

REPORT

- ON THE -

ADA B. CLIFFORD, MRS. JTM, DMH & CAL LIME CLAIMS
CLINTON MINING DIVISION

92 P/4E

- FOR -

MONITOR RESOURCES LTD.,
20037 - 37 A AVENUE,
LANGLEY, B. C.
V3A 5X6.

PREPARED BY
KERR, DAWSON & ASSOCIATES LTD.

1 - 219 Victoria Street
Kamloops, B.C.

John R. Kerr, P. Eng.,
February 13, 1980.



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Clinton Mining Division

- for -

MONITOR RESOURCES LTD.,

20037 - 37 A Avenue,
LANGLEY, B.C.
V3A 5X6.

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

8051

NO. _____

PREPARED BY:

KERR, DAWSON & ASSOCIATES LTD.,
#1-219 Victoria Street,
KAMLOOPS, B. C.

John R. Kerr,
February 13, 1980.

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SUMMARY

Under agreement, Monitor Resources Ltd. has acquired the rights to three industrial mineral deposits in the Clinton area of British Columbia. A total of 19 located claims and 2 reverted crown-grant claims comprise the three properties.

An epsom deposit ($\text{Mg SO}_4 \cdot 7 \text{ H}_2\text{O}$) occurs as a residual evaporite in a dry lake bed. Preliminary estimates indicate .05 - .20 meters thick over an area of 35 hectares (approximately 59,000 metric tonnes) of relatively pure $\text{Mg SO}_4 \cdot 7 \text{ H}_2\text{O}$ is available.

A travertine-tufa deposit of relatively pure CaCO_3 (estimated ~ 98%) is indicated to contain approximately 300,000 metric tonnes.

A band of gypsum is indicated over widths of 20-25 meters and over a known strike length of 150-200 meters. Preliminary testing of a highly weathered surface rock, indicate a high $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ content.

All three properties have economic potential as industrial minerals provided that available markets in British Columbia or the northwestern States are present. Further exploration and development of the deposits are warranted, consisting of diamond drilling, trenching, sampling, geological mapping, and market studies, at an estimated cost of \$25,000.00.

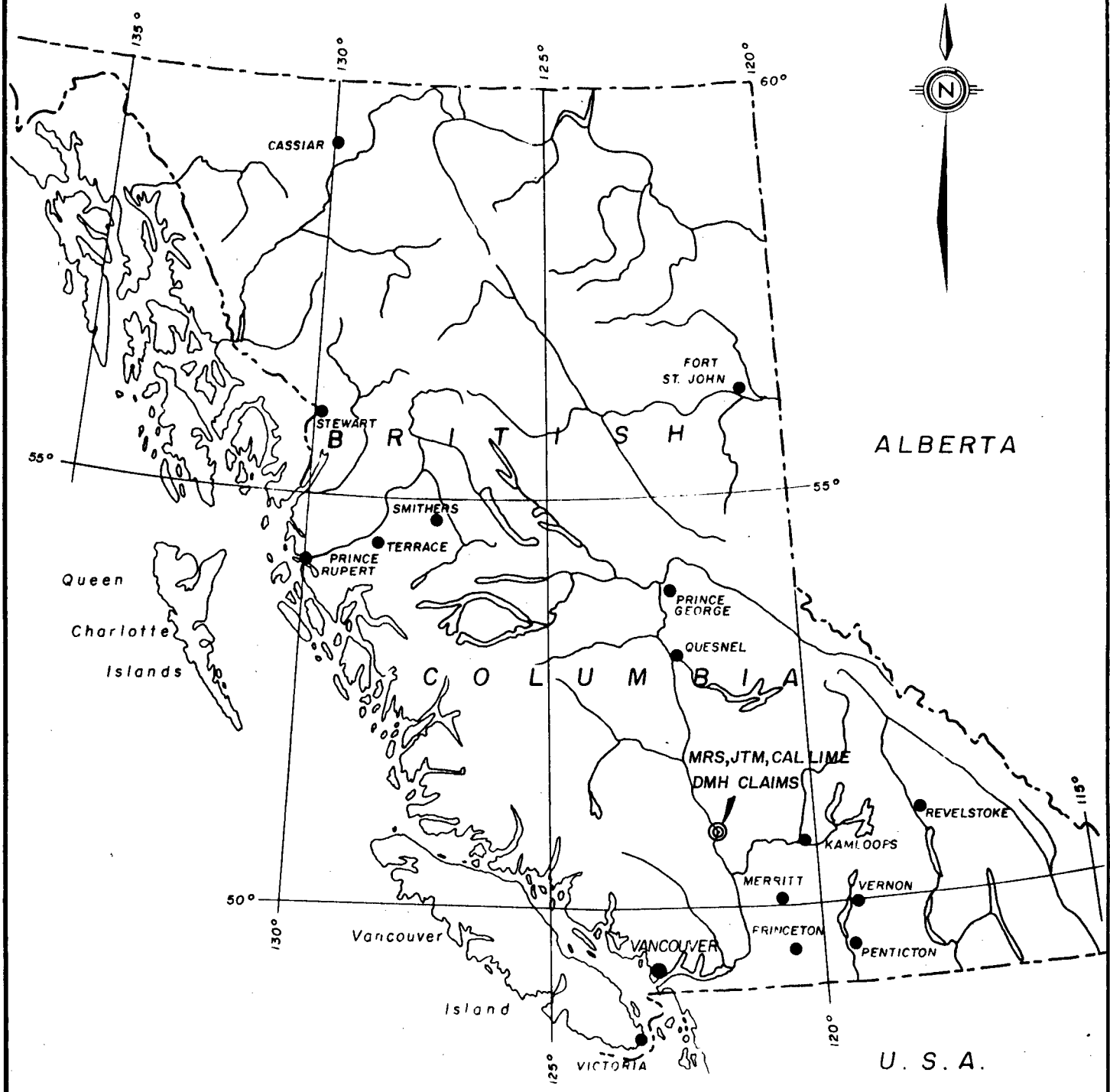
INTRODUCTION

General Statement:

Monitor Resources Ltd. have acquired three blocks of claims in the Clinton area covering three various potential industrial mineral deposits; magnesium sulphate (epsom), limestone, and calcium sulphate (gypsum). In the accompaniment of Mr. Peter Martin, the writer examined and sampled the various deposits on September 24, 1979. At the request of the directors of Monitor, the writer prepared this report.

Location and Access:

All claim blocks are located within a short distance from Clinton, B. C. The Ada B and Clifford claims (epsom deposit) are located 2 km. south of Clinton, geographic coordinates $51^{\circ}04'N$; $121^{\circ}35'W$, (NTS 92P/4E). The Cal Lime claim (limestone deposit) is located 3 km. SW of Clinton, geographic coordinates $51^{\circ}05'N$; $121^{\circ}38'$ (NTS 92P/4E). The DMH claims (gypsum deposit) are located at Kelly Lake, 17 km. SW of Clinton, geographic coordinates $51^{\circ}00'N$; $121^{\circ}47'W$, (NTS 92I/13W).



MONITOR RESOURCES LTD.	
LOCATION MAP	
MRS, JTM, CAL LIME & DMH CLAIMS	
CLINTON MINING DIVISION, B.C.	
Technical Work by: Kerr, Dawson & Assoc. Ltd.	Date : Feb., 1980.
Scale : 1cm. = 87km.	Dwg No. 214-1

Access is possible by good roads and highways to all properties. The epsom deposit lies along Highway #97, 2 km. south of Clinton. The limestone and gypsum deposits are along the Kelly Lake road, 3 km. and 18 km. respectively SW of Clinton.

Topography and Vegetation:

All claims are located in the eastern foothills of the Coast Mountain Range. Terrain on the epsom and limestone deposits is very gentle, and on the gypsum deposit is moderate to steep. Elevations on the limestone and epsom deposits average 1,075m (a.s.l.). Elevations on the gypsum deposit range 1,075m (a.s.l.) to over 1,200m (a.s.l.).

All claims areas are within the semi-arid belt of the interior, with light stands of yellow pine and fir. Light sagebrush ground covering exists on all claim areas.

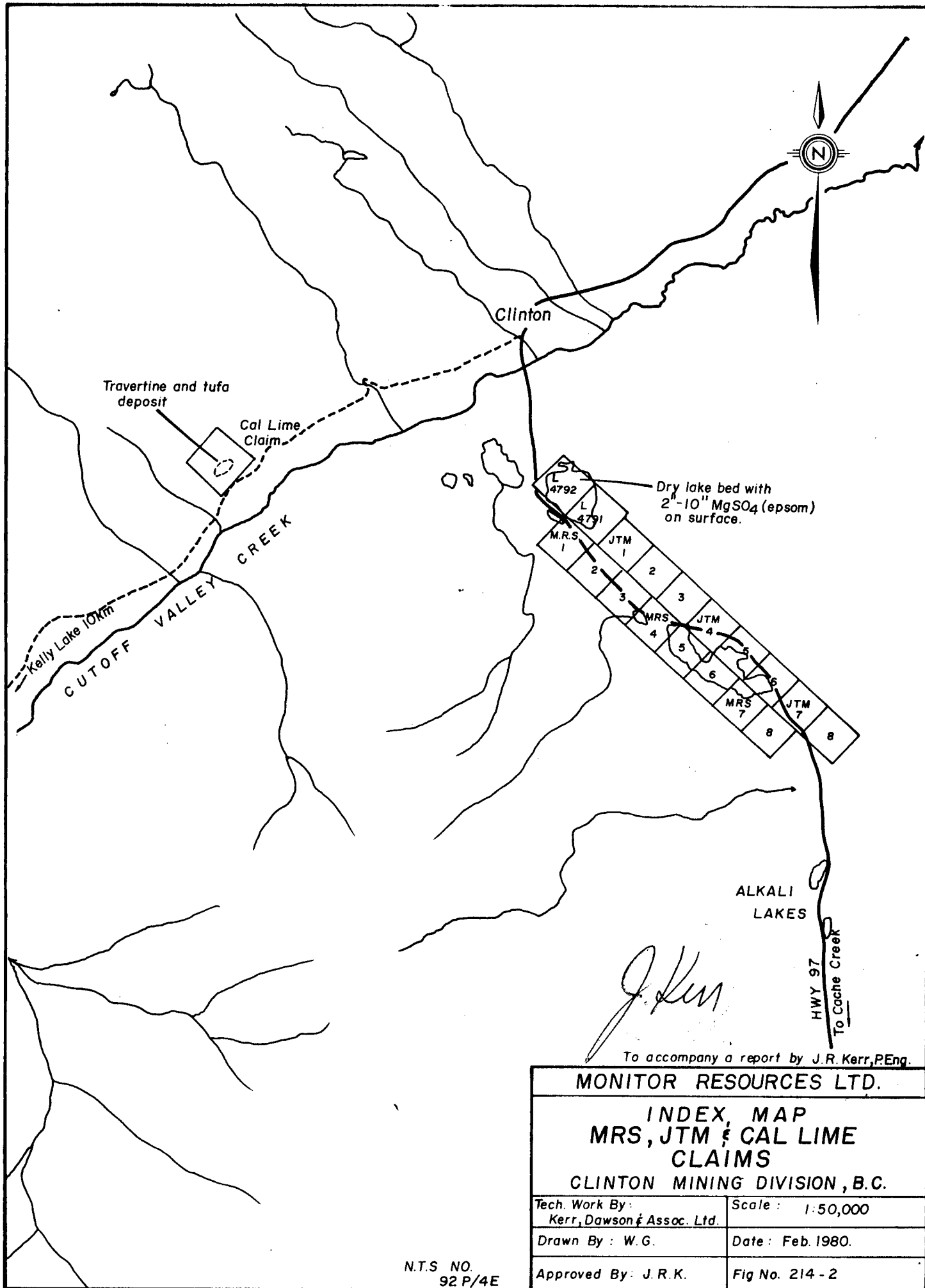
Claims:

The properties consist of three groups of claims, consisting of two reverted crown grants, acquired as mineral claims, and 19 located claims, staked under the 2-post staking system.

The following is a list of all claims:

<u>Claim Name</u>	<u>Record No.</u>	<u>Mining Division</u>	<u>Expiry Date</u>
<u>Limestone:</u>			
Cal Lime	433	Clinton	Sept. 23, 1980
<u>Epsom:</u>			
Ada B (L4792)	32056	Clinton	June 26, 1980
Clifford (L4791)	239	Clinton	Aug. 17, 1980
J.T.M. No. 1	344	Clinton	June 14, 1980
J.T.M. No. 2	345	Clinton	June 14, 1980
J.T.M. No. 3	346	Clinton	June 14, 1980
J.T.M. No. 4	347	Clinton	June 14, 1980
J.T.M. No. 5	348	Clinton	June 14, 1980
J.T.M. No. 6	349	Clinton	June 14, 1980
J.T.M. No. 7	384	Clinton	Aug. 21, 1980
J.T.M. No. 8	385	Clinton	Aug. 21, 1980
M.R.S. No. 1	335	Clinton	May 16, 1980
M.R.S. No. 2	336	Clinton	May 16, 1980
M.R.S. No. 3	337	Clinton	May 16, 1980
M.R.S. No. 4	338	Clinton	May 16, 1980
M.R.S. No. 5	339	Clinton	May 16, 1980
M.R.S. No. 6	340	Clinton	May 16, 1980
M.R.S. No. 7	341	Clinton	May 16, 1980
M.R.S. No. 8	383	Clinton	Aug. 21, 1980
<u>Gypsum:</u>			
DMH #1	434	Clinton	Sept. 28, 1980
DMH #2	435	Clinton	Sept. 28, 1980

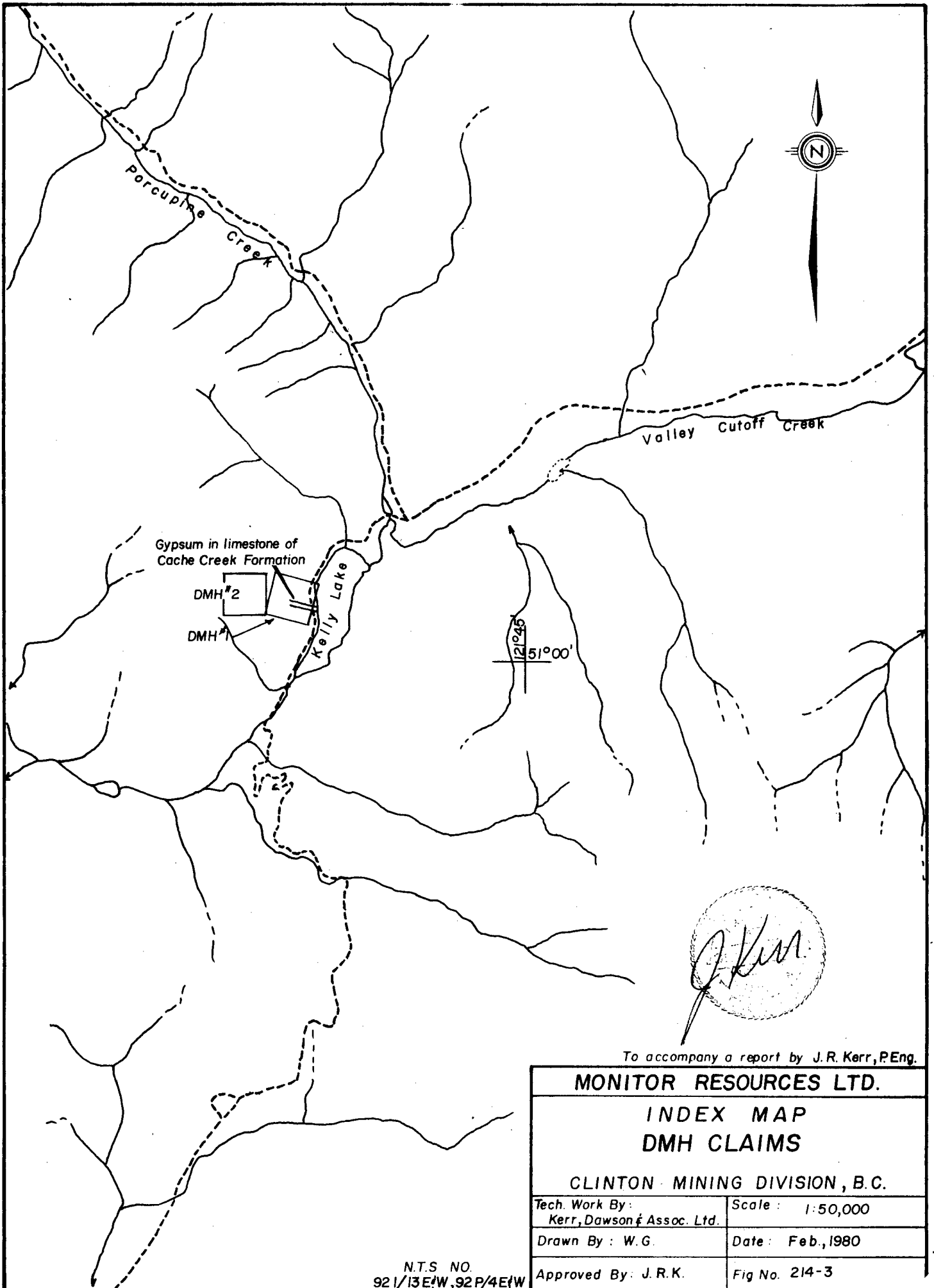
All claims are recorded in the names of P. Martin, T. Martin, B. Howes, and R. Hurley, and are under agreement to Monitor Resources Ltd.



To accompany a report by J.R. Kerr, P.Eng.

MONITOR RESOURCES LTD.	
INDEX MAP MRS, JTM & CAL LIME CLAIMS CLINTON MINING DIVISION, B.C.	
Tech. Work By: Kerr, Dawson & Assoc. Ltd.	Scale: 1:50,000
Drawn By: W.G.	Date: Feb. 1980.
Approved By: J.R.K.	Fig No. 214 - 2

N.T.S. NO.
92 P/4E



J. Kerr

To accompany a report by J.R. Kerr, P.Eng.

MONITOR RESOURCES LTD.	
INDEX MAP	
DMH CLAIMS	
CLINTON MINING DIVISION, B.C.	
Tech. Work By: Kerr, Dawson & Assoc. Ltd.	Scale: 1:50,000
Drawn By: W.G.	Date: Feb., 1980
Approved By: J.R.K.	Fig No. 214-3

N.T.S. NO.
921/13E/W, 92P/4E/W

HISTORY

There is very little documented history of the three deposits.

Epsom deposits in dry lake beds of the Clinton and Cache Creek areas have been known of since early settling of the area. Small quantities of epsom have been removed from one such deposit south of Cache Creek. The epsom at Clinton was given Crown Grant status in the early 1900's. Several operators have surveyed the dry lake in efforts to calculate the volume of epsom. There is no record of production.

Limestone in the tufa-travertine deposit was known of in the nineteenth century. Local citizens of the Clinton area have been using the deposit as decorative rock for years. In the 1950's and 1960's, a small commercial operation quarried limestone, guaranteeing customers 98% CaCO_3 content. It is unknown how much limestone was produced.

There is no recorded history of the gypsum at Kelly Lake. It is obvious that an early operator cut a few bulldozer trenches across the zone, exposing an earthy, decomposed gypsum.

GEOLOGY

The geology of the area is well documented in GSC Memoir #363, Geology of the Bonaparte Lake Map Area, by R. B. Campbell, and H. W. Tipper, and accompanying 1:250,000 scale map sheet.

In summary, the oldest rocks in the area are limestone, argillite, chert, tuffs, and volcanic flows of the Permian Cache Creek Group. The dominant rock of the Cache Creek Group are prominent cliffs and bluffs of limestone and marble of the Marble Canyon Formation. Some Jurassic sediments overlie the Cache Creek Group in the area immediately to the south of Clinton. Tertiary sediments and plateau basalts are dominant in the area to the north and east of Clinton.

The following is a summary of the geology of each property:

Epsom Deposit: The MRS and JTM claims are underlain by Tertiary sediments of the Deadman River Formation, overlying carbonate rocks and sediments of the Cache Creek Group.

The deposit of epsom is the result of current seasonal deposition of $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ in a dry lake bed. Run-off water in the spring dissolves the epsom, and subsequent evaporation causes redeposition in early summer. As new MgSO_4 is being introduced to the lake bed annually, it is logical to assume the content of MgSO_4 is growing. This growth has not been estimated.

The source of the MgSO_4 is unknown; however, two springs tested in the area contain high contents of MgSO_4 . The Cache Creek Group of rocks contain many ultrabasic bodies and lenses, which may be the source of MgO. The SO_4 could derive from abundant sulphides in the Cache Creek sediments.

Limestone Deposit: Rocks underlying the Cal Lime claim are dominantly limestone and marble of the Cache Creek Marble Canyon Formation. In the central portion of the claim a deposit of tufa, with some travertine, exists over an estimated area of 200 meters by 100 meters. The deposit is obviously the result of recent deposition from a warm or hot spring, probably centered immediately beneath the deposit.

The bulk of the rock is described as a tufa; however, later forming travertine is found along fractures, as later precipitation from either spring water or ground water.

Gypsum Deposit: Limestone and marble of the Cache Creek Group underly most of the claim area. In at least one location (indicated on Figure 214-3), a band of gypsum was examined as weathered earthy rock, striking in a general E-W direction. The structural relationship of this band of gypsum to the limestone has not been ascertained. There is evidence of other bands of similar material further to the south.

ECONOMIC POTENTIAL

Epsom Deposit: The measured area of the lake is 700 meters long by 500 meters wide (~ 35 hectares), presumably covered with .05 - .20 meters of $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$. This indicates ~ 35,000 cubic meters (~ 59,000 metric tonnes), of $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ (epsomite) present within the claim area.

Tests completed on one random sample indicate:

MgO	- 19.5%
SO ₄	- 49.1%

which calculates to a 118.5% $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ content. It can be assumed that the evaporite residue is nearly pure epsomite.

Further detailed surveying and sampling of the deposit is required to ascertain an accurate volume and quality of the material. Sampling of the lake bed would best be done in freezing conditions, when access to the central portion of the lake is possible.

Limestone Deposit: The tufa-travertine deposit covers an area approximately 200 meters long by 100 meters wide. A railway cut indicates a minimum thickness of 8 meters, and topographic differential of outcrops indicates a maximum thickness of 25-30 meters. The pre-existing topography prior to deposition would determine the true thickness of the deposit. It is estimated that a minimum of 300,000 metric tonnes of CaCO_3 occur within the deposit.

Results of two samples collected from the deposit indicate 97.5% and 98.2% content CaCO_3 . This approximates the content guaranteed by the former producer.

Diamond drilling, sampling, and detailed geological mapping of the deposit area are required to ascertain accurate volume and quality of the limestone.

Gypsum Deposit: Lack of exposures of fresh rock prohibit any determination of the potential of this deposit. The width of the altered and weathered zone is 20-25 meters, and the zone can be traced over a length of 150-200 meters.

Results of two samples collected from the zone indicate a calculated content of 93.8% and 103.9% $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ (gypsum). This certainly indicates a very pure material.

Detailed geological mapping, bulldozer trenching, and diamond drilling are required to ascertain the true size of the deposit and quality of the gypsum.

RECOMMENDATIONS

The following programme is recommended on all three properties to ascertain quantity, quality and marketability of the various industrial materials.

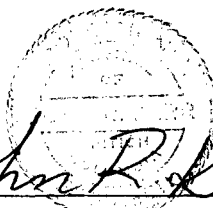
- (1). Approximately eight diamond drill holes on the Cal Lime claims, and three diamond drill holes on the DMH claims. This programme can be completed with a Winkie or X-ray drill, as no holes are anticipated to be longer than 50 meters.
- (2). Bulldozer trenching on the DMH claims to expose full width of the gypsum zone.
- (3). Detailed geological mapping of the Cal Lime and DMH claims.
- (4). Detailed plane-table survey of the dry lake bed to ascertain the true area of the epsomite deposit. Sampling of the lake is required to determine average thickness and quality of the deposit. This would be best done in freezing conditions.

- (5). A preliminary market study of all three products should be undertaken when results of initial testing is completed.
- (6). Results of all work is to be compiled in report form.

The cost of the recommended programme is estimated to be \$25,000.00 (see Appendix A for details).

Respectfully Submitted By:

KERR, DAWSON & ASSOCIATES LTD.,


John R. Kerr

John R. Kerr, P. Eng.,
GEOLOGIST

KAMLOOPS, B. C.,

February 13, 1980.

APPENDIX A

COST ESTIMATE

COST ESTIMATE

Diamond Drilling (EQ-Winkie):

350 meters @ \$35.00/meter \$12,250.00

Supervision and Geological Mapping:

15 days @ \$175.00/day 2,625.00

Assays: 1,000.00

Bulldozer Rental (D-8)

25 hrs. @ \$70.00/hour 1,750.00

Market Studies: 3,000.00

Travel, Room and Board, Misc. Supplies: 2,000.00

Contingencies (~10%) 2,375.00

TOTAL \$25,000.00

APPENDIX B

LAB REPORTS



BONDAR-CLEGG & COMPANY LTD.

geochemists • assayers • analytical chemists

1500 PEMBERTON AVENUE, NORTH VANCOUVER, B. C. V7P 2S2
PHONE: 985-0681

REPORT OF: Requested Elemental Analyses REPORT No. IT29 - 295

PROJECT: _____ DATE: October 24, 1979

REPORTED TO: Kerr-Dawson & Associates

#1 - 219 Victoria Street

Kamloops, B.C. V2C 2A1

PAGE 1

Sample: EO 1

SiO₂ = 0.45 %

Fe₂O₃ = 0.11 %

Al₂O₃ = 0.13 %

CaO = 0.4 %

MgO = 19.5 %

LOI = 47.7 %

SO₄ = 49.1 %

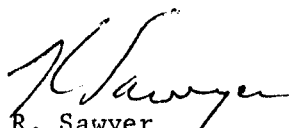
Calculated MgSO₄·7H₂O = 118.5 %

Sample: EO 2 EO 3

Mg ppm = 95 320

SO₄ ppm= 530 1800

BONDAR-CLEGG & COMPANY LTD.


R. Sawyer
Chief Chemist

RS/sja



BONDAR-CLEGG & COMPANY LTD.

geochemists • assayers • analytical chemists

1500 PEMBERTON AVENUE, NORTH VANCOUVER, B. C. V7P 2S2
PHONE: 985-0681

REPORT OF: _____ REPORT No. IT29 - 295

PROJECT: _____ DATE: October 24, 1979

REPORTED TO: Kerr-Dawson & Associates

PAGE 2

Sample: LO 1

SiO₂ = 0.65 %

Fe₂O₃ = 0.16 %

Al₂O₃ = 0.24 %

CaO = 54.6 %

MgO = 0.55 %

LOI = 42.6 %

Calculated CaCO₃ = 97.5 %

Sample: LO 2

CaO = 55.0 %

Calculated CaCO₃ = 98.2 %

BONDAR-CLEGG & COMPANY LTD.

R. Sawyer
Chief Chemist

RS/sja



BONDAR-CLEGG & COMPANY LTD.

geochemists • assayers • analytical chemists

1500 PEMBERTON AVENUE, NORTH VANCOUVER, B. C. V7P 2S2
PHONE: 985-0681

REPORT OF: _____ REPORT No. IT29 - 295

PROJECT: _____ DATE: October 24, 1979

REPORTED TO: Kerr-Dawson & Associates

PAGE 3

Sample: GO 1

SiO₂ = 5.10 %

Fe₂O₃ = 0.41 %

Al₂O₃ = 1.05 %

CaO = 30.6 %

MgO = 0.62 %

LOI = 21.9 %

SO₄ = 47.8 %

Calculated CaSO₄·2H₂O = 93.8 %

Sample: GO 2

CaO = 33.8 %

SO₄ = 50.2 %

Calculated CaSO₄·2H₂O = 103.9 %

BONDAR-CLEGG & COMPANY LTD.

R. Sawyer
Chief Chemist

RS/sja

APPENDIX C

WRITER'S CERTIFICATE

JOHN R. KERR, P.ENG.

GEOLOGICAL ENGINEER

1 - 219 VICTORIA STREET

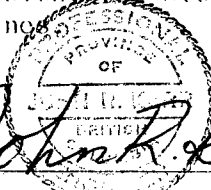
KAMLOOPS, B.C.

PHONE (604) 374-0544

CERTIFICATE

I, JOHN R. KERR, OF THE CITY OF KAMLOOPS, BRITISH COLUMBIA,
DO HEREBY CERTIFY THAT:

- (1). I am a member of the Association of Professional Engineers of British Columbia, and a fellow of the Geological Association of Canada.
- (2). I am employed by Kerr, Dawson and Associates Ltd., with my office at #1 - 219 Victoria Street, Kamloops, B. C.
- (3). I have practised continuously as a geologist since graduation from the University of British Columbia in 1964 with a B.A. Sc. in Geological Engineering.
- (4). I do not hold any interest directly or indirectly to title of the Cal Lime, MRS, JTM, DMH, Ada B or Clifford claims (as referred to in the text of the report), nor do I hold any interest direct or indirect in the securities of Monitor Resources Ltd.
- (5). This report is based on an exhaustive study of all available data, published and unpublished reports, and my examination of the property on September 24th., 1979.
- (6). Permission is hereby granted to Monitor Resources Ltd. to use this report for financing purposes, and to satisfy requirements of the Securities Commission, the Stock Exchange and the B. C. Ministry of Mines.



John R. Kerr, P. Eng.,
GEOLOGIST

KAMLOOPS, B. C.,

February 13, 1980.

KERR, DAWSON & ASSOCIATES LTD.

1-219 VICTORIA STREET, KAMLOOPS, B.C.
TELEPHONE: 374-0544

INVOICE No. #580

INVOICE TO: Monitor Resources Ltd.,
20037 - 37 A Avenue,
LANGLEY, B. C.,
V3A 5X6.

PROJ. No. 214
DATE Feb. 12/80

FOR

Report Preparation and Property Examination: Gypsum,
Limestone and Epsom Deposits, Clinton Mining Division.

John R. Kerr, P. Eng.,
3 1/2 days @ \$250.00/day \$875.00

Expenses:

Assays \$197.50

Truck Rental:

1 day @ \$25.00/day \$25.00
190 mi. @ 25¢/mile 47.50 72.50

Drafting 60.00

Report Preparation, typing,
printing, and telephone 84.70 414.70

TOTAL HEREIN \$1,289.70

DEPOSIT ACKNOWLEDGED 500.00

AMOUNT OWING \$ 789.70

P

Kerr-Dawson & Associates
#1 - 219 Victoria Street
Kamloops, B.C.
V2C 2A1

C 4598
INVOICE: **C 4598**
DATE: October 24/79
REPORT NO: IT29 - 295
PROJECT:

W. O. No. C 7634

3	SiO ₂	Analyses	@ \$ 9.00	\$ 27.00
3	Loss on Ignition	Analyses	@ \$ 5.00	15.00
3	Fe ₂ O ₃	Analyses	@ \$ 7.00	21.00
3	Al ₂ O ₃	Analyses	@ \$10.00	30.00
5	CaO	Analyses	@ \$ 7.00	35.00
3	MgO	Analyses	@ \$ 8.50	25.50
3	SO ₄	Analyses	@ \$ 8.00	24.00
2	Mg (H ₂ O)	Analyses	@ \$ 5.00	10.00
2	SO ₄ (H ₂ O)	Analyses	@ \$ 5.00	<u>10.00</u>
				<u>\$ 197.50</u>

sja