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2016 GEOLOGICAL ASSESSMENT REPORT ON THE JANES AND JANES SOUTH PROPERTIES

JANES TOWNSHIP SUDBURY MINING DIVISION, ONTARIO, CANADA

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EXECUTIVE SUMMARY

This is a technical report for assessment purposes on the 2016 reconnaissance geological mapping, prospecting and sampling program on the Janes and Janes South properties in Janes Township.

The claims are located 80 km east of Sudbury, Ontario within Janes Township in the Sudbury Mining Division. The properties are bounded by UTM NAD 83 coordinates 17U 544708E to 550644E, and 5165413N to 5172605N. They consist of 12 contiguous staked mining claims containing 169 units and covers an area of approximately 2,704 Ha.

The Main showing on claim 1220221 contains notable Palladium- dominated PGE mineralization associated with *the contact zone* of a large Nipissing gabbroic sheet and Huronian meta-sediments. This contact type of Ni-Cu-PGE mineralization has the most potential for tonnage and may be structurally controlled by unmapped footwall structures (small-scale faults and micro- faults associated with regional structures) (Butler, 2008).

In the summer of 2016, a program of reconnaissance geological mapping, prospecting and sampling was completed on the Janes and Janes South properties. The 29-day program occurred between June and December, 2016. The focus of the program was the ground truthing of HELITEM EM anomalies outlined from the 2015 airborne geophysical survey performed for North American Palladium Ltd. A total of 11 samples were collected. The analytical results for these samples will be reported in a separate assessment report.

1.0 INTRODUCTION

The Janes and Janes South properties are located 80 km east of Sudbury, Ontario within Janes Township in the Sudbury Mining Division. The properties are bounded by UTM NAD 83 coordinates 17U 544708E to 550644E, and 5165413N to 5172605N. They consist of 12 contiguous staked mining claims containing 169 units and cover an area of approximately 2,704 Ha.

From June 5th to December 30th, 2016, a 29-day program of reconnaissance mapping, prospecting and sampling was completed on the properties. This program forms the basis of this report.

2.0PROPERTY DETAILS

2.1 Location and Access

The properties are located 80 km east of the City of Sudbury within Janes Township in the Sudbury Mining Division (Figure 1). The properties are bounded by UTM NAD 83 coordinates 17U 544708E to 550644E, and 5165413N to 5172605N.

Excellent all year access to the property can be gained along a series of bush roads branching off Highway 535 that originates from the town of Hagar, Ontario. In the summer, the property can be accessed using a pick-up truck. During the winter months, access to the property would require the use of a snow machine.

A full range of services and supplies are provided in the city of Sudbury located 50 km to the west of Hagar. Accommodations, food, and limited supplies can be found in the towns of Hagar and Warren.

2.2 Topography and Vegetation

The local terrain is typical of the Precambrian Shield, with low rolling hills and marshy areas. Vegetation on higher ground consists of a variety of hardwoods such as poplar and

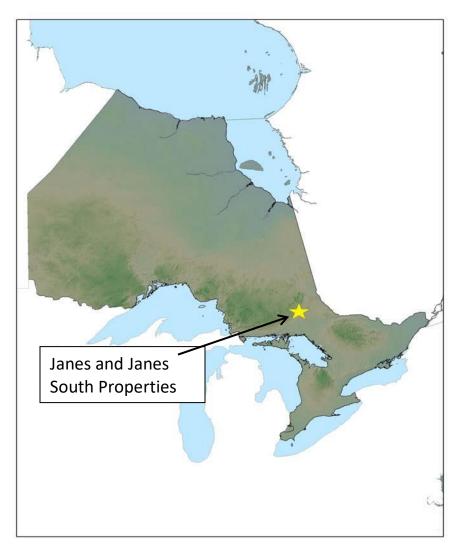


Figure 1: Location of the Properties in Ontario, Canada

birch, with coniferous trees that include spruce and balsam, and minor amounts of pine. In the lower ground, typically more wet in character, black spruce, tamarack, alder and cedar predominate. Water for exploration purposes is available from beaver ponds, marshes small streams and lakes. Snowfall generally begins in November and extends into late March, early April. Lakes are usually passable with adequate ice thickness from late December through to late March. Between 50 and 100 mm of monthly rainfall is normal from April to October. The mean temperature is -13° C in January and 19° C in July.

2.3 Claims

The properties are located within Janes Township in the Sudbury Mining Division. They consist of 12 contiguous staked mining claims containing 169 units and covers an area of approximately 2,704 Ha (Table 1, Figure 2).

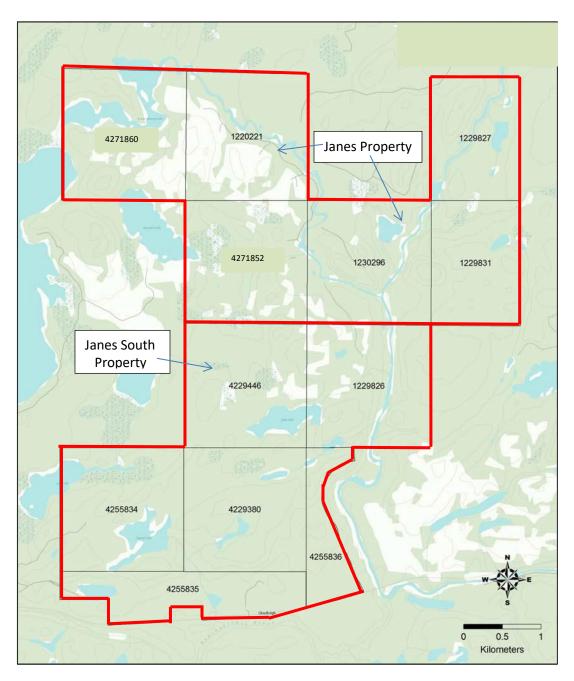


Figure 2: Claim Tenure of the Properties, Janes Township, Ontario.

Table 1:	Claim	Summary	of	the	Janes	and	Janes	South	Property,	Janes
Township	1									

Claim Number	Recording Date	Claim Due Date	Work Required	Total Applied	Total Reserve
1220221	1996-Dec-16	2016-Dec-20	\$6,400	\$89,600	\$714
1229826	1997-Nov-28	2016-Nov-28	\$6,400	\$83,200	\$0
1229827	1997-Nov-28	2016-Nov-28	\$4,800	\$62,400	\$0
1229831	1997-Nov-28	2016-Nov-28	\$4,800	\$62,400	\$0
1230296	1997-Nov-28	2016-Nov-28	\$6,400	\$83,200	\$0
4229380	2010-Jun-07	2017-Feb-06	\$6,400	\$25,600	\$0
4229446	2010-Mar-31	2016-Nov-30	\$6,400	\$25,600	\$0
4255834	2010-Jun-07	2017-Feb-06	\$6,400	\$25,600	\$0
4255835	2010-Jun-07	2017-Feb-06	\$4,400	\$17,600	\$0
4255836	2010-Jun-07	2017-Feb-06	\$2,400	\$9,600	\$0
4271852	2013-Aug-07	2017-Aug-07	\$6,400	\$12,800	\$0
4271860	2016-Jan-08	2018-Jan-08	\$6,400	\$0	\$0

3.0 PREVIOUS WORK

1958: Norseman Nickel Corp. completed diamond drilling and reported results for Ni, Cu and some Au assays. No PGE assays were reported.

1968: Kirkland Townsite Gold Mines Ltd. performed Cu-Ni exploration on the north-west area of the Janes South property. Work included trenching over a 54m x 105m area that exposed mineralized gabbro, returning assay values of <0.39% Cu. This area is now known as the Kirkland Townsite Showing (claim 4229446).

1969-1970: Kennco Explorations (Canada) Ltd. completed airborne magnetometer-EM with follow-up ground work that included geological mapping, ground geophysics (Induced Polarization), trenching and diamond drilling. The drilling (69-01 to 69-09, 70-02, and PS-1 to PS-5) was performed around the Main Trench area (claim 1220221). The drill results yielded minor sulphide mineralization consisting of disseminated chalcopyrite and pyrrhotite in Nipissing gabbro. The most significant intersection was from hole 69-08 that intersected 10.70 m of 1.27% Ni and 1.59% Cu and PS-1 (packsack hole) that intersected 1.0 m of 4.60% Ni and 5.32% Cu. No PGE or gold assay data were reported. In 1970, Kennco drilled one vertical hole (70-1) on the Kirkland Townsite Showing (claim 4229446) to depth of 2551 ft. The hole encountered chalcopyrite and pyrrhotite mineralized gabbro but no assay values were filed.

1968-69: Ossington Exploration Ltd. And Triller Explorations Ltd (1960) concentrated on the area between the Sturgeon and Chiniguchi Rivers on claim 1230296. A grab sample from a surface showing of chalcopyrite returned an assay of 2.45% Cu and 0.13% Ni. A follow-up diamond drill hole returned assays of 0.09% Cu and 0.19% Ni and intersected a >50 m wide granitic dyke which cut through the gabbroic rocks. 5 diamond drill holes were also completed to test several east-trending EM anomalies. No base metal or PGE-Au assay data were reported. This area is now known as the Ossington Showing.

1988: BP Resources Canada had Aerodat perform a helicopter borne Magnetic and VLF/EM survey that covered claims 1229826, 1230296, 4229446 and 4271852.

1988-89: Falconbridge Ltd. completed limited exploration consisting of ground geophysics (IP, Mag) and re-assaying of the historical Kennco's core for PGM's. Results for the mineralized section from hole 69-08 returned a weighted average of 1.51% Ni, 1.86% Cu, 0.27% g/t Pt, 1.30 g/t Pd, and 0.21 g/t Au, and 5.33 g/t Ag over a 7.90 m interval (172.80 – 180.70m). This interval was described as massive to semi-massive sulphide mineralization consisting of chalcopyrite, pyrrhotite, and pentlandite hosted in a pyroxenite gabbro.

1991: Todd Kampman completed an OPAP program of prospecting and soil sampling over the area of the Kirkland Townsite Showing. Anomalous values were reported but not recognized and no further work was performed.

1998 - 1999: Jobin-Bevans, L.S. completed an OPAP program (line-cutting, geological mapping, soil sampling, bedrock stripping and VLF-EM) on his Floodwood Chutes property. This area is now known as the Ossington Showing located on claim 1230296. Cu-Ni values were significant but precious metals were lacking. No new areas of mineralization were uncovered.

1999 – 2001: **Pacific North West Capital Corp. and Anglo Platinum (Goldwright option)** completed line-cutting, geophysics (IP and Mag), and diamond drilling on claim 1220221 near the Main Trench. A total of 2535.6 m was completed in 26 holes. Results were encouraging with some significant PGE and base metal intersections being obtained.

2007: Goldwright Explorations/GoldTrain Resources completed 9 diamond drill holes totaling 826.0 m near the previous drilling by Pacific North West Capital Corp. and Anglo Platinum. JVX Ltd. was also contracted to complete down hole IP surveys on two drill holes.

2011: GoldTrain Resources completed outcrop stripping and four diamond drill holes totaling 570.7 m. The drilling targeted downhole IP anomalies and the western extent of the Main Trench. The outcrop stripping expanded the Main Trench and has yet to be mapped or channel sampled.

2014: Randy Stewart and Brian Wright performed a program of reconnaissance geological mapping, prospecting and sampling. A total of 44 samples were collected. The program focused on three previously known mineralized Nipissing gabbro showings and two newly discovered mineralized and altered Nipissing gabbro zones:

1) The Kirkland Townsite Showing (claim 4229446)

In the 2014 program 7 samples (WP83, WP85, WP86, WP89, WP90, WP95 and WP96) were taken to encircle the known mineralized area in hope of finding the strike extension. Assays are still pending.

2) The Swamp Showing (claim 4271852).

This area was previously worked by Kennco and, in the 2014 program, several trenched and stripped areas were located. Three mineralized Nipissing gabbro samples were collected.

Table 2: The Swamp Showing Samples

Sample	Easting	Northing	Cu(ppm)	Ni(ppm)	Pd(ppb)	Pt(ppb)
E5251561	547215	5169578	3190	960	6.3	5.4
E5251562	547221	5169584	2440	783	4.6	5.6
E5251563	547233	5169685	4810	1440	10.2	7.7

3) Ossington (Triller) Showing (claim 1230296)

In the 2014 program one mineralized Nipissing gabbro trench sample was collected.

Table 3: Ossington Showing Sample

Sample	Easting	Northing	Cu(ppm)	Ni(ppm)	Pd(ppb)	Pt(ppb)
E5251570	549102	5169971	9330	3220	25.1	21.7

4) Two previously unrecognized zones of mineralized and altered Nipissing gabbro were mapped and sampled:

a) On claim 4255835 2 samples were collected. The rock is located within the Grenville Front Transition Zone just south of the Ess Creek Fault (Grenville Front). It is a sheared and altered Nipissing gabbro. It is medium grained with deep green/grey and pinkish hues. The rock contains pervasive epidote (possibly chlorite), carbonate and potassium feldspar alteration and localized calcite filled fractures and shears. Mineralization consists of trace blebby cpy.

Sample	Easting	Northing	Cu(ppm)	Ni(ppm)	Pd(ppb)	Pt(ppb)
E5251565	547861	5165815	334.0	190.5	73.8	13.8
(WP20)						
E5251566	545835	5165807	199.5	174.0	12.6	3.4
(WP21)						

 Table 4: Sheared Nipissing Gabbro Samples

b) On claim 4229446 samples WP113 (547469E-5168692N) and WP117 (547481E-5168763N) were collected. The rock is most likely a quartz (silica) and iron carbonate altered Nipissing gabbro with trace disseminated sulphides occurring proximal to the contact with the Huronian sediments. This area is now known as the Fe-Carb Alteration Zone. Assays are still pending.

2015: Randy Stewart and Brian Wright focused on outlining the relationship between the Nipissing gabbro, Huronian sediments and sulphide mineralization on claims 1230296 and 4271852. The 2015 program was designed to map and sample the possible strike extent of the area outlined in 2014 on claim 4271852 known as the Swamp Showing. In the 2015 program the areas east, west and north of the Swamp Showing were mapped and sampled. 10 samples were collected. Assays are still pending.

2015: North American Palladium. CGG performed a HELITEM electromagnetic and magnetic airborne geophysical survey over several claim blocks which included the

Janes and Janes South Properties. Several significant HELITEM EM anomalies were recognized and recommended for future follow-up. A follow-up reconnaissance geological mapping, prospecting and sampling program was performed. A total of 21 samples were collected but were never analyzed.

4.0GEOLOGY

4.1 Regional Geology

(Much of this section was taken and adapted from Easton (1998))

The Janes and Janes South properties are in the Southern Province near the southern margin of the Cobalt Embayment. The properties are underlain by rocks of the Nipissing gabbro and Huronian Supergroup (Fig 3).

The Southern Province in Ontario stretches from Lake Superior east to Sudbury and northeast to the Ottawa River and Cobalt (Bennett et al. 1991). In the east, it consists of Paleoproterozoic metasedimentary and metavolcanic rocks of the Huronian Supergroup and gabbroic intrusions of the Nipissing diabase suite. In the west, in addition to the Huronian Supergroup and the Nipissing Suite, it contains rocks of the Sudbury Igneous Complex and the Whitewater Group. Also, included in the Southern Province are Mesoproterozoic plutonic and minor volcanic rocks of the Killarney Magmatic Belt. The latter belt is transected by the Grenville Front, so that Killarney Magmatic Belt rocks occur in both the Southern and Grenville Provinces. Also, present in the Southern Province are anorogenic plutonic rocks emplaced between 1.5 and 1.45 Ga. The Southern Province is also cut by the 1.24 Ga Sudbury diabase dyke swarm (Krogh et al., 1988 and Osmani, 1991).

The Huronian Supergroup was deposited unconformably on 2.8-2.5 Ga Archean plutonic and supracrustal rocks of the Superior Province. Locally, a paleoweathering surface is preserved at the unconformity, particularly in the Thessalon and Elliot Lake areas (Bennett et al. 1991). The maximum age of Huronian deposition is constrained between 2.45 Ga, the minimum age of the Copper Cliff rhyolite and the 2.477 Ga Murray granite (Krogh et al. 1984, 1996) and was complete by 2.22-2.21 Ga, the age of the Nipissing diabase suite (Corfu and Andrews 1986, Noble and Lightfoot 1992).

The Huronian Supergroup is subdivided into four groups, the Elliot Lake, Hough Lake, Quirke Lake and Cobalt Groups. The lowest unit, the Elliot Lake Group consists of both metavolcanic and metasedimentary rocks. In the Sault Ste. Marie area, the lowest unit is

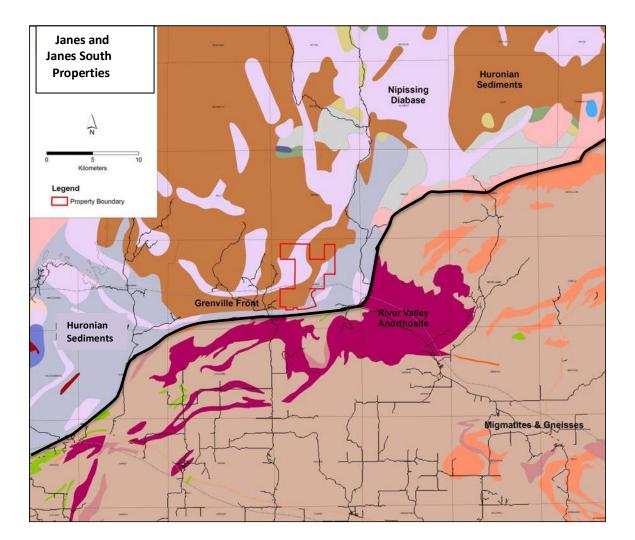


Figure 3: Regional Geology

the arkosic Livingstone Creek Formation, which is overlain by mafic and felsic volcanic rocks of the Thessalon Formation. Mafic rocks of the Thessalon Formation are continental

tholeiites (Jolly, 1987). In contrast, in the Sudbury area, the volcanic units are thicker, contain more felsic members, and lie beneath the sedimentary rocks (Bennett et al. 1991). Three main volcanic units are present in the Sudbury area: 1) tholeiitic basalts of the Elsie Mountain Formation, 2) evolved tholeiitic basalts, dacites, and metasediments of the Stobie Formation, and 3) dacites and rhyolites of the ca. 2.45 Ga Copper Cliff Formation, which may be coeval with the Murray and Creighton granites. These volcanic units interfinger with, and are overlain by the Matinenda Formation in the west and the McKim Formation in the east (Bennett et al. 1991). Volcanic rocks of the Thessalon Formation have received greater study, particularly their geochemistry, than have the volcanic rocks of the Sudbury area. Huronian-age felsic volcanic rocks have not been previously reported east of Sudbury, although Lumbers (1973) assigned deformed mafic volcanic rocks, in addition to some possible felsic volcanic rocks, was verified by Easton et al. (1996), who assigned them to the Stobie Formation. Huronian-age felsic plutonism, represented by the Murray and Creighton granites, has only been reported from the Sudbury area.

At the base of the Huronian Supergroup in the Elliot Lake, Agnew Lake and Sudbury area occur several layered mafic intrusions (gabbro to anorthosite) referred to as the East Bull Lake intrusive (EBLI) suite (Peck et al. 1993) (Fig 4). These bodies have been dated at 2.491-2.475 Ga (Krogh et al. 1984, Heaman 1995), and appear to be slightly older than the rocks of the Elliot Lake Group.

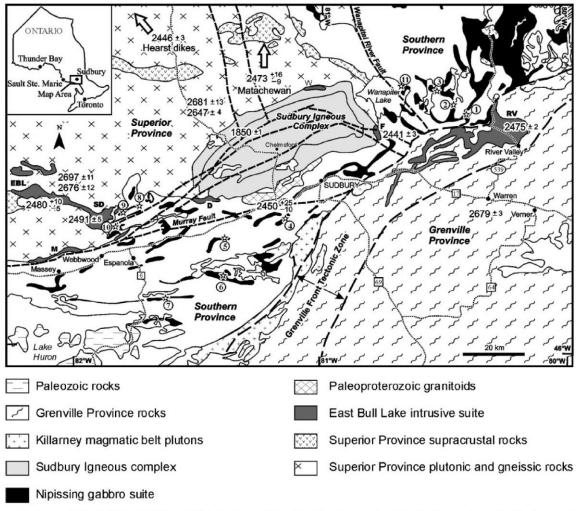
The three groups overlying the Elliot Lake Group consist of three sedimentary cycles of conglomerate, mudstone, siltstone or carbonate, capped by cross-bedded sandstone (Bennett et al. 1991). These three sedimentary groups have been best studied in the Elliot Lake-Espanola area (see references in Bennett et al. 1991). Conglomerate units (Ramsey Lake, Bruce and Gowganda Formations) in each of the cycles have been interpreted as being glaciogenic in origin (e.g. Junnila and Young 1995, Fralick and Miall 1989), likely deposited in a marine environment adjacent to an ice shelf. The siltstone and sandstone units are interpreted to represent deposition during warmer intraglacial or post-glacial periods in either fluvial or marine environments (e.g. Junnila and Young 1995, Fralick and

Miall 1989). Part of the evidence for climatic regimes is geochemically-based (e.g. Nesbitt and Young 1982, Fedo et al. 1997b), with the glaciogenic units having a higher percentage of unweathered rock debris compared to the units deposited in the post-glacial intervals.

The Huronian Supergroup is interpreted to represent a Wilson cycle, starting from a rifting phase represented by the Elliot Lake, Hough Lake and Quirke Lake groups, followed by a passive margin sequence (Cobalt group), and finally, a continent-arc collision between the Superior–Southern Province and the Wisconsin Magmatic Arc Terrane (e.g. Young 1983, Hoffman, 1989, Bennett et al. 1991). This collision event at ca. 1.89-1.85 Ga, termed the

Penokean orogeny, is believed to be responsible for most of the metamorphism and deformation present within the Huronian Supergroup. The scale and intensity of the Penokean orogeny has been the subject of recent debate (Davidson et al. 1992, Card 1992), in part because the Penokean orogeny has no associated plutonism in Ontario. The tectonic event/setting responsible for intrusion of the Nipissing suite intrusions at ca. 2.22 Ga is currently poorly understood.

The Sudbury Igneous Complex (SIC) was emplaced at 1.85 Ga (Krogh et al. 1984) (Fig 4). The SIC is of major economic importance, as it hosts the Ni-Cu ores mined at Sudbury since the turn of the century. The SIC consists of a lower, ore-bearing sublayer, a main mass of norite, and an upper granophyre (e.g. Dressler et al. 1991). These rock units outline a synformal basin, the Sudbury structure, occupied by clastic rocks of the Onaping Formation, which are in turn overlain by shales and greywackes of the Whitewater Group (e.g. Dressler et al. 1991). The Sudbury structure has been variously interpreted as originating from impact, impact-induced plutonism and volcanism, and volcanism (see reviews in Pye et al. 1984). Associated with the Sudbury structure are a series of brecciated rocks, termed the Sudbury breccias (e.g. Dressler et al. 1991). These breccias consist of randomly oriented blocks of country rock in a fine-grained, pseudotachylite matrix. The breccias occur up to 200 km from Sudbury, but are most abundant near the Sudbury



1: Janes; 2: Davis-Kelly; 3: Kelly; 4: Makada Lake; 5: Louis Lake; 6: Lac Panache; 7: Casson Lake; 8: Big Swan; 9: O'Brien; 10: Shakespeare intrusion

1 Regional geology of the Superior, Southern and Grenville provinces in the Sudbury area,¹¹ illustrating the locations of selected mineralised Nipissing gabbro intrusions: the East Bull Lake suite of intrusions are also shown (RV: River Valley; D: Drury; W: Wisner; F: Falconbridge; SD: Shakespeare-Dunlop (Agnew); EBL: East Bull Lake; M: May)

Figure 4: Regional Setting (after Sproule, 2007)

structure. To date, metamorphosed equivalents these breccias have not been identified within the Grenville Province. Reflection seismic imaging (Wu et al. 1995) reveals that the Sudbury structure is asymmetrical at depth, and in the north, it appears to represent a little-deformed, shallow-dipping slab. In contrast, structure of the SIC in the southern part of the Sudbury structure is more complex, probably reflecting increased deformation and structural imbrication (Wu et al. 1995). Card and Jackson (1995) provide an alternate interpretation of the seismic data, suggesting a synformal structure cut by faults in the south. In both interpretations, a major NE-striking imbricated fault zone is defined by the

reflection seismic imaging, establishing that thrust faulting played an important role in NW-SE shortening of the Sudbury structure.

Following the Sudbury event at 1.85 Ga, the southern part of the Sudbury structure was weakly metamorphosed, an event which also retrograded previously metamorphosed rocks of the Huronian Supergroup. In the Southern Province, a regional Na + K metasomatism and silicification event at ca. 1.7 Ga locally intensely alters rocks of the Huronian Supergroup (Meyer et al. 1990, Gates 1991, Fedo et al. 1997a). This metasomatic event may also be responsible for the retrograde metamorphism in the area, although this has yet to be demonstrated conclusively. The 1.7 Ga metasomatic event is commonly associated with faults cutting Huronian strata (e.g. Gates 1991; Easton et al. 1996). It is not known if this metasomatic event is linked to events in the Killarney Magmatic Belt, which was formed at 1.75-1.73 Ga, or results from a separate tectonic or orogenic event.

Felsic plutonism occurred at 1.5-1.45 Ga in the Southern Province and the Killarney Magmatic Belt. In the latter area, and in the Grenville Province, this event is associated with deformation and metamorphism (e.g. Ketchum et al. 1994). In contrast, this event appears to be anorogenic within the Southern Province.

The last major magmatic activity in the Southern Province occurred at 1.24 Ga, namely emplacement of the northwest-trending Sudbury diabase dike swarm. This event is noteworthy, as rocks of this dike swarm can be traced across the Grenville Front into the Grenville Front Tectonic Zone, providing an important marker horizon (e.g. Bethune 1997). Osmani (1991) states the Sudbury dike swarm (1238+/-4 Ma) lithotectonic trends in Archean and early Paleoproterozoic rocks, but are displaced by faults of the Grenville Front Tectonic Zone; hence they are younger than orogenic events in the Southern Province, but older than terminal stage docking of the Grenville Province against the Superior Province. The dike swarm appears to converge in trend towards a common point to the southeast; therefore, it is suggested that the swarm may be ascribed to a zone of spreading related to a hypothetical "Sudbury ocean" to the southeast. In an alternate explanation, the swarm may be related to the Grenville collision (Osmani, 1991).

In summary, the main tectonic events affecting the Southern Province in Ontario are:

- 1) mafic magmatism, rifting, volcanism and felsic magmatism, and continental margin sedimentation between 2.5 and 2.22 Ga,
- 2) mafic magmatism at 2.2 Ga,
- 3) Penokean orogeny at 1.89-1.85 Ga,
- 4) the Sudbury event at 1.85 Ga,
- 5) 1.75 Ga plutonism related to the Killarney Magmatic Belt,
- 6) regional K+Na metasomatism at 1.7 Ga,
- 7) felsic plutonism (and possible localized deformation) at 1.45 Ga,
- 8) continental extension and dike emplacement at 1.24 Ga
- 9) and localized effects of the Grenville orogeny at 1.0 Ga.

4.1.1 The Grenville Front Tectonic Zone (taken from Murphy, 2001)

The Grenville Front Tectonic Zone (Fig 4) forms the northernmost domain of the Grenville Province. It is a zone as much as 30 km wide and 2000 km long (in Canada); its boundaries (the Grenville Front and the Grenville Front Boundary Fault) are gradational and are defined by visible cataclastic zones, which extend into the adjacent Southern and Superior provinces.

Easton (1992) recognized three main zones within the Grenville Front tectonic zone in Ontario. In Segment 1, in the Killarney.Sudbury area, the dominant rock types are orthogneisses and minor paragneisses most likely derived from the Killarney Magmatic Belt. In Segment 2, which stretches from Sudbury to River Valley, the predominant rock types are para- and orthogneisses, as well as metagabbroic and meta-anorthositic bodies. Rocks in Segment 2 (which includes the Janes Properties) were most likely derived from the Superior and Southern provinces. Finally, Segment 3, which stretches from River Valley to the Ottawa River, consists mainly of ortho- and paragneisses most likely derived from the Superior Province.

All the rocks within the Grenville Front Tectonic Zone south and east of Sudbury have been subjected to high-grade regional metamorphism between about 1.3 and 1.0 billion years ago, (Lumbers 1971, 1975) and, thus, were converted into coarsely recrystallized schists and gneisses.

4.1.2 The Grenville Front (Ess Creek Fault) and The Grenville Front Boundary Fault

The Grenville Front (Ess Creek fault) crosses the most southern claims on the Janes South Property. The Front, in the area south and east of Sudbury, has been defined as either a metamorphic transition or a discrete fault. Easton et al. (1996) suggested that in northeastern Street Township (west of Janes Township), the Grenville Front-Wanapitei fault is coincident with the Ess Creek fault located about 1 km to the north of the Grenville Front boundary fault. The Grenville Front boundary fault separates recrystallized and migmatized gneissic rocks of the Grenville Province from recrystallized schistose rocks of the Transitional Zone (Murphy, 2001). Alternatively, the Ess Creek fault may be the eastward extension of the Murray fault; in this interpretation, the Murray–Wanapitei fault and the Grenville Front have diverged (Easton and Murphy, 2002). The Murray fault is also interpreted by some to be the northern limit of the Great Lakes tectonic zone (Muir, 1984 and Lightfoot, 1996).

4.1.3 Nipissing Gabbro (taken from Jobin-Bevans, 2009)

Regionally, although many of the Nipissing gabbro intrusions have been somewhat metamorphosed and deformed, some of the intrusions are thought to have retained their primary morphologies, as reflected by the current outcrop patterns. These patterns include tabular intrusions, open-ring structures, and massive, irregular shaped bodies, and are interpreted to represent four main morphologies (Jambor 1971; Buchan et al. 1989): 1) undulating sills and dikes; 2) concordant homogeneous sills; 3) cone sheets or ring dikes; and 4) lopolith-like or thick, stock-like bodies. Horst-and-graben structures (block-faulting) also appear to play a major role in determining the stratigraphic level of a gabbro body, particularly in the areas southwest, south and east of Sudbury.

Many of the Nipissing gabbro intrusions are less than 1000 m thick and occur as roughly horizontal sheets, as undulating sills (basins and arches) or as sub-vertical dikes (Hriskevich 1968; Jambor 1971; Conrod 1988, 1989). Disseminated to massive Cu-Ni-PGE sulphide mineralization, in these types of intrusions, is concentrated within the basin or limb portions, whereas pods of dominantly massive pyrrhotite occur within the arches. Much of the mineralization is associated with an orthopyroxene gabbro unit which is, in general, greater than 100 m in thickness (Lightfoot and Naldrett 1996; Jobin-Bevans et al. 1998, 1999). Arcuate and open-ring exposures of Nipissing Gabbro, described by Buchan et al. (1989) as cone sheets, comprise a third form of intrusion. These forms are distinguished by structural features in surrounding sedimentary rocks that suggest the gabbro intrusions were emplaced as shallow ($< 50^{\circ}$), inward-dipping, cone-shaped bodies that are tens of metres to several hundred metres thick (Jambor 1971; Lovell and Caine 1970; Jobin-Bevans et al. 1998).

These types of intrusions contain disseminated and blebby sulphides hosted in orthopyroxene gabbro, occurring within a few hundred metres of the basal contact of the intrusions. The fourth type of intrusion, the lopolithic-like form (i.e., saucer-shaped), is rare and is interpreted to represent deeper "feeder" systems to the stratigraphically higher sill, dike and cone-sheet type of intrusions. These deeper exposures, which are fault bound on a regional scale, are thought to have been exposed through uplift along the bounding fault lines (Dressler 1979; Innes and Colvine 1984; Jobin-Bevans et al. 1998). In the lopolithic-like form, disseminated, semi-massive and massive sulphide mineralization is hosted by orthopyroxene gabbro within tens of metres of the footwall sedimentary rocks, and within topographic irregularities along the footwall contact.

Geochemical characteristics of Nipissing gabbro intrusions have been described by several authors including Jambor (1971), Card and Pattison (1973), Conrod (1989), Rowell and Edgar (1986) and Lightfoot and Naldrett (1996). Rocks from the intrusions are dominantly tholeiitic and sub-alkalic, with evolved rock types and differentiated intrusions trending toward calc-alkalic affinities (Lightfoot and Naldrett 1996).

Based on the geochemical characteristics outlined above, and on outcrop patterns, the Nipissing gabbro may represent the intrusive portion of an eroded continental flood basalt. Magmas apparently cut through Archean basement rocks and sedimentary rocks of the Huronian Supergroup as dikes, then spread laterally through the Huronian rocks as sills (Lightfoot et al. 1986, 1987; Lightfoot and Naldrett 1996).

4.2 Property Geology (after Jobin-Bevans (1998), Easton (1998) and Butler (2009))

The Janes and Janes South properties are underlain by Nipissing gabbro and sediments of the Huronian Supergroup (Fig. 5).

The Nipissing gabbro has inward-dipping lower contacts that might define an original lopolith. Called the Chiniguchi River intrusion, this Nipissing body hosts Ni-Cu- PGE mineralization at the Main Trench (Photo 1). Irregularities in an undulating footwall contact may be of consequence in the localization of mineralization. Previous mapping has shown a crude change from fine-grained gabbro to the west to a medium-grained hypersthene gabbro, medium-to coarse-grained leucocratic gabbro and coarse-grained to pegmatitic and vari-textured gabbro in the east. Gabbro units to the east contain more modal quartz. Furthermore, hypersthene gabbro, the host rock to much of the known mineralization is recognized in outcrop to occur within ~150 m of the basal contact with Gowganda Formation sediments and the hypersthene gabbro occurs within ~75 to 100 m of the basal contact. All units show the effects of greenschist facies regional metamorphism. Metamorphic mineral assemblages in Nipissing gabbro on the properties include chlorite, albite, epidote and saussurite after plagioclase as well as chlorite and actinolite after pyroxene - these effects are more obvious in leucocratic phases. Minor biotite occurs in some gabbro but it is uncertain whether the mineral is a primary magmatic or a secondary metamorphic phase. The Nipissing gabbro rocks are massive to locally deformed and altered near the Grenville Front.

A large portion of the property is underlain by Cobalt Group rocks. The Group is divided into two major units: the Gowganda Formation (the most prominent rock type on the



Photo 1: Disseminated Sulphide Mineralization of the Main Trench

properties), and the Lorrain Formation (occurs to the west of the properties). These rest unconformably on (and locally truncate) earlier strata of the Hough Lake Group, and can be found directly overlying Archean basement north of the Sudbury Basin. The Gowganda Formation is characterized by a heterogeneous sequence of framework- and matrix supported conglomerate (including diamictites), sandstone, siltstone and mudstone with marked vertical and lateral facies changes. Regionally, matrix-supported conglomerates and laminated mudstones with dropstones are more abundant at the base of the sequence. Interbedded sandstone and mudstones are more common in the upper parts of the formation. Conglomerate units (Ramsey Lake, Bruce and Gowganda Formations) in each of the cycles have been interpreted as being glaciogenic in origin (e.g. Junnila and Young 1995, Fralick and Miall 1989), likely deposited in a marine environment adjacent to an ice shelf. The siltstone and sandstone units are interpreted to represent deposition during warmer intraglacial or post-glacial periods in either fluvial or marine environments (e.g.

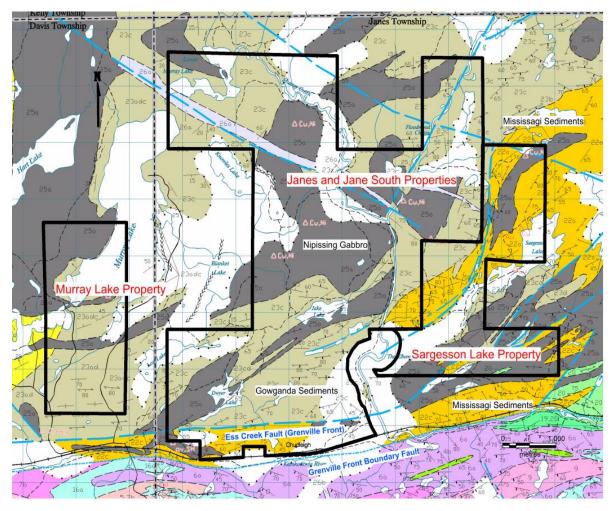


Figure 5: Property Geology (after Easton, 2001)

Junnila and Young 1995, Fralick and Miall1989). Part of the evidence for climatic regimes is geochemically-based (e.g. Nesbitt and Young 1982, Fedo et al. 1997b), with the glaciogenic units having a higher percentage of unweathered rock debris compared to the units deposited in the post-glacial intervals. The basal sequence (Coleman member) was deposited beneath a continental ice sheet, while the upper sequence (Firstbrook member) represents a prodeltaic facies equivalent of the Lorrain Formation (Long and Leslie 1986).

Only a minor portion of the properties are underlain by Mississagi formation rocks of the Hough Lake Group. The Hough Lake Group basal contact is an erosional discontinuity that can be traced throughout the region and may represent a major sequence boundary. The Mississagi Formation is between 1600 and 3400 m thick and has a patchy distribution in

the southern Cobalt Embayment due to erosion beneath younger formations, and significant relief at the base of the formation (Long 1987). It is characterized by mediumto coarse-grained sandstone of arkosic to subarkosic composition. Conglomeratic and argillitic strata are present locally near the base of the formation north of Lake Wanapitei, where the formation can be divided into an upper (sandstone dominated) and lower (conglomerate bearing) member (Long 1976, 1978, 1987). The formation is predominantly fluvial in origin, and was deposited from shallow braided rivers that flowed from a series of tributary basins in the Cobalt Embayment (Long 1987). These rocks consist mostly of quartz sandstone and arkose. On the southern portion of the Janes South Property the rocks consist of para-gneisses and schists and are located just south of the Ess Creek fault (Grenville Front) within the transition rocks of the Grenville Front Tectonic Zone. These rocks have been interpreted by Dressler (1979) to be Mississagi Formation and the recent mapping confirms a sedimentary (conglomerate) parentage.

Late NW-striking olivine diabase dike, part of the Sudbury dike swarm, crosses the Janes and Janes South properties. The dikes are generally 15 to 30 m thick and are most abundant in the Sudbury area. They dip vertically, weather recessively, and are generally

marked by narrow linear valleys. Most of the dikes are olivine tholeiites, and composed of plagioclase (60%), olivine (15%), titaniferous augite (12%), magnetite-ilmenite (5 to 10%); with minor amounts of chlorite and biotite. The dikes are medium to coarse grained, with ophitic to subophitic textures. (Osmani, 1991). These dikes are thought to follow important major regional structures.

5.0 2016 PROGRAM

5.1 Methods

In 2016 a reconnaissance geological mapping, prospecting and sampling program on the Janes and Janes South properties was completed. The 29-day program occurred between June and December, 2016.

The focus of the program was the ground truthing of HELITEM EM anomalies outlined from a previous airborne geophysical survey performed for North American Palladium Ltd. in 2015. A total of 11 samples were collected. The analytical results will be presented in a separate report.

6.0 RESULTS and CONCLUSIONS

The main rock types mapped and sampled during the 2016 program were Nipissing gabbro, Gowganda conglomerate/greywacke, granite para-gneiss (Mississagi rocks) and Olivine Diabase. A total of 11 samples were collected and are described in Table 4.

The most significant results were the discovery of a mineralized mafic dike (sample WP1017), on claim 4229380, associated with a broad EM anomaly and two previously unrecognized shear zones on claims 4255834 and 4229380.

Sample	Easting	Northing	Description				
WP1003	548085	5166051	Granite Gneiss, stretched and altered sediment				
			(Mississagi congl?), abnt stretched clasts, abnt				
			bio+fspar+qtz, pink weathering				
WP1017	547196	5166132	Mafic Dike, sheared and alt Nip Gb/ amphibolite? 1-				
			2% diss sulphides, non-mag, Gb weathered texture,				
			tear drop shaped pegmatite clast with rectangular qtz				
			crystal				
WP1030	546229	5166064	Gowganda GW/Congl, siliceous				
WP1039	546047	5166322	Gowganda GW/Congl, loc granitic clasts				
WP1041	545860	5166194	Gowganda GW/Congl, loc qtz + qtzite clasts, 0.5%				
			diss sulphides				
WP1102	546723	5166938	Gowganda GW/Congl, large subang 10-12cm granitic				
			dropstones, tr sulphides				
WP1122	547469	5168688	Alteration Zone, qtz+fe cb alt Nip Gb, tr diss				
			sulphide, proximal to Huronian seds contact				
WP1250	546482	5171095	Ol Gb Dike, mag, rusty crusty weathering				
WP1247	546618	5171168	Nip Gb, med gr, weakly mag				
WP1258	546564	5171163	Argillite, black, aphanitic, tr-0.5% sulphides,				
			nonmag, bedded/jointed				
WP1354	547184	5171222	Mineralized Nip Gb, blebby cpy+po				

Table	5.	2016	Sample	Locations	and	Descriptions
1 4010	\mathcal{I} .	2010	Sampie	Locations	anu	Descriptions

7.0 RECOMMENDATIONS

The following recommendations can be made based on the 2016 program on the Janes and Janes South Properties:

- Detailed mapping and sampling of the two newly discovered shear zones and mineralized mafic dike
- Reconnaissance mapping and sampling of all remaining HELITEM EM anomalies
- Line cutting and ground EM on selected airborne EM targets followed by diamond drilling of select anomalies

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Appendix I

Statement of Qualifications

I, Randy I. Stewart, B.Sc. of 213 Kingsmount Boulevard, Sudbury, Ontario, P3E 1L1, do hereby certify that:

I graduated from the Mining Engineering Technician program at Cambrian College of Applied Arts and Technology, Sudbury, Ontario, in 2002.

I graduated with a Bachelor of Science Degree (Honours) in geology in 1991 from the University of Waterloo, Waterloo, Ontario.

Randy Irwin Stewart

December 20, 2016 Sudbury, Ontario

Statement of Qualifications

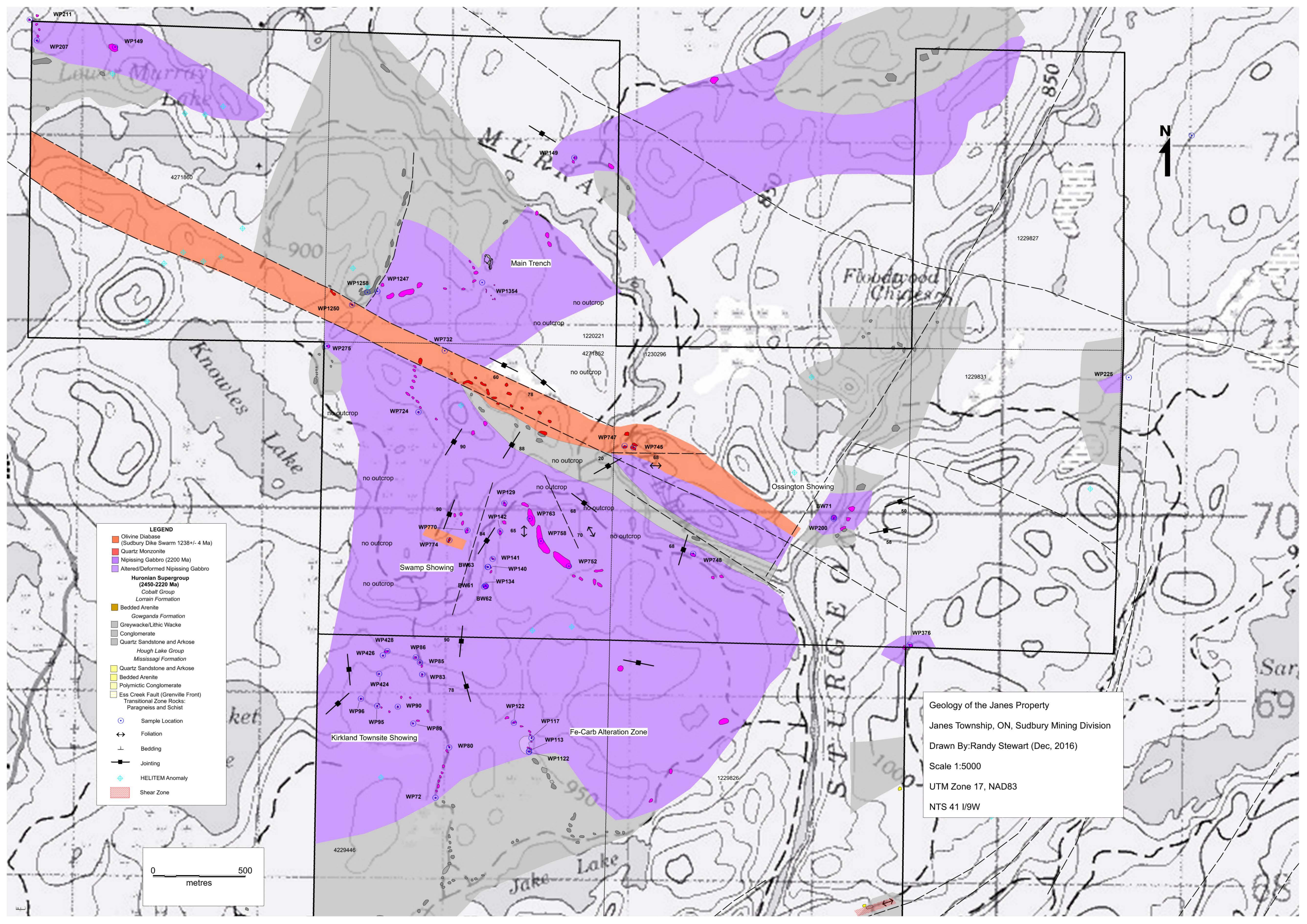
I, Brian James Wright, of 92 Main Street, Markstay, Ontario, POM 2G0, do hereby certify that:

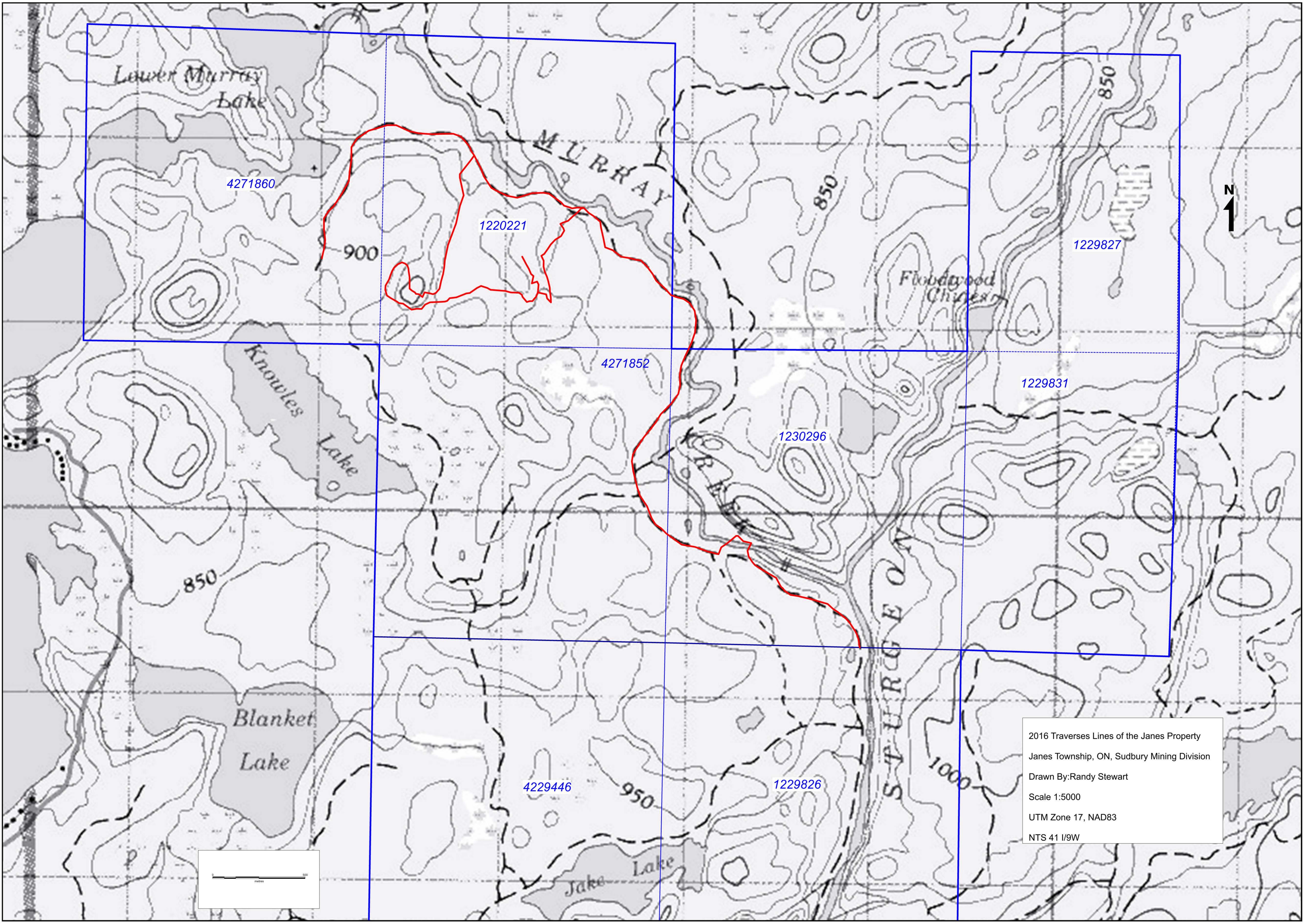
I am a Geological Technologist receiving my education from Haileybury School of Mines.

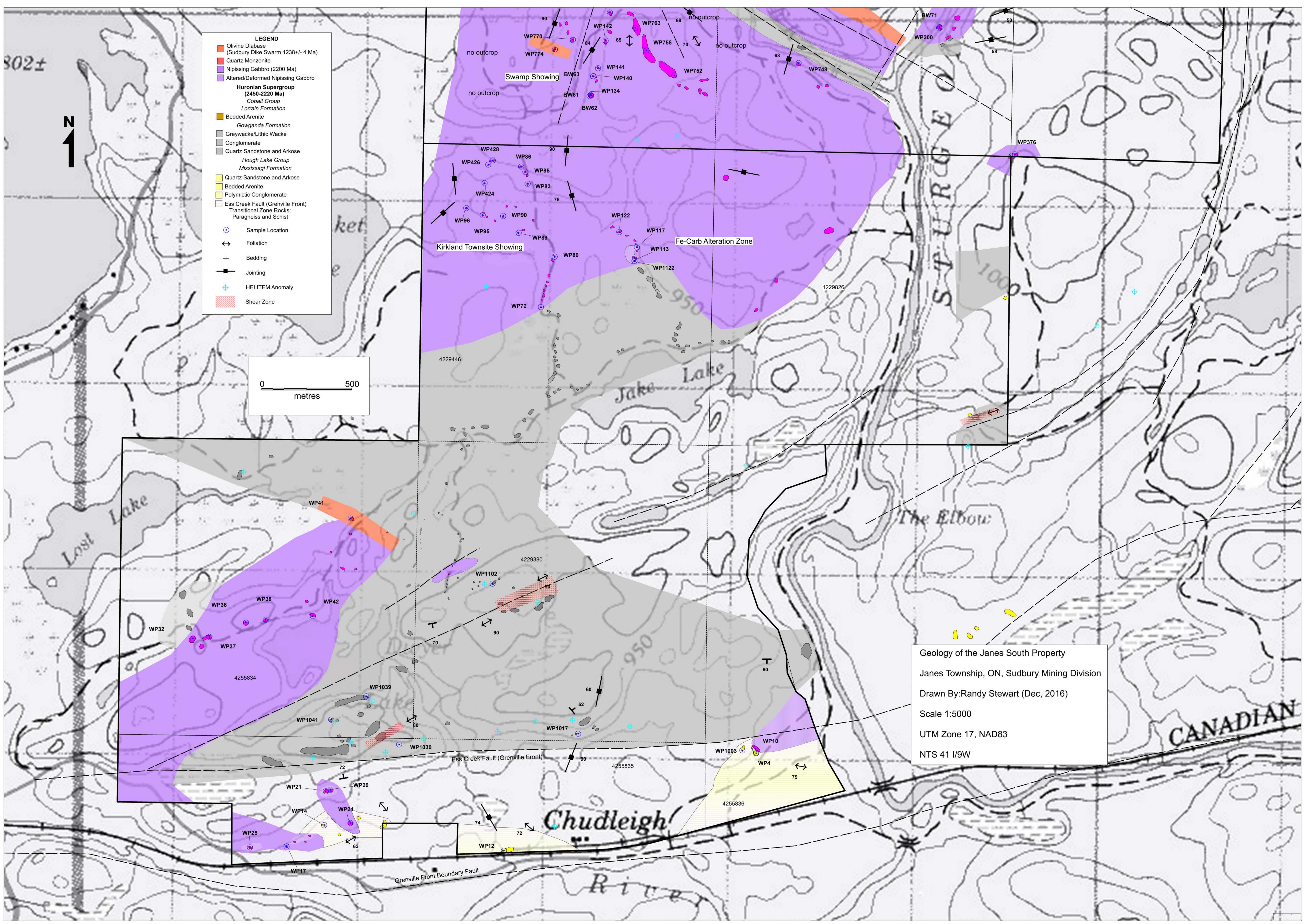
I have been actively involved in Mining and Exploration for over 30 years.

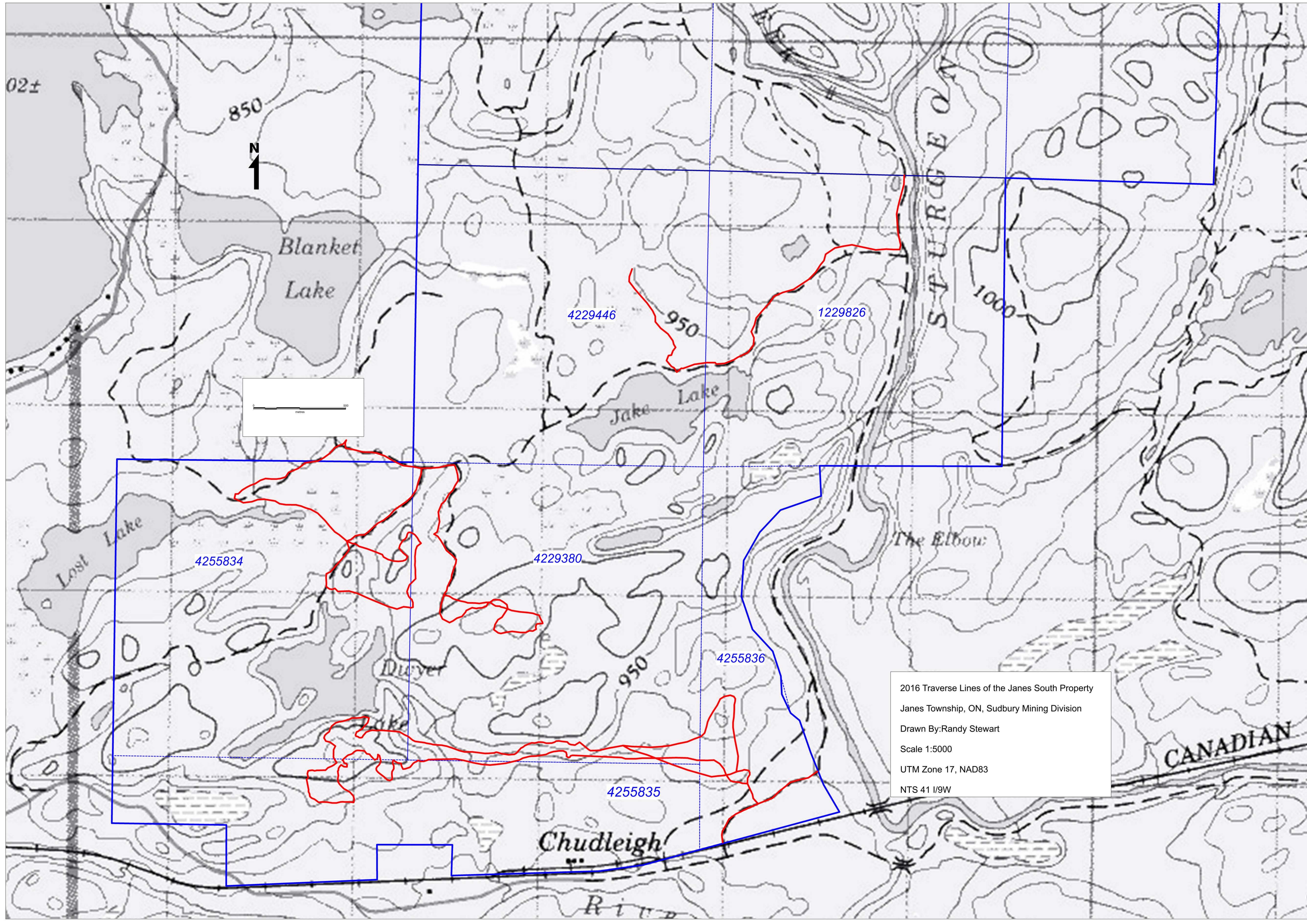
Brian James Wright

December 20, 2016 Markstay, Ontario









2016 Janes/Janes South Daily Log

2016	Personnel	Task	Claim	Samples	Targets and Objectives
05-Jun	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	1220221	WP1247	HELITEM Anomalies/Main Trench Showing
06-Jun	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	1220221	WP1258	HELITEM Anomalies/Main Trench Showing
07-Jun	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	1220221	WP1250	HELITEM Anomalies/Main Trench Showing
23-Jul	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	1220221		HELITEM Anomalies/Main Trench Showing
24-Jul	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	1220221		HELITEM Anomalies/Main Trench Showing
30-Jul	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	1220221	WP1354	HELITEM Anomalies/Main Trench Showing
31-Jul	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	1229826		Huronian-Gabbro Contact
01-Aug	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	1229826		Huronian-Gabbro Contact
02-Aug	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	1229826		Huronian-Gabbro Contact
10-Aug	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4255836	WP1003	HELITEM Anomalies/Ess Creek Fault Zone
11-Aug	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4255836		HELITEM Anomalies/Ess Creek Fault Zone
18-Aug	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4229380	WP1017	HELITEM Anomalies
19-Aug	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4229380		HELITEM Anomalies
20-Aug	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4229380		HELITEM Anomalies
26-Aug	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4229380		HELITEM Anomalies
27-Aug	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4229380	WP1102	HELITEM Anomalies
28-Aug	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4229380		HELITEM Anomalies
06-Sep	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4255835	WP1030	HELITEM Anomalies
07-Sep	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4255835		HELITEM Anomalies
08-Sep	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4255835		HELITEM Anomalies
15-Sep	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4255835		HELITEM Anomalies
16-Sep	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4255835		HELITEM Anomalies
17-Sep	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4255834	WP1039	HELITEM Anomalies
25-Sep	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4255834		HELITEM Anomalies
26-Sep	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4255834		HELITEM Anomalies
27-Sep	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4255834	WP1041	HELITEM Anomalies
03-Oct	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4255834		HELITEM Anomalies
04-Oct	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4229446	WP1122	Huronian-Gabbro Contact/Fe-Carb Alt Zone
05-Oct	Randy Stewart and Brian Wright	Mapping/Prospecting/Sampling	4229446		Huronian-Gabbro Contact/Fe-Carb Alt Zone
08-Dec	Randy Stewart	Report Writing	All		
09-Dec	Randy Stewart	Report Writing	All		
29-Dec	Randy Stewart	Report Writing	All		
30-Dec	Randy Stewart	Report Writing	All		

Rock Type	WP	Easting	Northing	El(m)	Description	Fol	Jointing	Bding
n/a	1001	547949	5166026	257	Logging set up area			
Arg float	1002	548068	5166397	276		110/90		
Granite Gneiss	1003	548085	5166051	267	SAMPLE. Pinkish weathering, poss abnt stretched clasts, strected and alt sed, abnt bio+fspar+qtz			
Granite Gneiss	1004	548089	5166069	268	Pinkish weathering, poss abnt stretched clasts, strected and alt sed, abnt bio+fspar+qtz, same o/c as 1003			
Granite Bio Gneiss	1005	548145	5166058	262	Previously mapped, fg massive, abnt bio			
Granite Bio Gneiss	1006	548972	5165579	248				
Bio Gneiss	1007	549144	5165766	253				
Gneiss	1008	548964	5165747	248				
n/a	1009	546258	5166248	240	End of Road turn around spot			
GW ang float	1010	547160	5166147	283				
GW Bedded	1011	547207	5166186	302	Bedded gw/arg		190/60	310/52
GW Bedded	1012	547232	5166202	303	Bedded gw/arg, same oc as 1011			
GW	1013	547279	5166164	275	Arkosic, pinkish weathering			
GW	1014	547292	5166157	273	Arkosic, pinkish weathering			
GW	1015	547469	5166183	261				
n/a	1016	547468	5166184	261	Alder swamp, no oc, Farm EM pick F5			
Mafic Dike	1017	547196	5166132	273	SAMPLE Sheared, alt Nip Gb?, amphibolite?, 1-2% diss sulphides, Gb weathered texture, tear drop shaped peg?clast with rect qtz crystal		20/90	
GW	1018	547187	5166131	276			20,00	
GW	1010	547164	5166124	275				
n/a	1015	546973	5166196	294	Rounded boulder slope, EM pick area			
n/a	1021	546880	5166133	272	Rounded congl boulder			
GW	1021	546488	5166178	272	Massive in creek bed			
n/a	1022	546394	5166191	284	Road end of traverse			
n/a	1023	546014	5165864	267	T in road			
GW/Congl	1024	546279	5166047	295	Large o/c, top of ridge, matrix supported sil gw congl			
GW/Congl	1025	546269	5166077	298	Edge of 1025			
GW/Congl	1020	546250	5166080	300	Edge of 1025 Edge of 1025, 0.5% diss cubic sulphide			
GW/Congl	1027	546225	5166094	305	Edge of 1025, 0.5% diss cubic sulphide			
GW/Congl	1028	546225	5166048	302	Edge of ridge, rusty weathering,crude bedding			65/70
		546229	5166064	302				05/70
GW/Congl GW/Congl	1030 1031		5166064	305	SAMPLE, Sil gw/congl			
		546142	5166022	292	Edge of new o/c, large o/c, tr-0.5% diss sulphides, loc rusty weathering	-		
n/a	1032	546156			Anomaly, no o/c, boulder ob	<u>co/00</u>		
Sheared GW	1033	546125	5166095	311	Edge of 1031	60/80		
Sheared GW/Congl	1034	546115	5166105	316	Loc clasts of qtz + qtzite, loc cren fol, extensive rusty crust weathering (Fe-Cb?0			
GW/Congl	1035	546069	5166143	329	N edge of o/c			
GW/Congl	1036	546020	5166229	322	Mass			
GW/Congl	1037	546062	5166271	315	Mass, loc 3cm gr clasts			
n/a	1038	546083	5166324	312	Overburden			
GW/Congl	1039	546047	5166322	312	SAMPLE large o/c, mass, loc gr clasts			
GW/Congl	1040	545912	5166293	312	Edge of 1039			
GW/Congl	1041	545860	5166194	323	Sample, loc qtz + qtzite clasts, 0.5% diss sulphides			
GW/Congl	1042	545887	5166189	328	Small o/c			

Rock Type	WP	Easting	Northing	El(m)	Description	Fol	Jointing	Bding
GW/Congl	1043	545902	5166107	326	Small o/c			· · · · · ·
GW/Congl	1044	545920	5166078	325	Small o/c			
GW/Congl	1045	545935	5166056	327	Mass, large ridge			
GW/Congl	1046	545976	5166056	322	Small ridge			
GW/Congl	1047	545950	5166092	328	0.5% diss sulphides			
GW/Congl	1048	545930	5166009	314	Cliff edge			260/72
n/a	1049	545767	5165995	309	No o/c			
GW/Congl	1050	545762	5166016	312	Cliff face			
Nip Gb	1051	545862	5165816	278	Alt and sheared gabbro, on road			
n/a	1052	545943	5165446	253	Rail bed and boulder road			
Ol Dia	1053	545959	5167276	267	As WP41 Massive gb, very mag, med-cr grained			
Nip Gb	1054	545951	5167198	298	Med gr, large o/c, non mag			
Ol Dia	1055	546151	5167209	291	Loc very mag, possibly dike			
GW	1056	546240	5167171	299	Sil, dark grey, 0.5% diss cubic sulphides			
GW	1057	546289	5167196	299	Sil			
GW	1058	546248	5167258	300	Sil			
GW	1059	546243	5167241	299	Sil, loc epi=kspar alt veinlets			
GW	1060	546350	5167281	287	O/c on edge of swamp, sil, pinky orange weathered crust			
n/a	1061	546361	5167268	289	Good trail heads south			
GW	1062	546333	5167232	292	Sil, on trail			
GW	1063	546328	5167201	294	Sil, on trail, same o/c as 62			
GW	1064	546331	5167175	296	Sil, on trail			
GW	1065	546330	5167153	296	Sil, on trail			
GW	1066	546334	5167125	296	Sil, on trail, same o/c as 65			
GW	1067	546305	5167042	292	End of trail, sil GW matrix with subang clasts of gr and mafic, poss flame strutures, loc ghost clasts			
Gw	1007	540505	5107042	292	poss ripped up sil beds, loc bedding, possible tops at 320, photos			210/?
GW	1068	546293	5167020	292	End of trail, sil GW matrix with subang clasts of gr and mafic, poss flame strutures, loc ghost clasts			
GW	1068	546293	510/020	292	poss ripped up sil beds, loc bedding, possible tops at 320, same o/c as 67			
GW	1069	546322	5166922	296	Small cliff edge of beaver pond, sil, jointed/bedded		270/70	
Qzite	1070	546271	5166924	305	Pinkish grey, fg, pinkey orange weathering			
Nip Gb	1071	545981	5167009	291	Nonmag			
Nip Gb	1072	545921	5167007	294	Nonmag			
Nip Gb	1073	545904	5167017	292	Nonmag, edge of 1072			
n/a	1074	545852	5167049	287	Road end of traverse			
Nib Gb	1075	545846	5167098	284	Nonmag			
GW	1076	545950	5167821	271	Sil, flat o/c on trail			
GW	1077	545516	5167609	266	Sil, 0.5% diss sulphides			
Qzite	1078	545349	5167500	265	Fg, pinkish weathering, grey green, large o/c close to EM			
Qzite	1079	545354	5167524	264	Fg, pinkish weathering, grey green, large o/c close to EM, edge of 1078			
No o/c	1080	545887	5167975	270	EM no o/c			
GW	1081	546549	5167662	351	Dropstone congl			
GW	1082	546467	5167476	342	Dropstone congl			
n/a	1083	546447	5167329	340	Fork in trail			
GW	1084	546427	5167317	330	15x15 o/c , Dropstone congl			
GW	1085	546447	5167310	326	Dropstone congl			

Rock Type	WP	Easting	Northing	El(m)	Description	Fol	Jointing	Bding
GW	1086	546532	5167204	328	Large o/c, possible soft sed def/bx 50-75cm wide			80/?
GW	1087	546559	5167179	328	Large o/c, possible soft sed def/bx 50-75cm wide, edge of 86			
GW	1088	546545	5167164	327	Large o/c, possible soft sed def/bx 50-75cm wide, edge of 86			
GW	1089	546553	5167178	325				
GW	1090	546517	5167063	316				
Nip Gb	1091	546504	5167033	317				
Nip Gb	1092	546504	5167030	315	Possibly sheared contact with seds	60/?		-
Nip Gb	1093	546486	5166987	315				
Qzite	1094	546478	5166956	316				
Qzite	1095	546475	5166933	318				-
Qzite	1096	546472	5166917	321				-
GW	1097	546467	5166888	324	Sil			
GW	1098	546487	5166852	327	Sil, possible peg dike			
GW	1099	546614	5166909	326	Sil, tr diss sulphides, pink to reddish rusty weathering			
GW	1100	546646	5166925	326	Sil		1	+
EM no o/c	1101	546680	5166946	328	EN anomaly, boulder pile			
GW	1102	546723	5166938	329	SAMPLE Large o/c of gowganda, large subang 10-12cm granitic dropstones, tr sulphides			-
GW sheared	1102	546767	5166833	325	Sheared/bedded GW Photo	60/90		
GW sheared	1103	546785	5166788	322	Stretched granitic clasts	60/90		
GW	1104	546829	5166792	324	Massive	00,50		
GW	1105	546860	5166797	324	Massive Massive, edge of cliff, large structure			
GW sheared	1100	546990	5166835	318	Edge of cliff			
Qtz	1107	546987	5166827	317	Qtz boulders			
2	1108	546987	5166822	315				
r CNV haddad (abaarad			5166813	315	Flat bling hadded access beyond 2 Dhates	40/45		
GW bedded/sheared	1110 1111	546989 546972	5166800	311	Flat lying, bedded poss sheared, 2 Photos	40/45		
GW laminated GW sheared	1111	547023	5166849	308	Laminated, bedded same cliff as 1110, Photo	64/90		
					Small qtz veinlet	64/90		
GW	1113	547014	5166864	316	Massive			
GW	1114	546835	5166918	329				
GW	1115	546757	5166967	332				
GW	1116	546738	5166953	333	as 1115			
GW	1117	546654	5166946	322				
GW	1118	546622	5166945	319				
GW	1119	546536	5166969	305				
n/a	1120	546495	5167003	299	End of traverse back on trail			
?	1121	547674	5168266	278				
Alt Zone	1122	547469	5168688	284	SAMPLE			
n/a	1123	547469	5168694	284	Trail			
Alt Zone	1124	547481	5168762	290	Fecb+chl alteration zone, loc qtz veining. Photo			
Alt Zone	1125	547482	5168764	290	Fecb+chl alteration zone, loc qtz veining.			
Alt Zone	1126	547482	5168771	290	Fecb+chl alteration zone, loc qtz veining.			
n/a	1132	547223	5171345	232	Main Trench edge of new stripping			
n/a	1133	547317	5171494	244	JR99-02 Sed contact trench			
n/a	1134	547312	5171507	243	JR99-03 Sed contact trench			
n/a	1135	547427	5171643	264	Main road and trench road			

convegands Congl 136 597143 5276 Scale and a strain of the strain	Rock Type	WP	Easting	Northing	El(m)	Description	Fol	Jointing	Bding
n/a 137 5 9746 5 1759 164 Trail 1 n/a 138 5 9744 15 1757 26 Trail 1 n/a 138 5 9744 15 1757 26 Trail 1 n/a 138 5 9743 15 1759 26 Trail 1 Gowgands Congl 1141 5 9733 215 1550 26 Rege of n/c 1 Gowgands Congl 1143 5 9723 5 11550 76 Rege of n/c 1 1 Gowgands Congl 1143 5 9723 5 115160 763 Rege of n/c 1 1 Gowgands Congl 1145 5 97243 5 11404 362 Trail 1	Gowganda Congl	1136	547411	5171637	265	Small o/c beside road, tr sulphides			
nA 1138 917341 917352 262 Frail nA 1140 917318 517353 266 Frail nA 1140 917318 517353 266 Frail Gowgands Congl 1141 917315 266 Segas of o/c 2 Gowgands Congl 1143 917268 256 Segas of o/c 2 Gowgands Congl 1144 91726 2517514 283 Rood and edge of sed trench 2 2 Na 1145 91726 317469 282 Frail 2 2 1 Na 1145 91728 317469 282 Frail 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 <t< td=""><td></td><td>_</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>		_							
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Mineralized Gabbro Channel 4911715472195171353258Main trench channel 49Image: Channel 50Image: Channel 51Image:	Gabbro	1170		5171304	258	Main trench cliff face and mud			
Mineralized Gabbro Channel 5111735472185171356259Main trench channelImage: Channel 53Main trench channelImage: Channel 53Main trench channelImage: Channel 53Main trench channelImage: Channel 54Main trench channelImage: Channel 54<	Mineralized Gabbro Channel 49	1171				Main trench channel 49			
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Mineralized Gabbro Channel 59 1179 547212 5171353 258 Main trench channel	Mineralized Gabbro Channel 58				259	Main trench channel			
	Mineralized Gabbro Channel 59	1180	547211	5171354	259	Main trench channel			

Rock Type	WP	Easting	Northing	El(m)	Description	Fol	Jointing	Bding
Mineralized Gabbro Channel 60	1181	547210	5171355	258	Main trench channel			
Mineralized Gabbro Channel 60	1182	547211	5171354	258	Main trench channel			
Mineralized Gabbro Channel 60	1183	547213	5171353	258	Main trench channel			
Mineralized Gabbro Channel 61	1184	547208	5171356	259	Main trench channel			
Mineralized Gabbro Channel 64	1185	547208	5171358	258	Main trench channel			
Mineralized Gabbro Channel 20	1186	547202	5171357	258	Main trench channel			
Mineralized Gabbro Channel 21	1187	547204	5171356	258	Main trench channel			
Mineralized Gabbro Channel 23	1188	547205	5171354	257	Main trench channel			
Mineralized Gabbro Channel 24	1189	547207	5171356	259	Main trench channel			
Mineralized Gabbro Channel 24	1190	547207	5171355	259	Main trench channel			
Mineralized Gabbro Channel 25	1191	547202	5171355	258	Main trench channel			
Mineralized Gabbro Channel 25	1192	547205	5171353	258	Main trench channel			
Mineralized Gabbro Channel 26	1193	547206	5171353	259	Main trench channel			
Mineralized Gabbro Channel 28	1194	547204	5171353	258	Main trench channel			
Mineralized Gabbro Channel 29	1195	547207	5171352	259	Main trench channel			
Mineralized Gabbro Channel 32	1196	547207	5171350	258	Main trench channel			
Mineralized Gabbro Channel 33	1197	547211	5171350	259	Main trench channel			
Mineralized Gabbro Channel 35	1198	547210	5171349	258	Main trench channel			
Mineralized Gabbro Channel 36	1199	547210	5171349	257	Main trench channel			
Mineralized Gabbro Channel 38	1200	547210	5171347	258	Main trench channel			
Mineralized Gabbro Channel 39	1201	547209	5171348	258	Main trench channel			
Mineralized Gabbro Channel 40	1202	547212	5171348	257	Main trench channel			
Mineralized Gabbro Channel 41	1203	547211	5171350	257	Main trench channel			
Mineralized Gabbro Channel 42	1204	547213	5171348	257	Main trench channel			
Mineralized Gabbro Channel 43	1205	547214	5171348	257	Main trench channel			
Mineralized Gabbro Channel 45	1206	547215	5171347	256	Main trench channel			
Mineralized Gabbro Channel 48	1207	547216	5171347	256	Main trench channel			
Mineralized Gabbro Channel 48	1208	547216	5171346	256	Main trench channel			
Mafic Dike	1209	547218	5171347	257	Main Trench fg mafic dike, striking 160 deg			
DDH	1210	547220	5171288	259	DDH 40			
DDH	1211	547244	5171264	264	DDH 50 deg			
DDH	1212	547244	5171265	264	DDH 80 deg			
Gowganda Congl	1213	547315	5171528	261	Edge of trench and road			
Nip Gb	1214	547475	5171600	259	Med-c gr gb, massive whale back blob			
Nip Gb	1215	547536	5171478	257	Med-c gr gb, massive blob			
Nip Gb	1216	547546	5171431	257	Med-c gr gb, massive blob			
GW	1217	548361	5169846	247	Flat lying, right on rivers edge			
Nip Gb	1218	548493	5169654	270	On road, previously mapped?			
n/a	1219	548773	5169516	251	Main road and possible skidder trail			
Gowganda Congl	1220	548926	5169147	247	Pinkey weathered, large o/c			
n/a	1221	548935	5168906	244	Main road and old main road			
n/a	1222	548671	5168905	257	Main road and double pic road			
Nip Gb	1223	548535	5168860	266	Large o/c			
Nip Gb	1224	548231	5168592	272	Large o/c			
Nip Gb	1225	548133	5168430	272	Large o/c			├───┦
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Rock Type	WP	Easting	Northing	El(m)	Description	Fol	Jointing	Bding
Argillite	1226	547985	5168257	274	Fg/aphanitic black, massive			
Argillite	1227	547958	5168255	2741	Fg/aphanitic black, massive			
Argillite	1228	547946	5168263	275	Fg/aphanitic black, massive			
Argillite	1229	547895	5168260	275	Fg/aphanitic black, massive			
Argillite	1230	547828	5168250	276	Fg/aphanitic black, massive			
Argillite	1231	547765	5168236	279	Fg/aphanitic black, massive			
Argillite	1232	547754	5168235	278	Fg/aphanitic black, massive			
Argillite	1233	547715	5168233	280	Fg/aphanitic black, massive			
Argillite	1234	547703	5168238	279	Fg/aphanitic black, massive			
Argillite	1235	547737	5168203	214	Fg/aphanitic black, massive, on lake shore			
Road	1236	546812	5171892	214	Main Road and logging road			
GW	1237	546755	5171818	222	Whale back o/c, gw loc sulphide burns			230/?
GW	1237	546755	5171799	225	Edge of 1237			2307.
GW	1230	546777	5171704	229	GW o/c follows trail			
GW	1235	546758	5171647	236	Same o/c as 968, massive jointed gb			
GW	1240	546738	5171552	230	GW along trail			
GW	1241	546696	5171332	235	GW			
GW	1242	546680	5171353	237				
GW					GW cliff folowing trail, swamp on Gb side, possible structure			
	1244	546669	5171310	237	Same o/c as 1243			
Nip Gb	1245	546644	5171205	249	Non mag			
Gowganda Congl	1246	546602	5171172	261	Cliff Face, Guzzou's rock			
Nip Gb	1247	546618	5171168	260	SAMPLE, weakly mag med gr		420/75 60/00	
Nip Gb	1248	546602	5171124	259	Blob, m gr, loc more finer grained mafic sections, possibly following joints		120/75,60/90	
Structure	1249	546503	5171083	259	Valley, possible the dike structure at 310			
Ol Gb Dike	1250	546482	5171095	264	SAMPLE Gb, mag, possible dike, rusty crusty weathering		320/90	
Ol Gb Dike	1251	546474	5171097	266	Dike			
Ol Gb Dike	1252	546457	5171115	269	Dike			
Ol Gb Dike	1253	546385	5171151	268	Dike			
Ol Gb Dike	1254	546368	5171169	267	Same o/c as 1253			
GW	1255	546357	5171195	276	GW			
GW	1256	546526	5171174	308	GW			
Argillite	1257	546529	5171159	303	Near edge of cliff, black, aph, non mag		275/85	
Argillite	1258	546564	5171163	300	SAMPLE, black, aph, tr-0.5% sulphides, non mag, bedede/jointed			220/50
Nip Gb	1259	546627	5171159	266	M-cg			
Nip Gb	1260	546675	5171138	258	Small knob			
Nip Gb	1261	546697	5171149	260	Large o/c			
Nip Gb	1262	546744	5171152	259	Small o/c			
Nip Gb	1263	546799	5171174	260	Gb			
Nip Gb	1264	546844	5171203	265	Gb			
Trail	1265	546877	5171215	263	Trail			
Min Nip Gb	1266	546981	5171184	261	Mg, sulphide burns, on side of trail			
Min Nip Gb	1267	547086	5171185	265	Mg, sulphide burns, on side of trail			
Min Nip Gb	1268	547143	5171228	262	Mg, sulphide burns, on side of trail			
Sulphide Photo	1269	547183	5171217	261	Sulphide Photo in trench 7			
Trench Outline	1270	547202	5171335	253	Main Trench Outline	İ	1	1

Rock Type	WP	Easting	Northing	El(m)	Description	Fol	Jointing	Bding
Trench Outline	1271	547199	5171333	253	Main Trench Outline			
Trench Outline	1272	547196	5171333	253	Main Trench Outline			
Trench Outline	1273	547195	5171337	252	Main Trench Outline			
Trench Outline	1274	547195	5171342	253	Main Trench Outline			
Trench Outline	1275	547194	5171349	252	Main Trench Outline			
Trench Outline	1276	547197	5171356	253	Main Trench Outline			
Trench Outline	1277	547198	5171359	253	Main Trench Outline			
Trench Outline	1278	547201	5171365	253	Main Trench Outline			
Trench Outline	1279	547205	5171368	254	Main Trench Outline			
Trench Outline	1280	547209	5171366	254	Main Trench Outline			
Trench Outline	1281	547210	5171360	254	Main Trench Outline			
Nip Gb	1282	547250	5171209	264	Med gr mass ,no visible sulphide burns, small x o/c			
Nip Gb	1283	547232	5171152	267	DDH collared on medgr mass gb, no visible sulphide burns			
Nip Gb(peg)	1284	547242	5171131	271	Pegmatitic gb		280/90,160/80	
Nip Gb(peg)	1285	547254	5171130	272	Med gr mass ,loc peg sections with coarse gr qtz and sulpides, abnt 160 joints		160/90	
Nip Gb(peg)	1286	547251	5171132	273	Same o/c as 1285, peg patches (photo), sulphide burns in med gr gb			
Nip Gb(peg)	1287	547252	5171137	269	DDH collared on en edge of 1285 and 86			
Nip Gb	1288	547207	5171182	267	Southern (back) edge of trench o/c			
Trail	1289	547198	5171157	265	Trench trail			
Cliff Trench Outline	1290	547163	5171133	263	Med gr gb with loc sulphide burns			
Cliff Trench Outline	1291	547155	5171133	262				
Cliff Trench Outline	1292	547145	5171127	267				
Cliff Trench Outline	1293	547140	5171128	269				
Cliff Trench Outline	1294	547133	5171122	270				
Cliff Trench Outline	1295	547126	5171122	271				
Cliff Trench Outline	1296	547126	5171131	271				
Cliff Trench Outline	1297	547127	5171138	270				
Cliff Trench Outline	1298	547126	5171148	269				
Cliff Trench Outline	1299	547135	5171147	270				
Cliff Trench Outline	1300	547138	5171141	270				
Cliff Trench Outline	1301	547141	5171136	268				
Cliff Trench Outline	1302	547147	5171136	267				
Cliff Trench Outline	1303	547156	5171136	264				
Channel	1304	547138	5171134	269				
Channel	1305	547139	5171132	268	As 1304			
Channel	1306	547139	5171134	268				
Channel	1307	547139	5171133	268	As 1306			
Channel	1308	547138	5171132	268				
Channel	1309	547138	5171132	268	As 1308, 160 joint in channel (Photo)		160/90	
Trench Outline	1310	547170	5171154	262				
Trench Outline	1311	547174	5171157	262				
Trench Outline	1312	547183	5171167	265				
Trench Outline	1313	547186	5171176	265				
Trench Outline	1314	547186	5171183	266				
Trench Outline	1315	547192	5171190	268	N end of old trench			

Rock Type	WP	Easting	Northing	El(m)	Description	Fol	Jointing	Bding
Trench Outline	1316	547191	5171195	268				
Trench Outline	1317	547182	5171196	266				
Trench Outline	1318	547174	5171196	265				
Trench Outline	1319	547168	5171196	263				
Trench Outline	1320	547160	5171198	259	Edge of trench and trail			
Trench Outline	1321	547153	5171186	260	Edge of trench and trail			
Trench Outline	1322	547161	5171180	263				
Trench Outline	1323	547164	5171173	264				
Trench Outline	1324	547168	5171161	261				
Channel	1325	547170	5171179	263				
Channel	1326	547171	5171180	263	As 1325			
Channel	1327	547174	5171178	263				
Channel	1328	547172	5171178	263	As 1327			
Channel	1329	547170	5171179	262				
Channel	1330	547172	5171180	262	As 1329			
Channel	1331	547170	5171179	263				
Channel	1332	547171	5171178	263	As 1331			
Channel	1333	547175	5171179	263				
Channel	1334	547177	5171179	262	As 1333		240/80,240/90	
Channel	1335	547171	5171185	265				
Channel	1336	547169	5171184	265	As 1335			
Channel	1337	547176	5171181	263				
Channel	1338	547172	5171181	264	As 1337 cuts across a 160 joint (Photo)		160/90	
Sheared Fault	1339	547185	5171183	265	Photos			
Trench Outline	1340	547185	5171216	263				
Trench Outline	1341	547191	5171222	263				
Trench Outline	1342	547195	5171228	263				
Trench Outline	1343	547194	5171234	264				
Trench Outline	1344	547195	5171238	264				
Trench Outline	1345	547186	5171241	261				
Trench Outline	1346	547180	5171242	259				
Trench Outline	1347	547179	5171236	259				
Trench Outline	1348	547178	5171229	261				
Trench Outline	1349	547177	5171221	261				
Trench Outline	1350	5471891	5171219	262				
Dike	1351	547178	5171225	261	90 degree dike Photos			
Mineralized Nip Gb	1352	547181	5171229	261	100/56-90 degree fractures in blebby sulphide zone (Photos)		100/56,100/90	
Mineralized Nip Gb	1353	547178	5171228	260	160/90 degree fractures/jointing in blebby sulphide zone, chl alt along fractures (Photos)		160/90	
Mineralized Nip Gb	1354	547184	5171222	260	SAMPLE Blebby sulphide (Photo)			
Shear	1355	547193	5171236	264	Shear at 145/90	145/90		
Channel	1356	547194	5171223	264				
Channel	1357	547193	5171222	264	As 1356			
Channel	1358	547188	5171227	263	This trench has small shears, mm scale (coarse?) grained mafic dikes, offset by xcutting joints and mm scale peg phases all following the 145-160 strike			
Channel	1359	547188	5171226	265	As 1358			1

Rock Type	WP	Easting	Northing	El(m)	Description	Fol	Jointing	Bding
Dike/Sed Raft	1360	547189	5171231	264	Aphanitic, sil, trending 70, rusty fractures, sharp sheared? contact with gb, poss dike more apt to be sed raft (sil gw)			
Nip Gb	1361	547142	5171271	262	Med gr gb			
Nip Gb	1362	547158	5171276	258	edge of 1361			
Nip Gb	1363	547140	5171304	261	Gb edge			
Nip Gb	1364	547120	5171335	260	Gb edge			
Gow Congl	1365	547267	5171468	254	Possible boulder			