

**DIVIDEND GROUP**

Geology  
Osoyoos Mining Division, B.C.  
NTS 82 E 3/4  
January 1984

L. Haynes

<u>Claims</u>	<u>Record Number</u>	<u>Expiry Date</u>
Bullfrog Fraction	L3572S (M103)	16 September 1984
Copper King	L1078 (M103)	16 September 1984
Dividend	L1589	-
Dividend Fraction	L1590	-
Eagle Fraction	L2395S (M26)	23 January 1984
International	L1076	13 July 1984
Jay 1	1637	21 January 1984
Jay 2	1638	21 January 1984
Jay 3	1639	21 January 1984
Jay 4	1640	21 January 1984
Jay 5	1641	21 January 1984
Jay 6	1642	21 January 1984
Lakeview Extension	L2468 (M36)	24 September 1984
Little Manx Fraction	L3559S	-
Manx	L3558S	-
Orient	L1898 (M36)	29 September 1984
Osoyoos-Heclar	L3573S	-

Location: 49°0.5' N, 119°29.5' W  
Owner: Joseph E. Falkoski  
Operator: Golden Dividend Resources Corporation  
Work Performed: June 1 to December 31, 1983

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**11,924**

## **DIVIDEND GROUP**

Geology  
Osoyoos Mining Division, B.C.  
NTS 82 E 3/4  
January 1984

### SUMMARY

The Dividend group of claims cover a copper-gold prospect located north of the Canada-USA border, southwest of Osoyoos, B.C. During the 1983 field season geological mapping, chip sampling and prospecting were carried out on the property.

The property was found to overlie either Permian or Triassic metavolcanics (greenstones) and minor sediments which have been intruded by the Osoyoos Batholith (granodiorite) to the north. Copper-gold values are associated with fracture fillings, quartz veins and skarn mineralization. The earliest work on the property included several exploration shafts and tunnels as well as production from the Dividend Mine during the period from 1908 to 1940.

Work by previous operators during the 1960's and by Golden Dividend in 1983 has identified several areas requiring additional work. A VLF-EM survey, magnetometer survey, trenching and diamond drilling are recommended for the property.

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## DIVIDEND GROUP

Geology  
Osoyoos Mining Division, B.C.

### 1. INTRODUCTION

The Dividend Group covers a copper-gold prospect located due west of Osoyoos, B.C. From June 1 to December 31, 1983, field work entailing geological mapping, chip sampling and prospecting was carried out over the property.

Results of the program are discussed in the following report.

#### 1.1 Location and Access

The Dividend Group is located in the Osoyoos Mining District, B.C., approximately 3 km southwest of Osoyoos, B.C. The claims cover an area of approximately 3 km<sup>2</sup> centering on latitude 49°0.5' and longitude 119°29.5' W.

Access to the property is by gravel road exiting south from the Osoyoos Golf Course. Two kilometres of paved road connect the golf course with Transprovincial Highway 3 south of Osoyoos.

#### 1.2 Topography

The Dividend Group encompasses 3 km<sup>2</sup> of mild relief on the lower eastern slope of Kruger Mountain 3.5 km southwest of Osoyoos. The property is lightly vegetated with grass and sagebrush. Elevations range from 365 m to 760 m above sea level.



**BRITISH COLUMBIA**

Scale 1:7,500,000

**PROPERTY**

N.T.S.  
82 E 3/4



GOLDEN DIVIDEND RESOURCES CORP.			
DIVIDEND GROUP			
PROPERTY			
LOCATION MAP			
DRAWN	WORK BY	DATE	PAGE <b>2</b>
	L. HAYNES	JAN. 84	
Revised _____			

### 1.3 Property and Claim Status

The Dividend Group currently consists of three mineral leases, six Crown grants and six located mineral (two post) claims. The claims, their record numbers, and anniversary dates are given in the table below. Map C-7001 shows the relative location of the claims.

TABLE I  
Claim Status

<u>Claim Name</u>	<u>Record Number</u>	<u>Anniversary Date</u>
Bullfrog Fraction	L3572S (M103)	16 September 1984
Copper King	L1078 (M103)	16 September 1984
Dividend	L1589	—
Dividend Fraction	L1590	—
Eagle Fraction	L2395S (M26)	23 January 1984
International	L1076	13 July 1984
Jay 1	1637	21 January 1984
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Jay 5	1641	21 January 1984
Jay 6	1642	21 January 1984
Lakeview Extension	L2468 (M36)	24 September 1984
Little Manx Fraction	L3559S	—
Manx	L3558S	—
Orient	L1898 (M36)	29 September 1984
Osoyoos-Heclar	L3573S	—

#### 1.4 History and Previous Work

The Dividend group of claims were optioned by Golden Dividend from Joseph E. Falkoski in February, 1983. Falkoski staked the Jay claims and acquired the mineral leases and Crown grants to cover the earlier workings as well as the potential for undiscovered mineralization. A brief history of the property is summarized below.

1. Prospecting on the property began before the turn of the century. As a result, several parts of the property were Crown granted in the early 1900's.
2. In 1908 Granby Consolidated Mining and Smelting optioned and worked the Dividend Crown Grant. The option was dropped in 1911 and the original owners, Dividend-Lakeview Consolidated Gold Mining Co. Ltd., reportedly shipped 1,057 tons averaging 0.44 oz./ton gold between 1912 and 1914.
3. During the late 1920's and early 30's the mine was leased out. In 1933 Osoyoos Mines was formed to operate the property and the Dividend deposit was then mined from 1936 until the mine closed in 1940. During this time the mill is reported to have run through 99,316 tons averaging 0.19 oz./ton gold.
4. A number of operators have examined or worked portions of the properties during the period from 1940 to 1970. The most significant exploration on the property included work by Sheep Creek Mines Ltd. (1963) magnetometer and SP surveys, diamond drilling; Torbrit Silver Mines Limited (1966) geophysics; Pine Pacific Mine Ltd. (1967) magnetometer survey, trenching and diamond drilling; Multiple Mining Ltd. (1970) geochemical and IP surveys. Details of some of this work are documented in B.C. Ministry of Mines Assessment Reports 658, 808 and 2922.
5. There is no record of work on the property during the period from 1971 to May, 1983.

### 1.5 Work by Golden Dividend Resources in 1983

Field work by Golden Dividend Resources commenced on June 1, 1983 and continued on an intermittent basis until December 31, 1983. During this period the following work was completed.

1. A base line totalling 4.0 kilometres was marked and picketed.
2. The property was mapped at a scale of 1:5000 with emphasis given to defining the major rock units and alteration assemblages.
3. The majority of the old pits and trenches were mapped and sampled. All samples were submitted for analysis.



## 2. GEOLOGY

### 2.1 General Geology

The geology of the Dividend group of claims was briefly but adequately described by W.E. Cockfield in GSC Memoir 179 (1935). The claims are underlain by a series of regionally metamorphosed volcanics and minor sediments of uncertain age. Different writers have classified these rocks as either Permian Anarchist Group or Triassic Kobau Group.

There are four mapable units: greenstone (1), basalt (2), limestone (3), and garnetite (4), on the property. These units show a general north-south strike and dip slightly to the west. Metamorphism and often intense fracturing has obscured almost all of the bedding features.

The intrusion of the Osoyoos granodiorite to the north of the claim group has strongly altered some of the bedded rocks to lime silicates, chiefly garnet-epidote zones. The source for massive sulphide mineralization within the skarn as well as other copper-gold occurrences on the property is probably related to this intrusive event.

### 2.2 Local Geology

Mapping of the local geology was carried out at a scale of 1:5000 by pace and compass traverse using a photomosaic base map for control. Results of the mapping are presented on Drawing G-7001. A description of the map units follows.

#### 2.2.1 Greenstone

The greenstone varies from a massive to schistose, fine grained, dark green rock and probably represents a highly sheared andesitic flow. The dark colour results from the abundance of fine grained chlorite, epidote and iron oxides. The schistose texture is better developed near areas of intense fracturing and shearing.

Within the greenstone is a coarser grained dioritic to gabbroic member with distinct hornblende, chlorite, feldspar and minor pyroxene grains. This rock bears a strong resemblance in colour and texture to the finer grained rocks making differentiation difficult. Both members can occur within the same outcrop with no obvious contacts between the two. Early attempts to distinguish these units on the geological map were abandoned.

Some of the other workers on the property consider that these coarse grained basic rocks may be intrusive in nature and have undergone metamorphism along with the andesitic (?) flows. In either case there is no apparent relationship between mineralization and the coarser grained rocks.

#### 2.2.2 Basalt

On the northeast corner of the Osoyoos-Heclar Fraction is a small occurrence of silicified basalt. The rock is aphanic to very fine grained and dark grey to black in colour.

#### 2.2.3 Limestone

Underlying the Dividend workings is a massive, blue-grey to white recrystallized limestone. The limestone is restricted to this one part of the property. It is surrounded on three sides by coarse grained greenstone and probably occurs as a lens within this series. In places the limestone is altered to marble and contains small areas of calcareous schists and slaty beds.

#### 2.2.4 Garnetite

Replacement of the limestone and/or altered volcanics has formed a massive band of garnetite. The rock is a mixture of medium to coarse grained red-brown garnet, epidote, other lime silicates, calcite and silica.

The unit is well exposed in the Dividend workings, above the upper tunnel on the Manx Crown Grant, and again along an east-west slope parallel to the north boundary of the Manx Crown Grant.

### 3. MINERALIZATION

Copper-gold occurrences are scattered throughout the property. Numerous showings can be identified by old pits, small trenches and shallow shafts. The mineralization is either associated with skarns, quartz veins or quartz-calcite filling fractures and shear zones.

Most of the mineral occurrences and trenches are identified on Map G-7002. Chip samples were collected from the better mineralized showings. Assay results from this sampling are presented in the table below.

TABLE II  
Assay Results

Sample Number	Sample Description	Ag (oz/ton)	Au (oz/ton)	Cu (%)
0595	chip	0.23	0.021	0.29
0596	grab	0.16	0.084	0.17
0597	1.5 m chip	0.13	0.098	0.22
0598	grab	0.12	0.016	0.06
0599	1.0 m chip	0.21	0.020	0.04
0600	grab	0.05	0.006	0.02
83047	grab	2.22	0.048	4.91
83500	1 m chip	0.28	0.024	0.70
83501	grab	0.85	0.210	3.36
83502	0.5 m chip	0.82	0.052	1.92
83503	grab dump	0.72	0.078	0.46
83504	0.5 m chip	0.44	0.005	0.69
83505	0.25 m chip	0.60	0.004	3.16
83506	0.25 m chip	0.26	0.003	1.04
83507	0.25 m chip	0.14	0.003	0.61
83508	0.25 m chip	0.18	0.003	1.40
83509	1.0 m chip	0.42	0.022	0.03
83510	0.3 m chip	0.14	0.042	0.51
83511	0.75 m chip	0.42	0.012	0.60

### 3.1 Skarns

The Dividend workings represent the most significant mineralization found on the property to date. The Dividend Mine reportedly shipped 99,316 tons of ore averaging 0.19 oz./ton Au with the grade decreasing from 0.48 oz./ton Au in 1936 to 0.11 oz./ton Au by 1940. The main production came from small pods of gold bearing pyrrhotite-arsenopyrite-chalcopyrite garnetite skarn. The skarn occurs as replacement bands in an east-west trending limestone bed.

Smaller garnetite skarn bands outcrop to the west of the Dividend workings along the northern edge of the Manx Crown granted claim. Near the northwest corner of the Manx Crown Grant several pits have been sunk on sulphide lenses within the skarn. Grab and chip samples (83500-503) give good copper and gold values ranging from 0.46 to 3.36% copper and from 0.024 to 0.21 oz./ton gold. The sulphide lenses are composed predominantly of pyrrhotite with lesser amounts of chalcopyrite and pyrite. The sulphide lenses vary in width from 0.5 to 1.5 metres and are exposed on either side of the pits. The lenses appear to be restricted in length.

A geophysical survey conducted by Torbrit Silver Mines Limited in July 1966 shows a strong chargeability high coincident with the sulphide lenses. The anomaly trends easterly toward the Dividend workings for approximately 400 metres. A similar chargeability high occurs over the Dividend workings. The author feels that the chargeability anomaly found on the Manx Crown Grant may reflect similar mineralization to that mined from the Dividend Crown Grant.

### 3.2 Quartz Veins

Chalcopyrite and pyrite bearing quartz veins have been explored throughout the property's history. The most significant vein structures occur on the Manx, Osoyoos-Heclar and Copper King Crown Grants.

Two tunnels were collared on the Dividend Crown Grant and driven west onto the Manx Crown Grant. The upper tunnel was 50 metres long and drifted on a 0.45 m vein for the first three metres and the last 20 metres. The quartz vein containing pyrrhotite and chalcopyrite fills a fracture in limestone. Gold values ranged from 0.1 to 0.64 oz./ton and copper from 0.25% to 3.66% Cu. A nine metre section of higher grade material was mined. A short raise from the lower tunnel driven about 30 metres below is believed to have intersected the downward continuation of the vein in the upper tunnel.

On the Osoyoos-Heclar Crown Grant an inclined shaft was sunk to explore a north-south striking vein. The vein, averaging one metre in width, dips about 65° to the east and can be traced over 30 metres. Weak copper and gold values (0599) are associated with chalcopyrite and pyrite.

A small open cut on the Copper King Crown Grant exposes a narrow east-west striking quartz vein that dips 25° to the north. The vein was sampled (83504-506) in three places and yielded poor copper-gold values.

Other narrow, weakly mineralized quartz veins occur throughout the property. Most of these veins have been exposed by open cuts or pits. None of these appear to have economic value.

### 3.3 Fracture Filling and Shear Zones

Copper stained fracture fillings and shear zones are scattered throughout the property. The zones typically have a strong east-west or north-south orientation. The largest fracture zone occurs near the south boundary of the International Crown Grant. Several large bulldozer trenches have traced the zone across 10 m and for 30 m in length. This zone plus others on the property have not yielded significant mineralization.

#### 4. CONCLUSIONS

The results of the present program lead to the following conclusions:

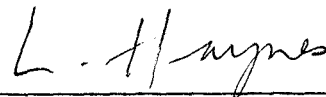
1. Work by various operators on the property has explored different portions of the Dividend group of claims. The earliest exploration efforts for Cu-Au bearing quartz veins and skarns resulted in the discovery of the Dividend orebody.
2. Following the closure of the Dividend Mine in 1940 the next phase of exploration was not until the 1960's and 70's. This work, directed at locating porphyry copper style mineralization, tested a number of showings as well as outlining several geochemical and geophysical anomalies.
3. Geological mapping of the property by Golden Dividend Resources in 1983 suggests that additional copper-gold bearing sulphide lenses could occur. Evidence for this includes the sulphide occurrences near the northwest corner of the Manx Crown Grant and the large band of garnetite skarn striking west from the Dividend workings. Further evidence includes the coincidence of a strong chargeability anomaly (Torbrit Silver Mines Limited, July 1966) with the sulphide occurrences.

5. RECOMMENDATIONS

It is recommended that:

1. Detailed geophysical surveys including VLF-EM and magnetometer be conducted on the Manx Crown Grant and adjoining claims.
2. Backhoe trenching be carried out in the vicinity of the sulphide lenses exposed on the Manx Crown Grant.
3. Diamond drilling be used to test positive results from either the trenching or geophysical surveys.

Respectfully submitted,  
GOLDEN DIVIDEND RESOURCES CORPORATION



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Larry Haynes

**APPENDIX A**

**REFERENCES**



## REFERENCES

B.C. Minister of Mines. 1932. Annual Report. pp. A134-135.

Campbell, D.D. May, 1963. Report for C.M.&S.

Cockfield, W.E. 1935. GSC Memoir 179. pp. 20-26.

Gibson, G. and J. Richardson. July, 1964. C.M.&S. report.

Gilbert, G. April, 1941. C.M.&S. report.

Hainsworth, W.G. February, 1983. Report on the Dividend-Osoyoos  
Claims. Golden Dividend Resources Corporation Prospectus.

**APPENDIX B**

**STATEMENT OF QUALIFICATIONS**

STATEMENT OF QUALIFICATIONS

LARRY HAYNES

Academic

October, 1983	Fellow	Geological Association of Canada
May, 1972	B.Sc. Geology	University of British Columbia

Practical

May, 1983 - January, 1984	Exploration Manager Golden Dividend Resources	Property appraisal and acquisition
November, 1982 - May, 1983	Associate Geologist Alionis & Lohman	Contract Geologist
May, 1972 - October, 1982	Geologist Riocanex Inc.	Geologist involved in all aspects of mineral ex- ploration in B.C., Yukon and N.W.T.

**APPENDIX C**

**COST ESTIMATE**

COST STATEMENT

DIVIDEND GROUP

Geology

1 June to 31 December 1983

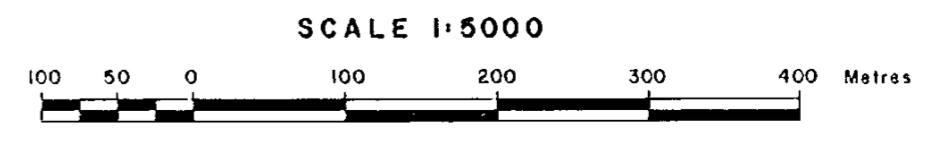
General Costs

Food and accommodation	33 man days @ \$50/day		\$ 1,650
Salaries and wages	52 man days @ \$135/day		7,020
Benefits	@ 25% of salaries		1,755
Travel			
Truck	33 days @ \$30/day	\$ 990	
Gas		<u>200</u>	
			1,190
Supplies and equipment			400
Assays	12 samples @ \$20/sample		240
Report preparation			<u>1,500</u>
			<u><u>\$13,755</u></u>

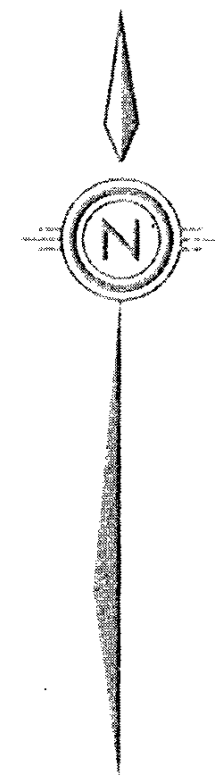


INTERNATIONAL BOUNDARY 119°30' 49°00'

JAY 1  
GEOLOGICAL BRANCH  
ASSESSMENT REPORT  
**11,924**



GOLDEN DIVIDEND RESOURCES CORP.			
DIVIDEND GROUP			
<b>CLAIM MAP</b>			
WORK BY L. HAYNES	DRAWN	DATE JAN. 84	FIGURE
Revised		N.T.S. 82 E 3/4	<b>C - 7001</b>



INTERNATIONAL BOUNDARY 119°30' 49°00'

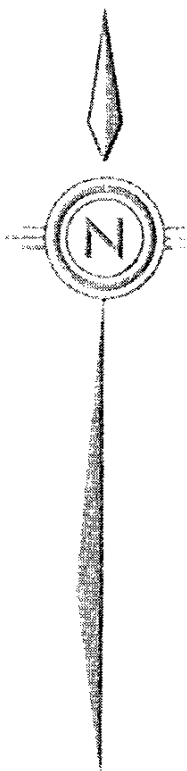
LEGEND

- 4 --- Garnetite  
Strongly altered limestone and/or greenstone. Red-brown to light brown, massive, medium to coarse grained mixture of garnet, epidote, calcite and silica.
- 3 --- Limestone  
Blue-grey to nearly white, medium grained, recrystallized limestone. In places altered to marble.

- 2 --- Basalt  
Aphanitic to very fine grained, dark grey to black flow rock.
- 1 --- Greenstone  
Darkly colored, highly sheared, schistose to massive andesite (?) with medium to coarse grained dark green dioritic or gabbroic sills (?).

- ☉ --- Pit
  - --- Showings
  - Contact, approximate
  - --- Outcrop
- SCALE 1:5000
- 100 50 0 100 200 300 400 Metres

GOLDEN DIVIDEND RESOURCES CORP.			
DIVIDEND GROUP			
<b>GEOLOGY</b>			
WORK BY L. HAYNES	DRAWN	DATE JAN. 84	FIGURE G - 7001
Revised		N.T.S. 82 E 3/4	



SAMPLE NO.	SAMPLE DESCRIPTION	Ag (oz/ton)	Au (oz/ton)	Cu %
0595	chip	0.23	0.021	0.29
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83509	1.0 m chip	0.42	0.022	0.30
83510	0.3 m chip	0.14	0.042	0.51
83511	0.75 m chip	0.42	0.012	0.60

X SHOWINGS      - - - - - TRENCH

INTERNATIONAL BOUNDARY      119°30'      49°00'

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

**11,924**

GOLDEN DIVIDEND RESOURCES CORP.			
DIVIDEND GROUP			
<b>MINERALIZATION</b>			
WORK BY L. HAYNES	DRAWN	DATE JAN. 84	FIGURE
Revised		N.T.S. 82 E 3/4	<b>G - 7002</b>

