

Ore Zone: MAIN
Category: Assay/analysis

Year: 1922
Report On: N
NI 43-101: N

Sample Type: Chip

Commodity	Grade
Silver	20.6000 grams per tonne
Gold	336.0000 grams per tonne
Bismuth	3.0000 per cent

Comments: A sample of "best-grade" material from a shaft.

Reference: EMPR AR 1922-217

Summary Production

	Metric	Imperial
Mined:	12 tonnes	13 tons
Milled:	0 tonnes	0 tons
Recovery	Gold	404 grams
		13 ounces

Capsule Geology

The Ophir occurrence is on a northwest trending ridge near the divide between the head of Marsh Adams Creek, which drains to the northeast into the Westfall River and Gainer Creek, which flows to the southwest into Lardeau Creek. The Ophir (L.1565), crown grant is one of six lined up along the ridge on the northwest side of Lade Peak. They are known as the Lade Group. They are, from the south (at the summit of the, 2580 metres elevation, mountain) to north (at 2000 metres elevation) the Two and a Half, (L.4722), Foundation (L.4725), Olive Mabel (L.4723), Ophir (L.4721) and Famous (L.4719). These crown grants were originally bordered on their northeast side by another row of claims (Hoeshoe, L.5066; Horseshoe Fraction, L.5067; White Warrior, L.5064 and Snowflake, L.5065); however, they have since reverted. The Annie L. (L.4724) abutted against the Ophir on its southwest side.

The property was first worked in 1898, when crosscuts on the Olive Mabel claim disclosed small veins carrying native gold and telluride. At that time, Lade Bros. shipped a small amount of ore. Great Northern Mines Limited owned the Lade Group and several other properties in the area in 1903, and ran a stamp mill that shut down in November, 1904, after only a year of operation. At that time, the Lade mine had a wire-line tramway, a compressor and used power assisted drills. There were numerous open cuts scattered over the property and two adits on the Ophir claim. One was 39.6 metres long, and driven at 075 degrees. The other was 15 metres long and driven at 020 degrees. There was also a shaft at 2438 metres elevation on the Foundation claim. They exposed several, discontinuous, structures. In 1922, a Nelson Syndicate owned the ground and prospected the ridge at around 2300 to 2400 metres elevation for gold-bearing quartz vein. Although the potential to mine a single vein was thought to be slim, the syndicate felt that large-scale mining might be possible. Goldenville Mines Limited built a new stamp mill and concentrator table and operated them for a season, in 1925. Joe Flagel and Associates leased the mine and processed approximately 12 tonnes of ore in 1932, and produced 404 grams of gold.

Some of the claims were later crown-granted to Fred Beruschi and inherited by his children, Sherrin and Fred, who restaked several of the lapsed tenures and resumed exploration in the area in the late 1980s. The property is described by P.J. Santos (EMPR Ass RPT 18090, 20477).

The Trout Lake area is underlain by a thick succession of sedimentary and volcanic rocks of the Badshot Formation and Lardeau Group near the northern end of the Kootenay arc, an arcuate, north to northwest trending belt of Paleozoic and Mesozoic strata that is now classified as a distinct, pericratonic, terrane. The arc rocks are bordered by Precambrian quartzite in the east and they young to the west, where they are bounded by Jurassic-age intrusive complexes. They were deformed during the Antler orogeny in Devonian-Mississippian time and were refolded and faulted during the Columbian orogeny, in the Middle Jurassic. A large panel, the "Selkirk allochthon", was later offset to the northeast by dip-slip motion along the Columbia River Fault.

The Badshot Formation is composed of a thick Cambrian limestone that is a distinctive marker horizon in the Trout Lake area. It is underlain by Hamill Group quartzite and it is overlain by a younger assemblage of limestone, calcareous, graphitic and siliceous argillite and siltstone, sandstone, quartzite and conglomerate, and also mafic volcanic flows, tuffs and breccias, all of which belong to the Lardeau Group. The rocks are isoclinally folded and intensely deformed, but only weakly metamorphosed. They occur as intercalated beds of marble, quartzite and grey, green and black phyllite and schist. Fyles and Eastwood (EMPR BULL 45) subdivided the group into six formations (Index, Triune, Ajax, Sharon Creek, Jowett and Broadview) of which the lowermost (Index) and uppermost (Broadview) are the most widespread. The Triune (siliceous argillite), Ajax (quartzite) and Sharon Creek (siliceous argillite) are restricted to the Trout Lake area. The Jowett is a mafic volcanic unit.

The Lade Group tenures are underlain by rocks of the Index Formation. The strata consist of black and grey phyllite, overlain by a green phyllite and

meta-tuff, which crops out in the steep northeast side of the ridge. These units are overlain by a grey carbonate lens (the Lade limestone) and more green phyllite, which is exposed on the ridge crest and on the shallower-dipping dip-slope of the ridge. The Lade limestone is composed of a grey, thick-bedded limestone that is inter-layered with white to cream coloured marble. The unit is folded into a tight anticline and is overlain by a thick sequence of green, chloritic schists and grey sericitic schist, and grey micaceous argillite. Where altered, the more mafic (presumably igneous) rocks contain abundant iron carbonate and mariposite. The rocks also have quartz boudins that appear to be lenses that have undergone plastic deformation and are now elongated parallel to schistosity.

The tenures cover numerous irregular quartz-carbonate veins that locally have quartz stringers extending from them. The Olive Mabel crosscuts disclosed several small veins, from 0.02 to 0.30 metre wide, cutting diagonally across the strike of the underlying rock. The veins contain quartz, carbonate (probably ankerite), pyrite and traces of native gold and telluride. In the early 1920s, the Nelson Syndicate prospected the green, schistose rock on the ridge crest for gold-bearing quartz veins and found several small veins that were irregular in outline and lacked continuity. Some were parallel to schistosity, others were discordant. In some localities, stringers fringing veins significantly increase their effective size. Many of the veins are highly oxidized and leached on surface and they consist of both honeycombed and more massive varieties of quartz. The mineralization is irregularly distributed. In some localities, bismuthenite, which commonly occurs with gold, is found in tiny quartz veinlets that cut carbonate, suggesting that both belong to a late stage of mineralization. Free gold is found in oxidized rocks and is most abundant near bismuthenite; however, in the primary ore, most of the gold is probably contained in pyrite. A pyrite sample analyzed by N.W. Emmens yielded 37.7 grams per tonne gold. A sample of stamp mill concentrate assayed 329 grams per tonne gold and "best-grade" material from an old shaft assayed 336.0 grams per tonne gold, 20.6 grams per tonne silver and 3 per cent bismuth. Although no tellurium was then identified, the ore minerals were thought to be tellurides. The vein system is rich in manganese.

The property was mapped by P.J. Santos in 1988. He noted five main northeasterly trending, steeply dipping quartz veins and one northwest trending vein, all of which were mapped and sampled and found to contain gold and silver. The veins vary in thickness from 0.31 to 0.91 metre and assays range from 2.26 to 29.82 grams per tonne gold with some silver values. The gold content of the quartz vein at the main Ophir (Lade) adit decreases significantly from 29.8 grams per tonne gold, 4.8 grams per tonne silver, to 1.10 grams per tonne gold and a trace amount of silver in direct proportion to decrease in pyrite content. The vein feathers out after a strike length of 40 metres. There are similar northeast striking veins on the north side of Sherrin #1 (a two-post claim). One vein was mapped for 70 metres. Generally, concordant veins were found to be less continuous than those that parallel schistosity, but better in grade. In addition to steep dipping veins, Santos discovered a fairly continuous flat-lying vein. This may be same vein Starr (Starr; Report on Examination of the Ophir Lade Group) traced for 800 metres, from the east end of the Goldenville claim to the southwest corner of the Foundation claim, in 1933. He describes it as being 0.3 to 1.2 metres wide, and states that it contains rare, large crystals of galena and pyrite. Santos felt that there was potential for gold enrichment where these shallow dipping veins intersected more steeply dipping structures. In addition to the gold veins, Santos found replacement deposits in the Lade Peak limestone. Preliminary sampling of two weathered surface deposits gave gold values of 0.34 grams per tonne gold, 14.06 grams per tonne silver, 0.4 per cent lead and 1.0 per cent zinc.

Bibliography

EMPR AR 1898-1071; 1899-602,684; 1900-822; 1903-H114,H244; 1904-G121;
*1922-217; 1924-B212,368; 1925-A263; 1932-A25,A159,A182
EMPR ASS RPT 18090, *20477
EMPR BULL 45, pp. 54,87
EMPR INDEX 3-208
EMPR OF 1990-24; 1999-3
EMPR PF (*Starr, C.C. (1933), Report of Examination of the Orphir Lade Group, 10 p.)
EM GEOFILE 2003-2
GSC MAP 235A
GSC MEM *161 pp. 49-50,113,137
GSC OPEN FILE 288; 432
Placer Dome File
EMPR PFD 3902, 861408, 520058, 680205

Date Coded:	1985/07/24	Coded By:	BC Geological Survey (BCGS)	Field Check:	N
Date Revised:	2004/01/13	Revised By:	Robert H. Pinsent (RHP)	Field Check:	N