Occurrence Details

Occurrence Number: 106E 041
Occurrence Name: El Nimo
Occurrence Type: Hard-rock
Status: Prospect
Date printed: 4/29/2025 12:14:54 AM

General Information

Secondary Commodities: gold, molybdenum, nickel, palladium, platinum, rhenium, zinc
Aliases: Goodfellow
Deposit Type(s): Sediment hosted Shale-Hosted Ni-Zn-Mo-PGE (Nick)
Location(s): 65°51'57.26" N - -135°50'46.81" W
NTS Mapsheet(s): 106E13
Location Comments: Location marks approximate centre of sulphide horizon found by Goodfellow in south bank of Peel River.
Hand Samples Available: No
Last Reviewed:

Capsule

WORK HISTORY

In 1994 W.D. Goodfellow of the Geological Survey of Canada discovered a thin nickel/molybdenum sulphide layer outcropping along the south shore of the Peel River. A second site was discovered 5 km to the northwest. Neither site was explored further.

The occurrence site was staked within El cl 1-12 (YC52354) in Sep/2006 by Strategic Metals Ltd. The company added El cl 13-78 (YC52872 in Dec/2006, cl 79-130 (YC54988), cl 132-166 (YC55401) and cl 168-488 (YC55077) in Feb/2007. In Apr/2007 Strategic Metals optioned the EL claims and 5 other properties collectively called the NiMo project to Southampton Venture Inc.

Southampton Ventures carried out a preliminary exploration program in early Jun/2007 that consisted of collecting 2 rock specimen samples, 13 chip samples and 41 silt samples. The company immediately followed up with a diamond drill program consisting of 19 holes (2 839.55 m) spread over two areas; the Swamp zone and the East zone.

In Apr/2009 Southampton Ventures changed their name to Quetzal Inc. No further work is planned on any of the claim blocks associated with the NiMo project.

GEOLOGY

The area is located on the southern edge of the Richardson Mountains approximately 72 km southeast of Eagle Plains Lodge in north-central Yukon. The Peel River marks the northern boundary of both the claim block and the Mayo Mining District. The area is located on the west side of the Richardson Trough a north to northwest-trending intracratonic depression formed during Early to Middle Paleozoic time. Deep water shale and argillaceous limestone of the Ordovician to Silurian Road River group are deposited within the trough atop Cambrian and Proterozoic age strata. Younger Paleozoic sediments unconformably cap the Road River Group within the trough and elsewhere in the surrounding broader basin. The entire stratigraphic section is folded by a large-scale anticline that plunges to the north. This anticline is called the Richardson Anticlinorium and its axis approximately coincides with the centre of the trough. To the east, the Richardson Trough is bound by the Trevor Fault and to the West the Deception Fault.

The occurrence is underlain by shallow south-southwest dipping shales assigned to the Middle to Upper Devonian Earn Group and Ordovician to Silurian Road River Group. The Earn Group is comprised of sandy shale belonging to the Imperial Formation which outcrops in the south and west parts of the claim group, and conformably overlies siliceous shale of the Canol Formation which forms a narrow east-west band across centre of the claim block. The Earn group sits unconformably atop calcareous shale belonging to the Road River Group, which is exposed in the north and east parts of the claim block.

Wayne Goodfellow of the Geological Survey of Canada first identified nickel/molybdenum mineralization along the southern banks of the Peel River in 1994. The discovery was not widely reported until D. Heon noted the two locations in her 2006 mineral assessment report of the Eagle Plain Study Area. Strategic Metals verified the locations shortly thereafter and began staking claims in the area. Further information was released in Southampton Ventures' 2007 assessment report and in an abstract published by Goodfellow et al. in (2010).

A similar massive sulphide horizon is reported at the same stratigraphic location at the Nick occurrence (Minfile Occurrence #106D 092) located 122 km to the southwest. The Nick massive sulphide horizon covers an area greater than 80 square kilometres and comprises pyrite, vaesite, melnikovite-type pyrite, sphalerite and wurtzite hosted in a gangue of phosphatic-carbonaceous chert, silica and bitumen. Rock assays from the Nick horizon typically average 3 % nickel, 0.20 % molybdenum, 0.82 % zinc, 0.82 % vanadium, 310 ppm platinum and 150 ppb palladium over narrow widths (i.e. < 10 cm). Strategic Metals staked their various claim groups to explore for this type of mineralization.

Goodfellow, Southampton Ventures and others have reported that the nickel/molybdenum unit occurs at the contact between the Earn Group and Road River Group. This contact is marked by a unique lithological sequence consisting from top to bottom of a phosphatic chert member, sulphide horizon (containing nickel-molybdenum mineralization, commonly known as the NiMo horizon), nodular shale and limestone member. All four members were observed in the southern bank of the Peel River. Southampton Ventures sampled a 300 m section of the horizon; however Goodfellow reported in his 2010 abstract that he was able to trace the horizon for over 1 km along the riverbank.

Southampton Ventures collected 12 chip samples over 300 m of the mineralized horizon exposed at the original Goodfellow site (this occurrence). Six of the samples were collected from the nickel/molybdenum horizon and six samples were collected from the underlying nodular shale. The weighted average of the nickel/molybdenum chip samples graded 3.7 % nickel, 0.47 % zinc, 0.245 % molybdenum, 112 ppb gold, 274 ppb platinum, 149 palladium, 36.3 ppm rhenium and 2 382 ppm selenium. The underlying nodular shale returned anomalous values for several metres but nowhere approached ore grade. The silt samples returned only background levels of nickel/molybdenum indicator elements.

The diamond drilling program was divided between two areas of the property. Eleven holes (1 425.6 m) were collared in the Swamp zone located approximately 250 south of this occurrence. The remaining eight holes (1 414.29 m) were collared at the East zone located 5 km to the east. All but two of the holes intersected the nickel/molybdenum sulphide horizon. One hole stopped short of the favourable contact while the other hole only intersected Road River Group strata. The thickness of the nickel/molybdenum sulphide horizon varied from approximately 1 mm to 14 cm and averaged 3 cm.

Diamond drilling shows that the nickel/molybdenum sulphide horizon occurs at a predictable stratigraphic location that can be traced over 6 km between zones. The weighted average from 16 drill holes graded 3.7 % nickel, 0.23 % molybdenum, 1.07 % zinc, 91 ppb gold, 223 ppb platinum, 120 palladium and 26.9 ppm rhenium over 3 cm.

Other research completed by Southampton Ventures and by Goodfellow shows that the general stratigraphy and sedimentology between various showings is remarkably uniform despite

being separated by as much as 400 km in distance. In addition it has been theorized that the nickel/molybdenum horizon could host economic thicknesses somewhere within the district. Unfortunately other than diamond drilling there is currently no known effective method available to test the horizon's thickness in a given area.

Work History

Date	Work Type	Comment
12/13/2007	Geochemistry	Southampton Ventures collects rock specimens and chip samples.
12/13/2007	Drilling	Nineteen holes (2,839.5 m) drilled, Eleven holes (1,425.6 m) collared in Swamp zone, Eight holes (1,414.29 m) collared in East zone.
12/13/2007	Geochemistry	All streams silt sampled.
12/13/1994	Other	Goodfellow discovers nickel/molybdenum sulphide horizon in south bank of Peel River.

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
095621	2008	Assessment Report Describing Prospecting, Mapping and Diamond Drilling at the El Property	Diamond - Drilling, Rock - Geochemistry, Bedrock Mapping - Geology	2	694.97
094960	2007	Assessment Report Describing Prospecting, Mapping and Diamond Drilling at the El Property	Diamond - Drilling, Rock - Geochemistry, Silt - Geochemistry, Prospecting - Other	19	2839.55

Related References

Number	Title	Page(s)	Reference Type	Document Type
YEG2007_OV	Yukon Exploration and Geology Overview 2007	30, 39, 42.	Yukon Geological Survey	Annual Report
2003-9(D)	Yukon Digital Geology (version 2)		Yukon Geological Survey	Open File (Geological - Bedrock)
2006-3	Mineral Assessment of the Eagle Plain Study Area, Yukon.		Yukon Geological Survey	Open File (Geological - Bedrock)

Drill core at YGS core library

Number	Property	Year Drilled	Core Size	Photos	Data
EL-08-20	El	2008	NQ2	2	3
EL-08-21	El	2008	NQ2	2	3
EL-07-01	El	2007	BTW	4	2
EL-07-02	El	2007	BTW	2	2
EL-07-03	El	2007	BTW	2	2
EL-07-04	El	2007	BTW	2	2
EL-07-05	El	2007	BTW	2	1
EL-07-06	El	2007	BTW	2	2
EL-07-07	El	2007	BTW	2	1
EL-07-08	El	2007	BTW	4	2
EL-07-09	El	2007	BTW	6	2
EL-07-10	El	2007	BTW	4	2
EL-07-11	El	2007	BTW	2	2
EL-07-12	El	2007	BTW	2	2
EL-07-13	El	2007	BTW	4	2
EL-07-14	El	2007	BTW	2	2
EL-07-15	El	2007	BTW	2	2
EL-07-16	El	2007	BTW	4	3
EL-07-17	El	2007	BTW	4	2
EL-07-18	El	2007	BTW	2	2
EL-07-19	El	2007	BTW	2	3