2	ND	0	24	3.1	2	2	72		. 1.7 1	21	27		202	• 1 •		.00	.02	. 10	
RBSO-7	1	40	30	657	.9	74	12	296	2.96	4	5	ND	7	25	4.6	2	2	56	.39	.131	22	29	.55	276	.12	62	.78	.02	.15	1
RBSO-8	1	30	27	613	1.3	72	10	389	2.62	2	5	ND	6	28	5.0	2	2	53	.39	.215	17	25	.47	337	.13	42	.94	.04	.15	1
RBSO-9	1	21	27	699	.7	61	9	323	2.44	5	5	ND	6	33	6.0	2	2	52	.40	.255	16	24	.45	418	.11	72	.38	.03	.15	1
R8SO-10	1	22	24	658	.7	54	9	448	2.17	8	5	ND	8	42	4.8	2	2	46	.38	.322	14	22	.38	455	.12	52	.48	.04	.13	2
STANDARD C	19	55	42	133	6.9	70	34	1061	3.98	43	19	7	38	52	18.8	16	20	56	.49	.090	38	58	.88	175	.09	33 1	.92	.08	.13	11

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB - SAMPLE TYPE: P1 SOIL P2 ROCK P1 GEO/P2 ASSAY Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: NOV 4 1991 DATE REPORT MAILED:  $\sqrt{0 \sqrt{g}/g}$ .

ACME ANALYTICAL LABORATORIES LTD.

#### 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

#### GEOCHEMICAL ANALYSIS CERTIFICATE

Annex Exploration Corp. PROJECT RED BIRD File # 91-4625

305 - 850 W. Hastings St., Vancouver BC V6C 1E1 Submitted by: VICTOR GUINET

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SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	Ρ	La	Cr	Mg	Ba	Ti	B	AL	Na	κ	V
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	*	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	<u> </u>	*	ppm	ppm	*	ppm	*	ppm	%	*	*	ppm
GK-1	5	28	21	545	.4	72	11	318	2.79	14	5	ND	5	33	7.7	2	3	45	.43	.333	19	21	.38	338	.11	4 2	. 19	.03	. 15	2
GK-2	5	33	23	448	.3	64	11		2.67	11	5	ND	5	29	2.5	2	2	49	.36	.159	17	21	.52	248	.11	2 2	.36	.02	.20	1
GK-3	4	31	11	425	.3	59	8	210		7	5	ND	4	33	- A.	2	2	34		.363	14	13	.27	345	.10		.30	.04	.16	- Meduate Trib
GK-4	4	27	22	625	1.6	75		503		10	5	ND	4		12.3	2	2	45		.294	20	22	.38	542	.08		.05	.02	. –	
GK-5	3	45	19	274	.3	59		232		10	5	ND	6	32		2	2	42	.32		23	28		233			.38	.03	. 19	and the second sec
GK-6	2	36	23	422	.3	58	11	240	2 77	8	5	ND	5	77	5.8	2	2	44	34	.149	19	20	62	402	12	2 2	.37	03	.18	
GK-7	7	14	18	990	.3	82	10	_	2.50	Š	5	ND	2		12.8	2	2	41		.212		30					.31	.02	.17	
	2 7		17	528	.5		9			2	5	ND	5	25		2	2	49		.060	18	23			.12		.98	.02	.20	84 <b>2</b>
GK-8	2	26			- C 10 T T 10	54	ž		2.58	See 2	2		2			2	2												-	1
GK-9	2	33	17	681	.3	75	<u> </u>	210		8	2	ND	4		2.6	2	2	44		.156	15	16					.60	.03	.23	3
GK-10	6	14	27	1708	•	69	8	371	1.94	9	5	ND	4	55	19.3	2	2	64	.30	. 189	14	8	.26	028	.10	52	.06	.03	.16	10
RE GK-7	3	12	18	978	.3	78	10	475	2.42	6	5	ND	2	30	12.5	2	2	40	.35	.200	13	29	.43	547	.11	42	.24	.02	.17	5
GK-11	2	19	9	520	1.6	38	7	382	1.89	6	5	ND	3	27	13.6	2	2	35	.34	.372	15	11	.23	282	.14	23	.25	.03	.08	2
GK-12	11	75	34	2845	1.3	210	10	404	2.29	19	5	ND	1	88	24.5	4	2	48	2.53	.181	14	13	.38	300	.04		.90	.01	.11	15
GK-13	6	57		1098	1.7	94	9		2.13	16	5	ND	2		8.1	14	2	52			14	16		156	.05		.74	.02	.12	
GK-14	5	68		1117	- 1997 - F. C.	129	16	614		14	5	ND	4		14.0		3	45	2.97	1911 - 1913 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 -	22		1.03		.06		.98		.13	5
GK-15	1	31	29	287	.4	53	11	657	2.14	9	5	ND	1	135	3.7	2	2	16	19.16	.097	6	16	.36	212	.02	3	.81	.01	.09	戦争
STANDARD C	19	58	40	134	6.9	71	31	1054	4.03	40	18	8	36	51	18.5	15	18	54	.50	.092	37	60	.88	180	.09	33 1	.91	.06	.15	11

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. - SAMPLE TYPE: SOIL <u>Samples beginning 'RE' are duplicate samples.</u>

DATE RECEIVED: SEP 20 1991 DATE REPORT MAILED: Signed By M. S. H. D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

<b>H</b> A				<u>Anı</u>	<u>ex</u>	Exp	lor	ati		Cor	р.	PRC	JEC	T F	XED	BIR	) ]	ril.	e #	•••••••••••	-526	52	P	age	1				
SAMPLE#	Mo ppm	Cu ppm	Pb ppm		Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As		Au	Th ppm	Sr ppm	Cd ppm	Sb	Bi	V V ppm	Ca X	P %		Cr ppm	Mg %	Ba ppm	Ti %	B	Al X	Na %	K X F
GK 30 GK 31 GK 32 GK 33 GK 34	3 16 6 6 11	14 65 43 50 231	26 27 24	884 1287 1056 750	.1 1.8	49 100 110 68	7 11 11 10	703 288 448 966	1.72 2.50 3.10	4 15 7 13 34	5 5 5 5 5 5	ND ND ND ND ND	3 6 6 3 6	36 24 40 70 57	8.9 7.5 10.8 14.5 7.9	2 6 2 2 4	2 2 2 2 2 2	48 55 51 44 55	.50 .33 .38 .93	.187 .103 .157 .212 .167	12 20 18 15 18	15 15 31 23 22	.32 .24 .41 .30	698 323	.07 .07 .10 .08 .10	6 1 4 1 4 1 5 1	.80 .68 .99 .64 .97	.02 .02 .01 .02 .01	.18 .19 .17 .17 .17 .14
GK 35 GK 36 GK 37 GK 38 GK 39	4 6 4 5 3	32 67 66 56 41	32 28 16	670 325	.9 1.3 1.9 .5 1.2	91 56	15 11 12	981 394 316 299 363	3.80 2.49 2.87	5 3 7 12 2	5 5 5 5 5	ND ND ND ND	3 7 4 5	72 47 43 29 37	49.9 9.0 6.9 2.7 25.0	2 2 2 2 2 2	2 2 2 2 2 2		.37		13 19 14 24 17	33 28	.52 .62 .52	507 340 243	.10 .12 .10 .08 .10	5 2 4 1 4 1	2.02 2.87 1.88 1.39 2.01	.03 .02 .04 .01 .01	.20 .20 .22 .17 .20
GK 40 GK 41 GK 42 GK 43 GK 44	7 5 6 7 7	62 57 50 71 68	22 21 19	1761 652 404	1.1 1.0 .7 2.0 1.7	133 72 58	12 10 10	243 461 209 223 374	2.64 2.47 2.54	9 7 8 12 18	5 5 5 5 5	nd Nd Nd Nd	5 5 5 4	35 35 26 27 53	4.1 17.3 3.8 3.4 10.4	2 2 3 6	2 2 2 2 2 2	145 120 68 64 72	.35 .30 .40	.076 .146 .107 .096 .204	16 16 16 20 22	26 24	1.03	177	.09 .08 .07 .07 .06	5 1 4 1 3 1	.92 .99 .54 .03 .25	.01 .02 .01 .01 .01	.29 .18 .14 .16 .19
GK 45 GK 46 GK 47 GK 48 GK 49	5 5 24 7	32 54 205 104 34	23 45		.6 2.2 3.2 2.2 .8	254	15	360 322 729 298 337	2.72 2.70 3.12	8 7 13 38 11	5 5 5 5 5	nd Nd Nd Nd	6 5 2 5 4	127	5.4 12.2 224.2 14.0 8.7	2 2 8 2	2 2 2 2 2 2	42	.42 5.83 .52	.319	20 19 12 24 18	24 20 24 19 17	.41 .32	981 239	.08 .09 .05 .04 .08	52 71 2	.61 2.11 .56 .95 .60		.18 .16 .13 .11 .11
GK 50 GK 51 GK 52 GK 53 GK 54	5 14 8 9 14	27 29 36 91 88	26 21 65	782 483 838 2405 1865	.5 .5 .5 1.4 4.7	59 47 65 228 142	9 11 8	485 342 659 521 455	2.25 2.52 1.99	10 17 14 16 20	5 5 5 5 5	ND ND ND ND	4 1 3 1 2	36 18 37 135 54	18.0 9.3 14.6 42.1 21.1	2 3 2 2 2	2 2 2 2 2	34		.105	19 19 17 8 21	19 11 18 17 20	.13 .30 .39		.07 .02 .07 .04 .06	3 3 1 9	.85 .60 .55 .94 .88	.02 .01 .01 .01 .02	.12 .10 .15 .10 .12
SK 55 RE GK 51 SK 56 SK 57 SK 58	12 14 5 15 19	63 31 39 77 79		806 504 781 1048 1307	1.4 .6 .3 1.2 1.2	94 50 67 97 130	9 13 11	363 349 1230 338 338	2.37 2.64 2.63	23 19 13 23 28	5 5 5 5 5	ND ND ND ND	5 1 1 2 2	33 19 43 69 79	10.2 9.6 11.2 12.8 18.4	2 4 2 3	2 2 2 2 2	40		.137	27 22 18 20 18	21 11 20 17 14	.15 .33	309 416 563 247 231	.06 .03 .07 .03 .03	3 4 1 4	.64 .63 .79 .77 .73	.02 .01 .02 .01 .01	.10 .10 .10 .08 .08
ik 59 ik 60 ik 61 ik 62 ik 63	16 15 13 13 14	80 87 72 97 85	38 32 35	1844 1744 2084	1.1 1.2 1.1 1.3 1.2	173 152 191	13 10 10	310 377	2.52	21 21	5 5 5 5	nd Nd Nd Nd	1 1 2 1	105 75 105	21.9 23.8 20.3 27.2 20.4	3 1980 3 2 4	2 2 2 2 2	39 37 41	3.47 3.81 2.38 3.79 2.52	.138 .125 .136	16 15 14 13 17	18 15 19	.37 .32 .38		.03	7 5 6	.75 .67	.01 .03 .01 .01 .01	.08 .08 .09
K 70 K 71 Standard C	7 6 20		148	845	1.9 2.0 7.3	82	9	325 323 1074	2.46	21 19 41	5 5 18	ND ND 7	3 3 39		7.1 8.3 19.0	18	2 2 20	50	2.92 3.58 .46	.156	17 16 39	20	.61	152 149 178	.04	2	.71	.01 .01 .07	.09
		THIS	S LEA	CH IS		IAL FO	DR MN	FE S	R CA	PLA	CR MG	BA T	1 B W	AND	AT 95 LIMITE mples.	D FOR													



Annex Exploration Corp. PROJECT RED BIRD FILE # 91-5262

MUNE MARCETTICAL																												
SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe As	υ		Th	Sr	- 100 C (2000)		Bi	۷	Ca	P La	Cr	Mg	Ba	2000 200	В	AL	Na	K	V
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	% ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	K ppm	ppm	~ ~	ppm	1	ppm	~ ~	7	<b>%</b> (	mqc
					80866									biologies,				2003	89 89		_						33	
GK 72	5	70	180	972	2.3	86	8	336	1.84 20	5	ND	2	90	9.0	18	2	43	3.23 .13	B 13	16	.60	172	.04	2	.73	-01	.11 🏼	1
GK 73	6	72	189	979	2.7	91	8	314	1.90 25	5	ND	2	76	8.5	25	2	47	2.61 .15	4 14	16	.53	154	.04	3	.67	.01	.11 🕅	1
RE GK 73	7	71	211	1026	2.6	95	9	328	1.97 22	5	ND	3	80	8.8	26	2	49	2.69 _16	5 14	18	.55	159	.04	4	.68	.01	.11 🏼	1

4

Page 2

Sample type: SOIL. Samples beginning 'RE' are duplicate samples.



**Guinet Management** FILE # 91-5637

Page 2

SAMPLE#	Mo ppm		Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	second of the	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	۷ مرم	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K W % ppm	
															a. 25. 1					- 240 A.M.					Cleanter				L. Newbolf	
GK 92R	3	24	95	1820	1.1	36	3	62	.84	57	5	ND	1	252	34.4	8	2	23	30.67	.086	3	7	.26	223	.01	2	.29	.01	.11 3	
GK 93R	21	44	89	477	2.3	35	4	68	1.54	72	5	ND	5	52	25.7	11	2	143	2.00	.142	7	11	.10	1248	.01	9	.59	.01	.35 1	
GK R 101	6	35	24	1452	1.4	43	3	73	1.07	18	5	ND	1	200	24.6	8	2	48	21.38	.142	5	10	.29	271	.01	6	.41	.01	.17 1	
GK R 102	14	16	40	123	1.7	13	1	138	.59	31	5	ND	3	16	2.1	7	2	75	.55	.032	8	9	.03	579	.01	8	.21	.01	.14 1	
RE GK 93R	22	49	88	490	2.5	37	4	64	1.62	77	5	ND	5	52	27.9	11	2	155	1.87	149	8	13	.11	1339	.01	10	.64	.01	.39 1	
STANDARD C	20	60	36	136	7.0	73	32	1080	3.94	42	19	8	36	52	17.0	16	21	60	.49	.099	39	60	.92	185	.10	38	1.86	.07	.16 11	$(\boldsymbol{\times})$

Sample type: ROCK. Samples beginning 'RE' are duplicate samples.

ACME ANAL	TIC	L L	ABOI	RATO	RIES	LT	D.	6	852	E. E	(AST)	INGS	ST.	. VA	NCOU	VER	B.C.	v	5A 1	.R6		PHON	E(6(	04)2	53-3	158	FA	X (60	)4)2	53-17	16
										GEOC	HEM	ICA	L P	NAL	'A8I	<b>8 C</b> 1	ERT	IFI	CAT	E										AA	L I
44					An	nez	C Ex	<u>p10</u>	ora	tior	<u>1 Cc</u>	rp.	PF	OJE	CT	RED	BI	<u>RD</u>	Fi	1 <b>e</b>	# 9	1-52	2621	R							
SAMPLE#	1		Pb ppm		Ag ppm					As ppm					Cd ppm				Ca %	P %	La ppm	Cr ppm	Mg X	Ba ppm	Ti %	B ppm	Al X	Na %	к Х	<b>ppm</b>	
GK 47	2	196	46	3699	2.6	242	14	677	2.44	16	5	ND	1	119	216.1	4	2	36	5.01	.457	10	2	.30	1012	.05	7	1.36	.02	.13	1	

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HN03-H20 AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.

ACME ANALY	TICA	L	ABOI	RATO	RIES	LTI	).	٤ آ	352	Е. Н	AST	INGS	ST	— . Va	исоп	VER	B.C.	vē	5A 1	.R6		PHON	E(6	04)2	53-3	3158	FA	X (60	04)253-	1716
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44			걸린		:			Gui	net	: Ma	nao	eme	nt	ন	ile	# 9 <sup>.</sup>	1-54	637		Page	s 1								4	<b>A</b>
					•										St., Va					* * 7 *										L
SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	٧	Ca	Р	La	Cr	Mg	Ba	Ti	B	Al	Na	ĸ	
	ppm	ppm	ppm	ppm	ррп	ppm	ppm	ppm	*	ppm	ppm	ppm	ppm	ррт	ppm	ppm	ррп	ppm	*	*	ppm	ppm	*	ppm	*	ppm	*	*	X ppn	1
GK74	5	354			2.8				3.09	13	5	ND	5	73	180.2	2	2	55	1.08	.352	18	25	.34	908	.07	2	1.81	.03	.14	
GK75	11	247	35	1644	5.0	185	23	390	3.64	23	5	ND	6	63	26.3	2	2	64	.70	.169	17	19	.38	758	.06	2	1.75	.03	.27	
GK76	5	105			1.4		13	265	2.64	11	5	ND	6	58	19.2	2	2	65	.47	.358	20	20	.40	705	.07	2	1.73	.03	.30	
GK77	13	98	39	1081	1.1	120	15	361	3.03	24	5	ND	4	42	14.1	4	2	53	.45	.184	26	19	.48	328	.04	2	1.27	.01	.16	I
GK78	5	61	39	1003	1.0	54	14	1377	2.28	13	5	ND	2	45	26.8	2	2	62	.37	.293	16	17	.22	1215	.06	2	1.49	.03	. 18 1	$\otimes$
GK79	5	37	20	801	1.2	50	12	678	2.33	10	5	ND	3	51	14.6	2	2	58	40	.464	17	18	24	1166	.07	2	1.92	.02	10	Ś
GK80	13	138			5.2	82			2.85		5	ND	7	39		2	2	66		175		21		235			.97			
GK81	11	87			2.8				2.92		5	ND	8	31			2	61		.089		23			.07		1.49			
GK82	ġ	69			3.0				2.53		5	ND	6	32			2	61		.107	23	19		240				.01		•
GK83	8	61			3.0	59		127		10	5	ND	6	27	3.3	2	2	59		.088	22	19		243			1.12			
																				49.99						-				
GK84	10	91	20	649	2.7	77	10	176	2.56	17	5	ND	6	40	6.6	2	2	58	.47	.231	21	18	.37	356	.05	2	1.01	.01	. 15	2
RE GK81	11	79	35	523	2.8	72	10	156	2.88	13	5	ND	7	30	2.9	3	2	60		.087	21	22		234			1.45	.01	.11	
GK85	12	65	30	2127	1.7	161	9	127	2.35	15	5	ND	6	38	16.1	2	2	61	.41	.143	22	17		322		2	1.25	.02	.18	
GK86	16	100	21	593	1.7	78	9	130	2.66	25	5	ND	7	36	3.9	8	2	67		.117	26	20		204			.88		.14 1	
GK87	11	123	20	581	3.4	69	9	188	2.48	17	5	ND	6	46	6.0	4	2	81	.49	.205	21	19					.93	.01		i. F
GK88	10	90	10	542	22	70	9	1/2	2.57	14	5	ND	7	34	4.2	2	2	64	74	.164	22	20	.47	221	.07	2	1.17	.02	42	
GK89	13	132			2.4	74		120		16	5	ND	7	43	4.1	2	2	89		.185	22 24	20	.47				1.04		.10	- 20
GK90	10	110			5.9	64			2.49		5	ND	4	43 39		2	2	79		.147		21	.50				.96			). 1.
GK90	10	92			1.7	60			2.66	18	5	ND	4	42	3.1	* 2	2	79		.147	20	31		195			.90	.01		
GK101	5	44	19		2.2	51			2.24	10	5	ND	5	30		2	2			.393	15			443				.02 .03		2 · · · ·
			.,				,	252	6.24		2	ND	2	50		2	2		. 24			10	.22	-43	. 10	2 1	2.19	.05		
GK102	21	106	31	882	1.2	129	14	355	3.23	35	5	ND	7	24	3.6	6	2	59	.21	.157	27	20	.52	198	.03	2 '	1.23	.01	.09 1	
GK103	10	122	22	695	4.8	78	12	369	2.49	22	5	ND	5	37	6.0	2	2	68	.28	.261	22	19	.28	337	.06	3 '	1.61		.11	3
GK104	11	80	22	872	5.4	89	10	237	2.71	15	5	ND	7	41	8.2	2	2	56	.37	.378	24	18		511	.06	4 <sup>.</sup>	1.69	.02	.12 1	č.
STANDARD C	19	63	39	128	7.3	68	33	1012	3.90	42	16	8	35	51	18.4	15	22	60	.46	.088	37	58	.88	177	.09	34 <sup>-</sup>	1.91	.09	.17 11	-

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HN03-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB Samples beginning 'RE' are duplicate samples. - SAMPLE TYPE: ROCK

# APPENDIX II

# MINERALOGIC REPORT

J.Harris, Ph.D., January 1992

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#### MINERALOGY AND GEOCHEMISTRY

534 ELLIS STREET, NORTH VANCOUVER, B.C., CANADA V7H 2G6 TELEPHONE (604) 929-5867

Report for: Annex Exploration Ltd., 305 - 850 West Hastings St., Vancouver, B.C V6C 1E1

Report 91-86

January 15th, 1992

#### MINERALOGICAL STUDY OF OXIDIZED Zn ORE FROM THE RED BIRD DEPOSIT

#### **INTRODUCTION:**

A composite sample of crushed rock, designated 2-21-399, was submitted by Murray McLaren.

A portion of this material was deslimed on 325 mesh, and was put through heavy mineral separation in tetrabromoethane (S.G. 2.97) to concentrate the minerals of interest.

Polished thin sections were then made of the deslimed "as is" sample, and the concentrate from the heavy mineral separation. These slides are identified as 91-429X and 428X respectively.

One of the principal phases seen in thin section could not be positively identified by optical means. A portion of the (original) sample was therefore run on the X-ray diffractometer (using CuK& radiation) to provide the necessary information.

#### **RESULTS:**

### a) SAMPLE "as is" (Slide 91-429X)

Estimated mode

Limonitic	material	40
Bladed	silicate	58
(	Carbonate	2

The slide consists of particles 0.5 - 3.0mm in size. Much of the material is very soft and friable, and considerable plucking occurred, despite impregnation. This hampers the microscopic observations.

Nevertheless, it is clear that the sample consists essentially of two components. One is compact to earthy limonite, as fine-grained, homogenous, structureless to pellety, occasionally colloform/ cellular aggregates. The other is a colourless, moderate-relief, low-birefringent mineral of silicate aspect (somewhat resembling a zeolite), occurring as microgranular to bladed, sheaf-like aggregates, of grain size 0.1 - 0.5mm.

The only other constituent is a little carbonate, mostly occurring as more or less sparse, fine-grained flecks and dustings in the silicate component. Very rare, fine-grained, compact aggregates of carbonate, independent of the silicate, are also seen.

No sulfides survive.

#### b) HEAVY MINERAL CONCENTRATE (Slide 91-428X)

#### Estimated mode

Limonitic material 44 Bladed silicate 55 Carbonate 1

This product closely resembles the "as is" material. This is not surprising, in view of the fact that the heavy concentrate constituted 96% of the starting weight.

The small portion removed as a light fraction presumably consisted mainly of dolomite.

The section is identical in all respects to that described in Slide 91-429X

#### c) X-RAY DIFFRACTION ANALYSIS

The sample yielded a clearly defined pattern with multiple peaks. Most of these are accounted for by the spectrum of <u>hemimorphite</u> (Zn hydrated silicate), indicating that this is the identity of the major silicate component seen in the thin sections.

A small peak is present at the position of the principal reflection of dolomite.

There was no sign of a peak at the wavelength of the principal reflection of smithsonite.

#### CONCLUSIONS:

This sample is of remarkably simple mineralogy, consisting essentially of hemimorphite and limonite. The content of carbonate (dolomite) appears to be no more than about 5%. The complete absence of smithsonite is notable.



#### MINERALOGY AND GEOCHEMISTRY

534 ELLIS STREET, NORTH VANCOUVER, B.C., CANADA V7H 2G6

TELEPHONE (604) 929-5867

- I, JEFFREY FREDERICK HARRIS, hereby certify that:
- 1. I am a consulting Geologist/Mineralogist with an office at 534 Ellis St., North Vancouver, B.C. V7H 2G6
- 2. I am a graduate of the Royal School of Mines, London (B.Sc. 1956) and the Australian National University, Canberra (Ph.D. 1965).
- 3. I have practiced my profession for over 30 years.
- 4. This report is based on sample material submitted to me by Annex Exploration, and purporting to come from the Red Bird property.
- 5. I have no direct or indirect interest in this property or in the securities of Annex Exploration.

J.F. Harris Ph.D.

June 24th, 1992

# APPENDIX III

# METALLURGICAL REPORT

Fluor Daniel Wright, February 1992



# **FLUOR DANIEL WRIGHT**

Wright Engineers Limited 1444 Alberni Street Vancouver, B.C. V6G 2Z4 Canada Telex 04-54367 (604) 684-9371 Fax (604) 687-6130

**Mining and Metallurgy** 

Project No. 2055 February 14, 1992

Annex Exploration Corp. #305 - 850 W. Hastings St. Vancouver, B.C. V6C 1E1

Attention: Mr. V. Guinet

Dear Mr. Guinet:

# Re: Preliminary Investigation of Zinc Oxide Deposit

This letter presents a summary and review of results obtained to date from your test program at B.C. Research, with reference to the petrographic study.

### 1. Mineral Composition

The whole rock analysis from Chemex is compatible with the mineralogical assessment which reports hemimorphite as the dominant zinc mineral with amorphous limonite as the major gauges component.

There is an excess of silica over that required for all zinc to be present as hemimorphite.  $ZnO:SiO_2$  ratios are:

Annex Sample	2.06
Stoichiometric 2 $ZnO \cdot SiO_2 \cdot H_2O$	2.7

The behaviour of the ore under acid leaching conditions conforms exactly to "... gelatinizes with acid ..." as noted in mineralogy texts.

### 2. <u>Comminution</u>

The sample tested is very friable. Quantitative tests to predict crushing/grinding requirements were not done. However, rod milling of fine crushed samples for 5 minutes reduced the rock to a fine pulp.

In the course of preliminary flotation tests (see below), a test sample of rod milled material was deslimed by decantation after scrubbing in a bench flotation cell. A portion of the sand fraction has been submitted for analysis, since the primary slimes may be largely the amorphous limonite noted in the mineralogy report.



# FLUOR DANIEL WRIGHT

# **Mining and Metallurgy**

# 3. <u>Acid Leaching</u>

Zinc content of the Annex sample is readily soluble in dilute sulphuric acid. Over 80% extraction was obtained at pH 3, and all tests at pH 2 dissolved over 97% of zinc.

Acid consumption at pH 2 was approximately 1.9 kg/kg Zn or only 27% over the stoichiometric requirement for dissolution of zinc oxide. Limonite was not significantly leached in tests at ambient temperature.

Published data on commercial treatment of zinc silicate ores indicates optimum performance at about pH 2, in terms of control over slurry viscosity due to colloidal silica production. Accordingly, a controlled pH leach test was performed. At approximately 60 g/L Zn, the pulp viscosity increased significantly and at 100 g/L Zn the pulp was too viscous for the magnetic agitator.

# 4. <u>Solvent Extraction</u> (SX)

The feed solution selected for SX shakeout tests was a product of the pH 2 leach, partially neutralized to pH 5.5 with further rock and containing approximately 60 g/L Zn. A low organic to aqueous ratio was used in the SX tests, so the results do not indicate the extent to which dissolved zinc can be depleted. However, manufacturers data (backed up for Cyanex 302 by an independent publication) indicate that 99+% recovery can be achieved with appropriate process control.

For stripping of loaded organic, a synthetic spent zinc electrolyte containing 66 g/L of zinc as  $ZnSO_4$  and 100 g/L of free acid was used. Stripping of organic with this solution resulted in zinc transfer as follows:

<u>Stage</u>	Zn aq (g/L)
0	66
1	83
2	86
3	88

These results clearly indicate that free acid in typical spent electrolyte can be only approximately 33% consumed in stripping fully loaded Cyanex 302.

Impurity transfer in SX/stripping was low; stage 3 strip liquor contained 0.75 mg/L (ppm) of iron, 5.3 ppm of calcium, 41 ppm of magnesium and 2.5 ppm of manganese. The high rejection of magnesium may be significant since this element frequently determines zinc electrolyte bleed requirements.

# **Mining and Metallurgy**

# FLUOR DANIEL WRIGHT

# 5. <u>Froth Flotation</u>

Scoping tests have been done with xanthate and fatty acid (oleate) collectors.

- 3 -

Analytical results are not yet available.

# 6. <u>Implication for Commercial Processing</u>

## 6.1 Leach/Electrowin

Preliminary results indicate that the controlled pH leach technology reported by Electrolytic Zinc Company (EZ) is probably applicable to the Annex sample. A dissolved zinc increment of 60 g/L without significant change in pulp viscosity is indicated. On this basis, typical/spent electrolyte in the 60-70 g/L Zn range could be brought up to 120-130 g/L Zn in a reasonably simple circuit.

This is an acceptable level for modern tankhouse practice.

Further work required to confirm the scoping test results would include:

- locked cycle leach tests with spent electrolyte to confirm extractions indicated by fresh acid
- filtration testing

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It should be noted that the limonite gangue in the sample will make any filtration difficult. Results of the desliming test/analysis will be interesting in this respect.

The indicated net acid consumption of approximately 0.5 kg  $H_2SO_4$ /kg Zn is significant, but not expected to be prohibitive for most exciting zinc smelters.

## 6.2 <u>Solvent Extraction</u>

Present results indicate that highly selective solvent extraction of zinc is possible. The stripping results are less favourable, however, since a relatively small proportion of free acid in spent electrolyte is active for stripping.

An extra unit operation, such as evaporative crystallization, could produce good quality zinc sulphate.

The solvent extraction results may be of interest in the context of a zinc smelter which bleeds off significant volumes of spent electrolyte. Conceptually, the acid content of the bleed stream would be completely utilized and all zinc recovered by SX.

# **Mining and Metallurgy**



# 6.3 <u>Physical Cleaning</u>

The flotation test analyses are not yet available, and the visual characteristics of floats/tails do not give a useful indication of results.

- 4 -

The product from scrubbing and desliming is granular and free settling/filtering. If zinc losses to primary slime are not excessive, scrubbing/desliming could be a cost effective route to upgrading the material significantly.

Overall, results to date indicate that material represented by the sample supplied can be treated by demonstrated zinc production technology.

I will be away during the week of February 16, but will contact B.C. Research on my return to obtain the remaining results and finalize our report.

Yours very truly,

WRIGHT ENGINEERS LIMITED,

R.O. McElroy Senior Metallurgist

ROM/mm

#### CERTIFICATE OF QUALIFICATION

I, Roderick McElroy of the City of Vancouver. British Columbia, do herby certify that:

(1) I am a Senior Metallurgist employed with Wright Engineers Limited of Vancouver, B.C. from 1988 to the present time.

(2) I am a graduate of the University of Alberta (1965) with a degree in Science (B.Sc. Hons. Chemistry), McMaster (M Scl. 1967, Material Science) and UBC (PhD., 1972, Extractive Metallurgy).

(3)I have practice, my profession continuously since graduation while being employed by BC Research Corp and Wright Engineers.

(4) I have no interest, either direct or indirect in the properties or securities of Annex Exploration or its associated companies, nor do I expect to acquire any such interest.

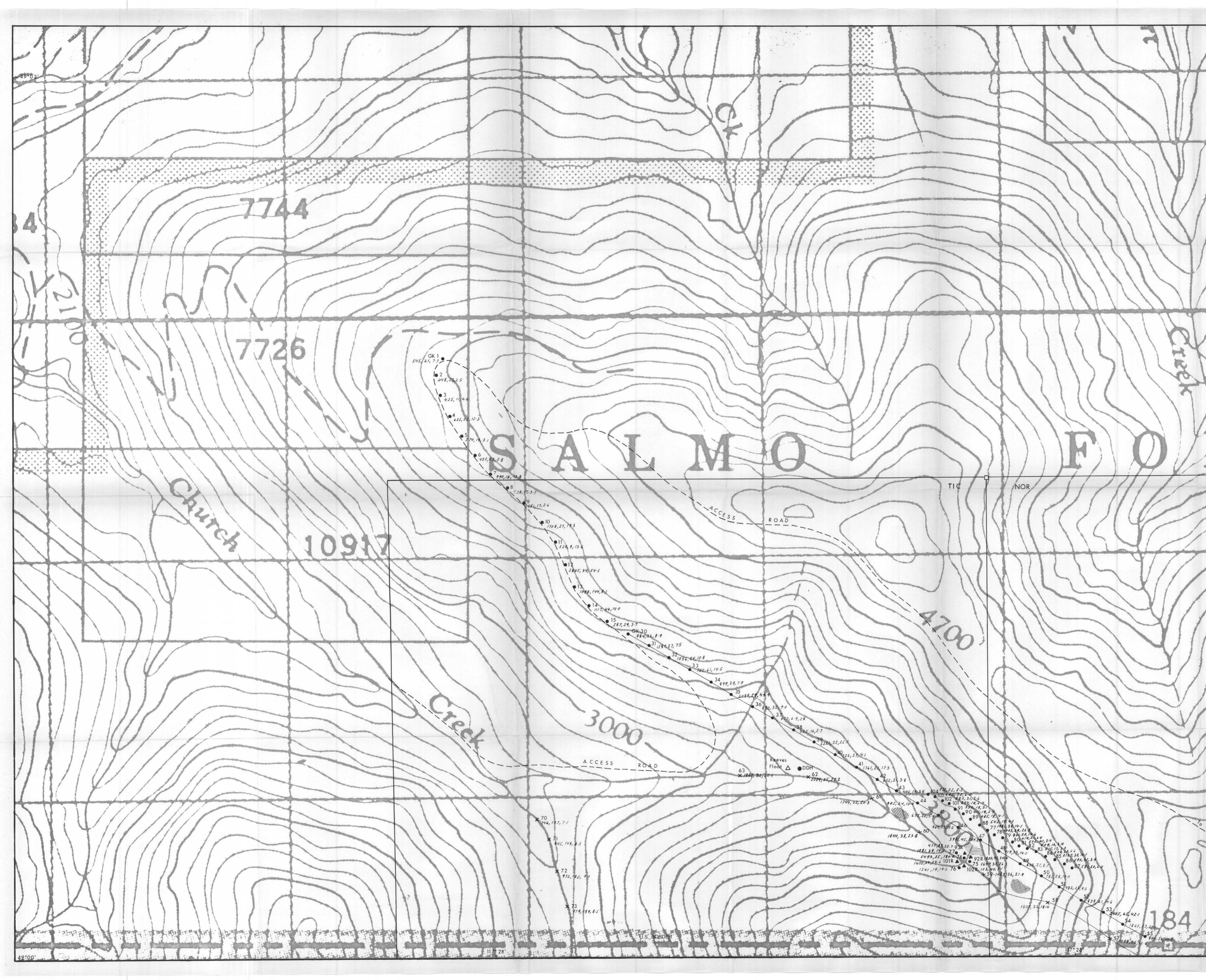
Dated in Vancouver, British Columbia, on this 3rd day of July, 1992.

R. O. McElroy Senior Metallurgist

200/2002

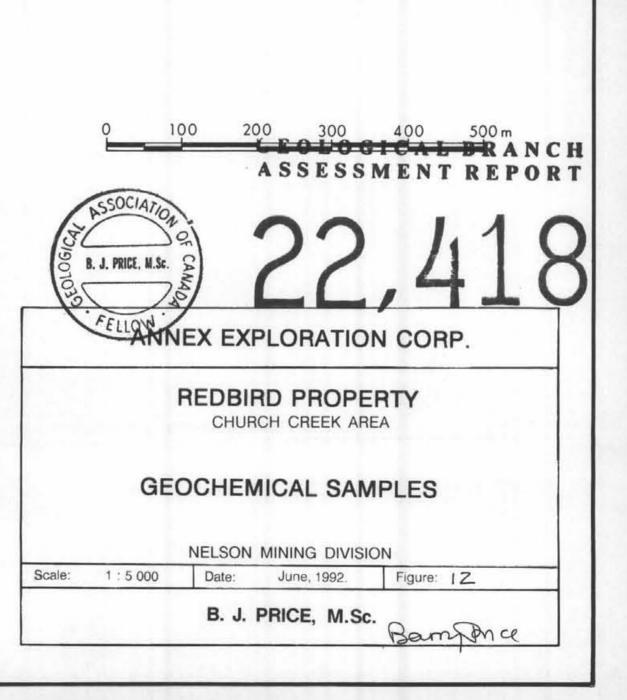
MELCHT ENGINEERS

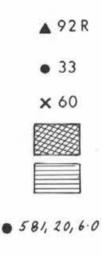
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Rock sample location and number Soil sample location and number Silt sample location and number Travertine Active argillite • 581, 20, 6.0 Zn, Pb, Cd (ppm)





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