6365

GEOLOGICAL & DRILLING REPORT

1977 FIELD WORK

PHOSPHATE PROPERTIES

FLATHEAD AREA, B.C.

FOR

MEDESTO EXPLORATION LTD.

Prepared by M.A. Pelzer, P.Geol.

Brunswick Resources Ltd.

August, 1977.

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ILLUSTRATIONS

FLATHEAD B.C. PHOSPHATE PROPERTY

Western Warner Oils Ltd. & Medesto Exploration Ltd.

Location & Access

Phosphate claims held by Western Warner Oils Ltd. and Medesto Exploration Ltd. are located in the Flathead Valley of British Columbia on or adjacent to the Flathead Forestry road 16 miles south of its junction with B.C. Highway # 3, and approximately 5 miles south of the settlement of Corbin.

Bush trails providing access by four-wheel drive vehicle to the principal claims have been constructed by both companies.

Claims and Ownership

Forty claims, numbered WW1, WW2, WW4, WW6, to WW12 incl., WW45 to WW60 incl. WW83 to WW88 incl. and WW97 to WW104 incl. are registered in the name ot S.R. Dunn, and held in trust for Western Warner Oils Ltd.

Nine claims numbered PH1 to PH 9 incl. are registered in the name of J.S. Adamson and held in trust for Medesto Exploration Ltd..

The outlines of these claims are shown on the Index Map. Appendix A lists the claim names and record numbers. Drilling done in 1977 was carried out on Claim WW85 and Claim PH6.

Under Agreement between Medesto Exploration Ltd. and Western Warner Oils Ltd., Medesto carried out all field work and paid all costs of same for the 1977 season, in order to earn a 50% interest in the WW group of claims. The Agreement specified that credit for costs of the project is to be split 80% to Western Warner Claims and 20% to Medesto Claims.

Purpose of the 1977 Field Program

Previous geological studies and seismic work (E.E. Pelzer, 1972, N. Dornian, 1975, and D.K. Robertson, 1976) indicated the presence of a three foot phosphorite bed at the base of the Fernie shale on the Medesto and Western Warner Claims. The 1977 field program was designed to confirm the occurence of this phosphorite bed at a depth (16 metres or less) accessible for strip mining.

Planned Program

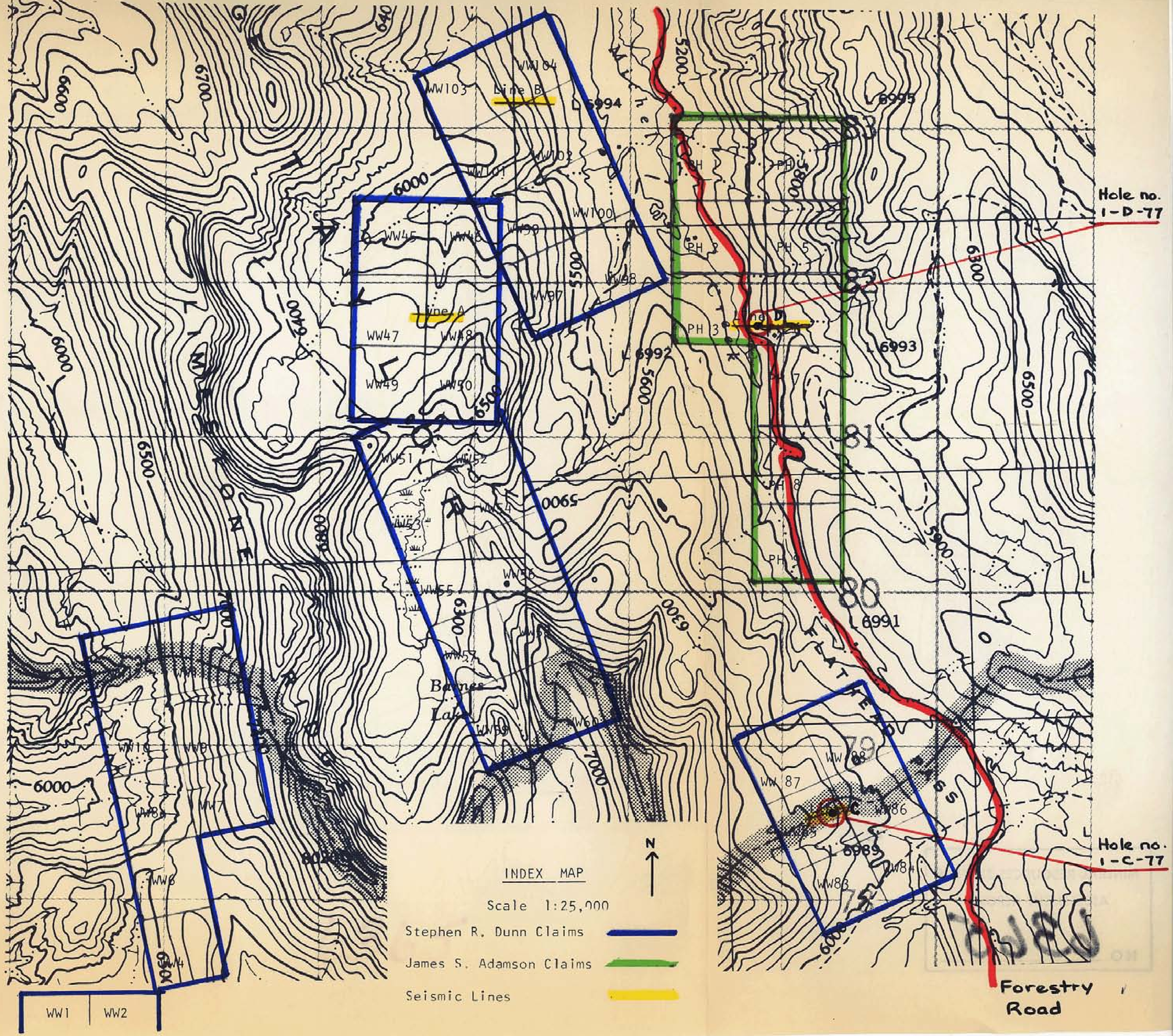
To this end it was planned to drill 3 or 4 holes (as budget permitted) located on Seismic lines C, D, and B (see Index map) to a depth of approximately 18 metres and to log and analyse the samples and cores obtained.

Initial drilling by rotary equipment was expected to penetrate the Fernie shale and reach the underlying Spray River formation. The basal Fernie Phosphorite was then to be cored in a hole drilled immediately adjacent to the rotary hole.

Work done July 6th through 11th, 1977

Following necessary road building operations, two drill sites were prepared on Line C (Claim WW85), one in the middle of the line (Hole No. 1-C-77) and one at its east end. Drilling of hole no 1-C-77 began on July 7th using a Failing CFB-1B-1250 rotary drill with special core equipment, mounted on a FN Nodwell tracked vehicle.

Drilling proceeding with difficulty, progress being very slow and sample recovery poor. Coring was attempted at a depth of 13 metres to 13.4 metres, but the effort was abandoned because of poor recovery. Drilling was resumed, but discontinued after a further 15 cm. in the face of generally unsatisfactory results.



INDEX MAP
N
Scale 1:25,000
Stephen R. Dunn Claims
James S. Adamson Claims
Seismic Lines
Hole no. 1-D-77
Hole no. 1-C-77
Forestry Road
Line B
Line A
WW103
WW104
WW102
WW101
WW100
WW99
WW98
WW97
WW45
WW46
WW47
WW48
WW49
WW50
WW51
WW52
WW53
WW54
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WW2
WW87
WW88
WW86
WW84
WW83
PH 2
PH 3
PH 5
PH 8
6994
6995
6993
6992
6991
6989
6000
6500
6300
6400
6700
6600
5900
5600
5500
5200
7000

Work done July 6th through 11th, 1977 (continued)

Due to drilling difficulties and resulting high costs and poor results it was decided not to attempt the second hole planned for Line C. On July 8th the rig was moved to the 1-D-77 site on Seismic Line D (Claim PH6). Drilling began in glacial drift and proceeded to 9 metres with some hole deviation caused by boulders. Attempts to ream the hole to 9 metres and set casing for coring proved futile. The hole was then drilled to a total depth of 28.96 metres with a smaller bit, and samples taken.

Plans for further drilling were cancelled because of budget over run.

Trench Sampling

In July 1977 samples of Fernie Phosphorite were obtained by trenching from Claim WW57 by W. Bale of the University of Alberta. These samples are to be analysed for mineral content, particularly U_3O_8 and phosphate, as part of a University research project, and the results made available to Medesto. Unfortunately, no results are available in time for inclusion in this report.

Geological Interpretaion and Conclusions

Detailed sample descriptions for each drill hole will be found in Appendix B. The rotary cuttings were examined with a binocular microscope using 10X magnification. Samples were generally of good quality and representative of the lithology.

A. Hole No 1-C-77

Samples from this hole do not provide conclusive evidence that either in situ Fernie Formation or Spray River Formation were ever encountered. A few cuttings resembling each formation were seen, but samples consisted mainly of an assortment of rock types.

A. Hole No. 1-C-77 (continued)

The most reasonable conclusion is that bedrock was never reached in this hole, and that drilling difficulties were caused by boulders of hard carbonate rock in the overburden.

Overburden was much thicker than anticipated at this site, and it is not very likley that the Fernie phosphorite is present above the 16 m. depth limit for strip mining.

B. Hole No 1-D-77

Fernie formation was encountered after drilling through approximately 10.5 metres of overburden. At total depth, a thickness of 18.5 metres of Fernie had been penetrated without reaching the basal Phosphite bed. This places the Phosphorite too deep for economic strip mining at this location.

C. The equipment used proved to be inadequate for the conditions, and was responsible in some measure for the disappointing and inconclusive results of the season's work.

D. It is clear however, that the drilling done does cast doubt on the validity of the interpretation of the seismic survey carried out in 1975 (Dornian report).

On Line C, the seismic depth profile showed a depth range for the Spray River formation of 30 to 40 feet; Hole 1-C-77 reached a depth of 44.5 feet without encountering Spray River.

On Line D the depth range for the Spray River was interpreted as being 26 to 53 feet; Hole 1-D-77 was still in Fernie at a depth of 95 feet.

E. Although Phosphorite was not found at the hoped for depths on the two claims drilled, this does not rule out its occurrence elsewhere on the subject claim blocks. Further drilling and/or trenching with improved equipment will be necessary to evaluate the property and outline reserves.

Respectfully submitted,

M. Aileen Pelzer

M. Aileen Pelzer

APEGGA Registration no. 23377

APPENDIX A

Claim Names and Record Numbers.

PH CLAIM GROUP

Units	Record Number
1 to 3	151
4 to 9	150

WW CLAIM GROUP

Units	Record Number
1	8819
2	8820
4	8822
6	8824
7	8825
8	8826
9	8827
10	8828
11	8829
12	8830
45	8927
46	8928
47	8929
48	8930
49	8931
50	8932
51	8933

APPENDIX B

Sample Descriptions of Individual Holes

Units	Record Number
52	8934
53	8935
54	8936
55	8937
56	8938
57	8939
58	8940
59	8941
60	8942
83	8965
84	8966
85	8967
86	8968
87	8969
88	8970
97	8979
98	8980
99	8981
100	8982
101	8983
102	8984
103	8985
104	8986

Hole no. 1-C-77

Phosphate Property, 1977 Drilling Program

Location: Claim WW85. On Seismic Line C, 50 metres from its East end. (See Index map)

Inclination: 90^{o}

Total Depth: 13.6 metres
Depths are measured from Ground Level.

Depth (metres)	Description
1.37	Dolomite, light gray, microcrystalline, vuggy. Minor Sandstone, white, very fine grained, quartzose.
3.96	Sandstone and Dolomite as above, plus loose fine sand grains, 80% Limestone, dark grayish brown, argillaceous, dense, slightly bituminous, 20%.
10.97	Brown limestone as above, 35% Sandstone and dolomite as above, 60% Loose sand grains, 5%
12.34	Limestone, brownish grey to dark brown, crypto to fine crystalline, argillaceous to shaly, slightly bituminous, 35% Dolomite, light to medium gray, microcrystalline, vuggy in part, 40% Sandstone, white to light gray, quartzose slightly calcareous, 25%
12.95	Limestone, medium brownish gray, slightly argillaceous and bituminous, cryptocrystalline, with white dolomite veining, 70% Brown limestone, sandstone, and Dolomite as above, 30%
13.41	Brownish gray limestone as above, grading to medium gray, slightly argillaceous dolomite, 80% Brown limestone and white sandstone as above, 20%

Hole no. 1-C-77, cont.

Depth (metres)	Description
12.95 to 13.41	Cored. Recovered 4 cm. Limestone, medium brownish grey, slightly bituminous, oolitic.

Hole no. 1-D-77

Phosphate Property, 1977 Drilling Program

Location: Claim PH6. On Seismic Line D, 100 metres N. of forestry road intersection with unnamed creek. (see Index map)

Inclination: 90°

Total Depth: 28.96 metres
Depths measured from Ground Level.

Depth (metres)	Description
0 to 10.06	Overburden
10.36	Assorted rock types - sandstone, quartzite, etc. Minor brownish gray shale.
12.19	Shale, dark grayish brown, slightly calcareous, and Limestone, medium to dark grayish brown, cryptocrystalline, argillaceous, slightly bituminous, with calcite veins. Fernie Formation
13.11, 13.72, 14.63)	As above.
15.24, 15.54, 15.85,) 16.15, 16.46, 16.76,) 17.07, 17.37, 17.68,) 17.98, 18.28, 18.59,) 18.89, 19.20, 19.51,)	Dark brown, slightly calcareous shale, grading to dark brown, dense, very argillaceous limestone, with some white calcite veins. Occasional unidentifiable fossil fragments.
19.82, 20.12, 20.42,) 20.73, 21.03, 21.34,) 21.64, 21.95, 22.25,) 22.56, 22.86)	Mainly dark brown shale as above, but less calcareous. Minor limestone as above. Traces calcite veins and fossil fragments.
23.17, 23.47	Shale and limestone as above, 70% Limestone, argillaceous to shaly, very dark brown, with numerous white calcite veins and/or fossil fragments, 30%

Hole no. 1-D-77, cont.

Depth (metres)	Description
23.78, 24.08, 24.39,) 24.69, 24.99, 25.30,) 25.60, 26.21, 26.52,) 26.82)	Very dark brown slightly calcareous shale, grading to shaly limestone, with white calcite inclusions, veins, and/or fossil fragments, 80% Dark brown shale and limestone, as above, 20%
	No samples below 26.82 m.

WW and PH Claims (Jointly)

WW Claims 80% - PH Claims 20%

Division B - Valuation of Work

Persons Employed

EMPLOYEE	# Days Worked	DATES WORKED	DAILY WAGE	TOTAL AMOUNT	80% WW CLAIMS	20% PH CLAIMS
Management	2	May 2/77	$ 60	$ 120		
Management	4	June 6/77	60	240		
Management	4	June 15/77	60	240		
Geological Students	2	June 20/77	95	190		
Management	4	July 6 - 9 incl.	60	240		
Cost of food and accommodation				745		
Cost of ground transportation (private auto & 4 wheel drive)				675		
Preparation of report pertaining to investigation				1,000		
		Totals page 1.....		$3,450	$2,760	$ 690

PART III - Drilling Reports

Drill unit and crew for 6 days July 6 to 11 inclusive

Crew - 3 men

Drill & Equipment - Failing CFB - 1B - 1250 equipped with special coring and drilling equipment and mounted on a FN 110 Nodwell track vehicle.

1 - 3/4 ton auxilliary truck

1 - automobile.

Cost - Project costs include moving equipment and crew from Calgary to drill site and return to Calgary. (850 miles)

Low boy costs to transport drill - 2 round trips, Calgary - drill site - Calgary (1,760 miles)

Food and accommodation for drilling crew in Coleman, B.C. AND transportation of crew from Coleman to drill site and return daily. (60 miles daily)

		80% WW Claims	20% PH Claims
Total cost.....	$6,295.00	$5,036	$1,259

PART V - Physical Work

D-7 Cat employed to prepare access road to #1 drill site (1,500 M) and prepare 2 drill sites (8 x 12 M) Includes Low-boy transportation from Fernie to drill site & return.

		80% WW Claims	20% PH Claims
Total cost.....	$1,025.00	$ 820	$ 205
Grand Totals	$10,770.00	$8,616	$2,154