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EZEKIEL EXPLORATIONS LIMITED

GEOLOGICAL AND GEOCHEMICAL ASSESSMENT REPORT ON THE "S" CLAIMS ATLIN MINING DIVISION, B.C. NTS 104 N/12E

BY

R.A. GONZALEZ, M.Sc., F.G.A.C., P.ENG.

NOVEMBER, 1984

CLAIM NAME	UNITS	RECORD NO.	ANNIVERSARY DATE
S-1	20	1394	AUGUST 4
S-2	18	1395	AUGUST 4

LOCATION: 59° 35' NORTH LATITUDE-133°37' WEST LONGITUDE

OPERATOR: MARK MANAGEMENT LTD.

CONSULTANT: ARCHEAN ENGINEERING LIMITED.

PROJECT GEOLOGIST: COLMAN WONG

GEOLOGICAL AND GEOCHEMICAL ASSESSMENT REPORT ON THE "S" CLAIMS ATLIN MINING DIVISION, B.C. NTS 104 N/12E

SUMMARY

The "S" claims are located near the south side of Pine Creek approximately 6 km (4 miles) east of the town of Atlin in northwestern British Columbia. A programme of geologic mapping and geochemical sampling was carried out by Mark Management Ltd. for the registered holder, Ezekiel Explorations Limited, in 1984. Results of this programme were inconclusive. However, the property still has a good potential for discovering lode gold mineralization similar in occurrence to that found on the adjacent claims.

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TABLES

1. INTRODUCTION

The "S" claim block is a lode-gold prospect located in the historic Atlin Placer Gold Mining Camp in northwestern British Columbia (Figure 1). The claims were staked in 1981 after Yukon Revenue Mines Ltd. reported a large, low-grade gold discovery in the area.

In 1983, initial fieldwork was carried out over the claims and consisted of preliminary geologic mapping and litho-geochemical sampling of all geologic units, quartz veins, and mineralized float. The success of this original programme prompted a further exploration effort. In 1984, additional geochemical assessment of the property was undertaken by Mark Management Ltd. under the direction of Archean Engineering Ltd. This exploration programme consisted of a geologic examination and geochemical sampling in an area untested by the previous survey.

1.1 LOCATION AND ACCESS

The "S" claims represent a lode gold prospect located within the Atlin Placer Camp. This camp consists of about 380 square kilometres of mountainous country, in the Atlin Mining Division in northwestern British Columbia. This placer area is east of Atlin which is centrally located on the east side of Atlin Lake. The area trends northeastward and is approximately 26 km long and 20 km wide. Most of the area is drained to the west by Fourth of July Creek in the north, Pine and Spruce Creeks in the central portion, and McKee and Eldorado Creeks in the south. The eastern portion of the district is drained by the north flowing Snake, Otter, and Wright Creeks and the east and south flowing Feather and Slate Creeks.

Atlin is, and has been since the early days of the Klondike Gold Rush of 1897 and 1898, the principal population and supply centre of northwestern British Columbia. It is approximately 150 kilometres south of Whitehorse, the capital and principal Yukon city. Atlin, since 1949, has had a road connecting it with Jakes Corners on the Alaska Highway in the Yukon Territory. This road is open all year except for short periods when some of the hills are iced over. From Jakes Corners another road goes to Carcross, Y.T. The Alaska Highway extends from Dawson Creek, B.C., to Whitehorse, Y.T., and beyond to Alaska and is open all year. Both Carcross and Whitehorse are on the White Pass and Yukon Railway line, which extends from Skagway, U.S.A. to Whitehorse; however, at present the railroad is not in service. Skagway is the terminus for several coastal lines; and, until the closure of the rail line in late 1982, most heavy freight to the area went by boat to Skagway, thence by train to Carcross and thence by truck to Atlin. Now that the White Pass and Yukon Railway is closed all heavy cargo must be transported by truck from Skagway or from the east along the Alaska Highway. For passengers traveling to the area, it is best to fly to Whitehorse and go from there to Atlin by plane, car, or bus. Whitehorse is served by scheduled flights from both

Vancouver and Edmonton. Planes for charter trips are available at Atlin, Whitehorse, and Lower Post on the Dease River. Helicopters are available in Atlin on a year round basis.

The "S" claims are located in the central portion of the placer district approximately 6 km east of Atlin. It is located on N.T.S. Quadrangle 104N/12E. Terrestial coordinates for the centre of the claim group are as follows:

59° 35' North Latitude
133° 37' West Longitude

Within the area roads extend to all the placer creeks. The roads are in good condition except in the eastern part of the area where the roads are considered to be low-maintenance summer roads. The "S" claims are accessable from Atlin by a road along the south side of Pine Creek. This road connects with the Spruce Creek road approximately 5.5 km east-northeast of the Town of Atlin. The Spruce Creek road diagonally crosses the S-1 Claim but should be considered a dry weather only track.

1.2 PHYSIOGRAPHY, VEGETATION, AND CLIMATE

The Atlin area is located just east of the Coast Mountains on the Teslin Plateau. The town of Atlin lies on the east shore of Atlin Lake, the largest natural lake in British Columbia, at an elevation of 670 m (2,200 feet). The topography is moderately rugged with slopes of up to 30° rising from the Pine Creek Valley floor at an elevation of 822 m (2,700) feet to mountains well over 1440 m (4723 feet). Glaciers occupied the Spruce Creek valley in Pleistocene time and deposited up to 90 m (300 feet) of glacio-fluvial till during their retreat. Meltwater channels are prominent on Spruce Creek just above its confluence with Dominion Creek and near its confluence with Little Spruce Creek.

The tree line is at approximately 1280 m (4,200 feet) on north facing slopes and 1219 m (4,000 feet) on south facing slopes. Below 1219 m, the valleys are forested with lodgepole pine, black spruce, aspen and dwarf birch. Mountain alder and willow grow near streams with stunted buckbrush covering the hills above tree line.

Atlin enjoys a pleasant summer climate with temperatures averaging 20°C and little precipitation. Winter temperatures average -15°C in January with moderate snowfall. Total annual precipitation averages 279.4 millimetres of moisture. "Winter" conditions can be expected from October to April.

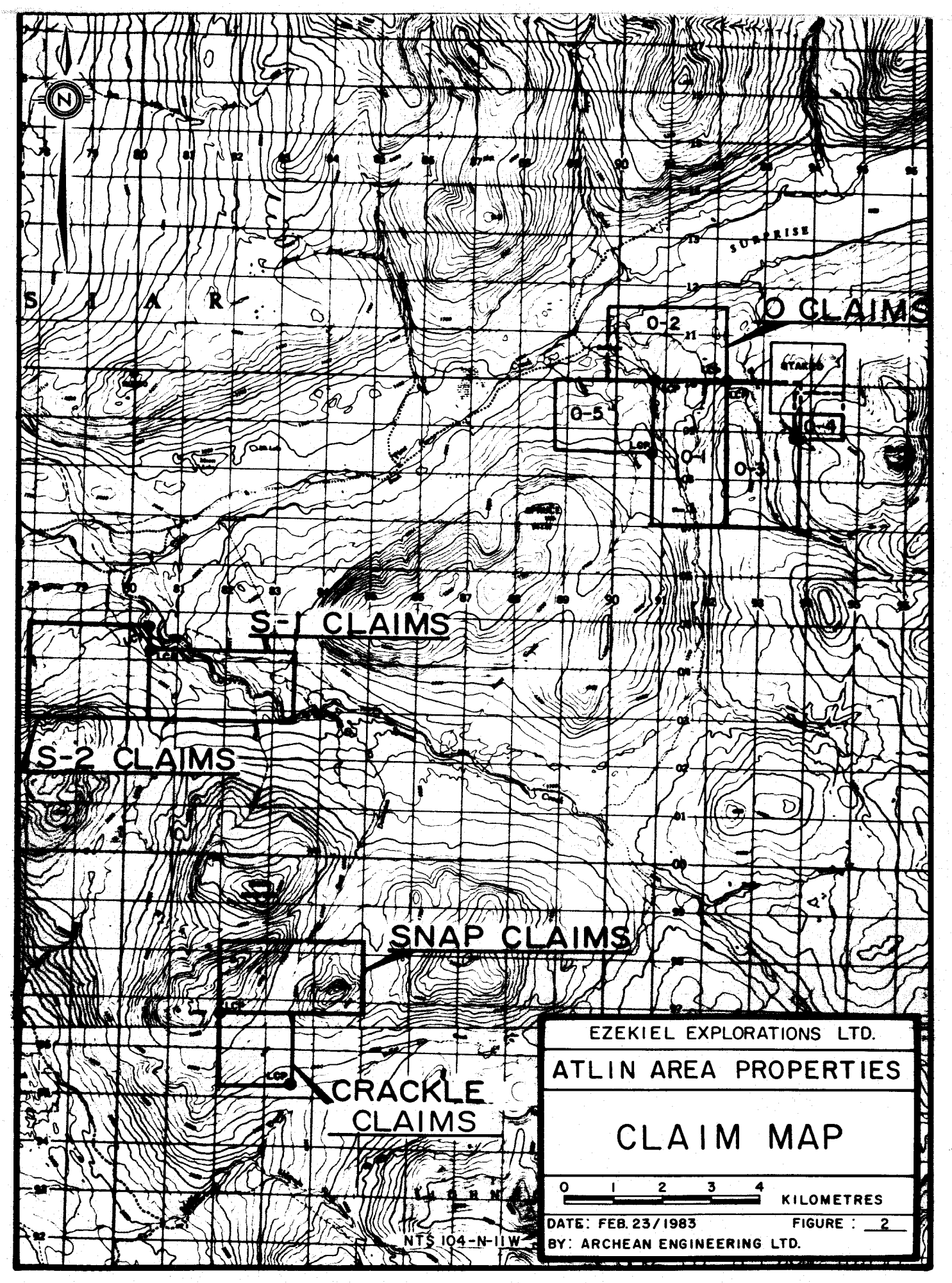
EZEKIEL EXPLORATIONS LTD.

LOCATION MAP

DATE : NOV., 1984 DRAWN: R.G. /r.w.r

FIGURE 1

N.T.S. 104N/12E



EZEKIEL EXPLORATIONS LTD.

ATLIN AREA PROPERTIES

CLAIM MAP

0 1 2 3 4 KILOMETRES

DATE: FEB. 23/1983 FIGURE : 2

BY: ARCHEAN ENGINEERING LTD.

1.3 CLAIM INFORMATION

The "S" claims are located in the Atlin Mining Division and consists of two claims totalling 38 units. Claim information is listed in Table 1, below:

TABLE 1

CLAIM STATUS

Claim Name	Units	Record No.	Anniversary Date
S-1	20	1394	August 4, 1984
S-2	18	1995	August 4, 1984

1.4 HISTORY

Before 1898 very little was known of the Atlin country beyond the fact that it contained fur, big game, and a number of large lakes, the largest of which was called "Atlin," meaning "Big Water," by the Tlinkit-Tagish Indians. According to the most authenticated sources, B.C. Dept. of Mines, Annual Reports for 1900, 1904, 1932, and 1936, gold was first discovered on Pine Creek about July, 1897, by a man named Miller while driving cattle into Dawson and the Klondike Gold Fields. The information, together with a rough map, was passed on to Miller's brother, Fritz, in Juneau, who together with Kenny McLaren, a Canadian prospector named Hans Gunderson, and another, were on their way to the Klondike. These men decided to investigate and with the aid of the map were able to located the creek with little difficulty and staked the first claims about July 8, 1898. Public information concerning the new strike reached Alaskan ports on August 5th, and Victoria, B.C. on August 13th, 1898, and resulted in a rush to the area. The first workings were on Pine Creek and by the end of 1898, more than 3,000 people were camped in the Atlin area. Only eight creeks, Spruce, Pine, Birch, Boulder, Ruby, Otter, Wright and McKee, have been important producers in the Atlin camp, although gold has been produced along 21 other creeks including Dominion, Eldorado, Feather, Fox, Rose, Slate, Snake, and O'Donnel River.

Uninterrupted placer mining in the Atlin camp has produced some one million ounces of gold since 1898. Spruce Creek, the richest stream in the camp, has yielded more than 40 per cent of this gold. The pay streak along Spruce Creek is over 5 kilometres long, approximately 2 m thick, and up to 60 m wide. Near the southern end of the pay streak, the gravels are reported to have averaged about 80 gm of gold to the cubic metre along a 600 m section of the creek. Table II shows the gold production from the main creeks for the period up to 1946, the

last year for which individual creek recoveries were obtained.

Since the late 70's interest and activity in the placer deposits has increase with the increase in the price of gold. Today the area is swarming with activity, and for five months a year the area is alive with small and medium-sized operations re-working or re-examining the area.

Gold-bearing quartz veins were first discovered in the Atlin area in 1899 and by 1905 most of the known showings had been discovered. Although the original showings have been repeatedly worked and re-examined there is no record of regional exploration for lode mineralization since 1905. In 1981, Yukon Revenue Mines Ltd. acquired and re-examined the old Lakeview property. Work done by Yukon Revenue showed low-grade gold values over an extensive but delicate stockwork of carbonatized and silicified andesite adjacent to a serpentinite intrusive.

The discovery by Yukon Revenue Mines Ltd. and the similarity of geology in the vicinity of major placer gold producing streams prompted Ezekiel Explorations Ltd. to stake the "S" claims.

TABLE 2 (from Holland, 1950 and Black, 1953)

GOLD RECOVERY FROM PRODUCTIVE CREEKS, ATLIN AREA, 1898-1946.

STREAM NAME	OUNCES OF GOLD PRODUCED
Spruce Creek	262,603
Pine Creek	138,144
Boulder Creek	67,811
Ruby Creek	55,272
McKee Creek	46,953
Otter Creek	20,113
Wright Creek	14,729
Birch Creek	12,898
All Others (21 creeks)	15,624
TOTAL PRODUCTION	**634,147**

Note: B.C. Dept. of Mines records show that for this same period 705,229 ounces of gold was sold from the Atlin area suggesting that not all gold production was reported.

2. GEOLOGY

2.1 REGIONAL GEOLOGY

Geologic mapping of this area was undertaken in 1951-55 by J.D. Aitken of the Geological Survey of Canada (GSC) and compiled as Map 1082A. In 1966-68, J.W.H. Monger, also of the GSC, selectively mapped the Atlin area and published his findings in GSC Paper 74-47.

The Atlin region is located in a eugeosynclinal area composed of three distinct northwest striking tectonic belts; the St. Elias and Insular Belt, Coast and Cascades Belt, and Intermontane Belt. The rocks of the area belong to the Atlin Terrane, which represents an independent tectonic entity of the oceanic sequence of the Intermontane Belt in the Canadian Cordillera. The Atlin Terrane consists of upper Paleozoic age radiolarian cherts, pelites, carbonates, volcanics, and ultramafics. These rocks are intruded by Mesozoic granite, alaskite and quartz monzonite. The youngest rocks of the Atlin Terrane are composed of Tertiary and Quaternary volcanics. Till deposited by receding Pleistocene glaciers extensively covers the valleys.

The Atlin Terrane is bounded on the northeast by a northwest striking vertical fault and on the southwest by a northwest striking reverse fault. Structurally, the terrane is characterized by compressional deformation which is similar in style and trend to the southwest bounding faults (Monger, 1975). Minor fold axes generally strike northwest or trend southwest.

2.2 PROPERTY GEOLOGY

Outcrop exposure accounts for less than 2 per cent of the surface area on the property. Felsenmeer is present in alpine areas and is assumed to be close to outcrop. Till covers the valleys below 1220 m (4,000 feet) elevation.

Limited rock exposures make geologic interpretation difficult. However, it appears that the properties are underlain by Cache Creek Group volcanics intruded by post-Pennsylvanian and Permian ultramafics (Figure 3).

The Cache Creek Group rocks are of Pennsylvanian and Permian in age and are known to consist of limestone, argillite, chert, and andesite; however, only andesitic volcanics were seen in outcrop. The andesite is typically drab grey-green in colour, siliceous, sometimes weakly carbonatized and contains 1% primary pyrite.

Intruding into this volcanic package are post-Cache Creek ultramafics, which are considered part of the Atlin Intrusions, and consist of peridotite and serpentinite. These rocks are usually dark

green to dull waxy green in colour and locally talcose. Alteration of the ultramafics is extensive. Most of the rocks have been subject to varying intensities of serpentinization or carbonatization. The carbonatized ultramafic is characterized by rusty-orange brown weathering and its recessive nature.

2.3 ECONOMIC GEOLOGY

The Atlin area has enjoyed a history of productive placer mining and to a lesser extent, hard rock mining. All gold recovered from the Atlin area is very coarse and many large nuggets have been found in the camp. The fine gold as well as the nuggets are often found intergrown with quartz, which in many cases, occurs as euhedral crystals. All important placer gold production has been from rich Tertiary gravels buried beneath a thick blanket of barren glacial till. The south side of the pay streak is observed to extend onto the northern portion of the S-2 Claim.

In 1983, Standard Gold Mines Ltd. announced a new lode gold discovery just two kilometre southeast of the southeast corner of the S-1 claim. Work by Standard Gold indicated that the gold occurred in a quartz stockwork hosted by carbonatized ultramafic. Because of the similarities in geologic setting, similar mineralization may exist on the properties held by Ezekiel Explorations Ltd, and it is because of this potential that the "S" claims are presently being held.

3. GEOCHEMISTRY

3.1 ROCK CHIP SAMPLING

3.1.1 SAMPLING AND SAMPLE TREATMENT

Rock samples were collected from the mountainous area in the southwest corner of the S-2 Claim. The area is underlain by carbonatized ultramafics. Using a rock hammer, four mineralized rock samples were collected from areas believed to have a potential for hosting economic mineralization.

All samples were shipped to Bondar-Clegg & Company Ltd. in Whitehorse where they were crushed to minus 100 mesh and fire assayed for gold, copper, and iron using standard assaying techniques.

3.1.2 DISCUSSION OF RESULTS

All the samples gave disappointing assay values and suggest that surface chip sampling is ineffective. All of the values obtained in the laboratory were below the detection limit for gold and copper. The assay information is included on Figure 4.

4. CONCLUSIONS

The results from the 1984 programme were inconclusive in evaluating the potential for the discovery of gold mineralization, similar in occurrence to Standard Gold Mines Ltd.'s new discovery.

Additional exploration on the property is warranted to fully evaluate its potential.

Respectfully submitted,

ARCHEAN ENGINEERING LIMITED

R.A. Gonzalez, M.S.c., F.G.A.C., P.Eng

5. REFERENCES

Aitken, J.D., 1960; Geology, Atlin, Cassiar District, British Columbia: Geological Survey of Canada, Map 1082A, Scale 1:253,440.

B.C. Minister of Mines, Annual Reports; 1900, 1904, 1932, and 1936.

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Boyle, R.W., 1979; The Geochemistry of Gold and its Deposits: Geological Survey of Canada, Bulletin 380, 584 p.

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Holland, S.S., 1950; Placer Gold Production of British Columbia: B.C. Ministry of Energy, Mines and Petroleum Resources, Bulletin 28, 89p.

Monger, J.W.H., 1975; Upper Paleozoic Rocks of the Atlin Terrane, Northwestern British Columbia and South-Central Yukon: Geological Survey of Canada, Paper 74-47, 63p. and maps.

Troup, A.G. and Wong, C., 1982; Geophysical Report on the SNAP, CRACKLE, S and O Mineral Claims: Engineer's Report.

Troup, A.G. and Wong, C., 1983; Geochemical, Geological and Geophysical Report on the Shuksan Property: Engineer's Report dated October 1983.

6.0 STATEMENT OF PROFESSIONAL QUALIFICATIONS

R.A. GONZALEZ, M.Sc., P.Eng.

ACADEMIC

1965	B.Sc. in Geology	The University of New Mexico, U.S.A.
1968	M.Sc. in Geology	The University of New Mexico, U.S.A.

PROFESSIONAL

1983	Archean Engineering Limited	Overseas Manager
1980-1983	Placer Development y Cia. Ltd. (Chile)	Ass't Exploration Manager
1977-1980	Consultant attached to the Geological Survey of Malaysia	Ass't Project Manager on a C.I.D.A. supported mineral exploration survey over Peninsular Malaysia
1975-1977	Province of Manitoba	Resident Geologist for the Manitoba Dept. of Mines.
1971-1975	Giant Mascot Mines Limited	Senior Geologist
1970-1971	New Jersey Zinc (Canada) Ltd.	Exploration Geologist
1968-1970	Anaconda American Brass Ltd.	Research Geologist
1965-1966	Mex-Tex Mining Co.(U.S.A)	Geologist

7.0 COSTS STATEMENT

EZEKIEL EXPLORATIONS LTD.
GEOPHYSICAL, GEOCHEMICAL, AND GEOLOGICAL
ATLIN PROPERTIES
18 June - 7 October 1984

GENERAL COSTS

FOOD & ACCOMMODATION		
5 pers, 59 mandays @ $17.96		$ 1,059.64
SUPPLIES		278.92
FUEL		590.68
SHIPPING & POSTAGE		213.19
FIXED WING		
CP Air (Hastings Travel)		236.80
RENTALS		
ANGELA Field Office,		
20-21, 28-30 Jun, 5 days @ $60	$ 300.00	
AIRWAYS 4WD Blazer,		
18 Jun - 1 Jul, 7 - 11 Aug		
5 - 7 Oct, 21 days @ $43	903.00	
MARK 4WD Bronco, 5 days @ $43	215.00	
EZEKIEL SBX11A, 21 days @ $11	231.00	
PERRON Chain Saw, 1 day	30.00	
EZEKIEL Camp/Fiel Equipment		
59 days @ $6	354.00	2,088.00
CONSULTANTS		
ARCHEAN ENGINEERING		2,085.26
REPORT PREPARATION		— 5,477.00
TOTAL GENERAL COSTS		$12,029.49

GEOLOGICAL SURVEY COSTS

SALARY & WAGES	
5 pers, 18 Jun - 7 Oct, 39 mandays @ $89.70	$ 3,498.13
BENEFITS @ 20%	699.63
GENERAL COSTS APPORTIONED	
39/49 X $12,029.49	9,574.49
TOTAL GEOLOGICAL SURVEY COST	$13,772.25

GEOPHYSICAL COSTS

SALARIES & WAGES	
4 pers, 4 mandays @ $85.87	$ 343.48

BENEFITS @ 20%	68.70
CONTRACTOR - Dighem	
Airborne EM	12,146.37
GENERAL COSTS APPORTIONED	
4/49 X $12,029.49	982.00
TOTAL GEOPHYSICAL COSTS	$13,837.55

GEOCHEMICAL COSTS

SALARIES & WAGES		
2 pers, 6 mandays @ $94.56		$ 567.36
BENEFITS @ 20%		113.47
BACKHOE TRENCHING CONTRACTOR		
ENOS KYLE D8, 7 - 8 Aug, 20 hrs @ $33.20		664.00
ASSAYS AND ANALYSES		
BONDAR-CLEGG		
4 Rocks for CU,FE,AU @ $26.31	$ 105.25	
1 Silt for CU,FE,AU	10.25	
16 Rocks for AG,AU @ $13.75	220.00	
CHEMEX LABS		
53 Rocks for CU,FE,AU @ $26.75	1,417.75	
Supplies	155.00	1,937.54
GENERAL COSTS APPORTIONED		
6/49 X $12,029.49		1,473.00
TOTAL GEOCHEMICAL COSTS		$ 4,755.37

COSTS APPORTIONED TO CLAIMS

CLAIM	GEOLOGICAL	GEOPHYSICAL	GEOCHEMICAL	TOTAL
O 1	3,548.99	1,685.37	2,477.42	7,711.78
O 2	2,957.49	1,337.81	2,064.52	6,359.82
O 3	3,548.99			3,548.99
O 4	788.67			788.67
O 5	2,365.99			2,365.99
S 1		3,987.76		3,987.76
S 2	562.12	4,386.43	213.43	5,161.98
SNAP		1,626.78		1,626.78
CRACKLE		813.40		813.40
TOTALS	13,772.25	13,837.55	4,755.37	32,365.17

LCP

ST-3VLT 1

LCP

SPRUCE

CREEK

S-2 M.C.

S-1 M.C.

ESSL 001

ESSL 002

ESST 001

ESST 002

DOMINION

CR.

LITTLE SPRUCE CR.

ASSAY RESULTS

SAMPLE	Au (OPT)	Cu (%)	Fe tot (%)
ESSL 001	<0.002	<0.01	5.57
ESSL 002	<0.002	<0.01	8.17
ESST 001	<0.002	<001	4.57
ESST 002	<0.002	<0.01	5.45

LEGEND

--> TRAVERSE ROUTE

× SAMPLE LOCATION (ROCK CHIP)

EZEKIEL EXPLORATIONS LTD.

S1 & S2 CLAIMS

ATLIN MINING DIVISION - B.C.

TRAVERSE MAP

0 200 400 600 SCALE 1:10,000

NTS 104-N-11 DATE: SEPT. 8, 1984

BY: S.E. / r.wr. FIGURE 4

LEGEND:

QUATERNARY

QAL GRACIAL DRIFT, ALLUVIUM

PENNSYLVANIAN AND PERMIAN

ATLIN INTRUSIONS

4 ULTRAMAFIC, COMMONLY SERPENTINIZED

4A CARBONIZED 4

CACHE CREEK GROUP

3 ANDESITE

QUARTZ VEIN (STRIKE AND DIP)

FOLIATION (STRIKE AND DIP)

FOREST COVER

4aF FLOAT

CONTACT, APPROXIMATE

TRAVERSE

OUTCROP

N/OC NO OUTCROP

x54911 ROCK CHIP SAMPLE

S-2 M.C.

S-1 M.C.

LCP

CORNER POST ON GROUND

TALUS

Creek

Cr.

Little Spruce

Eureka

Dominion Cr.

EZEKIEL EXPLORATIONS LTD.

S1 & S2 CLAIMS

ATLIN MINING DIVISION - B.C.

GEOLOGICAL MAP

SCALE 1:10,000

NTS 104-N-11

DATE: NOV. 3, 1984

BY CW/rwr.

FIGURE 3