Location/Identification

MINFILE Number: 082KNE018
National Mineral Inventory Number: 082K16 Pb1
Name(s): **SILVER GIANT**
SILVER GIANT MINE, GIANT MASCOT, SPILLIMACHEEN

Status: Past Producer
Mining Method Underground
Regions: British Columbia
BCGS Map: 082K098
NTS Map: 082K16W
Latitude: 50 55 52 N
Longitude: 116 29 07 W
Elevation: 951 metres
Location Accuracy: Within 500M
Mining Division: Golden
Electoral District: Columbia River-Revelstoke
Resource District: Rocky Mountain Forest District
UTM Zone: 11 (NAD 83)
Northing: 5642290
Easting: 536171
Comments: Mine complex and portals, 750 metres north of the Spillimacheen River on the western slopes of Jubilee Mountain, 9 kilometres west of the village of Spillimacheen and the Columbia River (Property File - Plan maps).

Mineral Occurrence

Commodities: Lead, Zinc, Silver, Copper, Barite, Antimony, Cadmium

Minerals
Significant: Galena, Sphalerite, Barite, Pyrite, Chalcopyrite, Bornite
Associated: Barite, Silica, Carbonate
Alteration: Silica
Alteration Type: Silicific'n
Mineralization Age: Unknown

Deposit
Character: Disseminated, Massive
Classification: Replacement, Sedimentary, Industrial Min.
Type: E12: Mississippi Valley-type Pb-Zn, E10: Carbonate-hosted barite, E14: Sedimentary exhalative Zn-Pb-Ag
Shape: Tabular
Modifier: Folded, Faulted

Host Rock

Dominant Host Rock: Sedimentary

Stratigraphic Age	Group	Formation	Igneous/Metamorphic/Other
Cambrian	Undefined Group	Jubilee	------
Cambrian-Ordovician	McKay	Undefined Formation	------

Isotopic Age	Dating Method	Material Dated
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Lithology: Limestone, Slate

Geological Setting

Tectonic Belt: Omineca
Physiographic Area: Purcell Mountains
Terrane: Ancestral North America

Inventory

No inventory data

Summary Production

		Metric		Imperial	
	Mined:	851,195	tonnes	938,281	tons
	Milled:	1,390,148	tonnes	1,532,375	tons
Recovery	Silver	19,359,163	grams	622,412	ounces
	Gold	124	grams	4	ounces
	Barite	187,753,628	kilograms	413,925,896	pounds
	Lead	29,426,348	kilograms	64,873,992	pounds
	Zinc	3,229,900	kilograms	7,120,711	pounds
	Copper	220,334	kilograms	485,753	pounds
	Antimony	18,172	kilograms	40,062	pounds
	Cadmium	7,801	kilograms	17,198	pounds

Capsule Geology

The region includes strata from the Purcell and Windermere supergroups, overlain by a Paleozoic platformal carbonate succession. The structure of the area is dominated by the Mount Forster-Steamboat fault, one of a series of Mesozoic thrust faults, and it carries folded Middle and Upper Proterozoic strata over folded Upper Proterozoic and Paleozoic strata.

In the Silver Giant occurrence area, the Middle-Upper Cambrian Jubilee Formation consists of a massive dolomite-limestone unit unconformably overlying the Lower Cambrian Cranbrook Formation and Hadrynian Horsethief Creek Group. The Cranbrook Formation consists of thick-bedded mature quartzites and quartz grits; the Horsethief Creek Group comprises a series of interbedded thinly laminated, grey shales, massive thick-bedded grits, medium to thick-bedded, white and brown quartzites, and grey, black, and buff-weathering limestones and dolomites. The Upper Cambrian to Middle Ordovician McKay Group conformably overlies the Jubilee Formation and consists of recessively weathering shales, thin sandstones and dolomitic biowackestones. Base metal mineralization occurs within the Jubilee Formation in solution breccias beneath the Devonian and Ordovician unconformities.

At the Silver Giant mine, mineralization occurs in limestone of the Jubilee Formation close to its contact with slates of the McKay Group. The orebodies occur on the crest of an overturned anticline that has been subsequently folded and faulted. At the mine the main ore zone occupies the nose of the overturned anticline. The structure has a limestone core surrounded by slate. The plunge of the nose is westerly, and underground development has shown it to vary from 45 degrees near the surface to flat-lying on the No. 8 level. A large regional thrust fault has been mapped 400 metres to the west and in the underground workings.

The various mineralized zones are barite-sulphide replacements with varying amounts of silica. They occur beneath the slate at its contact with the limestone along the nose of the fold and along the west limb. Some barren masses of barite also occur in the limestone beneath the contact; these are interpreted as the roots of the orebodies.

Mineralogy consists of predominantly fine-grained galena with lesser amounts of sphalerite, pyrite, chalcopyrite and bornite. Locally, small amounts of a grey copper-arsenic mineral also occur. The barite is most commonly white. It varies from very fine grained to coarse bladed crystal aggregates. The fine-grained barite is either massive or foliated and commonly contains sulphides and argillaceous material. Both fine and medium-grained carbonate occurs interstitial to the barite. Some chert may also be present. Locally, there is the suggestion of brecciation.

The Silver Giant discovery dates back to 1883 and was a producer of lead, zinc, silver, copper, antimony and cadmium during the period 1947 to 1957. In 1959 Baroid of Canada Limited entered into an agreement to produce barite from the property. Production in excess of 188,000 tonnes of barite came from reconcentration of mill tailings and some underground and open pit operations. Production ceased in 1983 and the deposit is considered depleted (Z.D. Hora, personal communication, 1991).

Since most of the barite appears to have been produced from a reworking if the mine tailings, a more accurate value of all ore acutually mined at the Silver Giant would be 840,000 tonnes.

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Date Coded:	1985/07/24	**Coded By:**	BC Geological Survey (BCGS)	**Field Check:**	N
Date Revised:	2001/08/01	**Revised By:**	Garry J. Payie (GJP)	**Field Check:**	Y