



## Occurrence Details

**Occurrence Number:** 115I 029

**Occurrence Name:** Amadeus

**Occurrence Type:** Hard-rock

**Status:** Prospect

**Date printed:** 4/29/2025 2:24:40 AM

## General Information

**Secondary Commodities:** antimony, arsenic, copper, gold, lead, silver, zinc

**Aliases:** Delta

**Deposit Type(s):** Porphyry Cu-Mo-Au

**Location(s):** 62°38'36" N - -137°56'57" W

**NTS Mapsheet(s):** 115I12

**Location Comments:** .5 Kilometres

**Hand Samples Available:** No

**Last Reviewed:**

## Capsule

### Work History

Staked as Hayes cl 1-20 (Y35038) in Mar/69 and cl 21-32 (Y38829) in Oct/69 by J. Lerner and associates in an area explored in 1965 by Coranex Ltd (Frobex Ltd, Inco Ltd, Dome Exploration Ltd, Dennison Mines Ltd, McIntyre Porcupine Mines Ltd). The property was optioned by Delta International Minerals Ltd, which explored by mapping and geochemical sampling in 1969 and 1970.

Restaked as AS cl 1-20 (Y99312) in Jul/75 by the DC Syndicate (Dome Exploration Ltd and Cominco Ltd) which performed mapping, geochemical sampling and bulldozer trenching later in the year; and as H cl 1-24 (YA25033) in Aug/79 by J. Lerner, who trenched in 1980 and 1981.

Restaked as Hay cl 1-20 (YA95601) in Aug/86 by Noranda Exploration Company Ltd which explored by geological mapping and grid soil geochemistry. Noranda Exploration Company Ltd restaked as Hay cl 1-22 (YB7862) in Sep/87 and performed geophysical sampling in 1988.

Firestone Ventures Inc staked Stone cl 1-20 (YC26123) in Dec/2003 immediately west of the occurrence. In Jun/2004 the company added Stone 21-34 (YC29893) on the south side of the claim block. The claims were staked as part of an option agreement Firestone signed with the owners of the adjoining Sonora Gulch occurrence (Minfile Occurrence #115J 008) located approximately 3.25 km to the west. In 2005 the company carried out a small rock, silt and soil sampling program on the adjoining Sonora Gulch property.

In Nov/2005 Firestone Ventures carried out ground IP, magnetometer and VLF-EM geophysical surveys southeast of the Sonora Gulch occurrence. In May/2006 the company extended the geophysical survey onto the western side of the Sonora Gulch occurrence. In Jul/2006 of 2006 Firestone Ventures carried out a property wide geological mapping silt and soil sampling program on the entire Sonora Gulch property which includes the Stone claims (this occurrence). In Sep/2006 the company drilled 12 diamond drill holes (1 821m) on the Sonora Gulch property. Eight of the holes tested targets associated with this occurrence.

In Jan/2007 Firestone Ventures staked Stone cl 35-46 (YC57915) on the north side of the existing Stone claim block. The company restaked this occurrence within Stone cl 47-50 (YC57592) (located southeast of the Stone claim block) at the same time. In Jul/2007 the company commenced a 12 hole diamond drill (2 024.9 m) program on the property. Seven holes tested targets associated with this occurrence. The company also carried out reconnaissance scale geological mapping, prospecting and geochemical sampling on the newly staked claims.

In Dec/2007 Firestone Ventures signed an agreement with the underlying vendors to purchase the remaining 20% interest in the Sonora Gulch property (which includes this occurrence) 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 27 km to the east.

In Jul/2008 Northern Tiger Resources staked Stone cl 51-64 (YC90025) on the east 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. Three of the drill holes were associated with this occurrence the remaining seven were associated with Minfile Occurrence #115J 008.

In 2009 Northern Tiger drilled 12 diamond drill holes (2 455 m) on the property. All of the holes were associated with Minfile Occurrence #115J 008. The company also carried out airborne magnetic and radiometric surveys over the entire property (including this occurrence) and geological mapping and rock and soil sampling programs over selected portions of the property.

Northern Tiger's 2010 exploration program was centred on the west side of Hayes Creek. The company carried out a Quantec Titan 24 deep penetrating geophysical (Induced Polarization and Resistivity) survey over the Gold Vein Porphyry zone (Minfile Occurrence #115J 008). The company tested the survey results with 12 diamond drill holes (2 875 m).

In Mar/2011 Northern Tiger released an updated National Instrument 43-101 compliant Technical Report on the entire Sonora Gulch Property. During the 2011 exploration season the company collared 9 diamond drill holes 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 east of Hayes Creek (i.e. eastern half of the Sonora Gulch property).

The area is located in the central Dawson Range, west-central Yukon approximately 25 to 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. Gorday 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.

This portion of the Sonora Gulch property (i.e. eastern portion) is mainly underlain by metagranite, metavolcanic and subordinate metasedimentary rocks assigned to the Devonian to Mississippian Wolverine Creek metamorphic suite. In the central portion of the area the metamorphic rocks are intruded by a Late Cretaceous leucocratic quartz feldspar porphyry which Bennett has tentatively assigned to the Late Cretaceous Carmacks Group. A small ultramafic body, the eastern extension of the ultramafic body which hosts the Nightmusic zone (Minfile Occurrence #115J 008) likely extends onto the east side of Hayes Creek.

Delta International Minerals mapped a feldspar porphyry intrusion that intrudes Wolverine Creek metamorphic rocks located near the center point of this area of the Sonora Gulch property. The metamorphic rocks are highly bleached, silicified and pyritized up to 100 m away from the contact. Soil sampling completed in 1969 - 70, in and near the altered metasedimentary rocks returned anomalous silver and lead values and weakly anomalous copper and molybdenum values. Check soil sampling carried out in 1975 by the DC Syndicate confirmed the anomalies on surface.

Noranda Exploration staked the Hay claims to follow up a high antimony value obtained from a stream sediment sample collected by the Geological Survey of Canada in 1985 (Open File 1220). Follow-up silt sampling failed to replicate the result. Soil sampling conducted in 1986 on a grid overlying the feldspar porphyry intrusion returned spot anomalies of up to 2 100 ppm arsenic, 330 ppm copper, 120 ppb gold and 14 ppm silver. Follow-up soil sampling conducted in 1987 outlined a 200 m long by 300 m wide gold-silver arsenic anomaly on the east side of Hayes Creek directly across from Little Klines Gulch. The highest values obtained were 1 600 ppb gold, 9.6 ppm silver and 200 ppm arsenic.

The bulk of the 2004 exploration program was focused on the Little Klines Gulch area located on west side of Hayes Creek. A single north-south trending line of soil samples collected about 500 m east 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.

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 Amadeus zone and Wolfgang anomaly which are associated with this occurrence. The Amadeus zone is a gold +/- copper zone which is roughly coincident with the outline of the underlying feldspar porphyry intrusion and adjacent volcanic country rock. The zone measures at least 700 m long and up to 250 m wide and is associated with several strong gold anomalies with values exceeding 100 ppb gold and commonly exceeding 250 ppb gold. The Wolfgang anomaly lies on the east side of the Amadeus zone and hosts soil values ranging from 453 to 2 340 ppb gold with strongly anomalous bismuth and anomalous copper.

Diamond drilling in the fall of 2006 confirmed the presence of mineralization at the Amadeus zone. Mineralization is hosted by the Amadeus stock, a high level epithermal quartz-feldspar porphyry stock which is strongly leached and has undergone moderate to strong pervasive argillic alteration and lesser silicification. Gold and silver mineralization occurs in both the Wolverine Creek metamorphic host rocks lying immediately above the intrusive contact of the stock and within the stock itself. Immediately above the intrusion, granitic gneiss hosts multiple phases of pyrite +/- chalcopyrite vein and fracture mineralization. Gold and silver mineralization also occurs at the brecciated intrusive contact of the stock and metamorphic rocks, where pyrite +/- gold and silver mineralization occur as matrix minerals of the intrusive clast-supported breccia. Within the stock gold and silver show a correlation with depth; gold occurs at higher levels while appreciable silver concentrations occur at depth. Late stage epithermal-style veining and feldspar porphyry dykes were not observed to crosscut the Amadeus stock, suggesting stock emplacement was coeval or post-dated, the epithermal and dyking events observed in the Nightmusic zone located on the western half of the Sonora Gulch property.

Six holes tested the Amadeus zone with all the holes returning gold mineralization. Hole SG-06-06, considered the discovery hole intersected 15.3 m which returned 6.21 g/t gold and 3.0 g/t silver. The intercept includes a sub-interval of 5.0 m that returned 12.9 g/t gold and 4.8 g/t silver. Hole SG-06-04 collared to test the Wolfgang anomaly returned a 3.4 m intercept that returned 1.132 g/t gold with 45.5 g/t silver, including a 1.3 m subinterval grading 2.410 g/t gold and 117 g/t silver. Hole SG-06-08 which tested the Giovanni anomaly; a strong chargeability IP anomaly located on the east side of Hayes Creek, in the southern flatlands, approximately 1 km west of this occurrence did not intersect any significant mineralization.

The Amadeus zone was tested by 5 additional drill holes in 2007. All of the holes returned intervals of low-grade gold and/or silver mineralization. In addition short intervals of moderate to high grade lead-zinc-silver mineralization, commonly accompanied by anomalous gold values were returned from most of the holes with the best intersection being a 2.0 m intercept that returned 817 g/t (26.25 ounces per ton) silver, 1.12 g/t gold, 0.27% antimony, 0.37% copper, 1.58% lead and 0.30% zinc.

The arrival of 2008 saw control of the Sonora Gulch property transfer to Northern Tiger Resources. Northern Tiger tested the Amadeus zone with 3 diamond drill holes. These holes focused on the contact area of the stock with older volcanic rocks. All intersected strongly altered and mineralized intrusive rock with consistent anomalous gold and silver values. The best intercept was returned from hole SG-08-31 which returned 31.0 m grading 1.0 g/t gold and 4.2 g/t silver including a 6 m sub-interval which returned 2.37 g/t gold and 2.4 g/t silver. The highlight of the 2008 drilling program was the discovery of the Nightmusic zone located 3.25 km to the northwest from this occurrence, on the western portion of the Sonora Gulch property (see Minfile Occurrence 115J 008).

Northern Tiger Resources focused their 2009 exploration efforts on the Nightmusic zone and other targets location on the west side of Hayes creek. Only cursory exploration was carried on the eastern portion the Sonora gulch property.

U-Pb dating of zircons collected from the Amadeus stock by V. Bennett of the Yukon Geological Survey returned a date of 75.5 +/-0.79 million years. This compares with a date of 74.79 +/- 0.61 million years obtained from two feldspar porphyry dykes and an age of 73.91+/- 0.81 million years obtained from a porphyry stock, both situated within the Nightmusic zone. These dates 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 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 underexplored 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.

## References

DELTA INTERNATIONAL MINERALS LTD, 1969. Assessment Report #060207 by E.D. Dodson.

DELTA INTERNATIONAL MINERALS LTD, 1970. Assessment Report #060206 by G.C. Guttrath.

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FIRESTONE VENTURES INC, May/2008. Assessment Report #094987 by C. M. Schulze.

FIRESTONE VENTURES INC, New Releases, 05 Jan/2004, 28 Jan/2004, 21 Jul/2004; 4 Nov/2005, 11 Jan/2006, 5 Sept/2006, 26 Sep/2006, 25 Oct/2006, 15 Jan/2007, 17 Jul/2007, 10 Sep/2007, 27 Sep/2007, 10 Oct/2007, 16 Nov/2007, 20 Nov/2007, 5 Dec/2007, 3 Mar/2008, 23 Jun/2008.

FIRESTONE VENTURES INC, Jul/2004, Website: [www.firestoneventures.com](http://www.firestoneventures.com)

MINERAL INDUSTRY REPORT 1969-70, p. 70-71; 1975, p. 145.

NORANDA EXPLORATION COMPANY LTD, Oct/87. Assessment Report #091957 by H. Copland.

NORANDA EXPLORATION COMPANY LTD, Dec/88. Assessment Report #092619 by H. Copland.

NORTHERN TIGER RESOURCES INC, Apr/2009. Assessment Report #095084 by C. M. Schulze.

NORTHERN TIGER RESOURCES INC., Mar/2010. Assessment Report #095179 by C. M. Schulze.

NORTHERN TIGER RESOURCES INC., Feb/2011. Technical Report on the Sonora Gulch Project, Yukon Territory. Prepared by Watts, Griffis and McQuat, February 3, 2011 by R. H. Page. (available on SEDAR).

NORTHERN TIGER RESOURCES INC., News Release, 23 Jun/2008, 22 Jul/2008, 18 Sep/2008, 24 Nov/2008, 16 Jul/2009, 1 Oct/2009, 25 Feb/2010, 2 Mar/2010, 15 Jul/2010, 28 Oct/2010, 1 Mar/2011, 27 Jul/2011, 7 Nov/2011

NORTHERN TIGER RESOURCES INC., Jul/2012. Web Site: www.northerntiger.com.

YUKON EXPLORATION 1987, p. 268; 1988, p. 187

YUKON EXPLORATION AND GEOLOGY 2005, p. 26, 38; 2006, p. 14, 41, 46; 2007, p.10-11, 36, 42; 2008, p. 9-10, 31, 37.\

YUKON EXPLORATION AND GEOLOGY OVERVIEW 2009, p. 30, 55, 58; 2010, p. 40-41, 61, 65; 2011 p. 51, 67, 73.

## Work History

Date	Work Type	Comment
12/31/2009	Geochemistry	Also soil sampling. Selected portions of property .
12/31/2009	Geology	Selected portions of property .
12/31/2009	Airborne Geophysics	Also radiometric survey. Covered entire property. Diamond drilling on the west portion of property .
12/31/2008	Drilling	Ten holes, 2,238.3 m. Three holes tested targets associated with this occurrence.
12/31/2008	Geology	
12/31/2008	Geochemistry	Also silt sampling.
12/31/2008	Ground Geophysics	Total field magnetics.
12/31/2008	Ground Geophysics	
12/31/2007	Drilling	Twelve holes, 2,024 m. Seven holes tested targets associated with this occurrence.
12/31/2006	Drilling	Twelve holes, 1,821 m. Eight holes tested targets associated with this occurrence.
12/31/2006	Geology	Property wide.
12/31/2006	Geology	Property wide.
12/31/2004	Geochemistry	One line of samples collected east side of Hayes Creek .
12/31/1987	Geology	
12/31/1987	Geochemistry	
12/31/1986	Geology	
12/31/1986	Geochemistry	
12/31/1980	Trenching	
12/31/1975	Geology	
12/31/1975	Geochemistry	
12/31/1975	Trenching	
12/31/1969	Geology	
12/31/1969	Geochemistry	
12/31/1965	Other	
12/13/2011	Studies	Updated National Instrument 43-101 compliant Technical Report on the entire Sonora Gulch Property.
12/13/2007	Geochemistry	Also silt sampling.
12/13/2007	Geology	
12/13/2007	Other	
12/13/2006	Geochemistry	Also silt sampling.
12/13/2006	Ground Geophysics	Also magnetic and VLF-EM surveys.
12/13/1981	Trenching	

## Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
<a href="#">095084</a>	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
<a href="#">094987</a>	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
<a href="#">094405</a>	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		
<a href="#">094134</a>	2000	Interpretation of Aeromagnetic Data from the Sonora Property-Hayes Creek Area	Process/Interpret - Pre-existing Data		
<a href="#">091957</a>	1987	Geochemical Report on the HAY 1-20 Claims	Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry		
<a href="#">060207</a>	1970	Report on the HAYES CREEK Property	Soil - Geochemistry, Cursory Property Visit - Other, Line Cutting - Other		
<a href="#">060206</a>	1970	Geological and Geochemical Report on the HAYES Claim Group	Soil - Geochemistry		

## Related References

Number	Title	Page(s)	Reference Type	Document Type
<a href="#">YEG2009-03</a>	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
<a href="#">2003-9(D)</a>	Yukon Digital Geology (version 2)		Yukon Geological Survey	Open File (Geological - Bedrock)
<a href="#">1993-3(G)</a>	Geological Map of Wolverine Creek (115I/12), Dawson Range, Yukon		Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Open File (Geological - Bedrock)
<a href="#">YEG1992-pg49</a>	Preliminary results of 1:50 000-scale geologic mapping in Wolverine Creek map area (115 I/12), Dawson Range, southwest Yukon		Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Annual Report Paper
<a href="#">1987-3(G)</a>	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)
<a href="#">ARMC016620</a>	Geology map - 115I/12 - Mount Pitt		Property File Collection	Geoscience Map (Geological - Bedrock)