



Occurrence Details

Occurrence Number: 115I 055

Occurrence Name: Emmons Hill

Occurrence Type: Hard-rock

Status: Prospect

Date printed: 8/5/2025 10:07:18 AM

General Information

Secondary Commodities: antimony, gold, mercury, silver

Aliases: Freegold

Deposit Type(s): Epithermal Au-Ag-Cu: High Sulphidation

Location(s): 62°16'13" N - -137°3'14" W

NTS Mapsheet(s): 115I06

Location Comments: Coordinates provided by Triumph Gold in 2020.

Hand Samples Available: No

Last Reviewed:

Capsule

Work History

Discovered by T. Bee and W. Renworth in the early 1930s and explored by hand trenching. In September 1936, American Yukon Mining Company Ltd sank a 28 m shaft from which two crosscuts (8 m and 15 m) were driven.

Re-staked as Bill, Joe and Tie cl (86804) in October 1964 by Peso Carmacks Gold Mines Ltd. and as 32 various Free cl (Y41182) in November 1969 by Tanzilla Exploration Ltd., which carried out geological mapping, access road construction, geochemical soil and stream sediment sampling and trenching in 1970.

Re-staked as GM cl 1-4 (Y77230) in September 1973 by M. Cloutier and sold to a private company, Mount Free Gold Mines Ltd. After a proposed merger with Frontier Exploration Ltd. fell through, the property was optioned to Norwich Resources Ltd., which added the Gold cl 1-36 (Y78108) in March 1974 and carried out line cutting and a small grid soil geochemical sampling program later in the year.

Re-staked as Dart cl 1-6 (YA23829) in October 1978 by Noranda Exploration Company Ltd., which carried out EM and IP geophysical surveying and geochemical sampling in 1979; drilling of 2 holes (94.2 m) in 1980; bulldozer trenching in 1981; hand trenching and geochemical rock and soil sampling in 1985; bulldozer trenching, sampling and mapping in 1986; drilling of 2 holes (184.5 m) in 1987; and reverse-circulation drilling of 12 holes (468 m) in 1988.

Re-staked as Dart cl 1-6 (YB55295) in November 1994 by T. Morgan. In August 1995, Morgan transferred the Dart claims to B. Harris. Midnight Mines Ltd (B. Harris) re-staked the occurrence as Dart cl 1-6 (YB67074) in June 1996 and carried out geochemical soil sampling in 2001. In 2004, Midnight Mines carried out rock geochemistry.

Northern Freegold Resources consolidated the claims in 2006 as part of their Golden Revenue property and performed a property wide VTEM and magnetic airborne survey, including the Emmons Hill occurrence. In 2013, Northern Freegold Resources performed mechanical trenching, as well as soil, rock and silt geochemistry at the Emmons Hill occurrence.

Triumph Gold acquired Northern Freegold Resources in 2015 and the property that includes the Emmons Hill occurrence is now termed the Freegold Mountain Project.

Regional & Property Geology

The occurrence is partly underlain by Yukon-Tanana Terrane (YTT). The rocks of the YTT in this region consist of Early Mississippian metamorphic rocks separated into meta-sedimentary and meta-igneous suites. The meta-sedimentary suite consists of micaceous quartz-feldspar gneiss, schist and quartzite. The meta-igneous package is comprised of biotite-hornblende feldspar gneiss and coarse-grained granodiorite orthogneiss with lesser amphibolite.

The YTT basement rocks are cut by numerous plutonic and volcanic events from the Mesozoic (Murray & Friend, 2018), including:

1. Early Jurassic Long Lake monzonite and granodiorite plutonic suites;
2. Mid-Cretaceous Mount Nansen Suite andesite to diorite;
3. Mid-Cretaceous Whitehorse granodiorite, quartz monzonite and monzodiorite;
4. Late Cretaceous Casino quartz monzonite;
5. Late Cretaceous Prospector Mountain syenite; and,
6. Quartz feldspar and feldspar hornblende porphyry dykes and plugs.

Mineralization & Results

Gold-bearing quartz sulphide veins and breccia zones with up to 10% pyrite, pyrrhotite, arsenopyrite, sphalerite, galena and stibnite are associated with quartz-feldspar porphyry dykes which intrude Late Devonian to Mississippian aged gneisses and schists of the YTT. The veins strike north-northeast and dips steeply east and are localized within a fault zone (AR 091785; AR 092631).

Geochemical surveys in 1970 outlined copper-antimony anomalies and a copper-molybdenum anomaly. Assays from the underground workings were erratic. Tanzilla reported samples grading up to 24.0 g/t Au, 5.5 g/t Ag and 3.6% Sb (AR 060608).

The 1980 drilling intersected up to 5 m of pyrrhotite with minor quartz, but poor gold values. Trenching attempted in 1981, 1985 and 1986 failed to reach bedrock. The 1985 soil sampling returned low values, but drilling in 1988 produced elevated values adjacent to the old shaft with assays of 100 to 1,000 ppb Au and elevated arsenic returned over widths up to 9 m (AR 091785).

Midnight Mines' work in 2001 served to relocate old workings and confirm previous values and was carried out as part of a compilation report prepared for assessment on the Dart-Goldy property (this occurrence and MINFILE occurrence 115I 112).

Trenching in 2013 by Northern Freegold Resources observed moderate to intense clay alteration at the margins of the quartz feldspar porphyry dykes and in orange, friable brittle shear zones (AR 096643). Auriferous veins are present in the shear zones as discreet veins systems and fine-grained, disseminated pyrite and arsenopyrite, fine-grained stibnite and medium-grained galena and sphalerite mineralization are present in quartz-barite/-carbonate gangue. Chip sampling of the trenches returned assays of up to 0.03 g/t Au over 38.6 m and 0.16 g/t Ag over 4 m (AR 096643).

Work History

Date	Work Type	Comment
12/31/2001	Geochemistry	
12/31/1988	Drilling	Twelve holes, 468 m.
12/31/1987	Drilling	Two holes, 184.5 m.
12/31/1986	Geochemistry	
12/31/1986	Geology	
12/31/1986	Trenching	
12/31/1985	Trenching	
12/31/1981	Trenching	
12/31/1980	Drilling	Two holes, 94 m.
12/31/1979	Geochemistry	
12/31/1979	Ground Geophysics	Also IP survey.
12/31/1974	Other	
12/31/1974	Geochemistry	
12/31/1970	Geology	
12/31/1970	Geochemistry	Also silt sampling.
12/31/1970	Trenching	
12/31/1936	Development, Underground	28 m shaft and 23 m of crosscut.
12/31/1935	Trenching	
12/13/2013	Geochemistry	Chip and grab samples.
12/13/2013	Geochemistry	
12/13/2013	Geochemistry	
12/13/2013	Trenching	
12/13/2006	Airborne Geophysics	Property wide survey.
12/13/2006	Airborne Geophysics	Property wide survey.
12/13/2004	Geochemistry	
12/13/2001	Other	
12/13/1985	Geochemistry	
12/13/1985	Geochemistry	

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
096643	2013	2013 Geological and Geochemical Report for the Freegold Mountain Property	Reclamation - Development, Surface, Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Petrographic - Lab Work/Physical Studies, Data Compilation - Pre-existing Data, Backhoe - Trenching, Hand - Trenching		
094745	2006	2006 Geophysical Assessment Report on the Freegold Mountain Property	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics		
094555	2004	Geological and Geochemical Assessment Report on the Goldy Property	Rock - Geochemistry, Property Evaluation - Other, Process/Interpret - Pre-existing Data		
092631	1988	Drilling Report on the Dart 1-6 Claims	Rotary - Drilling	12	468
091785	1986	Geology, Geochemistry, and Trenching Report 1985 on the Dart 1-6 Claims	Rock - Geochemistry, Soil - Geochemistry, Hand - Trenching		
090533	1979	Geophysical Assessment Report Dart 1-6 Mineral Claims	EM - Ground Geophysics, IP - Ground Geophysics		
061045	1974	GM- Gold Corp Report by P.H. Sevensma	Data Compilation - Pre-existing Data, Research/Summarize - Pre-existing Data		
060608	1970	Reconnaissance Geology and Geochemistry Free Mineral Claims, Freegold Mountain Area	All Weather Road - Development, Surface, Silt - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Property Evaluation - Other		
060200	1970	Report on the Geophysical and Geochemical Surveys Ram and Bow Claim Groups	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics, Rock - Geochemistry, Soil - Geochemistry		

Related References

Number	Title	Page(s)	Reference Type	Document Type
ARMC016627	Land and disposition and mineral deposits chart - Freegold - Big Creek area		Property File Collection	Geoscience Map (General)
ARMC016626	Geology and mineralization chart - Freegold - Big Creek area		Property File Collection	Geoscience Map (Geological - Bedrock)
1987-2(G)	Geology of Mt. Nansen (115I/3) and Stoddart Creek (115I/6), Dawson Range, Central Yukon		Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Open File (Geological - Bedrock)
1987McInnes	Geological and precious metal evolution at Freegold Mountain, Dawson Range, Yukon		McMaster University	MSc Thesis
2018-2	Bedrock geological map of the Mount Freegold district, Dawson Range		Yukon Geological Survey	Open File (Geological - Bedrock)

Drill core at YGS core library

Number	Property	Year Drilled	Core Size	Photos	Data
FGY-87-1	Dart	1987	NQ	0	0
FGY-87-2	Dart	1987	NQ	0	0
DDH-1	Dart	1980	BQ	4	0
DDH-2	Dart	1980	BQ	2	0