



Occurrence Details

Occurrence Number: 115J 008
Occurrence Name: Sonora Gulch
Occurrence Type: Hard-rock
Status: Prospect
Date printed: 4/29/2025 4:57:12 AM

General Information

Secondary Commodities: antimony, copper, gold, lead, molybdenum, silver
Aliases: Hayes, Nightmusic
Deposit Type(s): Orogenic Au, Plutonic Related Au, Skarn, Vein Au-Quartz
Location(s): 62°38'54" N - -138°1'8" W
NTS Mapsheet(s): 115J09
Location Comments: .5 Kilometres
Hand Samples Available: No
Last Reviewed:

Capsule

Work History

Placer gold was originally discovered in Klines Gulch in 1896. The first lode staking was Spruce Stake and Old Alex cl (4602) by Alex Summerfield and Henry Marco in Aug/1899.

Restaked by F. Envoldsen in Oct/02 as Psyche and Reef cl (4820), on which N. Lyons carried out approximately 25 m of drifting from 1904-07.

Restaked as Little Gold cl (4356) and Little Gold Quartz cl (55740) in Apr/45 by F.A. DuPont, who carried out trenching from 1946-51 in conjunction with placer activity in the area.

Restaked as Hayes cl 1-21 (92832) for copper-molybdenum potential in Sep/65 by Coranex Ltd (Frobex Ltd, Inco Ltd, Dome Exploration Ltd, Dennison Mines Ltd and McIntyre Porcupine Mines Ltd) following regional geochemical exploration.

Restaked as DP cl 1-24 (Y31094) in Apr/69 by Dawson Range Joint Venture (Straus Exploration, Trojan Consolidated Mines, Great Plains Development Company of Canada and Molybdenum Corporation of America), which carried out geochemical silt and soil sampling and geological mapping later in 1969 and bulldozer trenching in 1970.

Restaked as Nada cl 1-24 (Y80532) in Aug/74 by DC Syndicate (Dome Mines Ltd and Cominco Ltd), which carried out geological mapping and geochemical sampling in 1974 and 1975.

Restaked as Swede cl 1-6 (YA3779) in Oct/75 by J. Martensson and A. McDiamird and optioned to Anglo-American Corporation of Canada Exploration Ltd, which added Sam cl 1-86 (YA3869) in Oct/75 and Sam cl 87-98 (YA8275) in Oct/76. Anglo-American carried out geochemical silt and soil sampling in 1976; geochemical soil sampling, geological float mapping and EM geophysical surveying in 1977; bulldozer trenching and diamond drilling of 11 holes (490 m) on Sam cl 89 to 96 in 1978.

The property was transferred to Hudson Bay Exploration and Development Company Ltd in Feb/79, which carried out geochemical sampling later that year; magnetic and EM geophysical surveying, geochemical sampling and diamond drilling of 4 holes (404 m) in 1980; diamond drilling of 6 holes (812 m) in 1981; additional geophysical surveying and geochemical sampling and staked Sam cl 99-128 (YA75495) in 1983. In 1984, the owners transferred the property to a new company, Hayes Resources Inc, which carried out trenching and diamond drilling of 5 holes (695 m) later that year and trenching in 1985.

No physical work was conducted on the property during the period from 1985 to 1997. During this time the claims were maintained by cash in lieu payments made by Hudson Bay, until the claims were returned to Martensson and McDiamird in Sep/97. The claims were subsequently optioned to Selwyn Minerals Ltd, which carried out geochemical rock and soil sampling and geological mapping of historic trenches in Oct/97 and Oct/98.

In 1999 the claims reverted to the original owners who immediately staked Stone cl 1-48 (YC14648) on the east side of the existing claim block and S cl 1-16 (YC14632) on the west side of the block in Jun/99. During the next four years various reports compiling and interpreting all existing exploration and government data available for the property and surrounding area were prepared. A site visit to the claims in Aug/2001 is the only physical work recorded in this period.

In Jan/2004, Firestone Ventures Inc acquired an option to earn an 80% interest in the property in return for cash, shares and certain work commitments. At the time of the agreement the property consisted of 27 surviving Swede and Sam claims. As part of the option agreement, Firestone immediately staked Stone cl 1-20 (YC26163), Sam cl 1-41 (YC26181), Sam cl 91-92 (YC26208), Sam cl 97-100 (YC26210), S cl 1-16 (YC26213) and S cl 117-118 (YC26229) to cover previously staked ground. In Jun/2004 the company carried out a small geochemical rock, silt and soil sampling program and staked Stone cl 21-34 (YC29893).

In Nov/2005 Firestone carried out ground IP, magnetometer, and VLF-EM geophysical surveys southeast of the occurrence in the vicinity of Little Klines Gulch - Hayes Creek. In May/2006 the company extended the IP, resistivity and VLF-EM geophysical surveys to the western half of the property. The geophysical surveys were followed up in Jun/2006 by a property wide geological mapping, silt and soil sampling program.

In Sep/2006 Firestone drilled 12 diamond drill holes (1 821m) on the property. Four of the holes tested targets associated with this occurrence. The remaining holes tested targets associated with Minfile Occurrence #115I 029 located 3.25 km to the southeast. In Oct/2006 Firestone staked Wam cl 1-10 (YC54316) on the west side of the property.

In Jan/2007 Firestone staked Stone cl 35-50 (YC57915) on the eastern side of Minfile Occurrence #115I 029. During the same period the company staked Sam cl 101-125 on the south end of the claim block and Strauss cl 1-84 (YC59834) on the west side of the claim block. The Strauss claims also cover Minfile occurrence #115J 011.

In Jul/2007 Firestone commenced a 12 hole (2 024.9 m) diamond drill program. Five of the holes tested targets associated with this occurrence. The remaining seven holes tested targets associated with Minfile Occurrence #115I 029. The company also carried out reconnaissance scale geological mapping, prospecting and geochemical sampling on the newly staked areas.

In Dec/2007 Firestone Ventures signed an agreement with the underlying vendors to purchase the remaining 20% interest in the property plus 1% of the underlying Net Smelter Returns Royalty. Upon completion of the agreement Firestone acquired a 100% interest in the Sonora Gulch property. The vendors retained a 1% Net Smelter Returns Royalty.

In Jun/2008 Firestone Ventures spun off its Sonora Gulch and other Canadian exploration properties to a new company, Northern Tiger Resources Inc. In addition Firestone Ventures signed a Memoranda of Understanding with Sherwood Copper Corp and their wholly owned subsidiary Minto Explorations Ltd whereby Sherwood Copper vended a 100% interest in four Yukon (Dawson Range) exploration properties and an extensive historical exploration database to Northern Tiger Resources. Sherwood Copper and Northern Tiger also entered into a Regional Exploration Alliance Agreement whereby the companies would provide input and cooperation on planning and executing exploration projects and long term strategies in the area. In return for this assistance Sherwood Copper retained back-in rights to acquire a 65% interest in any of Northern Tigers projects located within a 50 km radius of Sherwood Copper's Minto Mine facilities (Minfile Occurrence 115I 021 & 022) located approximately 30 km to the east.

In Jul/2008 Northern Tiger Resources staked Stone cl 51-64 (YC90025) on the eastern side of the claim block. During the 2008 field season the company drilled 10 diamond drill holes (2 238.3 m), carried out ground total-field magnetic and induced polarization geophysical surveys and completed geological mapping and soil and silt sampling programs. Seven of the drill holes were associated with this occurrence the remaining three were associated with Minfile Occurrence #1151 029.

In 2009 Northern Tiger drilled 12 diamond drill holes (2 455 m) on the property. All of the holes were associated with this occurrence. The company also carried out airborne magnetic and radiometric surveys over the entire property and geological mapping and rock and soil sampling programs over selected portions of the property.

In Jun/2010 Northern Tiger carried out a Quantec Titan 24 deep penetrating geophysical (Induced Polarization and Resistivity) survey over the Gold Vein Porphyry zone (this occurrence). The company followed up the survey with a 12 hole diamond drill program (2 210 m) to test various geophysical and geochemical targets located on the west side of Hayes Creek.

In Mar/2011 Northern Tiger released an updated National Instrument 43-101 compliant Technical Report on the entire Sonora Gulch Property. In Jun/2011 the company staked Bach cl 1-36 (YD63606) on the southwest side of the Sonora Gulch property. No work appears to have been performed on these claims and the company allowed them to lapse the following year.

During the 2011 exploration season the company collared 9 diamond drill holes(2 649 m) on the Gold Vein Porphyry zone. On July 27, 2011 the company announced that they had reached agreement with Capstone Mining Corp's (formerly Sherwood Copper Corp) wholly owned subsidiary Minto Explorations Ltd to extinguish the back-in rights Minto Explorations holds on the Sonora Gulch property.

Capsule Geology

*This occurrence covers all of Northern Tiger Resources' claims lying in the central portion of the Sonora Gulch property. This portion of the property covers the historic portion of the property.

The area is located in the central Dawson Range, west-central Yukon approximately 30 km due east from Capstone Mining Corporation's Minto Mine. S. Johnston employed by the Yukon Geoscience office (now part of the Yukon Geological Survey) released a geological compilation in 1995 which covered the occurrence area. Johnston used data obtained from a Geological Survey of Canada Airborne Multiparameter Geophysical survey (Open File 2816) to assist him in creating the compilation. Gordey and Makepeace (2003) released a geological compilation of the Yukon which included this area and various exploration companies have carried out geological mapping programs as part of their assessment requirements. In the summer of 2009, V. Bennett, a metallogenist employed by the Yukon Geological Survey visited the property and collected four intrusive samples for age dating purposes.

The occurrence area lies within the Yukon-Tanana terrane, an accreted terrane locally separated from strata of the ancestral North American margin by the northwest-trending Tintina fault. The occurrence area is underlain by polydeformed and metamorphosed Devonian to Mississippian metagranite, metavolcanic and subordinate metasedimentary rocks assigned to the Wolverine Creek metamorphic suite. Several ultramafic sills of undetermined age intrude and are intercalated within the Wolverine Creek units. The mid-Cretaceous Dawson Range batholith intrudes the Wolverine Creek assemblage to the south. In addition numerous small granitic intrusions associated with the batholith occur throughout the area. Several Late Cretaceous quartz-feldspar porphyritic monzonite intrusions tentatively assigned by Bennett to the Late Cretaceous Carmacks Group intrude the Wolverine Creek sequence along the northern boundary of the Dawson Range Batholith.

The area is crosscut by two regional-scale faults; the northwest-trending Big Creek fault and the east-trending Hootcheckoo fault. The Big Creek fault which extends northwest approximately 80 km from Mount Freegold cuts the area in two and intersects the Hootcheckoo fault, west of the junction of Selkirk and Hayes creeks. From this intersection, the Big Creek fault projects a more westerly orientation. The Big Creek fault and related northwest-trending faults are considered to represent the locus of an important mineralizing belt extending possibly as far as the Casino deposit of Western Copper Inc (Minfile Occurrence #115J 028) located approximately 40 km to the west-northwest.

The 1907 adit reportedly intersected a quartz vein 2.4 m wide that assayed as high as 17.2 g/t gold.

Exploration activities between the mid 1960's to 2006 were focused on two main targets; the "Gold Vein system" (later renamed Gold Vein Porphyry zone) and the Tetradymite Vein system. The Gold Vein system is a kilometre-scale zone of anomalous copper-gold mineralization hosted by a pyritic quartz-feldspar porphyritic intrusion located approximately 1 km west of the occurrence location. Mineralization consists of disseminated pyrite and minor chalcopyrite with sulphide concentrations to 10% throughout the porphyritic stock. Although sulphide mineralization occurs within massive portions on the stock the highest grades occur along fractures and shear zones associated with northwest - southeast trending faults and northeast-southwest trending shear zones. Values to 3 000 ppb gold have been obtained from past trenching of areas of fairly massive intrusive fabric. The intrusion has undergone variable argillic and phyllic alteration, with local strong silicification, with mineralized areas associated with manganese, hematite and limonite staining. Sulphides have undergone oxidation to a depth of 80 metres.

The quartz porphyry stock has a strongly anomalous gold-silver-lead geochemical signature with gold-in-soil values exceeding 150 ppb gold covering an area of 1.2 km by 0.3 km. Smaller bismuth - tellurium anomalies also occur within this zone. The southern, topographically higher edge of the gold anomaly terminates abruptly correlating with a strong VLF-EM anomaly which may represent a fault contact between porphyry and metavolcanic rocks or the contact with the Dawson Range Batholith. The porphyry was trenching by several companies however their efforts were hampered by deep overburden and bedrock which was heavily oxidized and decrepitated. The best trench returned 3 000 ppb gold. Follow-up sampling carried out in 2004 by Firestone Ventures on old trenches returned lower values but confirmed the presence of intrusive -hosted gold.

The porphyry was tested in 1978 by 10 diamond drill holes. The holes intersected oxide mineralization consisting of hematite, limonite and goethite bands and veins and quartz sulphide veins along fractures and shears. The more heavily oxidized sections returned values between 400 to 1 000 ppb gold and 3 - 7 g/t silver. Higher-grade veins were intersected in oxide material with the best hole returning 4.1 g/t gold and 12.6 g/t silver over 0.15m (DDH 78-11). Consistent anomalous gold values were returned from several of the holes with abundant values in the 300 - 600 ppb gold range.

The "Tetradymite Vein" system is a zone of gold-tetradymite quartz vein-hosted mineralization orientated northwest-southeast that shadows, the approximate interpreted trace of the Big Creek fault. The zone cuts across the dextrally offset portion of the main ultramafic sill on the northeast side of the fault. Up until 2006, the bulk of exploration activities on the Sonora Gulch property was directed towards finding economic gold mineralization in faults and veins hosted by quartz porphyritic and metavolcanic rocks lying in and adjacent to the Tetradymite Vein system. Exploration in the mid-1970's outlined minor gold-silver values associated with boulangerite, bournonite (copper sulphosalts) and pyrite in quartz-calcite veins occupying northwest-trending shear zones that cut a small body of rhyolite porphyry located south of a large quartz-monzonite stock that underlies the Little Klimes Gulch area. A 5 to 8 cm wide calcite vein containing bournonite and boulangerite found in another rhyolite porphyry located at the head of Sonora Gulch in 1976-77 returned assays of up to 27.4 g/t gold, 754.3 g/t silver, 18% lead and 5% antimony. Alteration zones related to the mineralization consist of carbonate, kaolinite, limonite and silica.

Gold values were obtained by 1980-81 drilling of a northwest-striking structure outlined by EM surveys. In the mid-1980's Hudson Bay and partners recognized the presence of tetradymite in placer gold obtained from streams draining the property. The 1984 exploration program traced the shear zones north into ultramafic rocks that are altered to serpentine-chlorite-carbonate, talc-chlorite-carbonate, and mariposite-fuchsite assemblages. Trenching and diamond drilling returned low gold values from the ultramafics. Trenching and drilling in the metavolcanics returned bournonite, boulangerite, sphalerite, galena, chalcopyrite and arsenopyrite in narrow calcite veins. The best trench assays were 7.2 g/t gold over 1.5 m and 3.7 g/t gold over 5.8 m, while the highest grade drill intersection was 2.7 g/t gold and 273.1 g/t silver across 1.5 m. Follow-up trenching in 1985 returned only minor amounts of sulphides but produced assays up to 12.4 g/t gold with 165.6 g/t silver over 1.5 m. from narrow calcite veins.

Regional government mapping and airborne geophysical surveying completed in 1993 and 1994 revealed the presence of additional ultramafic sills, a larger quartz porphyry body and the Big Creek Fault zone on the claim block. Sampling in 1997 and 1998 confirmed that the rhyolite porphyry and the veins host gold in the 1 to 3 g/t range with coincident anomalous values for arsenic, bismuth, antimony and tellurium.

The 2004 exploration program was focused on the Little Klimes Gulch area and lead to the discovery of the K-467 zone. The K-467 zone is located along the west bank of Hayes Creek at the mouth of Little Klimes Gulch. The 1907 adit is located just north of the gulch. The K-467 zone runs east-west along the north contact of a quartz monzonite intrusion and underlying Wolverine Creek Suite metavolcanics and metasediments. The zone extends approximately 100 m north and 200-300 m south of the contact and consists of vein and skarn-style sulphide mineralization, locally semi-massive, with moderately to strongly silicified metasediments and metavolcanics with weak to moderate argillic and phyllic alteration. The intrusive component consists of sulphide-bearing vein mineralization, locally sheeted, within moderately limonitic, silicified and argillically altered quartz monzonite. Mineralization within the Wolverine Creek suite rocks consist of up to 7% sulphides orientated along gneissic foliation, including disseminate pyrite, pyrrhotite and minor chalcopyrite and associated malachite staining, quartz veins with clotty chalcopyrite also occur. Composite grab samples of metavolcanics and metasediments returned from 0.044 g/t gold, 2.4 g/t silver and 629 ppm to 0.136 g/t gold, 22.9 g/t silver and 3 700 ppm copper. Additional sampling later in the year determined the zone held limited economic potential and only cursory work was completed in later years.

A line of soil samples collected in a north-south direction on the east side of Hayes Creek returned anomalous gold values across the northern 1.0 km. Values from the northern portion of the line returned three samples ranging from 0.202 g/t gold, 136 ppm copper and 3.8 g/t silver to 0.395 g/t gold, 164 ppm copper and 2.0 /t silver. Follow-up sampling in later years lead to the discovery of the

Amadeus zone (Minfile Occurrence #115I 029). Firestone ventures also resampled many of the historic trenches located on the property to verify previous results.

The results of the 2005/2006 geophysical programs and 2006 geological mapping and geochemical sampling programs were used to identify targets for follow-up drilling. Soil sampling outlined the Figaro zone and the Jupiter anomaly on this occurrence and the Amadeus zone and Wolfgang anomaly on Minfile Occurrence #115I 029 located 3.25 km to the east. The Figaro zone occurs along a narrow gulch located on the west side of Hayes creek approximately 200 m south of Little Klines Gulch. Soil sampling identified a strong coincident copper-gold anomaly with values ranging from 220 to 1 120 ppm copper and from 118 to 264 ppb gold. Rock sampling from within the anomaly returned anomalous copper and molybdenum values and one grab sample of a 15 cm wide quartz-molybdenum vein in altered monzonite returned 0.46% molybdenum. The Figaro zone is coincident with a high chargeability IP geophysical anomaly. The Jupiter anomaly is a strong gold soil anomaly with values exceeding 100 ppb gold across a 600 m long east-west trending anomaly centred on the north side of the upper reaches of Little Klines Gulch. Soil sampling also revealed a coincident copper anomaly with values exceeding 250 ppm copper across a 900 m strike length.

In the fall of 2006 Firestone Ventures tested the Figaro zone with two diamond drill holes. The first hole was lost in overburden. The second hole intersected strongly developed quartz veining throughout much of its length with the best intersection returning 0.654 g/t gold over 1.0 m. Most of the remaining samples returned strongly anomalous gold silver, copper and molybdenum values. Two diamond drill holes tested the Jupiter anomaly. Both holes intersected short intervals of low grade gold mineralization. Hole SG-06-09 returned 1.24 g/t gold over 1.8 m together with sporadic gold values elsewhere and consistently anomalous molybdenum values ranging from 5 to 166 ppm. Hole SG-06-10 was drilled from the same set-up as hole 09 but at a steeper dip. It returned 0.239 g/t gold and 3.4 g/t silver over 3.9 m.

In 2007 Firestone Ventures tested the Jupiter zone with 4 diamond drill holes. Holes SG-07-18 & 19 were lost due to poor rock conditions. The company moved approximately 100 m to the east and attempted to redrill the hole but both of these holes (SG-07-20 & 21) were stopped far short of their intended target depth. A single hole was collared to test the Ultramafic Horizon located approximately 3.5 km to the northwest. Hole SG-07-22 penetrated the horizon and terminated in altered volcanic footwall country rocks. Anomalous gold and silver values were returned from surface to the upper contact of the horizon including 0.66 g/t gold and 6.5 g/t silver across 2.0 m and a second intersection grading 0.939 g/t gold and 2.7 g/t silver over 1.5 m. Silt sampling from the area returned 0.545 g/t gold with elevated nickel and chrome values.

The arrival of 2008 saw control of the Sonora Gulch property transfer to Northern Tiger Resources. Northern Tiger tested the Ultramafic Horizon now known as the Nightmusic zone with 6 diamond drill holes; 5 of which intersected gold mineralization. Hole SG-08-27 returned 4.96 g/t gold, 11.9 g/t silver and 0.23% copper over 26.6 m, including 25.76 g/t gold and 6.5 g/t silver over 4.0 m. Soil sampling conducted coincident to the drilling outlined a 2 000 m east-west anomaly lying along the southern contact of ultramafic body and extending from Sonora Gulch to just west of Hayes Creek. The anomaly width varies from 50 to 300 m. gold values commonly exceed 0.100 g/t gold to a maximum of 0.843 g/t gold. High gold values have a strong correlation with high copper values and weak to moderate silver values. Previous exploration shows that mineralization associated with the ultramafic horizon includes tetrahedrite, malachite and azurite in listwanitic alteration zones and quartz-sulphide veins in fracture zones.

A single diamond drill hole tested the Jupiter zone. Elevated gold and silver values, anomalous copper and strongly anomalous molybdenum values were returned across the length of the hole. Results include 1.18 g/t gold and 81.9 g/t silver over 2.0 m. Soil sampling also outlined the Sonata anomaly 700 m northwest of the Nightmusic anomaly. The Sonata anomaly measures approximately 1.5 km in a east-west direction with a width of about 750 m. This anomaly occurs along the south margin of an interpreted structure. Visible gold was panned from a streambed downstream of the structure. This anomaly may represent an offset portion of the Nightmusic anomaly displaced along the Big Creek fault.

Northern Tiger followed up the 2008 results with a 11 hole diamond drill program targeting the Nightmusic zone. All eleven holes intercepted varying degrees of gold mineralization within large zones of strongly sheared and/or altered sulphide-enriched material. Hole SG-09-33 returned 3.72 g/t gold and 2.2 g/t silver over 2.9 m and 5.25 g/t gold and 7.4 g/t silver over 1.4 m. A single hole collared to test the Allegro soil anomaly located 1 km north of this occurrence was lost in overburden.

Bennett (2010) noted that mineralization in the Nightmusic zone is complex and consists of: (i) mesothermal Au-enriched base-metal skarns hosting copper, zinc and lead, (ii) replacement zones hosted by calcareous metaclastic and metavolcanic rocks, (iii) bonanza-style lode gold associated with listwanitic ultramafic rocks, and (iv) structurally controlled veins and stockwork. The Nightmusic zone is one of two major mineralized zones (the other is Amadeus zone) occurring on the Sonora Gulch property that occur along that portion of an east-trending structural corridor located east of the northwest-trending Big Creek fault. Farther south within the Freegold Mountain Project area (Minfile Occurrence #115I 111 etc.), similar east-west mineralizing structures occur to the west of the Big creek fault, suggesting the fault system may represent a significant mineralizing conduit of regional extent.

U-Pb dating of two feldspar porphyry dykes (74.79 +/-0.61 million years) and a weakly mineralized quartz porphyry stock (73.91 +/- 0.81 million years), situated within the Nightmusic zone and the gold-silver mineralized Amadeus stock (75.73 +/- 0.93 million years), which occurs 3.5 km to the east, demonstrate the wide-spread occurrence of Late Cretaceous magmatism within the Sonora Gulch property. This magmatism is coeval with the Late Cretaceous Carmacks Group rather than the mid-Late Cretaceous Prospector Mountain suite as previously interpreted. These new age dates indicate that magmatic-associated mineralization occurring on the property area are temporally equivalent to the Casino (Minfile Occurrence #115J 028) copper, gold and molybdenum deposit, located approximately 40 km to the west-northwest.

The 210 Quantec Titan 24 geophysical survey covered a 2 000 m long section of a larger airborne geophysical anomaly centred over the Gold Vein Zone porphyry. Five lines spaced at 400 m apart were collected. Results show a low chargeability core surrounded by a high chargeability halo typical of a mineralized porphyry system. The 1 000 m diameter anomaly is undrilled below 200m.

The 2010 drill program was designed to test for the presence of a porphyry copper-gold molybdenum system as suggested by past exploration results and to test a gold-in-soil anomaly located over the Gold Vein zone. Hole SG-10-55 which tested for gold mineralization at the Gold Vein zone intersected 4 m of porphyry mineralization which assayed 11.3 g/t gold and 233 g/t silver. Hole SG-10-53 which tested the Jupiter zone intersected 16 m of skarn mineralization which assayed 1.88 g/t gold. Four other holes intersected long intercepts of anomalous copper and molybdenum values in porphyry style mineralization that demonstrate the properties porphyry potential.

The 2011 Technical Report summarized and commented on the work completed to date by Firestone Ventures/Northern Tiger Resources on the Sonora Gulch property. The report concluded that Sonora Gulch remains under explored considering the scale of mineralized system and its location in a prospective gold belt. Potential for discovery of structurally or lithologically controlled gold-silver mineralization is considered highest. In addition, there is also potential for discovery of bulk tonnage porphyry mineralization. The report recommended a drill program totalling 16 400 m to test for both types of targets.

The 2011 drill program focused on the Gold Vein zone, a 1.4 km long by 500 m wide geochemical anomaly averaging 161 ppb gold-in-soils. Thick intercepts of gold bearing sulphide mineralization were intercepted in three drill holes and mineralization remains open. Hole SG-11-58 returned the longest mineralized intercept of the program. It returned 0.45 g/t gold and 3.0 g/t silver over 234 m of quartz-feldspar porphyry containing narrow arsenic-lead-antimony sulphide veins.

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YUKON EXPLORATION AND GEOLOGY OVERVIEW

Work History

Date	Work Type	Comment
7/31/2010	Drilling	Twelve holes (2 455 m) to test various geochemical and geophysical targets.
6/30/2011	Drilling	Nine diamond drill holes (2 649 m) collared on Gold Vein Porphyry zone.
6/30/2010	Ground Geophysics	Quantec Titan 24 deep penetrating Induced Polarization and Resistivity survey over Gold Vein Porphyry.
3/31/2011	Studies	Updated National Instrument 43-101 compliant Technical Report covers entire Sonora gulch property.
12/31/2009	Drilling	Twelve holes, 2,455 m.
12/31/2008	Drilling	Ten holes, 2,283.3 m.
12/31/2008	Geochemistry	
12/31/2008	Geochemistry	
12/31/2007	Drilling	Twelve holes, 2,024.9 m.
12/31/2007	Geology	Reconnaissance scale.
12/31/2007	Other	Reconnaissance scale.
12/31/2006	Geochemistry	
12/31/2006	Drilling	Twelve holes, 1,821 m.
12/31/2006	Geochemistry	
12/31/2006	Geochemistry	
12/31/2006	Ground Geophysics	Also magnetometer and VLF-EM surveys
12/31/2004	Geochemistry	Also soil and silt sampling. Reconnaissance scale.
12/31/1998	Geology	
12/31/1997	Geology	Work completed on old trenching.
12/31/1997	Geochemistry	Also rock sampling.

12/31/1985	Trenching	
12/31/1984	Drilling	Five holes, 695 m.
12/31/1984	Trenching	
12/31/1983	Ground Geophysics	Ground magnetometer and EM surveys.
12/31/1981	Drilling	Six holes, 812 m.
12/31/1981	Ground Geophysics	Also VLF survey.
12/31/1981	Trenching	
12/31/1980	Drilling	Four holes, 404 m.
12/31/1980	Ground Geophysics	Also magnetic survey.
12/31/1978	Drilling	Eleven holes, 490 m.
12/31/1978	Trenching	
12/31/1975	Geology	
12/31/1975	Geochemistry	
12/31/1974	Geology	
12/31/1974	Geochemistry	
12/31/1970	Trenching	
12/31/1969	Geology	
12/31/1969	Geochemistry	
12/31/1965	Geology	Regional scale.
12/31/1946	Trenching	Work continued to 1951.
12/31/1904	Development, Underground	Approximately 25 m of drifting. Continued into 1907.

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
095179	2009	Assessment Report on the 2009 Diamond Drilling Program-Sonora Property	Diamond - Drilling, Drill Core - Geochemistry	12	2454.60
095084	2008	2008 Geological Mapping, Geochemical Sampling, Geophysical Surveying and Diamond Drilling Programs-Sonora Property	Diamond - Drilling, Drill Core - Geochemistry, Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, IP - Ground Geophysics, Magnetics - Ground Geophysics	10	2238.30
094987	2007	Assessment Report on the 2007 Diamond Drilling and Surface Geochemical Program, Sonora Property	Diamond - Drilling, Drill Core - Geochemistry, Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry	12	2024.90
094810	2006	2006 Geological, Geophysical, and Diamond Drilling Programs on the Sonora Gold Project	Diamond - Drilling, Drill Core - Geochemistry, Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, EM - Ground Geophysics, IP - Ground Geophysics, Line Cutting - Other	10	1821.10
094536	2004	2004 Assessment Report on Geological Mapping and Geochemical Sampling on the SONORA GULCH Property	Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Cursory Property Visit - Other, Line Cutting - Other, Data Compilation - Pre-existing Data		
094405	2002	The SONORA Property, a Pogo Style Gold Target in the Dawson Range, Yukon 2002 Assessment Report	Data Compilation - Pre-existing Data, Research/Summarize - Pre-existing Data		
094255	2001	2001 Assessment Report on the SONORA Property	Property Evaluation - Other		
094123	2000	Summary Report on the SONORA GULCH Property	Rock - Geochemistry, Cursory Property Visit - Other, Data Compilation - Pre-existing Data		
094172	2000	Geochemical and Geological Report on the Butter Claims	Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Heavy Mineral Concentrate - Lab Work/Physical Studies		
094134	2000	Interpretation of Aeromagnetic Data from the Sonora Property-Hayes Creek Area	Process/Interpret - Pre-existing Data		
093940	1998	Assessment Report-Mapping, Soil and Rock Sampling on the Swede and Sam Claims-Sonora Gulch Property	Rock - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology		
091773	1985	Assessment Report Trenching SAM-SWEDE Claims	Mechanical - Trenching		
090777	1980	Assessment Report-Diamond Drilling Program-October 1980-Sam, Swede Claims	Diamond - Drilling, Drill Core - Geochemistry	4	404.77
091347	1977	Assessment Report Diamond Drilling Program-August 1977-SAM Claims 1-98	Diamond - Drilling, Soil - Geochemistry, Mechanical - Trenching	11	489.51
		Assessment Report-Geochemical, Electromagnetic and Geological	Soil - Geochemistry, Bedrock Mapping - Geology, EM - Ground		

090223	1977	Assessment Report Geochemical, Electromagnetic and Geological Surveys-SAM Claims	Soil - Geochemistry, Bedrock Mapping - Geology, EM - Ground Geophysics		
060213	1969	Geochemical Sampling and Preliminary Geology -DP Claims-Hayes Creek Area, Dawson Range	Silt - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Prospecting - Other		

Related References

Number	Title	Page(s)	Reference Type	Document Type
YEG2009_03	Deconstructing complex Au-Ag-Cu mineralization, Sonora Gulch project, Dawson Range: A Late Cretaceous evolution to the epithermal environment		Yukon Geological Survey	Annual Report Paper
2003-9(D)	Yukon Digital Geology (version 2)		Yukon Geological Survey	Open File (Geological - Bedrock)
1995-2(G)	Geological Compilation with Interpretation from Geophysical Surveys of the Northern Dawson Range, Central Yukon (115 J/9 & 10; 115 I/12)		Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Open File (Geological - Bedrock)
1987-3(G)	Geology of Colorado Creek (115J/10), Selwyn River (115J/9) & Prospector Mountain (115I/5) Map Areas, Western Dawson Range, West Central Yukon		Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Open File (Geological - Bedrock)
ARMC016555	Photo interpretation map of geology with coloured sections - 115J/9 - Selwyn River		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC016554	Photo interpretation map showing claims - 115J/9 - Selwyn River		Property File Collection	Geoscience Map (General)
ARMC016556	Geology map - 115J/9 - Selwyn River		Property File Collection	Geoscience Map (Geological - Bedrock)

Drill core at YGS core library

Number	Property	Year Drilled	Core Size	Photos	Data
SG-08-01	Sonora Gulch	2008		6	0
SG-08-02	Sonora Gulch	2008		10	0
SG-07-18	Sonora Gulch	2007	NQ	0	2
SG-07-19	Sonora Gulch	2007	NQ	0	2
SG-07-20	Sonora Gulch	2007	NQ	0	2
SG-07-21	Sonora Gulch	2007	NQ	0	2
SG-07-22	Sonora Gulch	2007	NQ	0	2
SG-06-01A	Sonora Gulch	2006	NQ	0	3
SG-06-02	Sonora Gulch	2006	NQ	0	3
SG-06-03	Sonora Gulch	2006	NQ	0	3
SG-06-04	Sonora Gulch	2006	NQ	0	3
SG-06-05	Sonora Gulch	2006	NQ	0	3
SG-06-06	Sonora Gulch	2006	NQ	0	3