

180-4360-4 8103

NORCEN ENERGY RESOURCES LIMITED
ASSESSMENT REPORT
GEOCHEMICAL AND GEOLOGICAL PROGRAM
GROUP XIX (WC9 - WC11)

GOLDEN MINING DIVISION,
BRITISH COLUMBIA

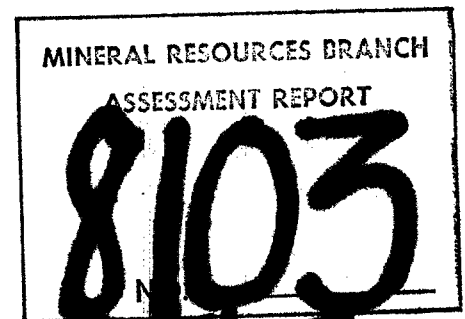
Claims: WC9 (314)
WC11 (316)

Location: 51 km South of Golden, British Columbia

Latitude: 50°51'N

Longitude: 116°49'W

Owner and Operator: Norcen Energy Resources Limited
August 28, 1979



June 10, 1980

[Signature]
L. Smith, P. Geol.

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APPENDIX I

Geochemical Assay Certificates

MAPS

1. Land Holdings Map; Crystal Creek Project, British Columbia, (Two Copies).
2. Regional Geology, Crystal Creek Project, British Columbia.
3. Regional Soil Geochemical Map, Crystal Creek Project, British Columbia.

SUMMARY

Regional geological mapping and soil geochemical sampling was performed within the boundaries of Group XIX (WC9 - WC11) on August 28, 1979. A total of eleven (11) B horizon soil samples were collected and geochemically analysed in parts per million for copper, lead, zinc and silver. All bedrock outcrops noted during the geochemical sampling were geologically mapped and are presented at the same scale as the soil geochemical data.

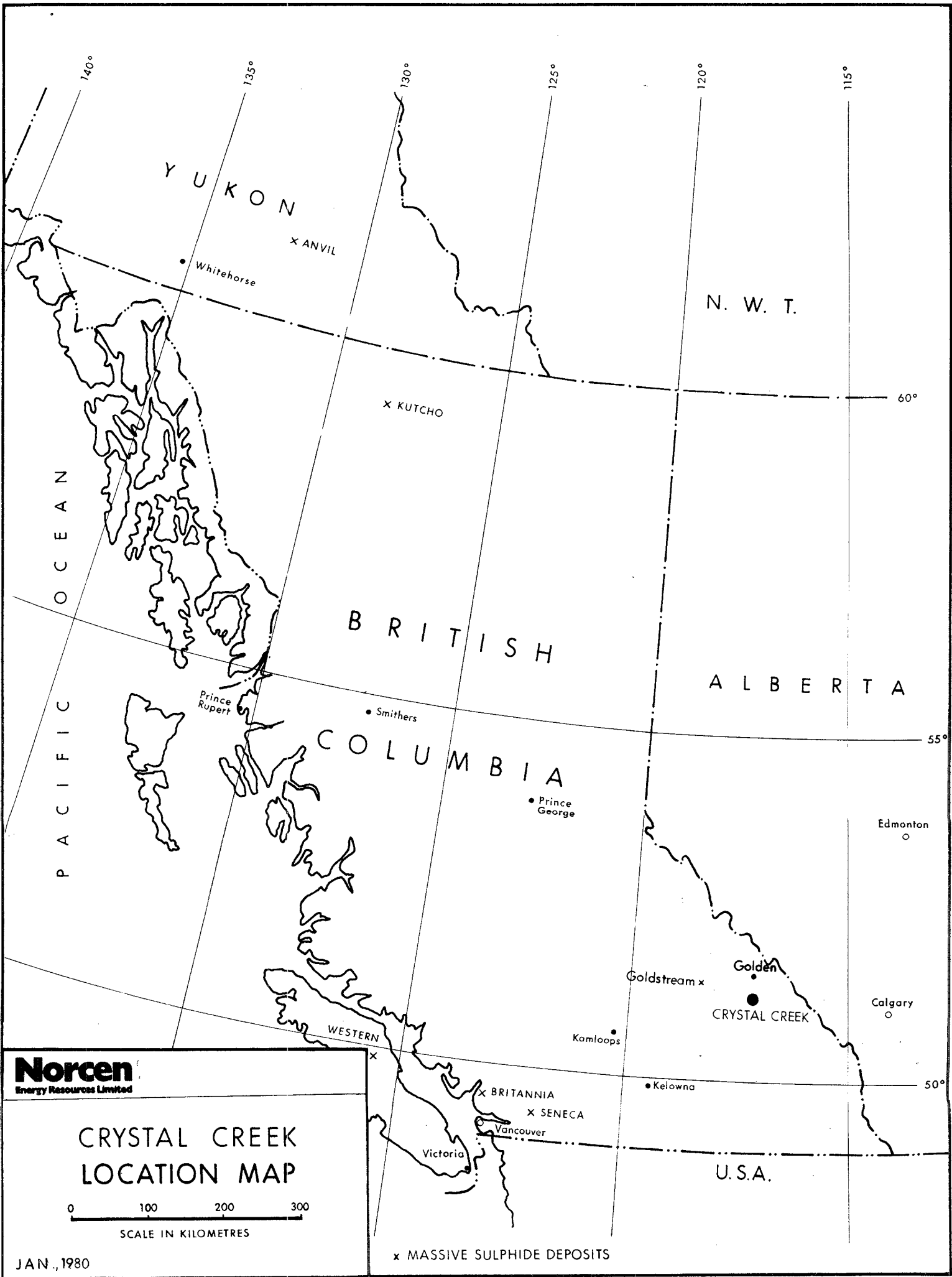
LOCATION AND ACCESS (See Land Holdings Maps, Crystal Creek Project, British Columbia)

The claims are located in the Purcell Mountains approximately 51 kilometres south of Golden, British Columbia. Access is provided by Provincial Highway 95 south from Golden to Parson, followed by 51 kilometres along a gravelled logging road along Vowell Creek.


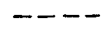
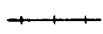


CLAIM STATUS

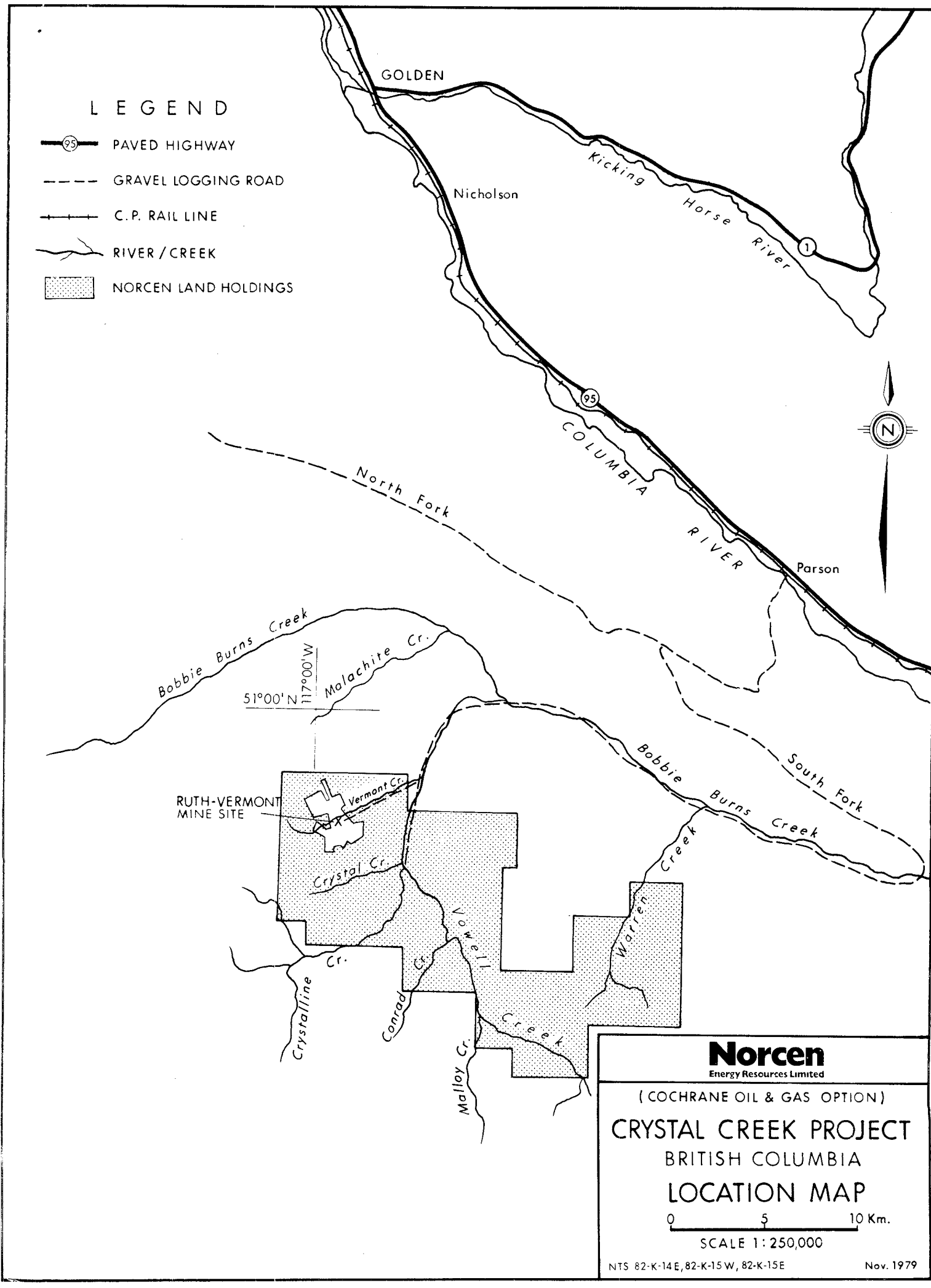
The WC9 and WC11 claims form part of the Crystal Creek Property. The WC9 and WC11 claims have been grouped into Group XIX (WC9 - WC11).

<u>Claim Name</u>	<u>Record Number</u>	<u>Recorded Date</u>	<u>Unit Dimensions</u>	<u>No. of Units</u>
WC9	314	June 18, 1979	2S X 6E	12
WC11	316	June 18, 1979	3N X 6E	18



L E G E N D

-  PAVED HIGHWAY
-  GRAVEL LOGGING ROAD
-  C.P. RAIL LINE
-  RIVER / CREEK
-  NORCEN LAND HOLDINGS



Norcen
Energy Resources Limited

(COCHRANE OIL & GAS OPTION)
CRYSTAL CREEK PROJECT
BRITISH COLUMBIA
LOCATION MAP

0 5 10 Km.

SCALE 1:250,000

NTS 82-K-14E, 82-K-15W, 82-K-15E

Nov. 1979

GEOCHEMICAL SOIL SAMPLING

A total of eleven (11) B horizon soil samples were collected within the boundaries of claims WC9 - WC11. All samples were sent to Loring Laboratories Limited of 629 Beaverdam Road, N.E., Calgary, Alberta and geochemically analysed in parts per million by atomic absorption.

Previous soil geochemical sampling in the area had shown that anomalous base metal B horizon soil samples reflected close proximity to bedrock base metal mineralization. Based upon the statistical analysis of two hundred and five (205) B horizon soil samples collected in the region over Norcen Energy Resources Limited claim blocks anomalous values are defined by values in excess of: 32 ppm lead, 108 ppm zinc, 0.9 ppm silver, and 38 ppm copper.

No anomalous samples were collected during the 1979 geochemical sampling from the WC9 and WC11 claims.

GEOLOGICAL MAPPING

All bedrock exposures encountered during the geochemical soil sampling program were investigated and geologically mapped. The rock types encountered included phyllites, arkoses, and coarser grained grits of the Horse Thief Creek Series of Proterozoic age. No economic base metal mineralization was located during the regional geological mapping.

STATEMENT OF QUALIFICATIONS

I, Laurie James Smith, of the City of Calgary in the Province of Alberta, do hereby state:

1. I am a graduate of the University of Calgary with a BSc degree in Geology.
2. I have been involved in all phases of geological exploration in many areas of Canada (British Columbia, Alberta, Saskatchewan, Northwest Territories, Ontario, Quebec, Nova Scotia, and New Brunswick) since graduation.
3. I personally supervised the geochemical soil sampling and geological mapping on Group XIX (WC9 - WC11).
4. I am a member of the Association of Professional Engineers, Geologists, and Geophysicists of Alberta.
5. I am the holder of valid Free Miners Licence Number 197331.

Laurie J. Smith

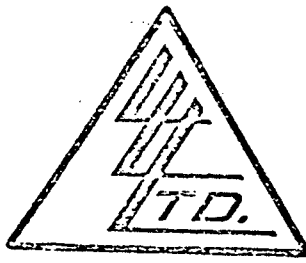
ITEMIZED COST STATEMENT

A.	Geochemical Sampling and Geological Mapping	
	L. Smith, Supervision (August 28, 1979)	
	L. Smith, Report Writing (June 3, 1980)	
	1 day @\$125/day	\$ 125.00
	1 day @\$175/day	175.00
	M. Anderson - Geologist (August 28, 1979)	
	G. Wilson - Geologist (August 28, 1979)	
	2 days @\$90/day	180.00
	R. Kostiuk - Geochemical Sampler (August 28, 1979)	
	D. Desjardins - Geochemical Sampler (August 28, 1979)	
	2 days @\$75/day	150.00
B.	Transport	
	4 Wheel Drive Vehicle Rental	
	\$30.00/day X 2 days	60.00
	Fuel for Vehicle \$5.00/day X 2 days	10.00
C.	Accommodation and Meals	
	5 man days X \$25/day	125.00
D.	Assaying	
	11 Geochemical Assays @\$5/sample	<u>55.00</u>
		\$880.00

APPENDIX I

Geochemical Assay Certificates

NORCCN ENERGY RESOURCES LIMITED
 715 - 5th Avenue S.W.
 Calgary, Alberta
 T2P 2X7
 ATTN: L. J. Smith



File No. 17653
 Date Sept. 4, 1979
 Samples Lake Sediment

Certificate of
 ASSAY of
 LORING LABORATORIES LTD.

Page 1

SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
MA-A-				
17/20	21	16	57	0.6
17/21	18	15	39	0.7
17/22	18	16	59	0.6
17/23	28	19	82	0.8

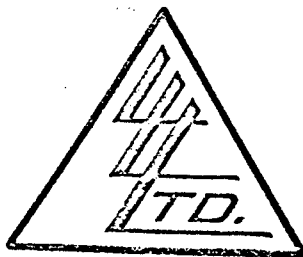
I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Retained one month.
 Retained one month
 specific arrangements
 in advance.

edmcjave

Licensed Assayer of British Columbia

To: NORCEN ENERGY RESOURCES LIMITED
 715-5th Avenue S.W., 27th Flr.
 Calgary, Alberta T2P 2X7



File No. 17716
 Date September 17, 1979
 Samples Soil

ATTN: L. Smith

Certificate of
 ASSAY of
 LORING LABORATORIES LTD.

Page # 2

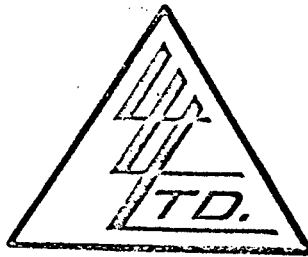
SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
MA-A-28/1	14	14	68	0.4
28/2	9	11	62	0.5
28/3	22	15	80	0.6
28/4	16	13	58	0.5
28/5	32	18	96	0.7

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Results Retained one month.
 Results Retained one month
 for specific arrangements
 please in advance.

L. M. J. ...

to: NORCEN ENERGY RESOURCES LIMITED
 715-5th Avenue S.W., 27th Flr.
 Calgary, Alberta T2P 2X7



File No. 17716
 Date September 17, 1979
 Samples Soil

ATTN: L. Smith

Certificate of
ASSAY of
LORING LABORATORIES LTD.

Page # 3

SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
GN-A-28/1	22	20	64	0.5
28/2	26	16	80	0.5
28/3	16	15	74	0.5

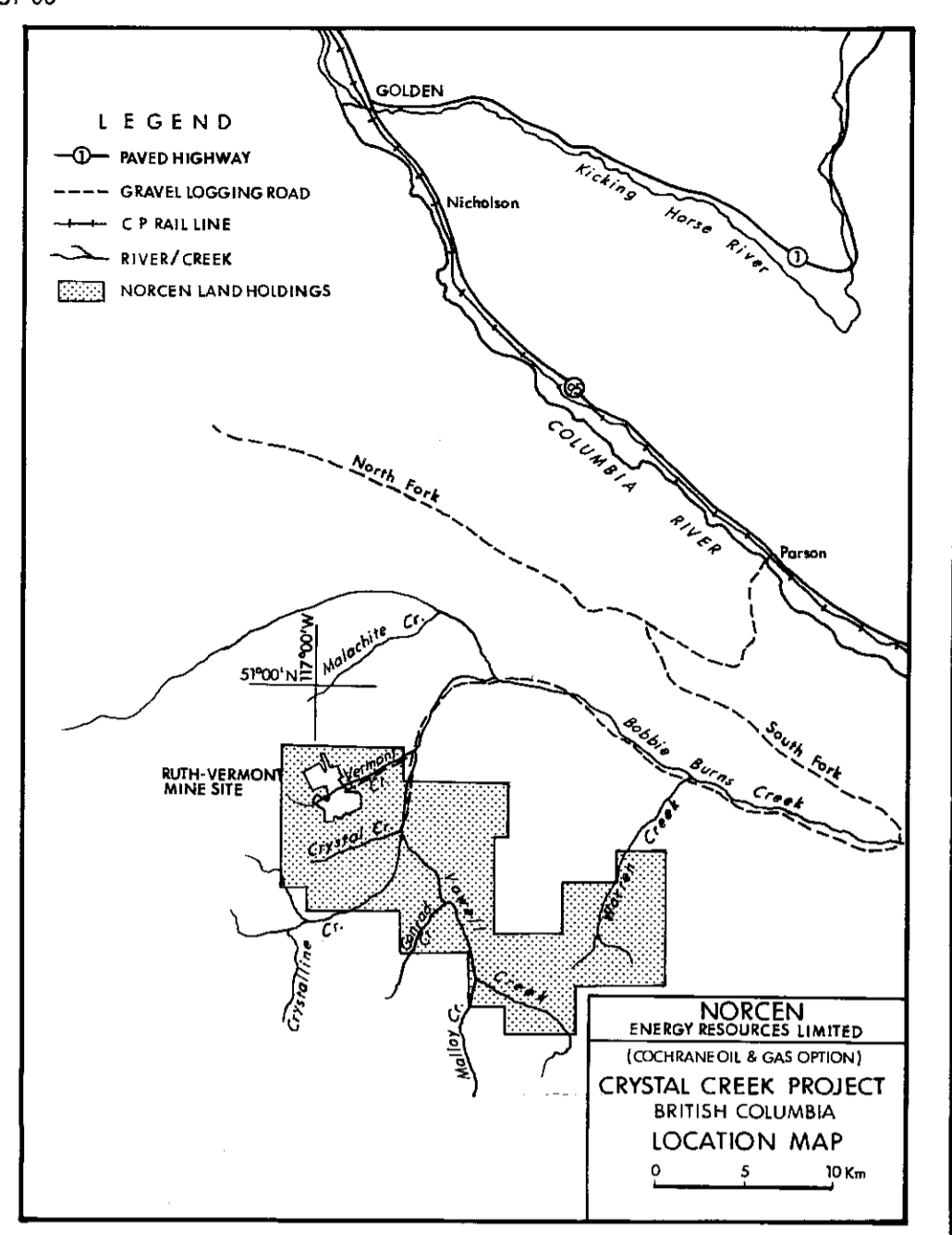
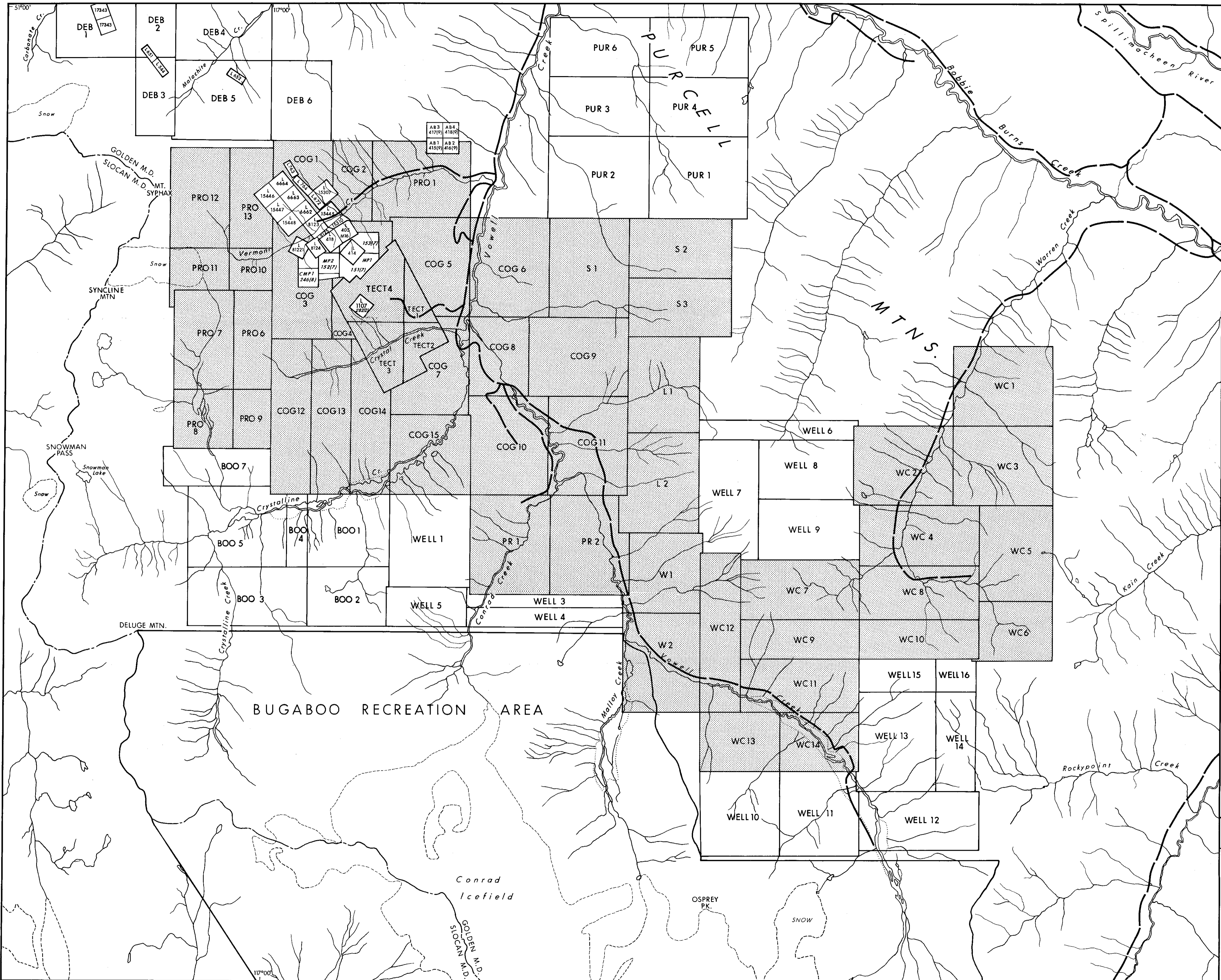
I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Results Retained one month.

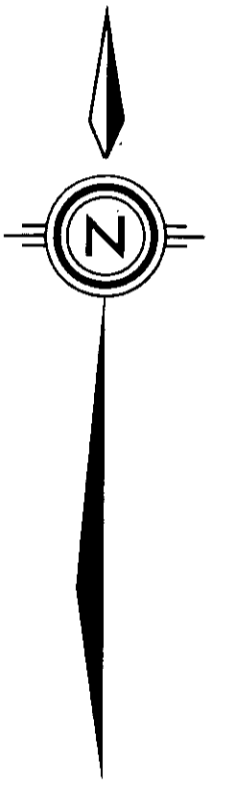
Results Retained one month
 for specific arrangements
 please advise in advance.

L. M. Isaac

LORING LABORATORIES LTD.



2 of 2
 Part 1
 5018
 IN
 A RESOLUTION
 MINERAL RESOURCES BRANCH

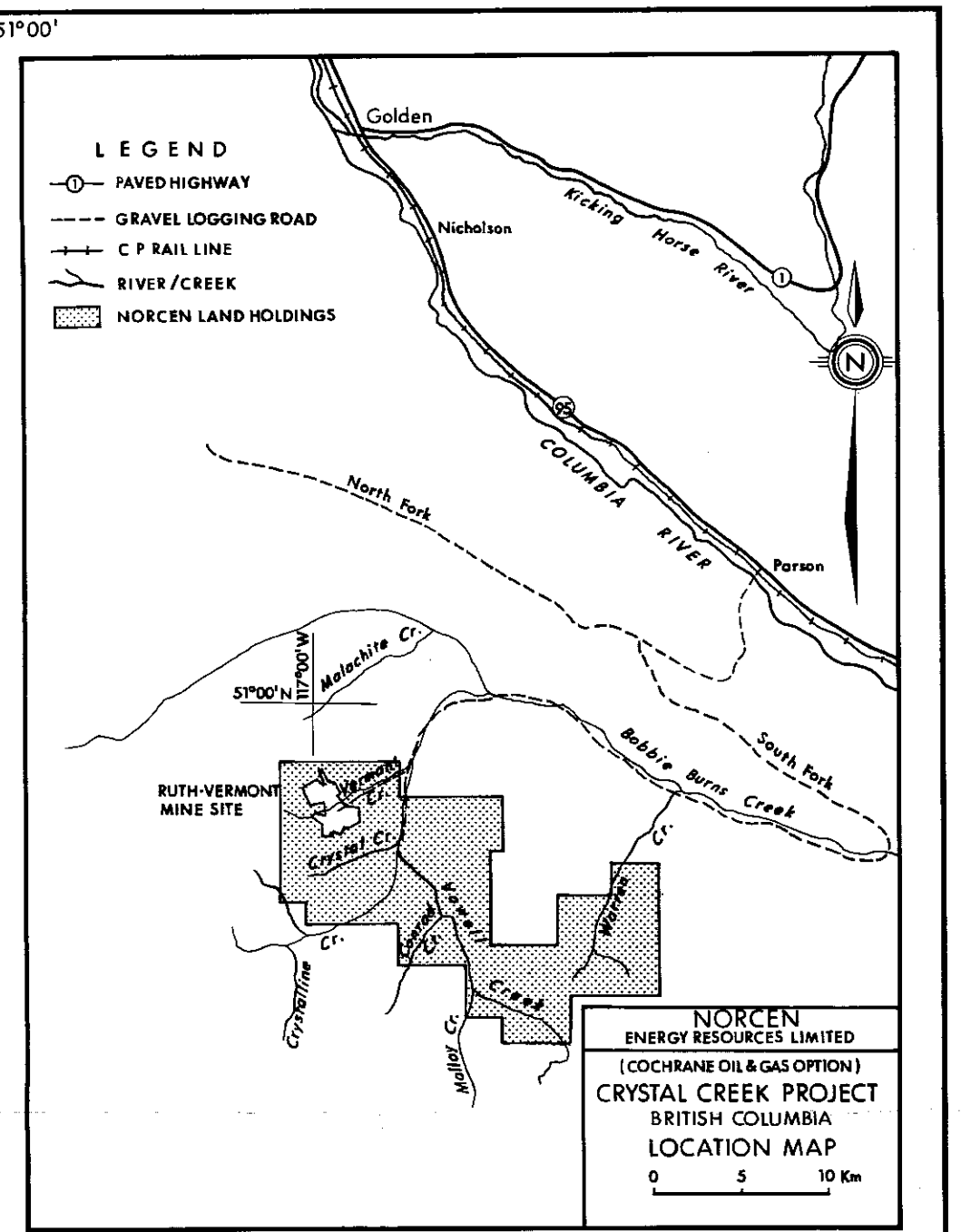
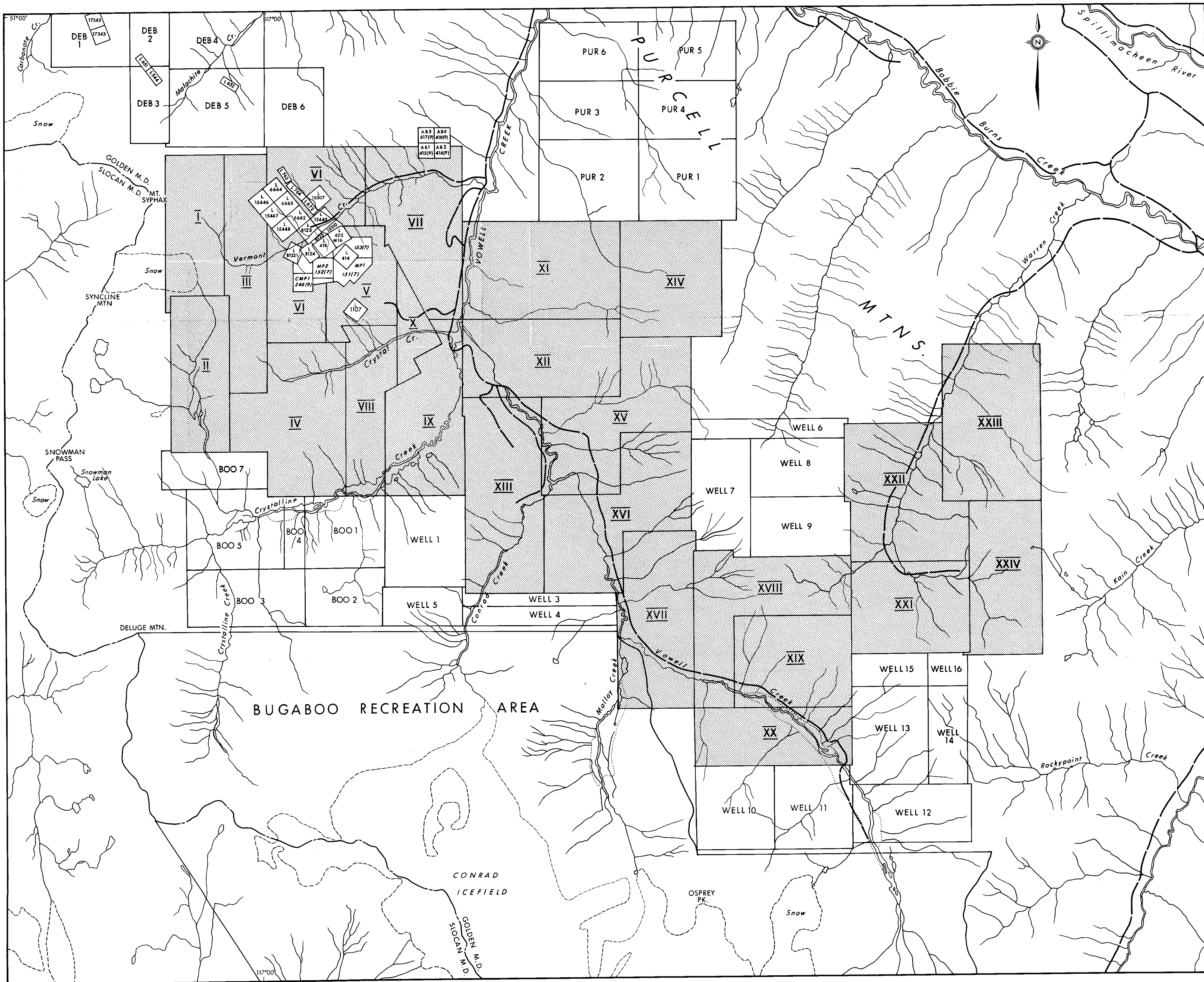


NORCEN LAND HOLDINGS
 TRUCK ROAD

Norcen
Energy Resources Limited

(COCHRANE OIL AND GAS OPTION)
CRYSTAL CREEK PROJECT
BRITISH COLUMBIA
LAND HOLDINGS MAP





GROUP	Number of units
I	27
II	24
III	37
IV	38
V	38
VI	38
VII	40
VIII	28
IX	36
X	27
XI	40
XII	32
XIII	40
XIV	36
XV	40
XVI	40
XVII	36
XVIII	34
XIX	30
XX	24
XXI	30
XXII	38
XXIII	40
XXIV	32
TOTAL	825

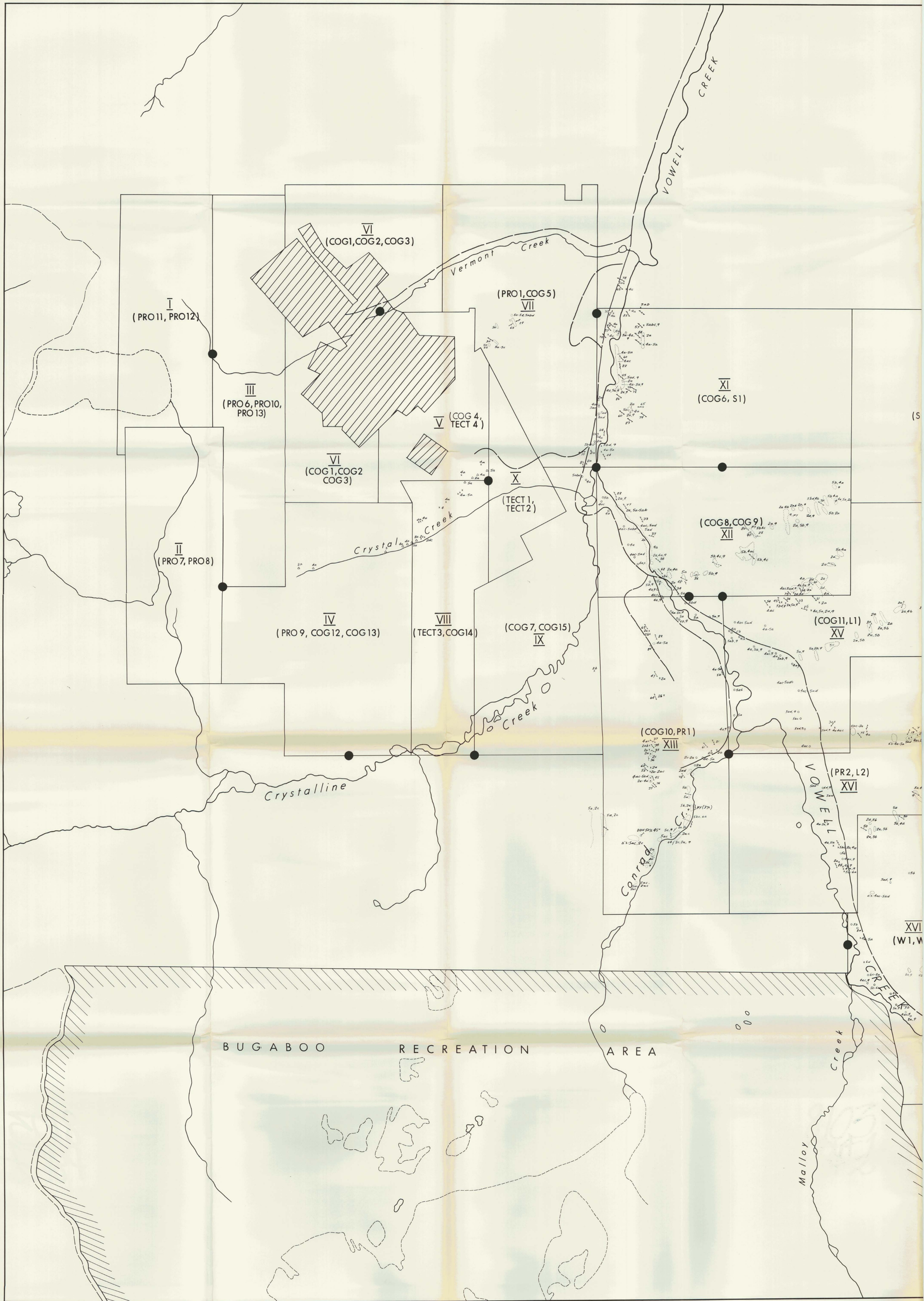
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8103
part 1
of 2

NORCEN LAND HOLDINGS
TRUCK ROAD

Norcen
Energy Resources Limited

(COCHRANE OIL AND GAS OPTION)
CRYSTAL CREEK PROJECT
BRITISH COLUMBIA
LAND HOLDINGS MAP





I
(PRO 11, PRO 12)

III
(PRO 6, PRO 10,
PRO 13)

II
(PRO 7, PRO 8)

IV
(PRO 9, COG 12, COG 13)

VI
(COG 1, COG 2, COG 3)

VI
(COG 1, COG 2
COG 3)

V
(COG 4,
TECT 4)

VIII
(TECT 3, COG 14)

(PRO 1, COG 5)
VII

X
(TECT 1,
TECT 2)

(COG 7, COG 15)
IX

XI
(COG 6, S1)

(COG 8, COG 9)
XII

(COG 11, L1)
XV

(COG 10, PR 1)
XIII

(PR 2, L2)
XVI

XVI
(W1, W)

BUGABOO RECREATION AREA

VOWELL
CREEK

Vermont
Creek

Crystal
Creek

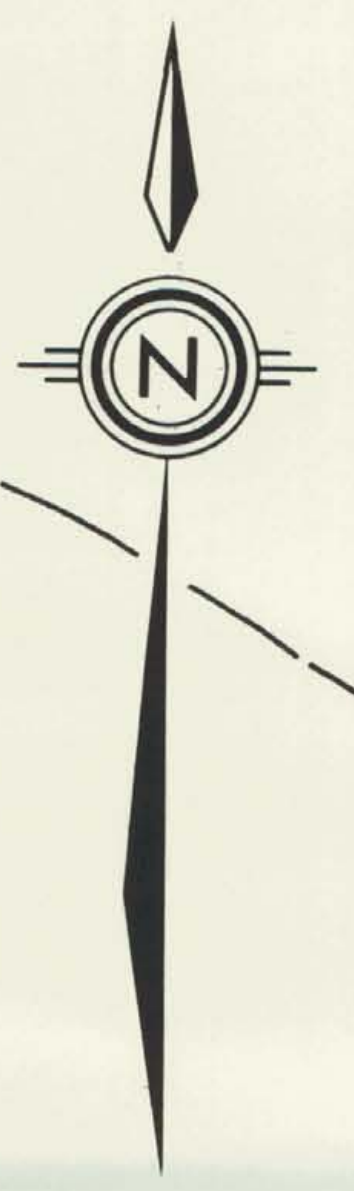
Crystalline
Creek

Creek

Conrad
Creek

VOWELL
CREEK

Malloy
Creek



XIV
2, S3)

Bobbie Burns
Creek

Warren
Creek

XXIII
(WC1, WC3)

(WC2, WC4)
XXII

XXIV
(WC5, WC6)

XXVIII
(WC7, WC12)

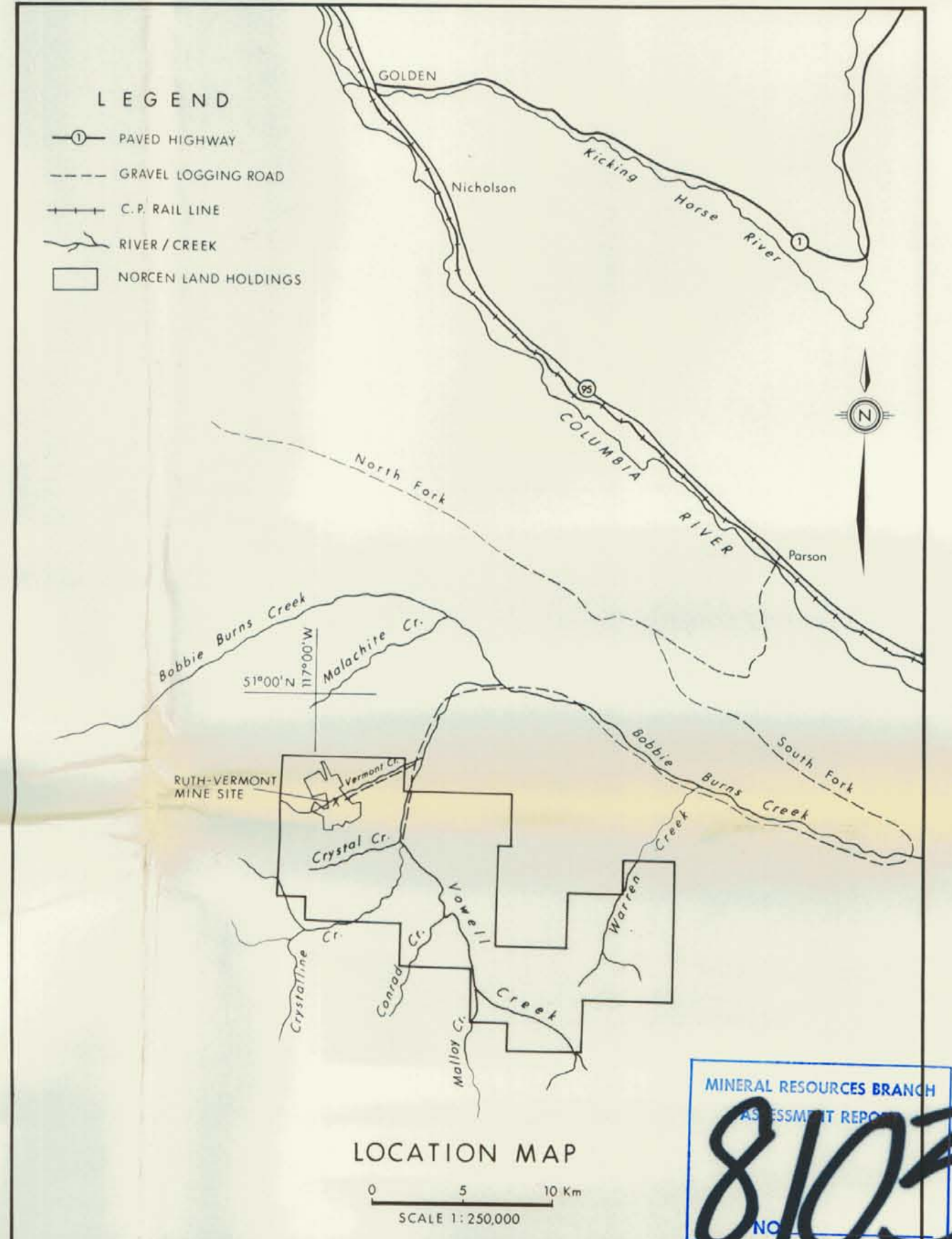
XXI
(WC8, WC10)

XXIX
(WC9, WC11)

XX
(WC13, WC14)

GEOLOGICAL LEGEND

- 1a ARGILLITE
- 1b LIMY ARGILLITE
- 1c ARKOSIC ARGILLITE
- 2a PHYLLITE, WELL DEVELOPED FOLIATION
- 2b PHYLLITE, INTERMEDIATE FOLIATION
- 2c PHYLLITE, POORLY DEVELOPED FOLIATION
- 2d LIMY PHYLLITE
- 2e ARKOSIC PHYLLITE
- 3 SCHIST
- 4a ARKOSE
- 4b META-ARKOSE (INCLUDES PHYLLITIC ARKOSE)
- 4c LIMY ARKOSE
- 5a MEDIUM-GRAINED GRIT
- 5b COARSE-GRAINED GRIT
- 5c META-GRIT
- 5d LIMY GRIT
- 6a QUARTZ-PEBBLE CONGLOMERATE
- 6b QUARTZ-PEBBLE CONGLOMERATE WITH CHERT
- 6c META-CONGLOMERATE (ELONGATED PEBBLES,
- 7a CARBONATE BRECCIA
- 7b OOLITIC CARBONATE BRECCIA
- 8 QUARTZITE
- 9 QUARTZ VEINS



8103
PART 1
OF 2

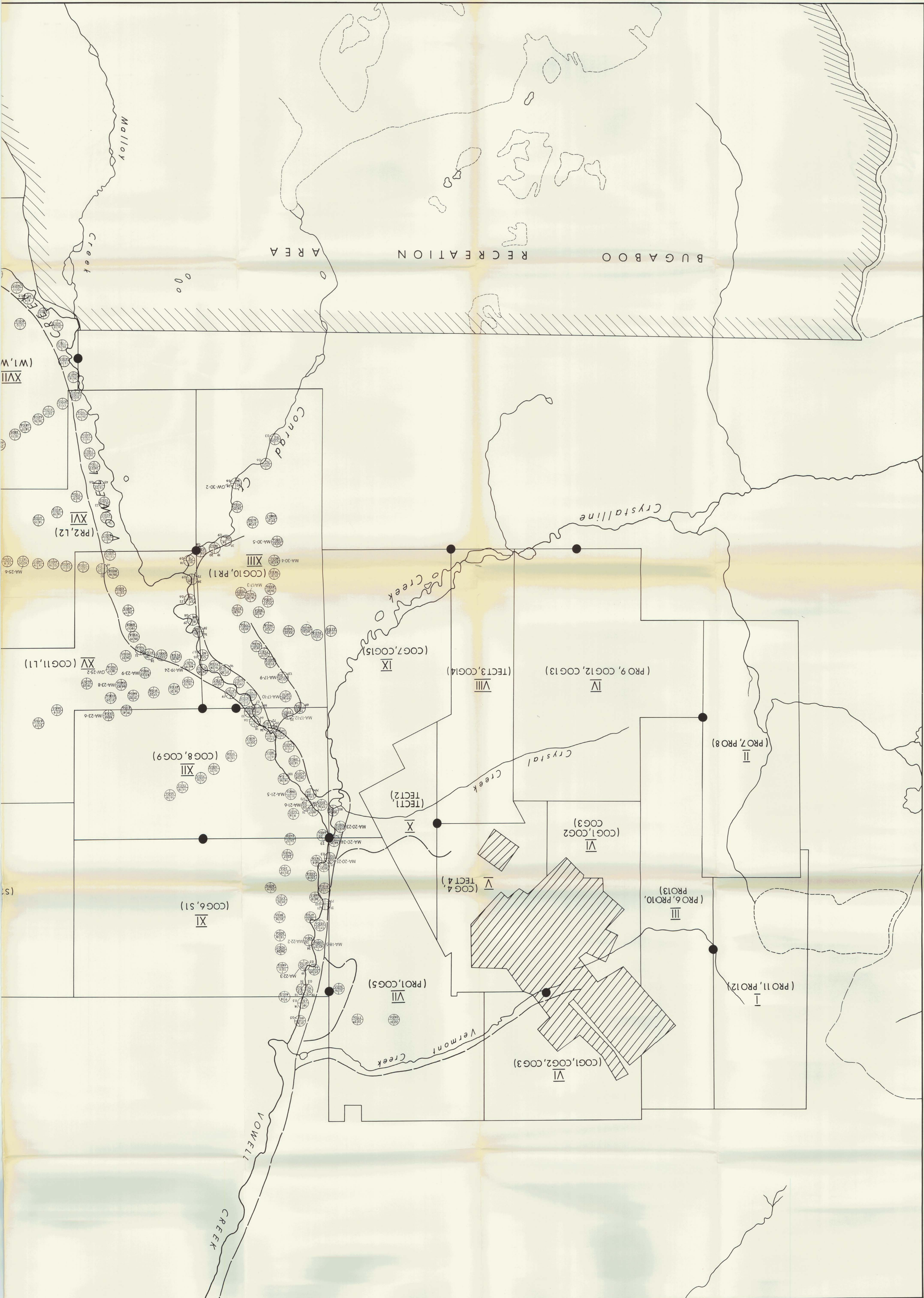
- LEGEND
- GRAVEL ROADS
 - OUTCROP
 - FLOAT (BOULDER)
 - BEDDING (STRIKE/DIP)
 - FOLIATION (STRIKE/DIP)

Norcen
Energy Resources Limited

(COCHRANE OIL AND GAS OPTION)
CRYSTAL CREEK PROJECT
BRITISH COLUMBIA
REGIONAL GEOLOGY

0 500 1000 1500
METRES

NTS 82K-14E,15E,15W MAY, 1980



BUGABOO RECREATION AREA

Malloy Creek

Creek

(W1,W)

XVII

(PR2,L2)

XVI

(COG11,L1)

XV

(COG 8, COG 9)

XII

(COG 6, S1)

XI

(COG 7, COG 15)

IX

(TECT 1, TECT 2)

X

(COG 4, TECT 4)

V

(PRO 9, COG 12, COG 13)

IV

(COG 1, COG 2, COG 3)

VI

(PRO 6, PRO 10, PRO 13)

III

(PRO 7, PRO 8)

II

(PRO 11, PRO 12)

I

(COG 1, COG 2, COG 3)

VI

(PRO 1, COG 5)

VII

VOWELL CREEK

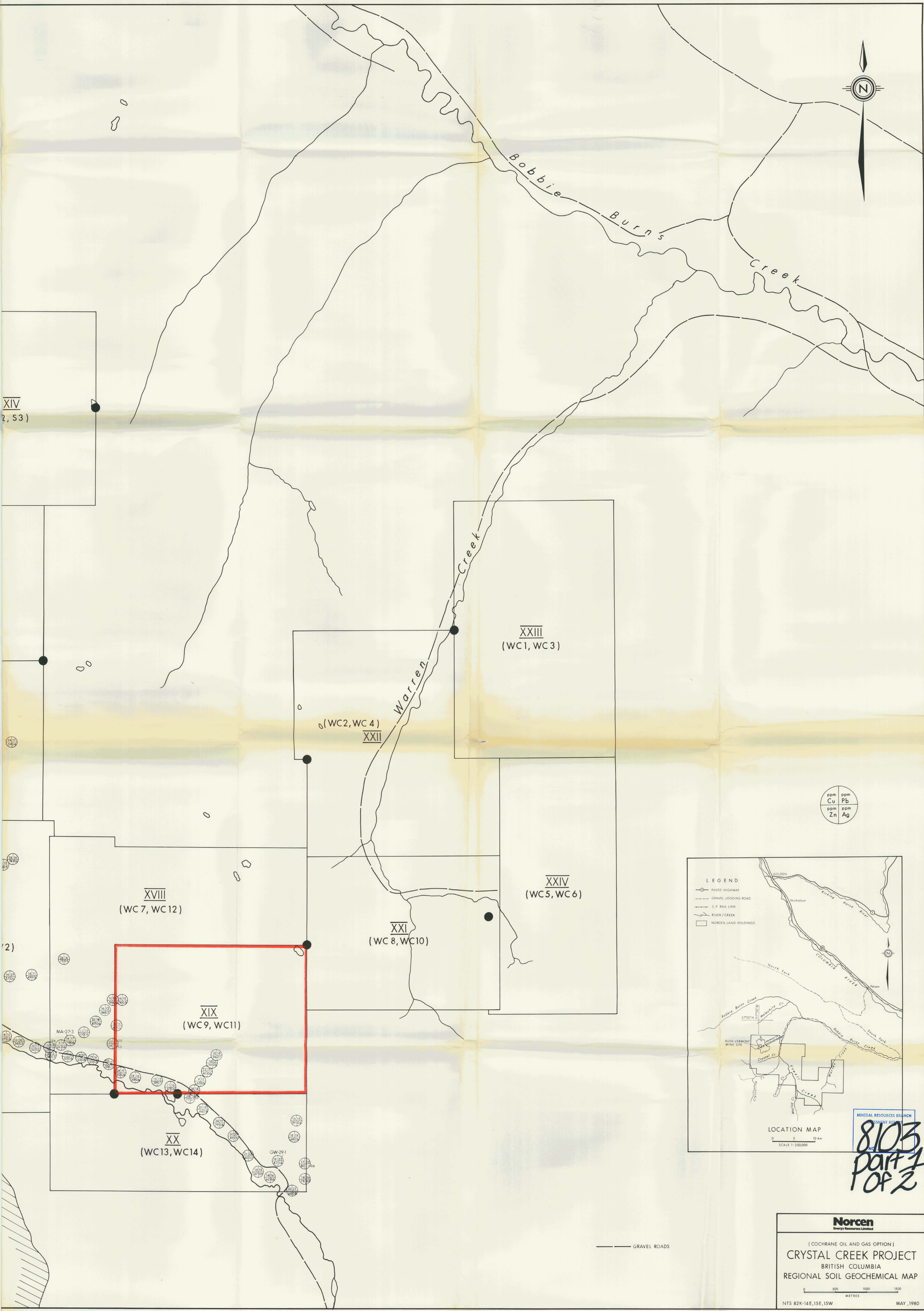
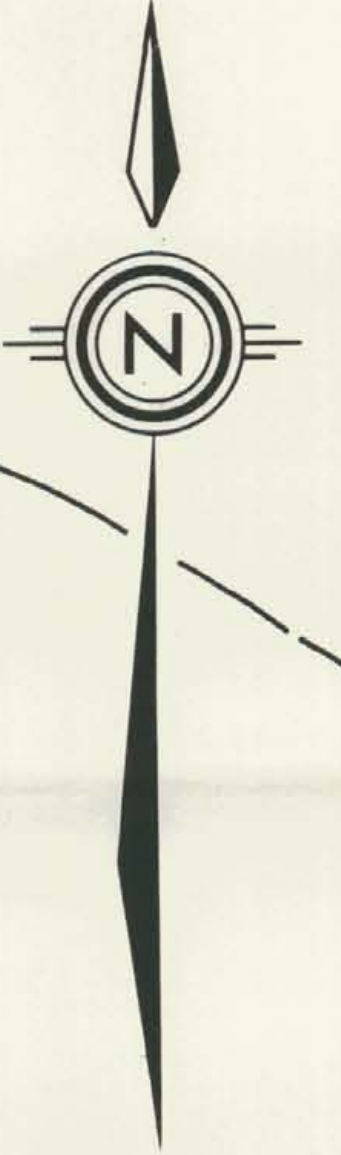
Vermont Creek

Crystal Creek

Crystal Creek

Crystalline

Conrad



XIV
(2, 53)

(WC2, WC 4)
XXII

XXIII
(WC1, WC3)

XVIII
(WC 7, WC12)

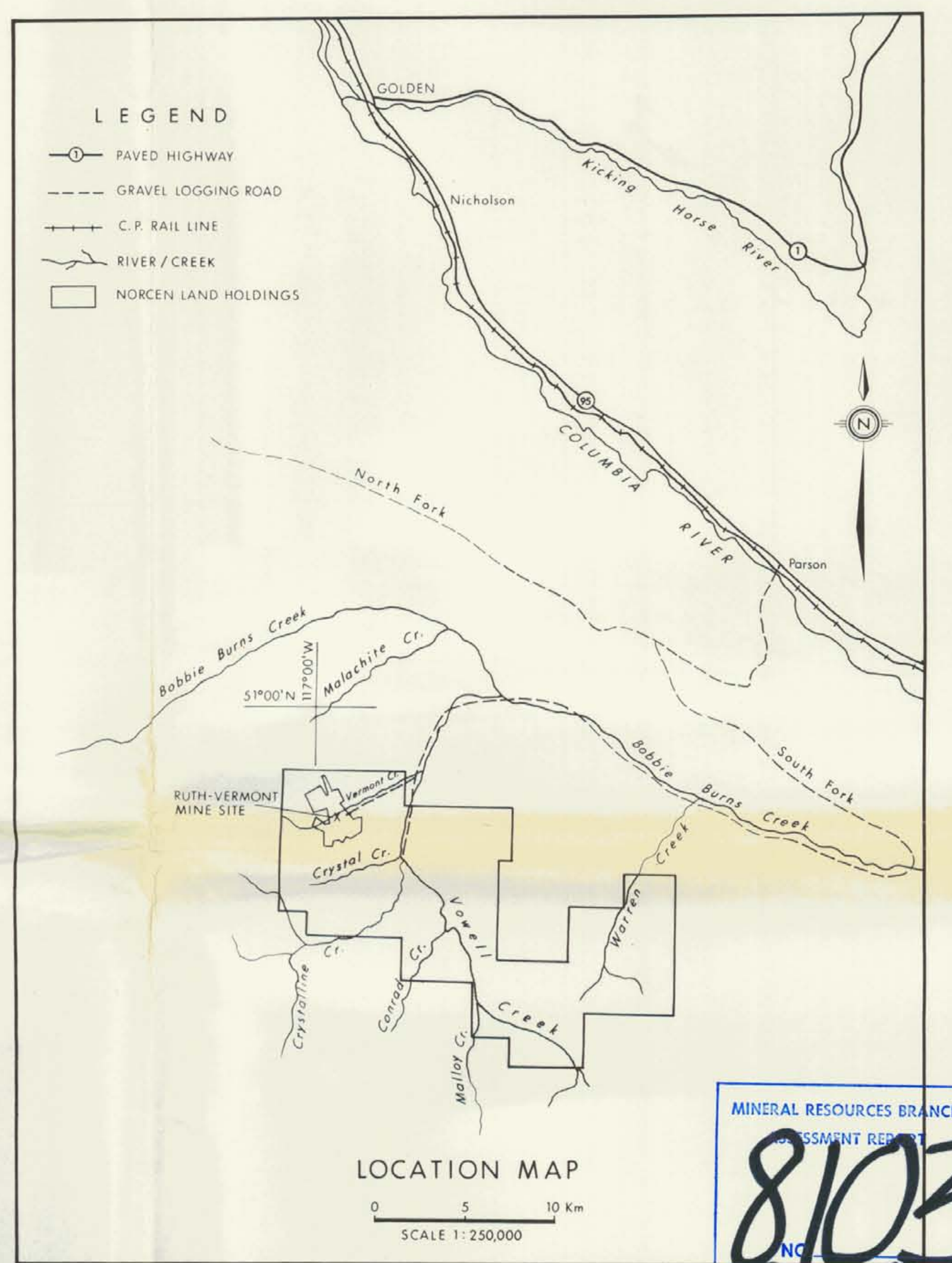
XXIV
(WC5, WC6)

XXI
(WC 8, WC10)

XIX
(WC9, WC11)

XX
(WC13, WC14)

ppm	ppm
Cu	Pb
ppm	ppm
Zn	Ag



MINERAL RESOURCES BRANCH
8103
Part 1
of 2

GRAVEL ROADS

Norcen
Energy Resources Limited

(COCHRANE OIL AND GAS OPTION)

CRYSTAL CREEK PROJECT
BRITISH COLUMBIA
REGIONAL SOIL GEOCHEMICAL MAP

0 500 1000 1500
METRES

NTS 82K-14E,15E,15W MAY, 1980