86-405-14876

ASSESSMENT REPORT
GEOLOGY, GEOPHYSICS, LITHOCHEMISTRY

and

SOIL CHEMISTRY

on

PART OF THE JENNY GROUP
VANCOUVER ISLAND, B.C.

on behalf of

WESTMIN RESOURCES LTD.
P.O. Box 8000
Campbell River, B.C. V9W 5E1

Alberni M.D.
92F 2E
49° 09'
124° 39'

Report by
John J. Watkins, Geologist
JAM GEOLOGICAL SERVICES
P.O. Box 308
Royston, B.C. V0R 2V0

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF MAPS (In report pocket)

APPENDICES

SUMMARY

Carbonate altered basalt flows of the Upper Paleozoic Sicker Group are spatially related to the north trending Mineral Creek-Williams Creek fault. Anomalous concentrations of gold, arsenic, zinc and lead are localized in the zone of carbonate alteration close to positive IP and VLF responses. A small amount of gold, won from quartz veins cutting carbonate altered basalt, is reported from the Vancouver Island Gold Mine one kilometer to the north and is probably part of the same mineralized zone. The mineralized and carbonate altered zone which may be broadly stratabound is developed at a lithologic transition from basalt to dacite.

Further work is recommended.

1. INTRODUCTION

1.1 Property Definition

The Jenny group consists of four contiguous mineral claims (Figure 1) totalling 54 units described as follows:

Claim Name	No of Units	Record No.	Anniversary Date
Linda 1	16	454(5)	May 2
Linda 2	12	455(5)	May 2
Jenny	20	636(11)	November 13
Loupy	6	673(11)	November 13

1.2 Location, Access and Physical Features

The Jenny group is located 12 kilometers east of Port Alberni on Vancouver Island (Figure 2). Access to the claim group is best by an all weather, gravel, logging road that follows China Creek from Cameron on the Bamfield Road.

The claim group straddles the steep sided valley of China Creek. North of the creek, the property covers part of the south face and upper plateau-like reaches of [illegible]lin Ridge. The south half of

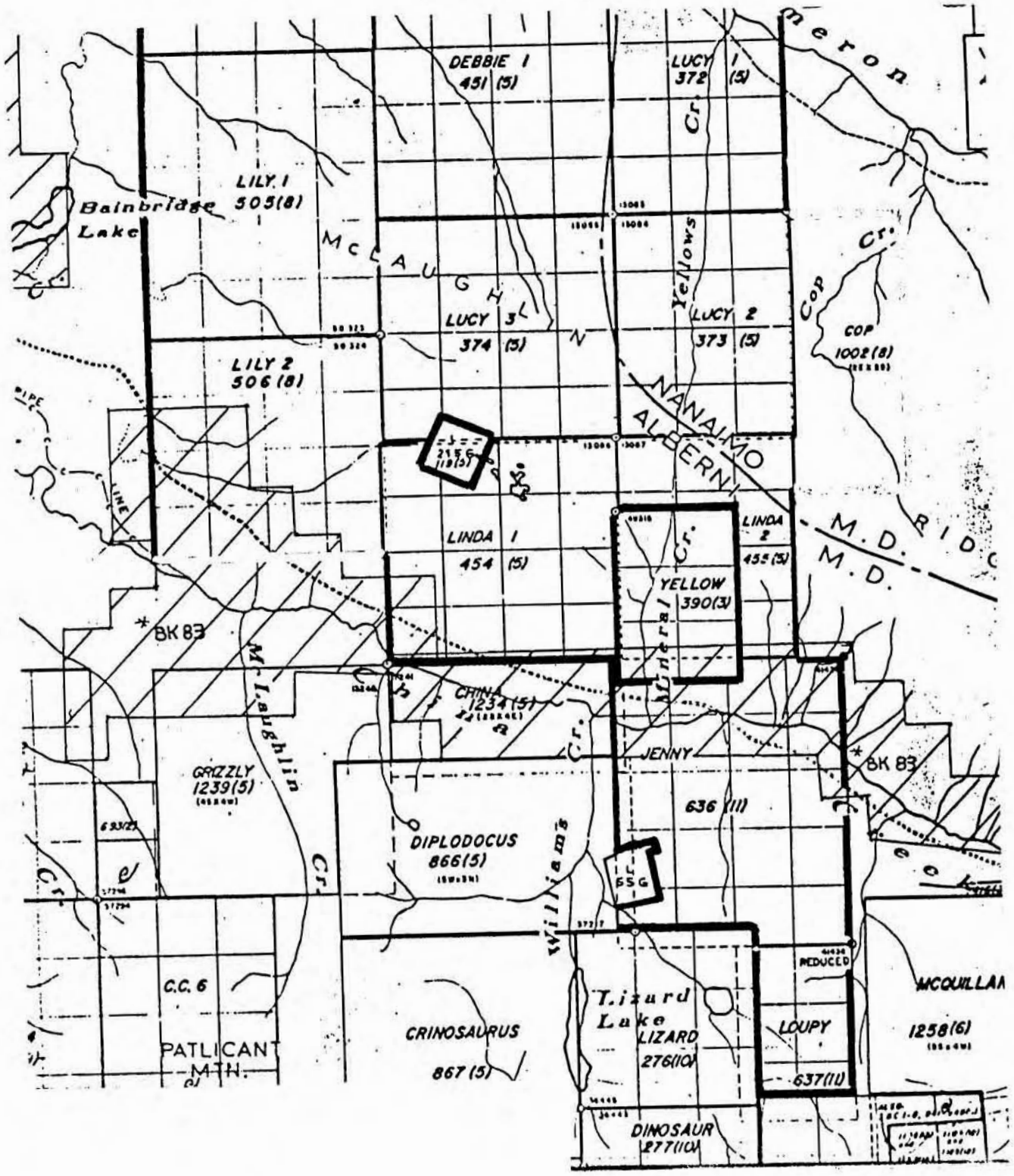


Figure 1. Property definition, Jenny claim group: Linda 1, Linda 2, Jenny and Loupy. NTS 92F/2E, Scale 1:50,000

0 1 KM

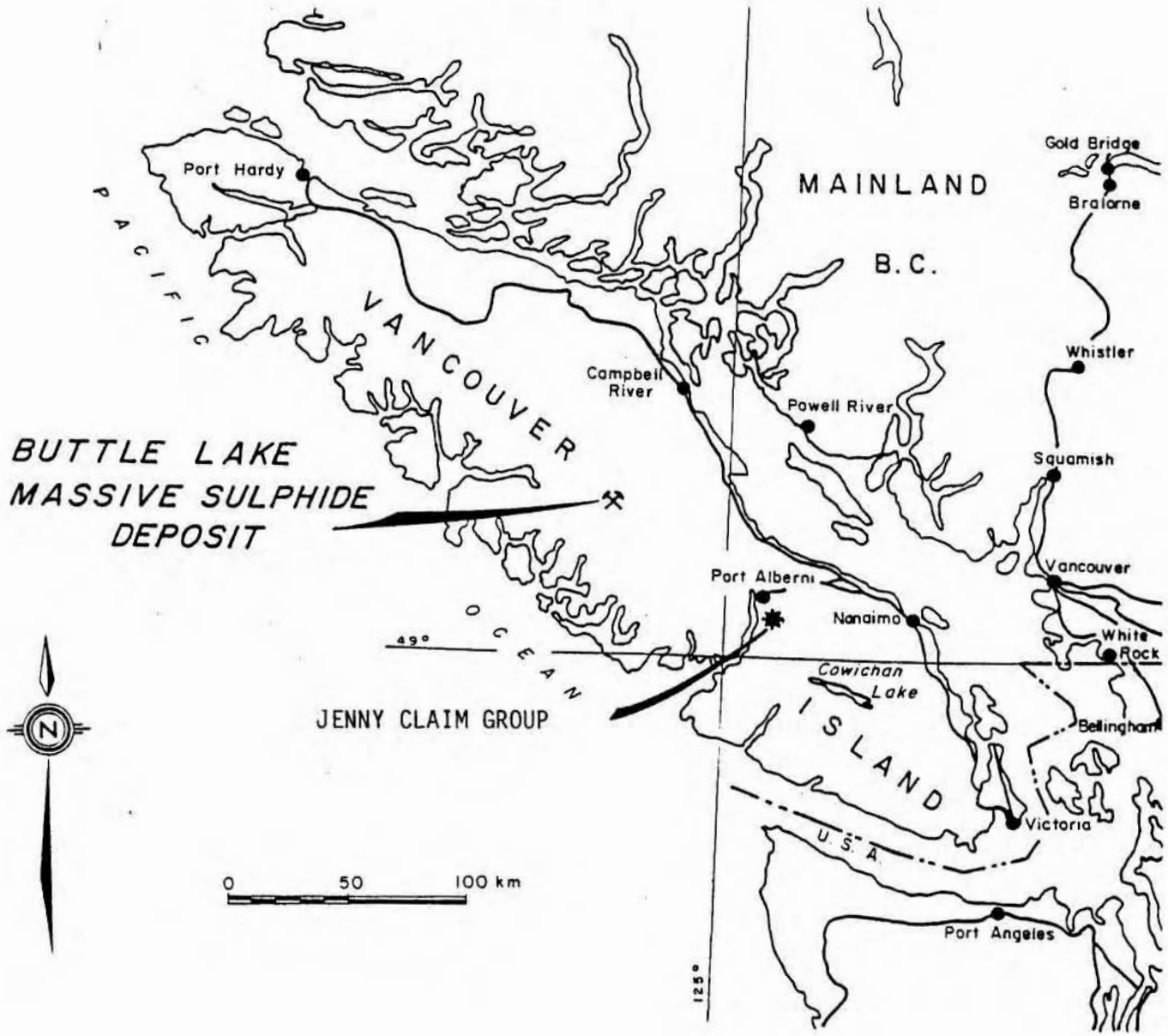


Figure 2. Location of the Jenny claim group, Vancouver Island

the claim group covers the north slopes of Douglas Peak.

Most of the Jenny and Loupy claims are covered by old and new logging slash. The lower slopes of China Creek Valley are covered with second tree growth. The upper reaches of the Linda 1 and Linda 2 claims are covered with open, mature, first growth fir forest.

1.3 Property History

The China Creek area has a long history of mineral exploitation and exploration, beginning as early as 1862 with placer mining. Lode mining near Mineral Creek by Consolidated Alberni Gold Mining Co. and later by Vancouver Island Gold Mines Ltd. in the 1890's and mid-1930's respectively, won 303 ounces of gold and 52 ounces of silver from 403 tons mined (Stevenson, 1944). These old workings now lie within the Yellow claim centered in, but not part of, the Jenny group (Figure 1).

On the Regina group, now part of the Jenny claim and Crown Grant L55G (Figure 1), the Alberni Gold Development Syndicate in the late 1890's drove several adits into "silicified and pyritized andesite" and reported gold values to 0.64 ounces per ton along with chalcopyrite and galena (Stevenson, 1945).

Westmin Resources Ltd. staked the Jenny claim in 1979 in their search for Buttle Lake-type (Walker, 1983) exhalative sulphide ores. To date, Westmin has carried out airborne geophysics, mapped geology, covered all but valley fill with soil geochemistry, and detailed the Regina workings area with ground geophysics.

1.4 Objectives of This Study

The objective of this work is to evaluate the significance of anomalous gold values reported by Westmin in soils and verify the existence of an airborne EM response centred on the floor of China Creek valley near Mineral Creek.

2. WORK SUMMARY

Two geologists from JAM Geological Services spent 8 days in the field from April 23 to April 30 examining and sampling exposed bedrock, and carrying out soil sampling surveys. A crew of three, lead by Alan Scott, geophysicist, conducted induced polarization and VLF-EM surveys from April 24 to 26, 1986 over the area of the airborne EM response.

2.1 Geology

Bedrock exposure in the area of interest at the lower reaches of China Creek Valley are poor. Outcrops are present above the level of valley fill, first at lower elevations in stream channels, and at higher elevations as cliff faces and ridges. Traverses were made along the course of China Creek and along stream channels running into China Creek from McLaughlin Ridge and Douglas Peak. Most field time was spent searching for exposures at the lower elevations.

Outcrops examined are shown on Map 1.

2.2 Geochemistry

2.2.1 Rock

Twenty-eight rock samples were submitted to Chemex Labs Ltd. of North Vancouver for gold and trace element analysis. Sample locations are shown on Map 1. Descriptions of rock samples can be found in Appendix I and analytical results in Appendix II of this report.

2.2.2 Normal Soils

Forty normal soil samples were collected from two grid areas, B and C on Map 1, and submitted to Min-En Labs Ltd., North Vancouver for analysis. The two grids were positioned over earlier reported soil anomalies (Benvenuto, 1981). Results are given in Appendix III of this report.

2.2.3 Heavy Mineral Separates from Soils

Ten large soil samples, collected from one line, at intervals of 20 meters across an earlier reported soil anomaly (Benvenuto, 1980) are shown on grid A on Map 1. The samples were submitted to Min-En Labs Ltd. for heavy mineral separation and analysis. Results and sample

preparation procedure are given in Appendix IV of this report.

2.3 Geophysics

A total of 3.4 line kilometers of induced polarization and VLF-EM surveys were carried out over four lines centred near the junction of Mineral and China creeks (Map 1). The report describing procedures and results can be found in Appendix V of this report.

3. DETAILED TECHNICAL DATA

3.1 Geology

3.1.1 Regional Setting

The Jenny claim group lies within rocks of the Sicker Group (Figure 3), the oldest stratigraphic unit recognized on Vancouver Island. Sicker Group rocks are basement to at least two depositionally stacked, lower Mesozoic tectonostratigraphic assemblages which now define a terrane called Wrangellia by Jones and others (1977). Wrangellia apparently persisted as a discreet entity until Late Jurassic time, when it coalesced with a second terrane, Alexander, to form a composite terrane that now corresponds closely with the Insular Belt, one of five geologic and physiographic belts of the Canadian Cordillera. Sicker Group rocks appear to be a consequence of a Late Devonian-Permian volcanic arc.

The claim group lies at the northwest edge of a 10 kilometer wide belt of Sicker Group rocks, the "Cowichan-Horne Lake uplift" best described by Muller (1980) as á complex anticlinal uplift. Immediately west of the claim group, Sicker group rocks are in fault contact with both younger Wrangellia rocks, flood basalts of the Karmutsen Formation, and with post-Wrangellian Late Mesozoic non-marine grading to marine clastic sediments of the Nanaimo Group and Jurassic

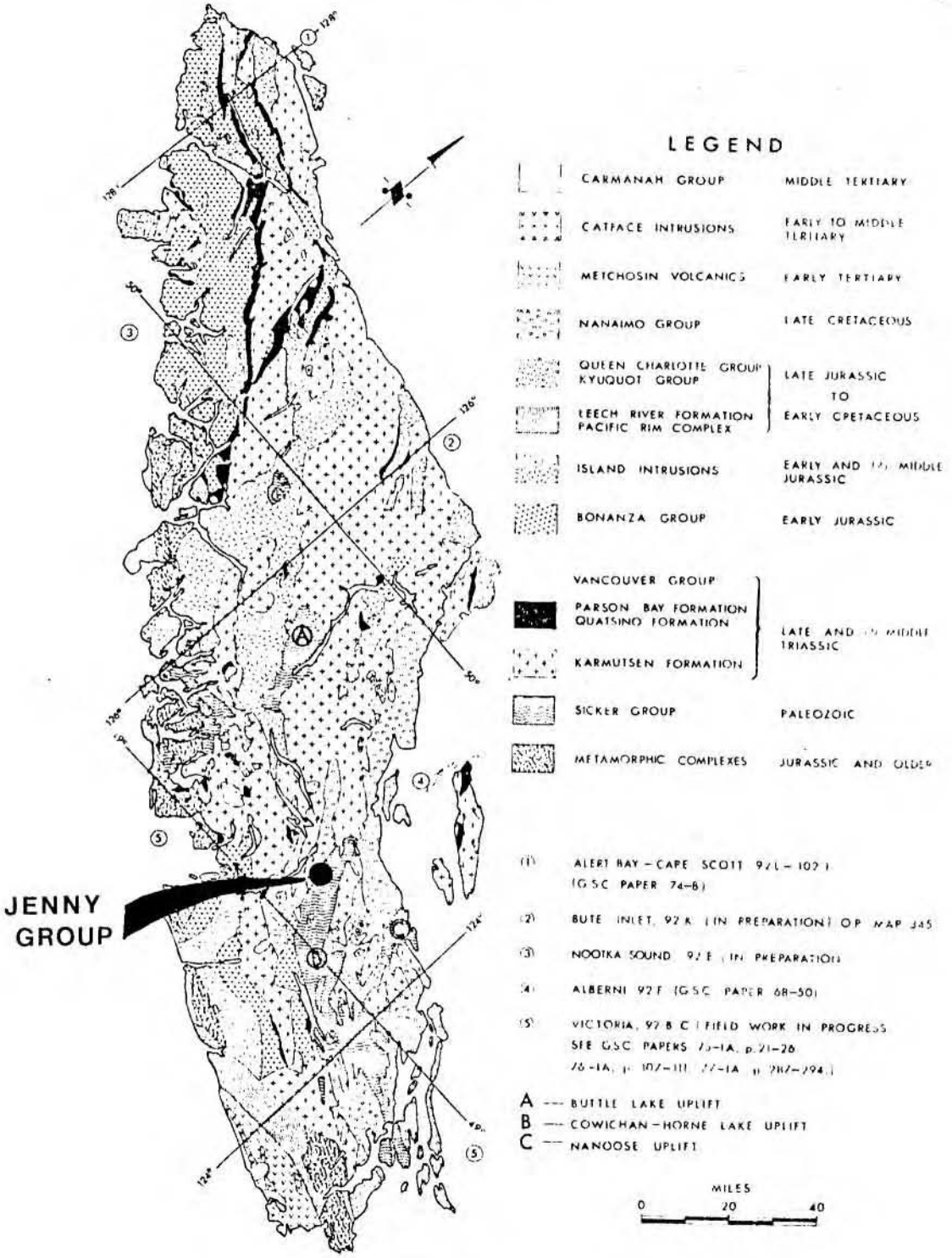


Figure 3. Geology map Vancouver Island

batholithic granitoid rocks. A large, suspected early Tertiary, feldspar porphyritic stock of intermediate composition intrudes Nanaimo Group rocks four kilometers east of the Claim group.

This area of Vancouver Island is dominated by steep long lived north and northwesterly directed fault systems. Faulting in a northeastern direction has affected younger Mesozoic and Tertiary rocks.

3.1.2 Property Setting

Most of the Claim group is underlain by basaltic flow and volcaniclastic rocks, and less extensively by massive crystalline dacitic flows and lapilli tuffs that are best developed at higher elevations on the Jenny and Linda 1 claims. Intracalated with basalts are narrow magnetite-bearing tuffaceous units with associated sedimentary chert.

In the area examined, centred near the confluence of China and Mineral creeks, lithologic units generally trend at approximately 140° and dip 20° to 40° easterly. Masking primary depositional features is a superimposed foliation trending about 155° and dipping easterly 70° to 80° with rare steep west dips. A conspicuous mineral lineation is locally well developed on this later schistosity, trending about 160° and plunging 10° northwest.

It is interpreted that the central part of the claim group occupies the east limb of a shallow, north-plunging open anticlinal fold. The fold is cored by basaltic flows and flow breccias, intracalated tuffaceous sediments and sedimentary chert, and overlain stratigraphically by more siliceous, dacitic flows and associated clastics.

Further complicating stratigraphic relationships is a north-south fault occupying the channel of Mineral Creek. The Mineral Creek fault is probably the north extension of a fault that now follows Lizard Lake and Williams Creek, and is a boundary between Sicker Group and Karmutsen Formation rocks. If at one time a continuous structure, the Williams Creek-Mineral Creek fault is now offset left-laterally by a west-trending fault following China Creek. However, no westerly trending faults were seen in the channel of China Creek. Of possible economic significance is the spatial association to the Mineral Creek-Williams Creek fault of the lode gold veins on the Yellow claim and the pyritized volcanics at the Regina Workings.

3.2 Geochemistry

3.2.1 Rock

Gold: Eleven of 28 rock samples collected returned gold values greater than 50 ppb, and four samples returned values exceeding 500 ppb. Rock samples reporting greater than 50 ppb Au are highlighted on Map 1.

Arsenic: Eight of 28 rock samples collected returned arsenic values exceeding 100 ppm with three samples exceeding 1,000 ppm. High arsenic values tend to correlate with high gold values on Mineral Creek. Near the Regina working, high gold values do not have accompanying high arsenic values.

Silver: Seven of 28 samples reported silver values greater than 1.0 ppm, with two samples exceeding 10.0 ppm. High silver values report with high gold values, but the inverse is not true.

Base Metals: Two samples returned significant zinc enrichment (2,260 ppm and 1.34%) and both report high gold values (920 ppb and 1,300 ppb, respectively). Four samples returned high lead values (40, 303, 390 and 880 ppm) and all report with high gold values (240, 150, 920, and 1,300 ppm, respectively). No high copper values are reported.

3.2.2 Standard Soil

Two small grids covering areas of earlier reported anomalous gold values in soil (Benvenuto, 1980) were resampled. The two sample sites are shown on Map 1.

Site B totalled 17 samples collected at 50 meter intervals from three 100 meter spaced lines. A weak, 40 ppb gold, anomaly with no accompanying arsenic enrichment, correlates across all three lines.

Benvenuto's 1980 survey reported 240 and 2,700 ppb gold at sample sites B-8 and B-10, respectively.

Site C totalled 23 soil samples collected at 50 meter intervals from five 100 meter spaced lines. Seven samples returned significant gold and all are accompanied by high arsenic values. The seven enriched samples define a contiguous area across three lines that is open, untested by soils, to the south. The area of gold enrichment is outlined on Map 1 by values exceeding 60 ppb and includes five samples exceeding 100 ppb and one sample returning a high 3,400 ppb. The anomalous soils correlate with high gold and arsenic values in rock.

The earlier survey (Benvenuto, 1980) reported 330 and 280 ppb gold at the approximate position of sample sites C-8 and C-18, respectively.

3.2.3 Heavy Mineral Separates, Soil

Ten, 10-kilogram samples (A1 to A10) of "B" horizon soil were collected at 25 meter intervals along one line. Sample preparation procedures and analytical results are given in Appendix IV. All samples were analysed as normal soil samples for Cu, Pb, Zn, and As, and heavy mineral separates analysed for Cu, Pb, Zn, Ag, As, and Au. This sample traverse was made across the end of a 400 meter long anomaly that reported 950, 200 and 380 ppb gold on three, 200 meter spaced lines (Benvenuto, 1980).

Gold enrichment into heavy mineral separates is apparent. Base metal enrichment is slight and arsenic depletion appears for the two highest values (A1 and A2) with a slight enrichment in others.

3.3 Geophysics

Induced polarization and VLF surveys were performed by Alan Scott, Geophysicist on four lines totalling 3.4 kilometers. The objective of the survey was to identify and characterize an airborne EM conductor positioned near the confluence of Mineral & China creeks.

Survey grid location with highlights is shown on Map 1. Technical data is enclosed as Appendix V.

4. DISCUSSION AND CONCLUSIONS

On the Jenny claim group anomalous gold values, widespread carbonate alteration with a possible stratabound character developed in basalt near stratigraphically higher dacite flows, and a spatial relationship to a steep dipping, regional fault characterizes the mineralization as epigenetic-type similar to the large gold deposits of the Archean Porcupine camp of northeastern Ontario. Evidence suggests (Kerrich and Fyfe, 1981) that some of the large Archean gold systems formed as a consequence of metamorphic degassing. CO_2-rich fluids released by dehydration reactions moved up shear zones and faults to form greenstone gold deposits. This model has been applied to both epigenetic and syngenetic mineralization.

In conclusion, further work is recommended on the Jenny group in the form of detailed geology enhanced by trenching, geophysics and diamond drilling.

5. STATEMENT OF COSTS

Geophysics, April 24, 25, 26 (3 days)		
Alan Scott, Geophysics		
Dave Hall, Field Assistant	$ 330.00	
Ken Moir, Field Assistant	330.00	
IP Survey	2,760.00	
VLF Survey	272.00	
Report Preparation	462.95	
Food and Accommodation	609.28	
	$4,764.23	
85% applied to Jenny Group		$4,049.60
Geology, April 23-30 (8 days)		
Field Work, JAM Geological Services	$2,400.00	
John J. Watkins, Geologist		
Marilyn Atkinson, Geologist		
Mobilization and demobilization	300.00	
Food and Accommodation	603.64	
Field Materials	30.00	
Truck and FUel	534.85	3,868.49
Analytical Work		
Chemex Labs Ltd.	$ 451.08	
Min-En Labs Ltd.	814.10	1,265.18
Assessment Report Preparation		
Drafting, WHW Drafting Services	$ 60.00	
Typing, Woodcomp Management Ltd.	70.00	
Photocopies, Materials	20.50	
Report, JAM Geological Services July 14 to 17	800.00	950.50
Management		
Richard R. Walker, Westmin Res. Ltd.	$ 300.00	
Expenses	90.00	
Truck	50.00	440.00
		$10,573.77

6. STATEMENT OF QUALIFICATION

I, John J. Watkins, of Royston, British Columbia, do hereby certify that:

I am a graduate of Queen's University, Kingston, Ontrio, graduated with a B.Sc. Honours Degree in Geology in 1972, and with a M.Sc. Degree in Geology in 1980.

I have practised my profession continuously since graduating, holding positions with Texasgulf Inc., Corporation Falconbridge Copper, Canadian Superior Exploration Ltd. and Homestake Mineral Development Co. I have been a practising consulting geologist since 1983.

I am a Fellow of the Geological Association of Canada.

I personally supervised work on the Jenny claim group.

July 15, 1986
Royston, B.C.

J. J. Watkins

GEOLOGICAL ASSOCIATION OF CANADA
J. J. WATKINS
FELLOW

7. REFERENCES

Benvenuto, G. (1980) Results of geologic, geochemical soil, and induced polarization surveys on the McLaughlin Ridge property, Port Alberni, Vancouver, B.C., 1980 (Sicker-Debbie project), Westmin Res. Ltd., unpublished company report.

Jones, D.L., Silberling, N.J., and Hillhouse, J.W. (1977) Wrangellia - A displaced terrane in northwestern North American, Can. Jour. Earth. Sci., Vol. 14, pp. 2565-2577.

Kerrich, R., and Fyfe, W.S. (1981) The gold-carbonate association: Source of CO_2, and CO_2-fixation reactions in Archean lode deposits: Chem. Geology, V.33, pp. 265-294.

Muller, J.E. (1980) The Paleozoic Sicker Group of Vancouver Island, B.C., Geol. Surv. Can. Pap. 79-30.

Stevenson, J.S. (1945) Geology and ore deposits of the China Creek area, Vancouver Island, B.C., Annual Report of the Minister of Mines, 1944, pp. A143-A161.

Walker, R.R. (1985) Westmin Resources' massive sulphide deposits, Vancouver Island in Mineral Deposits of Vancouver Island by J. Fleming, R. Walker, and P. Wilton. GAC-MAC-CGU Field Trip Guidebook, Trip 9, May 13-16, 1983.

APPENDIX I

ROCK SAMPLE DESCRIPTIONS
Submitted for
Analysis

Map Location No.	Sample No.	Description
8	43601	calcite altered mafic volcanic flow, moderately to strongly sheared at 155°/60°E over 2 meters, 5% white quartz cutting schist, trace pyrite
10	43602	quartz and iron carbonate-heeled schist, 3% fine diss. pyrite, trace arsenopyrite, fine cross-cutting quartz veins
11	43603	similar to 43602 with less than 1% pyrite, no arsenopyrite
12	43604	cherty tuff, 5% disseminated magnetite, 1% pyrite, 20% white quartz as irregular patches
13	43605	calcite-rich schist with 5% fine quartz veins, 2% pyrite, schist at 155°/65°E
18	43606	grey chert, 5% disseminated and fracture controlled pyrite, fine magnetite
19	43607	well banded chert at 025°/40°SE, trace of pyrite
20	43608	strongly carbonate-quartz altered mafic volcanic, minor pyrite, heeled schist at 130°/$\pm$90°
22	43609	calcite altered mafic schist, at 175°/190° with 10% quartz-rich knots, 5% pyrite
24	43610	5 cm. wide clay gouge fault at 165°/80°W hosted by carbonate altered mafic volcanic, 5% white qtz
25	43611	semi-massive sulphide, 30% pyrite in granular quartz-rich host, attitude not determined
26	43612	25 cm wide band of semi-massive sulphide (30% pyrite) trending at approx. 170°/$\pm$90°?, quartz carbonate chlorite host

Map Location No.	Sample No.	Description
27	43613	20 cm. wide band of semi-massive sulphides (30% pyrite), attitude undetermined
28	43614	adit, sample from back at entrance, white granular quartz, 30% granular pyrite, 10% white cross-cutting quartz
29	43615	quartz-iron carbonate altered mafic? rock, 5% fine quartz veining, fresh sample grey green, 1% fine pyrite, trace arsenopyrite
30	43616	same zone as 43615, silicified quartz-carbonate with 20% quartz veining, fine quartz veining, 5% sphalerite, 1% pyrite, 1% fine arsenopyrite
32	43617	carbonate-heeled, well banded mafic tuff at 170°/75°E, less than 1% fine pyrite, 10% quartz carbonate veining at 010/50°E, all cut by strong shear at 025°/75°E
33	43618	quartz-carbonate vein 5 cm. wide, 2% pyrite, narrow dark grey bands with 1% fine arsenopyrite, veining at 155°/40°E all cutting well banded carbonate altered mafic tuff
34	43619	5 cm. wide quartz vein cutting carbonate altered mafic tuff with narrow parallel veinlets containing dark grey, sulphide rich bands, 3% fine arsenopyrite, 1% pyrite, minor sphalerite, trace galena
56	43620	quartz vein, 5 cm. wide cutting feldspar porphyry
57	43621	same as 43620 with 1% fine pyrite
58	43622	quartz vein parallel foliated mafic tuff at 140°/80°E, 50% quartz, minor pyrite
59	43623	cherty knots in schistose mafic tuff, schist at 170°/$\pm$90E, trace pyrite

Map Location No.	Sample No.	Description
65	43624	at soil station C-10, large angular rubble of orange stained, carbonate altered rock, massive, light buff coloured fresh surface, fine quartz-carbonate veining with fine pyrite, sample contains approx. 40% quartz
66	43625	outcrop similar to 43624 with white quartz veining, 3% pyrite
67	43626	4 meter thick chert band, contacts not seen, 2% diss. pyrite
68	43627	at soil station C-16, massive siliceous dacite, granular, feldspathic with siliceous groundmass, no sulphides
69	43628	1 X 1 meter area of scree, cherty iron formation, 5% pyrite, trace of fine arsenopyrite

APPENDIX II

ANALYTICAL RESULTS, ROCK

Chemex Labs Ltd.

Analytical Chemists • Geochemists • Registered Assayers

212 Brooksbank Ave.
North Vancouver, B.C.
Canada V7J 2C1
Phone: (604) 984-0221
Telex: 043-52597

CERTIFICATE OF ANALYSIS

TO : WESTMIN RESOURCES LTD.
WESTERN MINES DIVISION
P.O. BOX 8000
CAMPBELL RIVER, B.C.
V9W 5E2

P.O. BOX 308
ROYSTON, B.C.
V0R 2V0

CERT. # : A8612567-001-A
INVOICE # : I8612567
DATE : 13-MAY-86
P.O. # : NONE
DEBBIE

✓CC: JAM GEOLOGICAL

MAP NO.	Sample description	Prep code	Cu ppm	Pb ppm	Zn ppm	Ag ppm Aqua R	AS ppm	Au ppb FA+AA
8	43601	205	70	1	37	0.1	3	<5
10	43602	205	34	2	46	2.5	100	40
11	43603	205	61	1	51	0.2	32	<5
12	43604	205	78	1	13	0.1	29	100
13	43605	205	65	1	56	0.1	11.	<5
18	43606	205	11	1	7	0.1	5	<5
19	43607	205	47	1	56	0.1	5	<5
20	43608	205	40	1	117	0.1	3	<5
22	43609	205	51	3	36	0.1	4	<5
24	43610	205	104	5	81	0.3	70	70
25	43611	205	65	40	19	4.6	16	240
26	43612	205	35	9	89	0.8	12	90
27	43613	205	34	303	25	5.0	36	150
28	43614	205	15	5	5	0.7	5	10
29	43615	205	33	1	76	1.2	290	20
32	43617	205	47	1	71	0.1	53	15
33	43618	205	33	1	48	0.2	1200	680
34	43619	205	116	390	2260	11.0	8000	920
56	43620	205	11	2	25	0.1	36	10
57	43621	205	49	1	61	0.1	19	<5
58	43622	205	62	1	61	0.1	12	<5
59	43623	205	34	1	27	0.1	6	15
65	43624	205	61	3	68	0.8	110	45
66	43625	205	8	8	92	1.2	210	265
67	43626	205	30	7	25	0.1	15	210
68	43627	205	29	1	125	0.1	11	<5
69	43628	205	22	3	27	0.3	220	750

VOI rev. 4/85

Certified by ..Hans Bichler.....

Chemex Labs Ltd.

Analytical Chemists · Geochemists · Registered Assayers

212 Brooksbank Ave.
North Vancouver, B.C.
Canada V7J 2C1
Phone: (604) 984-0221
Telex: 043-52597

CERTIFICATE OF ANALYSIS

TO : WESTMIN RESOURCES LTD.
WESTERN MINES DIVISION
P.O. BOX 8000
CAMPBELL RIVER, B.C.
V9W 5E2

General Delivery
Royston, BC
V0R 2V0

CERT. # : A8612568-001-A
INVOICE # : I8612568
DATE : 14-MAY-86
P.O. # : NONE
DEBBIE

CC: JAM GEOLOGICAL

Map No	Sample description	Prep code	Cu ppm	Pb ppm	Ag ppm Aqua R	AS ppm	Au ppb FA+AA	
30	43616	208	85	880	46.0	4800	1300	--

VOI rev. 4/85

Certified by Hans Bichler

Chemex Labs Ltd.

Analytical Chemists · Geochemists · Registered Assayers

212 Brooksbank Ave.
North Vancouver, B.C.
Canada V7J 2C1
Phone: (604) 984-0221
Telex: 043-52597

CERTIFICATE OF ASSAY

TO : WESTMIN RESOURCES LTD.
WESTERN MINES DIVISION
P.O. BOX 8000
CAMPBELL RIVER, B.C.
V9W 5E2

CC: JAM GEOLOGICAL

CERT. # : A8612568-001-A
INVOICE # : I8612568
DATE : 14-MAY-86
P.O. # : NONE
DEBBIE

Map No.	Sample description	Prep code	Zn %					
30	43616	208	1.34	--	--	--	--	--

VOI rev. 4/85

Registered Assayer, Province of British Columbia

13450

APPENDIX III

ANALYTICAL RESULTS, SOILS

MIN-EN Laboratories Ltd.
Specialists in Mineral Environments
705 WEST 15th STREET NORTH VANCOUVER, B.C. CANADA V7M 1T2

PHONE: (604) 980-5814 OR (604) 988-4524 TELEX: 04-352828

GEOCHEMICAL ANALYSIS CERTIFICATE

COMPANY: WESTMIN RESOURCES/JAM GEOLOGICAL
PROJECT: DEBBIE
ATTENTION: R.WALKER

FILE: 6-220
DATE: MAY 12/86.
TYPE: -80M SOIL GEOCHEM

We hereby certify that the following are the results of the geochemical analysis made on 10 samples submitted.

SAMPLE NUMBER	CU PPM	PB PPM	ZN PPM	AS PPM
A-1	59	6	56	204
2	67	9	54	200
3	56	7	74	8
4	82	7	87	3
5	106	8	83	1
6	56	6	78	1
7	50	6	81	2
8	39	7	91	1
9	71	8	96	8
A-10	72	8	81	8

Certified by

MIN-EN Laboratories Ltd.
Specialists in Mineral Environments
705 WEST 15th STREET NORTH VANCOUVER, B.C. CANADA V7M 1T2

PHONE: (604)980-5814 OR (604)988-4524 TELEX: 04-352828

GEOCHEMICAL ANALYSIS CERTIFICATE

COMPANY: WESTMIN RESOURCES/JAM GEOLOGICAL
PROJECT: DEBBIE
ATTENTION: R.WALKER

FILE: 6-220
DATE: MAY 9/86.
TYPE: SOIL GEOCHEM

We hereby certify that the following are the results of the geochemical analysis made on 17 samples submitted.

SAMPLE NUMBER	AS PPM	AU PPB
B-1	7	10
2	5	5
3	7	40
4	1	10
5	2	10
6	1	5
8	5	10
9	1	5
10	6	45
11	4	5
12	8	5
13	3	3
14	4	5
15	8	40
16	3	5
17	7	5
B-18	4	10

Certified by 

MIN-EN Laboratories Ltd.
Specialists in Mineral Environments
705 WEST 15th STREET NORTH VANCOUVER, B.C. CANADA V7M 1T2

PHONE: (604) 980-5814 OR (604) 988-4524 TELEX: 04-352828

GEOCHEMICAL ANALYSIS CERTIFICATE

COMPANY: WESTMIN RESOURCES/JAM GEOLOGICAL
PROJECT: DEBBIE
ATTENTION: R.WALKER

FILE: 6-219
DATE: MAY 9/86.
TYPE: SOIL GEOCHEM

We hereby certify that the following are the results of the geochemical analysis made on 23 samples submitted.

SAMPLE NUMBER	AS PPM	AU PPB
C-1	32	190
2	51	515
3	123	450
4	114	10
5	77	5
6	75	5
8	21	85
9	114	3400
10	32	155
11	3	5
12	29	5
13	31	60
14	348	250
15	21	5
16	7	3
18	3	15
19	7	10
20	6	30
21	1	30
22	3	5
23	1	5
24	6	3
C-25	9	10

Certified by _____

MIN-EN Laboratories Ltd.

705 WEST 15th STREET,
NORTH VANCOUVER, B.C., CANADA V7M 1T2
TELEPHONE (604) 980-5814

ANALYTICAL REPORT

Project Debbie Date of report May 15, 1986.

File No. 6-219 Date samples received May 6, 1986.

Samples submitted by: R.Walker

Company: Westmin Resources/Jam Geological Services

Report on: 23 soils Geochem samples

Assay samples

Copies sent to:

1. Westmin Resources, Campbell River, B.C.
2. Jam Geological Services, Royston, B.C.
3.

Samples: Sieved to mesh -80 Ground to mesh

Prepared samples stored ☒ discarded ☐

rejects stored ☐ discarded ☒

Methods of analysis: As-Spectrophotometric., Au-wet.

Remarks:

SPECIALISTS IN MINERAL ENVIRONMENTS

PHONE 980-5814

MIN-EN Laboratories Ltd.

Specialists in Mineral Environments

Corner 15th Street and Bewicke
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

GOLD GEOCHEMICAL ANALYSIS BY MIN-EN LABORATORIES LTD.

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 pretreated with HNO_3 and $HClO_4$ 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.

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 0.005 ppm (5ppb).

APPENDIX IV

ANALYTICAL RESULTS

HEAVY MINERAL SEPARATES, SOILS

MIN-EN Laboratories Ltd.
Specialists in Mineral Environments
705 WEST 15th STREET NORTH VANCOUVER, B.C. CANADA V7M 1T2

PHONE: (604)980-5814 OR (604)988-4524 TELEX: 04-352828

GEOCHEMICAL ANALYSIS CERTIFICATE

COMPANY: WESTMIN RESOURCES
PROJECT: DEBBIE
ATTENTION: R. WALKER

FILE: 6-220
DATE: MAY 15/86.
TYPE: -40 HM

We hereby certify that the following are the results of the geochemical analysis made on 10 samples submitted.

SAMPLE NUMBER	CU PPM	PB PPM	ZN PPM	AG PPM	AS PPM	AU PPB	HM %
A-1	51	26	45	1.3	81	950	1.95
2	34	20	29	1.6	65	6000	2.61
3	52	19	36	0.9	15	110	3.06
4	35	20	35	1.0	3	250	3.30
5	188	44	59	2.9	18	210	1.36
6	28	18	34	0.8	6	125	3.54
7	32	18	36	3.2	8	15800	1.58
8	16	20	28	0.5	4	130	3.18
9	43	18	48	1.4	13	3500	5.38
A-10	34	14	34	0.6	11	660	6.47

Certified by _____

PHONE 980-5814

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.

PROCEDURES FOR, Cu, Mo, Cd, Pb, Mn, Ni, Ag, Zn.

Samples are 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 by jaw crusher and pulverized by ceramic plated pulverizer.

1.0 gram of the samples are digested for 6 hours with HNO_3 and $HClO_4$ mixture.

After cooling samples are diluted to standard volume. The solutions are analysed by Atomic Absorption Spectrophotometers.

Copper, lead, zinc, silver, cadmium, cobalt, nickel and manganese are analysed using the CH_2H_2-Air flame combination but the molybdenum determination is carried out by C_2H_2-N_2O gas mixture directly or indirectly (depending on the sensitivity and detection limit required) on these sample solutions.

Background corrections for Pb, Ag, Cd upon request are completed.

MIN-EN Laboratories Ltd.

705 WEST 15th STREET,
NORTH VANCOUVER, B.C., CANADA V7M 1T2
TELEPHONE (604) 980-5814

ANALYTICAL REPORT

Project Debbie Date of report May 15, 1986.

File No. 6-220 Date samples received May 6, 1986.

Samples submitted by: R.Walker

Company: Westmin Resources/Jam Gedogical Services

Report on: 27 soils, 10 HM Geochem samples

Assay samples

Copies sent to:

1. Westmin Resources, Campbell River, B.C.
2. Jam Geological Services, Royston, B.C.
3.

Samples: Sieved to mesh -80 soils Ground to mesh

Prepared samples stored ☒ discarded ☐ HM -40mesh

rejects stored ☐ discarded ☒

Methods of analysis: Specific gravity flotation and routine geochem analysis.

Au-wet.

Remarks:

SPECIALISTS IN MINERAL ENVIRONMENTS

PHONE: (604) 980-5814 or 988-4524 TELEX: 04-352828

MIN-EN Laboratories Ltd.
Specialists in Mineral Environments
Corner 15th Street and Bewicke
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

ASSESSMENT REPORT FOR:

HEAVY MINERAL SAMPLING AND CONCENTRATIONS

A large sample is collected from stream sediments or soils big enough to yield a minimum of 0.5 kg of the desired minus fraction. After sieving through any of the sieve mesh sizes they are adapted for the survey. After seiving the samples, the minus fraction is grinded to -80 mesh.

Then 0.4 kg of sample is weighed into a suitable centrifuge containers. The prepared concentrations of liquids are added to obtain a 3.1 specific gravity flotation.

The heavy fractions are then washed cleaned and dried. After drying the samples they are separated . The sink float Heavy Minerals are separated into Magnetic and Non Magnetic fractions and both fractions are weighed. The percent of the Magnetic and non Magnetic fractions are calculated and reported with the analytical data.

The analysis are than carried out in the ususal analytical manner by I.C.P. or A.A. method.

APPENDIX V

GEOPHYSICAL REPORT

INDUCED POLARIZATION AND VLF SURVEYS

GEOPHYSICAL REPORT

INDUCED POLARIZATION and VLF SURVEYS

CHINA CREEK PROPERTY

VANCOUVER ISLAND, B.C.

on behalf of

WESTMIN RESOURCES LTD.
PO Box 8000
Campbell River, B.C. V9W 5E2

contact: Mr. Rick Walker
(604) 286 1814

Field work completed: April 24 to 26, 1986

Report by

Alan Scott, Geophysicist
4013 West 14th Avenue
Vancouver, B.C. V6R 2X3
(604) 228 0237

May 1, 1986

TABLE OF CONTENTS

1. INTRODUCTION

Induced polarization and VLF surveys were conducted over portions of the China Creek Property, Vancouver Island, B.C. on behalf of Westmin Resources Ltd., in the period April 24 to 26, 1986. The work was performed by Alan Scott, Geophysicist.

The main objective of the survey was to follow up an airborne EM conductor located in the vicinity of China Creek.

The pole dipole electrode array at an "a" spacing of 25 meters was used on the induced polarization survey, with readings taken at "n" separations of 1, 2, 3, 4, and 5. The current electrode was to the south of the receiving electrodes on all survey lines. VLF readings were taken at 25 meter intervals.

Anomalies detected on the surveys are categorized and discussed in this report.

2. SURVEY LOCATION

The China Creek Property is located about 15 kilometers southeast of Port Alberni, B.C. Access is via a network of well maintained logging roads from Port Alberni.

3. SURVEY GRID AND SURVEY COVERAGE

The surveys were conducted over four widely separated lines crossing China Creek. Baseline 500+00N was defined as station 1000N for the induced polarization survey. Lines surveyed were:

Line 497+00E: 496+00N - 503+50N
Line 500+00E: 496+00N - 505+50N
Line 502+00E: 496+00N - 504+00N
Line 506+00E: 497+00N - 506+00N

A total of 3.4 line kilometers of induced polarization and VLF survey was completed.

4. INSTRUMENTATION

A Scintrex IPR-11 time domain microprocessor based induced polarization receiver and a Scintrex IPC-7 2.5 kw transmitter were used on the survey. The IPR-11 operates on an alternating square wave transmitted current pulse train, and samples the decay curve at ten semilogarithmically spaced times after cessation of each pulse. A 2 second on/2 second off pulse was used on the survey. The data is continually averaged until the operator is satisfied convergence has occurred, and is filed into solid state memory. The eighth slice (from 690 to 1050 milliseconds after shutoff: midpoint at 870 milliseconds) is the value that has been plotted on the plans and pseudosections.

The survey data was archived, processed, and plotted using a Corona PPC 400 microcomputer running the Scintrex Soft II software. All decay curves were submitted to spectral analysis by a curve matching procedure.

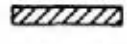
A Scintrex IGS VLF4 electromagnetometer was used on the VLF survey, with station NLK, Seattle (broadcasting at 24.8 kHz) serving as the primary VLF field.

5. DISCUSSION OF RESULTS

The results of the induced polarization survey are presented as stacked pseudosections (figures 1 to 4). The upper pseudosection in each figure gives the spectral time constant and chargeability, and the lower pseudosection the M7 (eighth slice) chargeability and the apparent resistivity (ohm meters/100).

In areas of low chargeability response, the spectral parametrers are poorly defined and are not plotted if the rms error of fit to the theoretical curve exceeds 5%. The interpretation of the survey is based on the standard M7 chargeability.

Chargeability (IP) anomalies have been categorized on the pseudosections and interpretation plan as follows:


moderate chargeability high


weak chargeability high

weak chargeability high, poorly defined

If the anomaly was defined at a separation other than n=1, this is noted below the anomaly symbol.

Local resistivity lows (conductivity highs) have been categorized on the pseudosections and plans as follows:


strong local resistivity low


moderate local resistivity low


weak local resistivity low

weak resistivity low, poorly defined

A moderate to strong local resistivity low and a strong VLF conductor, was located nearly coincident with China Creek on all four survey lines. This conductive zone has a very low chargeability response and is believed to be caused by a shear zone, or other high porosity, saturated geological feature. It is clearly the same feature as was detected on the airborne EM survey.

Several weak chargebility anomalies were detected on the survey. Owing to the wide line spacing, line to line correlation of these anomalies is uncertain, and no attempt has been made to contour the data in plan. In addition, the stratigraphy is believed to be at a shallow angle to the crossline direction. This greatly reduces the resolution of the IP method. Closing in the line separation, and possibly reorienting the line direction, is recommended prior to any physical testing of these anomalies.

L497+00E — Weak IP high coincident with high apparent resistivity at the south end of L497.

1497+00E — Moderate IP high at n=2 centered at 503+00N coincident with weakly high resistivity and characterized by a short time constant... follow up recommended.

L500+00E — Weak IP high coincident with high apparent resistivity at the south end of L500. Appears to represent the same feature as at the south end of L497.

L500+00E — Three weak IP highs coincident with high resistivity and detected only at n=1 occur at 500+20N, 503+20N, and 503+95N. These poorly defined responses may be depth limited (overburden?) features, but could be a reflection of the shallow angle of the survey line to stratigraphy. Note that a weak anomaly was detected at the further separations at about 503+40N.

L500+00E — Weak IP high coincident with high resistivity at the north end of L500E.

L502+00E Four weak and poorly defined responses. The weak high at 499+00N may be of interest given its proximity to the postulated shear zone (see L506+00E; 501+60N below).

L506+00E Moderate IP high at n=2 centered at about 500+25N, coincident with a local weak resistivity low and characterized by intermediate time constants... recommended for follow up.

L506+00E Weak IP high at n=2 centered at 501+60N and proximal to the shear zone... recommended for follow up.

L506+00E Moderate IP high at the south end of the line and weak IP high at about 498+50N - both coincident with weakly high resistivity... recommended for follow up

1506+00E Weak IP high coincident with high resistivity at the north end of the line.

6. RECOMMENDATIONS

The interpretation of the results from the IPR11 survey on the China Creek Property indicates a broad moderate to strong apparent resistivity low, coincident with a VLF conductor, trends accross the survey area in the vicinity of China Creek. This conductive feature is believed to be the same as that detected by airborne EM. Chargeabilities associated with this resistivity low (conductivity high) are very low, suggesting a shear zone or other high porosity saturated source.

Several weak and poorly defined chargeability highs were detected on the survey. Subject to correlation to the geological and geochemical data bases, further induced polarization survey work on lines 100 meters apart, and possibly reoriented to favour testing of the stratigraphy as opposed to the probable shear zone, is recommended in order to define specific locations for drilling and/or trenching.

Respectfully Submitted,

Alan Scott,
Geophysicist

WESTMIN RESOURCES LTD.

CHINA CREEK PROPERTY

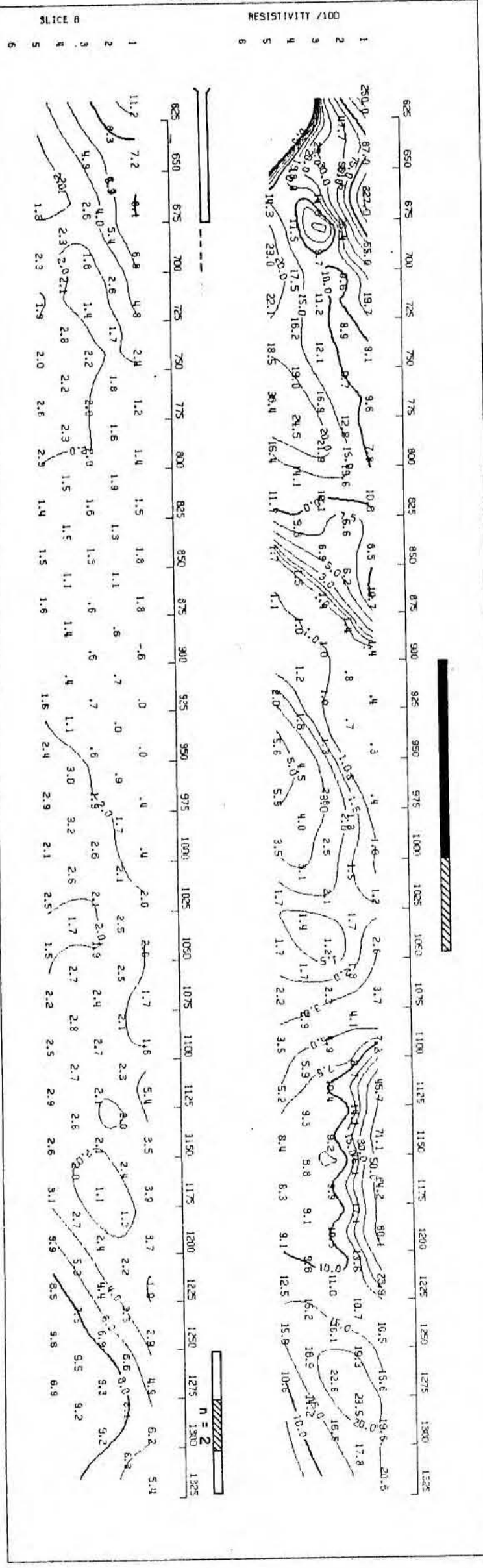
LINE NUMBER: 497 EAST

"A": 25.0 METRES N=1 TO 5

SCINTREX IPA-11 RECEIVER
POLE-DIPOLE ARRAY

TX PULSE TIME: 2.0 SEC
RECEIVE TIME: 2.0 SEC

SCALE 1: 1250



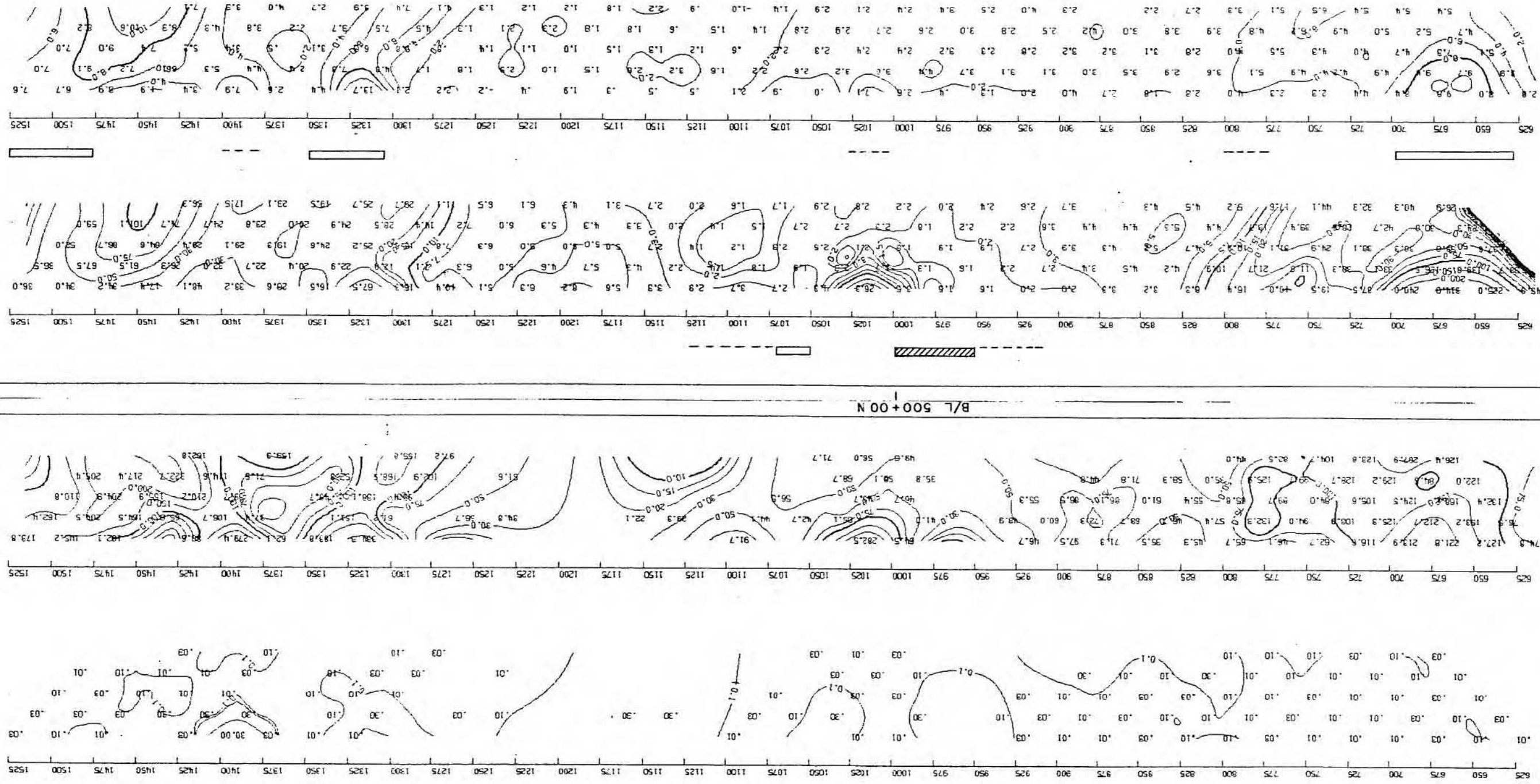
n = 2

LINE 497+00 E

FIGURE I

LINE 500+00E

FIGURE 2



WESTMIN RESOURCES LTD.

CHINA CREEK PROPERTY

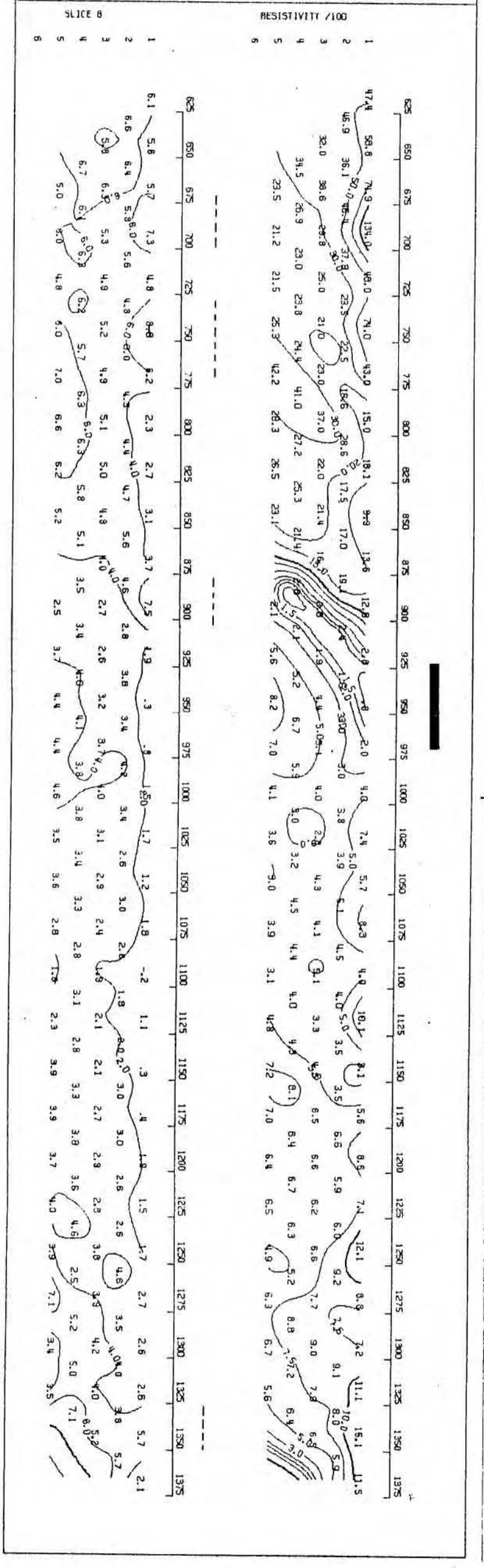
LINE NUMBER: 502 EAST

"A": 25.0 METRES N=1 TO 5

SCINTREX IPR-11 RECEIVER TX PULSE TIME: 2.0 SEC

POLE-DIPOLE ARRAY RECEIVE TIME: 2.0 SEC

SCALE 1: 1250



WESTMIN RESOURCES LTD.

CHINA CREEK PROPERTY

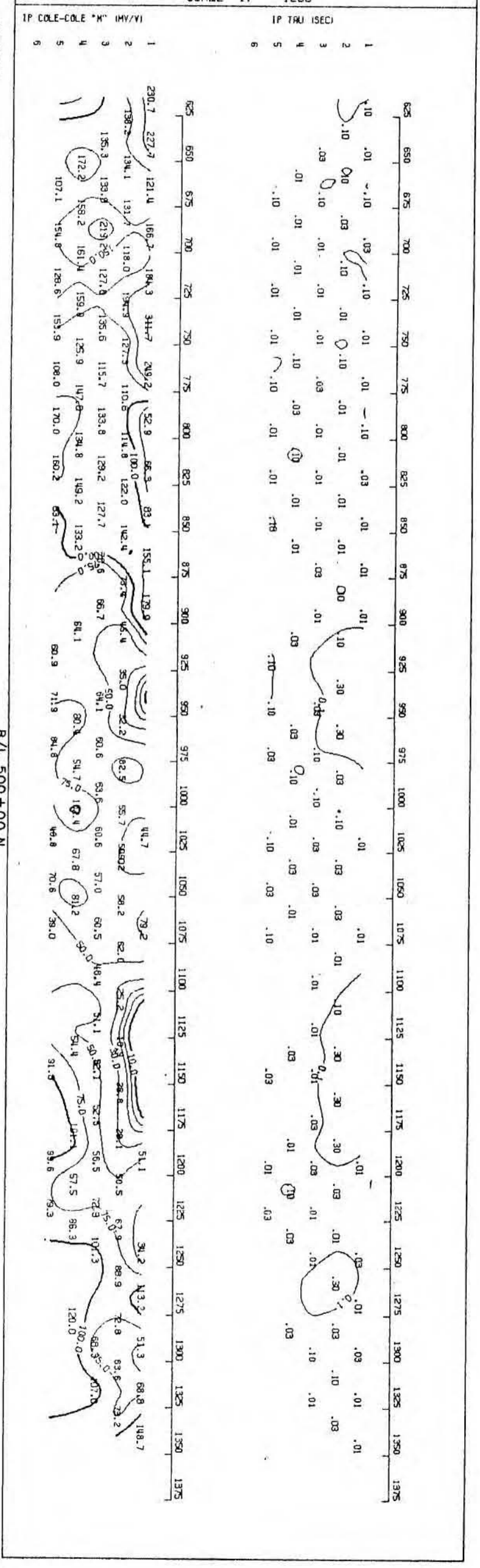
LINE NUMBER: 502 EAST

"A": 25.0 METRES N=1 TO 5

SCINTREX IPR-11 RECEIVER TX PULSE TIME: 2.0 SEC

POLE-DIPOLE ARRAY RECEIVE TIME: 2.0 SEC

SCALE 1: 1250

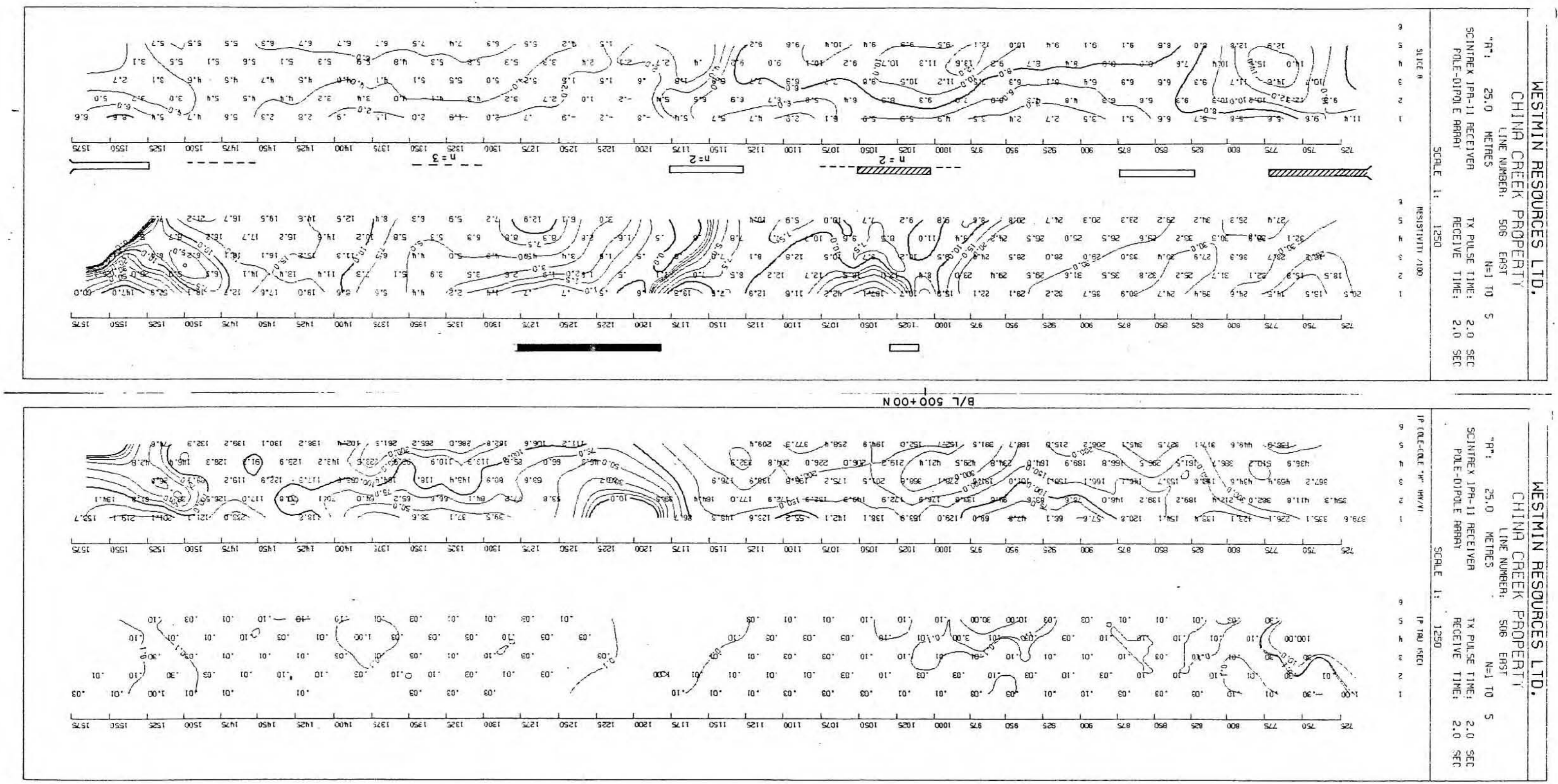


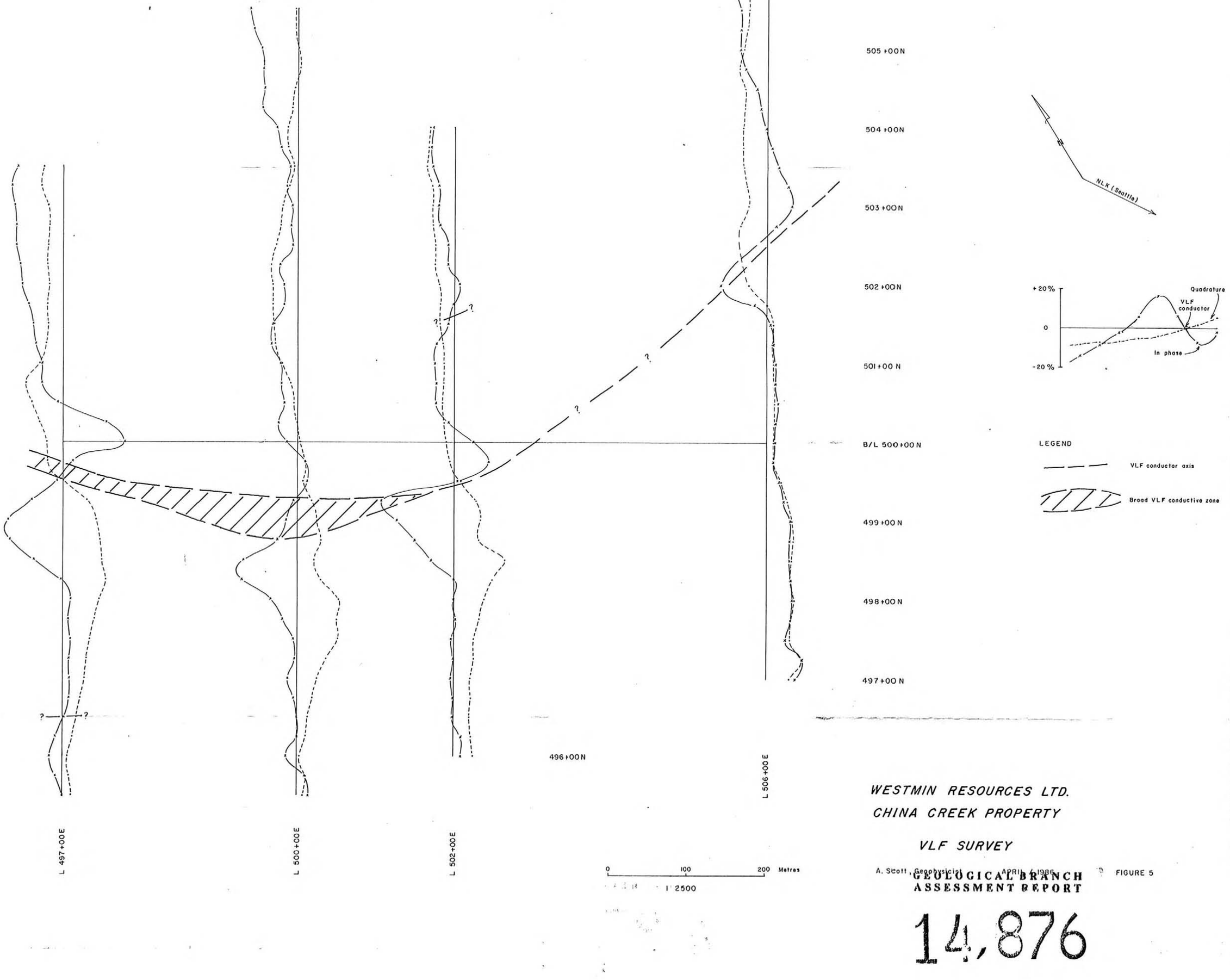
LINE 502+00E

FIGURE 3

LINE 506+00E

FIGURE 4



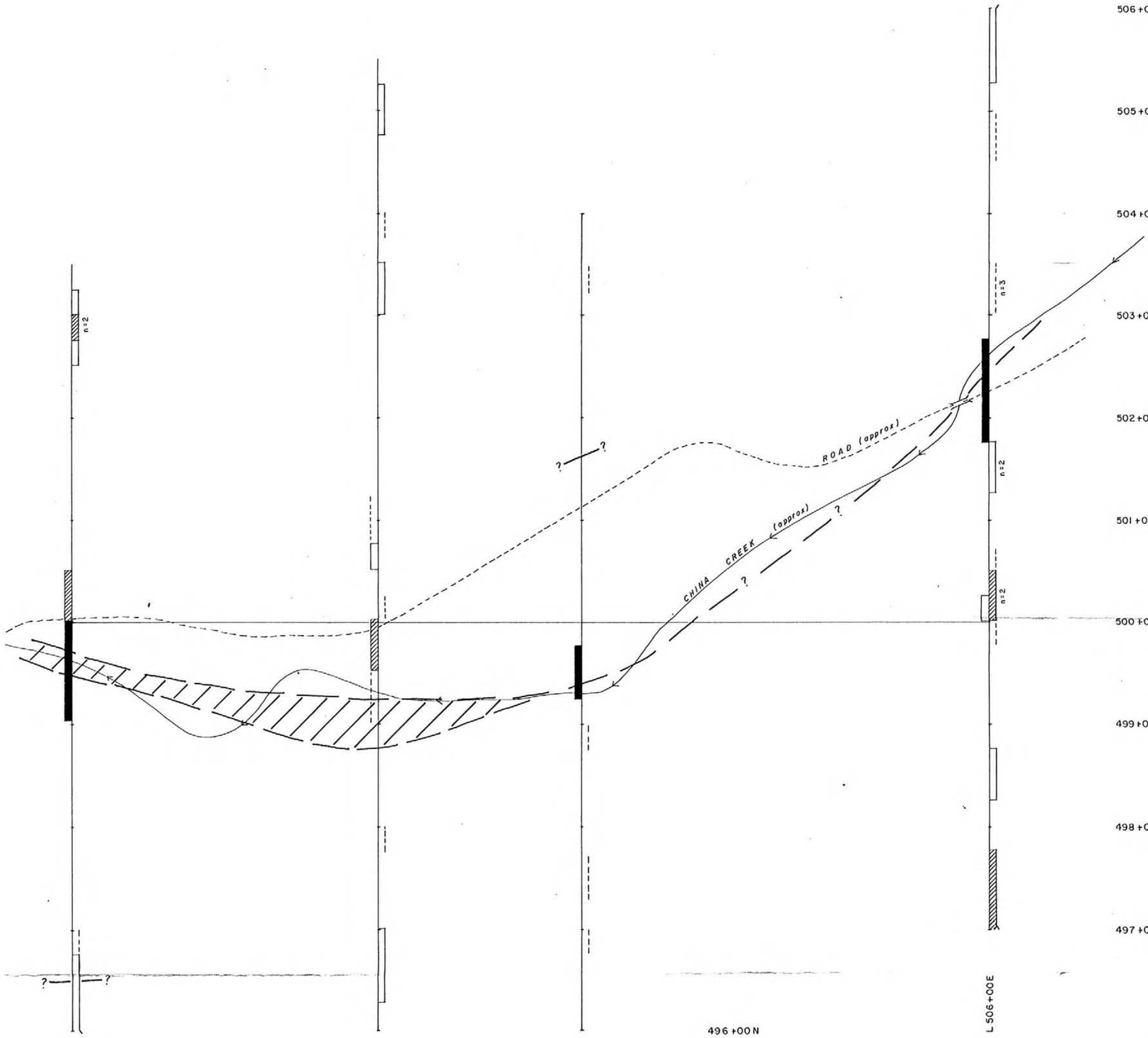


WESTMIN RESOURCES LTD.

CHINA CREEK PROPERTY

VLF SURVEY

A. Scott, Geophysicist APRIL, 1986 FIGURE 5



LEGEND

CHARGEABILITY
(To East of line)

- Moderate IP high
- Weak IP high
- Weak IP high, poorly defined

RESISTIVITY
(To west of line)

- Strong local resistivity low
- Moderate local resistivity low
- Weak local resistivity low
- Weak local resistivity low, poorly defined

VLF

- Axis of VLF conductor

0 100 200 Metres

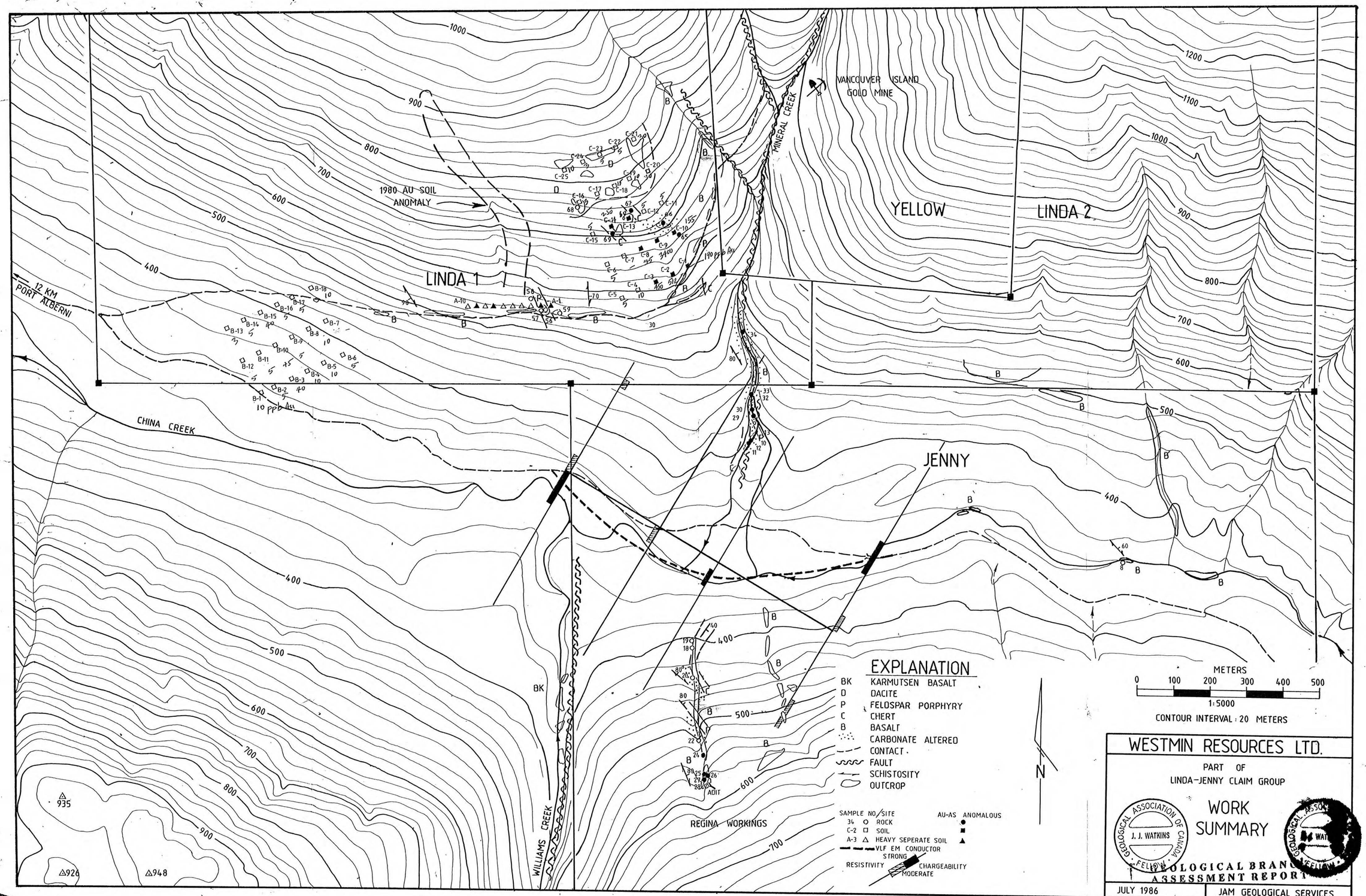
1:2500

WESTMIN RESOURCES LTD.

CHINA CREEK PROPERTY

IPR II SURVEY

A. Scott, Geophysicist APRIL / 1986 FIGURE 6



WESTMIN RESOURCES LTD.

PART OF
LINDA–JENNY CLAIM GROUP

GEOLOGICAL ASSOCIATION OF CANADA
J. J. WATKINS
FELLOW

WORK SUMMARY

GEOLOGICAL BRANCH
ASSESSMENT REPORT

JULY 1986 | JAM GEOLOGICAL SERVICES

14,876