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GEOPHYSICAL, GEOCHEMICAL

A SUMMARY REPORT on the CASTLE MOUNTAIN PROPERTY Omineca Mining Division NTS 94 E/6E 57°/6.5; /27°07.5 for

> DYNAMIC OIL LTD. by

John S. Vincent, P.Eng.



Richmond, B.C.

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September 29, 1981

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INTRODUCTION

The Castle Mtn. prospect is located approximately a mile southwest of the Baker Gold Mine, which was formerly known as the Chappelle property prior to actual mine development. The 4 Castle Mtn. Crown granted mineral claims have been optioned by Dynamic Oil Ltd., and the Castle Mt. 1 and Castle Mt. 2 Fr., were acquired by staking.

A four man crew carried out a program of soil sampling, magnetometer, and VLF-electromagnetic surveying over the period July 11th to 25th, 1981, for a total of 52 man days. The writer examined the property on September 9th, 1981.

This report has been prepared at the request of Mr. W.J. Babcock, President of Dynamic Oil Ltd., for the purpose of reviewing the results of the 1981 work program.

PROPERTY, LOCATION AND ACCESS

The property consists of 4 Crown granted mineral claims acquired under agreement with Mr. O. Mac Donald, and 2 staked mineral claims located as per the Modified Grid System. The claims are identified as follows:

<u>Claim Name</u>	Record No.	Units	Date of Record					
Castle Mtn. #1	Lot 6077	1						
Castle Mtn. #2	Lot 6005	1						
Castle Mtn. #3	Lot 6009	ī						
Castle Mtn. #4	Lot 6008	1						
Castle Mt. 1	4084	20	Tulv 27 1981					
Castle Mt. 2	4085	l Fr.	July 27, 1981					
The property is located in the Omineca Mining Div-								
ision on NTS sheet	94 E/6E at 127	7 ⁰ 07'W by 5 [.]	7 ⁰ 17'N, approx-					
imately 20 miles northwest of Thutade Lake.								

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Access is best achieved by fixed wing aircraft from Smithers to the gravel strip at the Baker Gold Mine, and thence by truck to the property. An alternative is to fly directly from Smithers to the property by helicopter.

HISTORY

Mineralization was first found in 1931 and the 4 Castle Mountain claims were staked. The original owner was the Consolidated Mining and Smelting Company of Canada Ltd. Prospecting and hand trenching was done in 1932-1933, and the claims were surveyed for Crown granting in 1934.

The claims were subsequently acquired by Mr. Oswood G. McDonald, and a magnetometer and electromagnetic survey was carried out in March of 1973. Because of weather conditions and topographic conditions it was not possible to complete the survey. Mr. J.J. Crowhurst, P.Eng. prepared a report for Macsan Exploration Ltd. dated June 25th, 1973. At that time Conwest Exploration Co. Ltd. had optioned the adjacent Chappelle claim group from Kennco Explorations (Western) Limited and was preparing to drive an exploration adit on a gold-bearing quartz vein system. Interest in the area was high and it was hoped that the nearby Castle Mtn. claims might have a significant potential.

Conwest efforts were not rewarding, but as precious metal prices increased, Dupont of Canada Ltd. acquired the Chappelle claims and has subsequently developed the Baker Mine to production.

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Exploration on the Lawyers prospect 5 miles to the northwest has proven encouraging over the past 2 exploration seasons, and at present very little unstaked ground exists on the map sheet.

GEOLOGY

The regional geology of the Toodoggone River area is described by Dr. N.C. Carter, P.Eng. in the 1971 GEM; pp 63, 64, and that of the Chappelle property on pp 65 through 70. Figure 2 illustrates the regional setting, and Figure 3 the geology of the Castle Mtn. property and adjacent Chappelle group. Both maps are after Carter, above reference. Figure 4 is a sketch map prepared by CM&S as a result of their work on the Castle Mtn. claims in 1931.

As shown in Figure 2, much of the area is underlain by Upper Triassic Takla Group rocks which consist of basaltic flows and pyroclastic rocks. The Omineca granitic intrusives cut the Takla, and this sequence is in turn overlain unconformably by the Lower Jurassic Toodoggone volcanic rocks. Although the above described setting appears fairly straight forward, recent work shows the geologic picture to be somewhat more complex. The Toodoggone rocks are comprised essentially of hornblende-feldspar porphyry flows and related pyroclastic rocks. Some of the quartz-feldspar porphyry phases appear to be intrusive in part, and rocks which were initially classified as Omineca intrusives may, in fact, belong to Toodoggone age volcanic activity.

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Current exploration results in the general area indicate that these considerations are significant in as much as precious metal mineralization appears to be associated with volcanic centers and related feeder systems of Toodoggone age.

In the mid-1970s the area was explored for porphyry copper-moly mineralization associated with monzonite porphyry dykes thought to be a late phase of the Omineca intrusive activity. The gold-bearing quartz vein system on the Chappelle claims was explored, and an occurrence of skarn mineralization on the Castle Mtn. claim was prospected.

LOCAL:

In the area of the Castle Mtn. Crown grants limestone occurs interbedded with the Takla volcanic rocks, and as a sheet, or block, thrust in a southerly direction over the Takla. Figure 3 illustrates the geologic setting. The Takla rocks are intruded by a granitic body which stretches to the south. Northerly and northwesterly trending fault zones are indicated. The sketch map prepared by Cominco (1931), Figure 4, illustrates their sample sites and analytical results. This mineralization has been described as a skarn-type in association with the limestone. However, much of the claimed area underlain by the volcanics and intrusives is covered, and thus has not been prospected for other types of mineralization.

Quartz-feldspar porphyry dykes are closely associated with mineralization at Chappelle, and with other occurrences in the area, and any exposures of intrusive rocks on Castle Mtn. should be checked for their possible presence.

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Metallic minerals described on the property consist of sphalerite, galena, chalcopyrite, magnetïte, pyrrhotite and pyrite, but sphalerite is regarded as predominant. The largest zone is traceable for 1000-1400 feet and averages 10 feet thick. The silver content is erratic and ranges up to 50 ounces per ton, however, the average would appear to be closer to 2-3 ounces. Gold shows up in trace amounts, but one sample returned a significant value of 0.27 ounces per ton.

Past efforts were directed towards the obvious mineralization, and this has likely been adequately evaluated. However, the results of exploration activity in the area over the past 2 seasons has established significant new geological relationships for precious metal mineralization which could be present on the Castle Mtn. Crown grants, and further work is justified to evaluate this potential.

GEOPHYSICS

A total field intensity magnetometer survey and a VLF-EM survey were conducted on the grid established for the geochemical soil sampling program. The magnetic data is presented in contour form Figure 9, and the VLF-EM data in profile form Figure 10(a) and fraser filtered contour form on Figure 10(b). Due to the close correlation of the anomalous responses observed the results of these surveys are discussed together.

The magnetic data shows two prominent linear features across the grid. One is composed of a number of closed magnetic highs which closely follow tie line 5+00W and the northwesterly trending bluffs and talus slopes. Similar background magnetic intensities are observed on either side of this feature which infers either a contact between

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similar rock types or a fault within one unit. The closed highs likely represent localized accummulations of high susceptability materials (magnetite or pyrrhotite) along the apparent contact or fault. The second trend is comprised of alternating high and low magnetic responses which align in a west-northwesterly direction at an acute angle to the above mentioned trend. This response occurs to the east of the talus slopes and is typical of the response generated by a layered sequence of steeply dipping rocks. A number of closed highs and lows occur near the western extent of this trend, as shown on Figure 5.

The contoured fraser-filtered VLF-EM data (Figure 10(b)) displays contour orientations which closely trace both linear magnetic features described above. A well defined conductivity anomaly closely follows the west-northwesterly trending magnetic lineament and displays closed highs at the same location as the anomalous magnetics.

Both the magnetic and VLF-EM data display trends in the northern corner of the survey grid which strike nearly perpendicular to the larger trend described above. These responses are believed to be reflecting faults within the major rock unit.

Two well defined, high amplitude magnetic dipoles are observed in the southwest section of the grid. One occurs on the southwest end of lines 0+50N, 1+00N and 1+ 50N, near the base of the cliffs. No corresponding VLF-EM anomaly is observed in this area. The other magnetic dipole also occurs near the base of the cliffs, on the southwest end of lines 4+00N and 4+50N. This anomaly has a well defined, high amplitude VLF-EM conductive response associated with it. A polarity reversal between the inphase and quadrature measurements observed across the ano-

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maly (Figure 10(a)) suggests a relatively high conductivity to this feature; higher than observed elsewhere on the grid.

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View looking southerly across the survey grid which covers the grassed slope.



View looking northeasterly down the grid lines towards the Baker Mine Camp.

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The closed magnetic and VLF-EM features are likely defining areas of localized, near surface accumulations of magnetic and/or conductive minerals. The features noted and described above all warrant continued exploration work to further define the source of the various anomalous geophysical responses.

GEOCHEMISTRY

A total of 530 soil samples were collected at 25 meter intervals along lines spaced at 50 meters. The -80 mesh fraction was analysed at Chemex for copper, lead, zinc, silver, and gold. The results are plotted on Figures 5-8.

For the most part the geochemical signature is erratic and care must be taken in contouring and interpreting trends. The photographs illustrate the topography and the reader is referred to the area which extends from below the limestone bluffs to the valley, which pretty well includes the survey grid. The west end of the lines run up the talus slope to the base of the bluffs, and easterly downslope pretty well to the first creek at the base of the hill.

Transported overburden and talus is a problem, and the photos illustrate the distribution of material across the upper slopes. Mineralization boulders and fragments are common in the talus, particularly below the skarn zones in the cliffs above. Down-slope the boulders are numerous, and the most prevalent rock type seen is light grey coarse grained crystalline limestone.

High values in lead, zinc, copper, and silver trend across the west end of the grid in a zone which appears to coincide with the talus slope. However, some of the values are exceptionally high; up to 8000 ppm lead, 16 ppm silver, 800 ppm copper, and in excess of 10,000 ppm

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zinc. Gold is very spotty and values up to 340 ppb are shown in single highs on Figure 8.

Lead:

Figure 5 shows a distribution of lead in the soil which reflects the talus slope to some extent across the western portion of the grid. However, the values are much higher than might be expected from the amount of galena reported in the skarn zones in the cliffs above. Although some lead was found, the total amount was very small. The trend across the western end of the grid coincides generally with that shown by the other metals.

A possible area of interest is outlined by the 50 ppm contour on the No. 4 claim. The area trends northerly and coincides with a similar trend shown by copper and zinc.

In the southeast corner of the No. 2 claim the 50 ppm contour outlines a possible area of interest which trends off the claim group. Silver, copper, and zinc also respond similarly.

Zinc:

The zinc response generally coincides with that of the lead and copper, Sphalerite is the most widespread visible sulphide, along with pyrite, and it might be expected to respond accordingly. However, very high values show a wide distribution also, and the significance requires thoughtful evaluation.

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Copper:

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The copper geochemistry is of particular interest, because copper values reported in all the old sample records are quite low; ie usually less than 0.75%. Work in 1933 on the No. 2 claim located large pieces of float which had an appreciable copper and lead content, and which was regarded as being different that that seen in the exposed skarn zones above. Trenching did not reach bedrock, and their source was not located.

Figure 7 outlines spotty copper highs which show a general coincidence with the lead-zinc signatures of Figures 5 and 6.

In particular the area in the southeast corner responds well.

Silver-Gold:

Away from the west end of the grid the silver responds in spot highs, several of which coincide with the other metals. The area of interest in the southeast corner also reflects in the silver.

The gold signature, although very spotty and erratic, is significant because gold is absent in all the previous sample results, except for one small occurrance on the No. 3 claim. The skarn mineralization of previous interest has no reported gold association.

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DISCUSSION

The exposed mineralization is skarn-hosted in the massive limestone bluffs visible in the photographs. This material is reflected to some extent in the soil geochemistry across the talus slope, and perhaps in the transported overburden below. Soil cover varies considerably in thickness and so may the distribution of transported material.

The most comprehensive work was carried out by Cominco over the period 1932-1933, and this consisted of prospecting, trenching, and sampling. A record of their results is on file. Unfortunately, their hand-dug trenches in the overburden have long since sloughed in, but it is interesting to review their results with reference to the present soil sampling results.

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- a) No. 2 claim Southwest corner: Significant Silver/copper values may correlate with local soil response below the talus.
- b) No. 1 claim East side center : High lead/zinc values in the soil coincide with mineralization sampled by Cominco.
- c) No. 3 claim East center: Silver, lead and gold responds in an area where Cominco report their only gold value, and in association with silver and lead.
- d) No. 4 claim East center: Cominco sampled a silver/copper zone in an area where lead and copper may be responding.
- e) No. 4 claim Southwest corner: Silver, copper, lead and zinc mineralization was sampled, and the soil geochemistry has responded with:
 - (i) an area of high leads.
 - (ii) several copper spot highs.
 - (iii) several silver spot highs.
 - (iv) an area of high zincs.
- f) No. 2 claim Southeast corner: There is no evidence that Cominco uncovered any mineralization in the area of the soil response.

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It appears that the soil geochemistry may well have a valid response in several areas when correlated with the old sample results and geological setting. Mineralization may correlate with contact zones between the massive limestone and the intruding granite. This relationship is suggested in the Cominco sketch.

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There is a broad correlation in places between the geochemical signature and the mag. and EM responses which deserves comment. The northwesterly and northeasterly geophysical trends have associated soil anomalies which could indicate fault-controlled mineralization. The magnetic dipole located on the southwest end of lines 4+00N and 4+50N has a geochemical response which suggests that mineralization of interest may well be associated.

CONCLUSIONS & RECOMMENDATIONS

Geochemical and geophysical results compiled in 1981 correlate to define trends which justify continued followup and evaluation. The indicated sphalerite content may preclude massive sulphide behaviour relative to an electromagnetic response, but other sulphides may be present in sufficient quantity to generate an induced polarization signature. Thus, an I.P. survey is recommended over the present grid. Contingent on these results, diamond drilling will be required to evaluate anomalous responses.

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COST ESTIMATE

Phase 1

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1.	Induced Polarization Survey Crew and equipment 5 days @ \$1000	\$ 5,000.00
2.	Personnel Costs 30 man days @ \$45	\$ 1,350.00
3.	Camp Costs Estimate	\$ 1,500.00
4.	Transportation a) Air fares b) Helicopter: 5 days @ \$450 c) Air freight	\$ 1,000.00 \$ 2,250.00 \$ 2,000.00
5.	Misc. Field Supplies	\$ 200.00
6.	Data processing, drafting, & report preparation	\$ 2,000.00
	Total	\$15,300.00
	Allow \$15,000.00	
		-
Phase	<u>e 2</u>	
1.	Diamond Drilling a) 2,000 feet of BQWL @ \$26 b) mobilization & demobilization c) fixed wing charter d) misc. man hours; moves, etc	\$52,000.00 \$ 2,000.00 \$ 3,000.00 \$ 2,000.00
2.	Camp Costs 1 month @ \$6,000	\$ 6,000.00
3.	Analytical a) Estimate 50 assays @ \$17 b) Shipping	\$ 850.00 \$ 150.00
4.	Geologist	
	1 month @ \$3,000	\$ 3,000.00

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14 Communications\$ 200.00 7. Consulting & Reporting \$10,000.00 8. 9. Supervision, Overhead & Adminstration @ 12% of total less drill contract ... \$ 4,851.00 Total \$97,276.00 Allow \$97,000.00 Respectfully submitted, and E. Trent Pezzot, B.Sc., Geophysicist COUL F.SS John S. VincenVINE EN BRITISH John S. Vincent P. Eng. _

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COST STATEMENT

Personnel:
Brent Robertson; 15 days @ \$185 \$2,775. Bremner Robertson; 15 days @ \$155 . \$2,325. L. Kostyshin; 15 days @ \$155 \$2,325. D. Schmidt; 15 days @ \$175 <u>\$2,625.</u>
Subtotal \$10,050.00
Personnel Costs:
55 man days @ \$40 \$ 2,200.00
Mobilization & Office:
July 9, 10, 26, 27 @ \$370/day \$ 1,480.00
<u>Geochemistry:</u> \$ 5,007.10
<u>Airfares:</u> \$ 881.40
<u>Aircraft:</u> \$ 1,281.93
Airfreight: \$ 200.64
<u>Materials:</u> \$ 250.00
Instrument Rental:
13 days @ \$50\$ 650.00
<u>Claims Recording:</u> \$ 105.00
Reports & Drafting: \$ 1,500.00
Total

Respectfully submitted as costs incurred on the Castle Mtn. mineral claims for the 1981 program.



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STATEMENT OF QUALIFICATIONS

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NAME: PEZZOT, E. Trent

PROFESSION: Geophysicist - Geologist

EDUCATION: University of British Columbia -B.Sc. - Honors Geophysics and Geology

PROFESSIONAL

ASSOCIATIONS: Society of Exploration Geophysicists

EXPERIENCE: Three years undergraduate work in geology - Geological Survey of Canada, consultants.

> Three years Petroleum Geophysicist, Senior Grade, Amoco Canada Petroleum Co. Ltd.

Two years consulting geophysicist, Consulting geologist - B.C., Alberta, Saskatchewan, N.W.T., Yukon, western U.S.A.

Three years geophysicist with Glen E. White Geophysical Consulting & Services Ltd., and Western Geophysical Aero Data Ltd.

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CERTIFICATE

I, John S. Vincent, DO HEREBY CERTIFY:

- 1. That I am a consulting geologist resident at 4859 12A Ave., Delta, B.C., V4M 2B6.
- That I am a graduate of Queen's University in Geological Sciences, B.Sc. - 1959; and of McGill University, M.Sc. - 1962.
- 3. That I am a Registered Professional Engineer (Geological) in the Association of Professional Engineers of the Province of British Columbia.
- 4. That I am a Fellow of the Geological Association of Canada, and a member of the Canadiam Institure of Mining and Metallurgy.
- 5. That I have practiced my profession as a geologist for the past twenty-two years.
- I have examined and sampled the property under study, and personally reviewed the results of the 1981 program.
- 7. That I have no interest in the properties or securities of Dynamic Oil Ltd., or in any related companies.
- 8. That permission is granted to the use of this attached report for the purpose of financing.



Vancouver, B.C.

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REFERENCES

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Carter, N.C.,	Geology, 1971; pp	Mining, 63-70	and	Exploration;	BCDOM,

Crowhurst, J.J., Report on the Castle Mountain Property; 1973

Giegerich, H.C. Cominco; 1931-1933, Misc. memos reporting on progress.















