



MINFILE Detail Report
BC Geological Survey
Ministry of Energy, Mines and Petroleum Resources

Location/Identification

MINFILE Number: 082FSW110 **National Mineral Inventory Number:** 082F4 Mo1

Name(s): COXEY
RED MOUNTAIN, COXEY (L.1221), NEVADA (L.966)

Status: Past Producer **Mining Division:** Trail Creek

Mining Method: Open Pit **Electoral District:** West Kootenay-Boundary

Regions: British Columbia **Resource District:** Arrow Boundary Forest District

BCGS Map: 082F001

NTS Map: 082F04W **UTM Zone:** 11 (NAD 83)

Latitude: 49 05 23 N **Northing:** 5437760

Longitude: 117 49 40 W **Easting:** 439563

Elevation: 1379 metres

Location Accuracy: Within 500M

Comments: Open Pit A, located 2.5 kilometres northwest of Rossland on the west side of Red Mountain.

Mineral Occurrence

Commodities: Molybdenum, Copper, Tungsten, Gold

Minerals

Significant: Molybdenite, Pyrrhotite, Chalcopyrite, Arsenopyrite, Scheelite, Pyrite, Magnetite

Associated: Silica, Quartz, Calcite

Alteration: Garnet, Epidote, Silica

Alteration Type: Silicific'n, Skarn

Mineralization Age: Unknown

Deposit

Character: Breccia, Vein, Disseminated

Classification: Hydrothermal, Epigenetic, Porphyry, Skarn

Type: L05: Porphyry Mo (Low F- type), K05: W skarn, L07: Porphyry W

Shape: Irregular **Modifier:** Faulted

Host Rock

Dominant Host Rock: Metasedimentary

Stratigraphic Age	Group	Formation	Igneous/Metamorphic/Other
Pennsylvan.-Permian	Undefined Group	Mount Roberts	-----
Jurassic	-----	-----	Trail Pluton
Lower Jurassic	-----	-----	Nelson Intrusions

Isotopic Age	Dating Method	Material Dated
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Lithology: Breccia, Hornfels, Hornfels Siltstone, Quartz Diorite Breccia, Quartz Diorite, Granodiorite, Andesite, Lamprophyre Dike

Comments: The Trail pluton is part of the Nelson Intrusions.

Geological Setting

Tectonic Belt: Omineca **Physiographic Area:** Selkirk Mountains

Terrane: Slide Mountain, Quesnel

Metamorphic Type: Contact **Relationship:** Syn-mineralization, Post-mineralization

Grade: Hornfels

Inventory

Ore Zone: COXEY AND NEVADA CLAIMS

Year: 1982

Category: Indicated

Report On: Y

Quantity: 244,917 tonnes

NI 43-101: N

Commodity	Grade
Molybdenum	0.2200 per cent

Comments: Drill indicated in upper B and C zones. Actual grade is 0.37 per cent MoS₂. Conversion used to MoS₂ to Mo is 1.6681.

Reference: Filing Statement 139/82, David Minerals Ltd.

Summary Production

	Metric	Imperial
Mined:	920,136 tonnes	1,014,276 tons
Milled:	939,397 tonnes	1,035,507 tons
Recovery		
Molybdenum	1,748,871 kilograms	3,855,601 pounds

Capsule Geology

The Coxey mine is underlain by the Pennsylvanian and possibly Permian Mount Roberts Formation siltstone, hornfelsed siltstone, hornfels and a breccia complex. The siltstone is rusty, sooty and massive or thinly bedded with minor disseminated pyrrhotite and pyrite. The hornfels and hornfelsic siltstones are thinly laminated, massive cherty rocks, which locally contain brown garnet and epidote.

The succession is thought to have been thrust over augite porphyry of the underlying Rossland sill of the Elise Formation (Rossland Group) prior to the intrusion of the Middle to Late Jurassic Trail pluton (Nelson Intrusions). The siltstone is intruded by lenticular masses of andesite, irregular bodies of quartz diorite and quartz diorite breccia, and late steeply dipping dykes which trend northward. The quartz diorite is assumed to be part of the Trail pluton.

Steeply dipping faults, trending 160 degrees, offset the orebodies. One such fault separates the A from the B orebodies, another passes between the A and upper A orebodies, and yet another passes between the A and E orebodies. From the offset of the orebodies the faults are assumed to be downthrown on the west. The Headwall fault, between the A and upper A orebodies, is followed by a lamprophyre dyke which is locally sheared along the fault. The quartz diorite breccia is also offset 45 to 50 metres to the right along this fault. Potassium-argon dating of biotite from the Headwall lamprophyre dyke gave an age of 49.0 plus or minus 1.6 million years (Bulletin 74).

The molybdenum mineralization occurs essentially within the Mount Roberts Formation breccia complex. The hornfels and hornfelsic siltstone comprises a breccia with angular blocks ranging up to 30 metres across. The matrix between the blocks is comprised of fine silicates, quartz, calcite, garnet or scheelite. Molybdenite, usually without other sulphides, occurs in randomly oriented fractures in all types of hornfels breccia and in the quartz diorite breccia. Commonly, it lies along the margins of breccia blocks and locally is concentrated at junctions between the blocks. Rarely, these junctions also contain drusy quartz, scheelite, hornblende or epidote. Pyrrhotite, chalcopyrite and pyrite are disseminated in the hornfels and also occur in fractures and as massive lenses between breccia fragments. The sulphide distribution seems independent of the distribution of molybdenite. Arsenopyrite is a predominant mineral with molybdenite and chalcopyrite in the Coxey-Nowelty vein (082FSW107). Microscopic magnetite rims the arsenopyrite grains.

Between 1966 to 1972, 1,035,509 tonnes of ore was mined from the open pits and produced 1,748,871 kilograms of molybdenum. In 1982, the indicated reserves for the orebodies on the Coxey and Nevada claims was calculated to be 244,917 tonnes of 0.22 per cent molybdenite. Actual grade is 0.37 per cent MoS₂ (Filing Statement 139/82, David Minerals Limited). Conversion used of MoS₂ to Mo is 1.6681. Some of this material is reported to carry gold but estimates of the average grade cannot be made from the data available.

Scheelite occurring as medium to coarse grains, is scattered throughout the breccia complex. Rarely, it forms spectacular clusters of grains between fragments. Its occurrence is erratic and company records indicate the highest grades were found in the E and F orebodies on the Mountain View claim (082FSW140), where the grade was about 0.10 per cent WO₃ (tungsten trioxide).

The characteristics of the molybdenite and scheelite mineralization and its association with the Middle to Late Jurassic Trail pluton, especially its upper and western margins, point to its classification as a porphyry-type deposit (Bulletin 74).

The property is located on the west slope of Red Mountain about 18 kilometres northwest of Rossland. It consists of 10 claims, the Coxey, Nevada, Mountain View, Ontario, Good Friday, Peak, High Ore, Ophir, Jumbo, and Sam Hayes. Most of these claims were Crown-granted during the period 1895-97 and were well known in the early days of the Rossland camp.

Development work on the Coxey was begun in 1897 by Messrs. Cook & Johnson. In 1899 Montreal Goldfields Ltd. prospected the property for gold and copper. Development work consisted of two tunnels, a shaft, and several open cuts. The Coxey claim was reportedly worked by lessees Williams and Ruffner during the first World War but it is not known what development work was done at that time.

Late in 1963 Torwest Resources acquired the group of 10 claim. During 1964, 59 diamond drill holes were put down on the Coxey claim, 53 on the A or east zone and 6 on the B or west zone. Stripping on the B zone traced the mineralization for over 213 metres.

Metal Mines Limited optioned the property in September 1964 and early in 1965 they assigned one half of their interest in the project to Canadian Nickel Company Limited, the exploration arm of The International Nickel Company of Canada Limited.

At the end of 1964 ore reserves were estimated at 400,000 tons grading 0.5 per cent molybdenite.

Thirty-four drill-holes put down by Metal Mines Limited late in 1964 reportedly confirmed the results of the Torwest drilling. Red Mountain Mines Limited was formed in April 1965 to operate the property. The new company was owned by Torwest Resources (60 per cent), Metal Mines (20 per cent), and Canadian Nickel (20 per cent). Mining was by open pit. A 400 ton per day mill began operating April 24, 1966. Reserves at that time were estimated at 800,000 tons averaging 0.45 per cent molybdenite. The property was financed to production jointly by Canadian Nickel Company and Consolidated Canadian Faraday Limited.

Mining was done initially in the A zone. Mill capacity was increased to 600 tons per day by 1969 and 750 tons per day by 1970. The mine closed in December 1970 due to lack of ore. The discovery of the E zone late in 1970 permitted the resumption of milling in February 1971. The mine closed in January 1972. After closing, The International Nickel Company engaged Min Finders Inc., of Lakewood Colorado to carry out an extensive exploration program based on a porphyry model of mineralization. Geochemistry, geophysics and deep drilling were carried out in the mine area between 1972 and 1974.

In 1980-81 David Minerals Ltd acquired the property from AJM Explorations Ltd. and AJM Mill Ltd. and also acquiring the interests of Hunstone Ventures Ltd. and those of Inco Limited, Consolidated Canadian Faraday and Teck Corporation. The 1980 agreement included purchase of the 600 tpd mill. In 1981 the company drilled 9 short holes just south of the mine area. Reserves were reported as drill indicated 270,000 tons at 0.37 per cent MOS2 on the Coxey and Nevada claims (David Minerals Ltd., FS 139/82, p. 3, 1982).

Bibliography

EMPR AR 1890-368; 1895-685,688; 1897-537,543,570; 1898-1094; 1899-599,717; 1901-1042; 1906-152; 1908-103; 1909-128; 1910-115; 1911-172; 1912-161; 1913-134; 1914-332; *1916-214-244; 1936-E48; 1940-75; 1941-72; 1945-96; 1946-137; 1964-113; 1965-175; *1966-200-208; *1967-236-239; 1968-237

EMPR BC METAL MM00712

EMPR BULL 2, p. 25; 10, p. 154; *74, *Fig. 5; 109

EMPR FIELDWORK 1987, pp. 19-30; 1988, pp. 33-43; 1989, pp. 11-27; 1990, pp. 9-31

EMPR GEM 1969-314; 1970-436; 1971-403; 1972-50; 1973-62; 1974-70

EMPR OF 1988-1; 1989-11; 1990-8; 1990-9; 1991-2; 1991-16; 1991-17; 1998-8-M, pp. 1-74

EMPR PF (Various reports, surface plans and maps; Also see files for Golden Queen - 082FSW106 and Giant - 082FSW109)

EMR MIN BULL MR 223 B.C. 25

EMR MP CORPFILE (Torwest Resources (1962) Ltd.; Metal Mines Ltd.; Red Mountain Mines Ltd.; Consolidated Canadian Faraday Ltd.; David Minerals Ltd.)

GSC MAP 1004; 1518; 1090A; 1504A

GSC MEM *77, pp. 78,143; 308

GSC P 79-26

CANMET IR 509, Test #81, p. 119

CANMET RPT 592, p. 47

CIM BULL Vol.60, 1967, pp. 807,814

CIM Jubilee Volume (1948), pp. 189-196

CIM Special Vol.15, 1976, Table I

CMH 1970-1971

GCNL #249, 1979

W MINER Vol.39, 1966, pp. 47-57

Thorpe, R.I. (1967): Controls of Hypogene Sulphide Zoning, Rossland, British Columbia, Ph.D. Thesis, University of Wisconsin

EMPR PFD 3143, 3144, 3145, 3147, 3148, 3149, 3150, 3151, 3152, 3153, 3154, 3155, 3156, 3157, 3158, 3159, 3160, 3162, 3163, 3164, 3165,

3166, 3167, 3168, 3169, 3170, 3171, 3172, 3173, 3174, 3675, 905480, 750101, 750520, 3146, 3161, 907201, 812389, 882056, 882057, 882058, 822488, 822546, 822566, 822930, 822957, 800193, 800894, 502135, 502137, 508280, 508281, 896284

Date Coded:	1985/07/24	Coded By:	BC Geological Survey (BCGS)	Field Check:	N
Date Revised:	1991/05/02	Revised By:	Garry J. Payie (GJP)	Field Check:	N