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SPHAL 1, 3, 5, 7

CLAIMS

(4816, 4818, 4820, 4822)

LIARD MINING DIVISION

GEOLOGICAL REPORT

OCTOBER, 1989

FILMED

G E O L O G I C A L B R A N C H
A S S E S S M E N T R E P O R T

19,197

Latitude : 57° 03'

Longitude: 131° 11'

Paul W. Jones
CORONA CORPORATION

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CONCLUSIONS

The SPHAL A claim group is composed of Stikine Assemblage rocks which include a major limestone unit with lesser agglomerate volcanics and mixed sediments. Bedrock on 20% of the group is obscured by glacial outwash deposits. A strong north-south structure which cuts massive limestone on SPHAL 5 hosts minor sulphide mineralization.

RECOMMENDATIONS

Two areas on the SPHAL A group may warrant further exploration, especially in light of unsubstantiated reports of a discovery by Cominco on their FOREMORE claims 10 kilometres to the east. Weak copper/silver values contained in the major structure on SPHAL 5 might be tested by a combined program of geochemistry, geophysics and trenching as warranted. Quartz veins at the limestone/phyllite contact near the centre of SPHAL 7 contain anomalous precious metal values and should be followed up.

INTRODUCTION

The SPHAL A claim group includes the four 20-unit SPHAL 1 (4816), SPHAL 3 (4818), SPHAL 5 (4820) and SPHAL 7 (4822). They were staked from July 3, 1988 to July 6, 1988 by a contractor for Lacana Ex. (1981) Inc., a subsidiary of Corona Corporation. They are located at the headwaters of Sphaler Creek. The claims lie within the contact of the Coast Plutonic Complex and the Intermontane Belt. Access is via helicopter from the Scud Airstrip, located at the confluence of the Scud and Stikine Rivers or the Galore Creek airstrip 15 km to the northwest.

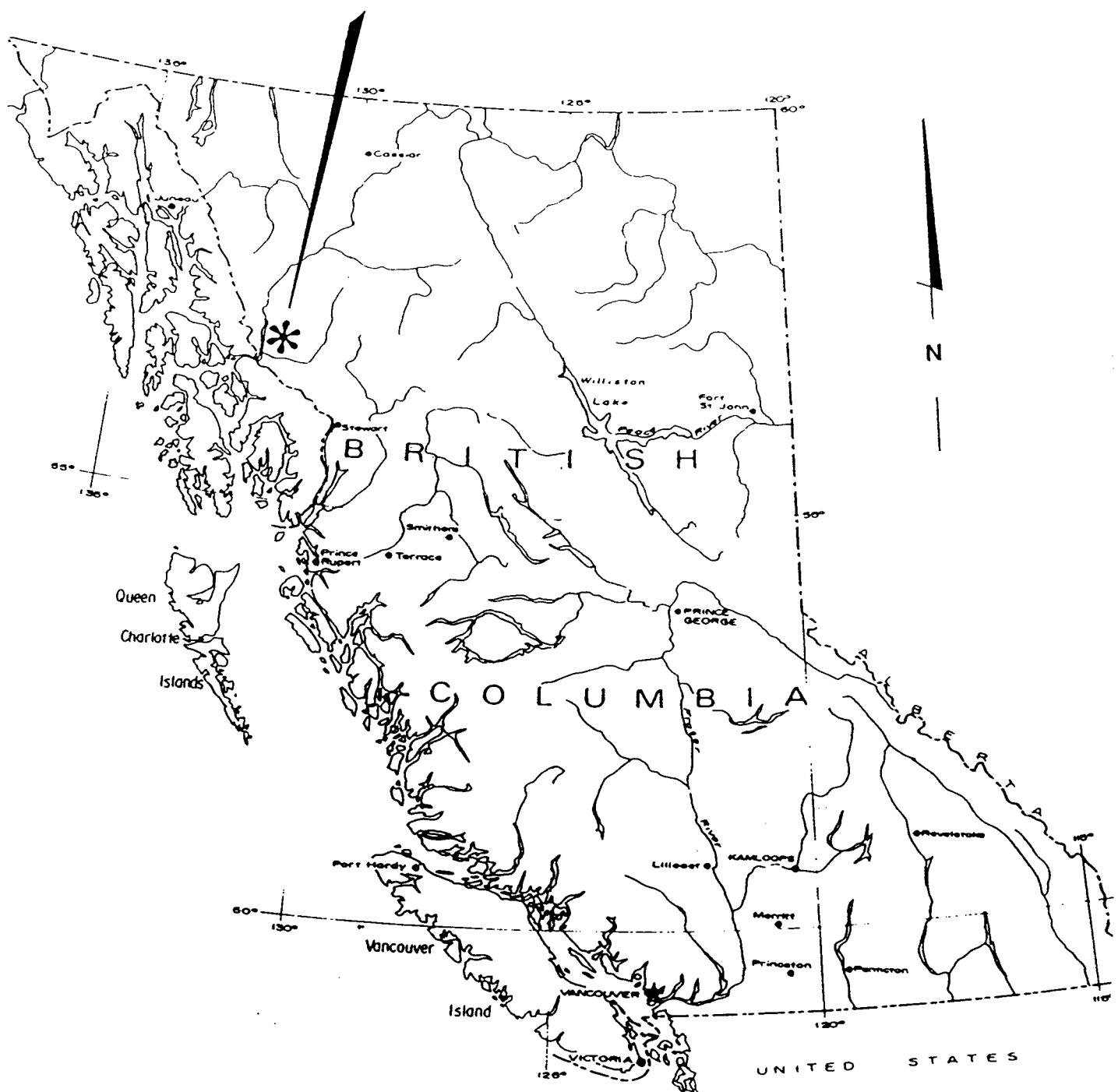
The claims are composed of Permian and Pre-Permian sediments and volcanics. At the extreme western border of SPHAL 1, the Permian volcanics are in fault contact with younger Triassic volcanics. On the SPHAL 7 claim the Paleozoic Stikine assemblage sequence starts with a Mississippian basal fossiliferous calcarenite then phyllite and then limestone. The Mississippian sediments are unconformably overlain with Permian volcaniclastics that are both green and purple. Stratigraphically overlying the volcanics is a thick sequence of limestone with lesser amounts of sandstone and siltstone. A NE/SW fault cuts the claim group and places the younger Permian sediments in contact with older phyllitic sediments. These phyllitic sediments underlie the Permian volcaniclastic unit which in turn is capped by the younger Permian sediments.

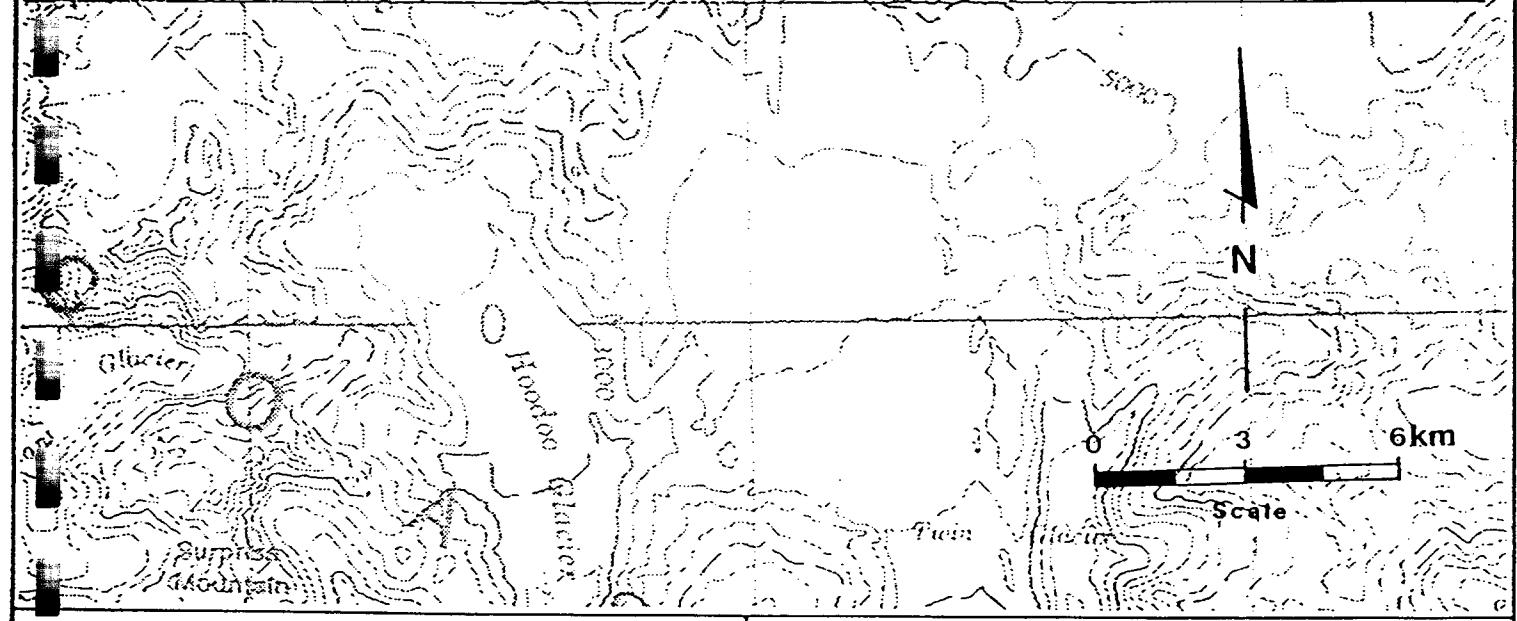
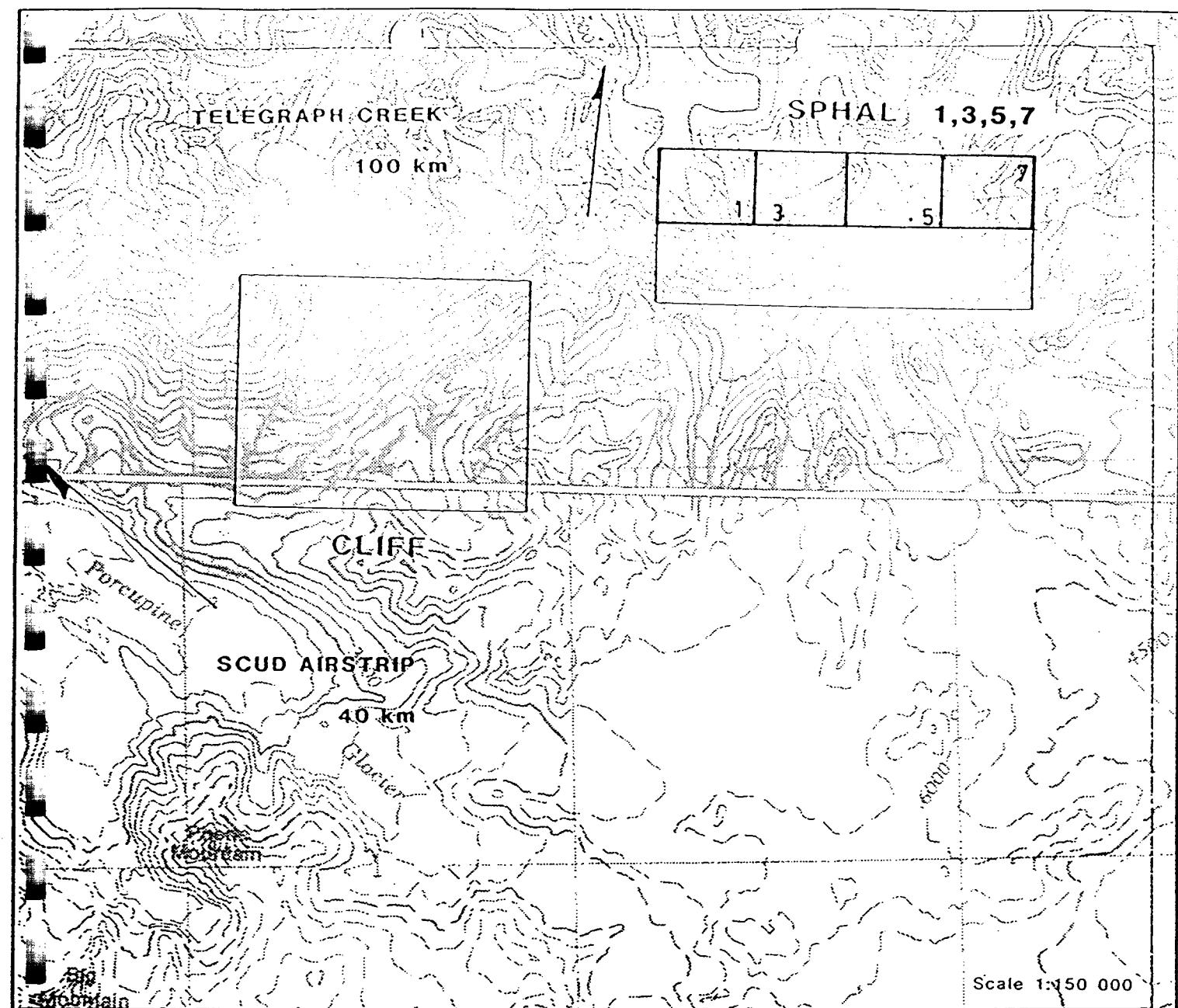
Mineralization of note on the SPHAL A claim group includes: i) mineralized quartz veins within the Mississippian limestones at the contact with the phyllite unit, (ii) a north south structure cutting the thick Permian limestone unit with copper and silver mineralization, (iii) shear zones and quartz veins within the green and purple volcanoclastic unit, and finally iv) rusty rounded siliceous pyritic boulders up to 10 m across left by the receding ice.

The geological mapping and sampling performed from July 7th to July 17, 1989 included 12 mandays, 45 rock samples at a cost of \$12,310.00 Cdn. The work was done out of a fly camp located on the south bank of Sphaler Creek on the SPHAL 5 claim using a helicopter based at Galore Creek.

was done out of a fly camp located on the south bank of Sphaler Creek on the SPHAL 5 claim using a helicopter based at Galore Creek.

PROPERTY LOCATION





REGIONAL GEOLOGY

The claim area lies on the western margin of the Intermontane Belt at its contact with the Coast Plutonic Complex. Paleozoic sediments and Mesozoic sediments and volcanics are cut by intrusive bodies of the main Coast Belt and the satellite Hickman and Yeheniko Plutons. General tectonic fabric of the region trends north-northwesterly.

The oldest rocks exposed in the area are Lower Paleozoic clastics including impure quartzites and limestones, overlain by crystalline schists and gneisses. A thick impure limestone unit caps the Paleozoic oceanic sequence.

The lower contact of Mesozoic units is described by F.A. Kerr, G.S.C. Memoir 246 and J.G. Souther, G.S.C. Paper 71-44, as gradational and in places unconformable. Triassic rocks consist of a thick sedimentary sequence overlain by an island arc volcanic assemblage which is in turn capped by volcanic derived sediments.

The Jurassic layered sequence consists of a thick, near shore sedimentary package and later volcanic island arc rocks. Extensive intrusive activity during this period resulted in the emplacement of the multi phased 'Coast Complex' and related satellite plutons. Alkaline and calc-alkaline members of this suite are directly associated with most of the numerous mineral occurrences in the area. Cretaceous rocks consist mainly of marine sediments with a thin basaltic to rhyolitic component.

Cenozoic stratigraphy includes mafic and felsic aerial volcanic units. These rocks are a major component of glacial and fluvial deposits throughout the area. Several active hot springs attest to ongoing geologic activity throughout the general Iskut-Stikine region.

Most of the region has been subjected to Quaternary glaciation, resulting in rugged alpine terrain.

Study of aeromagnetic data published at a scale of 1:250,000 suggests that regional lows may reflect areas of thick ice cover.

PROPERTY GEOLOGY

The SPHAL A claim group encompasses a mixed package of Paleozoic volcanics and sediments and a small area of Mesozoic volcanics. Geology will be described on an individual claim basis, traversing from west to east.

SPHAL 1

The dominant geologic feature of the Sphal 1 claim is a strong N-S trending fault with abundant quartz and ankerite which separates Triassic volcanics from a Paleozoic sedimentary sequence. Triassic rocks are generally andesitic tuffs which are widely propylitized along the fault trace. Sediments include a buff coloured dolomite with black graphitic argillite beds and lesser quartzite lenses. Splays off the main structure contain ankerite and quartz but only trace amounts of sulphide.

SPHAL 3

As prospecting during 1988 had indicated little mineral potential on Sphal 3, no geological work was undertaken in 1989. Previous work indicates the claim to be underlain by Permian andesite-basalt, tuffs and flows.

SPHAL 5

The SPHAL 5 claim covers a major limestone unit with lesser volcanic and mixed sediment outcrops. A large glacial floodplain obscures bedrock under the east central portion of the claim. Volcanic rocks observed are purple agglomerates and green tuffs with local, ankeritic shear zones. The mixed sediment unit includes black crystalline limestones and black argillites with interbeds of sandstone. This unit is cut by a major north south structure. The structure hosts quartz ankerite zones containing disseminations and blebs of pyrite, chalcopyrite and tetrahedrite. Copper values range to near .3% over .3m. Other metals are low.

SPHAL 7

As much of SPHAL 7 is below treeline, bedrock exposure is limited to stream cut gorges. Siliceous chlorite-sericite schist and quartz ankerite rich shears contain pyrite, chalcopyrite and minor barite. Structures are abundant but discontinuous.

An area near the centre of SPHAL 7 where 1988 prospecting encountered quartz veins sparsely mineralized with pyrite and chalcopyrite, containing anomalous precious metal values was not investigated by this phase of work.

GEOCHEMISTRY

The 45 rock samples collected during this phase of work were submitted to Acme Analytical Labs of Vancouver for geochemical analysis for copper, lead, zinc, silver and gold. Analytical techniques are described in Appendix A, sample descriptions in Appendix B and the results are given in Appendix C.

STATEMENT OF COSTS

SPHAL 1, 3, 5, 7 - GEOLOGICAL

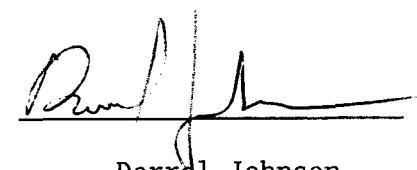
Geology 12 man days @ \$350/man day	\$ 4,200.00
Samples (including shipping) 45 @ \$25/sample	1,125.00
Food @ \$30/man day	360.00
Accommodation, Camp	550.00
Supplies and Equipment	175.00
Mob - De Mob (Aircraft Charter)	1,525.00
Helicopter Support 5 hours @ \$725/hr	3,625.00
Report Preparation	<u>750.00</u>
TOTAL	<u>\$12,310.00</u>

Dates: July 7 - 17, 1988

STATEMENT OF QUALIFICATIONS**DARREL L. JOHNSON**

I, DARREL L. JOHNSON, resident of the District of Coquitlam, B.C. declare that:

1. I hold a B.Sc. degree in Geology, granted by the University of British Columbia in 1970;
2. I have worked as a geologist in all phases of exploration work throughout B.C. since 1970;
3. I have been employed by Corona Corporation as a Senior Geologist since 1988;
4. Work described in this report was conducted by Paul Jones under my overall supervision.
5. I co-authorized this report based on published information for the area, extensive discussion with Paul Jones and visits to the area during the programmes described.


Darrel Johnson

DATED THIS 8th DAY OF December 1989
AT VANCOUVER, BRITISH COLUMBIA.

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APPENDIX A - GEOCHEMICAL METHODS



ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis

852 E. Hastings St., Vancouver, B.C. V6A 1R6

Telephone : 253 - 3158

ICP - .5 gram sample is digested with 3 ml 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, Al.

Au* - 10 gram samples are ignited at 600 deg.C, digested with aqua regia at 95 deg.C for one hour, 50 ml aliquot is extracted into 10 ml MIBK, analysed by graphite furnace AA.



**MINERAL
• ENVIRONMENTS
LABORATORIES**

ANALYTICAL PROCEDURE REPORT FOR ASSESSMENT WORK:

PROCEDURE FOR 31 ELEMENT TRACE ICP:

Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cu,
Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb,
Sr, Th, U, V, Zn, Ga, Sn, W, Cr

Samples are processed by Min-En Laboratories., at 705 West 15th Street, North Vancouver, employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized by ceramic plated pulverizer or ring mill pulverizer.

1.0 gram of the sample is digested for 4 hours with an aqua regia HClO₄ mixture.

After cooling samples are diluted to standard volume. The solutions are analysed by computer operated Jarrell Ash 9000 ICAP or Jobin Yvon 70 Type II Inductively Coupled Plasma Spectrometers. Reports are formatted and printed using a dot-matrix printer.

MIN-EN Laboratories Ltd.

Specialists in Mineral Environments

Corner 15th Street and Bewicke
705 WEST 15th STREET
NORTH VANCOUVER, B.C.
CANADA

ANALYTICAL PROCEDURE REPORTS FOR ASSESSMENT WORK

PROCEDURE FOR GOLD GEOCHEMICAL ANALYSIS.

Geochemical samples for Gold processed by Min-En Laboratories Ltd., at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed and pulverized by ceramic plated pulverizer.

A suitable sample weight 5.0 or 10.0 grams are pre-treated with HNO₃ and HC1O₄ mixture.

After pretreatments the samples are digested with Aqua Regia solution, and after digestion the samples are taken up with 25% HCl to suitable volume.

At this stage of the procedure copper, silver and zinc can be analysed from suitable aliquote by Atomic Absorption Spectrophotometric procedure.

Further oxidation and treatment of at least 75% of the original sample solutions are made suitable for extraction of gold with Methyl Iso-Butyl Ketone.

With a set of suitable standard solution gold is analysed by Atomic Absorption instruments. The obtained detection limit is 5 ppb.

APPENDIX B - SAMPLE DESCRIPTIONS

<u>Sample</u>	<u>Type</u>	<u>Description</u>
30235	grab	10cm wide quartz vein with 5% pyrite, chalcopyrite, tetrahedrite
30236	1 m chip	across quartz vein and quartz flooded zone, 5% pyrite, chalcopyrite, tetrahedrite
30237	float	rounded massive sulphide boulder within siliceous volcanic
30238	grab	quartz vein, zone with 5% pyrite, chalcopyrite, tetrahedrite
30252	grab	coarse grey black limestone with ankerite stockwork
30253	grab	ankerite stockwork up to 2cm wide in grey coarse grained limestone
30254	grab	rusty fine grained grey ankerite limestone with trace disseminated pyrite
30255	grab	rusty grey siliceous sericite schist with trace disseminated pyrite
30256	2 m chip	rusty grey siliceous sericite schist with trace disseminated pyrite
30257	2 m chip	rusty grey siliceous sericite schist with trace disseminated pyrite
30265	1/2 m chip	black sheared and brecciated purple agglomeratic volcanic with ankerite
30266	2 m chip	ankerite quartz shear within purple agglomeratic volcanic
30267	20 cm chip	ankerite quartz shear within purple agglomeratic volcanic
30268	30 cm chip	rusty ankerite zone within limestone with trace - 1% chalcopyrite, malachite
30269	2 m chip	rusty ankerite zone within limestone with trace - 1% chalcopyrite, malachite
30270	grab	rusty ankerite altered dolostone with trace disseminated pyrite

30271	grab	rusty ankerite altered dolostone with quartz stockwork and trace chalcopyrite
30272	grab	rusty black argillite with quartz ankerite stockwork and pyrite blebs
30273	grab	rusty black argillite with quartz and ankerite veining and trace pyrite
30274	grab	rusty black argillite, sheared with quartz veins and trace disseminated pyrite.
30283	2 m chip	rusty ankerite altered brecciated shear in silicified agglomerate? with mariposite, pyrite
30284	2 m chip	rusty ankerite altered brecciated shear in silicified agglomerate? with mariposite, pyrite
30285	2 m chip	rusty ankerite altered brecciated shear in silicified agglomerate? with mariposite, pyrite
30303	grab	rusty ankerite altered shear within foliated sediments
30304	talus	limey quartz vein within black argillite
30305	grab	ankerite altered shear zone
30306	2.5 m grab	black limey graphitic sheared clastic sediments with malachite, chalcopyrite
30307	grab	ankerite and quartz flooded zones within shear in creek cut
30308	grab	highly fractured and sheared argillite with talc zones
30309	grab	rusty ankerite altered shear within lapilli - agglomerate tuff
30310	1 m grab	ankerite quartz shear within green lapilli tuff
30311	talus	ankerite altered agglomerate with veinlets of quartz and ankerite

<u>Sample</u>	<u>Type</u>	<u>Description</u>
30312	grab	pervasive ankerite altered shear
30313	grab	rusty ankerite altered limestone with siltstone interbeds
30314	grab	brown ankerite altered lapilli tuff
30315	1.5 m grab	ankerite altered lapilli tuff with occasional quartz veinlets
30316	40 cm grab	shear zone in lapilli tuff
30317	grab	ankerite altered zone with quartz veins
30326	3 m grab	ankerite shear with quartz veins within limestone? basalt??
30334	4 m chip	green chlorite altered rusty andesite with limestone lenses
30335	2 m chip	rusty black graphitic argillite with shear zones
30336	grab	ankerite altered rusty sediments with trace quartz veins
30337	30 cm chip	brecciated limestone with fine grained disseminated pyrite
30338	3/4 m chip	black limey argillite with quartz veins
30339	talus	rusty buff limestone with minor pyrite blebs

APPENDIX C - ANALYTICAL RESULTS

ACME ANALYTICAL LABORATORIES LTD. DATE RECEIVED: JUL 20 1989
852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6
PHONE (604) 253-3158 FAX (604) 253-1716 DATE REPORT MAILED: July 25/89.

GEOCHEMICAL ANALYSIS CERTIFICATE

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 PPB.
- SAMPLE TYPE: ROCK Au* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

SIGNED BY *C. L. Wong*, D.TOYE, C.LKONG, J.WANG: CERTIFIED B.C. ASSAYERS

CORONA CORPORATION PROJECT 1040 FILE # 89-2312 Page 1

SAMPLE#	Cu	Pb	Zn	Ag	Au*
	PPM	PPM	PPM	PPM	PPB
✓E 20351	15	2	74	.1	3
✓E 20352	2	2	11	.1	3
✓E 20353	24	2	84	.1	4
✓D 30235	5556	2	822	18.3	2
✓D 30236	34	4	22	.3	5
✓D 30237	5902	97	226	2.9	52
✓D 30238	5732	31	51	6.2	550
✓D 30239	34	2	29	.3	2
✓D 30240	62	11	16	.2	1
✓D 30241	1	2	8	.1	3
✓D 30242	13	6	65	.1	5
✓D 30243	6	8	2	.1	3
✓D 30244	34	3	85	.1	5
✓D 30245	38	12	96	.1	1
✓D 30246	37	3	138	1.7	2
✓D 30247	11	3	59	.1	3
✓D 30248	65	4	55	.1	4
✓D 30249	19	7	39	.1	25
✓D 30250	11806	7	66	10.9	20
D 30265	38	11	10	.2	3
✓D 30266	71	7	25	.3	2
✓D 30267	9	5	37	.1	6
✓D 30268	3459	2	365	91.7	18
✓D 30269	241	2	48	7.8	16
✓D 30270	21	2	26	.8	6
✓D 30271	600	9	30	1.8	6
✓D 30272	30	17	118	.4	4
✓D 30273	17	7	70	.1	3
✓D 30274	21	2	96	.3	4
✓D 30275	66	2	66	.3	7
✓D 30276	15	4	12	.1	2
✓D 30277	43	28	27	.1	4
✓D 30278	40	2	186	.1	1
✓D 30279	4	4	13	.1	4
✓D 30280	12	2	59	.1	1

SAMPLE#	Cu PPM	Pb PPM	Zn PPM	Ag PPM	AU* PPB
✓D 30282	32	5	77	.1	3
✓D 30283	28	2	28	.1	2
✓D 30284	19	2	29	.1	1
✓D 30285	26	4	31	.1	1
✓D 30286	7	2	36	.1	1
✓D 30287	10	2	13	.1	1
✓D 30288	107	5	77	.1	2
✓D 30326	69	4	84	.1	136
✓D 30327	12	2	15	.1	3
✓D 30328	28	12	54	1.1	64
✓D 30329	13	6	67	.1	1
✓D 30330	10	6	49	.1	2
✓D 30331	6	2	24	.1	3
✓D 30332	100	7	55	.1	2
✓D 30333	41	10	63	.1	3
✓D 30334	19	4	102	.1	4
✓D 30335	15	9	65	.1	1
✓D 30336	26	4	48	.1	8
✓D 30337	4	2	34	.1	2
✓D 30338	49	2	108	.1	15
✓D 30339	41	15	54	.1	1
✓D 30340	65	607	156	1.2	2
✓D 30341	33	8	53	.1	2
✓D 30342	31	16	66	.1	3
✓D 30343	84	6	72	.4	6
✓D 30344	56	6	30	.1	2
✓D 30345	20	3	40	.1	1
✓D 30346	64	5	98	.1	3
✓D 30347	85	9	104	.1	4
✓D 30348	98	4	85	.1	3
✓D 30349	240	28	25	.5	62
✓D 30350	10	5	66	.1	1
STD G/AU-R	56	42	132	7.1	490

- ASSAY REQUIRED FOR CORRECT RESULT for Cu > 1%
 Ag > 30 ppm

ACME ANALYTICAL LABORATORIES LTD.

DATE RECEIVED: JUL 18 1989

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

PHONE (604) 253-3158 FAX (604) 253-1716 DATE REPORT MAILED:

July 26/89

GEOCHEMICAL ANALYSIS CERTIFICATE

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.
 IS 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: ROCK Au* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

SIGNED BY *C.L.* D.TOYS, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

CORONA CORPORATION PROJECT 1040 FILE # 89-2261 Page 1

SAMPLE#	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Au* PPB
✓D 30201	6	7	7	.1	1
✓D 30202	37	25	62	.2	1
✓D 30203	56	2	56	.1	1
✓D 30204	7	2	48	.1	1
✓D 30205	2096	2	54	1.8	27
✓D 30206	3904	2	235	9.0	36
✓D 30207	9892	3	92	2.0	37
✓D 30208	9921	3	77	2.2	36
✓D 30209	149	55	29	.3	1
✓D 30210	989	4	36	.2	31
✓D 30211	69	9	70	.1	1
✓D 30212	55	5	38	.1	1
✓D 30213	74	38	53	.2	3
✓D 30214	2571	4	62	.1	56
✓D 30251	106	6	67	.1	1
✓D 30252	26	9	35	.1	1
✓D 30253	15	2	67	.1	2
✓D 30254	101	2	68	.1	3
✓D 30255	10	9	66	.1	1
✓D 30256	8	6	28	.1	1
✓D 30257	129	2	32	.1	1
✓D 30258	31	5	91	.1	1
✓D 30259	3134	4	329	2.4	2
STD C/AU R	58	43	134	7.1	400

SAMPLE#	Cu PPM	Pb PPM	Zn PPM	Ag PPM	AU* PPB
✓D 30260	17	12	84	.3	1
✓D 30261	863	4	60	.5	5
✓D 30262	6	11	71	.3	1
✓D 30301	58	12	286	.1	1
✓D 30302	62	5	77	.1	3
✓D 30303	28	2	63	.1	1
✓D 30304	14	2	69	.2	1
✓D 30305	153	2	85	.1	2
✓D 30306	16796	7	55	33.1	2
✓D 30307	52	2	27	.1	1
✓D 30308	48	5	53	.1	2
✓D 30309	19	16	81	.1	1
✓D 30310	14	2	32	.1	2
✓D 30311	37	2	61	.1	1
✓D 30312	42	5	70	.1	1
✓D 30313	2	2	22	.3	1
✓D 30314	12	2	90	.1	1
✓D 30315	39	2	15	.2	3
✓D 30316	6	3	11	.2	3
✓D 30317✓	308	5	50	.3	2
STD C/AU R	56	38	121	7.1	520

- ASSAY REQUIRED FOR CORRECT RESULT -

APPENDIX D - PROSPECTING NOTES

PROJECTING TRAVERSES

The following traverses are grouped according to the individuals who performed the work, with the traverse number correlating to traverses marked on the compilation map.

Paul Jones - Prospector - Employee of Corona Corporation, 11 years in the mining industry, the last four full time.

(5) August 9, 1988

SPHAL 7, 8 - 6 rock samples, #1406-1408, 1410-1412
6 silt samples, #1401-1405, 1409

This traverse was down the slope on the south side of Sphaler Creek, starting at the toe of a glacier. It ended on the extensive mud flats at the headwaters of Sphaler Creek . The geology includes many variations of andesite volcanic ash to agglomeratic tuffs and flows. Locally the volcanics are chlorite altered, foliated, silicified and sheared. The increase in foliation occurs near and within structurally-controlled creek ravines. At the end of the traverse the contact between the volcanic and limestone phyllite unit was prospected. The phyllite unit near the triple contact has narrow quartz veins with pyrite and arsenopyrite mineralization. A small outcrop of ultramafic pyroxene-rich volcanic is found along the edge of the mud flats.

(7) August 10, 1988

SPHAL 7, 8 - 9 rock samples, # 1413, 1415-1418, 142101424
3 silt samples, #1414, 1419, 1420

This traverse was from east to west, just below the glaciers on the south side of Sphaler Creek, and above the tree line. The start of the day was at the contact of the andesite volcanics and a crinoidal limestone and phyllite unit. The structural complexity of the area has resulted in an irregular contact. Horst and graben

block faulting juxtaposes the volcanics and sediments. The sediments are primarily a fossiliferous limestone with lesser amounts of medium-grained grey limestone and foliated siltstone, phyllite. The later part of the traverse was in a mixed lapilli to agglomeratic tuff. These tuffs are green and purple with interfingering green flows. Shear zones periodically cut the volcanics. These shear zones are from 1/2 m. to 10 m. wide and comprise ankerite and quartz. Iron staining is common, but mineralization is limited to trace amounts of disseminated pyrite. The only other mineralization of note is small 1-2m. x 1/2m. sulphide, pyrite lenses within a green rusty andesite tuff.

(23) August 23, 1988

SPHAL 5 - No samples

Half a day was spent here around a small pond up above a limestone bluff. The rocks prospected during this helicopter-supported traverse were mixed bedded limestones and fractured sandstones and siltstones. No mineralization was observed.

Peter Neelands -Geology Student - Summer employee of Corona Corporation. Five years in field work, the last two full time.

(2) August 1988

SPHAL 7, 8 -11 rock samples, #28-38

This traverse was along a bench above the south side of Sphaler Creek on Sphal 7 and 8. The geology started in sediments and ended in volcanics. The sediments include sandstones, chlorite schists, arkoses and limestones. The sediments have ankerite shear zones and quartz veins at the contacts between sedimentary layers. No mineralization was noted in the sediments. The andesite volcanic unit also have ankerite-filled shear zones and quartz veins, but only trace amounts of pyrite. Alteration of the volcanic rocks include various degrees of chlorite and epidote.

(6) August 9, 1988

SPHAL 1 - 15 rock samples, #1301-1315

This traverse was on the north side of Sphaler Creek , high up by the ridgetop glaciers. The alpine and glacial-scraped terrain is an andesite volcanic unit. These volcanics have mafic variations and are pervasively chlorite and epidote altered. Zones of quartz flooding and quartz stockwork with trace amounts of pyrite and chalcopyrite were sampled. At the contact of the volcanics and the lower sediments are a number of porphyritic intrusive plugs. The sediments were briefly transversed and are limey sandstones, quartzites and limestones.

(8) August 10, 1988

SPHAL 1, 3, 4 - Rock samples, #1316-1333

This traverse was a continuation along the slope below the glaciers on the north side of Sphaler Creek . The route started in the alpine and followed a vegetation-free path, eventually ending along the creek a difference of 3000 feet lower than the start. The geology at the beginning of the day was a banded and bedded sedimentary unit which included laminated quartzites and black siltstones. These sediments have a north/south strike and near vertical dip. Prospecting east, the sediments are underlain by a green chloritic andesite volcanic unit. This andesite unit is massive and included tuffs and flows. Quartz veins, veinlets and ankerite zones with trace amounts of disseminated pyrite were sampled. Lenses of a limestone and black sandstone, siltstone horizon were mapped within the volcanics and are probably of the overlying sedimentary package. The lower extent of the volcanics are composed of green and purple volcanic flows. Below this is an older sedimentary package which includes siliceous limestones, black dolomites to limey argillites and a red mudstone unit. The sedimentary volcanic contact is brecciated and chlorite-altered. No mineralization or alteration of significance was encountered.

(10) August 11, 1988

SPHAL 5 - 15 rock samples, #1334-1348

This traverse was from north to south along a steep creek valley that may be structurally controlled. The rocks within this gully are all of a sedimentary nature. The most predominant sediment is a limestone that occurs in both a ferruginous and a clean state. The presence of this extensive limestone leaves the rest of the sediments with a calcarenite composition. A more intensely fractured zone within the limestone was prospected. The fracture surfaces have apparent copper staining, malachite and the fractures themselves are filled with barite, iron-carbonate, and quartz veining. The zone also has brecciated segments. Rounded silicified pyritic boulders with up to 30 per cent pyrite were noted.

(14) August 12, 1988

SPHAL 5, 6 - 4 rock samples, #1349-1352

This traverse was on the north bank of Sphaler Creek and was through the extensive limestone unit. The limestone has brecciated segments and quartz ankerite shears. The structures are iron oxidized, but no sulphides were observed.

Karen Sobey - Contract Prospector - Graduate of BCDM Prospecting Course, 1987. Two years of field experience.

(1) August 7, 1988

SPHAL 7, 8 - No samples collected

This traverse was along a bench above the south side of Sphaler Creek on Sphal 7 and 8. The geology started in sediments and ended in volcanics. The sediments include sandstones, chlorite schists, arkoses and limestones. The andesite volcanics have ankerite shear zones. No mineralization of any note was

prospected.

GEOCHEMISTRY

The 74 samples collected during this phase of work were submitted to both Min - En and Acme Analytical Labs of Vancouver for geochemical analysis. Analytical techniques are described in Appendix A, sample descriptions in Appendix B and results in Appendix C.

SPAHL A - CLAIM GROUP

<u>Sample No.</u>	<u>Sample Type</u>	Description
<u>SPHAL 1</u>		
1301	grab	siliceous medium volcanic with both epidote and quartz stockwork veinlets
1302	grab	siliceous medium volcanic, bleached with abundant epidote
1303	grab	crystalline quartz vein with trace chalcopyrite
1304	grab	pink purple fine grained volcanic
1305	grab	felsic volcanic with Fe carbonate, ankerite alteration zone
1306	grab	limy meta sediment with white quartz veins at top of rusty sequence
1307	grab	contact zone, upper limy meta sediment with lower mafic biotite rich unit
1308	grab	Fe-stained gossanous siliceous sediment unit
1309	grab	rusty tan brown volcanic with dyke in shear zone
1310	grab	intrusive porphyry unit, highly altered
1311	grab	chlorite altered porphoritic intrusive with kaolanite
1312	grab	gossanous limy rock
1313	grab	sediment unit, quartzite with 1% disseminated pyrite
1314	grab	gossan, Fe-stained limy meta sediment rock
1315	grab	sediment unit, coarse limestone with Fe carbonate, siderite
1316	grab	finely laminated sediment, mixed quartzite and siltstone, differential weathering
1317	grab	parallel quartz veins within siltstone with Fe-stain and trace pyrite
<u>SPHAL 3</u>		
1318	grab	Fe-stained banded siltstone with pyrite blebs
1319	grab	choritic volcanic rock
1320	grab	medium volcanic with Fe-carbonate enrichment zone

<u>Sample No.</u>	<u>Sample Type</u>	<u>Description</u>
SPHAL 3 cont..		
1321	grab	medium volcanic unit, calcareous, with quartz ankerite vein
1322	grab	medium grained siliceous gritty quartzite with trace disseminated pyrite
1323	grab	medium purple and green banded volcanic with carbonate, chloride alteration
1324	grab	black banded siltstone with brecciated limestone unit with ankerite veinlets
1325	grab	medium volcanic with 1-2mm pyritic seams
1326	grab	bleached weakly foliated felsic unit within purple and green medium volcanic
1327	grab	banded siliceous sediment with pyritic zones
1328	grab	felsic ash tuff, strongly foliated, weak Fe carbonate alteration

SPHAL 5

1334	grab	very siliceous light grey felsic ash tuff with fine grained disseminated pyrite
1335	grab	rusty weathered greywacke and limey sediment with brecciated ankerite zone with trace pyrite and chalcopyrite
1336	grab	limey sediment with quartz carbonate veinlets and trace chalcopyrite, pyrite
1337	grab	Fe-stained calcareous siliceous sediment with ankerite zones and quartz veinlets
1338	grab	dark blue brecciated ankerite veinlets with chalcopyrite within sediment
1339	grab	dark blue brecciated ankerite veinlets with chalcopyrite within sediment
1340	grab	agglomeratic limestone with copper staining and barite blebs
1341	grab	brecciated agglomeratic limestone with barite and chalcopyrite

Sample No.	Sample Type	Description
<u>SPHAL 5 cont..</u>		
1342	grab	green siliceous quartzite with ankerite zones and barite and chalcopyrite
1343	grab	unoxidized sediment with barite and chalcopyrite
1344	grab	quartzite with remnant carbonate veinlets
1345	grab	brecciated limestone with quartz ankerite veinlets
1346	grab	limestone with quartz ankerite veinlets
1347	grab	altered limey sediment with copper staining
1348	float	siliceous sediment, rusty weathered with 30% blebs pyrite
1349	grab	brecciated siliceous limestone with quartz ankerite veins and trace disseminated pyrite
1350	grab	quartz ankerite veins within brecciated limestone
1351	grab	parallel quartz ankerite veins within brecciated limestone
1352	float	quartz ankerite zone within a felsic intrusive dyke within limestone
<u>SPHAL 7</u>		
28	grab	rusty brown weathered siliceous carbonate dyke
29	grab	limestone with shear zone
30	grab	chlorite schist with weak carbonate alteration
31	grab	contact zone tan brown stained arkose and limestone with quartz Fe-carbonate veining
32	grab	low grade schist, volcanic, with Fe-carbonate staining and ankerite
33	grab	medium volcanic, rusty weathered and strongly sheared
34	grab	10cm wide quartz vein
35	grab	quartz epidote altered zone with trace pyrite, 20cm wide
36	grab	light cream coloured fault shear system within altered volcanic
37	grab	fault controlled pyrite seam, 1cm wide, green host rock
38	grab	boundinage quartz pods barren

<u>Sample No.</u>	<u>Sample Type</u>	<u>Description</u>
<u>SPIHAL 7 cont..</u>		
1403	silt	
1404	1m chip	through contact of overlying quartz carbonate unit and rusty graphitic volcanic
1405	silt	
1406	grab	quartz ankerite zone with calcite
1407	float	pyrite cubes within ankerite shear zone
1408	grab	emerald green porphyritic volcanic unit
1409	silt	limestone creek above gossan
1410	10m grab	quartz pyrite arsenopyrite vein within dirty grey dolomitic limestone
1411	10m grab	quartz feldspar vein with pyrite and arsenopyrite
1412	10m grab	quartz feldspar vein with pyrite and arsenopyrite
1413	grab	rusty siliceous limestone with blank banded carboniferous
1414	silt	
1415	silt	
1416	grab	quartz carbonate vein, Fe-stained within green volcanic
1417	float	quartz ankerite vein with malachite, pyrite, epidote and molybdenite all trace
1748	grab	schistose zone with quartz carbonate stringers trace chalcopyrite

(VALUES IN PPM)

PAGE 1

SAMPLE 1

	Ag	Al	As	B	Be	Bi	Ca	Co	Cu	Fe	K	Li	Mg	Mn	Na	Ni	P	Pb	SB	SR	TB	U	V	Zn	Ga	Sn	W	Cr	Au	Pb			
1301	2	34170	11	17	43	1	23	30510	2.4	41	451	55240	1190	53	22480	1053	5	650	5	1090	12	1	31	1	1	210.1	64	1	5	1	64	5	
1302	1.6	34410	20	15	31	1.2	18	30980	2.1	27	91	37240	1560	50	16300	1119	5	680	5	850	14	4	68	1	1	105.5	61	2	4	1	87	5	
1303	2	14270	32	14	41	0.7	11	34880	3.1	23	1297	20410	2240	48	10100	640	7	520	15	710	18	4	7	1	4	49.9	31	1	2	4	157	5	
1304	1	43370	8	17	42	1.1	17	29640	2.4	37	40	60290	1278	46	27010	1062	4	3200	8	880	10	1	78	1	1	221.1	63	1	4	1	68	19	
1305	1.1	6440	28	1	47	0.5	7	44190	2.2	14	1138	26240	1740	47	4300	940	5	680	8	610	14	80	5	1	2	54.3	46	1	1	1	102	5	
1306	0.5	630	1	1	1	1	3	159870	7.6	9	40	2660	790	36	78500	70	2	390	7	100	3	2	3	1	1	5.8	8	1	1	1	26	5	
1307	1.8	26550	18	5	2157	1.7	15	33510	3.6	28	53	31050	8050	58	21030	466	5	12180	70	3960	20	2	444	1	1	81.5	84	1	3	3	143	5	
1308	0.9	6780	14	1	879	1.8	8	51700	3.9	24	42	37500	3230	42	20770	629	5	740	51	3190	16	9	290	1	1	107.4	40	1	1	1	89	5	
1309	0.5	800	1	1	24	1.4	5	110550	5.0	12	15	16720	970	37	4820	399	5	370	22	380	13	6	45	1	1	19.9	60	1	1	1	44	10	
1310	1.1	4600	86	1	276	0.9	7	26440	3.5	13	5	23210	2790	37	9120	516	4	590	6	1350	23	6	33	1	3	18.1	47	1	1	1	69	19	
1311	1.2	5470	18	1	1112	1	7	24620	3.2	13	5	25230	3000	37	9470	524	5	680	5	1470	16	7	35	1	3	23.7	63	1	1	1	56	5	
1312	0.7	6150	46	1	68	1.4	6	81380	5.4	17	35	26880	1720	40	36780	479	6	360	22	1420	14	21	124	1	1	45.1	67	1	1	1	24	15	
1313	1.4	4970	55	1	216	1.2	7	28980	3.7	21	14	32850	2250	40	15740	508	4	690	42	1310	18	14	39	1	3	43.9	54	1	1	1	79	5	
1314	0.6	430	1	1	1	1.3	3	159490	6.7	9	15	4900	810	37	67560	145	3	320	5	160	4	3	1	1	7.2	14	1	1	1	56	5		
1315	0.5	340	1	1	2	2	3	134270	6.6	11	12	9220	790	35	73250	283	3	320	10	160	2	3	16	1	1	6.9	32	1	1	1	51	5	
1316	0.7	11970	4	3	455	0.7	10	1210	1.6	12	17	21900	1420	57	10470	385	6	490	11	220	15	1	9	1	1	35.2	34	1	3	1	50	5	
1317	0.3	25210	15	6	66	1.2	7	10650	0.4	21	36	36990	1470	44	19030	728	5	570	13	1	480	13	1	7	1	1	86.1	55	1	2	1	79	10

SAMPLE 3

	Ag	Al	As	B	Be	Bi	Ca	Co	Cu	Fe	K	Li	Mg	Mn	Na	Ni	P	Pb	SB	SR	TB	U	V	Zn	Ga	Sn	W	Cr	Au	Pb		
1318	2.4	10230	10	5	67	0.6	8	1080	1.3	14	32	20970	2650	51	4000	212	7	450	17	250	22	4	11	1	1	24.8	45	6	1	4	92	5
1319	0.2	42010	13	10	53	2.3	2	28390	0.1	48	6	85730	1360	72	34020	938	2	550	55	3070	12	1	18	1	1	186.6	77	8	1	2	72	5
1320	0.6	19980	28	8	114	2.1	2	100640	1.7	32	3	68240	1860	53	31520	2049	4	380	39	1500	9	3	42	2	1	65.9	56	8	1	2	72	5
1321	0.6	1290	8	4	1	1.5	1	170510	5.6	14	3	25080	1260	41	48310	943	5	340	4	480	3	1	96	1	1	16.6	27	4	1	1	34	5
1322	0.5	18430	5	6	75	1	8	14710	1	17	27	29670	1940	41	11010	911	5	610	7	1250	11	1	14	1	1	45.5	47	3	2	1	75	5
1323	0.7	37110	26	10	1770	1.6	2	52100	1.4	49	5	68240	1850	72	21900	1299	3	380	64	120	8	1	38	1	1	67.5	93	1	1	1	67	5
1324	1.4	2940	9	2	91	0.7	6	26250	2.5	16	26	12600	1390	46	3620	589	6	390	17	360	14	4	17	1	1	14	22	4	2	6	144	5
1325	1.7	5190	21	4	151	0.7	7	20240	2.1	13	35	11990	1890	47	4450	347	10	410	31	1510	13	2	42	1	1	19.2	48	4	1	1	150	5
1326	1.1	10680	1	6	95	0.7	6	19980	1.8	11	23	12710	2830	51	1540	477	6	730	9	510	9	1	20	1	1	15.1	30	6	1	1	85	5
1327	0.3	32780	26	10	193	1.3	8	8310	0.9	29	70	49500	3690	65	23660	810	6	730	13	960	15	1	6	1	1	113.6	83	1	3	1	80	5
1328	1.2	18130	17	6	324	0.9	8	4500	1	15	18	18720	2650	64	11430	170	4	460	20	390	16	1	7	1	1	25.2	46	6	2	1	69	5

SAMPLE 5

	Ag	Al	As	B	Be	Bi	Ca	Co	Cu	Fe	K	Li	Mg	Mn	Na	Ni	P	Pb	SB	SR	TB	U	V	Zn	Ga	Sn	W	Cr	Au	Pb		
1334	0.6	16120	24	10	140	1.3	3	2370	0.8	24	56	82370	2410	55	13010	132	4	690	1	310	7	1	4	1	1	46.5	76	5	1	1	39	5
1335	0.5	590	1	5	84	1.3	1	145350	6.1	8	11	27240	910	41	70550	1256	4	370	2	270	4	1	2	1	1	8.1	5	5	1	1	30	5
1336	30.5	610	24	3	2	1.3	2	144740	9.8	11	1324	38490	940	41	59500	2394	4	430	10	110	7	344	3	2	1	10.6	110	1	1	1	53	15
1337	0.6	330	6	2	1	1.3	2	134840	6.4	9	58	20220	850	40	63110	1081	4	380	2	80	5	14	2	1	1	11.4	7	1	1	1	41	5
1338	1.7	290	9	2	51	0.8	4	50780	4.8	10	121	19040	900	44	23620	731	6	380	17	120	12	6	1	1	14.3	11	1	1	1	850	10	
1339	0.3	300	11	3	2	1.3	2	146850	5.6	9	5	41100	830	39	65090	2626	4	370	1	70	6	1	1	1	6.2	6	9	1	1	32	10	
1340	0.9	410	35	1	151	0.6	9	10160	3.8	12	99	3670	1020	47	4570	106	7	410	27	110	14	2	200	1	1	13.8	10	18	1	1	46	5
1341	1.1	1132	321	1	293	0.9	7	97100	11.1	9	1951	15430	890	43	51500	845	5	360	9	140	44	531	265	1	1	9.9	133	1	1	1	45	15
1342	0.6	2600	6	2	169	1.2	1	12760	4.1	9	10	18370	910	42	43670	1030	4	270	9	150	4	1	3	8.2	5	1	1	1	36	5		
1343	0.3	330	9	2	22	1.2																										

STATEMENT OF COSTS

SPHAL 1, 3, 5, 7 - PROSPECTING

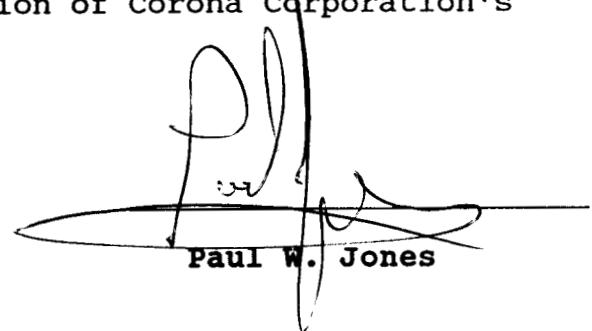
Prospecting 7.5 man days @ \$250/man day	\$ 1,875.00
Samples (Including Shipping) 74 @ \$25/sample	1,850.00
Food @ \$30/man day	225.00
Supplies and Equipment	175.00
Contract Base Camp	1,705.00
Mob - De Mob (Aircraft Charter)	750.00
Helicopter Support 6.9 hours @ \$625/hr	4,310.00
Report Preparation	750.00
 TOTAL	 \$ 11,640.00
	=====

Dates: August 7, 9, 10, 11, 12, 23; 1988

STATEMENT OF QUALIFICATIONS

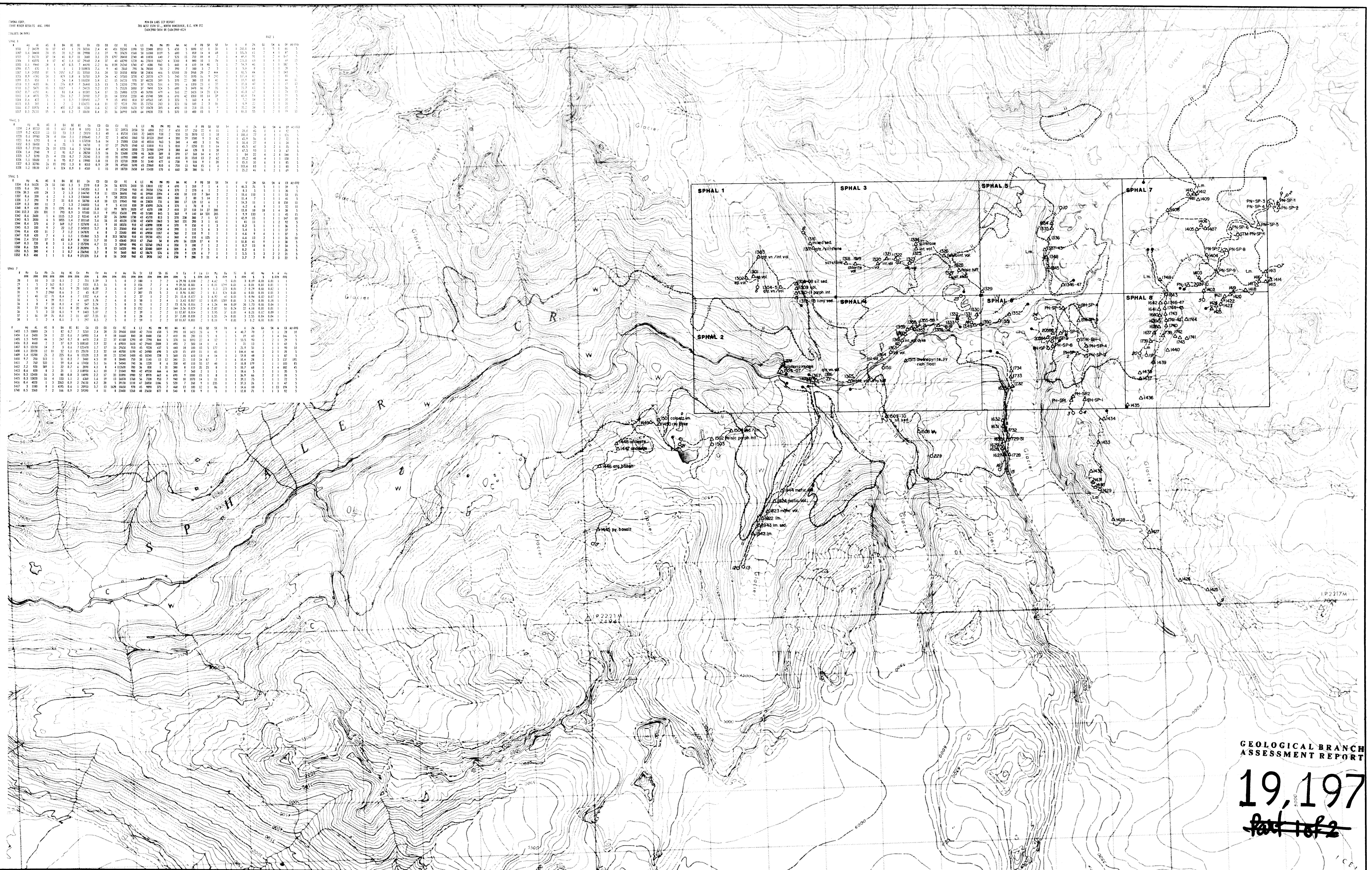
I, **PAUL WILLIAM JONES** of the City if Vancouver, B.C. declare
that:

1. I have been actively involved in the mining industry in Canada and the United States for 12 years.
2. I have personally directed and performed the work enclosed in this report under the supervision of Corona Corporation's Senior Geologist, **Darrel Johnson**.




A handwritten signature in black ink, appearing to read "P.W.J." followed by a stylized surname. Below the signature is the printed name "PAUL W. JONES".

DATED THIS 11th DAY OF Dec 1989
AT VICTORIA, BRITISH COLUMBIA.



		<u>AB BREVIATIONS</u>				
		ep. - epidote	porph. - porphyry			
		and. - andesite	qtz. - quartz			
		arg. - argillite	sed. - sediments			
		int. - intrusive	sil. - silicified			
		Lm. lm. - limestone	vol. - volcanics			
			vn. - vein			
CORONA CORPORATION						
SPHAL PROPERTY						
SPHAL 1,3,5,7						
COMPILATION MAP						
TRAVERSE						
120 - Start - End						
m 500 0 500 1000 1500m						
MAP SCALE REVISIONS 1 2 3 4 5	MADE BY	DESCRIPTION				
DATE		DRAWN BY	CHECKED	APPROVED		
NOV. / 1988						
OFFICE		DEPARTMENT		MAP INDEX NUMBER	SCALE	DRAWING NUMBER
NTS.					1: 25,000	A



MAP SCALE		Date	Made By	DESCRIPTION		
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