

84-1088-12985

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

12,985



11/5

**GEOCHEMICAL SURVEY AND
PROSPECTING REPORT
ASPEN CLAIMS
NELSON MINING DIVISION
NTS 82 F/3**

Lat: 49°10'

Long: 117°11'

OWNER: GORDON W. SINDEN

OPERATOR: GREENWICH RESOURCES, INC.

CONSULTANT CONTRACT: ROBERTSON RESEARCH CANADA LIMITED

BY

G.W. SINDEN
GEOTECHNOLOGIST

AND

DAVID S. EVANS, Ph.D., P. Geol.,
Consultant to
ROBERTSON RESEARCH CANADA LIMITED

OCTOBER 1984

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1. SUMMARY

Nine rock samples (select grab) from old workings and as representative lithological samples, 48 soil samples and 14 stream sediments samples have been collected from the Aspen Claim.

Significant Pb, Zn, Ag and Au values in rocks, soils and stream sediments have been identified. The anomalies are believed to reflect both known and unknown sources of lead, zinc, silver and possibly, gold mineralization.

Prospecting observations results from reconnaissance exploration activities on the Aspen claims indicate a favourable geological environment for multiple lead/zinc/silver-bearing quartz veins and/or quartz stockwork systems. Potential may also exist for Sheep Creek type gold deposits.

Further mapping, prospecting, soil and stream sediment sampling and VLF-EM work is recommended to establish the sources of lead, zinc, silver and gold soil and stream sediment anomalies and, possible extension(s) of the Aspen occurrence(s).

2. INTRODUCTION

2.1 Location and Access

The Aspen claim area is located in the Nelson Mining Division of southeastern British Columbia, approximately 7km southeast of the town of Salmo and approximately 35km south-southeast of the city of Nelson (Figure 1).

The property is accessible via Highway #3 from Salmo onto the Sheep Creek gravel road and to the old HB mine site. A good dirt road along Aspen Creek reaches the property (Figure 2).

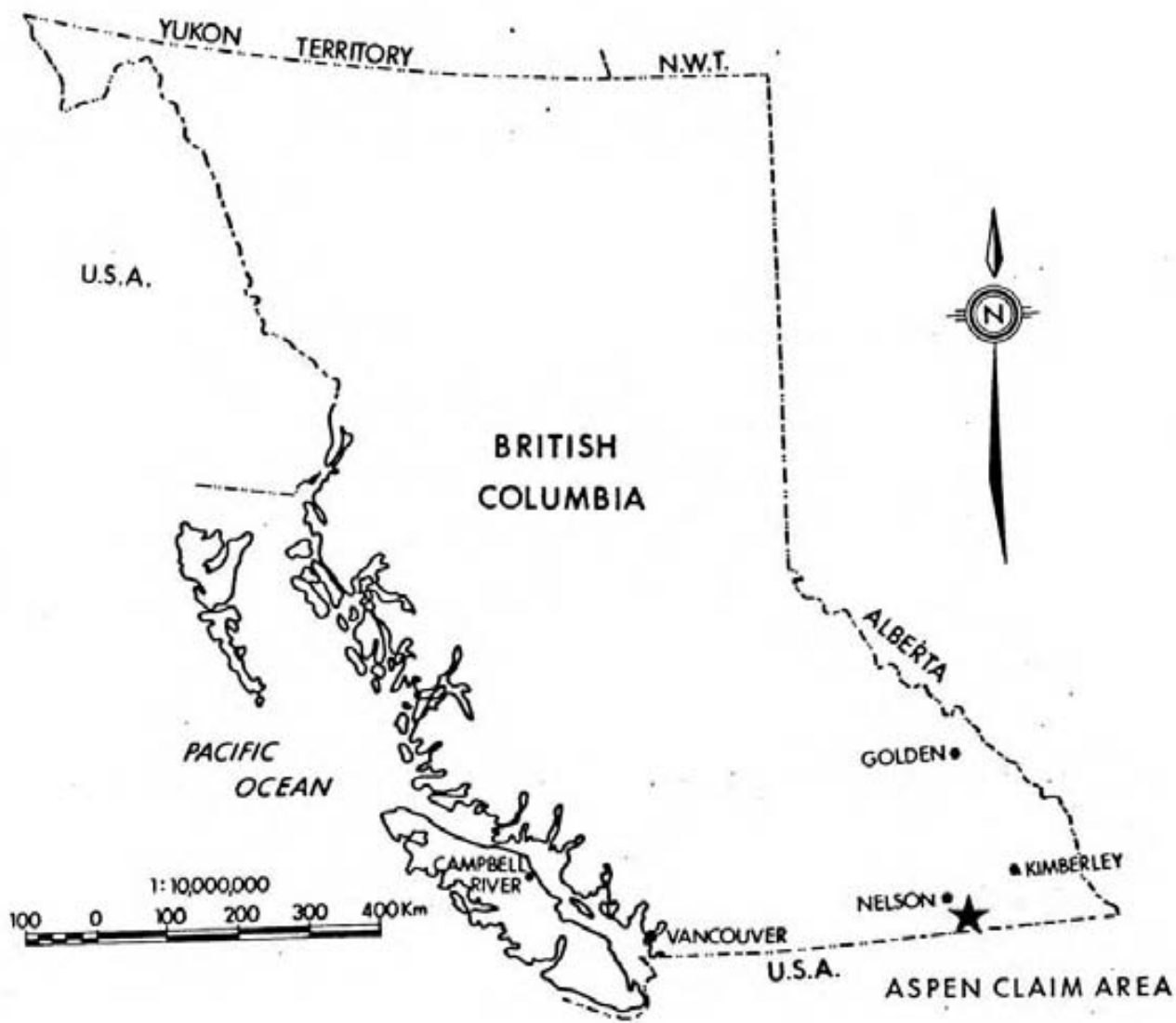
TABLE 1

Mineral Claims

<u>Claim</u>	<u>Record Number</u>	<u>Month of Record</u>	<u>Owner of Record</u>
Aspen	3762	June	Gordon W. Sinden

2.2 Phsyiography and Climate

A reconnaissance grid system (Figures 3 and 4) was located on a south facing slope encompassing an old burp now covered with thick patches of scrub brush, cedar,



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FIGURE 1
PROPERTY INDEX MAP
ASPEN CLAIM AREA

spruce and alder. The terrain ranges from flat to rugged. Outcrop exposure is poor.

The greater area of the claim block extends southward over a gradual to moderate thickly forested northwest and southeast facing slopes.

The climate of the west Kootney region is characterized by warm summers from May to September, a cool and damp fall and spring, and relatively mild winters.

3. GEOLOGY

3.1 Regional Geology

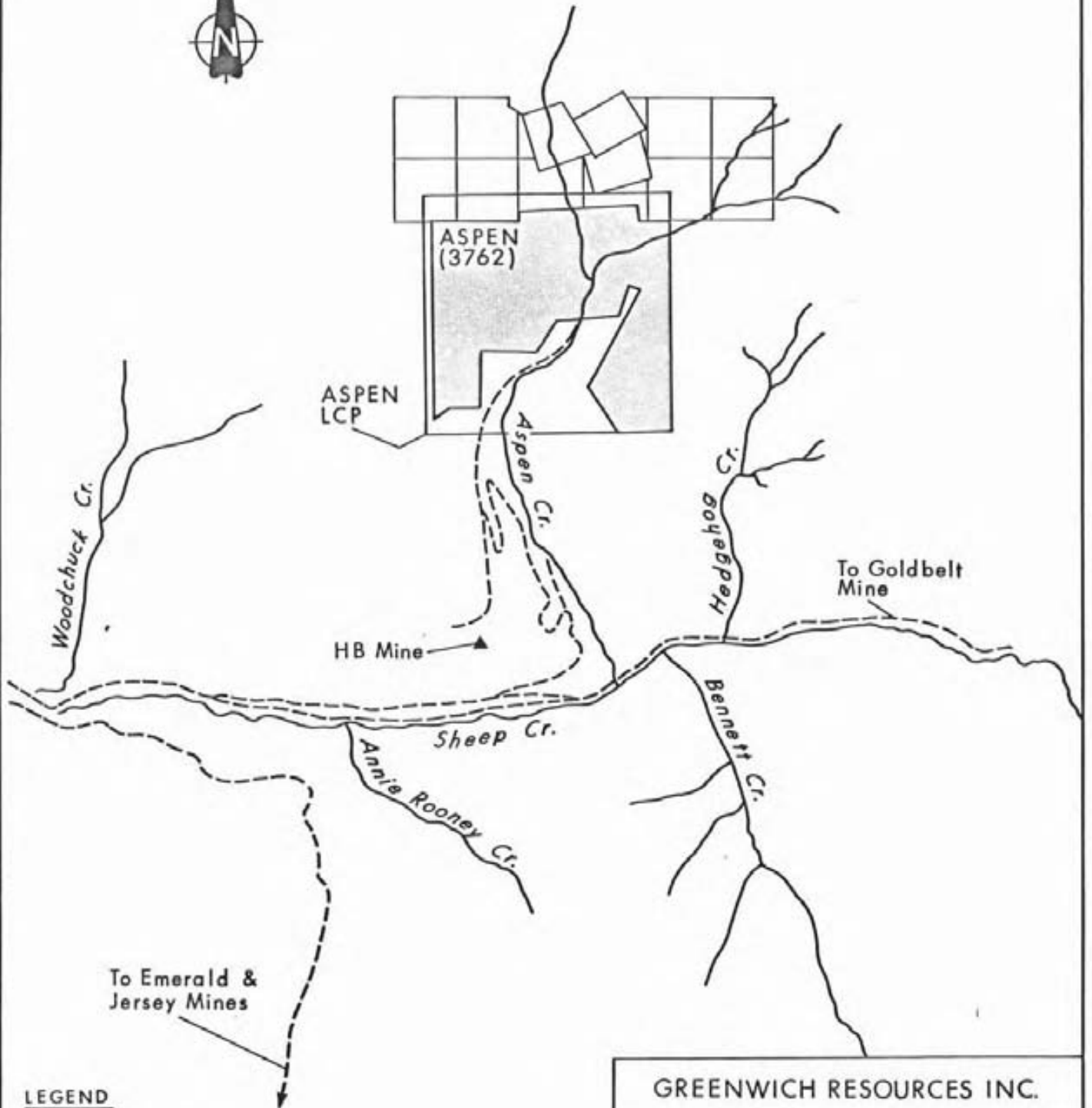
The Aspen Claims (Figure 2) are located within the Nelson (West half) Map Area (G.S.C. Map 1090 A; Little, 1960 and G.S.C. Map 1145 A; Little, 1964). Rock units are described by Little (G.S.C. Memoir 308, 1960).

The Aspen Claims are underlain by Early Paleozoic rock units of the Laib and Active Formations. These formations host a variety of sedimentary rock types including phyllites, argillites, slates, quartzites, limestones and schists.




Mineral potential of the Aspen claims is related to lead-zinc-silver-bearing quartz veins and/or quartz stockwork systems. Potential may also exist for Sheep Creek type gold occurrences.

3.2 Local Geology

The property is underlain with limestones, argillites, and argillaceous Quartzites of the Laib and Active Formations. The limestone has been recrystallized by metamorphic and/or hydrothermal activity while the argillaceous rock units are frequently silicified and quartz-rich. The quartz occurs as laminations less than 1mm in width and up to massive veins of 1 meter in thickness. Most of these emplacements appear to be void of lead, zinc and silver sulphides although minor pyrite and iron staining is prevalent. The property is characterized by numerous shear zones and fold patterns.



LEGEND

-  CREEKS
-  ROAD
-  CLAIM OUTLINE

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FIGURE 2

ASPEN CLAIM
LOCATION REFERENCE

Compiled by	Date	October, 1984
Drawn by	S. Erskine	Project

Two sloughed adits and thirteen trench cuts (Figure 3) were located in an area which exposes significant Pb, Zn and Ag occurrences along a strike length of 180 meters.

4. MINERAL OCCURRENCES

4.1 Aspen Occurrences

The Aspen occurrences are located in the northeast quadrant of Aspen claims (Figure 3) and documented in Figure 4. Thirteen old sloughed and overgrown trenches and two caved adits exist were relocated where sulphide mineralization appears confined to silicified shear zones, primarily in argillites. Exposure is poor in this area.

Trenching and tunnelling along this zone was not successful in determining the thickness and continuity of the occurrence(s).

Select grab samples from dump material and outcrop have been collected (Figure 4). Sulphide mineralization ranges from disseminated to massive galena and sphalerite. Pyrite and limonite staining is common and prevalent.

Assay values up to 0.04 oz/ton Au, 7.9 oz/ton Ag, 6.7% Pb and 7.4% Zn are recorded in rock and dump samples collected from the Aspen occurrence area.

TABLE 2

STATISTICAL ANALYSIS¹
SOIL SAMPLES

<u>Element</u>	X ²	Sd ³	Cv ⁴
Au (ppb)	2.2	2.8	1.27
Pb (ppm)	23	8	0.34
Zn (ppm)	308	185	0.60
Ag (ppb)	562	617	1.09

- 1 48 samples Zn, 46 samples Pb, 31 samples Ag, Au
- 2 Arithmetic mean, Ag, Pb and Zn; Logarithmic mean Au
- 3 Standard deviation
- 4 Coefficient of Variation

Values exceeding 5 ppb Au, 1180 ppb Ag, 495 ppm Zn and 31 ppm Pb have been selected as anomalous levels based on the statistical evidence documented in Table 2.

Weak to moderate gold and silver soil anomalies are identified on L100S in the area from 3 + 00 to 4 + 50E and and L300S from stations 2 + 50 to 3 + 25E. This area closely corresponds to the course of Aspen Creek; and, may reflect precious metals mineralization associated with faulting/shearing in this area.

Lead and zinc soil anomalies are much more confined and limited. The main area of enrichment is located on 1 + 00S at 4+25E to 4+50E where Pb values reach 680 ppm. This anomaly probably reflects downslope dispersion from extensions of the known Pb-Zn-Ag occurrence area (Section 4.1).

Stream sediment anomalies are less well defined and largely confined to gold enrichments, primarily at station 0 + 00, where levels reach 104 ppb. The source of this anomaly, together with other weak Au enrichments along Aspen Creek, may indicate mineralization and/or gold enrichment in veins at or near the contact between sedimentary rocks and the Nelson Granite at a location(s) upstream.

5. GEOCHEMISTRY

5.1 Rock Samples

Nine rock samples (selected grab) from old workings and representative lithologies were collected from the Aspen Claims (Figures 3 and 4) and geochemically analyzed for Pb, Zn, Ag and Au. Significant Pb, Zn, Ag, Au values and enrichment have been recorded at the Aspen Occurrence (Section 4.1 and Figure 4).

5.2 Soil Samples

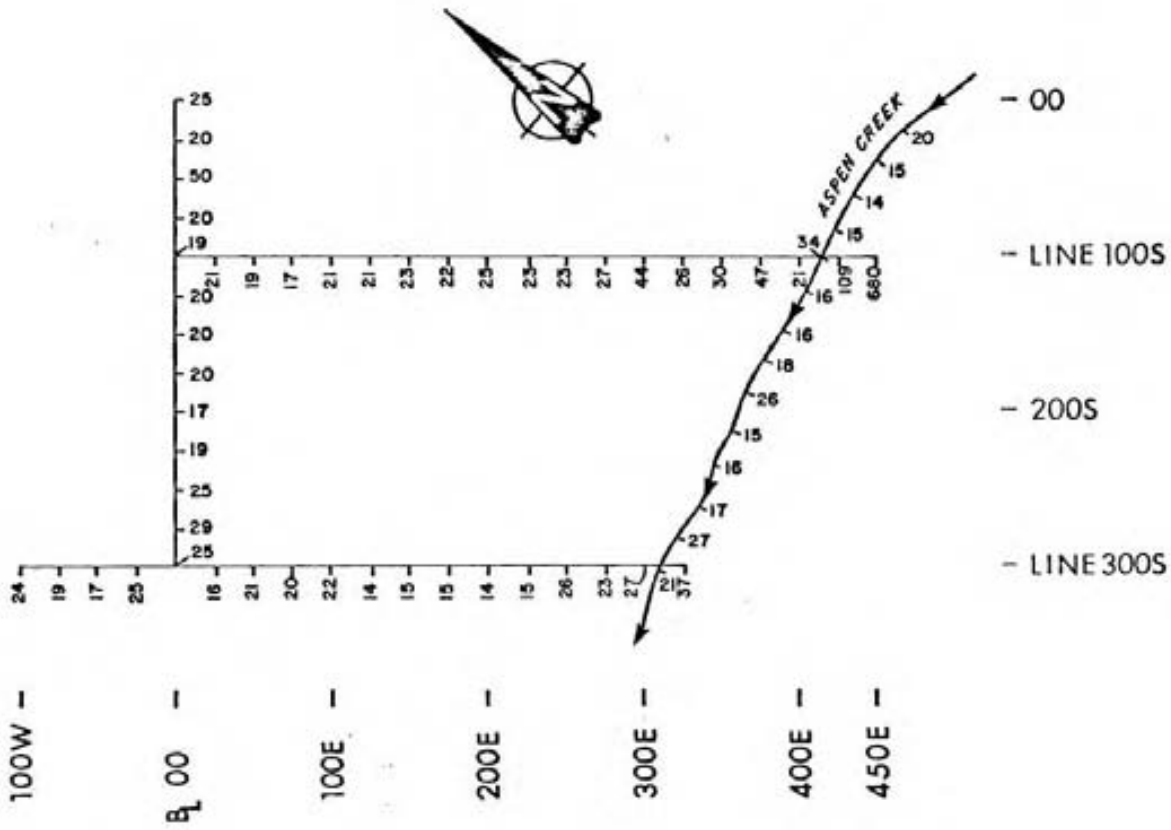
A reconnaissance soil survey was carried out on the Aspen Claims to assess base and precious metal potential.

Forty-eight soil samples were collected at 25 metre intervals and geochemically analyzed for Pb, Zn, Ag and Au (Figures 5,6,7 and 8).

B horizon soils at 5 cm to 20 cm depth were the preferred sampling media.

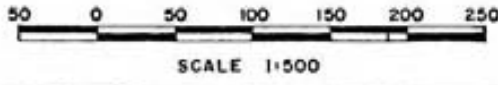
5.3 Stream Sediment Samples

A reconnaissance stream sediment survey was carried out on the Aspen claims to assess base and precious metal potential.

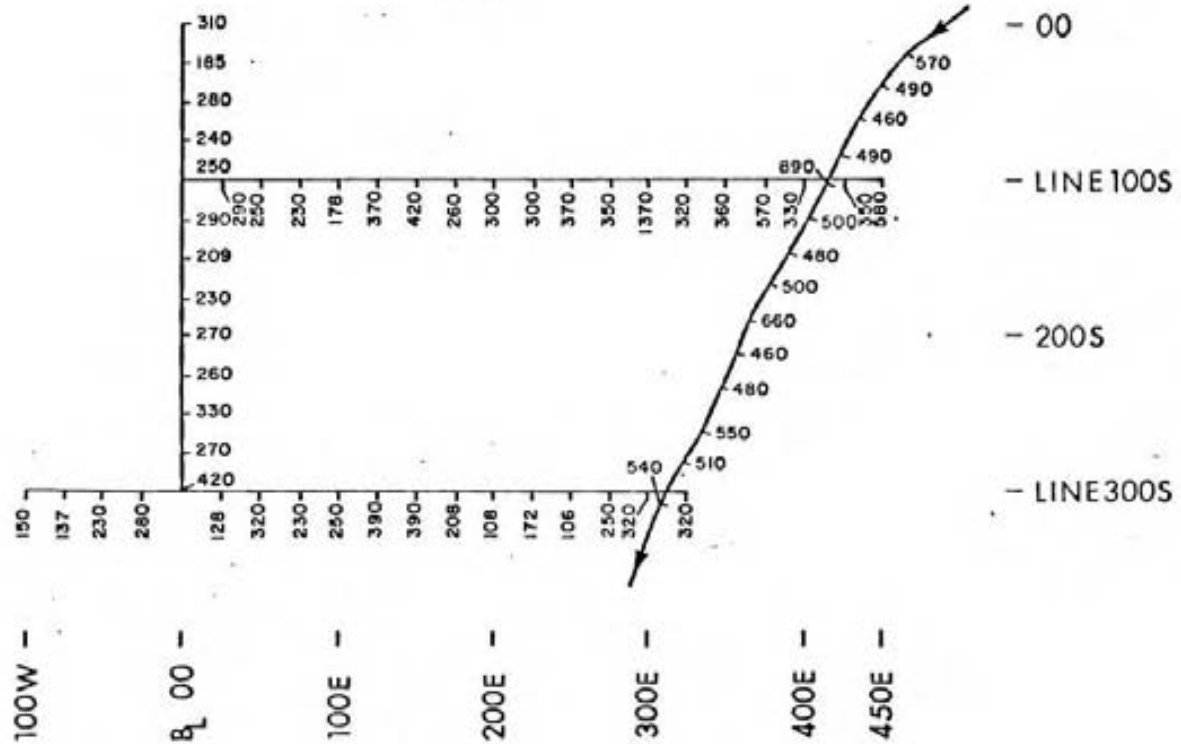


LEGEND

Stream, Direction of Flow



GREENWICH RESOURCES INC.	
ASPEN CLAIMS GEOCHEMICAL SURVEY LEAD IN SOILS & SILTS (PPM) Figure 5	
COMPILED BY	DATE
DRAWN BY S. ERSKINE	PROJECT



LEGEND

→ Stream, Direction of Flow

0 50 100 150 200 250
SCALE 1:500

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ASPEN CLAIMS

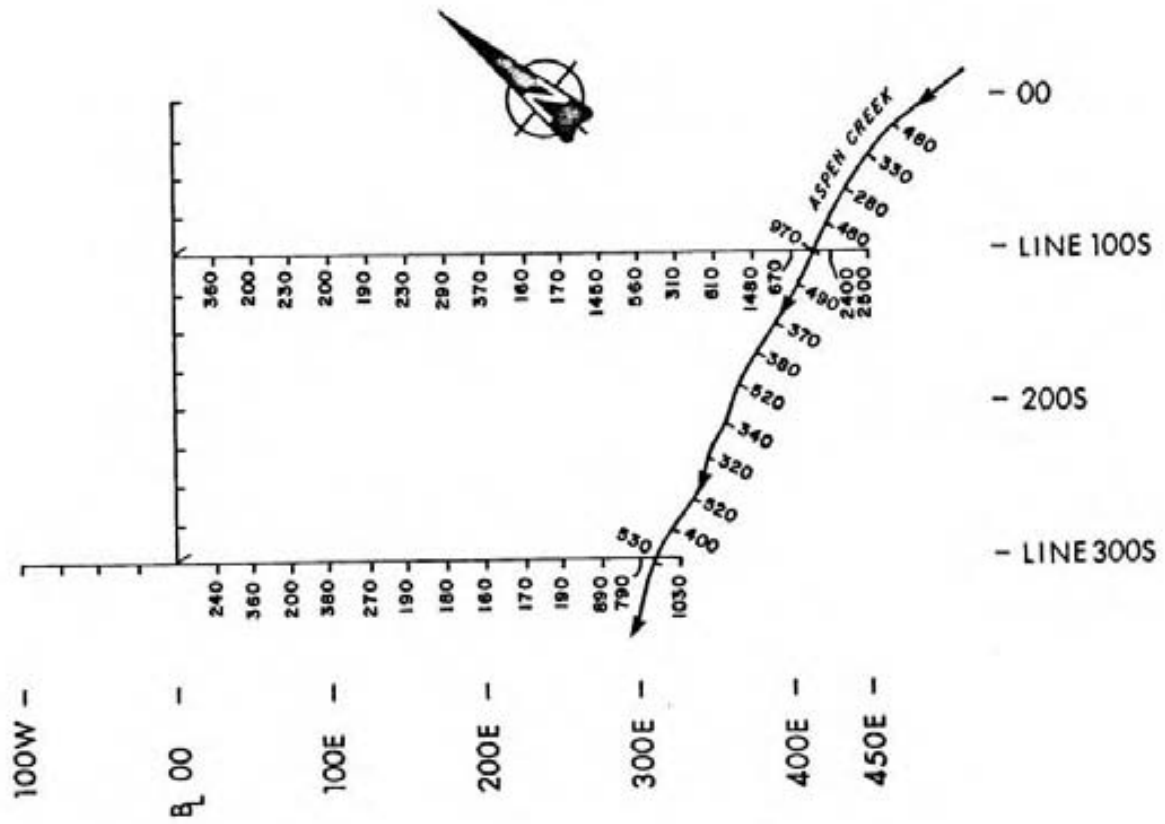
GEOCHEMICAL SURVEY
ZINC IN SOILS & SILTS (PPM)
FIGURE 6

COMPILED BY G.W.SINDEN


DATE OCT., 1984

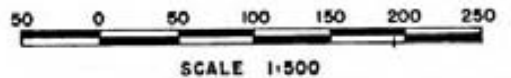
DRAWN BY S.ERSKINE

PROJECT



LEGEND

 Stream, Direction of Flow



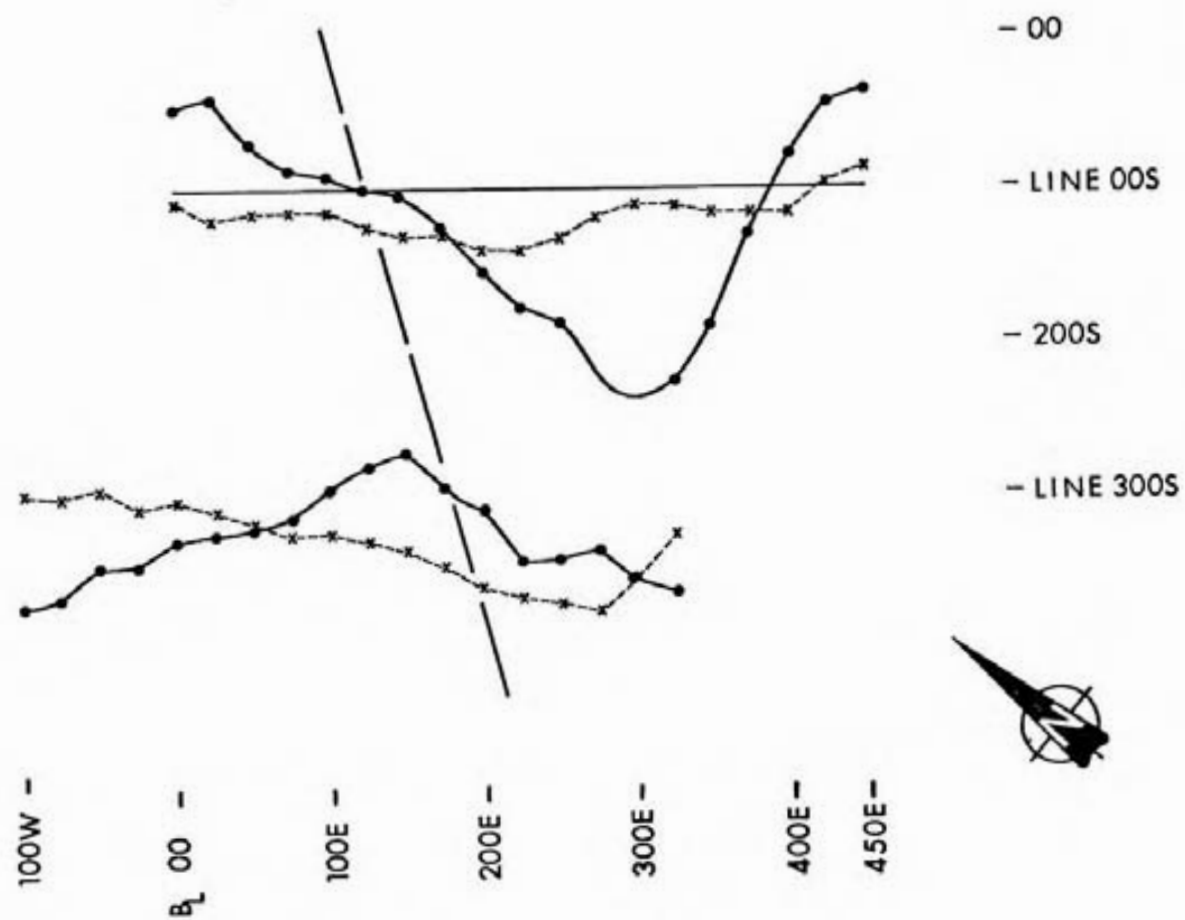
GREENWICH RESOURCES INC.	
ASPEN CLAIMS GEOCHEMICAL SURVEY SILVER IN SOILS & SILTS (PPb) FIGURE 7	
COMPILED BY G.SINDEN	DATE OCT., 1984
DRAWN BY S.ERSKINE	PROJECT

Stream sediments were collected at 25m intervals from the active channel in locations where sediment fines accumulated. Samples have been geochemically analyzed for Pb, Zn, Ag, Au (Figures 5,6,7 and 8).

6. GEOPHYSICS

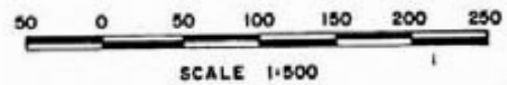
6.1 VLF-EM Survey

A VLF-EM reconnaissance survey was conducted over the soil survey grid (Figure 9). The results indicate the presence of a moderately conductive zone striking northwest/southeast. This VLF anomaly corresponds to a fault zone shown on the Nelson (West half) GSC Map 1090A, (Little, 1964). The relationship between this implied fault or structure and sulphide mineralization is unknown. Further VLF-EM survey work should be undertaken in an attempt to resolve local structural relationships with mineral occurrences and geochemical anomalies.



LEGEND

- In Phase Readings
 - x---x---x Out of Phase Readings
 - — — Conductor Axis
- Transmitter Station: Cutler
 Reading Direction: East
 Positive Readings Above Line $\frac{+}{-}$
 Dip Scale 1cm = 20 Degrees



GREENWICH RESOURCES INC.	
ASPEN VLF SURVEY FIGURE 9	
COMPILED BY G.W.SINDON	DATE OCT., 1984
DRAWN BY S.ERSKINE	PROJECT

7. CONCLUSIONS

1. Significant Pb and Zn values have been identified in soil on the Aspen claims. Stream sediments samples are similarly enriched. Both anomaly systems appear to reflect the presence of a known Pb-Zn-Ag-bearing vein system.
2. Significant Pb, Zn, Ag and Au values are identified in rock samples collected from the Aspen mineral occurrence area. These values indicate promise for an extensive base and precious metal-bearing vein and/or stockwork system.
3. Both regional and local geological environments favour the possibility of additional Pb-Zn-Ag mineralization and extensions of silicified shear zone systems and bodies in the Aspen Creek area.
4. The VLF-EM survey has outlined a moderately conductive anomaly corresponding to a previously defined fault zone.

8. RECOMMENDATIONS

1. Detailed mapping and soil and rock geochemical surveys should be carried out to evaluate the source of lead, zinc, silver and gold soil and stream sediment anomalies on the Aspen claim. A program of detailed sampling guided by prospecting and mapping is recommended.

2. A detailed VLF-EM survey should be carried out over the known mineral occurrence to relate sulphide mineralization to anomalies VLF-EM responses.

9. SELECTED REFERENCES

LITTLE, H.W., 1960.

Nelson Map area, West Half British Columbia (83FW 1/2),
G.S.C. Memoir 308.

LITTLE, H.W., 1964.

G.S.C. Map 1145A.

CERTIFICATE

I, Gordon W. Sinden, currently residing at 2607 - 123 10th Avenue S.W., Calgary, Alberta, T2R 1K8, hereby certify that:

1. I am a geological technologist and have practised my profession since 1977.
2. I am a graduate of Northern Alberta Institute of Technology (1977) in Mineral Resources Technology.
3. I am a Registered Engineering Technologist (Resources Technology) with the Alberta Society of Engineering Technologists.
4. I visited the Aspen claims during the period July 12 to August 23, 1984 and carried out the work described in this report.

Nov 23/84
DATE

Gordon Sinden
GORDON W. SINDEN, C.E.T.

CERTIFICATE

I, David S. Evans, currently residing at 5232 Viceroy Drive N.W., Calgary, Alberta T3A 0V7, hereby certify that:

1. I am a mining exploration geologist and have practised my profession since 1966.
2. I am a graduate of the University of British Columbia with a B.Sc. (1966) in Chemistry and Geology, and a graduate of the Royal School of Mines, University of London (U.K.) with a Ph.D. (1971) in Applied Geochemistry.
3. I am a registered Professional Geologist with the Association of Professional Engineers, Geologists and Geophysicists of Alberta, a member of the Society of Exploration Geochemists, and a fellow of the Geological Society of Canada.
4. I visited the Aspen claim area on August 11, 1984.
5. The work in this report was carried out under my supervision.

Nov 23, 1984

DATE

David S. Evans
DAVID S. EVANS, Ph.D., P. Geol.

APPENDIX 1

ANALYTICAL INFORMATION

Laboratory: TerraMin Research Labs Ltd.
Calgary, Alberta

Mesh Size: -80/soils and stream sediments,
-100/rocks

Extraction: For Pb/Zn : Nitric-Perchloric dissolution
to dryness, taken up in dilute
HCl.
For Au/Ag : Fire assay fusion and
cupellation followed by aqua
regia dissolution of the bead.

Analysis: Atomic Absorption

APPENDIX 2

GEOCHEMICAL DATA



TERRAMIN RESEARCH LABS LTD.

ANALYTICAL REPORT

Job # 84-147

Date

Client Project Aspen

Page 6/12

Sample No.	Pb ppm	Zn ppm
BL - 0+00	25	310
0+25 S	20	185
0+50	50	290
0+75	20	240
1+00	19	250
1+25	20	290
1+50	20	209
1+75	20	230
2+00	17	270
2+25	19	260
2+50	25	330
2+75	29	270
3+00	25	420
L 100 S 0+25 E	21	290
0+50	19	250
0+75	17	230
1+00	21	178
1+25	21	370
1+50	23	420
1+75	22	260
2+00	25	300
2+25	23	300
2+50	23	370
2+75	27	350
3+00	44	1370



TERRAMIN RESEARCH LABS LTD.

ANALYTICAL REPORT

Job # 84-147

Date

Client Project Aspen

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Sample No.	Pb ppm	Zn ppm
L 1+00 S 3+25 E	26	320
3+50	30	360
3+75	47	570
4+00	21	330
4+25	109	350
4+50	680	580
L 3+00 S 1+00 W	24	150
0+75	19	137
0+50	17	230
0+25	25	280
0+25 E	16	128
0+50	21	320
0+75	20	230
1+00	22	250
1+25	14	390
1+50	15	390
1+75	15	208
2+00	14	108
2+25	15	172
2+50	26	106
2+75	23	250
3+00	27	370
3+25	37	320
AC 1+00 N	20	570
0+75	15	490

ANALYTICAL REPORT

Job # 84-147

Date

Client Project Aspen

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Sample No.	Pb ppm	Zn ppm	Au ppb	Ag ppb
AC 0+50 N	14	460		
0+25	15	490		
0+00	34	890		
0+25 S	16	500		
0+50	16	480		
0+75	18	500		
1+00	26	660		
1+25	15	460		
1+50	16	480		
1+75	17	550		
2+00	27	510		
2+25	21	540		
Rock ASP-1	4	24	2	20



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ANALYTICAL REPORT

Job # 84-216

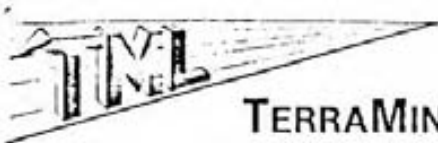
Robertson Research

Date Sept.28, 1984

Client Project ASPEN

Page 1/7

Sample No.	Au ppb	Ag ppm	Pb %	Zn %
<u>Rock</u> AA - 1	598	73.1	4.20	5.10
AA - 2	1020	110	4.80	4.00
AT - 2A	192	39.8	1.85	.900
AT - 2B	388	49.2	2.30	7.40
AT - 2C	740	64.8	3.30	1.60
AT - 5	710	76.4	3.00	1.50
AT - 11A	1290	272	6.70	3.00
AT - 11B	360	60.3	3.10	3.50



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ANALYTICAL REPORT

Job # 84-289 (from 84-147)

Robertson Research

Date Oct.23, 1984

Client Project **Aspen**

Page 1/2

Sample No.	Au ppb	Ag ppb
L 100 S 0+25 E	-2	360
0+50	2	200
0+75	4	230
1+00	2	200
1+25	-2	190
1+50	4	230
1+75	-2	290
2+00	-2	370
2+25	4	160
2+50	-2	170
2+75	-2	1450
3+00	-2	560
3+25	8	310
3+50	4	610
3+75	-2	1480
4+00	-2	670
4+25	-2	2400
4+50	24	2500
L 300 S 0+25 E	-2	240
0+50	-2	360
0+75	2	200
1+00	-2	380
1+25	4	270
1+50	2	190
1+75	-2	180



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ANALYTICAL REPORT

Job # 84-289

Date

Client Project Aspen

Page 2/2

Sample No.	Au ppb	Ag ppb
L 300 S 2+00 E	-2	160
2+25	-2	170
2+50	16	190
2+75	2	890
3+00	26	790
3+25	16	1030
AC 1+00 N	2	480
0+75	32	330
0+50	6	280
0+25	8	480
0+00	104	970
0+25 S	6	490
0+50	-2	370
0+75	-2	380
1+00	2	520
1+25	4	340
1+50	12	320
1+75	4	520
2+00	-2	400
2+25	10	530

APPENDIX 3

STATEMENT OF
EXPLORTATION EXPENDITURES

STATEMENT OF 1984 EXPENDITURES

ASPEN CLAIMS

Other Expenditures

Field Office Rental	\$ 70.00
Supplies and Equipment	120.00
Truck Rental (incl. gas, oil maintenance)	315.00
Travel, Mileage and Expenses	105.00
Analytical	591.75
Drafting	<u>150.00</u>

Total Other Expenditures \$1,351.75

Summary

Total Wages	\$ 2,060.00
Total Subsistence	350.00
Total Other Expenditures	<u>1,351.75</u>

Total Project Costs	3,761.75
Report Preparation	<u>720.00</u>

TOTAL 1984 EXPENDITURES \$ 4,481.75

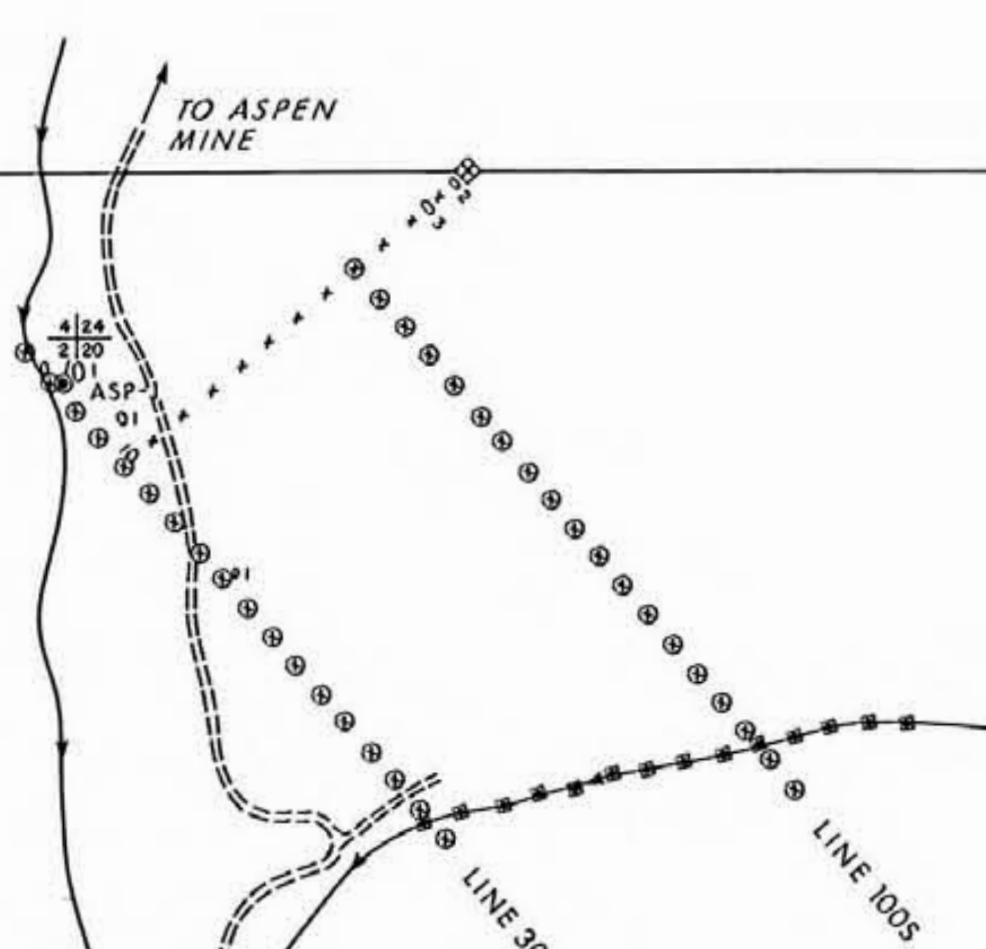
STATEMENT OF 1984 EXPENDITURES
ASPEN CLAIMS

NAME/ADDRESS	DAYS ON PROPERTY	WAGES			SUBSISTENCE				
		DAYS WORKED	DAILY RATE	TOTAL WAGES	DAYS	RATE PER DAY	AMOUNT		
Gordon W. Sinden, Senior Technologist, Robertson Research Canada Ltd. 300, 604 - 1st St. S.W. Calgary, Alberta T2P 1M7	July 12 to August 23	6.0	\$155.00	\$ 930.00	6.0	\$ 25.00	\$150.00		
David S. Evans, Exploration Manager/Geochemist, 5232 Viceroy Drive N.W. Calgary, Alberta T3A 0V7	August 11	1.0	\$360.00	\$ 360.00	1	\$ 25.00	\$ 25.00		
T. Joveski Geological Assistant R.R. # Nelson, British Columbia V1L 5P4	July 12 to August 23	7.0	\$110.00	\$ 770.00	7.0	\$ 25.00	\$175.00		
		TOTAL			\$2,060.00	TOTAL			\$350.00

ASPEN (3762)



TO ASPEN MINE



LINE 3005

LINE 1005

AA-2

AA-1

ASPEN CREEK

gate

TO SHEEP CREEK

LEGEND

- (3762) Property Record Number
- ⊙ VLF Reading
- x ⊙ Soil Sample Location
- ⊠ Silt Sample Location
- ⊙ Rock Sample Location
- ===== Road
- Trail
- ~ Stream, direction of flow
- ◆ Claim Post
- Y Adit
- ∩ Bridge
- Gate

Pb	Zn
(ppm)	(ppm)
Au	Ag
(ppb)	(ppb)

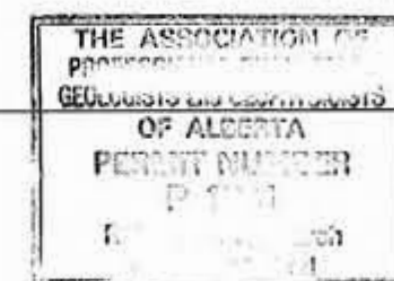
Geochemical Results

GEOLOGY

1. Schistose Argillite with Quartz Stringers
2. Grey to Buff, Banded, Crystalline (Sucrosic) Limestone
3. Reeves Limestone Outcrop

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0 50 100 150 200 250

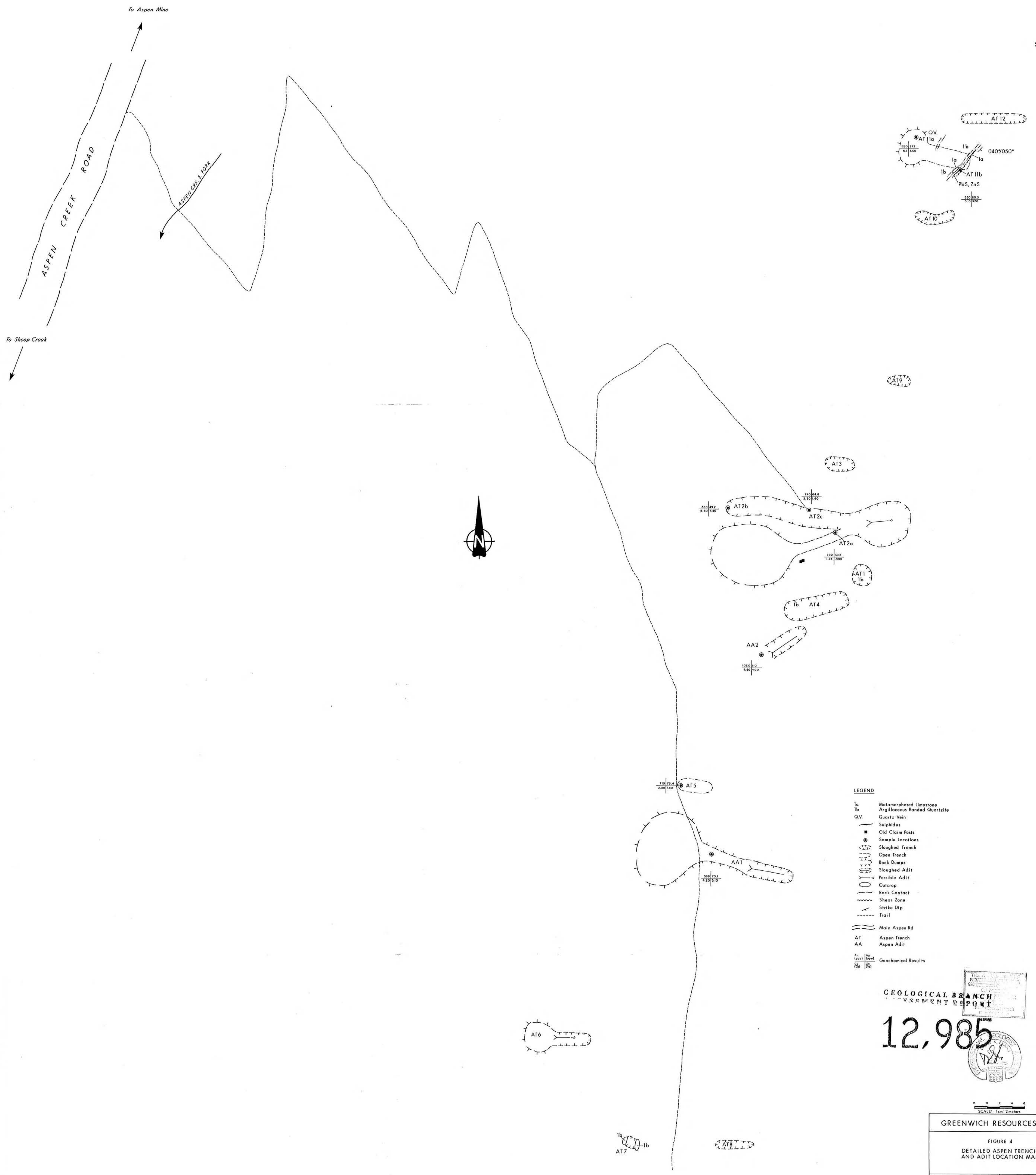
GREENWICH RESOURCES LTD.

ASPEN PROPERTY

GEOCHEMICAL/GEOPHYSICAL SURVEY AREA

FIGURE 3

COMPILED BY: G.SINDEN	DATE: OCT, 1984
DRAWN BY: S.ERSKINE	PROJECT:



LEGEND

- 1a Metamorphosed Limestone
- 1b Argillaceous Banded Quartzite
- Q.V. Quartz Vein
- Sulphides
- Old Claim Posts
- Sample Locations
- Sloughed Trench
- Open Trench
- Rock Dumps
- Sloughed Adit
- Possible Adit
- Outcrop
- Rock Contact
- Shear Zone
- Strike Dip
- Trail
- Main Aspen Rd
- AT Aspen Trench
- AA Aspen Adit
- Geochemical Results

GEOLOGICAL BRANCH
EXPLORATION REPORT

12,985



SCALE: 1cm = 2 meters

GREENWICH RESOURCES INC.

FIGURE 4
DETAILED ASPEN TRENCH
AND ADIT LOCATION MAP

Compiled By	R. T. Jovaski	Date	July, 1984
Drawn By	S. Erskine	Project	