

'83-70-#1118  
3

REPORT ON THE GEOPHYSICAL AND GEOCHEMICAL SURVEY OF  
THE RIVERSIDE PROPERTY  
ROCK CREEK, B. C.

N.T.S. 82 E/2  
Lat. 49°07'N Long. 118°58'W  
GREENWOOD, M. D.

OWNER & OPERATOR  
WORLD CEMENT INDUSTRIES INC.  
#915 - 470 GRANVILLE ST.  
VANCOUVER, B. C. V6C 1V5

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

11,118

NAME OF CLAIM	No. of Units	Record No.	Month of Record
Riverside	1	1671	July
Riverside Fr	1	1672	July
H.R Claim	1	1421	Jan.
Bee 1	1	2583	Dec.
Imperial 1 Fr	1	2396	Aug.
Big Eddy	1	1430	Mar.
Joy 1/6	6	3184	July
Joy 1 1/10	10	3185	July
Commonwealth	1	1440	Mar.
Kay 1/5	5	1444/448	Mar.
Kay 7	1	1450	Mar.

Consultant: J. S. Vincent                      Field Work: Summer 1982  
Author of Report: I. Borovic                      Report: Nov. 23, 1982  
Date: Sept. 6, 1983 (Revision of 83 #70 E, File No. 166  
Greenwood)

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## MAPS IN POCKET

VLF Electromagnetic Survey

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Geochemical Map - Zinc

Geochemical Map - Silver

INTRODUCTION

World Cement Industries Inc. of Vancouver, B. C. intends to continue geological exploration of its silver, lead, zinc and gold bearing property on the Kettle River some 8 km north of Rock Creek, B. C.

The following report presents a summary of information obtained from the published and unpublished reports listed in the Bibliography (page 16) and from personal knowledge and experience gained during exploration of the Kettle River and Camp McKinley areas in the past ten years.

PROPERTY

Location: Lat. 49°07'N.; Long. 118°58'W; (N.T.S. 82 E/2)  
Greenwood M. D. eight road km north of Rock Creek,  
B. C. on the east side of Kettle River.

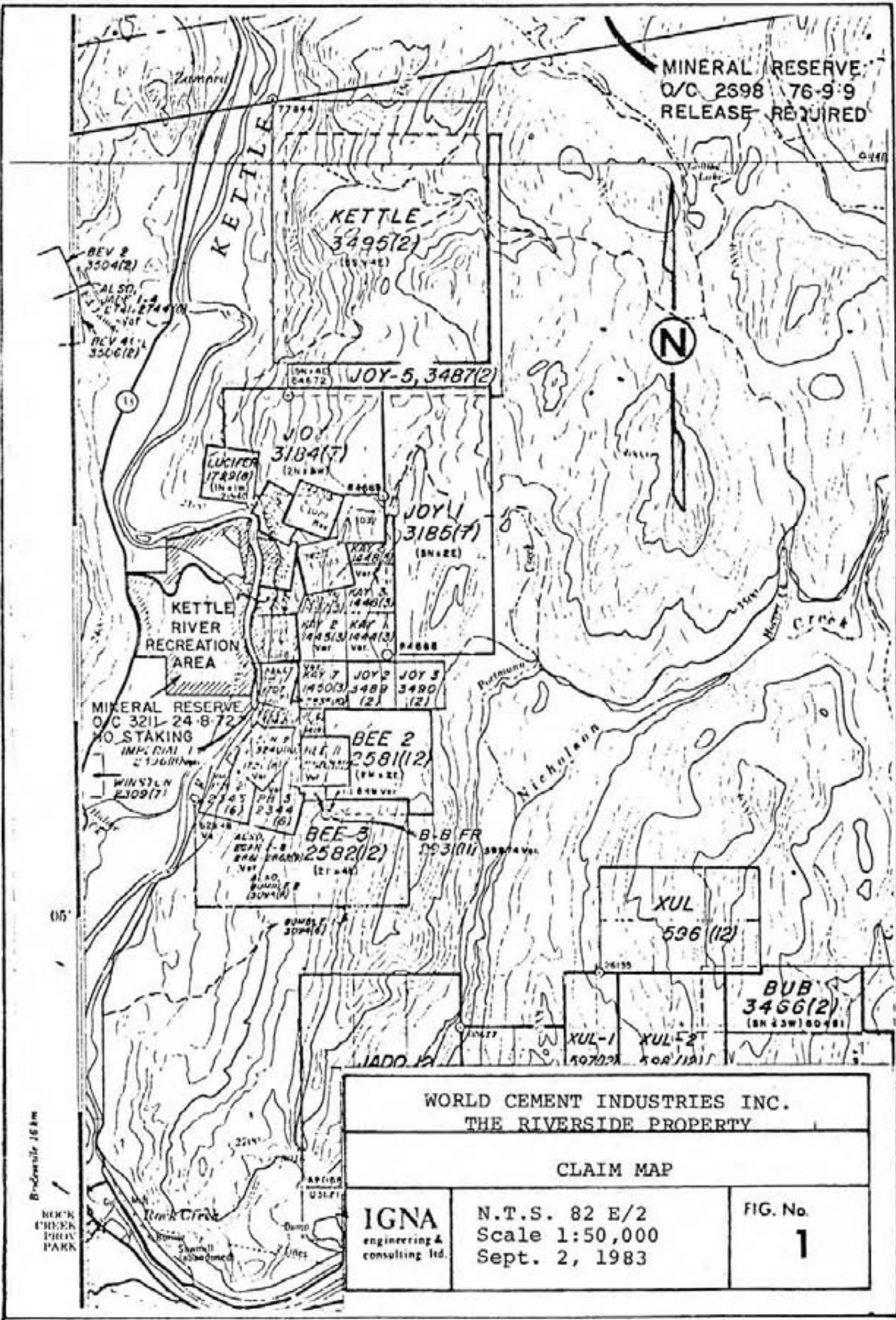
Claims: (Fig. 1)

NAME OF CLAIM	No. of Units	Record No.	Month of Record
Riverside	1	1671	July
Riverside Fr	1	1672	July
H.R Claim	1	1421	Jan.
Bee 1	1	2583	Dec.
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Big Eddy	1	1430	Mar.
Joy 1/6	6	3184	July
Joy 1 1/10	10	3185	July
Commonwealth	1	1440	Mar.
Kay 1/5	5	1444/448	Mar.
Kay 7	1	1450	Mar.

Owner-Operator:

World Cement Industries Inc.  
#915 - 470 Granville St.  
Vancouver, B. C.  
V6C 1V5

MINERAL RESERVE  
O/C 2698 76-9-9  
RELEASE REQUIRED



<b>WORLD CEMENT INDUSTRIES INC.</b> <b>THE RIVERSIDE PROPERTY</b>		
<b>CLAIM MAP</b>		
<b>IGNA</b> <small>engineering &amp; consulting ltd.</small>	N.T.S. 82 E/2 Scale 1:50,000 Sept. 2, 1983	FIG. No <div style="font-size: 2em; text-align: center;">1</div>

B-D境界 16km  
 ROCK CHICK  
 PION PARK

Access

Year round access is provided by 8 km of forest access road from the Kettle River bridge in Rock Creek. The road is following the Kettle River along the eastern bank toward the north, where the road crosses the property. A number of old logging roads give an easy access to all claims.

Facilities and Services

The nearby settlement of Rock Creek has good room and board facilities for the exploration crew. Major political and commercial centres are Osoyoos, 53 km to the west on Hwy 3, and Grand Forks, 53 km to the east, also on Hwy 3.

Property Resources

There is ample timber, sand and gravel and water available on or near the property to support any exploration or development work.

## GEOLOGY

### General Geology (Little, H. W., 1957, 1961; Fig. 2)

The Riverside property area is underlain by greenstones, graywackes and limestones of the Permian Anachist group. These rocks represent the oldest outcropping rocks in the region. They are covered by sedimentary and volcanic rocks of the Kettle River formation. Cretaceous and younger igneous rocks - granites and granodiorites were implaced into the older rocks, which resulted in contact metamorphic and hydrothermal alteration of the intruded rocks.

Property Geology (Taylor, B., Apr. 1979; Adamson, R. S., Nov. 1979; Verzosa, R. S., Sept. 1979; Dawson, J. M., Dec. 1975; Pringle, D. M., July 1982; Vincent, J. S., Nov. 1982; and exploration work done in 1982 by R. Kregosky & D. Pringle.)

On the Riverside property the Anachist Group is mainly represented by massive altered volcanic flows and fine to coarse grained tuffs interbedded with gray to greengray fine-grained quartzites and calcareous siltstones.

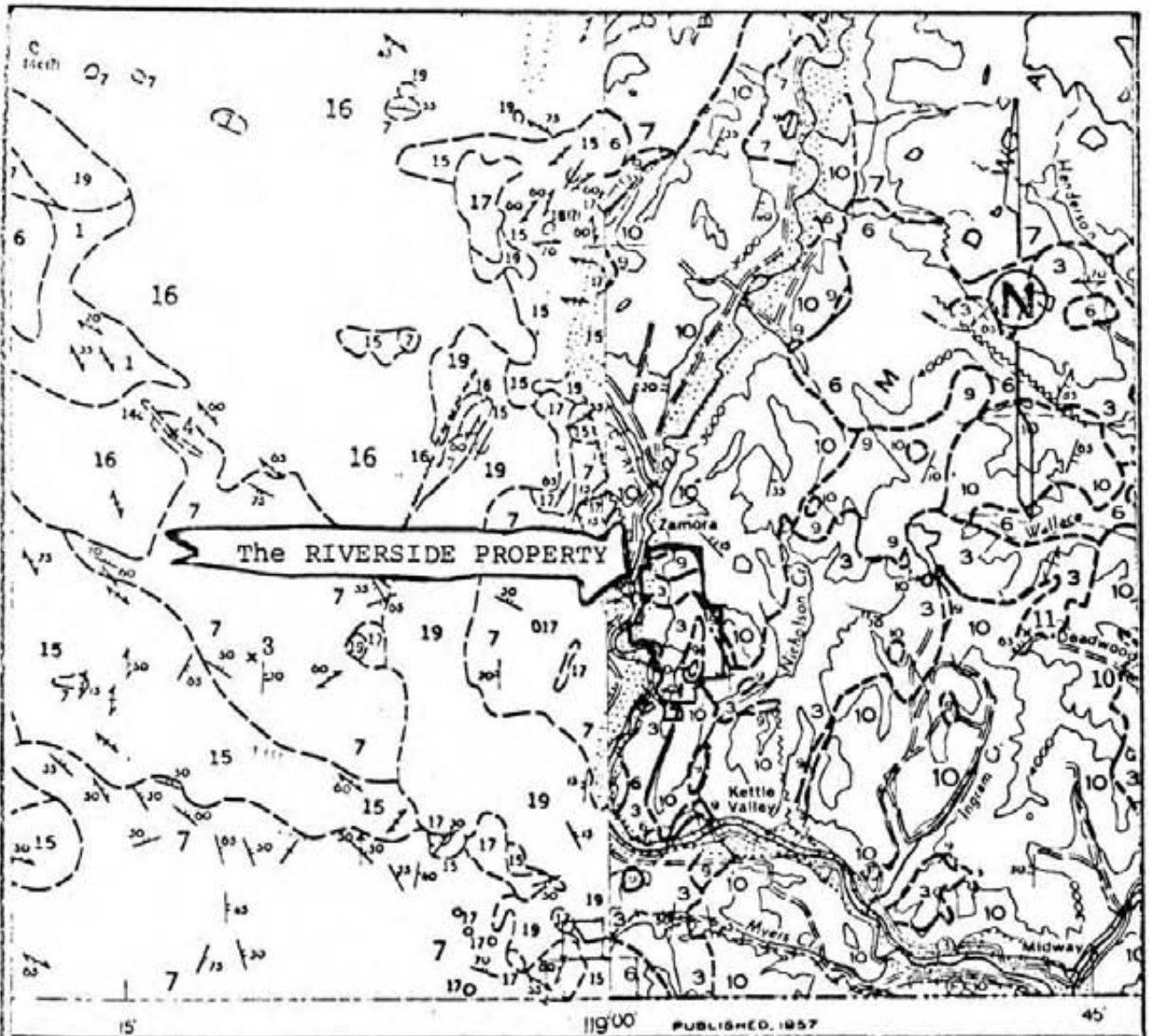
The altered volcanic flows and tuffs were previously classified under common name of "greenstones". These rocks when encountered in the drill core vary from fine to coarse grained altered tuffs to andesitic massive flows. Propilitic alteration is pervasive. In areas drilled close to fault and mineralized structures the chloritic, calcite and minor epidot alterations are always much stronger.

### Structure

Faulting and shearing are evident in all underground workings and could be recognized in some of the scarce outcrops on the surface, especially along the fault predisposed recent creek cuts.

Existing mineralized zones or veins were repeatedly faulted and displaced. Fault displacement is evident in Adit #4 and ranges from a few centimeters to one meter.





LEGEND

Eocene or Oligocene

- 19 Andesite, trachyte, minor basalt; locally, interbedded tuff and shale; 19a, andesite and trachyte flows and agglomerate; 19c, conglomerate, sandstone, shale, tuff; minor agglomerate and breccia, coal; 19d, andesite and trachyte; 19e, agglomerate and conglomerate
- 17 Conglomerate, sandstone, shale, tuff

Paleocene or Eocene

PHOENIX VOLCANIC GROUP

- 10 Andesite, trachyte, minor basalt; locally, interbedded tuff, shale, and/or siltstone

- 9 Kettle River Formation: rhyolite and dacite tuff; locally, conglomerate, sandstone, and shale, minor rhyolite flows and intrusive porphyritic rhyolite

- 6 Nelson Intrusions: granodiorite, porphyritic granite; diorite, monzonite, quartz monzonite

PERMIAN(?)

- 3 Anarchist Group  
Greenstone, graywacke, limestone; paragneiss
- 7

- Drift-covered area
- Geological boundary (defined approximate)
- Bedding (inclined, overturned)
- Bedding (inclined, vertical; tops unknown)
- Conformity (inclined, vertical)
- Fault (defined, approximate, assumed)
- Fossil locality
- Mineral property

WORLD CEMENT INDUSTRIES INC. THE RIVERSIDE PROPERTY		
GEOLOGY (Little, H.W., 1957 & 1961)		
<b>IGNA</b> engineering & consulting ltd.	N.T.S. 82 E/2 Scale 1:250,000	FIG. No <b>2</b>

### Mineralization

Silver and minor gold bearing mineralization consists of flat lying manto-like zones or veins with pyrite, galena, sphalerite, quartz and varying amounts of calcium carbonate and mariposite.

At least four different vein systems have been exposed in the original Riverside workings. The zones or veins vary in width from 20 cm to 3.5 m. The thickest zones are found on the intersection of two major sets of mineral-bearing zones. The first set is steeply dipping at 64° to the south and striking in an east-west direction; and the second is flat lying basin-like structure. Both sets are intensely faulted by north-south fault system and offset up to 1.0 m.

In 1924 the assays of numerous samples from the veins in the underground workings have been reported in annual reports of the Ministry of Mines of B. C., and numerous reports by engineers to different mining-exploration companies who worked and explored the property.

Average assay values of eighty-four samples taken in 1924 were 3.32% Pb, 31.40 oz/t Ag and 0.08 oz/t Au. Assays of samples taken in 1982 and 1983 show similar values:

Pb from 1.5% to 3.5%, Zn from 1.3% to 5.9%

Ag from 1.9 oz/t to 49.8 oz/t and Au from 0.01 oz/t to 0.11oz/t.

All those assays suggest that expectations of finding more mineralized structures with Au content of 0.01 to 0.30 oz/t, Ag from 0.50 to 50.0 oz/t, 3.0% Pb and 3.0% Zn are reasonable.



HISTORY OF EXPLORATION AND WORK DONE

- 1898 Crown has granted Lot 1030 "Big Eddy" to B. Perkins and H. Reed. Also other Crown grants such as L 1029 "Commonwealth", L1031 "Riverside", L 1032 "Brookline", L 1033 "Hir" and L 1081S "Emilie" have already been worked on.
- 1901 Ore for testing was shipped from L 1031 Riverside. A sample of 'clean' ore assayed \$2.40 in Au, 47 oz in Ag to the ton.
- 1907 Ninety tons of ore were shipped but no values were given.
- 1913 Four railroad cars of hand-sorted ore were shipped with reported value of \$300.00 per car.
- 1922 P. Nelson and Oli Lofstad leased the Riverside claim from the government and drove two crosscuts of 18.0 m and 12.0 m respectively and 5.0 m of raises and shafts.
- A number of samples from 90 cm wide "lead-matter" were taken from the collar of the inclined shaft. Average assays gave from 0.08 to 0.12 oz/t in Au, 29.5 - 34.0 oz/t in Ag, 3.5%/t Pb and 7.0%/t Zn.
- 1924 Extensive sampling was done by Cominco Ltd. and these results were later reported in D. W. Pringle's report of July 1982. Arithmetic averages of 14 samples gave: 31.86 oz/t Ag, 0.07 oz/t Au, 2.33% Pb and 2.98% Zn.
- 1925 & 1926 Extensive exploration work was done on the Imperial group of claims adjacent to the south of the Riverside. The explorers found that the same and/or similar geological, structural and mineralogical features are continuing through both Riverside and Imperial groups of claims.
- A number of shafts, tunnels, raises and crosscuts were excavated during these and following years when property was leased to Hecla Mining Co. of Idaho. About 250 tons of ore were shipped to the smelter in 1925 and 250 tons in 1926.
- Assayed samples taken from the workface gave 0.7 oz/t Au, 324.7 oz/t Ag, 16.6% Pb. Second sample of the ore zone assayed 0.3 oz/t Au, 113.40 oz/t Ag, 8.7% Pb and 7.8% Zn.

- 1927 About 33 tons of concentrate were shipped from Imperial. The recovery was: 11.0 oz Au, 2,102 oz Ag, 3.885 lbs Pb and 1,339 lbs of Zn.
- 1949 The last reported shipment of 59 tons of ore was made from Imperial property. Recovery was 9.0 oz Au, 682 oz Ag, 1,031 lbs Pb and 2,001 lbs Zn.
- 1953 A small amount of exploration work was done in the vicinity of the Riverside property.
- 1975 Exploration work done under supervision of J. M. Dawson, P. Eng. (report of December 1975). Assayed samples from Adits #1, 2, 4, and 5 range from 0.004 to 0.30 oz/t Au, 1.0 to 100.0 oz/t Ag, 0.1 to 5.0% Pb, 0.1 to 5.0% Zn.
- 1977 Alberni Mines Ltd. of Port Alberni cut 7 exploration trenches totalling 99.3 m on Riverside and riverside No. 2 FR claims. Most of the trenches never reached bedrock.
- 1979 Some basic exploration work was done on the Riverside and reported by R. S. Verzosa (Sept. 1979).  
  
Kay claims were worked on by Edina International Ltd., Adamson, R. S. (Nov. 1979).
- 1980-81 Adits #4 and #1 on the Riverside claim were worked by room & pillar method using trackless equipment. The relatively flat, undulating, faulted mineralized zone (or vein) of 0.5 m to 1.5 m thickness was mined. The values reported range from 0.04 to 0.24 oz/t in Au and 2.64 to 56.0 oz/t in Ag. All the mining was done in the thicker portions of the mineralized zone.
- 1982 The Riverside property, including Kay 1-7 claims (now Dawn MC) was acquired by the World Cement Industries Inc. of Vancouver. Initial evaluation was done by D. M. Pringle, P. Eng., of Oliver, B. C., and an exploration program recommended. The exploration started with orientation work consisting of VLF-EM reconnaissance survey, soil sampling and geological examination of accessible underground workings and surface outcrops. The purpose of the survey was to evaluate the effectiveness of VLF-EM and soil sampling in following possible extensions of the known vein systems and uncovering yet unidentified mineralized veins or vein zones (Vincent, J. J., Nov. 1982).  
  
Geophysical survey was done on 13 line kilometers using Ronka EM-16 VLF-Electromagnetometer with transmitter station in Annapolis 21.4 Khz.

Geochemical survey of the same 13 km line grid was done. A total of 258 samples were collected and assayed for lead, zinc and silver.

### Results of 1982 Exploration

Geological mapping of the underground workings has confirmed the following:

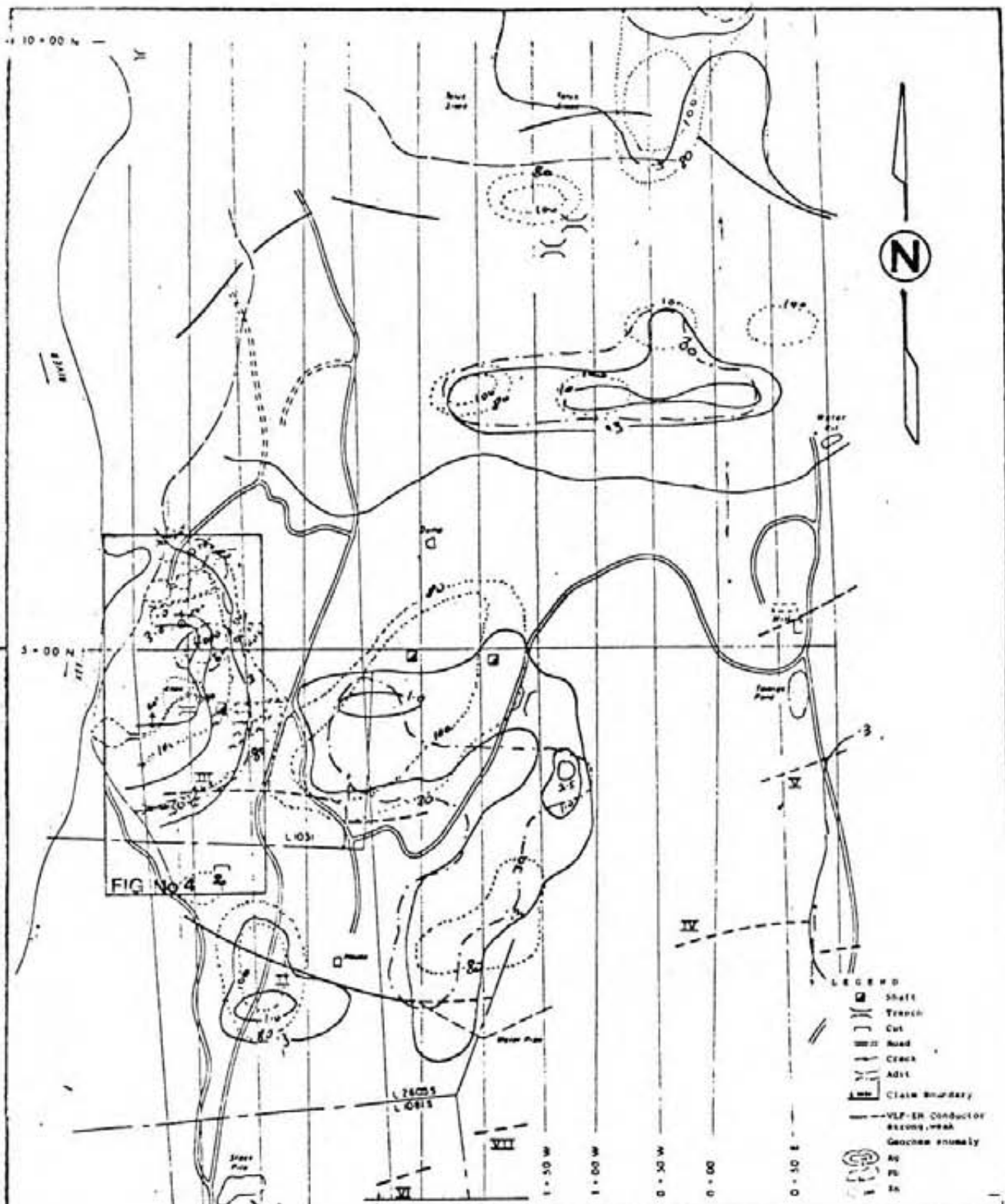
Mineralization consists of pyrite, galena, sphalerite, quartz, calcite, mariposite, silver.

Mineralization carries good values in silver and spotty values in gold.

Mineralized, silver-bearing quartz veins vary in width from 25 cm to 1.8 meters.

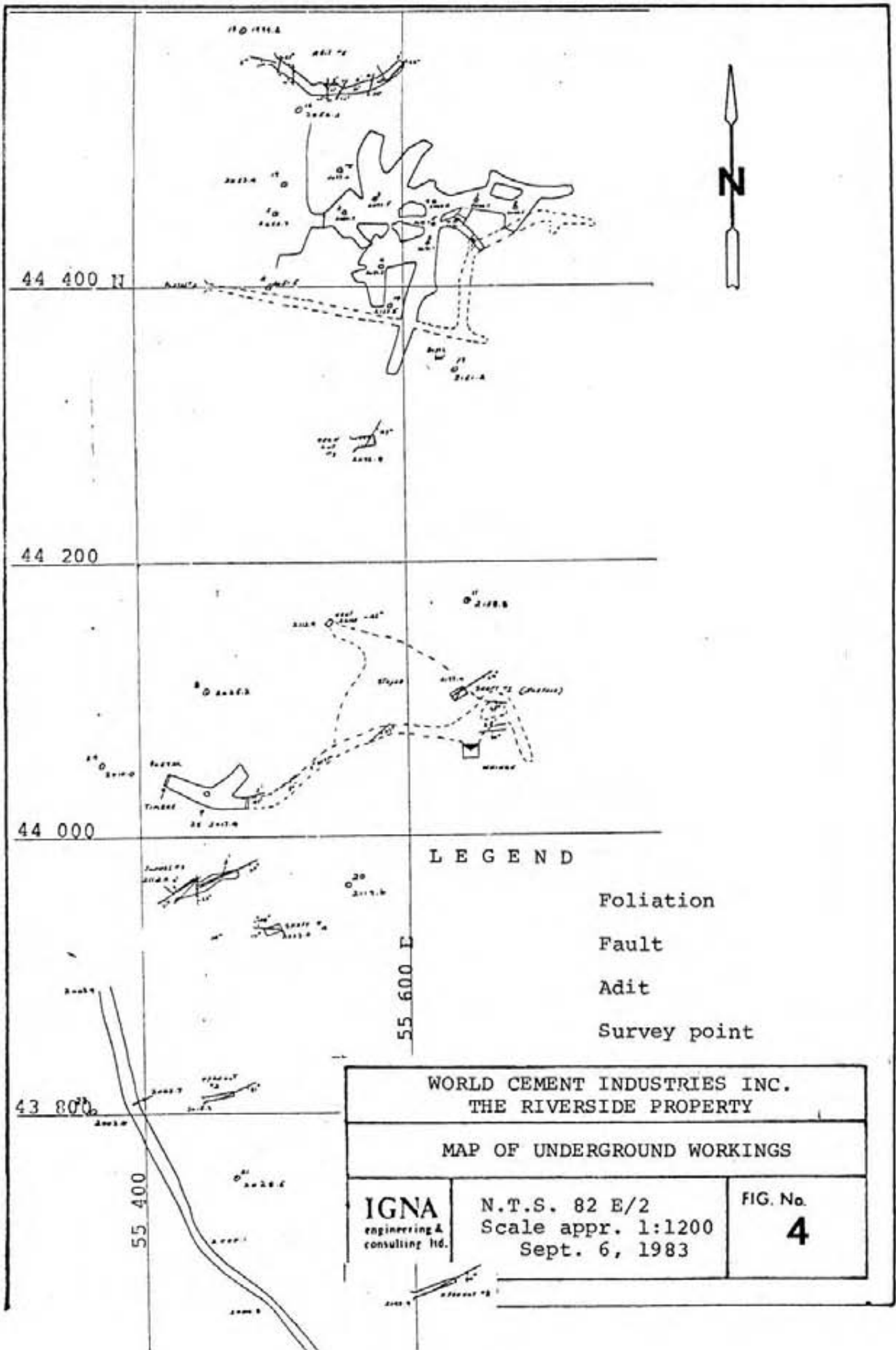
Flat lying mineralized manto-like zones range up in thickness to 3.5 meters as a result of intersections of two vein-or-zone structures.

There are two sets of structures. The first is a steep deeping one which strikes to the west and dips south at approximately 64°. The second is a flat, undulating zone which in Adit #4 makes a small basin-type manto-like structure. Both zones (or veins) are cut and offset by N-S trending faults. There are at least four vein zones exposed in the workings with structures expected to continue under unexplored parts of the property.



<b>WORLD CEMENT INDUSTRIES INC.</b> <b>THE RIVERSIDE PROPERTY</b>		
<b>LOCATION OF WORKINGS</b> <b>GEOPHYSICAL &amp; GEOCHEM. SURVEYS</b>		
<b>IGNA</b> engineering & consulting ltd.	N.T.S. 82 E/2 Scale: 1:5000 Aug. 17, 1983	<b>FIG. No.</b> <b>3</b>

3  
 4.50  
 3  
 3.50



LEGEND

- Foliation
- Fault
- Adit
- Survey point

WORLD CEMENT INDUSTRIES INC.  
THE RIVERSIDE PROPERTY

MAP OF UNDERGROUND WORKINGS

**IGNA**  
engineering &  
consulting ltd.

N.T.S. 82 E/2  
Scale appr. 1:1200  
Sept. 6, 1983

FIG. No.  
**4**

### Geophysical Survey

The VLF-EM orientation survey was done over 13 km line grid. The survey instrument was Ronka Em-16 VLF-Electromagnetometer and transmitter station-Annapolis 21.4 Khz.

Results (Fig 1 and Fig. 3):

A short but strong southeasterly-trending conductor lies across the south end of lines 3 + 50W and 4 + 00W. These lines should be extended to the south property boundary to close off the conductor, and to survey the area where the Imperial workings are located.

A long, strong conductor (II) cuts across lines 2 + 50W to 4 + 50W at approximately 2 + 50N. This may be a topographic response and requires checking accordingly.

A number of weaker responses are of interest (IV-VII) because, as mentioned, the nature of the sulphide distribution would not be expected to support a strong conductor.

### Geochemical Soil Survey

Sampling and Assaying:

A soil sampling geochemical survey was carried out in order to define and extend mineralized areas from the Riverside underground workings towards the east.

Samples were taken at 50 m intervals on lines spaced at 50 m.

Samples were obtained from the "B" horizon at a depth varying from 20 to 35 cm.

Complete pulverization of the soil samples followed by screening to -80 mesh and subsequent AA analysis were done by Dean Toye, Certified B. C. Assayer at Acme Analytical Laboratories Ltd. 852 E. Hastings, Vancouver, B. C.

Samples were analysed for lead, zinc and silver.

Results:

Lead, zinc and silver dispersion is coincidental and four three-metal anomalies have been outlined (Fig's A, B, C; Fig.3).



Lead (Fig. A)

Lead dispersion with background of 20 ppm is relatively low but anomalous values above 30 ppm coincide with zinc and silver anomalies.

Zinc (Fig. B)

Zinc has a similar dispersion pattern and anomalous values above 80 ppm which also coincides with lead and silver anomalous values.

Silver (Fig. C)

Silver shows relatively uniform dispersion with a number of anomalous values above 1.0 ppm. Anomalous value of 0.3 coincides with lead and zinc anomalies.

The soil survey has outlined five anomalous areas (Fig. 3).

CONCLUSIONS AND RECOMMENDATIONS

A reconnaissance VLF-EM and soil survey was conducted during 1982, together with geological mapping and sampling of underground workings.

The VLF-EM mapped a number of stronger and weaker conductors and the soil survey outlined a number of coincident Pb, Zn, Ag, anomalies.

The vein structures carrying mineralization show strong continuation along strike as well as in its down dip extensions. It is reasonable to expect that more of the mineralized flat lying manto-like bodies will be found in the same stratigraphic level in other areas of the property as indicated by the recent soil survey.

The 1982 exploration of the Riverside property shows that strong mineralized veins continue along the strike, that they contain good silver values together with lead, zinc and gold, that more detailed EM and soil survey should be able to detect hidden vein structures and continuation of veins from the old workings. It is my opinion that the property warrants further exploration work.

I recommend the following exploration program:

1. Geophysical VLF-EM detailed survey over the whole Riverside property
2. Geochemical soil survey. Both surveys to run over the grid with 10 meters spacing on the line.
3. Diamond drilling of existing and new anomalies.

The program is to run in two consecutive phases, as follows:

Phase I

Field Work

- line cutting
- VLF-EM detailed survey
- soil survey

Office Work

- computing geophysical and geochemical data
- data evaluation
- report and recommendation

Phase II (Will depend on Phase I evaluation)

Field Work

- diamond drilling of targets
- geology and supervision
- survey

Office Work

- assaying
- computing geological data
- data evaluation
- report and recommendation

ESTIMATED BUDGET

Phase I .....	\$ 135,000
Phase II .....	<u>\$ 352,000</u>
Total Phase I & II .....	\$ 487,000
Office Overhead and Contingencies (10%) .....	<u>\$ 48,700</u>
TOTAL ESTIMATED BUDGET .....	<u>\$ 535,700</u>

BIBLIOGRAPHY

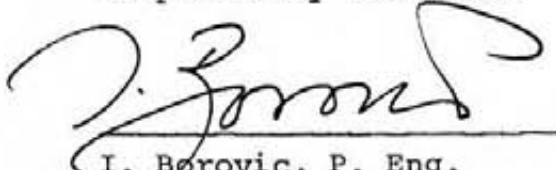
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- Dawson, J. M. (1975); Report on the Riverside for Kerr Dawson & Associates Ltd. (see Pringle, D. W., 1982).
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- Little, H. W. (1953 - 1956): Map 6 - 1957 Kettle River, B. C. (82 E/E1/2).
- Little, H. W. (1958 & 1959): Map 15 - 1961 Kettle River, B. C. (82 E/W1/2).
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- Pringle, D. W. (1982): Report on the Riverside Property Greenwood Mining Division B. C. for World Cement Industries Inc.
- Taylor, B. (1979): Geologic Report on the Kay 1-7 Mineral Claims Greenwood Mining Division Rock Creek, B. C. for Edina International Ltd.
- Verzosa, R. S. (1979): Geological Report (see Pringle, D. W., 1982).
- Vincent, J. S. (1982): Memorandum Riverside Mine Property Geophysical & Geochemical) Survey Results and Recommendations.

CERTIFICATE

I, I. Borovic, with business address in Vancouver, British Columbia, do hereby certify:

1. That I have personally reviewed the data collected by J. S. Vincent and R. Kregosky.
2. That I am exploration field supervisor and consultant for World Cement Industries Inc. of Vancouver, British Columbia.
3. That the expenditures claimed for the performance of the work are correct.

Respectfully submitted



I. Borovic, P. Eng.  
Geologist

September 6, 1983

November 23, 1982

World Cement Industries Inc.  
915 - 470 Granville St.  
Vancouver, B. C. V6C 1V5

INVOICE #148

To Professional Services -

- 1. Grid preparation and geophysical surveying as per Oct. 22nd contract:
  - a) 8 days @ \$495.....\$3,960.00
  - b) Expenses as per report.....655.74
  - c) Truck charges: 8 days @ \$50.....400.00  
1192 km @ 12¢.....143.04
  
- 2. Property examination and geological examination; plotting and evaluating survey results and report writing:
  - a) 45 hrs @ \$50.....2,250.00
  - b) Expenses as per report.....431.42
  
- Drafting as per attached invoice.....240.00
- Reproduction.....67.00
  
- Total.....\$8,147.20
- LESS ADVANCE.....1,000.00
- Balance.....\$7,147.20
  
- Amount of this invoice.....*J. Nov 26/82*.....\$7,147.20



November 3 1982

Mr. Peter Weidant

World Cement Products Inc.

In Acc't With Monashee Geological Services

Terms \_\_\_\_\_

re: Riverside Property

Oct. 28/82	geological reconnaissance with D. Pringle - start baseline grid	\$125.00
Oct 29	geological reconnaissance with Jack Venient	125.00
Oct. 30	geochemical survey	125.00
Oct. 31	" "	125.00
Nov. 1	" "	125.00
Nov. 2	" " (final)	125.00
Total		\$750.00

Monashee Geological Services

Box 63

Westbridge, B.C. V0H 2B0

446-2525

Thank you

Ray Reynolds

Paid Nov. 10/82  
\$750.00

# ACME ANALYTICAL LABORATORIES LTD.

PHONE: 253-3158

85 1/2 1st Hastings St., Vancouver, B.C. V6A 1R6

File: 82-1476A

Date: Nov. 9, 1982

World Cement Industries Inc.,  
915 - 470 Granville St.,  
Vancouver, B.C.  
V6C 1V5

TERMS:  
NET TWO WEEKS  
2% PER MONTH CHARGED ON  
OVERDUE ACCOUNTS.

NUMBER	ASSAY	PRICE	AMOUNT
252	Geochem Pb, Zn and Ag @	\$3.05	\$768.60
252	Soil sample preparations @	\$0.50	\$126.00
			\$894.60
			12.50
			<b>907.10</b>

WORLD CEMENT INDUSTRIES INC.

No 188

November 18 19 82

PAY TO THE ORDER OF

**PAID**

ACME ANALYTICAL LABORATORIES LTD

\$ 907.10

100 DOLLARS

CANADIAN IMPERIAL BANK OF COMMERCE  
GRANVILLE & DUNSMUIR  
VANCOUVER, B.C.

WORLD CEMENT INDUSTRIES INC.

CANADIAN IMPERIAL BANK OF COMMERCE  
GRANVILLE & DUNSMUIR  
VANCOUVER, B.C.

*[Signature]*

⑆00100⑆⑆00⑆46⑆04814⑆

⑆0000090710⑆

November 23, 1982

MEMORANDUM

To: Mr. P. F. Wishart, Pres.  
From: John S. Vincent, P. Eng.  
Subject: RIVERSIDE MINE PROPERTY  
Survey Results and Recommendations

INTRODUCTION

At the request of Mr. Peter Wishart, President of World Cement Industries Inc., and Mr. D. W. Pringle, P. Eng., an orientation survey was carried out over a small portion of the Riverside Mine Property. The survey consisted of VLF electromagnetic surveying, soil sampling, and a geological examination of accessible underground workings and surface outcrops.

PURPOSE

The purpose of the orientation work was to evaluate the effectiveness of VLF-EM and soil sampling in outlining possible extensions of the known vein systems, and to perhaps identify undiscovered veins.

### APPROACH

An area of interest centered on the underground workings was surveyed as shown on the accompanying drawings. An east-west base line is located midway between the portals of adits 1 and 2. Survey lines are spaced at 50 meter intervals, and 50 meter stations are flagged along the lines; slope corrections were not made. VLF-EM readings were taken at each station by a geophysical operator, and soil samples were collected by Mr. Roy Kregoski.

Mr. Kregoski and I examined the mineralized structures where it is accessible in the first 100 feet of the No. 1 tunnel and in the stoped area above the No. 2 tunnel. The recent mining in the latter workings has opened up the structure along a strike length of 150 feet and down-dip for a similar distance. This exposure provides a good indication of what can be expected with respect to the tenor of mineralization and its possible control and behavior. Since there is considerable sampling and analytical data on hand, compiled by previous workers, we did not do any sampling at this time.

### DISCUSSION OF RESULTS

Mineralization consists of varying amounts of pyrite, galena and sphalerite hosted by quartz veins which typically occur within sheared and altered zones. The quartz veins vary in width from a fraction of an inch to several inches, and the zones range up to 15 feet in thickness. From a mining perspective, the result is a combination of zones which will vary greatly in width, grade and attitude. The nature of the sulphide distribution is erratic, and the grade can be expected to behave similarly. The silver content is directly proportional to that of sphalerite and galena, and where the sulphides are heavy, the silver grade is high. Sampled grades range from less than 1 ounce per ton to in excess of 100 ounces per ton. With careful mining, a recoverable grade of 25 - 30 ounces of silver per ton might be expected.

It is evident that 2 sets of fracture systems are mineralized: a set which strikes northeasterly and dips to the southeast, and one which strikes northwesterly and dips to the northeast. The dips vary considerably from flat to steep, and it appears that the lower dip angles produce dilatant zones in the structure which are more conducive to the development of heavier mineralization and thicker zone - widths. Dips in excess of  $70^{\circ}$  contain tight, narrow zones. This relationship can be observed in the caved portion of the No. 1 tunnel. The stoped area above the No. 2 tunnel has excavated a flat to moderately-dipping section which has thicknesses to 5 feet.

The previously mentioned 15 foot thickness occurs where the 2 fracture systems intersect. Such an intersection can be expected to produce a pipe-like zone of mineralization plunging along this line of intersection.

At least 4 different vein systems have been exposed in the various cuts and adits in the area studied, and the strength of the hosting structures is such that continuity can be expected. Fault displacement is evident, and a left hand sense of movement is indicated in at least one off-setting fracture system which has a northerly strike.

The electromagnetic survey did not locate the known vein systems in the adit area, or provide a clear indication of continuity. However, this is not surprising considering the nature of the mineralization. The erratic and discontinuous sulphide content of the zones would not respond as a conductor and the low-angle dips where the better material is concentrated would be difficult to detect at best.

South of the base line, several electromagnetic responses warrant follow-up. A short but strong southeasterly-trending conductor lies across the south end of lines 3 + 50W and 4 + 00W. These lines should be extended to the south property boundary to close off the conductor, and to survey the area where the Imperial workings are located.



A long, strong conductor (II) cuts across lines 2 + 50 W to 4 + 50 W at approximately 2 +50N. This may be a topographic response and requires checking accordingly.

A number of weaker responses are of possible interest ( IV-VII ) because, as mentioned, the nature of the sulphide distribution would not be expected to support a strong conductor.

The soil survey has outlined anomalous zones identified by spot highs. This is the type of signature expected considering samples collected at 50 meter (164 foot) intervals. Fill-in sampling at 20 meter centers should be done in these areas.

#### RECOMMENDATIONS

The property has merit as a potential host for moderate to high grade silver mineralization with significant credits in lead, zinc, and gold. Diamond drilling will be required to evaluate the tonnage potential. It is recommended that an initial 2500 feet of drilling be planned to locate and test for extensions of the known mineralized structures, and to check several of the weaker EM conductors.

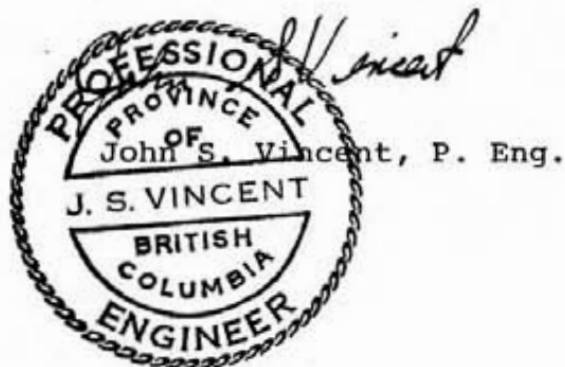
A cost estimate is outlined as follows:

Geologist: 1 month.....	\$3,000.
Consulting and evaluation.....	2,500.
Subsistence and accomodations -	
25 days @ \$50.....	1,250.
Truck: 1 truck month.....	1,500.
Drilling: 2500 feet @ \$25.....	62,500.
Analytical.....	2,500.
Field supplies.....	200.
Contingencies @ 10%.....	7,345
Administration @ 12%.....	9,695.
	\$90,490.

Allow: \$90,500.

Recommended locations for the first few holes are spotted on Figure 1, and subsequent targets will be contingent on results. A total of 10 - 12 holes can be drilled. The grid as plotted on Figure 1 is not slope-corrected, thus final spotting of the drill hole collar must be measured from the base line to check the final location on-site.

Respectfully submitted,



*John S. Vincent* P. Eng.



To: World Cement Industries Inc.,  
915 - 470 Granville St.,  
Vancouver, B.C.  
V6C 1V5

ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis

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

phone: 253 - 3158

File No. 82-1476A

Type of Samples Soils

Disposition \_\_\_\_\_

**GEOCHEMICAL ASSAY CERTIFICATE**

SAMPLE No.	Pb*	Zn	Ag						
0 0	16	82	.2						1
0+50N	15	56	.1						2
1	15	52	.1						3
1+50	14	55	.1						4
2	17	118	.1						5
2+50	11	42	.1						6
3	10	96	.1						7
3+50	13	54	.1						8
4	17	57	.1						9
4+50	15	55	.1						10
5	13	44	.1						11
5+50	15	30	.1						12
6	17	36	.2						13
6+50	21	50	.2						14
7	32	92	1.0						15
7+50	16	70	.2						16
8	11	26	.1						17
8+50	21	72	.1						18
9	18	65	.1						19
9+50	15	78	.1						20
0 10 N	30	82	.6						21
									22
0+50E 0	11	48	.1						23
0+50N	13	46	.1						24
1	14	42	.1						25
1+50	13	32	.2						26
2	18	48	.1						27
2+50	11	39	.1						28
3	13	84	.2						29
3+50	18	72	.2						30
4	16	78	.1						31
4+50	11	55	.1						32
5	15	46	.2						33
5+50	16	39	.3						34
6	18	19	.1						35
6+50	24	75	.1						36
7	15	59	.1						37
0+50E 7+50N	15	290	.1						38
									39
									40

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DIGESTION:.....

DETERMINATION:.....

DATE SAMPLES RECEIVED Nov. 4, 1982

DATE REPORTS MAILED Nov. 9, 1982

ASSAYER *Dean Toye*

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis

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

phone:253 - 3158

To: World Cement Industries Inc.,

File No. 82-1476A

Type of Samples Soils

Disposition

GEOCHEMICAL ASSAY CERTIFICATE

SAMPLE No.	Pb*	Zn	Ag						
0+50E 8 N	13	42	.1						1
8+50	17	64	.1						2
9	15	55	.4						3
9+50	24	56	.9						4
0+50E 10 N	18	46	.3						5
									6
0+50W 0	12	62	.2						7
0+50N	10	60	.1						8
1	12	48	.1						9
1+50	10	56	.1						10
2	11	45	.2						11
2+50	16	52	.4						12
3	11	37	.2						13
3+50	15	38	.3						14
4	14	52	.2						15
4+50	15	42	.3						16
5	11	94	.3						17
5+50	12	50	.2						18
6	13	46	.1						19
6+50	25	49	.1						20
7	19	50	.3						21
7+50	40	180	.3						22
8	12	38	.2						23
8+50	9	32	.1						24
9+25	13	110	.3						25
9+50	24	170	.4						26
0+50W 10 N	21	82	.6						27
									28
1 E 0	7	35	.1						29
0+50N	8	38	.1						30
1	13	45	.1						31
1+50	16	62	.2						32
2	16	60	.2						33
2+50	17	24	.5						34
3	14	32	.3						35
3+50	16	54	.3						36
4	17	54	.3						37
1 E 4+50N	16	66	.2						38
									39
									40

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DIGESTION:.....  
DETERMINATION:.....

DATE SAMPLES RECEIVED Nov. 4, 1982

DATE REPORTS MAILED Nov. 9, 1982

ASSAYER *D. Toy*

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



To: World Cement Industries Inc.,

ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis

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

phone:253 - 3158

File No. 82-1476A

Soils

Type of Samples

Disposition

### GEOCHEMICAL ASSAY CERTIFICATE

SAMPLE No.	Pb*	Zn	Ag							
1 E 5 N	13	48	.1							1
5+50	15	49	.3							2
6	13	24	.3							3
6+50	16	9	.4							4
7	12	34	.2							5
7+50	14	39	.3							6
8	12	40	.2							7
8+50	17	54	.4							8
9	16	47	.3							9
9+50	15	56	.3							10
1 E 10 N	19	44	.4							11
										12
1 W 0	14	68	.1							13
0+50N	16	48	.2							14
1	11	44	.1							15
1+50	13	58	.1							16
2	11	39	.1							17
2+50	15	50	.1							18
3	18	44	.1							19
3+50	18	45	.1							20
4	19	46	.3							21
4+50	19	48	.2							22
5	14	38	.2							23
5+50	15	33	.1							24
6	11	40	.2							25
6+50	14	39	.1							26
7	42	310	1.0							27
7+50	18	42	.1							28
8	15	38	.1							29
8+50	11	40	.1							30
9	13	62	.1							31
9+50	16	60	.4							32
1 W 10 N	19	65	.2							33
										34
1+50W 0	11	38	.1							35
0+50N	10	32	.2							36
1	9	33	.2							37
1+50	8	32	.1							38
1+50W 2 N	13	30	.1							39
										40

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DIGESTION:.....

DETERMINATION:.....

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DATE REPORTS MAILED Nov. 9, 1982

ASSAYER

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



ACME ANALYTICAL LABORATORIES LTD.

To: World Cement Industries Inc.,

Assaying & Trace Analysis

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

phone: 253 - 3158

File No. 82-1476A  
 Type of Samples SOFTS  
 Disposition \_\_\_\_\_

**GEOCHEMICAL ASSAY CERTIFICATE**

SAMPLE No.	Pb*	Zn	Ag						
1+50W 2+50N	12	43	.1						1
3	13	39	.1						2
3+50	21	67	.7						3
4	72	123	2.5						4
4+50	17	44	.3						5
5	15	38	.2						6
5+50	12	37	.2						7
6	15	48	.1						8
6+50	18	68	.2						9
7	55	92	.4						10
7+50	16	49	.2						11
8	16	44	.3						12
8+50	39	110	.4						13
9	13	74	.3						14
9+50	21	90	.4						15
1+50W 10 N	15	56	.4						16
									17
2 W 0	9	44	.1						18
0+50N	13	45	.1						19
1	11	35	.1						20
1+50	11	62	.3						21
2	15	50	.2						22
2+50	16	90	.3						23
3	29	80	.6						24
3+50	25	77	.6						25
4	24	67	.3						26
4+50	19	89	.5						27
5	20	85	.4						28
5+50	8	41	.2						29
6	17	62	.1						30
6+50	14	58	.2						31
7	34	109	.4						32
7+50	9	40	.1						33
8	17	49	.2						34
8+50	13	68	.2						35
9	12	46	.3						36
9+50	10	69	.2						37
2 W 10 N	14	48	.2						38
									39
									40

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 DIGESTION:.....  
 DETERMINATION:.....

DATE SAMPLES RECEIVED Nov. 4, 1982  
 DATE REPORTS MAILED Nov. 9, 1982  
 ASSAYER Dean Toye

DEAN TOYE, B.Sc.  
 CHIEF CHEMIST  
 CERTIFIED B.C. ASSAYER





To: World Cement Industries Inc.,

ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis

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

phone: 253 - 3158

82-1476A

File No. \_\_\_\_\_

Type of Samples Soils

Disposition \_\_\_\_\_

**GEOCHEMICAL ASSAY CERTIFICATE**

SAMPLE No.	Pb*	Zn	Ag						
2+50W 0	7	35	.1						1
0+50N	7	32	.1						2
1	8	38	.1						3
1+50	5	29	.1						4
2	14	70	.5						5
2+50	32	92	.7						6
3	23	78	.5						7
3+50	14	60	.1						8
4	23	90	.3						9
4+50	18	100	.5						10
5	14	128	.1						11
5+50	12	48	.1						12
6	11	45	.2						13
6+50	10	44	.1						14
7	13	52	.1						15
7+50	11	56	.1						16
8	13	56	.1						17
8+50	10	50	.1						18
9	15	110	.1						19
9+50	9	48	.1						20
2+50W 10 N	12	70	.1						21
									22
3 W 0	5	32	.1						23
0+50N	9	50	.1						24
1	6	32	.2						25
1+50	7	38	.2						26
2	12	56	.1						27
2+50	9	62	.1						28
3	10	58	.1						29
3+50	20	72	.1						30
4	32	102	.4						31
4+50	60	225	1.1						32
5	12	60	.2						33
5+50	7	45	.1						34
6	14	60	.2						35
6+50	6	52	.1						36
7	7	45	.1						37
3 W 7+50N	8	52	.1						38
									39
									40

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DIGESTION:.....

DETERMINATION:.....

DATE SAMPLES RECEIVED Nov. 4, 1982

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ASSAYER

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER





To: World Cement Industries Inc.,

File No. 82-1476A

Type of Samples Soils

Disposition \_\_\_\_\_

### GEOCHEMICAL ASSAY CERTIFICATE

SAMPLE No.	Pb*	Zn	Ag							
3 W 8 N	12	52	.1							1
8+50	12	54	.2							2
9	6	60	.1							3
9+50	7	88	.1							4
3 W 10 N	11	70	.3							5
3+50W 0	10	45	.1							6
0+50N	9	48	.1							7
1	12	42	.1							8
1+50	14	46	.1							9
2	13	45	.4							10
2+50	10	66	.1							11
3	13	56	.3							12
3+50	9	50	.2							13
4	20	108	.4							14
4+50	14	78	.4							15
5	12	52	.1							16
5+50	14	80	.1							17
6	13	60	.1							18
6+50	7	27	.1							19
7	8	48	.1							20
7+50	12	66	.1							21
8	13	70	.1							22
8+50	6	38	.1							23
9	4	34	.1							24
9+50	11	56	.1							25
3+50W 10 N	10	40	.1							26
4 W 0	7	50	.1							27
0+50N	8	38	.1							28
1	12	200	.1							29
1+50	12	60	.1							30
2	62	150	1.1							31
2+50	20	108	.3							32
3	14	54	.1							33
3+50	14	74	.3							34
4	17	47	.1							35
4+50	15	94	.1							36
4 W 5 N	12	46	.1							37
										38
										39
										40

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DIGESTION:.....  
DETERMINATION:.....

DATE SAMPLES RECEIVED Nov. 4, 1982

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ASSAYER Dean Toye

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis

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

phone:253 - 3158

To: World Cement Industries Inc.,

File No. 82-1476A

Type of Samples Soils

Disposition

GEOCHEMICAL ASSAY CERTIFICATE

SAMPLE No.	Pb*	Zn	Ag																		
4 W 5+50N	12	76	.1																		1
6	8	56	.2																		2
6+50	7	40	.1																		3
7	10	43	.2																		4
7+50	12	42	.2																		5
8	8	38	.1																		6
8+50	10	36	.2																		7
9	11	56	.1																		8
9+50	12	52	.2																		9
4 W 10 N	12	45	.2																		10
4+50W 0	9	68	.1																		11
0+50N	10	70	.1																		12
1	12	56	.1																		13
1+50	12	68	.1																		14
2	9	52	.2																		15
2+50	10	62	.2																		16
3	16	80	.3																		17
3+50	17	64	.1																		18
4	35	86	.5																		19
4+50	96	250	4.4																		20
5	6200	4400	71.0																		21
5+50	54	154	1.4																		22
6	19	68	.1																		23
6+50	10	32	.1																		24
7	Miss																				25
7+50	Miss																				26
8	Miss																				27
8+50	7	36	.1																		28
9	10	38	.1																		29
9+50	13	50	.1																		30
4+50W 10 N	12	48	.1																		31
5 W 3+50N	12	56	.1																		32
4	15	130	.8																		33
5 W 4+50N	106	330	3.5																		34
																					35
																					36
																					37
																					38
																					39
																					40

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DIGESTION:.....  
TERMINATION:.....

DATE SAMPLES RECEIVED Nov. 4, 1982  
DATE REPORTS MAILED Nov. 9, 1982  
ASSAYER *A. Toye*

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



To: World Cement Industries Inc.,  
 915 - 470 Granville St.,  
 Vancouver, B.C.  
 V6C 1V5

ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis

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

Telephone: 253 - 3158

File No. 82-1476B

Type of Samples Rock

Disposition

Project : Riverside

# ASSAY CERTIFICATE

No.	Sample	Ag oz/ton	Au oz/ton					No.
1	4781	.21	.002					1
2								2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20

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DATE SAMPLES RECEIVED Nov. 4, 1982

DATE REPORTS MAILED Nov. 8, 1982

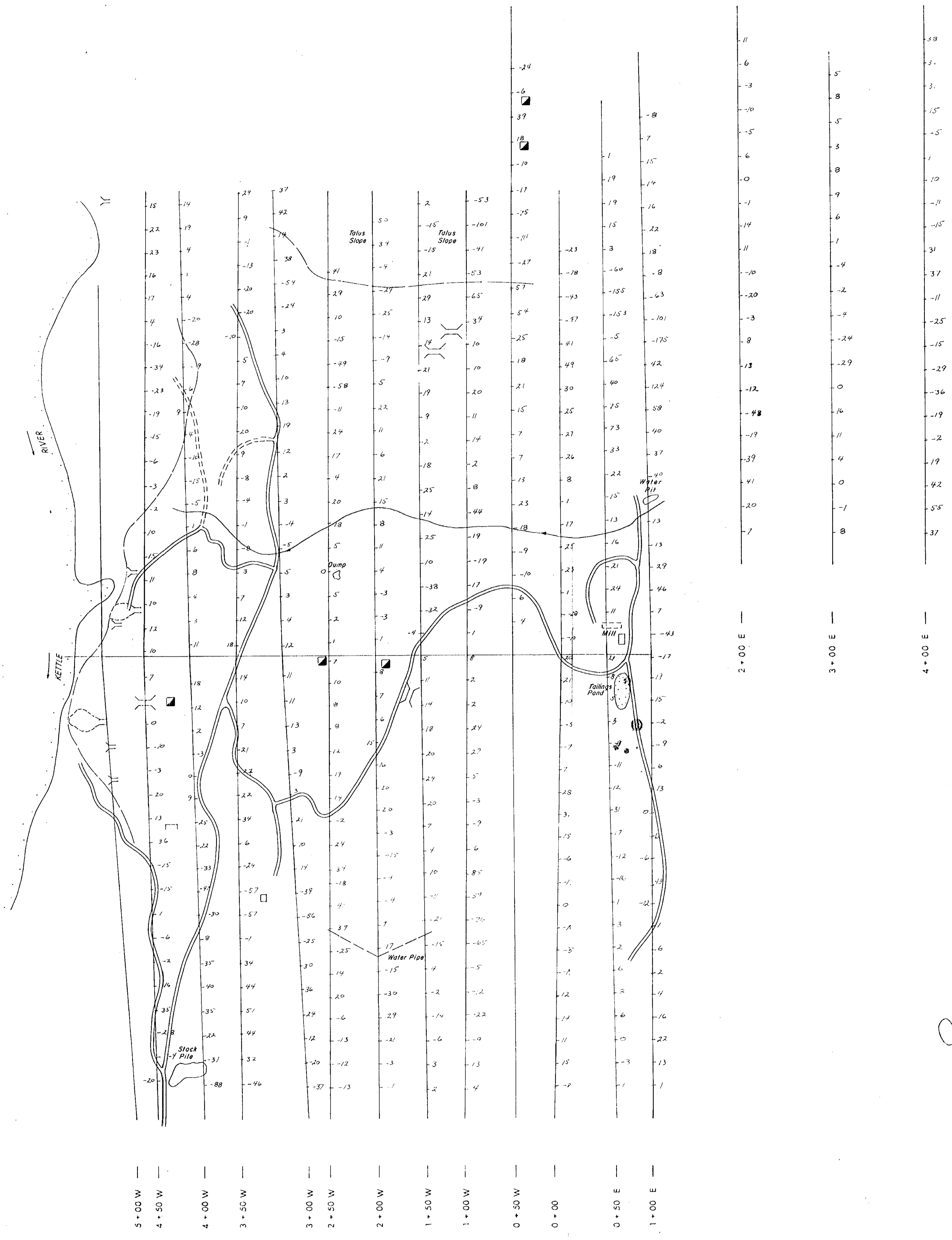
ASSAYER

DEAN TOYE, B.Sc.  
 CHIEF CHEMIST  
 CERTIFIED B.C. ASSAYER

10 + 00 N

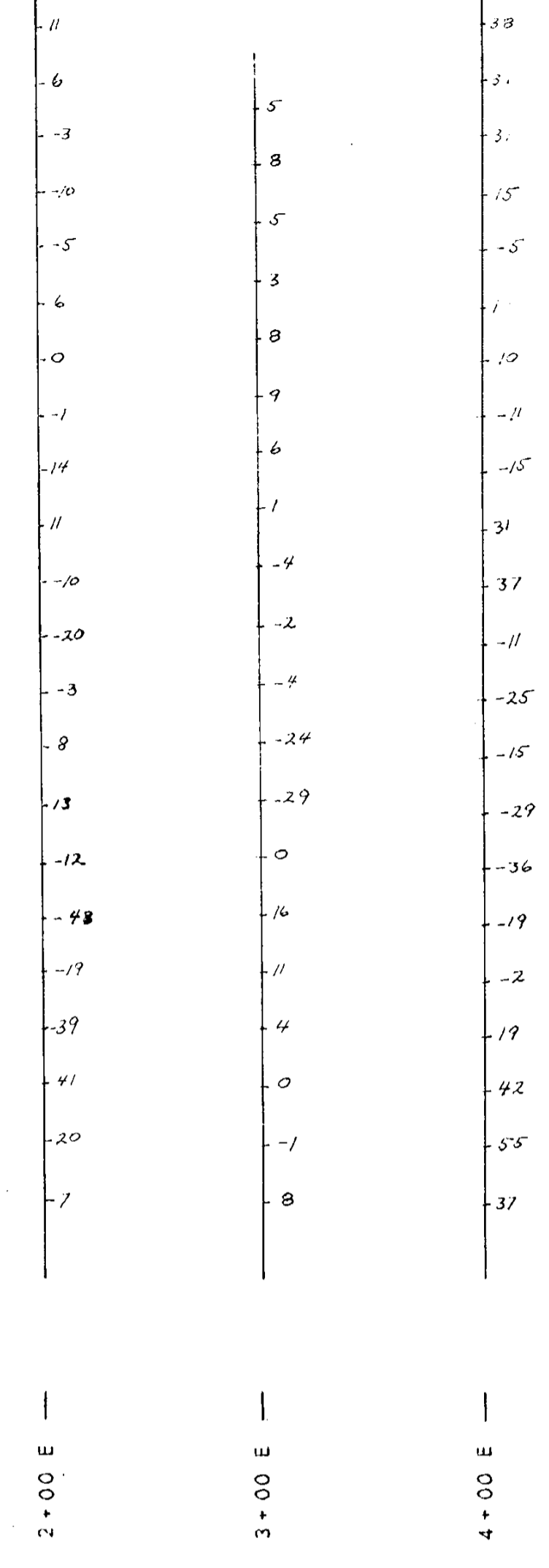
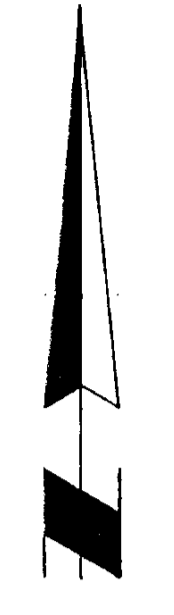
BASELINE 5 + 00 N

0 + 00

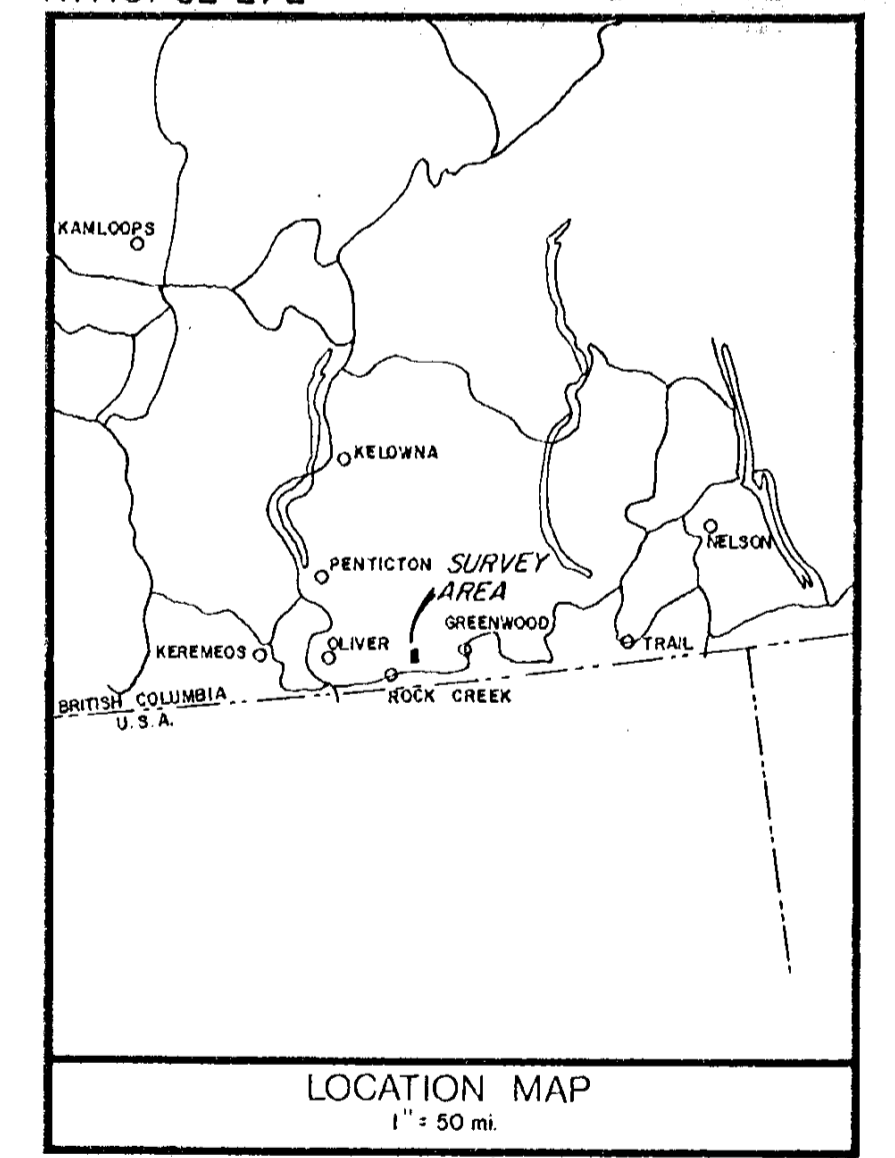


LEGEND:

- Shaft
- ⌋ Trench
- Cut
- === Road
- Creek
- || Adit

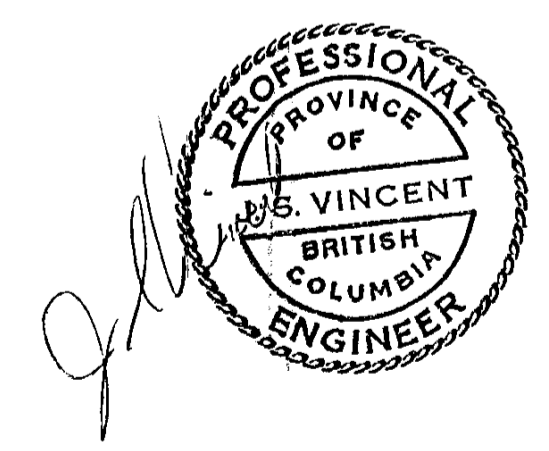
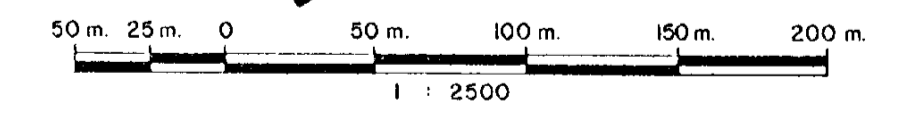


N.T.S. 82 E/2



LOCATION MAP  
1" = 50 mi.

11, 118



WORLD CEMENT INDUSTRIES INC.  
RIVERSIDE PROSPECT

GREENWOOD MINING DIVISION BRITISH COLUMBIA

EM-16 SURVEY  
FRASER-FILTERED VALUES

Glen S. White  
geophysical consulting  
services Ltd.

Interpreted By: J.C.V.
Drawn By: FINELINE DRAFTING & GRAPHICS
Checked By: J.C.V.
Date: NOVEMBER 1982
Fig. No.:



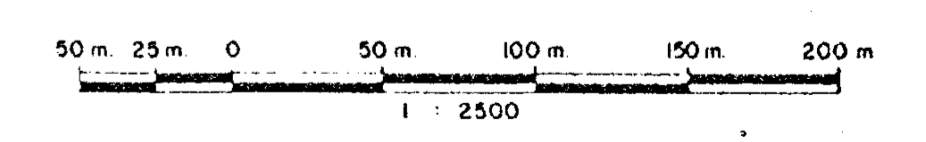
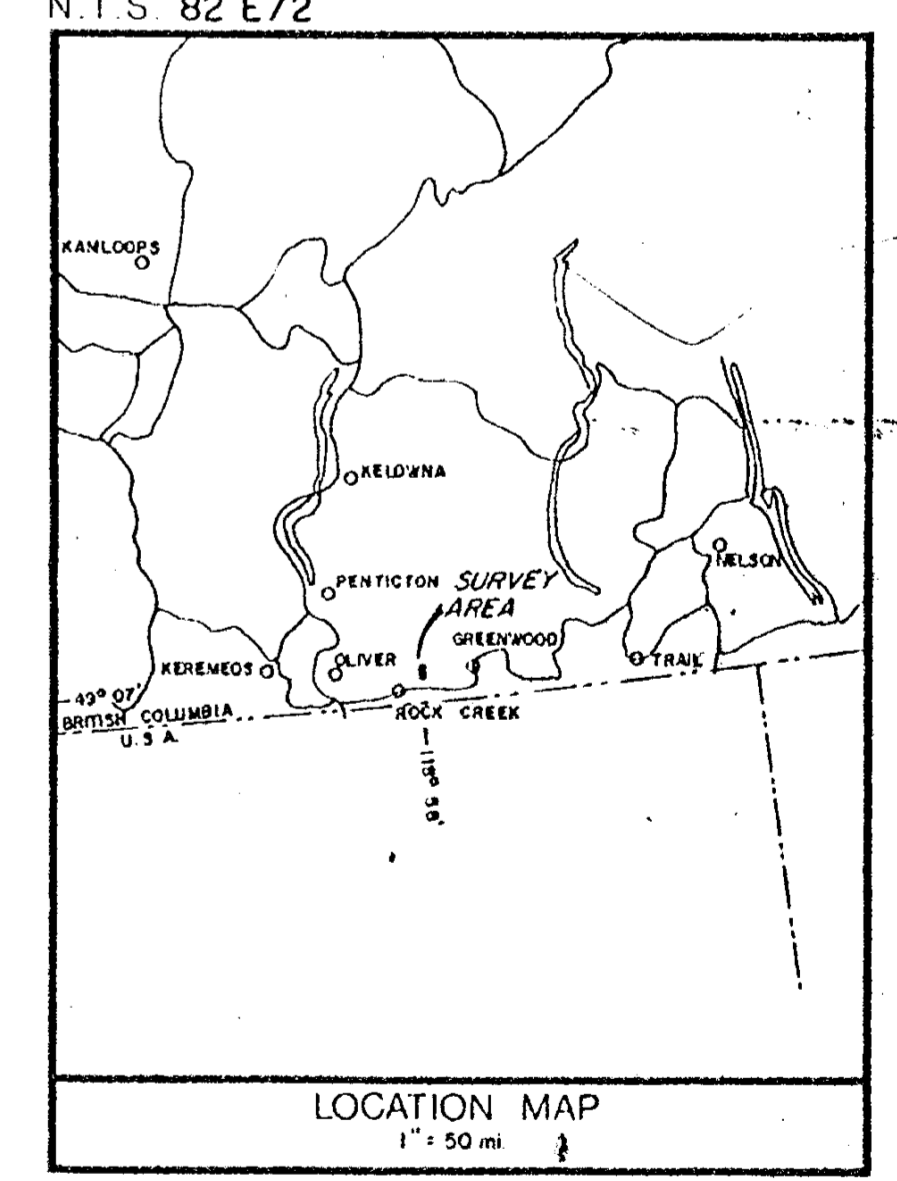
LEGEND:

- Shaft
- ( ) Trench
- [ ] Cut
- ≡≡≡ Road
- +— Creek
- ∩ Adit

GEOLOGICAL BRANCH ASSESSMENT REPORT

11,118

N.T.S. 82 E/2

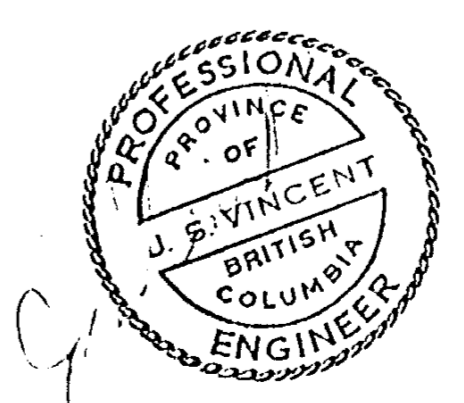


WORLD CEMENT INDUSTRIES INC.  
 — RIVERSIDE PROPERTY —  
 GREENWOOD MINING DIVISION BRITISH COLUMBIA

**GEOCHEMICAL MAP**  
 LEAD - P.P.M.

*Don E. White*  
 geophysical consulting  
 &  
 services Ltd.

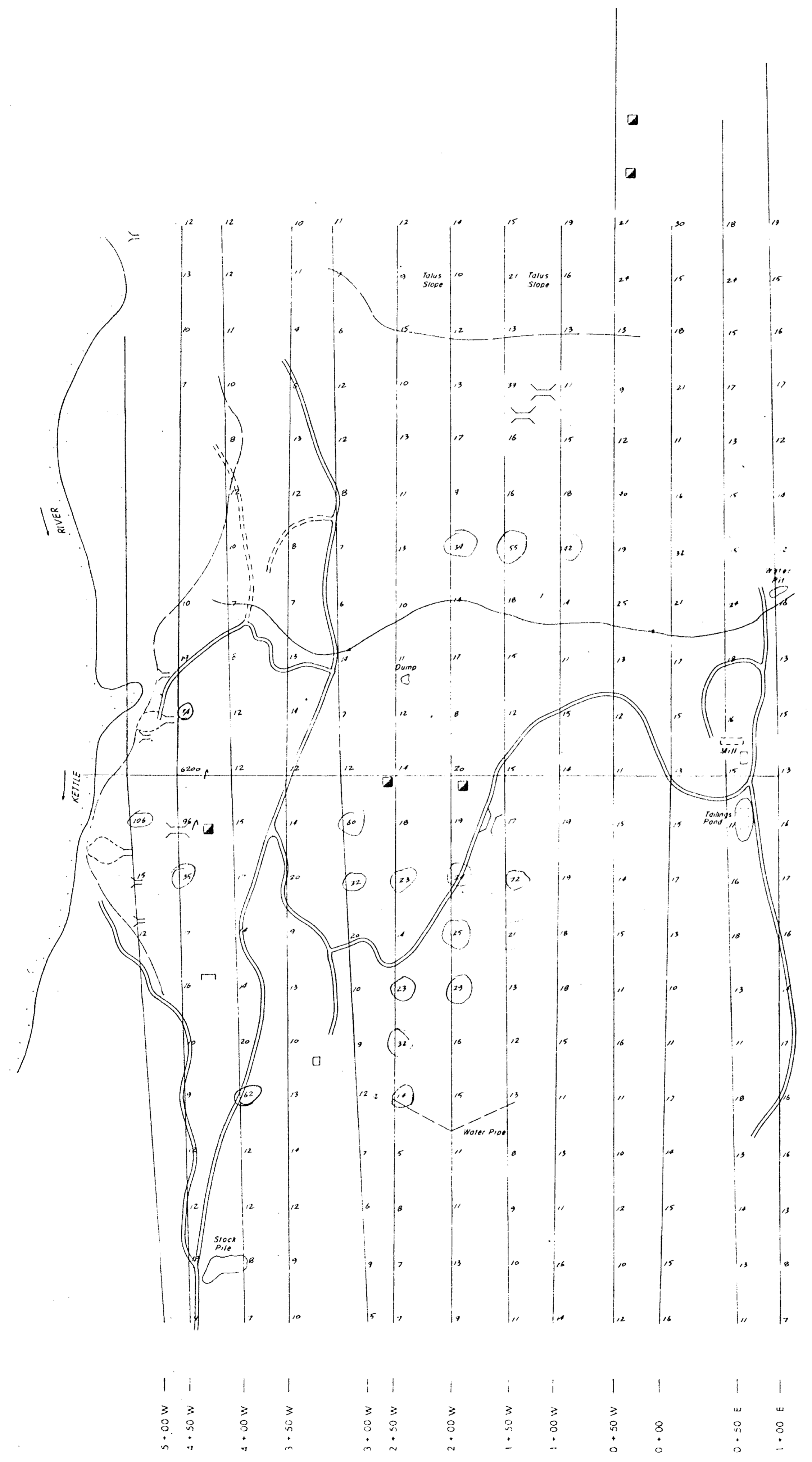
Interpreted By: J.S.V.  
 Drawn By: FINELINE GRAPHING & GRAPHICS  
 Checked By: J.S.V.  
 Date: NOVEMBER 1982  
 Fig. No. A



10 + 00 N —

BASELINE 5 + 00 N —

0 + 00 —



2 + 00 E —

3 + 00 E —

4 + 00 E —

5 + 00 W —  
 4 + 50 W —  
 4 + 00 W —  
 3 + 50 W —  
 3 + 00 W —  
 2 + 50 W —  
 2 + 00 W —  
 1 + 50 W —  
 1 + 00 W —  
 0 + 50 W —  
 0 + 00 —  
 0 + 50 E —  
 1 + 00 E —





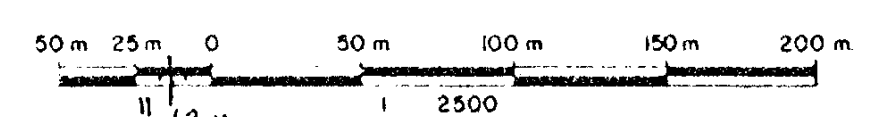
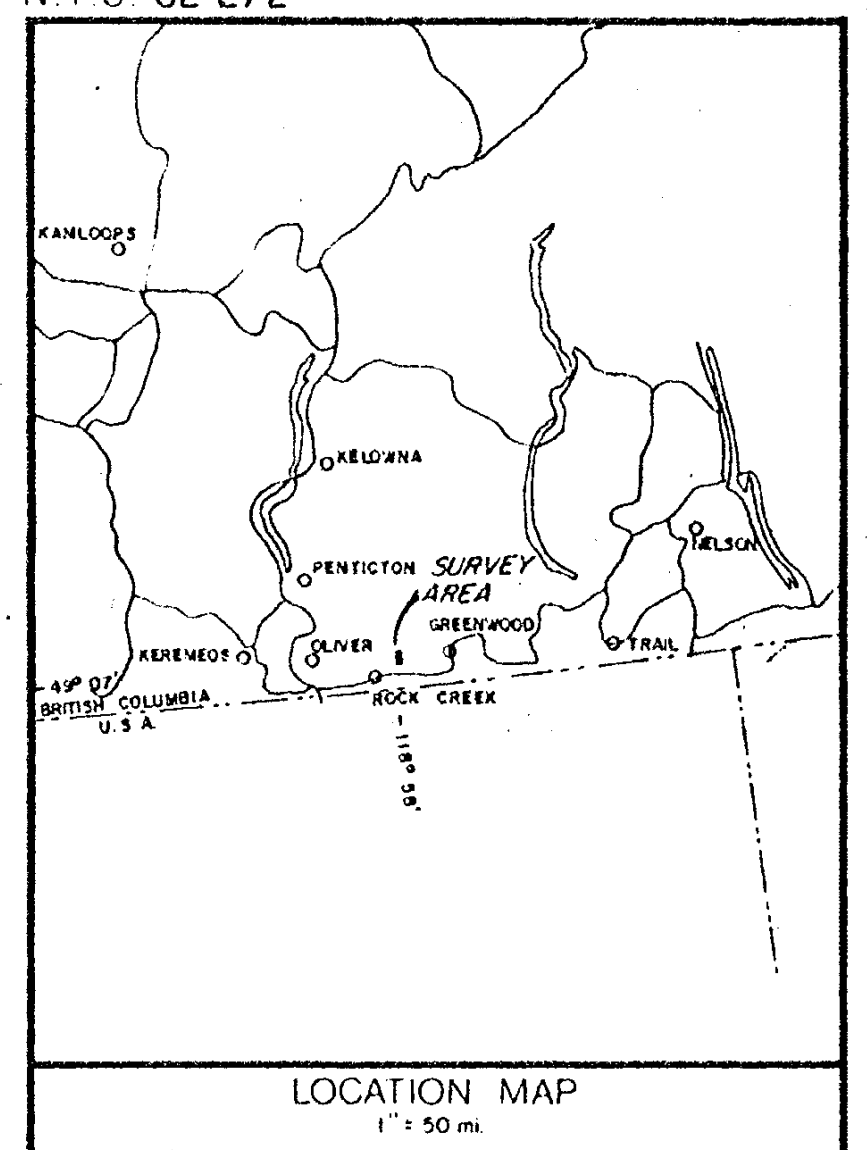
LEGEND

- Shaft
- ( ) Trench
- [ ] Cut
- == Road
- Creek
- || Adit

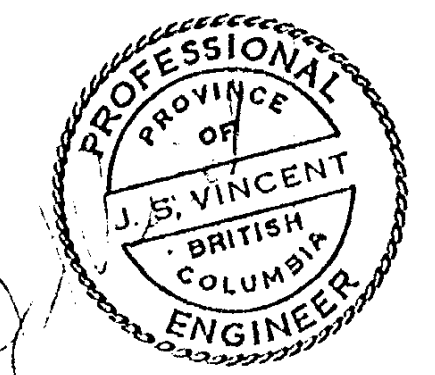
GEOLOGICAL BRANCH ASSESSMENT REPORT

11,118

N.T.S. 82 E/2



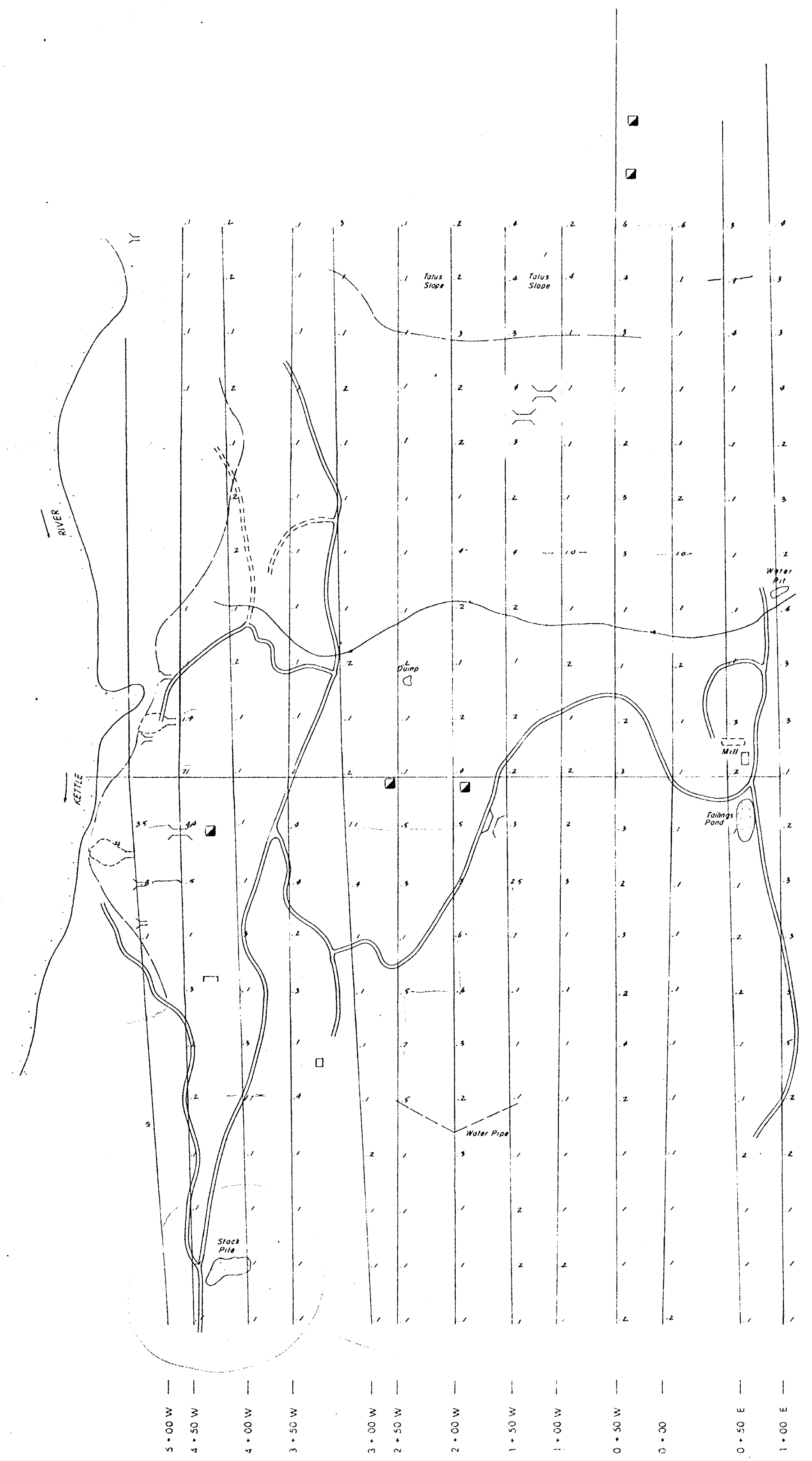
<b>WORLD CEMENT INDUSTRIES INC.</b> — RIVERSIDE PROPERTY — GREENWOOD MINING DIVISION BRITISH COLUMBIA	
<b>GEOCHEMICAL MAP</b> SILVER — P.P.M.	
<i>Alan E. White</i> geophysical consulting & services Ltd.	Interpreted By: J.S.V. Drawn By: FINELINE DRAFTING & GRAPHICS Checked By: J.S.V. Date: NOVEMBER 1982 Fig. No. C



10 + 00 N

BASELINE 5 + 00 N

0 + 00



2 + 00 E

3 + 00 E

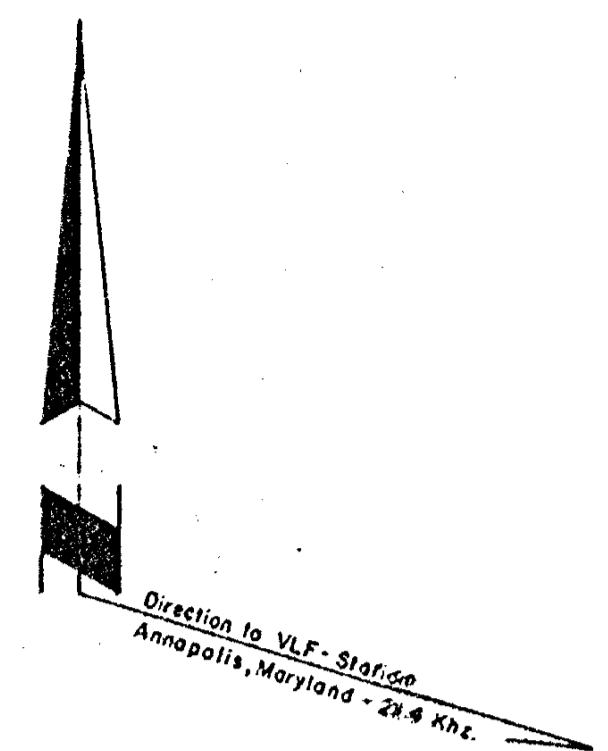
4 + 00 E

5 + 00 W  
 4 + 50 W  
 4 + 00 W  
 3 + 50 W  
 3 + 00 W  
 2 + 50 W  
 2 + 00 W  
 1 + 50 W  
 1 + 00 W  
 0 + 50 W  
 0 + 00  
 0 + 50 E  
 1 + 00 E

10 + 00 N

BASELINE 5 + 00 N

0 + 00



LEGEND

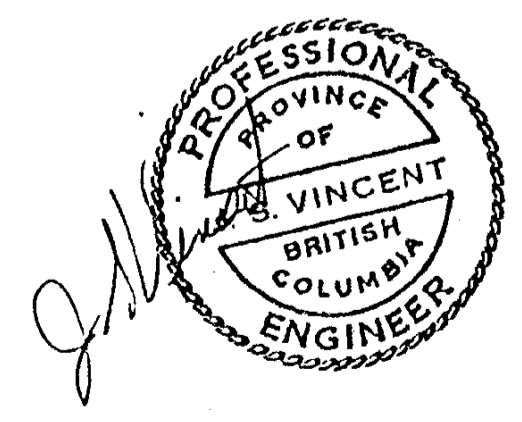
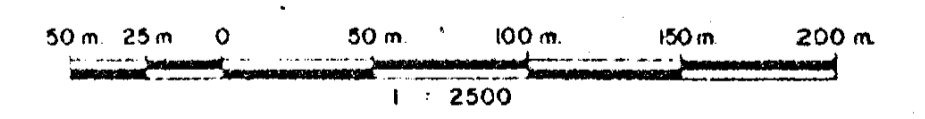
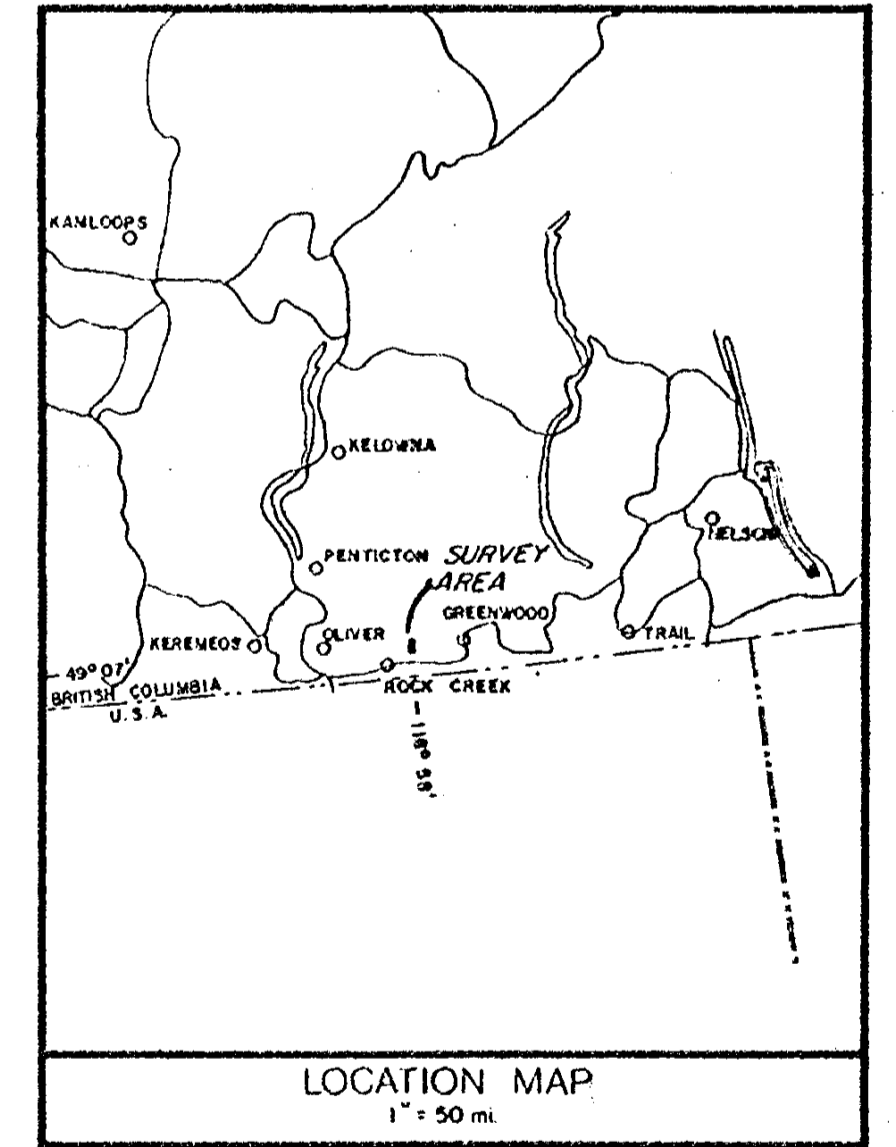
- Shalt
- ( ) Trench
- Cut
- ≡≡≡ Road
- +— Creek
- |— Adit
- - - Claim Boundary
- - - VLF-EM Conductor - Strong, Weak

INSTRUMENT: Ronka EM-16 VLF-Electromagnetometer  
 Transmitter Station - Annapolis - 21.4 KHz.

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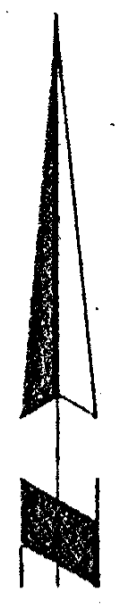


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 GREENWOOD MINING DIVISION BRITISH COLUMBIA

**VLF-ELECTROMAGNETIC SURVEY**

<i>John C. White</i> <i>geophysical consulting</i> <i>services Ltd.</i>	Interpreted By: J.C.V.
	Drawn By: FINELINE DRAFTING & GRAPHICS
	Checked By: J.C.V.
	Date: NOVEMBER 1982
Fig. No. 1	





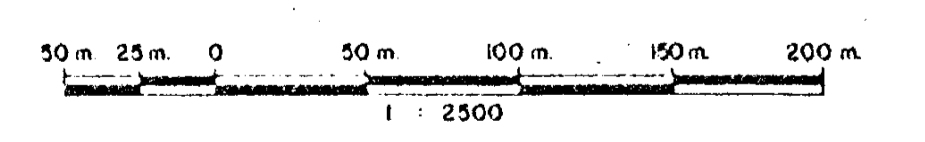
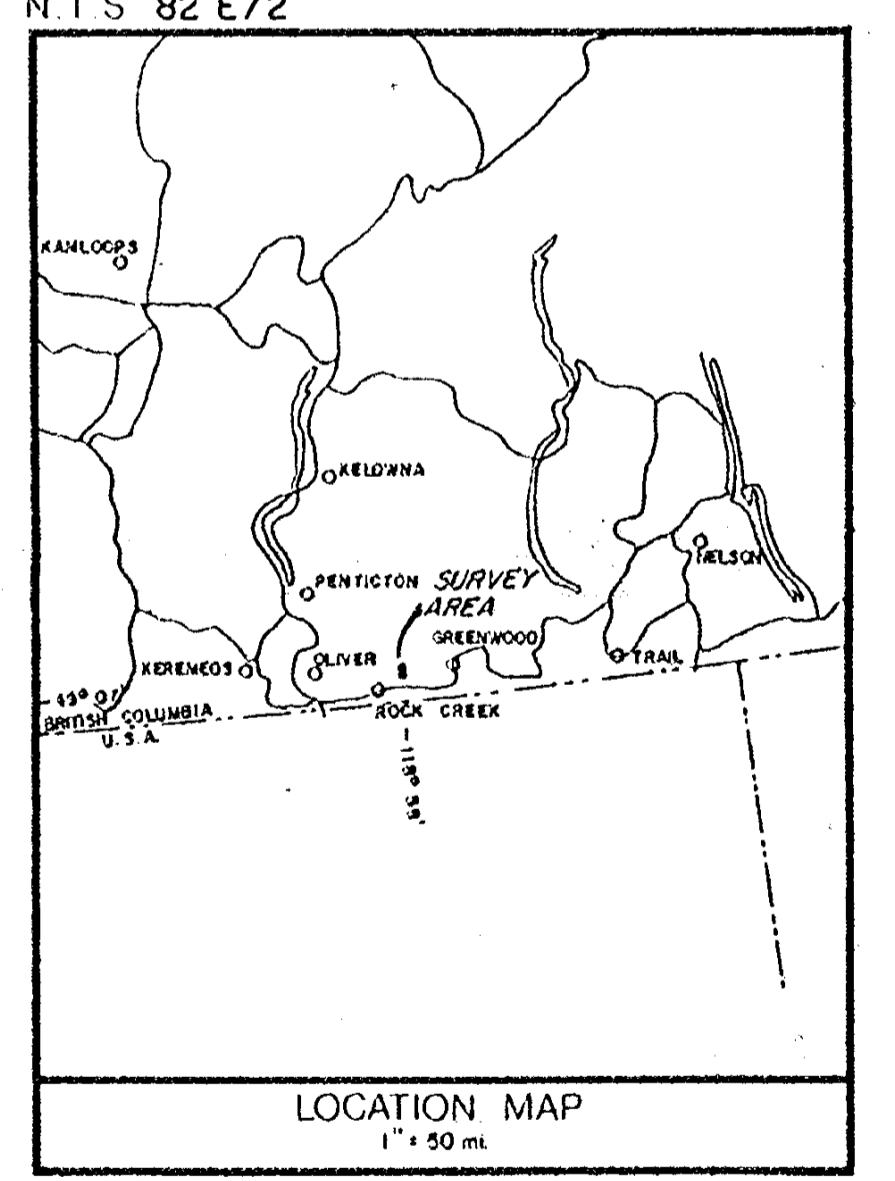
LEGEND

- Shaft
- ( ) Trench
- [ ] Cut
- == Road
- Creek
- ∩ Adit

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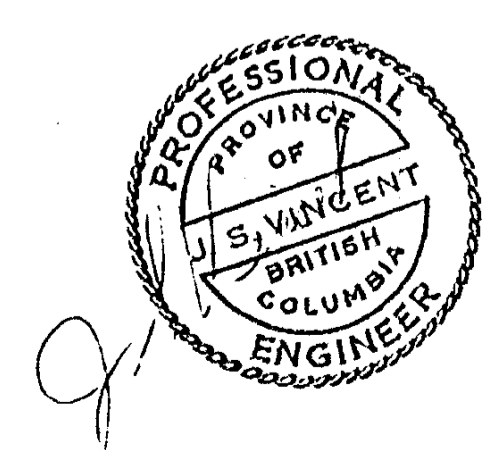


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GEOCHEMICAL MAP  
ZINC - P.P.M.

*John E. White*  
geophysical consulting  
Vancouver, B.C.

Interpreted By: J.S.V.  
Drawn By: FINELINE DRAFTING & GRAPHICS  
Checked By: J.S.V.  
Date: NOVEMBER 1982  
Fig. No. 8



10 + 00 N —

BASELINE 5 + 00 N —

0 + 00 —

