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REVERSE CIRCULATION OVERBURDEN DRILLING AND HEAVY MINERAL GEOCHEMICAL SAMPLING, SELBAIE MINE AREA

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SELCO DIVISION

BP RESOURCES CANADA LTD.

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SELBAIE MINE AREA, QUEBEC

REVERSE CIRCULATION OVERBURDEN DRILLING

AND

HEAVY MINERAL GEOCHEMICAL SAMPLING

BY

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OVERBURDEN DRILLING MANAGEMENT LTD.

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SUMMARY

The report describes the findings of a 97-hole reverse circulation overburden drilling/heavy mineral geochemical sampling program that was conducted on four properties--Grid 10-2, Grid 10-110, Grid 10-113, and the Main Grid -- in the vicinity of the Selbaie Mine, northwestern Quebec. The objectives of the program were threefold: firstly, to further investigate anomalous gold values found in Hole 88 of a 1985 reverse circulation program and in follow-up diamond drill hole No. D-2-7 on Grid 10-2; secondly, on Grid 10-113, to investigate gold values reported in 1967 Penarroya Ltd. diamond drill holes and to evaluate the gold and base metal potential of the surrounding area; and thirdly, on Grid 10-110 and the Main Grid, to explore for Selbaie type Cu-Zn deposits on the east and west margins of the Brouillan Batholith.

The properties are underlain by greenschist facies Archean metavolcanic and metasedimentary rocks of the Matagami-Chibougamau greenstore belt. Intermediate to mafic volcanic rocks predominate but felsic volcanics, fragmental volcanics, porphyries and gabbro are also present. Chemically, the volcanics change from tholeiitic east of the Brouillan granodiorite batholith to calc-alkalic west of the batholith. A previously undetected granodiorite stock occurs on the south part of Grid 10-2.

Significant bedrock gold anomalies occur on Grid 10-2 and Grid 10-110. On Grid 10-2, gold anomalies of 280, 735 and 600 ppb in Holes 115, 125 and 1985 Hole 88 occur along the granodiorite contact. The gold occurs in quartz-carbonate veins suggesting epigenitic deposition related to granodiorite emplacement. On Grid 10-110, concentrations of 105 ppb Au in Hole 11012 and 30 ppb Au in Hole 11022 appear to record a mineralizing event related to emplacement of a granodiorite lobe or dike swarm on the east margin of the Brouillan Batholith. Anomalous Pb, Zn, Mo, Ag and As accompany the gold in Hole 11022.

Very weak Cu-Zn mineralization occurs peripheral to the granodiorite stock on Grid 10-2 and in a flow-top breccia on the Main Grid. A 762 ppm Cu anomaly in Hole 1134 near the Penarroya occurrence on Grid 10-113 is accompanied by tourmaline-carbonate alteration diagnostic of a structural control, and the

intersection is in a fault-controlled bedrock valley. Previous efforts to extend the Penarroya mineralization appear to have failed because they focused on a stratigraphic rather than structural target.

Overburden depth in the drill areas averages 25 metres and drill operating costs averaged $73.91/m (22.53/foot). Quaternary strata from two successive glaciations of Illinoian and Wisconsinan age and from the Sangamon interglacial period were intersected. Most of the Illinoian till has been recycled into interglacial gravels that are weathered and contain minimal sulphide minerals. Only the south-southeast transported Matheson Till (Wisconsinan) has a sufficient distribution to be useful for mineral tracing.

Forty-eight overburden heavy mineral gold anomalies were encountered but forty-five of these anomalies were produced by free gold grains that form part of the normal till background. The significant anomalies are all related to intersected bedrock mineralization. On Grid 10-2, the source of eighteen fine, irregular gold grains present in Hole 111 is an auriferous sericite-carbonate shear zone previously diamond drilled in Hole D-2-7 north of the grandodiorite. On Grid 10-113, gold and copper in Hole 1134 corroborate the Penarroya diamond drill results. On Grid 10-110, a gold anomaly in Hole 11012 and a Pb-Zn-Ag-As anomaly in Hole 11022 correlate with underlying bedrock mineralization associated with the granodiorite lobe.

The only significant base metal dispersion is a zinc train ($\pm$ Cu and Ag) in Holes 103, 104, 105 and 108 on Grid 10-2. A shear zone source 150 meters east of the Hole D-2-7 intersertion is indicated.

The reverse circulation drilling showed that the geology is very favourable for epigenetic gold mineralization. Major findings were the identification of a structural control at the Penarroya occurrence and of mineralizing systems related to granodiorite intrusion on Grids 10-2 and 10-110. Additional reverse circulation drilling is recommended to extend coverage on Grids 10-2 and 10-113 and to develop diamond drill targets along the granodiorite contact on Grid 10-110. Diamond drilling is recommended to test the Penarroya occurrence on Grid 10-113 and the gold zones on Grid 10-2. Cost of the proposed work is $242,250.00.

2. INTRODUCTION

2.1 Project Background

From February 4 to April 18, 1986, Selco Division, BP Resources Canada Ltd. conducted a program of reverse circulation overburden drilling/heavy mineral geochemical sampling on the following four properties in the Selbaie Mine area, northwestern Quebec (Fig. 1, 2).

1.	Grid 10-2	-	13 km west of the mine in central Carheil Township
2.	Grid 10-113	-	16 km northwest of the mine in north-central Carheil Township and south-central La Peltrie Township
3.	Grid 10-110	-	15 km east of the mine in central Beschefer Township
4.	Selbaie Mine Main Grid	-	2 km north of the mine in north-central Brouillan Township

The area is underlain by Abitibi belt Archean metavolcanic and metasedimentary rocks. Immediately east of the Selbaie Mine, these rocks are intruded by granodiorite of the Brouillan Batholith.

The Selbaie Mine is a Cu-Zn-Ag deposit of the epigenetic rather than massive sulphide type. Important gold deposits occur in similar Abitibi belt rocks 35 km to the south at Casa-Berardi and 60 km to the west in Ontario at Detour Lake. Therefore both base metals and gold were targets of the reverse circulation drilling program.

The objectives of the drilling in the four areas were as follows:

1. Grid 10-2 - to further investigate anomalous gold values found in Hole 88 of a 1985 reverse circulation program and in a follow-up diamond drill program.

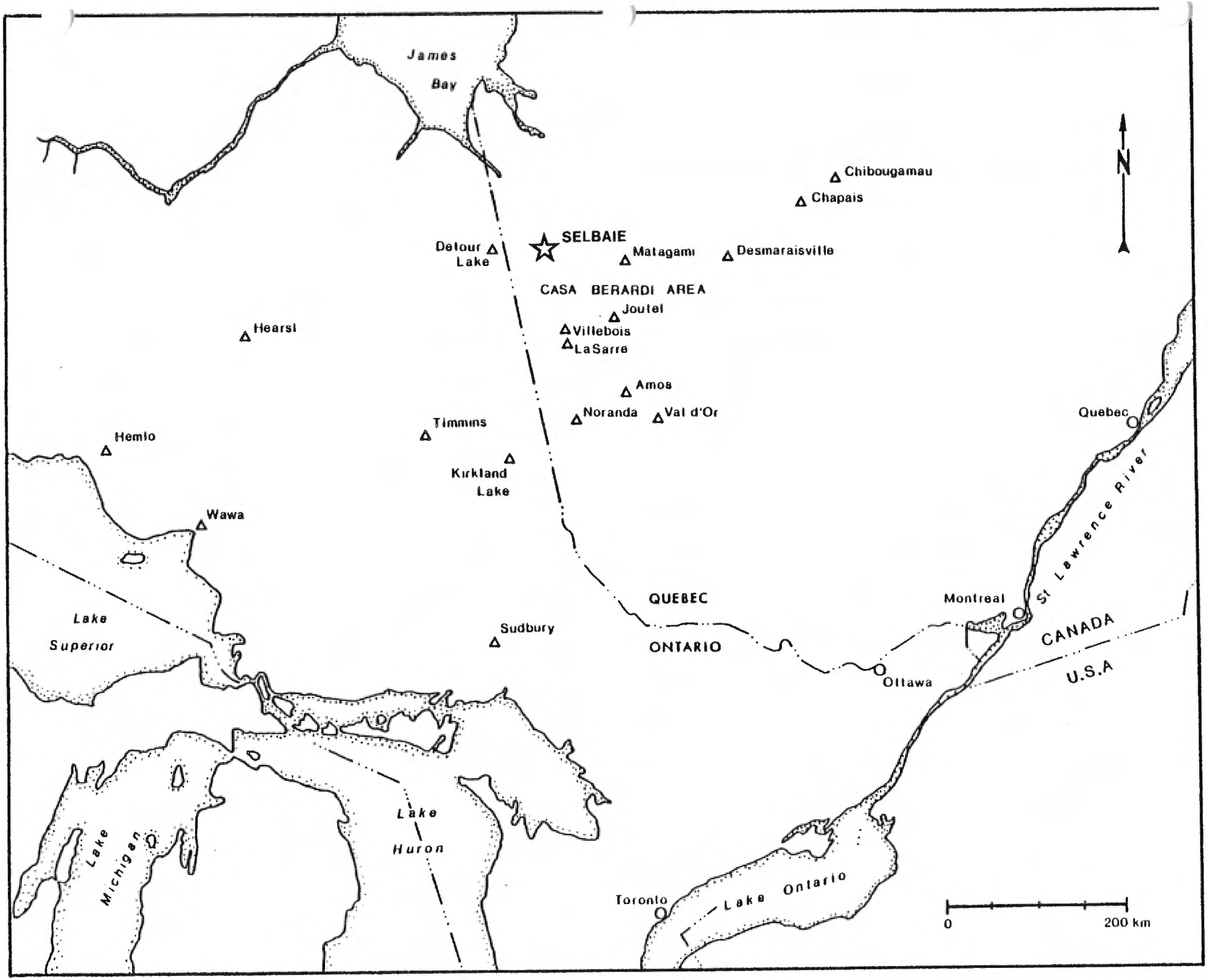


Figure 1 - Selbaie Location Map

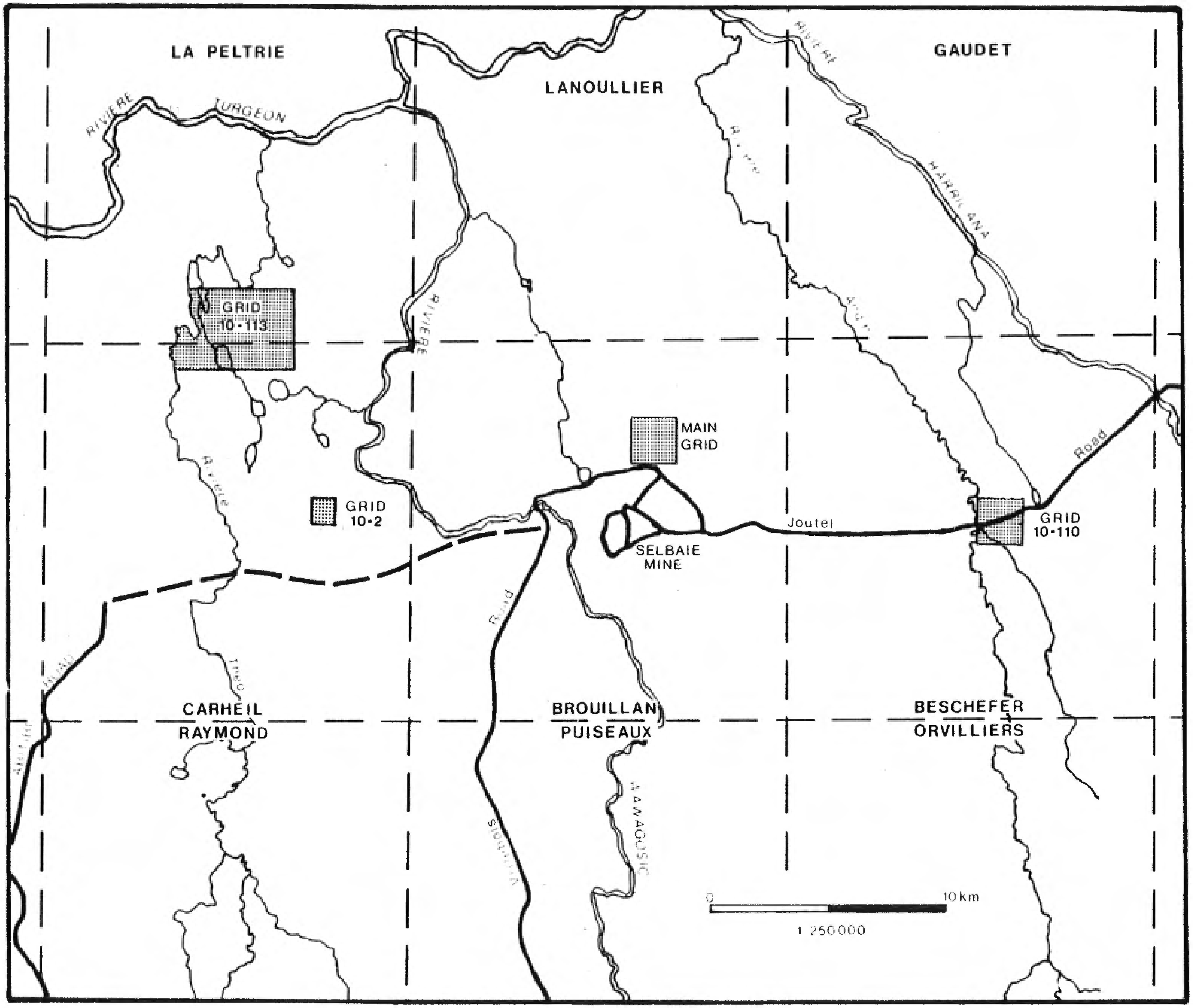


Figure 2. Property Location Map

2. Grid 10-113 - to follow up gold values reported in a 1967 Penarroya Ltd. diamond drill hole and to evaluate the gold and base metal potential of the surrounding area.

3. Grid 10-110 - to search for Selbaie type deposits on the eastern margin of the Brouillan Batholith.

4. Selbaie Mine Main Grid - to search for Selbaie-type deposits on the western margin of the Brouillan Batholith.

Overburden Drilling Management Limited (ODM), a Nepean, Ontario company was retained by Selco to manage the program. A total of ninety-seven holes was drilled in the four areas. ODM collected samples from Quaternary till, sand and gravel sections and from a 1.5 meter bedrock section where possible. Heavy mineral concentrates were prepared from the Quaternary samples and a gold particle count was done. The concentrates and bedrock samples were analyzed for gold, base metals and pathfinder elements. The bedrock samples were also analyzed for the major oxides. The Quaternary and Archean stratigraphy were deciphered, and the heavy mineral and bedrock geochemistry were interpreted in relation to this stratigraphy.

2.2 Property Location and Access

The Selbaie Mine is located approximately 600 km northwest of Montreal. Access to the area is either by Highway 393 from La Sarre to Villebois and then north approximately 95 km along an all-weather gravel road or by approximately 80 km of paved and all-weather gravel road northwest from Joutel and the Amos-Matagami Highway. The Villebois road runs through the central portion of the Selbaie Mine Main Grid. Grid 10-110 is 15 km east of the mine on the Joutel road. A camp set up to service the drilling on Grid 10-2 and Grid 10-113 was reached by proceeding 10 km west along an old winter road leading to the Detour mine and north 10 km along a new winter road that was cleared to the camp. Grid 10-2 was 5 km south of the camp and Grid 10-113 was 2.5 km north of the camp.

The following portions of the four grids were covered in the 1986 drill program:

1. Grid 10-2 - 0.5 sq. km
2. Grid 10-113 - 26.0 sq. km
3. Grid 10-110 - 6.8 sq. km
4. Selbaie Mine Main Grid - 7.3 sq. km

2.3 Physiography and Vegetation

The project area lies in the north-central portion of the physiographic region known as the Abititi Uplands. The southern boundary of this region approximates the Arctic-St. Lawrence drainage divide (Bostock, 1967).

The terrain is relatively flat - a reflection of glaciolacustrine sedimentation in proglacial Lake Ojibway following retreat of the main Wisconsinan glacier. A minor ice re-advance into the north part of the lake in Late Wisconsinan time reworked the upper few metres of glaciolacustrine sediments to produce a clay-rich fluted till (Cochrane Till). Minor glaciolacustrine sedimentation occurred following the retreat of the Cochrane glacier.

On the property scale, little relief is present on Grid 10-2 and Grid 10-113. Relief of 15-20 metres, due to a bedrock high and downcutting of the Angle River, occurs on the Selbaie Mine Main Grid and Grid 10-110 respectively. Flutings produced by the Cochrane glaciation are distinguishable on air photos although relief is only 1-2 metres. These flutings, orientated at 145 degrees, control the local stream drainage.

2.4 Previous Work

2.4.1 Initial Exploration

Quaternary overburden in the Selbaie area is often over 30 metres thick and bedrock outcrops are scarce. Thus, only indirect geophysical and geochemical prospecting methods can be used.

The earliest significant work was a geophysical survey followed by diamond drilling of a conductive zone on the site of the present Grid 10-113. Significant gold values were reported in two holes drilled by Penarroya Ltd. in 1967 (3 g/t over 2 m; 4.3 g/t over 6.5 m) but follow-up work carried out by Newmont in 1982 failed to substantiate these results.

The Selbaie Cu-Zn-Ag deposit was discovered by Selco Mining Corp. in 1974 during ground follow-up of a Selco INPUT survey. The deposit is hosted by felsic pyroclastic and volcaniclastic rocks within the Chibougamau-Matagami section of the Abitibi greenstone belt. These felsic rocks are thought to have been deposited in a caldera on the emergent part of a stratovolcano (Deptuck, Squair, Wierzbicki, 1982). The deposit itself consists of epigenitic quartz-carbonate vein systems mineralized with pyrite, chalcopyrite, sphalerite and minor amounts of galena, tetrahedrite, polybasite and native silver. Three zones have been defined by diamond drilling and underground development work. These are the A-1 Zone (32.11 million tonnes - 0.39% Cu, 2.30% Zn, 35.7 g/tonne Ag), the B-Zone (3.07 million tonnes - 4.49% Cu, 0.80% Zn, 39.4 g/tonne Ag) and the A-2 Zone for which reserve figures are unavailable (Deptuck, ibid).

2.4.2 Post-Discovery Exploration

Following the initial discovery the remainder of the Main Claim Block was systematically tested for base metal mineralization using conventional EM/I.P. geophysical methods and diamond drilling. As a result Selco has effectively eliminated the possibility of near-surface conductive deposits. However, deposits buried beneath multiple conductive clay horizons may not have been responsive to geophysical methods and as such could remain undetected. Mineralization consisting mostly of non-conductive sphalerite could also have been missed.

An orientation reverse circulation drilling program was carried out in 1975 by Driftex Ltd. (Brereton, 1975) to evaluate the ability of this newly developed method to detect glacial dispersion from the Selbaie deposits. Strong base metal anomalies were encountered which Driftex concluded were dispersed from the B-Zone to the northeast.

With the rising price of gold in the late seventies and early eighties, emphasis shifted from base metal to gold exploration. A magnetic gradiometer survey was flown by Selco - BP Canada in 1984. Earlier a limited program of overburden drilling was undertaken on Grid 10-501 over the Brouillan Batholith and on Grid 10-110 (MacNeil, 1983) to evaluate humus anomalies and VLF conductive zones for gold mineralization. Significant accumulations of gold were not encountered and the drilling revealed most conductors to be due to overburden response. Also, a Quaternary stratigraphic sequence was established which would be applicable to the entire Selbaie area.

The success of the initial Driftex program and information gained from the 1983 program resulted in the decision by Selco to use the reverse circulation-heavy minerals methods to test the Selbaie Main Claim Block with gold as a primary focus and a secondary emphasis on base metals.

A program in 1984 outlined areas of possible gold and base metal dispersion (Burns and MacNeil, 1984) and confirmed the southwest direction of ice transport for the B-Zone dispersion. A decision was made by Selco to conduct follow-up reverse circulation overburden drilling in 1985 to determine the source of gold dispersion encountered in Hole 41. In addition, the remainder of the Main Claim Block and an adjoining property to the west were to be tested for possible gold and base metal mineralization.

Thirty-four holes were drilled in 1985. Anomalous gold and copper values were obtained from follow-up holes drilled near Hole 84-41. The source of the anomalies was identified as a shear zone underlying Holes 41, 65 and 66. A two-hole diamond drill program was recommended by ODM to evaluate this structure and to investigate a gold-bearing pyritic quartz vein that was intersected in Hole 85-88. Only the second hole was drilled. It encountered highly anomalous gold values and attractive sericite-carbonate alteration in conductive intermediate volcanics 200 metres north of Hole 88.

3. DRILLING AND SAMPLING

3.1 The Principles of Overburden Exploration in Glaciated Terrain

During the Pleistocene epoch of the Quaternary period, the crowns of all ore bodies that subcropped beneath the continental ice sheets of North America were eroded and dispersed down-ice in the glacial debris. The dispersion mechanisms were systematic (Averill, 1978) and the resulting ore "trains" in the overburden are generally long, thin and narrow and most importantly are several hundred times larger than the parent ore bodies. These large trains can be used very effectively to locate the remaining roots of the ore bodies.

Because the dispersion trains originated at the base of the ice, they are either partly or entirely buried by younger, nonanomalous glacial debris. Most trains are confined to the bottom layer of debris deposited during glacial recession--the basal till. In fact, the sampling of glacial overburden for exploration purposes is commonly referred to as "basal till sampling". It is important to note, however, that in areas affected by multiple glaciations the bottom layer of debris in the overburden section may be only the lowermost of several stacked basal tills, and that a dispersion train may occur at any level within any one of the basal till horizons. Consequently, the term "basal till sampling" is not synonymous with the collection of samples from the base of the overburden section. Moreover, the term is not strictly correct because significant glacial dispersion trains can occur in formations other than basal till.

From the foregoing statements, it can be seen that glacial dispersion and glacial stratigraphy are interdependent. Consequently, the effectiveness of overburden sampling as an exploration method is related to the ability of the sampling equipment to deliver stratigraphic information from the unconsolidated glacial deposits. In areas of deep overburden such as Selbaie drills must be used. Most drills have been designed to sample bedrock and are unsuitable for overburden exploration, but in the last fifteen years rotasonic coring rigs and reverse circulation rotary rigs have been developed to sample the overburden as well as the bedrock. Both drills provide accurate stratigraphic information throughout the hole and also deliver large samples that compensate for the natural inhomogeneity of glacial debris.

The reverse circulation rotary system was selected for the Selbaie program. This system employs dual-tube rods and a tricone bit with the outer rod tube acting as a casing to contain the drill water for recirculation and to prevent contamination of samples by material caving from overlying sections. Air and water are injected at high pressure through the annulus between the outer and inner rods to deliver a continuous sample of the entire overburden section through the small inner rod. The sample is disturbed but returns to surface instantly, and the precise positions of stratigraphic contacts can be identified. Full sample recovery is possible in all formations regardless of porosity or consistency, although sample loss due to blow-out commonly occurs in the first 1 to 3 meters of the hole until a sediment seal is made around the outer rod.

Reverse circulation holes are normally extended 1.5 meters into bedrock. Cuttings of maximum 1 cm size are obtained. The bedrock samples are used to determine overburden provenance (and, hence, the precise directions of glacial transport), and the interrelated bedrock and overburden data provide exceptionally comprehensive exploration coverage.

Most of the glacial overburden in Canada is fresh, and metals in the overburden occur in primary, mechanically dispersed minerals rather than in secondary chemical concentrations. While ore mineral dispersion trains are very large, they are also weak due to dilution by glacial transport and are difficult to identify from a normal "soil" analysis of the fine fraction of the samples.

Consequently, heavy mineral concentrates are prepared to amplify the primary anomalies, and analysis of the fines is normally reserved for areas where significant post-glacial oxidation is evident. The heavy mineral concentrates are very sensitive, and special care must be taken to avoid the introduction of contaminants into the samples. On gold exploration programs, it is advantageous to separate and examine any free gold particles because most gold anomalies in heavy mineral concentrates are caused by background nugget grains that are of no interest.

3.2 Drill Hole Pattern

Overburden holes are ideally drilled along profiles oriented parallel to the strike of the mineralization and perpendicular to the direction of Quaternary ice advance. The hole spacing along the profile is determined primarily by the expected cross-ice subcropping strike length of the target mineralization, for this parameter governs dispersion train width. Profile separation is determined by the length of the dispersion train that can be expected for the type of mineralization sought, and is generally greater than hole separation.

ODM has participated in Abitibi belt reverse circulation and rotasonic drilling programs totalling more than 5,000 holes, including over one thousand holes in the Casa-Berardi/Selbaie/Detour region. From this work, it was known that three tills involving three different azimuths of ice transport would be present in the project areas.

1. Lower Till - 225 to 240 degrees
2. Middle or Matheson Till - 160 to 170 degrees
3. Upper or Cochrane Till - 140 to 150 degrees.

Only the Lower and Matheson Till contact bedrock sufficiently to be useful sampling media. Although the southwest and south-southeast ice flow directions for these two tills differ by 60-70 degrees, both flow directions intersect the east-southeast to east-west trending bedrock stratigraphy at a high angle. Therefore the drill profiles were laid out roughly parallel to the grid base lines which follow the bedrock stratigraphy.

Till dispersion trains are often called fans but are actually ribbon-shaped. Therefore the hole spacing along a drill profile should be similar to the expected cross-ice subcropping length of the target mineralization. For the Selbaie program, it was assumed that mineralization of interest would have an ore-grade subcrop at least 100 m long and would be stratigraphically and structurally controlled. Such deposits typically have 100-200 m sub-ore extensions along strike in either direction, and this weak mineralization can be detected with the sensitive heavy mineral method, giving the target a total strike length of 300-400 m. Consequently a 400 m separation was used for reconnaissance drilling conducted on Grid 10-113, Grid 10-110 and the Selbaie Mine Main Grid (Fig. 4, 5, 6). A closer hole spacing of 100 metres was required for Grid 10-2 follow-up drilling (Fig. 3) and a 150-200 metre spacing was used for four holes around the Penarroya occurrence on Grid 10-113 (Fig. 4).

ODM has identified and traced to source a total of nine gold dispersion trains (Table 1). The train length for deposits oriented perpendicular to the ice flow direction ranges from 300 to 1000 m. Therefore a drill profile separation of 300 m would be needed to ensure detection of all subcropping gold mineralization. Base metal massive sulphide dispersion trains are generally more than 1,000 m long. Budget and accessibility considerations on the Selbaie project resulted in a 1500 m profile separation on Grid 10-113. Closer profile separations of 100 m and 400 m were used on Grid 10-2 and the Selbaie Mine Main Grid, respectively. Two profiles were drilled at right angles on Grid 10-110 to cover both the east-west trending stratigraphy and the north-south trending contact zone of the Brouillan Batholith. On previous programs (1984, 1985), promising airborne conductors and magnetic anomalies were present, and hole profiles were positioned 100-200 m down-ice from these anomalies. This positioning was well within the 300 m gold dispersion train minimum length and allowed for the fact that many conductors occur in protected bedrock valleys that are lined with Lower Till making the conductors blind to the Wisconsinan glaciation. To detect mineralization in buried valleys of this type, holes must be drilled to intersect Lower Till on the valley floor. Shallower holes drilled down-ice from the valleys where Matheson Till extends to bedrock will give misleading negative results.

PROVINCE	GOLD DEPOSIT	TRAIN LENGTH[1] (m) TRACED	EST. TOTAL
Saskatchewan	Lake "X"[2]	300	300
Saskatchewan	Star Lake	300	800
Saskatchewan	Lake "Y"	500	1000
Saskatchewan	Waddy Lake[2]	600	2000
Ontario	McCool	300	400
Quebec	Cooke Mine[3]	800	1000
Quebec	Golden Pond West	300	400[4]
Quebec	Golden Pond	400	500[4]
Quebec	Golden Pond East	100	1000

1 - Based on minimum 10 gold grains of similar size and shape per 8 kg sample for free gold trains and on coincident high gold and base metal assays for invisible gold trains

2 - Deposit oriented parallel to glacial ice advance

3 - Invisible gold deposit

4 - Train foreshortened by erosion in last ice advance

Table 1 Heavy Mineral Gold Dispersion Trains Identified By Overburden Drilling Management Limited Laboratory

3.3 Drilling Equipment

During the course of the Selbaie program two reverse-circulation rotary drills were contracted from Bradley Brothers Limited of Noranda, Quebec. Initially, a Model 240 Nodwell-mounted Acker drill was to be used for the entire project, but, due to the unavailability of the Nodwell, a skid-mounted and dozer (International TD15) drawn Longyear 38 drill was utilized for the first month. All ancillary equipment including the air compressor, water pump and logging and sampling facilities was unitized and enclosed on the drill carriers for all weather operation.

The Acker drill head has a 3 m feed cylinder while the Longyear feed has only a 0.67 m cylinder. In addition to the advantage of a longer feed, the Acker also employed a larger air compressor (300 c.f.m at 160 p.s.i. versus 185 c.f.m. at 100 p.s.i.). Both rigs employed water pumps having a capacity of 20 g.p.m. at 600 p.s.i. pressure although water flow was normally maintained at 6-9 g.p.m. Both were equipped with 110 volt generators and Cool White fluorescent fixtures that simulate natural sunlight for accurate sample logging. All equipment except the carriers, air compressors and and the water pump on the Longyear unit was operated hydrostatically by a central diesel engine.

Bradley supplied 10-foot drill rods but the holes were logged in metres using the approximate conversion factor of 3 metres to 10 feet. This resulted in the logged hole depth being 1.6 percent less than true depth.

The Nodwell was able to carry thirty rods but a separate rod skid was required for the skid drill. This resulted in two trips being required for each move between holes; consequently, move times were longer than those for the Nodwell. Attempts to make one-trip moves failed to reduce the moving time.

Bradley Brothers supported each drill rig with a Bombardier Muskeg tractor equipped with two 250-gallon, exhaust-heated water tanks.

Road clearing was done with a Caterpillar D-6 wide-pad dozer. Where possible, roads were routed through sparsely treed muskeg, leaving the boreal forest undisturbed for future harvesting.

Work on the Grid 10-2 and Grid 10-113 was conducted from a tent camp constructed on the southeast shore of Lac Laurent. The Selbaie Mine Main Grid and Grid 10-110 work was conducted from Bradley's Camp 66 which had been established at kilometre 66 along the Selbaie-Villebois road to serve another project in that area.

Half-ton and three-quarter-ton trucks were used to transport personnel and equipment as close to the drill rig as possible. The Muskeg water carrier was used to complete the trip.

3.4 Drill Performance

Drilling on the Selbaie properties started on February 15, 1986 and was completed on April 18, 1986. The skid drill was used until March 17, when it was replaced by the Nodwell. One 12 hour shift per day, including travelling as well as drilling time, was worked. When requested to drill for more than 10 hours, the crew refused.

Major breakdowns included the Longyear unit water pump, the Muskeg transmission, an initially suspected compressor problem which turned out to be a fluid bypass in the string of rods, and a drill head derailment on the Nodwell. Minor delays resulted from ruptured hydraulic hoses, clogged fuel filters and Muskeg exhaust problems. The drilling was suspended for a five day crew break at Easter (March 28-April 1).

Because overburden conditions are unpredictable, reverse-circulation programs are contracted on a cost plus basis rather than at footage rates as in diamond drilling. Ground-supported programs in the Selbaie-Detour-Casa Berardi region are normally budgeted on the following basis:

1. Rig operating charges of $220.00/hour and dozer operating charges of $65.00/hour, including operator meals and accommodations.
2. 10 percent rig and dozer down-time.
3. One hour paid crew travel per day.

4. Productivity at historical minimum average of 6 metres (20 feet) per operating hour, or 54 metres (180 feet) per 10-hour shift with one hour down-time
5. Bit life at historical average of 60 metres (200 feet).
6. Other consumable consumption at historical average of 0.3 subs and 0.3 rods per 60 metres (200 feet)

Operating costs should average about $63.00/m ($19.00/foot). Non-operating costs -- mainly for equipment mobilization and demobilization and camp construction -- should bring the total cost to about $70.00/m ($21.00/foot).

The Selbaie drilling shifts, exclusive of travel time, totalled 570 hours. Productive hours were 463.5 and mechanical down-time was 106.5 hours or 18.7 percent. The relative performances of the two rigs are shown below:

Rig Type	Total Metres Drilled	Operating Hours	Downtime (%)	Drill Rate m/Opr. Hour	Metres Drilled Per Day
Skid	984.4	259.5	16	3.8	31.9
Nodwell	1413.0	204.0	21	6.9	54.5

The 3.8 m/hour rate for the skid drill is well below the expected level of 6.0 m/hour. However, this was partly offset by the high 6.9 m/hour rate achieved by the Nodwell. The consumption of drill rods and bit subs was also lower than expected, and the road-clearing dozer was needed only for three weeks. As a result, drilling costs were only 5.6 percent above normal at $73.91/metre. However, costs would have been about 15 percent below normal if the Nodwell rig had been available for the entire project as specified in the contract.

A total of 2397.4 metres was drilled (Table 2). Originally 137 holes had been proposed on the assumption that hole depth would average about 17 metres as in the 1984-85 programs. However, 1986 hole depth averaged 24.7 metres, allowing only 97 holes to be drilled. Most of the cancelled holes were on the Selbaie Mine Main Grid.

Hole Number	Coordinates	Metres Drilled		Hole Depth (metres)	Samples Collected	
		Overburden	Bedrock		Overburden	Bedrock
BPS-86-						
99	L62E; 10+50N	43.8	1.5	45.3	25	1
100	L62E; 11+50N	30.3	1.7	32.0	11	1
101	L62E; 12+50N	6.6	1.4	8.0	2	1
102	L60E; 9+50N	39.0	1.5	40.5	20	1
103	L60E; 10+50N	36.3	1.2	37.5	23	1
104	L60E; 11+50N	19.0	1.0	20.0	9	1
105	L60E; 12+50N	21.0	0.8	21.8	11	1
106	L60E; 13+50N	4.7	1.5	6.2	2	1
107	L60E; 14+50N	8.4	1.0	9.4	3	1
108	L59E; 14+00N	11.4	0.9	12.3	5	1
109	L59E; 13+00N	25.5	1.5	27.0	15	1
110	L59E; 12+00N	8.2	1.5	9.7	3	1
111	L59E; 11+00N	7.5	0.7	8.2	2	1
112	L59E; 10+00N	24.4	0.3	24.7	11	1
113	L59E; 9+00N	22.0	1.5	23.5	10	1
114	L58E; 9+50N	20.1	1.4	21.5	7	1
115	L58E; 10+50N	10.7	1.9	12.6	3	2
116	L58E; 11+50N	7.3	1.5	8.8	1	1
117	L58E; 12+50N	14.3	1.5	15.8	8	1
118	L57E; 13+00N	27.3	1.7	29.0	16	1
119	L57E; 12+00N	7.2	1.6	8.8	1	1
120	L57E; 11+00N	8.4	1.1	9.5	1	1
121	L57E; 10+00N	13.5	1.5	15.0	4	1
122	L56E; 11+50N	11.4	.5	11.9	4	1
123	L56E; 10+50N	9.3	1.5	10.8	3	1
124	L56E; 9+50N	12.0	1.5	13.5	4	1
125	L57E; 9+00N	25.3	1.5	26.8	10	1
126	L58E; 8+50N	17.0	1.5	18.5	8	1
127	L57E; 8+00N	21.7	1.5	23.2	10	1
128	L56E; 8+50N	8.6	1.5	10.1	3	1
TOTALS	30	522.2	39.7	561.9	236	31

Table 2.1: Drilling Statistics for Grid 10-2

Hole Number	Coordinates	Metres Drilled		Hole Depth (metres)	Samples Collected	
		Overburden	Bedrock		Overburden	Bedrock
BPS-86-						
1131	L 2+50N of Twp. Line, 4+00W (82/83 Grid)	32.5	1.5	34.0	3	1
1132	L2+50N of Twp. Line, 6+00W (82/83 Grid)	35.8	1.5	37.3	3	1
1133	L2+50N of Twp. Line, 8+00W(82/83 Grid)	44.5	1.5	46.0	6	1
1134	L1+00N of Twp. Line, 6+00W(82/83 Grid)	31.3	1.7	33.0	6	1
1135	L113-1; 4+00W	39.0	1.5	40.5	12	1
1136	L113-1; 8+00W	54.0	1.5	55.5	19	1
1137	L113-1; 12+00W	57.0	-	57.0	23	-
1138	L113-1; 16+00W	42.0	4.0	46.0	20	1
1139	L113-1; 20+00W	34.6	2.3	36.9	18	1
11310	L113-1; 24+00W	36.8	1.5	38.3	11	1
11311	L113-1; 28+00W	30.1	3.4	33.5	5	1
11312	L113-1; 32+00W	22.5	1.5	24.0	2	1
11313	L113-1; 36+00W	17.2	1.4	18.6	2	1
11314	L113-1; 40+00W	14.8	1.5	16.3	4	1
11317	L113-2; 24+00W	43.4	1.6	45.0	3	1
11318	L113-2; 20+00W	51.2	1.3	52.5	7	1
11319	L113-2; 16+00W	21.4	1.1	22.5	3	1
11320	L113-2; 12+00W	37.5	1.0	38.5	8	1
11321	L113-2; 8+00W	47.2	1.3	48.5	12	1
11322	L113-2; 4+00W	42.5	1.0	43.5	9	1
11323	L113-2; 28+00W	7.1	1.4	8.5	-	1
11324	L113-2; 32+00W	9.2	1.3	10.5	3	1
11325	L113-2; 36+00W	21.0	1.5	22.5	5	1

Table 2.2: Drilling Statistics for Grid 10-113

Hole Number	Coordinates	Metres Drilled		Hole Depth (metres)	Samples Collected	
		Overburden	Bedrock		Overburden	Bedrock
BPS-86-						
11326	L113-2; 40+00W	18.6	1.8	20.4	1	1
11327	L113-2; 44+00W	28.2	1.3	29.5	1	1
11328	L113-3; 32+00W	24.9	1.6	26.5	12	1
11329	L113-3; 28+00W	27.2	1.6	28.8	11	1
11330	L113-3; 24+00W	16.5	2.0	18.5	4	1
11331	L113-3; 20+00W	23.0	1.5	24.5	7	1
11332	L113-3; 16+00W	27.0	1.5	28.5	15	1
11333	L113-3; 12+00W	30.5	1.5	32.0	15	1
11334	L113-3; 8+00W	24.4	1.6	26.0	12	1
11335	L113-3; 4+00W	25.4	1.6	27.0	10	1
11336	L113-3; 36+00W	32.6	1.6	34.2	8	1
11337	L113-3; 40+00W	30.3	1.7	32.0	6	1
11338	L113-1; 52+00W	17.0	2.0	19.0	1	1
11339	L113-1; 48+20W	35.5	1.5	37.0	14	1
11340	L113-1; 44+20W	40.4	2.2	42.6	23	1
TOTALS	38	1174.1	61.3	1235.4	324	37

Table 2.2: Drilling Statistics for Grid 10-113

Hole Number	Coordinates	Metres Drilled		Hole Depth (metres)	Samples Collected	
		Overburden	Bedrock		Overburden	Bedrock
BPS-85-						
11009	L0+00E; 24+00S	19.2	1.3	20.5	1	1
11010	L0+00E; 20+00S	23.6	1.4	25.0	4	1
11011	L0+00E; 16+00S	10.6	1.6	12.2	1	1
11012	L0+00E; 12+00S	16.0	1.5	17.5	6	1
11013	L0+00E; 8+00S	12.1	1:4	13.5	3	1
11014	L0+00E; 4+00S	8.8	1.7	10.5	1	1
11015	L0+00E; 0+00E	12.4	1.6	14.0	2	1
11016	L0+00E; 4+00N	15.8	1.7	17.5	1	1
11017	L0+00E; 8+00N	23.8	1.7	25.5	1	1
11018	L0+00E; 12+00N	42.6	1.4	44.0	11	1
11019	L0+00E; 16+00N	27.6	1.4	29.0	3	1
11020	L0+00E; 20+00N	49.8	1.8	51.6	8	1
11021	L0+00E; 23+80N	11.8	1.7	13.5	1	1
11022	L4+00W; 0+00N	26.8	1.6	28.4	8	1
11023	L8+00W; 0+00N	31.0	1.5	32.5	6	1
11024	L12+00W; 0+00N	58.6	1.4	60.0	17	1
TOTALS	16	390.5	24.7	415.2	74	16

Table 2.3: Drilling Statistics for Grid 10-110

Hole Number	Coordinates	Metres Drilled		Hole Depth (metres)	Samples Collected	
		Overburden	Bedrock		Overburden	Bedrock
BPS-86-						
129	L40+00W; 22+00N	9.5	1.5	11.0	3	1
130	L36+00W; 22+00N	16.8	1.8	18.6	8	1
131	L32+00W; 22+00N	14.2	1.6	15.8	7	1
132	L28+00W; 22+00N	7.4	1.6	9.0	2	1
133	L24+00W; 22+00N	6.0	1.5	7.5	2	1
134	L20+00W; 22+00N	9.2	1.3	10.5	3	1
135	L12+00N; 22+00N	12.0	1.5	13.5	6	1
136	L8+00W; 22+00N	21.6	.9	22.5	12	1
137	L4+00W; 22+00N	18.2	1.3	19.5	7	1
138	L20+00W; 26+00N	9.2	1.3	10.5	3	1
139	L20+00W; 30+00N	5.5	1.5	7.0	2	1
140	L20+00W; 34+00N	3.4	1.6	5.0	1	1
141	L20+00W; 38+00N	35.0	1.5	36.5	15	1
TOTALS	13	168.0	18.9	186.9	72	13

Table 2.4: Drilling Statistics for Selbaie Mine Main Grid

3.5 Logging and Sampling

All necessary logging and sampling equipment was supplied by ODM. The ODM crew comprised a logger and a sampler for the rig plus one road navigator. The logger and sampler remained on site for all drilling. Personnel involved in the Selbaie project included: geologists - G. Shelp, D. Holmes and T. Burns; geotechnician - B. Bark; student - A. Knight.

Samples were collected in two 20 litre buckets coupled with a plastic tube. This procedure ensures a quiet settling environment thus reducing the loss of fines encountered if only one bucket is used and allowed to overflow. Most of the clay is still lost but a recent research study made by ODM (Dimock, 1985) showed that sand loss is insignificant and silt loss is reduced to 40 percent compared to 72 percent with the one-bucket system. Interestingly, fine gold is lost in direct proportion to fine quartz and feldspar because the flake shape rather than high density of fine gold is the primary factor controlling the rate of settling.

ODM employed a 10-mesh (1700 micron) screen over the first bucket to separate and discard the majority of rock cuttings and thereby increase the proportion of matrix material needed to identify and trace dispersion trains. The +10 mesh rock cuttings were constantly monitored to discern any variations which could give clues to overburden stratigraphy, or for any clasts indicative of an environment suitable for gold or base metal mineralization. Approximately 20 percent of the cuttings were kept for future reference. The degree of sorting of the -10 mesh matrix was monitored to differentiate till from sand and gravel (Appendix A).

The Lower and Matheson Tills were sampled continuously using an average sample interval of 1.5 meters. Cochrane Till and glaciofluvial sand and gravel were sampled over longer 3 to 5 meter intervals because they are far-travelled and are generally ineffective for mineral tracing. Glaciolacustrine clay, silt and sand were not sampled because they are of no exploration value.

Seven hundred and six overburden samples and ninety-seven bedrock samples were collected (Table 2). These samples were reduced to 7-9 kilograms with an aluminum scoop, packed in heavy plastic bags and shipped in 20-litre metal pails to the ODM processing laboratory in Nepean.

The average number of overburden samples in the ninety-six holes that were completed to bedrock was 7.3 compared to the North Abitibi average of 8.

3.6 Sample Numbering System

In the field, both the overburden and bedrock samples were assigned a number denoting the ODM client (BPS), the year (86), the hole number, and the relative position in the drill hole. For example, No. BPS-86-11009-01 is the first sample collected from Hole 09 on Grid 10-110. To facilitate computerization of the sample data, Selco requested that ODM's laboratory re-number the overburden samples from Grids 110 and 113 using a continuous three-digit number series. Unfortunately this conversion greatly impedes discussion of overburden anomalies as the new numbers indicate neither the geographic nor stratigraphic positions of the samples. For example, Sample 11009-01 is now simply designated Sample 601.

3.7 Sample Processing

ODM prepared heavy mineral concentrates from all samples of till, sand and gravel. Sample processing procedures are shown in the flow sheet of Fig. 7 and may be summarized as follows:

First, a 250 gram character sample is extracted from the bulk sample using a tube-type sampler. The character sample is dried and stored for future reference. On some programs, its minus 250 mesh fraction is separated and analyzed to allow comparison with the heavy mineral analyses.

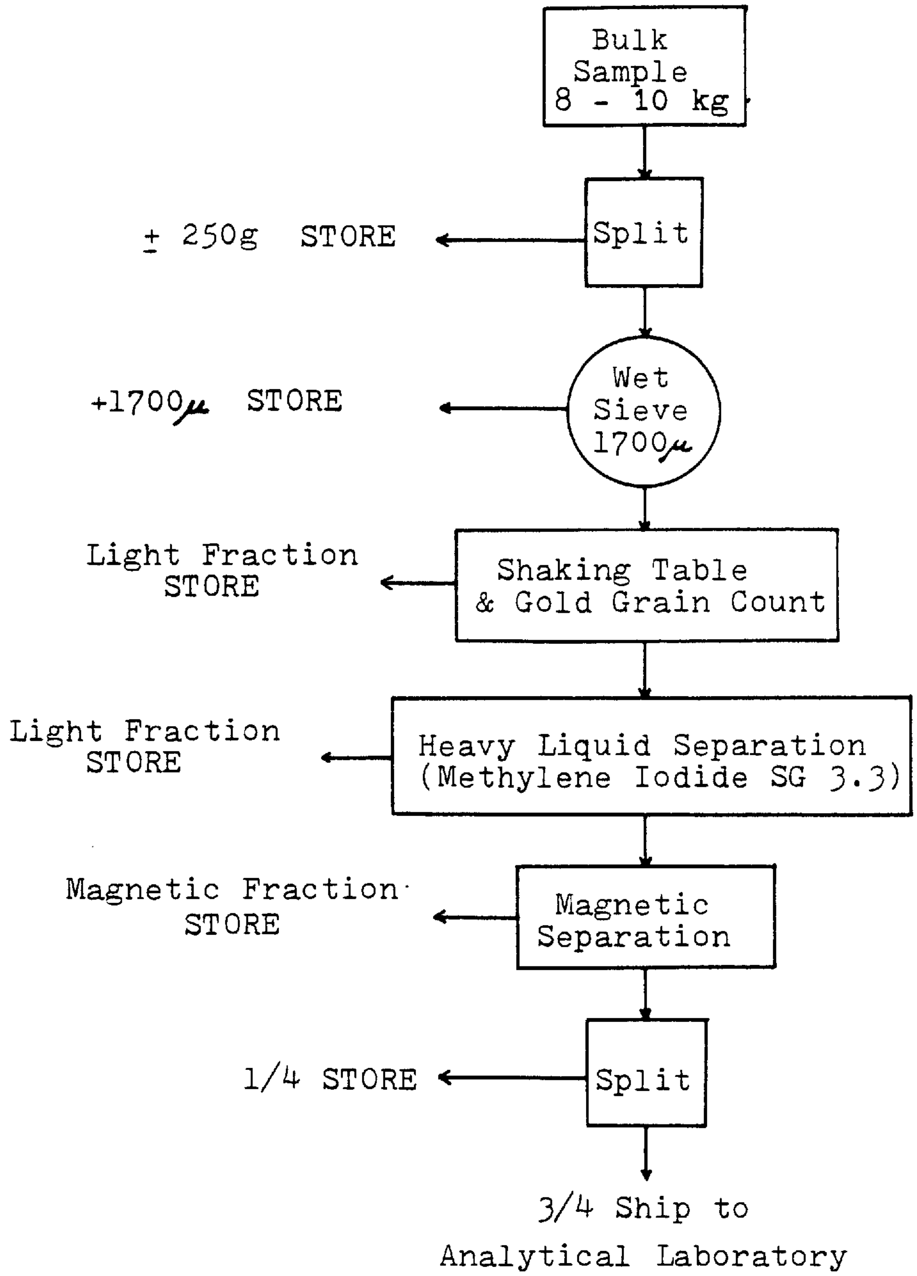


Figure 7 Sample Processing Flow Sheet

The remainder of the bulk sample is weighed wet and is sieved at 1700 microns (10 mesh). The +1700 micron clasts are weighed wet and the -1700 micron matrix is processed on a shaking table to obtain a preconcentrate. The table concentrate and all fractions obtained from it are weighed dry. The Selbaie sample weights are listed in Appendix B.

ODM has developed technology for evaluating free gold anomalies as the samples are being tabled. The use of special feeders and table adjustments causes many gold grains to separate from the other heavy minerals and follow individual paths across the table. These grains are picked from the deck, placed under a binocular microscope, measured to obtain an estimate of their contribution to the eventual assay of the concentrate, and classified as delicate, irregular or abraded (Fig. 8) to determine their approximate distance of glacial transport. Photomicrographs (35 mm slides) are taken if more than 10 gold grains are present.

Magnetite, with a specific gravity of 5.2, is the heaviest of the common minerals and normally forms the top mineral band on the table above garnet and epidote/pyroxene. Common flake gold coarser than 125 microns separates completely from the magnetite and is readily counted. Fine gold, thick gold and delicate gold travel with the magnetite due to size and shape effects, and only 10 to 20 percent of such grains can be sighted on the table. Gold particles can also be obscured by pyrite which tends to cross the table in the gold path if it forms more than 10 percent of the concentrate. However, ODM has developed a special panning technique to recover the hidden particles together with some copper, lead and arsenic pathfinder minerals. ODM normally pans samples in which two or more gold particles are sighted on the table as well as samples with high pyrite concentrations or any delicate gold. The Selbaie table and pan gold counts are listed in Appendix C.

The table and pan concentrates and any gold grains are recombined and the concentrate is dried. A heavy liquid separation in methylene iodide (Specific Gravity 3.3) is then performed. The light fraction (S.G. less than 3.3) is stored and the heavy fraction undergoes a magnetic separation to remove drill steel and magnetite. The Selbaie magnetic separates were checked to ensure that they contained not more than five percent pyrrhotite.

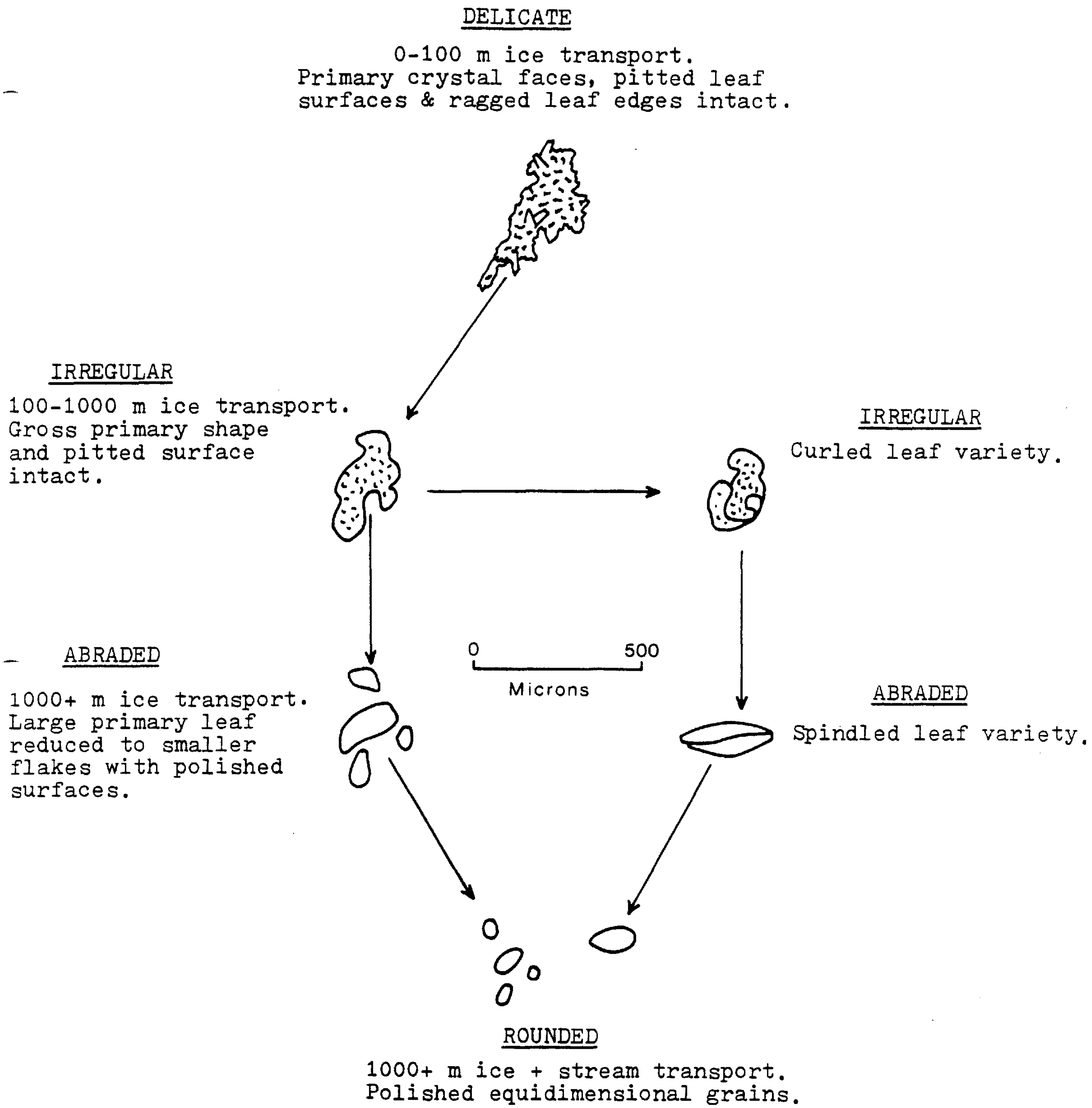


Figure 8 - Effects of glacial transport on gold particle size and shape. (Developed by Overburden Drilling Management Ltd.)

3.8 Sample Analysis

The non-magnetic heavy mineral fraction is used for mineralogical and geochemical studies. If the analysis is by chemical methods that involve pulping, a 3/4 split is analyzed and a 1/4 split is retained for the mineralogical work. On gold programs it is desirable to analyze the whole concentrate to minimize the nugget effect that is caused by the particulate nature of most till gold.

The whole concentrate can be analyzed without damaging its mineralogy by employing the instrumental neutron activation (INA) technique which requires no sample preparation (pulping). However the INA procedure is slow for the following reasons:

1. The analysis is not made until ten days after the concentrate has been irradiated.

2. Radiation levels remain too high to allow sample handling within four months of analysis.

These problems were considered to outweigh the benefits of a whole concentrate anlaysis for the Selbaie samples and 3/4 concentrates were therefore assayed by the conventional fire assay method using an atomic absorption finish.

In the sample preparation circuit, pulping time was reduced to minimize the potential for smearing of malleable gold grains. As a result, most pulps contained about 5 percent +150 mesh material that was not evenly distributed through the fines. It is well known that free gold tends to congregate as flattened metallics in the coarse fraction of a pulp. Therefore samples that were known to contain gold grains over 150 microns in diameter were screened to 150 mesh after pulping, and separate determinations were made on the +150 mesh metallics and on a 20-gram (if available) subsample of the homogenized -150 mesh pulp. A weighted average gold assay was then calculated. A small subsample of the pulp was analysed for Cu, Zn, Ag, As and Pb by DC Plasma (Appendix D). Bedrock samples were analyzed for the same metals (Appendix E) and whole rock compositions were determined (Appendix F). All assaying was done at the Ottawa laboratory of Bondar-Clegg and Company Limited.

4. BEDROCK GEOLOGY

4.1 General Geology

The Selbaie project areas are located within the Chibougamau-Matagami section of the Archean Abitibi greenstone belt. This belt, which comprises part of the Superior Structural Province is composed of at least nine deformed volcanoes (Goodwin, 1982). In the southern part of the belt the rocks from each volcano have been assigned to a "Group" ("Super Group" in Ontario) and have been subdivided into basal komatiitic, middle tholeiitic and upper calc-alkalic "Formations" ("Groups" in Ontario). This has not been done in the Selbaie-Detour-Casa Berardi area due to the poor bedrock exposure and low level of exploration activity until the recent discovery of the Golden Pond deposits at Casa-Berardi. The airborne Input Survey by the Quebec Department of Natural Resources in 1974 indicates that the area is underlain by an east-west trending belt of mixed metavolcanic and metasedimentary rocks (Fig. 9). Even the most recently published maps of the area (Quebec Department of Energy, Mines and Resources, 1986) are based mainly on interpretation of airborne geophysical surveys.

The only comprehensive diamond drilling program conducted in the Selbaie area is the one carried out by B.P. Selco in the vicinity of the mine. The mine is located in meta-volcanic rocks near the southwest contact of the Brouillan Batholith. Felsic to intermediate flow and fragmental metavolcanic rocks, which host the deposit, are overlain by basalt and andesite flows with intercalated metasedimentary rocks. The stratigraphic package strikes east and dips and faces to the south. Lower greenschist metamorphism is indicated by a poor foliation, pervasive chloritization and good preservation of primary volcanic textures (Deptuck, Squair, Weirzbicki, 1982).

The Selbaie ore deposit consists of epigenetic quartz-carbonate vein systems mineralized with pyrite, sphalerite and chalcopyrite along with minor amounts of galena, tetrahedrite, polybasite and native silver. The vein system formed as a result of late stage hydrothermal activity localized along steeply dipping fault/fracture systems within felsic pyroclastic and volcaniclastic rocks. A quartz porphyry horizon is believed to have formed an impermeable cap rock thus

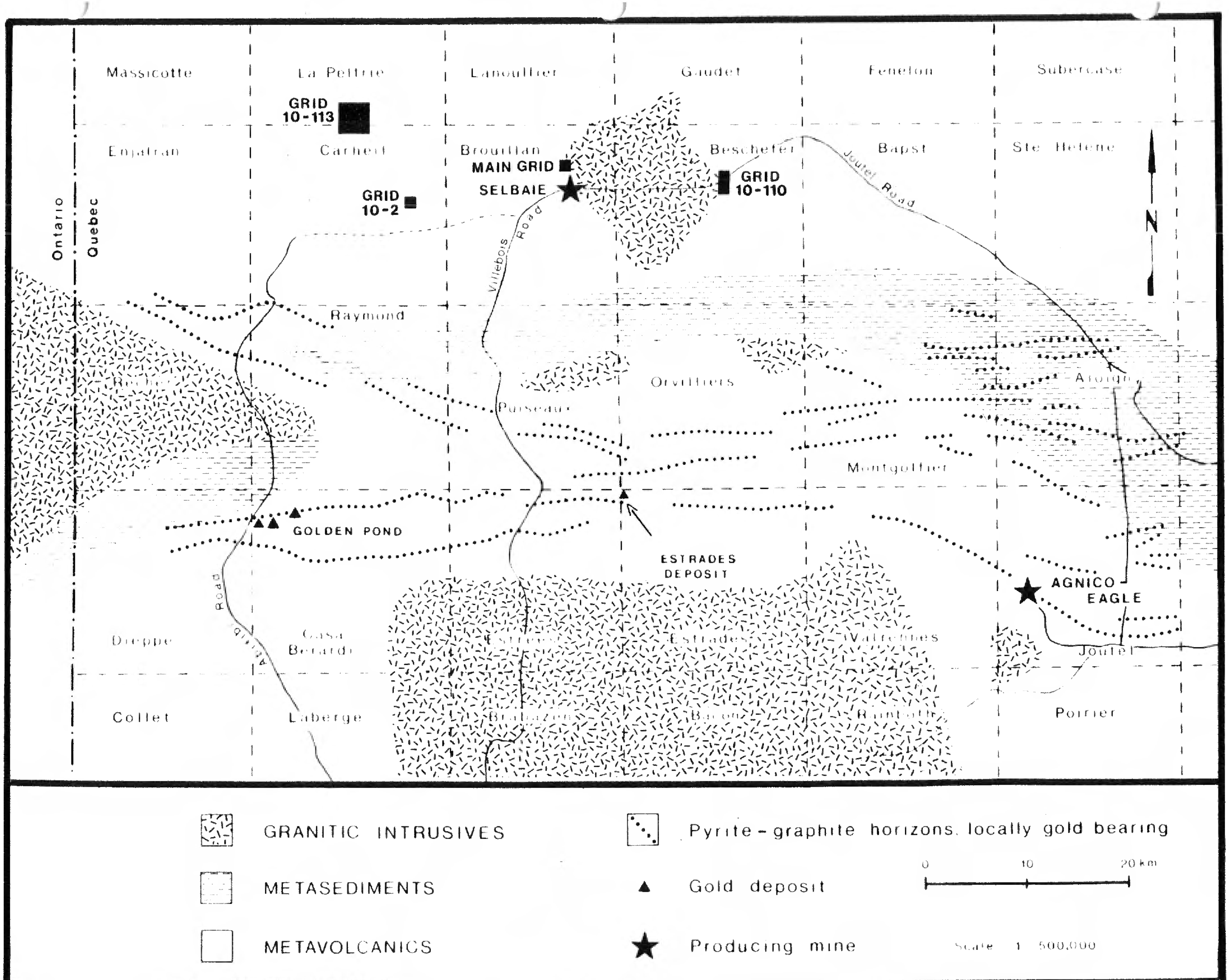


Figure 9. Geology of the Selbaie Area

restricting the hydrothermal solutions to permeable members of the fragmental rock units. The upper part of the B-Zone was weathered before the Pleistocene glaciations and contains supergene minerals such as native copper, chalcocite and bornite that enhance its copper content.

4.2 Bedrock Logging Procedures

A binocular microscopic log of all bedrock samples was prepared (Appendix G) to confirm and amplify field descriptions with the objective of producing an accurate stratigraphic map. Particular attention was paid to primary features, and the rocks were assigned genetic names such as felsic tuff rather than metamorphic names such as quartz-sericite schist.

Reasonably accurate measurements of primary mineralogy, structure, texture, degree of metamorphism and alteration can be made from chip samples with a binocular microscope, but inherent limitations are present. These limitations include:

1. Inability to differentiate gray plagioclase from gray-brown and gray-green pyroxene where the grain size is less than 0.2 mm as in most volcanic rocks. This effectively precludes differentation of intermediate volcanics from mafic volcanics in extensive areas of the Abitibi belt where primary pyroxene has survived sub-greenschist facies metamorphism. In greenschist facies areas where pyroxene has been largely converted to amphibole and chlorite, intermediate and mafic units can be differentiated.

2. Inability to determine bedding thickness or fragment size where the dimensions of the beds or fragments are greater than the 1 cm diameter of the coarsest drill cuttings.

3. Inability to recognize tops in bedded sections.

4. Difficulty in differentiating certain primary structures such as pillow selvages from secondary veins.

5. Necessity of inferring gross mineralogy of aphanitic samples from rock colour and hardness.

4.3 Bedrock Stratigraphy of the Selbaie Project Areas

The bedrock lithologies encountered on the four Selbaie properties are listed in Table 3. The geology of each area is dominated by intermediate to mafic volcanic rocks (flows). The frequency of occurrence of the other rock types varies with the project area. Specifically, graywacke occurs only in Hole 11334 on Grid 10-113 and porphyries are restricted to Grid 10-113 and Main Grid. Granitoid intrusives were intersected on all grids except 10-113 and fragmental volcanics were encountered in all four areas.

Lower greenschist metamorphism is evident to varying degrees in all rock types. Typically, intermediate to mafic volcanics consist of chlorite and plagioclase and exhibit a medium-green colour. Most samples with less than 35 percent chlorite have intermediate chemical compositions while those with more than 35 percent chlorite have mafic chemical compositions. Felsic volcanics contain quartz and sericite, the sericite imparting a yellow colour to the rock. Chlorite, instead of biotote, is present in sediments. Some primary pyroxene is preserved in gabbro sills.

Volcanic and grabbroic samples were plotted on Jensen Cation Plots (Fig. 11, 12, 14, 16 and 18) to determine the chemical affinity of the strata in each area. The volcanic rocks west of the volcanic centre, represented by the Brouillan Batholith (Grid 10-2, Grid 10-113 and Main Grid) appear to belong to the calc-alkalic series, while the volcanic rocks to the east (Grid 10-110) appear to be tholeiitic.

The age relationships of the different lithologies are as follows:

1) The oldest rocks are intemediate/mafic volcanics, felsic volcanics, fragmental volcanics and graywacke.

Bedrock Lithology

7	Granodiorite
6	Feldspar porphyry (6a), quartz-feldspar porphyry (6b)
5	Gabbro
4	Graywacke
3	Fragmental volcanics:felsic (3a), intermediate-mafic (3b)
2	Felsic volcanics
1	Intermediate (1a) to mafic (1b) volcanics

Table 3 Table of Bedrock Formations

2) Gabbro and porphyries occur as synvolcanic dikes and sills but are less deformed than the above rocks because their massive primary structure tended to insulate them from the regional metamorphism.

3) Granodiorite is the youngest rock present, occurring in the Brouillan Batholith and in satellite stocks.

The intersected lithologies are described by property and their distribution is shown in Figures 10, 13, 15 and 17.

4.3.1 Grid 10-2 (Fig. 10)

4.3.1.1 Intermediate to Mafic Volcanics (Unit 1)

Intermediate to mafic volcanics predominate on Grid 10-2 and were intersected in 73 percent of the drill holes. They are bounded to the north by felsic volcanics and intruded in the southwest by a granodiorite body.

On the Jensen Cation Plot (Fig. 12) the majority of the mafic volcanic rocks plot in the high magnesium tholeiitic basalt and the calc-alkalic basalt fields while the intermediate volcanic rocks fall in the calc-alkalic andesite and dacite fields. Associated rock types follow the same trend. Specifically, the only gabbro sample plots in the high magnesium tholeiitic basalt field with some of the mafic volcanics, suggesting a comagmatic character, while the felsic volcanics, fragmental volcanics and porphyries plot in the calc-alkalic field along with the intermediate volcanics and the remainder of the mafic volcanics. Overall, the volcanic lithologies represent a calc-alkalic suite.

The grain-size of intermediate to mafic volcanic rocks ranges from less than 0.05 mm to 0.3 mm with an average of 0.1 mm and the texture is equigranular and interlocking. The structure is generally massive to weakly foliated. Chlorite and plagioclase (visibly saussuritized in some samples) predominate with relict pyroxene crystals preserved in Samples 109-16 and 113-11.

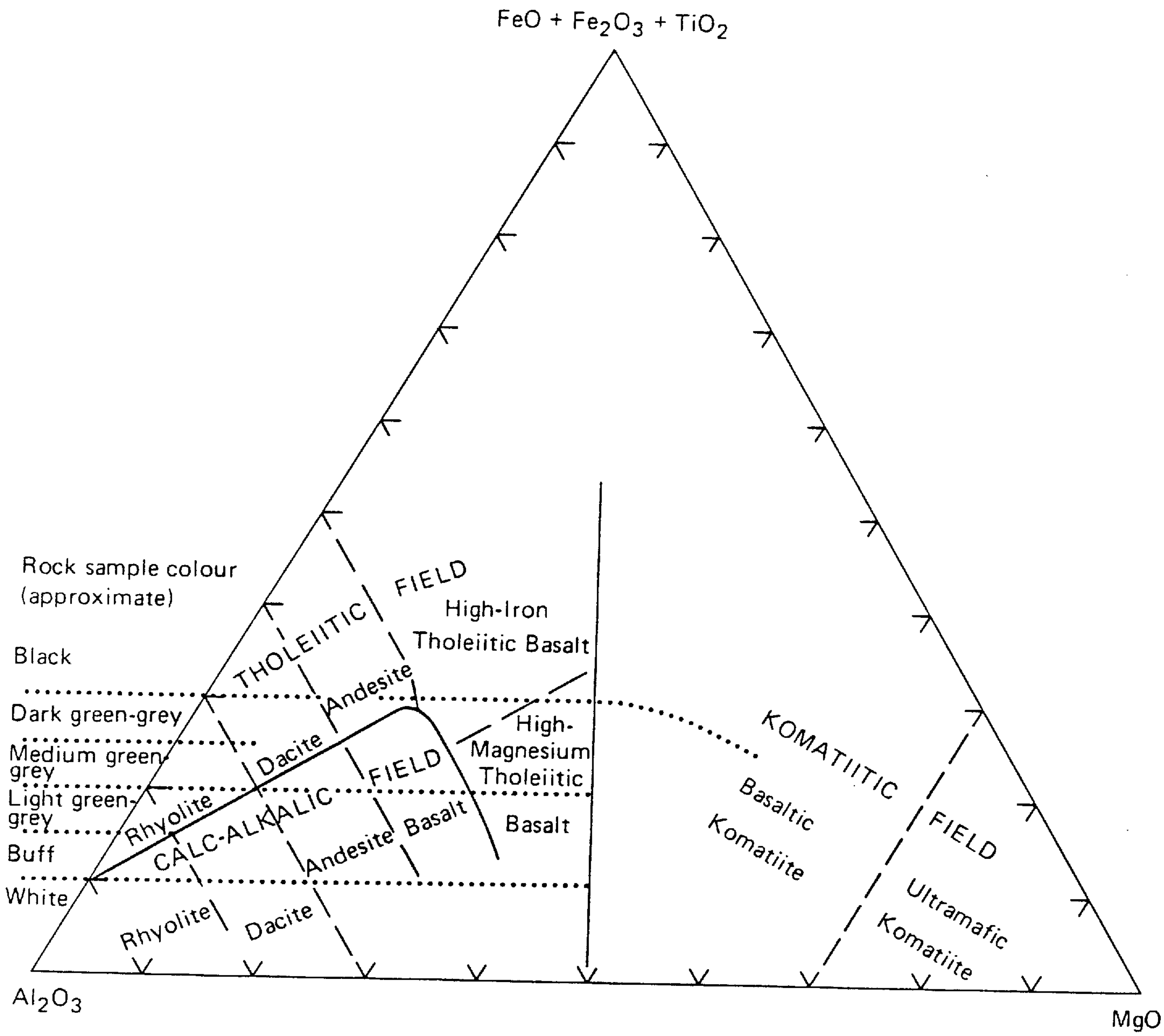


Figure 11 Jensen Cation Plot - Legend

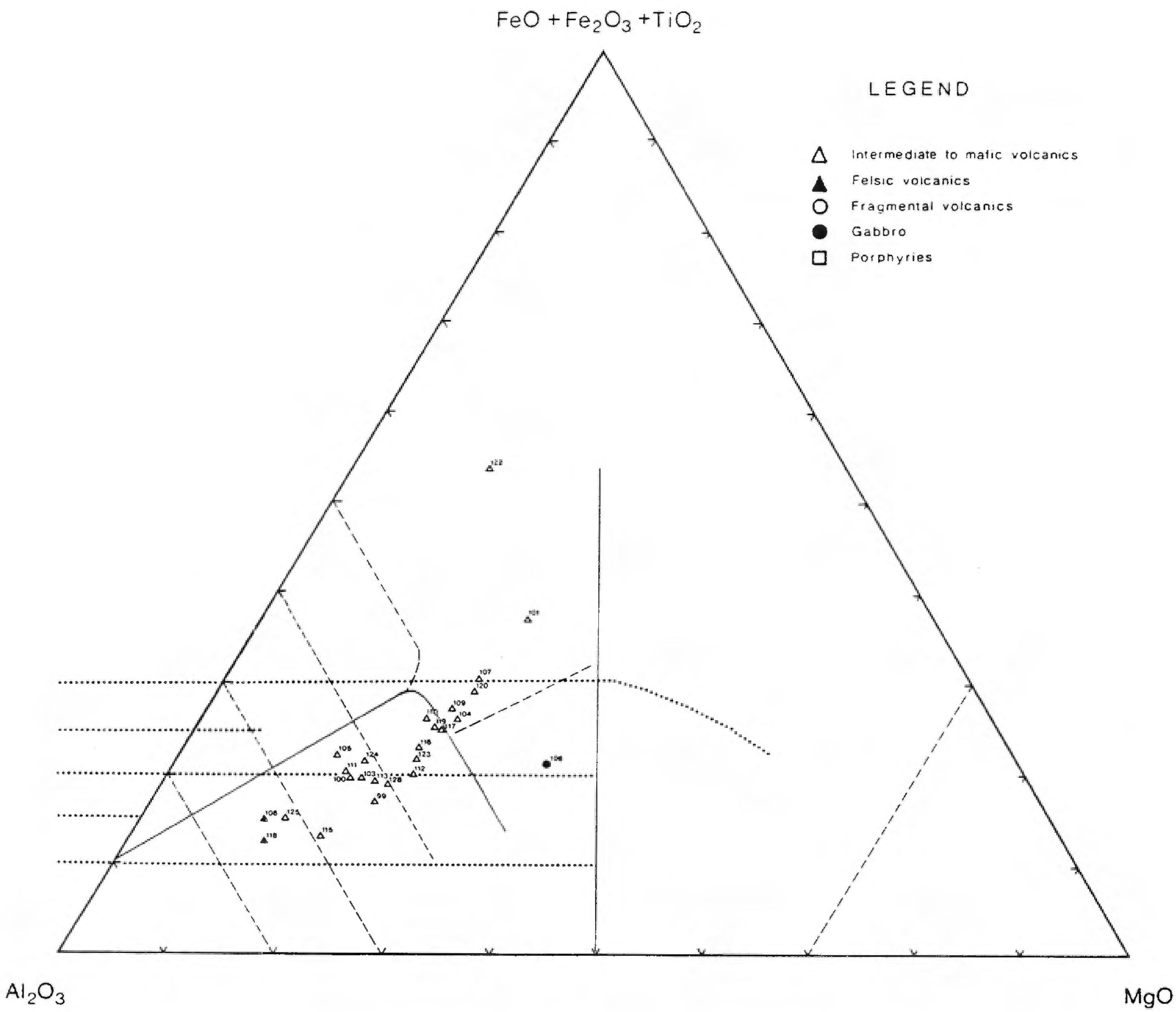


Figure 12 Jensen Cation Plot - Grid 10-2

Amygdules of chlorite, quartz and carbonate occur in 41 percent of the samples and up to 10 percent plagioclase and quartz phenocrysts were also noted in 41 percent of the samples. Generally, carbonate content of the intermediate to mafic volcanics is less than 1 percent except in Holes 111, 124 and 125 where quartz-calcite veins are present.

A flow breccia was encountered in Hole 100. It is characterized by 50 percent hard, angular to rounded, cherty fragments in an otherwise soft quartzo-feldspathic and chloritic matrix.

Sulphide concentrations in the intermediate-mafic volcanics are consistently less than 2 percent and generally less than 1 percent. Exceptions are: Hole 103 with 5 percent pyrite restricted to bleached zones; Hole 111 with 5 percent disseminated pyrite; and Hole 122 with 10 percent pyrite/pyrrhotite and 0.4 percent chalcopyrite as veinlets. Hole 122 lies just north of an E.M. conductor which passes through the northern portion of the grid. Chalcopyrite also occurs in Holes 110 and 120 at grades of 0.1 and 0.2 percent, respectively. The copper mineralization appears restricted to quartz-carbonate veinlets and the adjacent wallrock. The veinlets constitute 1 to 2 percent of the samples.

4.3.1.2 Felsic Volcanics (Unit 2)

Felsic volcanics are restricted to the northern boundary of the grid in Holes 108 and 118. Both samples are good examples of rhyolite with silica contents of 71 and 76 percent and 10 to 20 percent quartz eyes. They are light green-gray in colour, very fine grained (less than 0.05mm) and massive in structure. The rhyolites contain less than 1 percent slow reacting carbonate and are devoid of sulphides. On the Jensen Cation Plot (Fig. 12) they fall in the calc-alkalic dacite field.

4.3.1.3 Fragmental Intermediate to Mafic Volcanics (Unit 3b)

Fragmental volcanic rocks were intersected only in Hole 102. The sample, a quartz-sericite schist, is white to light yellow and exhibits an ashy texture. It is intensely altered, containing 20 percent quartz-dolomite vein material.

The chemistry places the sample in the high magnesium tholeiitic field of the Jensen Cation Plot (Fig. 12). This positioning may have been influenced by Fe and Mg addition associated with the intense carbonitization. Traces of pyrite and fuchsite are present.

4.3.1.4 Gabbro (Unit 5)

Gabbro was intersected only in Hole 106 in the northeastern portion of the grid. This gabbro is probably an extension of a known gabbro body to the east that has been identified in outcrop, in 1985 reverse circulation Holes 86 and 87 and by a magnetic anomaly.

Structurally, the rock is massive but the texture of the sample has been obscured by metamorphism. A grain size of 2-3 mm is inferred from relict pyroxene crystals. The gabbro contains equal proportions of chlorite and plagioclase accompanied by a trace of leucoxene and 1 percent slow reacting carbonate.

The sample plots in the high magnesium tholeiitic field on the Jensen diagram (Fig. 12). This coincides with the plotted position of the gabbro sample from Hole 87 drilled immediately east of Hole 106 during the previous year's program.

4.3.1.5 Granodiorite (Unit 7)

Granodiorite occurs in the southwestern portion of the grid and may represent a marginal dome formed during the emplacement of the Brouillan Batholith.

The rock is mottled white and green, massive, granitic in texture and has a grain size of 1-2 mm. It contains 70 percent feldspar, 10-15 percent quartz, 10-15 percent chlorite and/or biotite with hornblende occurring in Holes 114 and 121. Plagioclase: K-spar ratios were not determined but a granodiorite composition is indicated by the whole rock chemistry, relatively low quartz content and presence of hornblende.

The granodiorite contains less than 1 percent disseminated slow-reacting carbonate. Traces of pyrite are present in Holes 114, 115 and 121.

4.3.1.6 Bedrock Gold and Base Metal Geochemistry

Bedrock base and precious metal bedrock geochemistry is presented in Appendix E. Gold content of the Grid 10-2 rocks is generally less than 15 ppb with 87 percent of the samples having concentrations of less than the 5 ppb detection limit. Exceptions are of 280 and 735 ppb in Samples 115-04(2) and 125-11, respectively. Both samples have background Cu, Zn and Ag contents. They are from holes drilled at or very close to the granodiorite-volcanic contact and are in close proximity to Hole 85-88, drilled the previous year, which yielded 600 ppb Au from a quartz vein. The gold in Hole 115 is in the granodiorite portion of a composite granodiorite/intermediate volcanic sample, strongly suggesting that the mineralization is related to intrusion of the granodiorite.

Arsenic values are less than 25 ppm for all samples. Two samples, 101-03 and 105-12, contain elevated silver values of 1.7 ppm. Silver content of all remaining samples is less than 1 ppm.

Of the base metal elements analyzed, only copper shows elevated values. The Pb and Zn contents are all less than 150 ppm. Elevated copper levels (greater than 200 ppm) occurring in Holes 109, 110, 113, 115, 120, 122, 123 and 124 are 209, 640, 264, 598, 805, 1548, 226, and 337 ppm respectively. All elevated values occur in andesitic and basaltic rocks. The higher 640, 805 and 1548 ppm values in Holes 110, 120 and 122 correlate with observed chalcopyrite concentrations of 0.1, 0.2 and 0.4 percent, respectively. All of the chalcopyrite occurs in quartz-carbonate veins and, like the gold, was probably deposited during intrusion of the granodiorite.

4.3.2 Grid 10-113 (Fig. 13)

4.3.2.1 Intermediate to Mafic Volcanics (Unit 1)

Intermediate/mafic volcanic rocks were intersected in 60 percent of the holes, on Grid 10-113. They are interrupted in the east-central portion of the grid by a gabbro sill and in the southeast by felsic volcanics.

Mineralogically, the Unit 1 rocks are predominantly intermediate in character (andesite, dacite) with mafic volcanics present only in Holes 11314, 11325 and 11335. On the Jensen Cation Plot (Fig. 14) the majority of the intermediate volcanics fall in the calc-alkalic andesite and dacite fields but some fall in the calc-alkalic basalt field. Mafic volcanics fall in the high magnesium tholeiitic basalt field. Other rock types closely follow the volcanic trend. Specifically, gabbroic intrusives are chemically equivalent to the mafic volcanics indicating their comagmatic character, and felsic volcanics, intermediate fragmentals and porphyries plot in the calc-alkalic field with intermediate volcanics. Overall, the volcanic rocks in the area appear to represent a calc-alkalic series.

The intermediate/mafic volcanic rocks are generally strongly foliated to schistose and exhibit an equigranular, interlocking texture. The grain size varies from less than 0.05 to 0.2 mm with the majority of samples having a grain-size less than 0.05mm.

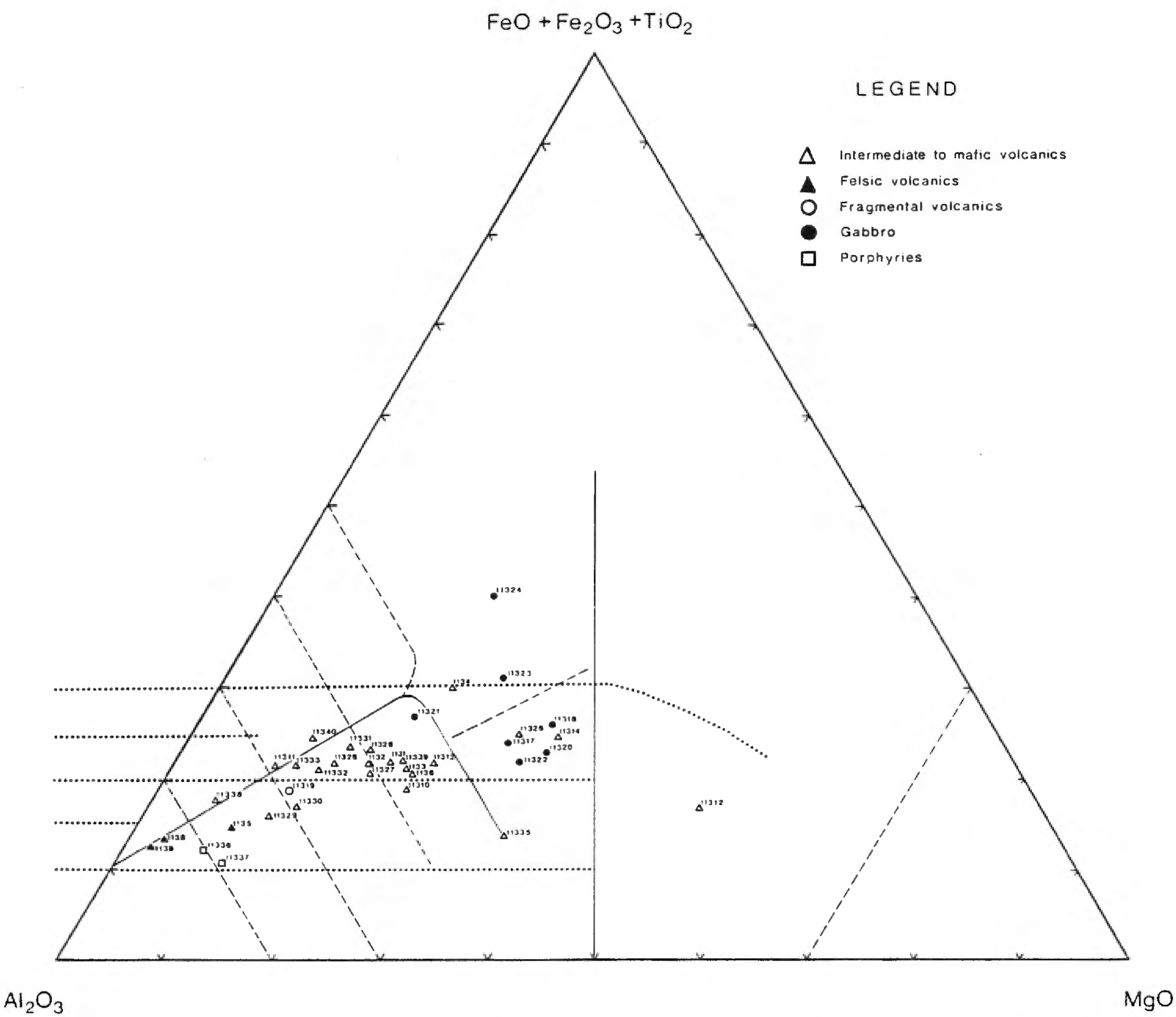


Figure 14 Jensen Cation Plot - Grid 10-113

The texture and structure of Samples 11311-06 and 11340-24 are completely masked by intense weathering which has formed saprolitic material. A sticky green clay material (rock flour) was generally returned during the penetration of the saprolitic rock by the tricone bit, and classification of the samples was mainly inferred from the surrounding lithologies and the whole-rock geochemistry.

A few amygdules of chlorite and quartz are present in Samples 11313-03, 11326-02, 11327-02 and 11335-11. Plagioclase phenocrysts and quartz eyes are also scarce. Plagioclase phenocrysts occur only in Sample 1136-20, representing less than 1 percent of the sample. Quartz eyes form up to 1 percent in Samples 1133-07, 11310-12 and 11305-06 and 5 percent of the sample from Hole 11330.

The mineralogy of the intermediate volcanics generally consists of 20-35 percent chlorite and 65-80 percent undifferentiated feldspar and quartz. Sericite (partly chlorite) content varies from 5 to 15 percent and is mainly restricted to samples from holes on the northern portion of the grid (Holes 11328 to 11332). Less than 1 percent carbonate is present in samples from the north and south traverses compared to 1-5 percent in the central portion of the grid. Exceptions are 11312-03 and 11330-05 with 10 and 6 percent slow-reacting carbonate, respectively.

Mafic volcanic rocks contain 40-45 percent chlorite and 50-60 percent plagioclase. The exception is Sample 11335-11, where carbonitization of the rock has occurred. The resulting mineralogy is 10-15 percent chlorite, 70-75 percent plagioclase, 10-15 percent dissseminated slow-reacting carbonate and 1 percent leucoxene.

Sulphide concentrations are restricted to trace levels except in samples from Holes 1134 (at the Penarroya occurence) and 11331. Up to 5 percent chalcopyrite is contained in 5 percent of the rock chips in Sample 1134-07. Approximately 1 percent tourmaline is also present. In Sample 11331-08, ten percent of the rock chips contain between 10 and 20 percent pyrite.

4.3.2.2 Felsic Volcanics (Unit 2)

Felsic volcanic rocks are restricted to the southeastern portion of the grid where they were intersected in Holes 1135, 1138 and 1139. Silica contents of greater than 75 percent indicate a rhyolitic composition. The felsic volcanics plot in the calc-alkalic rhyolite and dacite fields (Fig. 14) on the Jensen Cation Plot.

The rocks are light to medium green in colour except Sample 1138-21 which, being strongly weathered, has a pinkish to yellowish orange colour. Structurally the felsic volcanics, like the intermediate/mafic volcanics, are strongly foliated to schistose. They are fine-grained (less than 0.05 mm) and have an equigranular interlocking texture. The samples are quartz-rich (hard with 2 to 5 percent quartz eyes). Sericite content is 20-30 percent while the percentage of chlorite does not exceed 10 percent.

Carbonate alteration (2-3 percent slow reacting carbonate) and pyrite (0.1 percent) are present only in Sample 1135-13.

4.3.2.3 Fragmental Intermediate to Mafic Volcanics (Unit 3b)

Fragmental intermediate to mafic volcanics were encountered only in Hole 11319 which is located in the east-central portion of the grid. This intersection is situated midway along a gabbro sill and may be fault controlled.

The fragmental volcanic rock is light to medium green in colour and structurally is strongly foliated to schistose. Leucocratic fragments 0.5 to 5 mm in size comprise approximately 40 percent of the sample. The matrix has a grain size of less than 0.05mm and is largely composed of chert. The fragment mineralogy is 5-8 percent chlorite, 10 percent sericite, 10-20 percent carbonate and 2-5 percent quartz eyes with quartzo-feldspathic material constituting the balance. The fragmental falls in the calc-alkalic andesite field on the Jensen Cation Plot (Fig. 14).

One to fifteen percent pyrite is present in 1 percent of the fragments and the occasional fragment contains up to 1 percent tourmaline.

4.3.2.4 Graywacke (Unit 4)

Graywacke was intersected only in Hole 11334, which is located near the east end of the northern traverse.

Moorhouse states (1959, p. 441) that graywacke at the slate/phyllite/greenstone (lower greenschist) facies is little changed from its primary condition except for some loss of H_20 and $C0_2$. Typical "primary" graywacke in the Abitibi belt is an inequigranular rock consisting of quartz and plagioclase grit thinly scattered through an unsorted matrix of fine sand (less than 0.15 mm), silt and clay. Bedding is occasionally evident from variations in the percentage of grit. Overall quartz content is generally about 20 percent. The matrix minerals cannot be discerned with the binocular but presumably (Moorhouse, 1960; p. 257) comprise plagioclase, quartz, illite and chlorite.

The Hole 11334 graywacke a is medium gray-green in colour and is strongly foliated. The texture is atypically equigranular and sandy with a grain-size of 0.2-0.4 mm, and the quartz content is unusually high (40-50 percent). Only a trace of pyrite was noted in the sample.

4.3.2.5 Gabbro (Unit 5)

Gabbroic rocks are present in the central to east-central portion of the grid. They form a sill, clearly identified by magnetics, and were intersected in Holes 11317 through to 11324 excluding Hole 11319.

The gabbro is dark green, ranging from massive to schistose with shearing noted in Sample 11321-13. Grain size varies from 0.2 to 2 mm with metamorphic alteration often resulting in a masking of the grain size or destruction of the originally coarse grained crystals. In samples from Holes 11321, 11323 and 11324, a primary grain-size of 0.5-0.6 mm is inferred from relict "phenocrysts".

Plagioclase: mafic mineral ratios range from 50-60:40-50 except for Sample 11318-08 where only 30 percent plagioclase is present. Primary pyroxene is the dominant mafic mineral with secondary chlorite subordinate because the massive igneous structure of the gabbro tended to insulate it from the regional metamorphism. All samples contain a minimum of 1 percent leucoxene with up to 50 percent in Sample 11320-09. Disseminated carbonate forms less than 1 percent of the rock except in Samples 11321-13 and 11323-01 which contain 3 percent disseminated calcite and 5 percent calcite crystals, respectively. Less than 1 percent pyrite occurs in all gabbro samples. Twenty percent magnetite was noted in Sample 11324-04. This magnetite enrichment may be due to gravity settling in the gabbro magma but the configuration of the sill is not sufficiently well known to establish whether the top faces north or south.

4.3.2.6 Feldspar Porphyry (Unit 6a)

Subvolcanic porphyries were intersected in Holes 11336 and 11337, at the west end of the northern traverse. The porphyries are variably green, white and pink in colour, and are massive to weakly foliated. Subhedral to euhedral plagioclase phenocrysts (0.5-3 mm) make up 20-35 percent of the samples and are surrounded by a fine grained (less than 0.05-0.2mm) quartzo-feldspathic matrix containing less than 25 percent chlorite and 2-5 percent disseminated, slow-reacting carbonate. Hematite, in amounts of up to 5 percent, imparts a pinkish discolouration to the samples.

Chemically, the porphyry samples plot on the calc-alkalic rhyolite-dacite boundary on the Jensen Cation Plot (Fig 14).

4.3.2.7 Bedrock Gold and Base Metal Geochemistry

Bedrock gold, arsenic, and silver contents on Grid 10-113 are generally below the detection limits and no elevated values are present in any of the samples.

In terms of base metals, zinc values are all less than 160 ppm while copper values are all less than 170 ppm except in Sample 1134-07 which contains 0.2 percent chalcopyrite giving an elevated copper analysis of 762 ppm. This sample is an intermediate volcanic. Anomalous gold contents were obtained by Pennaroya Ltd. in diamond drill holes just north of Hole 1134 but no copper mineralization was reported.

4.3.3 Grid 10-110 (Fig. 15)

4.3.3.1 Intermediate to Mafic Volcanics (Unit 1)

Intermediate to mafic volcanics occur throughout Grid 10-2 but are disrupted by granitoid intrusives that are probably apophyses of the Brouillan Batholith.

Unit 1 rocks are predominantly intermediate (andesitic) in character. On the Jensen Cation Plot (Fig. 16) the majority of intermediate volcanics plot in the tholeiitic andesite and dacite fields while those rocks classified as mafic volcanics fall in the high iron tholeiitic basalt field. Other rock types show the same trend. Like the mafic volcanics, the gabbroic intrusives fall in or near the high-iron tholeiitic basalt field suggesting a comagmatic character. The single felsic volcanic sample falls in the tholeiitic rhyolite field. In contrast, the fragmental volcanics plot in the calc-alkalic andesite and rhyolite fields. If the tholeiitic rocks on Grid 10-110 were extruded from the same volcano as the calc-alkalic rocks to the west at the Selbaie Mine and on Grids 10-2 and 10-113, they probably represent a lower and older part of the section. Alternatively the tholeiitic rocks may have been extruded by a separate volcano into a basin that simultaneously received distal pyroclastic debris from the Selbaie volcano.

The intermediate/mafic volcanics are medium to dark green in colour and moderately foliated to schistose with an equigranular, interlocking texture. Grain size is less than 0.05 to 0.3 mm.

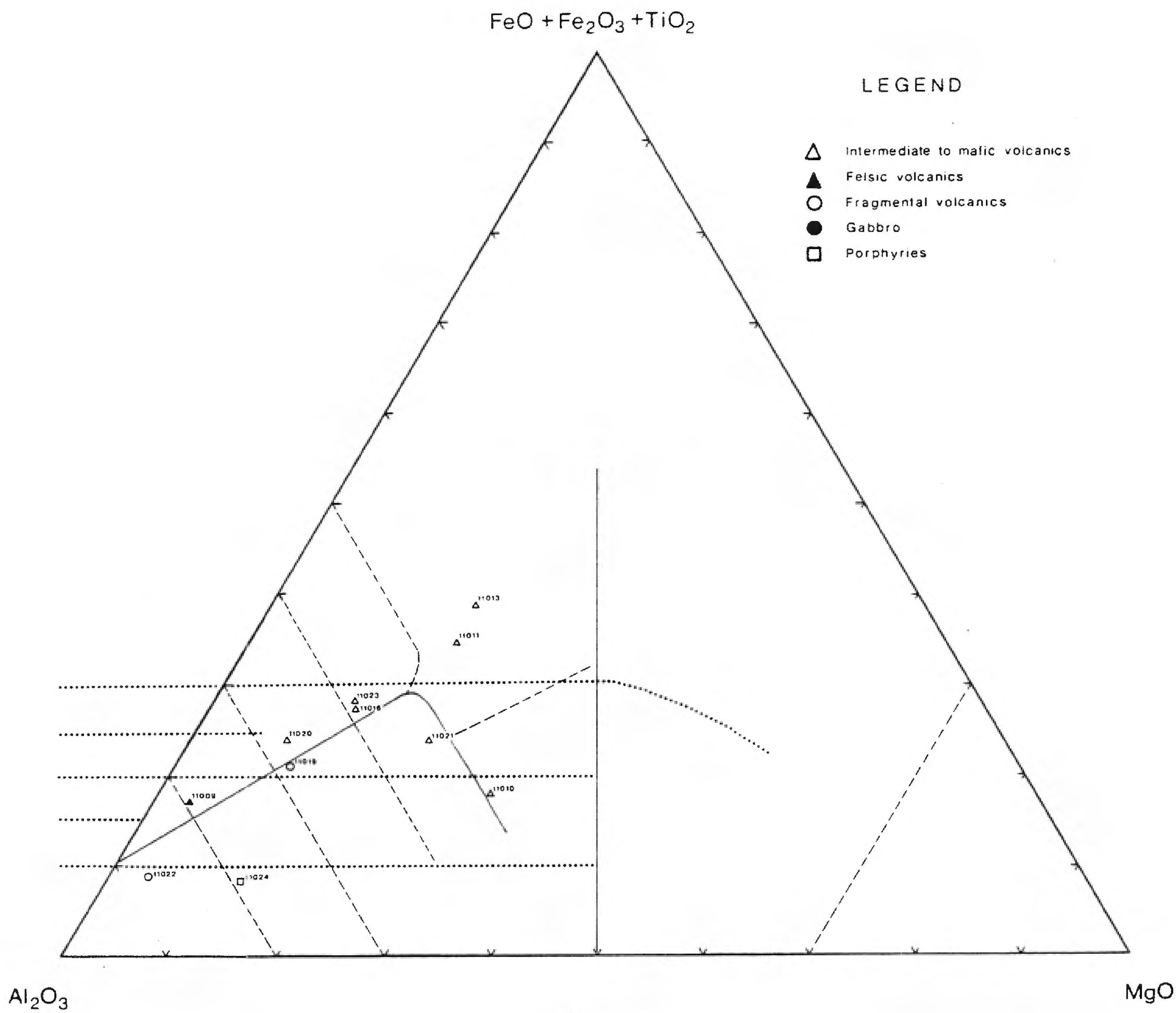


Figure 16 Jensen Cation Plot - Grid 10-110

Twenty to thirty-five percent chlorite and undifferentiated fine quartz and feldspar constitute the mineralogy of the intermediate volcanic rocks. Up to 2 percent quartz eyes to 1.3 mm are characteristic except in Sample 11020-09 which contains 1 percent plagioclase phenocrysts to 0.5 mm.

Mafic volcanic rocks are present in Hole 11011 and 11013. The texture and mineralogy of Sample 11011-02 has been obscured by carbonate alteration and strong foliation. Sample 11013-04 contains 35-40 percent chlorite, 50-60 percent plagioclase and 1 percent quartz eyes.

Carbonate alteration occurs in all intermediate to mafic volcanic rocks. Generally, less than 3 percent disseminated or veinlet calcite is present. Exceptions are Sample 11011-02 and 11013-04 with 10-20 percent disseminated slow reacting carbonate and 10 percent calcite, respectively. Pyrite, the only sulphide present, occurs only in trace amounts. Magnetite is found in Sample 11013-04 at a concentration of 0.1 percent.

4.3.3.2 Felsic Volcanics (Unit 2)

Felsic volcanic rocks occur in Hole 11009 located at the southern tip of the north-south traverse. Silica content of the sample is 72 percent and the plotted position of the sample on the Jensen Cation Plot (Figure 16) is in the tholeiitic rhyolite field.

Structurally, this fine-grained rock (less than 0.05 mm) is schistose with 2-3 percent quartz carbonate veinlets. It is quartz-rich (hard) and contains 15 percent sericite, 5-10 percent chlorite, 3-5 percent disseminated calcite and a trace of pyrite.

4.3.3.3 Fragmental Felsic Volcanics (Unit 3a)

Fragmental felsic volcanics occur in two holes (11019 and 11022) located in the northern and central portions of the grid. The samples plot in the calc-alkalic andesite and rhyolite fields but the sample from Hole 11019 falls just below the tholeiitic boundary.

Sample 11019-04 is medium green in colour and structurally massive. An ashy matrix with a gradational grain-size (0.1-2.0 mm) surrounds lapilli fragments (less than 20 mm) which constitute 20 percent of the sample. Fragments are of two types -- glassy, hard, siliceous and chloritic, quartzo-feldspathic.

Sample 11022-09 is chemically rhyolitic (71.5 percent SiO_2) and has been classed as a fragmental but is completely silicified and all of the fragments could be secondary. The fragment-like features consist of bluish cryptocrystalline chert while the "matrix", which forms more than 90 percent of the sample, consists of white, sugary, crystalline chert. Silicification is so intense that the original rock could have had almost any composition or texture.

Significant sphalerite (0.2-0.3 percent), a trace of galena and 2-3 percent pyrite are present in the silicified sample. The sulphides are very fine grained and occur in irregular clusters. The sphalerite is honey coloured because the intense silicification has lowered the iron content of the sample to 1.29 percent. Sample 11019-04 is devoid of sulphides.

4.3.3.4 Gabbro (Unit 5)

Gabbro was intersected in adjacent Holes 11017 and 11018, on the north central portion of the grid.

The samples, dark green with white zones, have a mafic mineral (pyroxene, chlorite) to plagioclase ratio of 45-60:40-55. Two to three percent calcite and 1-2 percent magnetite occur in Sample 11017-02 while Sample 11018-12 contains a trace of carbonate, 0.1 percent pyrite and 5-10 percent leucoxene. A grain size of 0.5 to 2.0 mm and ophitic texture clearly identifiable in Sample 11018-12 is obscured by strong foliation in Sample 11017-02.

4.3.3.5 Granodiorite (Unit 7)

Granodiorite was intersected in Holes 11012, 11014, 11015 and 11024. All of the granodiorite in the area appears to be related to the Brouillan Batholith. The three most easterly intersections have porphyrytic (Hole 11012) to aplitic (Holes 11014, 11015) textures and may represent individual dikes but have been connected to form a single lobe of the main batholith in Figure 15. The sample from Hole 11024 is coarser grained and is assumed to be on the margin of the main batholith.

In Hole 11012, blue quartz eyes to 0.5 mm constitute 2 percent of the sample. Phenocrysts of tourmaline are also present, forming 0.1 percent of the sample. The groundmass consists of 40 percent plagioclase, 40 percent quartz, 2-3 percent sericite, 10-15 percent chlorite, 5-10 percent disseminated calcite and a trace of pyrite.

The aplitic samples are whitish-green to pinkish-brown in colour and are structurally massive. Mafic minerals, mainly chlorite, comprise 5-10 percent of the samples. In Sample 11014-02, euhedral crystals of amphibole (actinolite) comprise 10 percent of the mafic component. The remainder of both samples consists of hard, quartz-rich rock. Less than 1 percent disseminated slow reacting carbonate and 0.1 percent pyrite occur in Sample 11014-02. Sample 11015-03, contains 2-3 percent hematite that may account for the deep pink colour of the rock.

In Hole 11024, the sample is orange with dark green patches and has a massive structure. Quartz phenocrysts, 0.2-2.5 mm in diameter, comprise 15-20 percent of the sample. It is indiscernable whether the groundmass consists of fine grained feldspathic material or large feldspar crystals because the crystal boundaries are masked by the overbearing orange colouration.

4.3.3.6 Bedrock Gold and Base Metal Geochemistry

Gold content of the Grid 10-110 rocks is less than 15 ppb except in Samples 11012-07 and 11022-09 which contain 105 and 30 ppb, respectively.

Sample 11012-07 is of granodiorite marginal to the Brouillan Batholith, and as on Grid 10-2 the gold mineralization must be genetically related to the granodiorite. Other metals in the sample are not elevated but 0.1 percent tourmaline is present.

The gold in Sample 11022-09 is accompanied by elevated Ag, Zn, Pb, Mo and As values of 14.9 ppm, 1610 ppm, 273 ppm, 4 ppm and 77 ppm, respectively, that reflect the visible sphalerite-galena mineralization noted in the sample.

In the remaining samples, base metal values for Cu, Zn and Pb are less than 155, 185 and 45 ppm respectively.

4.3.4 Main Grid (Fig. 17)

4.3.4.1 Intermediate to Mafic Volcanics (Unit 1)

Consistent with the other three areas, intermediate to mafic volcanics predominate on the Main Grid. They were intersected in 77 percent of the holes. Except for Sample 130-09, all samples were classed as intermediate volcanics. On the Jensen Cation Plot (Fig. 18) the majority of the intermediate volcanics plot in or near the calc-alkalic basalt field. Other volcanic rock types in the area also plot in the calc-alkalic field indicating an overall calc-alkalic series.

The intermediate to mafic volcanic rocks are medium to dark green in colour and are massive to strongly foliated. They are fine-grained (less than 0.05 mm) and exhibit an equigranular, interlocking texture. Amygdules of chlorite are present in 30 percent of the samples. Plagioclase phenocrysts to 1.0 mm in size occur only in Hole 180.

The samples from Holes 138 and 139 are breccias that probably represent flow tops. Their fragments are rounded to angular, 0.5 mm to more than 5 mm in diameter, and comprise up to 10 percent of the rock. They are leucocratic and hard but it is not clear whether they are silicified or represent a devitrified glass of intermediate/mafic composition. The matrix of the breccias has the same interlocking texture as non-brecciated intermediate/mafic flows in the area.

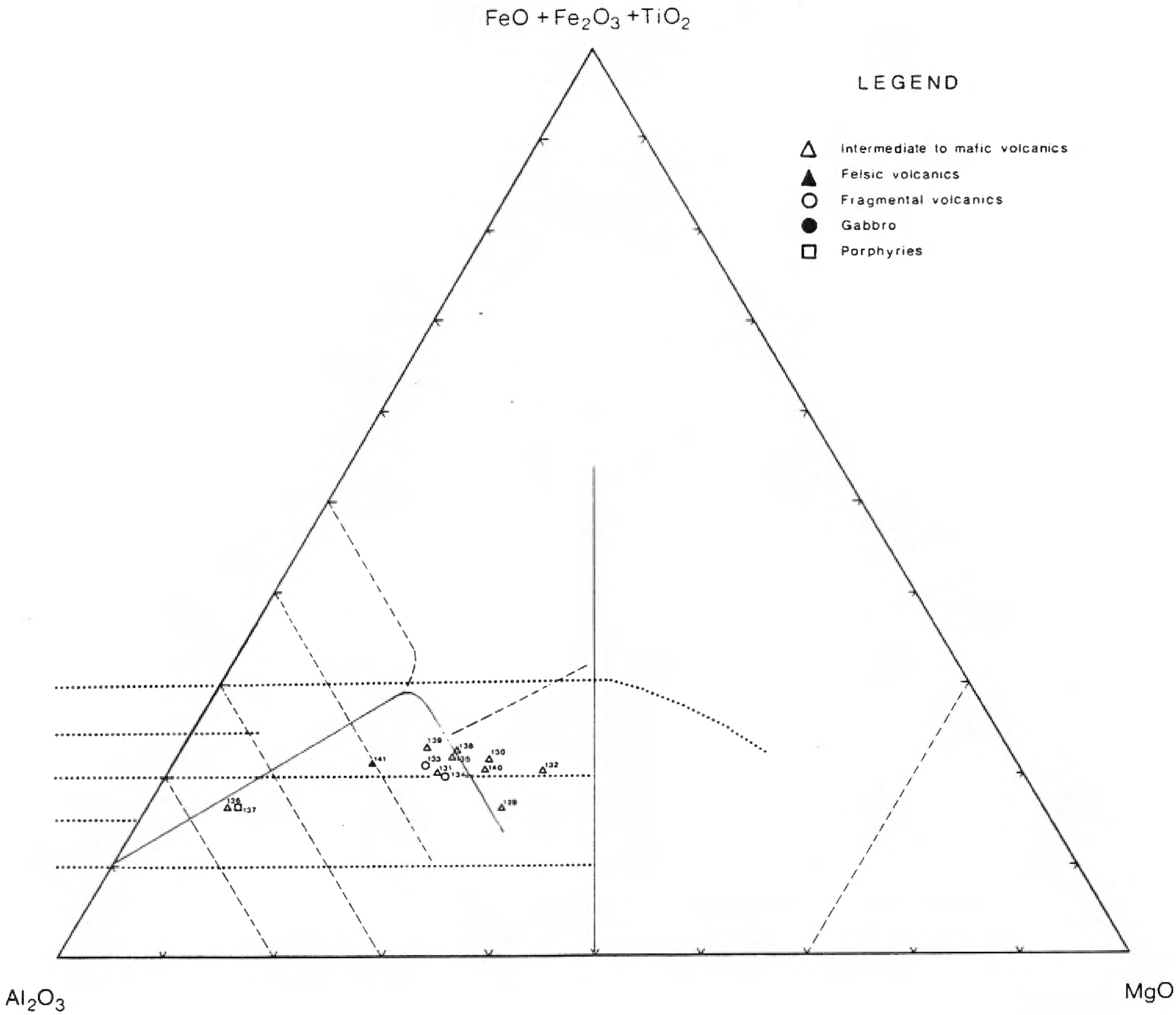


Figure 18 Jensen Cation Plot - Main Grid

The intermediate volcanics including the flow-top breccias are quartzo-feldspathic with 20-35 percent chlorite. The mafic volcanic rock in Hole 130 contains only 10-15 percent chlorite but the SiO_2 content (51 percent) is in the basalt range. Possibly part of the plagioclase-like component of the sample is actually relict pyroxene.

Carbonate alteration is insignificant except for 0.5 percent calcite crystals in Hole 129, 138 and 139 and 2-3 percent disseminated slow reacting carbonate in Hole 141. Pyrite is present in trace amounts. The flow-top breccias of Holes 138 and 139 contain 0.2 percent disseminated chalcopyrite/sphalerite.

4.3.4.2 Fragmental Intermediate to Mafic Volcanics (Unit 3b)

Fragmental intermediate to mafic volcanic rocks occur in Holes 133 and 134, located on the south central portion of the grid. As stated previously, these rocks plot in the calc-alkalic field on the Jensen Cation Plot (Fig. 18).

The rocks consist of 15-30 percent fragments (0.5-4 mm) enclosed in an ashy matrix (less than 0.05-0.2mm) and are massive to weakly foliated. The fragments are angular and consist of two types; soft chloritic and hard siliceous. The groundmass contains 20-25 percent chlorite and 75-80 percent undifferentiated quartz and feldspar. Three to five percent calcite as veinlets and crystals and a trace of pyrite is present in Sample 134-04.

4.3.4.3 Quartz-Feldspar Porphyry (Unit 6b)

Quartz-feldspar porphyry rock is found in Hole 137 in the southeast corner of the grid. This porphyry falls in the calc-alkalic dacite field on the Jensen Cation Plot (Fig. 18).

The porphyry is massive and consists of 10-15 percent quartz and plagioclase phenocrysts enclosed in a fine grained (less than 0.05 mm) groundmass. The matrix is generally chlorite-rich (30-40 percent) but contains strongly silicified zones basically devoid of mafic minerals. One to two percent calcite veinlets are present.

4.3.4.4 Granodiorite (Unit 7)

A granitic dyke was encountered along with intermediate volcanic rock in Hole 136. The dyke is probably an apophysis of the Brouillan granodiorite batholith.

The granodiorite is medium to coarse grained and structurally massive with a granitic texture. The mineralogy consists of 70 percent feldspar, 20 percent quartz and 10 percent chlorite.

4.3.4.5 Bedrock Gold and Base Metal Geochemistry

Gold content of all samples is less than 10 ppb. All other metals except Cu and Zn are present in background concentrations.

Copper and zinc are generally present in concentrations of less than 200 ppm. Elevated values of copper, 359 and 298 ppm, are present in Samples 138-04 and 139-03, respectively. The only elevated zinc value, 669 ppm, is also found in Sample 139-03. Both samples are intermediate flow-top breccias and the copper and zinc values reflect the chalcopyrite/sphalerite concentrations of up to 0.2 percent noted during binocular logging.

5. OVERBURDEN GEOLOGY

5.1 Quaternary History and Stratigraphy

The Quaternary history of the Abitibi region is poorly documented and is a subject of considerable controversy. Published accounts (e.g. Baker, 1984; Boissoneault, 1966; Hughes, 1959) are based on surficial mapping and on drill holes from a handful of localities. They are invariably simple and generally assume that:

1. All preserved strata were deposited during the Wisconsinan period.

2. The direction of ice advance was similar for all till horizons.

3. All sedimentation occurred during periods of ice recession.

ODM accepted these interpretations for almost ten years. After drilling more than 5,000 holes in the Abitibi region, however, we now recognize the following additional events (Fig. 19):

1. Two pre-Wisconsinan glaciations involving ice flow directions different from those in the Wisconsinan.
2. A Wisconsinan/Illinoian (Sangamon) interglacial period.
3. A major period of Early Wisconsinan sedimentation that occurred during ice advance rather than ice recession.

The recognition of these events has modified our interpretation of heavy mineral anomalies. Some of the events were previously recorded by Skinner (1973) in the Moose River basin 200 km north of the Abitibi area, and we have retained his stratigraphic names where possible. However, it has been necessary to coin new names for some previously unrecognized or unnamed units and events.

To date, only one of the pre-Wisconsinan glaciations has been recognized in the Selbaie project areas. All known Quaternary strata from the entire Abitibi region are listed in Table 4 and the distribution of the Selbaie units is illustrated in Sections A-A' to 0-0'. The units are described in detail below starting with the oldest.

5.1.1 Older Till and Sediments (Unit 1)

Till and sediments from the earliest recorded glaciations were not intersected within the Selbaie test areas, but do occur farther to the south in the Casa-Berardi area. This early glaciation, possibly Kansan, dispersed Paleozoic limestone and Proterozoic sandstone southward from Hudson Bay into Quebec.

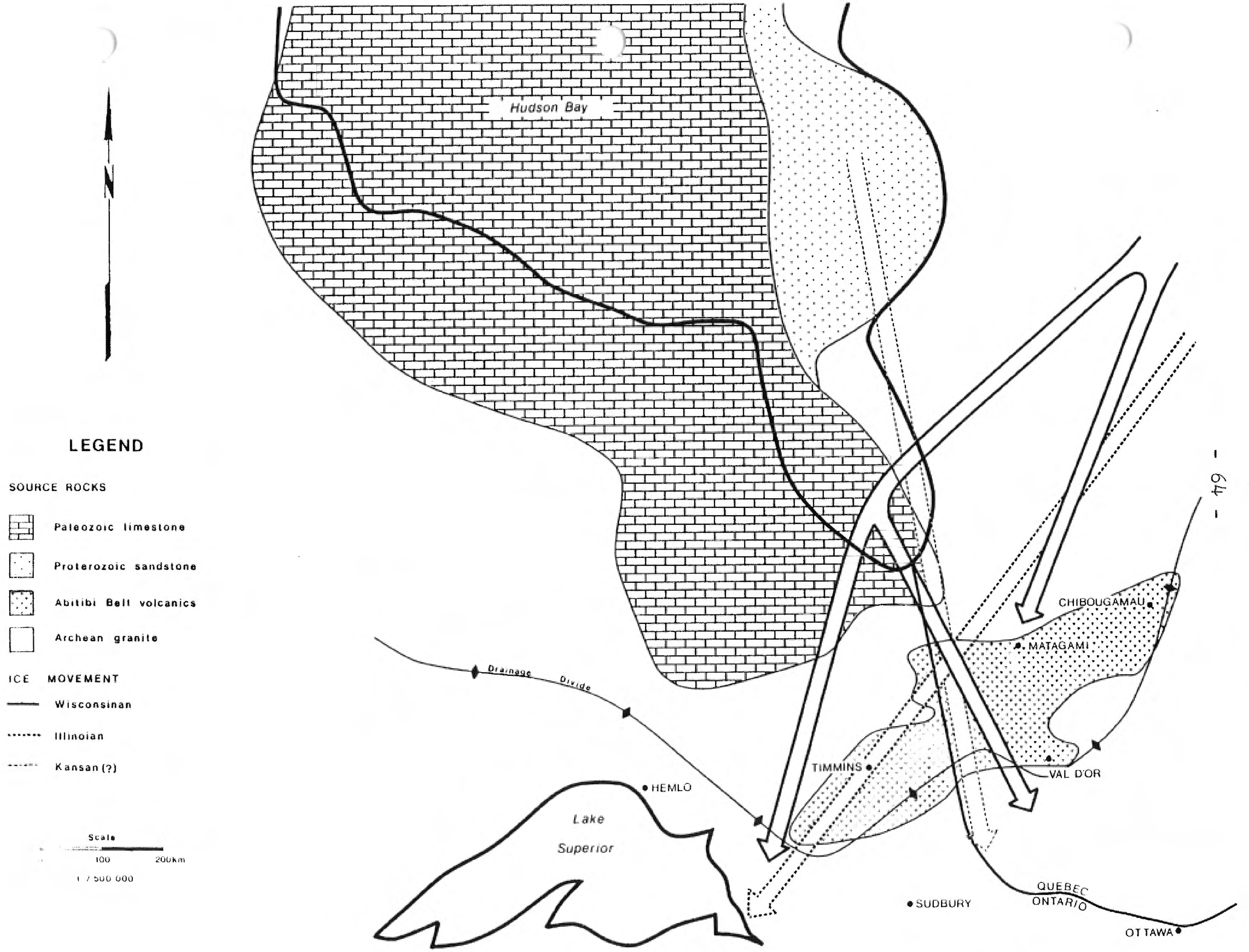


Figure 19 Glacial History

LATE WISCONSINAN

7	Cochrane Sediments 7b - glaciolacustrine member 7a - glaciofluvial/morainal member
6	Cochrane Till
5	Ojibway II Sediments 5c - glaciolacustrine clay member 5b - glaciolacustrine sand member 5a - glaciofluvial member
4	Chibougamau/Matheson Till

EARLY WISCONSINAN AND SANGAMON

3	Missinaibi Sediments 3c - Ojibway I member 3b - forest-peat member 3a - fluvial member

ILLINOIAN

2	Lower Till and Sediments

YARMOUTH AND KANSAN

1	Older Till and Sediments

Table 4 Table of Quaternary Formations

5.1.2 Lower Till (Unit 2)

The name "Lower Till" has been so widely used to describe the oldest till known in the Abitibi region prior to the discovery of the older and still lower unit in the Casa-Berardi area that we have chosen to retain it. Most authors (e.g. Baker, 1984) consider the Lower Till to be of Wisconsinan age but it is overlain by sediments that are partly interglacial and occur in the same relative stratigraphic position as Skinner's (1973) Missinaibi Formation of probable Sangamon age. We therefore consider the Lower Till to be of Illinoian age.

It has been difficult to establish the direction of Illinoian ice transport because the Lower Till is preserved only as buried lenses in bedrock valleys where it was protected from erosion in the Wisconsinan period. However, reliable measurements have been obtained from two dispersion trains (Selbaie Mine, Quebec and Bowman Township, Ontario) and from striae at three localities (one outcrop south of the Golden Pond deposit at Casa-Berardi and two open pit mines at Owl Creek and Maude Lake, Ontario). These measurements are consistently between 225 and 240 degrees, indicating regular southwesterly ice flow from a Nouveau Quebec centre. This contrasts sharply with the southward flow from (or through) Hudson Bay in the preceding glaciation (Averill, 1986; Fig 19).

The outcrop south of Golden Pond actually bears three sets of striae trending 165, 180 and 230 degrees. The 180 and 230 degree sets are not abundant, and we have not been able to prove that the 180 degree set is older than the 230 degree set. However, both of these sets are cut by the 165 degree set which is much more abundant and was inscribed by the main Wisconsinan glaciation.

The preservation of striae from three major glaciations on one outcop illustrates that glacial erosion is sometimes insignificant. Obviously, an orebody on the subject outcrop could not be expected to have a recognizable dispersion train. However, it is noted that the outcrop is a rare exception in an area where 30 metres of overburden is normal.

Lower Till throughout the Abitibi region is characteristically thin and contains a high proportion of clasts eroded from Abitibi belt formations. Its matrix consists mainly of fine sand and silty rock flour. Gray glaciolacustrine clay is not an important matrix constituent and is rarely present as beds in the till or between the till and the oxidized interglacial member of the overlying Missinaibi succession. Taken together, these features indicate that till melt-out occurred subaerially with the ice in direct contact with bedrock, producing an excellent sampling medium. Evidently most of the sediment-laden meltwater flowing off the glacier during both ice advance and recession immediately drained northward down the Hudson Bay slope. Unimpeded northward drainage would be expected since the Illinoian ice front trended north-northwest. Wisconsinan melt water, in contrast, became ponded in Lake Ojibway between an east-west trending ice front and the Hudson Bay/St. Lawrence River drainage divide and drained southward over the divide. Matheson Till was therefore deposited under subaqueous conditions.

Lower Till remnants within the 1986 Selbaie test areas occur in Holes 1132, 1134, 1135, 1136, 1137 and 1138 of Grid 10-113 and Holes 11018 and 11020 of Grid 10-110 where they are closely associated with Missinaibi Sediments. In all cases the Lower Till occurs in bedrock depressions (Sections I-I', K-K', L-L').

Lower Till intersections range from 0.3 to 17.0 metres in thickness. The till texture varies from cobbly (Holes 1132, 1134 and 1136) to pebbly (Holes 1135, 1137 and 1138), and as in other parts of the Abitibi exhibits no stratification and contains no clay beds. The till matrix consists of gray to gray-beige fine sand and silt. Gray-green fine sand and clay in Hole 11018 was probably derived from the abrasion of soft, weathered bedrock rather than glaciolacustrine clay which is normally gray. Till clast percentages are generally greater than 75 percent local material. An exception is found in the upper half of the Lower Till intersection in Hole 1135 where local lithologies only account for 50 percent of the clasts.

5.1.3 Missinaibi Sediments (Unit 3)

The name "Missinaibi Formation" was applied by Skinner (1973) to a distinctive sedimentary succession (Table 5) occurring between "Adam Till" and "Lower Till" in the Moose River Basin. If one counts down in the stratigraphic succession, Skinner's Adam and Lower Tills correlate, respectively, with the Matheson/Chibougamau and Lower Tills of the Abitibi region. If the Missinaibi Formation is present in the Abitibi area, therefore, it should overlie the Lower Till and underlie the Matheson/Chibougamau Till. Twenty percent of Abitibi drill holes have intersected a Missinaibi-like unit in the expected position. We use the informal name "Missinaibi Sediments" for this unit.

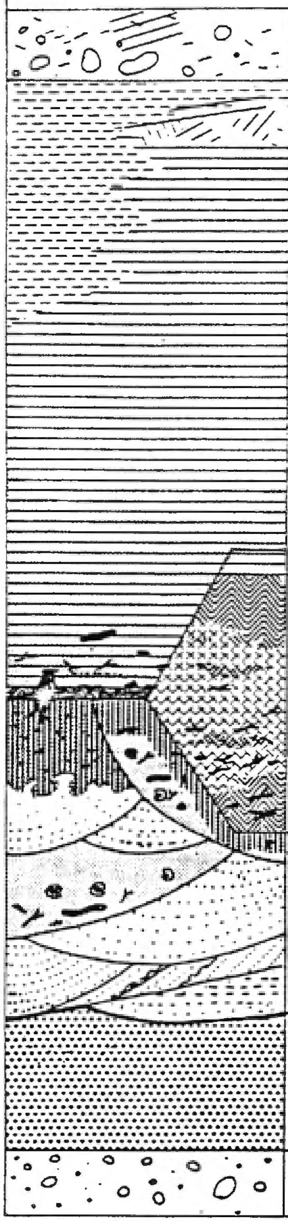
The complete Missinaibi section at the Moose River type locality comprises four members:

1. A basal marine clay unit related to the incursion of the Bell Sea (i.e. glacial Hudson Bay) in the interval between Illinoian (?) ice withdrawal and isostatic rebound.

2. An overlying fluvial (<u>not</u> glaciofluvial) sand and gravel unit that was deposited by streams flowing northward down the Hudson Bay slope in an interglacial period, presumably the Sangamon.

3. A weathered soil profile and forest-peat horizon from the same interglacial period.

4. An upper glaciolacustrine varved clay/silt/sand unit that was deposited by Wisconsinan ice advancing through Lake Ojibway I which was dammed proglacially on the Hudson Bay slope in Early Wisconsinan time.



SEDIMENTS	INTERPRETATION	ROCK STRATIGRAPHIC UNITS	
TILL	GLACIATION	ADAM TILL	
NON- TO SLIGHTLY ORGANIC, VERY CALCAREOUS SILT-CLAY RHYTHMITES COMMONLY SHEARED AND FOLDED VERY ORGANIC, LAMINATED TO MASSIVE SILT, SLIGHTLY OR NON-CALCAREOUS	GLACIAL OVERRIDING LITTLE OR NO REWORKING OF FOREST-PEAT-BED. GLACIER PROBABLY AN IMPORTANT SEDIMENT SOURCE REWORKING OF FOREST-PEAT-BED TRANSGRESSION OF PROGLACIAL LAKE	LACUSTRINE MEMBER	MISSINAIBI FORMATION
LAYER OF MOSS, STUMPS, STICKS, AND OTHER PLANT FRAGMENTS RARELY FIBROUS PEAT	PEAT AND FOREST GROWTH	FOREST-PEAT-BED MEMBER	
ZONE OF WEATHERING (VERTICAL LINES) AFFECTS LOWER UNITS AS WELL SAND, SILT, GRAVEL, COMMONLY CROSS-STRATIFIED IN PLACES WITH LENSES OF FOSSILIFEROUS SEDIMENT	WEATHERING, SOIL FORMATION STREAM INCISION AND DEPOSITION	FLUVIAL MEMBER	
SAND SILT AND CLAY CONTAINS MARINE FOSSILS.	OFF-LAP OF BELL SEA MARINE INCURSION (BELL SEA) GLACIAL RETREAT	MARINE MEMBER	
TILL	GLACIATION	LOWER TILL	

Table 5 Stratigraphy of Missinaibi Formation, Moose River Basin.

The marine member at Moose River is thin and has generally been eroded. Its former existence is inferred mainly from marine shells that have been reworked into younger members. The fluvial member is up to 8 m thick but is discontinuous. It is generally oxidized and often contains detrital wood. The peat layer in the forest-peat horizon is up to 2 m thick, similar to modern peat bogs, while the forest layer is typically 2 to 5 cm thick and contains stumps up to 12 cm diameter, similar to much of the modern forest layer in the area. The upper glaciolacustrine member is much thicker (up to 30 m) and more continuous. It coarsens upward from distal clay to proximal sand, clearly showing that sedimentation occurred during ice advance.

All of the Moose River members except the basal marine clay are present in the Abitibi region. The marine member is absent because the Bell Sea did not extend this far south. In its place should be discontinuous glaciofluvial and glaciolacustrine members associated with the Illinoian recession, although these units have not been recognized in any drill holes.

The forest-peat member is rare in Abitibi intersections because the sediments are preserved mostly in buried valleys that were probably occupied by rivers and small lakes rather than forests and peat bogs in the Sangamon interglacial. Most preserved examples are at higher elevations on the protected lee (down-ice) slopes of bedrock highs.

The upper glaciolacustrine member of Lake Ojibway I is much more prominent, with up to 30 m remaining after overriding by the Wisconsinan glacier. In terms of its thickness, it is similar to the Ojibway II sediments that were deposited during the recession of the same glacier. However, clay beds in the overriden sediments are tough, dry, compact and platy while the Ojibway II clays remain soft except at the base of very thick sections. As at Moose River, the Ojibway I section coarsens upward from clay to sand whereas the Ojibway II section fines upward from sand to clay.

Missinaibi Sediments within the Selbaie test areas are coincident with all intersections of Lower Till (Holes 1132, 1134, 1135, 1136, 1137, 1138, 11018 and 11020) and locally rest on bedrock where Lower Till is absent (Holes 99, 100, 112, 1131 and 1133). Intersections of tough, dark gray clay within younger Matheson Till, indicating dislocation of coherent sheets of Missinaibi Sediments occur in Holes 102, 118, 1136, 11310, 11335, 11337 and 11339 while Holes 11020 and 11339 contain sheets of fine grained sand.

Missinaibi Sediments in the Selbaie test areas vary from 1.0 to 7.0 m in thickness and typically average 3 m. The full Casa-Berardi type section -- oxidized sand and gravel overlain by peat and unoxidized, upward coarsening clay, silt and sand -- is not preserved in any drill holes. With the exception of sand horizons in Holes 99, 100 and 11020, the intersections consist entirely of clay.

The sand sections in Holes 99, 100 and 11020 are not underlain by clay and therefore should belong to the lower interglacial member of the Missinaibi. The sand is fine to very fine grained and is thinly interbedded with pebbly gravels and compact gray clay. Such interbedding is typical of a fluctuating interglacial environment. If the sediments had been deposited glaciofluvially as eskers in Illinoian time, they would occur in the same position but would probably coarsen systematically downward. The sample concentrates are slightly oxidized and lack sulphides. For similar sections in the Casa-Berardi area the dissolved pyrite has often been reprecipitated as marcasite. The complete lack of marcasite at Selbaie could result from a well drained fluvial interglacial environment and thus is not evidence of a glaciofluvial origin.

The more common clay intersections at Selbaie belong to Skinner's upper glaciolacustrine member marking the onset of the Wisconsinan period. They are dark gray in colour and are typical of the upper glaciolacustrine member of the Missinaibi throughout the Abitibi region, being dry, compact and platy. The clay is so tough that it is known as "super clay" in the drilling industry. Its dry, compact condition reflects burial under thousands of meters of ice, and is the principal evidence that the overlying Matheson Till was deposited in the main glaciation of the Wisconsinan period rather than in a Late Wisconsinan re-advance through the Abitibi area.

5.1.4 Matheson Till (Unit 4)

The thick glaciolacustrine member of the Missinaibi Sediments in the Selbaie/Casa-Berardi area was able to accumulate because the front of the approaching Early Wisconsinan glacier 100,000 years ago trended east-west, damming the natural northward drainage of meltwater and causing a major proglacial lake -- Lake Ojibway I -- to form between the ice and the Hudson Bay/St. Lawrence River drainage divide. The glacier then advanced through the lake, overriding and eroding the bottom sediments. In Late Wisconsinan time, 10,000 years ago, the glacier melted northward. The orientation of the ice front remained east-west as the ice crossed the drainage divide and meltwater was again ponded on the Hudson Bay slope, forming lake Ojibway II. Once in the lake, the receding glacier separated into two distinct lobes along a north-south line passing through the approximate sites of the present towns of Val d'Or and Matagami. The esker-like Harricana Moraine (Dyke et al, 1982) was deposited between the two lobes. The eastern lobe involved southwestward ice movement and deposited Chibougamau Till. The western lobe, which affected the Selbaie area, involved southeastward ice movement and deposited Matheson Till (Fig. 19).

The Matheson Till has several unique features that are related to ice advance and withdrawal through the lakes:

1. It is exceptionally thick -- typically 10 to 20 m -- reflecting the availability of abundant, easily eroded Missinaibi source material.

2. It often contains sheets of superclay and sand that were ripped up from the Missinaibi horizon.

3. The character of the matrix oscillates rapidly from clayey to sandy depending on whether the uppermost Missinaibi layer in the vicinity is clay or sand.

4. The surface of the till shows oscillatory undulations that are probably drumlins. (This feature is not visible at surface because the till is buried by younger sediments).

5. The proportion of Abitibi belt clasts is low — generally 50 percent — except near the base of till sections that rest directly on bedrock.

6. The upper half of the till section is often bedded, consisting of alternating layers of water laid, clast-poor (logged as "pebbly") till-turbidite, soft glaciolacustrine clay and glaciofluvial/glaciolacustrine sand.

5.1.4.1 Grid 10-2:

The Matheson Till on Grid 10-2 is generally continuous with the exception of Hole 199 where it is supplanted by Ojibway II sediments. Thicknesses range to a maximum of 31 metres (Hole 103) and average 15 metres. Examples of incorporated Missinaibi clay sheets are found in Holes 102 and 118 (Sections F-F' and A-A').

All of the Matheson Till sections have a sand rather than a clay matrix indicating that the proximal sands that once overlaid the preserved distal superclays of the Missinaibi glaciolacustrine member were very thick. Confirmation of the sand horizon thickness has been obtained from a sheltered southern bedrock slope in the Casa Berardi area where 17 metres of sand were intersected above a superclay horizon.

Stratification is often evident in the Matheson Till especially in the upper half of the section and reflects meltout in Lake Ojibway II where concurrent sedimentation was occurring. Evidence of this is found in most reverse circulation holes of Grid 10-2 but the best example occurs in Hole 100 where sand, silt and soft, smooth clay beds are found interlayered with lenses of sandy, pebbly till.

The Matheson Till is in bedrock contact in all holes with the exception of Holes 99, 100 and 112 where it is underlain by Missinaibi Sediments. The ratio of Abitibi belt to granitic clasts varies throughout the till section and is generally low in the upper portions averaging 50:50 to 60:40. Where the till rests directly on bedrock, the Abitibi belt component in the bottom 1 to 5 metres rises to 70 percent or higher and it is this portion that is the most effective medium for heavy mineral geochemical exploration.

5.1.4.2 Grid 10-113:

The Matheson Till horizon on Grid 10-113 is continuous and 4 metres (Hole 11338) to 35 metres thick (Hole 11340) in the extreme northern and southern areas where the bedrock elevations change gradually (Fig. 21, Sections G-G' and I-I') and is thinner and less continuous in the central region where the bedrock topography is more severe. It is very thin to absent at the Penarroya occurrence (Section K-K', J-J') where it is supplanted by Ojibway II sediments, and over a bedrock high at Hole 11323.

Examples of erosional sheeting of Missinaibi superclay are found in Holes 1136, 11310, 11335 and 11337 and of Missinaibi sand in Hole 11339. Thicknesses range from 1 metre (Holes 1136 and 11310) to a maximum of 12 metres (Hole 11337). Displacement from the base of the till section ranges from a minimum of 0.5 metres (Hole 11337) to a maximum of 26 metres (Hole 11361).

The till matrix throughout this area is sand-rich rather than clay-rich and results from the extensive incorporation of ice-proximal Ojibway I sands. Stratification is evident in the thicker till sections in the northern and southern regions. The best example is in Hole 1136 where beds of sand, silt and soft clay are interbedded with lenses of sandy, pebbly till.

The Matheson Till contacts bedrock in only 30 of the 36 holes (83 percent) in which it was intersected and the ratio of Abitibi belt to granitic clasts is generally low, averaging 50:50 to 60:40. Where the till rests directly on bedrock, the Abitibi belt component in the basal 1 to 5 metres rises to 70 percent or higher.

5.1.4.3 Grid 10-110

The Matheson Till horizon is continuous throughout Grid 10-110 despite an undulating bedrock topography. However, the variations in bedrock topography directly influence till thickness which averages 11 metres but varies from a maximum of 31 metres in a bedrock valley in the extreme west (Hole 11024, Section M-M') to a minimum of 1 metre on the flanks of a bedrock high in the central region (Holes 11016 and 11017).

The majority of the till sections have a sand rather than a clay matrix indicating extensive recycling of Ojibway I ice-proximal sands. However, the bottom 1-3 metres of till in approximately 50 percent of the holes is enriched in ice-distal gray clay.

Stratification of the upper part of the section is evident in Holes 11010, 11012, 11013, 11018, 11022, 11023 and 11024 with the best example in Hole 11018 where sand and silt beds are found interlayered with sandy, pebbly till.

The Matheson Till contacts bedrock in 15 of 17 holes (88 percent) in which it was intersected but the predominately sandy to basal clay-rich matrix indicates extensive recycling of Missinaibi Sediments and lesser erosion of bedrock. As a result, the ratio of Abitibi belt to granitic clasts is generally low, averaging 50:50 to 60:40, although the Abitibi belt component in the bottom 1-5 metres often rises to 70 percent or higher.

5.1.4.4 Main Grid:

The Matheson Till within the Main Grid area is continuous because the bedrock topography is gentle. The average intersection is approximately 8 metres with individual intersections varying between 2 to 19 metres with the exception of Hole 141 where 31 metres of till is present.

All of the till sections have a sand rather than a clay matrix resulting from the preferred incorporation of ice-proximal Ojibway I sands rather than ice-distal clays. No erosional sheeting was observed in any of the till sections.

Matheson Till contacts bedrock in all holes but is still derived largely from the Missinaibi Sediments as the ratio of Abitibi belt to granitic clasts is low, averaging 50:50 to 60:40. However, the Abitibi belt component in the bottom 1-2 metres does rise to 80 percent or higher in most holes.

5.1.5 Ojibway II Sediments (Unit 5)

Sediments related to Lake Ojibway II in the Casa Berardi/Selbaie area (Unit 5) include the following subunits:

5a Glaciofluvial esker/delta/moraine sand and gravel deposited at the mouths of ice-walled channels that delivered meltwater to Lake Ojibway II while the Matheson Till was being deposited.

5b The lower ice-proximal sand member of the Ojibway II lake bed.

5c The upper ice-distal clay-silt member of the Ojibway II lake bed.

The Ojibway II glaciofluvial member (Subunit 5a) was intersected only in the central and north-central region of Grid 10-113 (Sections G-G' and H-H'). These sediments appear to have been deposited as an apron along the ice front during a period of ice standstill rather than as an esker. The section consists of an upward fining sequence of pebbly gravel to fine gray to gray-beige sands which merge with glaciolacustrine sands.

The lower portion of the glaciolacustrine sequence (Subunit 5b) consists of sand. The majority of the intersections are found on Grid 10-2 and locally on the central portion of Grid 10-113. The sand is exclusively underlain by Matheson Till or glaciofluvial sand with the exception of Holes 119 and 120 of Grid 10-2 where it rests directly on bedrock. The average thickness is 1.5 metres with a maximum of 3 metres (Hole 123). The sand is gray and very fine grained with localized thin clay beds and grades conformably into the overlying clay and silt subunit.

The upper portion of the glaciolacustrine sequence (Subunit 5c) in the Casa-Beradi area typically comprises two horizons:

1. A thin basal layer of blue, deep-water clay.
2. A thick upper layer of gray, shallow-water clay.

The basal blue clay was not noted in any of the Selbaie test areas. The gray shallow-water clays are present in all areas except the Main Grid which is underlain by a bedrock high. During the lowering of Lake Ojibway II, this high formed an island in the lake and all clay was probably eroded by wave action.

5.1.5.1 Grid 10-2:

The upper glaciolacustrine member is on Grid 10-2 continuous in the southeastern portion, sporadically distributed in the central portion and absent from the slightly higher terrain in the north. It is conformably underlain by sand (Subunit 5b) in 71 percent of the intersections and underlain by Matheson Till in the remaining 29 percent. It averages approximately 1 metre in thickness with a maximum of 2 metres (Hole 127) and consists of gray to gray-beige, soft, pure distal clay.

5.1.5.2 Grid 10-113:

The upper glaciolacustrine member on Grid 10-113 is relatively continuous as it was intersected in 28 of 38 reverse circulation drill holes (74 percent). Its local absence is the result of erosion and incorporation into younger Cochrane Till down to the Matheson Till level. The clay is underlain by Matheson Till in 24 of the 28 intersections (85 percent), by glaciolacustrine sand in 3 intersections (11 percent) and by Missinaibi clay in Hole 1134 (4 percent).

The unit is thickest in the central portion (Sections H-H', J-J', K-K') where the Matheson Till is thin, and thins to the north and south. In the central portion thicknesses range from 3 to 21 metres and average 15 metres while in the northern and southern areas thicknesses range from 1 to 11 metres and average 5 metres. The unit consists predominantly of gray to gray-beige, soft, pure, distal clay with interbedded silty sections in the central area.

5.1.5.3 Grid 10-110:

On Grid 10-110, the upper glaciolacustrine sequence is relatively continuous and was intersected in 12 of the 16 reverse circulation drill holes (75 percent). Where it was not intersected, it has been eroded and incorporated into younger Cochrane Till - usually over bedrock highs where the sediments would be expected to be thin (Holes 11011 and 11015). The unit is underlain by Matheson Till in all intersections and varies in thickness from 0.5 metres (Hole 11013) to 23 metres (Hole 11024) with an average of 5 metres. It consists of beige to gray-beige, soft, pure distal clay.

5.1.6 Cochrane Till (Unit 6)

The Pleistocene era ended in the Abitibi region with a re-advance of the Wisconsinan glacier southward from the Moose River Basin into the north part of Lake Ojibway II. This period is known as the Cochrane stage (Prest, 1964). The Cochrane ice must have been very thin, for the glacier rarely contacted bedrock and overrode the Ojibway sediments on the lake bottom without causing significant compaction.

When the glacier melted northward, a thin layer of Cochrane Till was deposited over the Ojibway Sediments. Generally the ice overrode clay, and more than 90 percent of the till matrix is recycled clay. Also present are about 10 percent sand grit, which has been thoroughly homogenized with the clay, and 1-2 percent pebbles which are mostly limestone from Hudson Bay and granitic rocks from the terrane between the Abititi Belt and Hudson Bay.

Where the ice overrode the glaciofluvial rather than glaciolacustrine member of the Ojibway II sediments, the Cochrane Till sometimes consists mainly of recycled sand and gravel rather than clay. Since the clast lithologies in the parent gravel were similar to those in the Matheson Till, the Cochrane Till is now limestone-poor and is difficult to distinguish from Matheson Till. Examples of this are found in Holes 106, 125, 127 and 128 of Grid 10-2 (Sections B-B', E-E', F-F').

The approaching Cochrane ice deposited and overrode a layer of slightly gritty proglacial clay that grades downward into pure varved clays of Lake Ojibway II and upward into more compact Cochrane Till. This layer has been included with Cochrane Till because its field differentation is rather difficult and its preservation is rare (Holes 112, 113, 1135, 11310, 11313).

Well-developed flutings on the surface of the Cochrane Till on Grid 10-113 show that the azimuth of ice advance was 140 to 150 degrees. The till is ubiquitous in all four areas and is absent -- presumably due to erosion -- in only two holes (1139 and 11312 on Grid 10-113). Its thickness shows considerable variation in each of the four test areas. The thickest sections occur on Grid 10-110 where individual intersections range from a maximum of 17 metres (Hole 11023) to a minimum of 3 metres (Hole 11014) and averages 10 metres. This increase in till thickness approaching the Cochrane ice terminus is also evident in the Casa-Berardi area.

The Cochrane Till thickness elsewhere ranges from 0.5 metres to 5.0 metres and averages 2-3 metres. An exception occurs in the extreme western region of Grid 10-113 where thicknesses of 14 to 17 metres have resulted from the ease of erosion of an abnormally thick section of underlying Ojibway II clay.

Cochrane Till is in bedrock contact only in Hole 106 (Section B-B') and this lack of bedrock scouring severely limits the use of the till for mineral tracing.

5.1.7 Cochrane Sediments (Unit 7)

The Cochrane Till in the western Selbaie test areas (Grids 10-2 and 10-113) is overlain by a semi-continuous layer of clay to sand (Hole 11333) that was deposited during the Cochrane recession. Intersections on Grid 10-2 do not exceed 3.0 metres and average 1.0 metre. Intersections on Grid 10-113 average 1-2 metres with individual intersections of up to 8 metres (Hole 11311). They occur between the Cochrane Till flutings. Cochrane sediments west of Riviere Theo are probably thicker as an airphoto examination does not show fluted Cochrane Till at surface.

5.2 Glacial Influence on Bedrock Topography

In the foregoing sections we showed that the preservation of pre-Wisconsinan debris is dependent on bedrock topography. In significant measure, the Illinoian ice was responsible for creating that topography for it advanced in direct contact with bedrock while the younger Wisconsinan ice overrode interglacial sediments.

In order to establish realistic bedrock topographic trends the drill holes and drill hole profiles must be positioned to give a grid-like data base. Reverse circulation holes on Grid 10-110 and the Main Grid were drilled on two perpendicular profiles -- a pattern that tends to mask trends and lead to bullseye contours. Thus, contoured bedrock topography is illustrated only for Grids 10-2 and 10-113 (Fig. 20 and 21).

The close hole spacing on Grid 10-2 does not allow for interpretation of regional trends. On a local scale, bedrock topographic contours trend parallel to bedrock contacts. This is best illustrated in the south-central portion where the 240 metre contour mirrors the western contact of the granodiorite intrusion (Fig. 20). The apparent trend of the deepest bedrock valley is southwest suggesting scouring by Illinoian ice, but this valley contains Missinaibi fluvial sand and gravel and no Lower Till, indicating that it was a Sangamon river channel. The Missinaibi section was protected from Wisconsinan ice scouring by a bedrock high in the west-central part of the drill area. A narrow bedrock valley northeast of the bedrock high trends south-southwest and may have been formed by Wisconsinan ice.

The southwesterly grain of the Illinoian period is best illustrated on Grid 10-113 where it is defined by bedrock valleys in the central and southeastern portions. The central valley is coincident with an inferred northeast-trending fault which provided easily eroded bedrock material (Figs. 13 and 21). A thick, continuous section of Lower Till and Missinaibi Sediments is preserved in the southeastern valley while the central valley contains only a thin discontinuous veneer of Lower Till overlain by Missinaibi Sediments. This valley may have acted as an interglacial drainage channel which would result in lesser thicknesses of Lower Till. A bedrock high north-northwest of Holes 1131 to 1134 helped protect the Illinoian and Sangamon sediments in the valley from Wisconsinian ice scouring.

6. OVERBURDEN GEOCHEMISTRY

6.1 Regional Gold Background

Most gold occurrences in the Abitibi belt are of the free gold type. Even in Casa-Berardi or Hemlo-type deposits having a high pyrite/arsenopyrite content, most of the gold is free although very fine grained (50 microns). Thus, all tills over the Abitibi belt contain scattered free gold particles. Due to the nugget effect -- the chance occurrence of a coarse gold particle in a given sample -- the gold backgrounds of small till samples collected at the same site will vary by several orders of magnitude.

The nugget effect can be overcome if a sample of sufficient size is collected and all of the gold is concentrated into a small heavy mineral fraction that is then analyzed in its entirety (Clifton, 1967). We have found that at least 50 kg of till would be needed to overcome the nugget effect. However, it is impractical to collect, process or analyze samples of this size. We have standardized to 7-9 kg samples because reverse circulation drills deliver this quantity of material during one metre of advance.

Rather than trying to eliminate the nugget effect, we have developed procedures for recognizing and discounting anomalies that are caused by it. Specifically we measure the dimensions of all gold grains sighted on the table or recovered by panning and use these dimensions to calculate the expected contribution of each gold grain to the concentrate assay (Appendix C). In this way, the cause of each high assay is identified and nugget anomalies are screened out.

Most gold particles occur as thin flakes and it is difficult to position these flakes on edge to measure their thickness. However, we have found that each flake can be treated as a disc in which the thickness is a function of the diameter. For flakes of less than 1000 microns diameter, this relationship is expressed by the following equation:

$$t = 0.2d - 0.01\frac{(d-100)\ d}{100}$$

Thus, by simply measuring the diameters of the gold flakes that separate from the samples during tabling, it is possible to calculate the relative volume of gold in a given flake and from this relative volume to calculate the geochemical assay that the flake would produce in a sample of specific size. Clifton (1967) showed that a 100 micron flake will produce a value of approximately 100 ppb in a 15-gram sample. Conveniently, the analyzed 3/4 concentrates of most reverse circulation samples also weigh about 15 grams. Thus the range of assays produced in a "standard" reverse circulation concentrate by a single gold flake of varying size is as follows:

Size Classification	Flake Diameter (microns)	ppb Au
Very Fine	50	10
"	100	100
Fine	150	330
"	200	760
Medium	300	2,400
"	400	5,400
"	500	10,000
Coarse	600	16,200
"	700	24,000
"	800	33,300
"	900	43,700
"	1,000	55,000
Very Coarse	1,000+	55,000+

It is apparent from the above figures that till concentrates that contain no free gold will assay less than 10 ppb provided auriferous sulphides are also absent. Concentrates containing a single gold particle will assay from 10 ppb to more than 55,000 ppb depending on the size of the gold particle. Thus the normal background for till concentrates ranges from less than 10 ppb to more than 55,000 ppb.

We have found that fewer than 30 percent of till concentrates from the Abitibi region yield gold assays lower than 10 ppb. Most samples give assays of 20 to 500 ppb, suggesting the presence of one to five gold particles in the 50 to 150 micron range or/and of auriferous sulphide minerals. Ten to fifteen percent of samples contain a coarser gold grain that produces an assay over 1000 ppb.

Thick gold particles do not separate well from magnetite on the table, and in more than 80 percent of the cases where a high assay has been reported for a sample in which we did not see gold, the assay was caused by a single thick gold particle coarser than 150 microns. This is relatively easy to prove by panning the retained 1/4 concentrate and assaying it (the 3/4 concentrate either is destroyed or is not available for four months after analysis), preferably by the non-destructive neutron activation method. If the 3/4 concentrate assay was caused by a single gold grain, the 1/4 assay will be low. If the assay was caused by fine gold, a large number of grains would be required. Several such grains will be visible when the 1/4 pan concentrate is panned and this concentrate should assay the same as the 3/4 concentrate . If the 3/4 assay was caused by invisible gold in sulphides, the 1/4 concentrate will normally contain more than 10 percent pyrite plus elevated levels of another sulphide mineral such as arsenopyrite, galena, chalcopyrite or molybdenite, and will assay the same as the 3/4 concentrate.

6.2 Gold and Base Metal Anomaly Threshold Levels

Gray (1983) observed that heavy mineral gold assays in a number of dispersion trains tested by Asarco were 3000 ppb or higher. We have arrived at the same 3000 ppb threshold figure in a different manner. As early as 1976, we recognized that the grade of our concentrates within 1 km of source on base metal and uranium dispersion trains was similar to the grade of the source provided the source was of normal width (5 to 10 metres) and was oriented perpendicular to the direction of glacial ice advance. We have since proved that the same relationship applies to gold dispersion trains. Thus, assuming that gold mineralization must grade a minimum of 3 g/tonne (3000 ppb) to be significant, the anomaly threshold level in our concentrates is 3000 ppb.

It is not uncommon for gold deposits in the Abitibi belt to have a subcropping strike length of only 100 metres. Most of these deposits strike sub-parallel to bedrock stratigraphy and sub-perpendicular to glaciation. Using the 3000 ppb anomaly threshold level, a cross-ice reverse circulation drill hole separation of 100 metres would be needed to detect the deposits. However, most of the deposits have sub-ore strike extensions that increase the total mineralized length to three to four times the deposit length. If a low anomaly threshold is used and careful gold grain counts are made, the mineralized zones can be detected with confidence using a 300-400 metre hole separation. This greatly reduces exploration costs. We therefore consider any gold values over 1000 ppb to be potentially anomalous, and we prefer to pan concentrates in which any gold is seen or in which pyrite levels are sufficient (+20 percent) to interfere with the table gold count.

The base metal background of a heavy mineral concentrate, and particularly of a high-density methylene iodide concentrate, is higher than that of a whole sample, ranging up to several hundred ppm, because base metals tend to substitute to a significant extent for other metal ions in the structures of heavy silicate and sulphide minerals such as pyroxene and pyrite. The established anomaly threshold level for Cu and Zn, indicating the presence of ore-type minerals such as chalcopyrite and sphalerite in the sample, is 700 ppm. Because methylene iodide concentrates from dispersion train samples tend to grade the same as the bedrock source mineralization, massive sulphide deposits which typically grade 50,000 ppm (5 percent) combined Cu-Zn often produce anomalies over 10,000 ppm in each metal. The same deposits average 35 ppm (1 ounce/ton) silver, and the silver anomaly threshold corresponding to 700 ppm Cu or Zn is about 2 ppm. The anomaly threshold level for arsenic is about the same as for Cu and Zn but only those anomalies having a gold association are significant.

6.3 Stratigraphic Properties of a Dispersion Train

Glacial processes are systematic and heavy mineral dispersion trains in tills have specific configurations (Averill, 1978). For example, dispersed material tends to be sheeted progressively upward in the ice with increasing distance from source, causing the trains to rise in the till and thicken down-ice. Lateral spreading, in contrast, is minimal and most trains are tapered ribbons rather than fans.

ODM has traced nine gold dispersion trains (Table 1) and several base metal and uranium trains to source on both new discoveries and known deposits. These trains have had the following properties:

1. At a specific distance from source, the mineralization in adjacent drill holes was at a specific level within a specific till unit.

2. The train was at least two samples (2-3 m) thick unless:
   (a) The host till was very thin.
   or (b) The train was intersected within 100 m of source.

3. The width of the train was not more than twice the cross-ice length of the source mineralization.

4. The maximum length of the train for deposits oriented perpendicular to glaciation was 1 km (gold) to 5 km (base metals/uranium).

6.4 Properties of a Free Gold Dispersion Train

Ten to fifteen percent of background till samples over the Abitibi belt produce heavy mineral gold anomalies higher than our 1000 ppb threshold due to the nugget effect. For the reverse circulation/heavy mineral method to be effective, free gold dispersion trains, which are relatively rare, must be differentiated with confidence from the plethora of nugget anomalies. This is done on the basis of the gold grain counts rather than the assays. We have found that the gold particles in significant dispersion trains have the following properties:

1. At least 10 gold particles are present per 7 kg of till matrix.

2. The gold particles are of a common size, reflecting the size of crystallization at source.

3. The gold particles are of a common shape, reflecting a common distance of transport from source.

4. Since most gold dispersion trains are traceable for less than one km (Table 1) and gold particles become abraded after one km of ice transport (Fig. 8), the shape of the gold particles is either irregular or delicate.

Background nugget anomalies, unlike dispersion trains, do not normally repeat in the section, although with 10 to 15 percent of samples containing anomalies of this type, chance repetition does occur. Another property common to dispersion trains of all types is the presence of pathfinder minerals because most mineralized zones are multi-metallic. Even deposits that are considered to be strictly free gold occurrences generally have halos containing sufficient pyrite, arsenopyrite, galena, chalcopyrite or molybdenite for a pathfinder association to be evident in the dispersion train. Nugget anomalies have no pathfinder association.

6.5 Properties of an Invisible Gold Dispersion Train

We have encountered only one invisible gold dispersion train among nine gold trains tested. In one other train, the gold was very fine and more was recovered as composite gold/sulphide grains than as free grains.

In invisible gold trains it is not possible to use gold particle shape to predict distance to source. The distance must be gauged from the vertical positions of the anomaly in the host till and of the till in the stratigraphic succession. In most other respects, however, invisible gold dispersion trains are easier to trace than free gold dispersion trains. The following specific advantages are cited:

1. A pathfinder mineral association is always present.

2. The pathfinder minerals occur in sufficient concentrations that they can be seen in pebbles as well as in the heavy mineral fraction, and the host rock can therefore be determined.

3. The source mineralization is generally conductive and can be located by geophysical methods.

4. Gold/pathfinder metal ratios in the concentrates are relatively constant, and any interference from background nuggets is readily recognized.

5. The dispersion trains are longer and more uniform than free gold trains.

Some of these advantages apply only to unoxidized till samples from drill holes. Invisible gold is chemically reconstituted into the clay fraction if the host sulphides are destroyed by oxidation. Thus, in surface pit sampling programs, heavy mineral analysis will detect only the free gold. Conventional geochemical analysis should be used if sulphide gold targets are expected.

6.6 Selbaie Heavy Mineral Gold Anomalies

Thirty samples produced gold assays over the 1,000 ppb anomaly threshold. Our gold grain counts and calculated assays indicate that twelve additional samples would have yielded anomalous assays if the coarsest gold grain or 75 percent of the gold grains present had entered the analytical portion of the 3/4 concentrate split. Therefore, forty-two of the seven hundred and six samples (6 percent) are anomalous compared to the 10-15 percent Abitibi norm. Of these, only Sample 99-25 on Grid 10-2 has a gold count that exceeds the minimum 10 grains required for a free gold dispersion train. Two additional samples, 111-01 and 11340-03 contain 18 and 14 gold grains, respectively but neither sample produced an anomalous assay. Four other samples which yielded neither an anomalous assay nor greater than 10 gold grains were included due to either an elevated gold assay approaching the 1,000 ppb threshold or an elevated gold grain count, giving a total of 48 anomalous samples for consideration.

Twenty-eight drill holes (29 percent) contain anomalous samples and gold grains were observed in one hundred and fifty-nine of the samples (22.5 percent). These statistics alone suggest that most of the anomalies are due to background nugget noise.

Figures 22-25 are diagrammatic representations of the Selbaie overburden gold anomalies. In these figures the twenty-eight holes that contain anomalous levels of gold are plotted INPUT-fashion. Where two or more anomalies are present in a hole, the best anomaly is shown. Quadrants one through four (clockwise from upper right) represent greater than or equal to one thousand ppb Au, greater than or equal to ten grains of visible gold, greater than 50 percent of the visible gold being delicate and stratigraphic continuity, respectively.

As numerous anomalous samples and holes are present, various screening processes are used to separate background noise from those anomalies which are, or may be, caused by dispersion from significant mineralized sources. The screening processes and anomalies discounted are listed in Table 6. In some cases anomalies are discounted for more than one reason.

One screening method is to eliminate anomalies which have no stratigraphic continuity. In this regard, an anomaly at the base of a till horizon is assumed to have stratigraphic continuity as is an anomaly in a single sample till horizon. A lack of stratigraphic continuity is displayed by a single, isolated anomalous sample within or at the top of a multi-sample till horizon. A lack of stratigraphic continuity may be due to the presence of a single nugget or an erratic, high concentration of gold grains, especially in placer beds in Missinaibi gravels or at the washed surfaces of till horizons.

A second phase of anomaly screening is the calculation of assays (Appendix C) using the formula/parameters previously discussed. In this case the calculated and measured (geochemical) assays are compared. Either good correlation or a low measured assay is indicative of sufficient visible gold being seen initially to account for the anomaly. We consider the correlation between calculated and measured assays to be "good" if the calculated assays are not more than twice as high as or fifty percent less than the measured assays. This allows for a doubling or halving of the normal thickness factor for flake gold particles used in the calculation. A low measured assay indicates that the largest grain of visible gold or a disproportionate number of the grains remained in the retained 1/4 split of the concentrate. Thus either good correlation of measured and calculated assays or a low measured assay generally indicates background noise if the 10 gold grain threshold for dispersion trains is not met.

Hole No.	Gold Anomalies Sample No.	(Lab)	Au Assay (ppb) Meas.	Calc.	Grains V.G. (*Not Panned)	1st Phase Screening (No Strat. Cont.)	2nd Phase Screening (Good Corr./ Low Assay)	3rd Phase Screening (Inferred Nugget)	Remarks
GRID 10-2									
BPS-86- 99	05		180	1,950	2	X**	X	NA***	Pulp and metallics assay, check panned, no V.G., 3% py.
	08		190	2,234	2	X	X	NA	Pulp and metallics assay, check panned, no V.G., 2% py.
	15		130	7,614	1*	X	X	NA	Pulp and metallics assay, check panned, 1A @ 300x625, 1% py.
	25		2,780	34,189	12	Basal	X	Poss. train	Pulp and metallics assay, check panned, 1A @ 250x400, 5% py.
100	04		2,850	2,107	2	X	X	NA	Pulp and metallics assay, check panned, no V.G., 2% py.
	09		13,840	1,105	1*	Chance	High	X	Pulp and metallics assay, check panned, no V.G., 1% py.
	10		1,355	NA	0*	Chance	High	X	Check panned, no V.G., 1% py., 500 grains aspy.
102	04		330,400	7,163	1*	X	High	X	Check panned, no V.G., 5% py., pulp check assayed 110,000 ppb
	08		110	1,086	1*	X	X	NA	Pulp and metallics assay, check panned, no V.G., 2% py.
	20		910	1,540	2	Basal	X	NA	Pulp and metallics assay.
103	07		3,970	NA	0*	X	High	X	Check panned, no V.G., 5% py.
	17		1,640	1,238	1*	X	X	NA	Pulp and metallics assay, check panned, no V.G., 3% py.
104	07		1,100	NA	0*	Chance	High	Poss. train	Check panned, 1I @ 50 x 50, 1% py., 50 gr. aspy.
	08		2,355	183	1*	Chance	High	Poss. train	Check panned, 3A @ L25x25, 25x25, 75x75, 1D @ 25x25; 5% bornite, 10% cpy., 2% py., 20 gr. aspy. (boulder)
105	06		1,040	157	1*	Chance	High	X	Check panned, 1A @ 25x75, 10 gr. aspy.
	07		2,300	1,208	2	Chance	X	NA	Pulp and metallics assay, 1I @ 25x50, 0.25% py., 30 gr. aspy.
108	03		15,515	NA	0*	X	High	X	Check panned, no V.G., 1% py., 20 gr. aspy.
109	06		1,660	1,409	1*	Chance	X	NA	Pulp and metallics assay.
	07		1,240	NA	0*	Chance	High	X	Check panned, no V.G., 10 gr. py.
	10		1,010	NA	0*	X	High	X	Check panned, 2A @ 25x25, 50x75, 1% py.
111	01		630	217	18	X	High	Poss. train	Check panned, 1A @ 25x50, 1I @ 50x75, 2D @ 25x25, 1% py.

** - X = Yes
*** - NA = Not applicable

Table 6: Gold Anomaly Discrimination for Samples with Calculated or/and Measured Assays over 1000 ppb or/and More Than 10 Grains Visible Gold

Hole No.	Gold Anomalies Sample No.	(Lab)	Au Assay (ppb) Meas.	Calc.	Grains V.G. (*Not Panned)	1st Phase Screening (No Strat. Cont.)	2nd Phase Screening (Good Corr./ Low Assay)	3rd Phase Screening (Inferred Nugget)	Remarks
GRID 10-2 (cont'd)									
BPS-86- 112	03		20	1,618	1*	X	X	NA	Pulp and metallics assay, check panned, no V.G., 1% py., 10 gr. aspy.
	07		270,000	NA	0*	X	High	X	Check panned, no V.G., 2% py.
114	05		1,990	NA	0*	X	High	X	Check panned, no V.G., 10% py., 30 gr. aspy.
118	07		1,440	NA	0*	X	High	X	Check panned, no V.G., 1% py., 20 gr. aspy.
	09		4,390	1,923	1*	X	X	NA	Pulp and metallics assay, check panned, no V.G., 1% py.
124	02		2,370	325	1*	X	High	X	Check panned, 1I @ 25x25, 5% py., sulphides unoxidized.
GRID 10-113									
1134	06	(692)	6,480	558	2	Basal	High	Poss. train	1/4 check assayed 1,540 ppb, 1% py., adjust for small field sample.
1137	06	(729)	40	932	2	X	X	NA	Pulp and metallics assay, check panned, 1A @ 200x250, 1D @ 25x25, 5% py.
	22	(745)	1,560	NA	0*	X	High	X	Check panned, no V.G., 3% py.
11311	01	(797)	3,090	1,245	2	X	High	X	Pulp and metallics assay, check panned, no V.G., 5% py., adjust for wt. differences
11318	06	(830)	170	8,526	1*	X	X	NA	Pulp and metallics assay.
11322	04	(858)	950	NA	0*	X	High	X	Check panned, no V.G., 2% py., 1 gr. galena
	09	(863)	400	6,090	1*	Basal	X	NA	Pulp and metallics assay, check panned, no V.G., 5% py.
11330	03	(899)	460	1,376	9	X	X	NA	Pulp and metallics assay, check panned, 3A @ 75x150, 100x100, 250x250, 1I @ 25x100, 3D @ 25x25, 5% py.
11333	11	(933)	5,620	2,741	1*	Chance	X	NA	Pulp and metallics assay, check panned, no V.G., 1% py., adjust for wt. differences.
	12	(934)	1,650	NA	0*	Chance	High	X	Check panned, no V.G., 7% py.

** - X = Yes
*** - NA = Not applicable

Table 6: Gold Anomaly Discrimination for Samples with Calculated or/and Measured Assays over 1000 ppb or/and More Than 10 Grains Visible Gold

Hole No.	Gold Anomalies Sample No.	(Lab)	Au Assay (ppb) Meas.	Calc.	Grains V.G. (*Not Panned)	1st Phase Screening (No Strat. Cont.)	2nd Phase Screening (Good Corr./ Low Assay)	3rd Phase Screening (Inferred Nugget)	Remarks
GRID 10-113 (cont'd)									
11335	01	(950)	530	210	8	Chance	High	X	Pulp and metallics assay, check panned, no V.G., 15 gr. py., repanned, no V.G.
	02	(951)	3,595	NA	0*	Chance	High	X	Check panned, no V.G. 2% py.
11336	02	(961)	2,580	8	1	X	High	X	Check panned, no V.G., 15% py.
11340	03	(991)	500	314	14	X	X	Poss. train	Check panned, 3A @ 25x25, 50x50, 100x125, 11 @ 25x25.
	20	(1008)	90	1,001	1*	X	X	NA	Pulp and metallics assay, check panned, no V.G., 3% py.
GRID 10-110									
11012	06	(612)	1,205	NA	0*	Basal	High	Poss. train	Check panned, 10% py.
11013	02	(614)	1,805	617	1*	X	High	X	Check panned, no V.G., 10% py., adjust for analytical and concentrate wts.
11022	02	(645)	20,950	13,393	1*	X	X	X	Pulp and metallics assay, check panned, no V.G., 5% py.
11024	13	(670)	970	512	1*	Chance	X	NA	Pulp and metallics assay, check panned, 1% py.
	14	(671)	790	540	3	Chance	X	NA	Pulp and metallics assay, check panned, 1% py.
MAIN GRID									
136	11		20	2,331	1*	X	X	NA	Pulp and metallics assay.

** - X = Yes
*** - NA = Not applicable

Table 6: Gold Anomaly Discrimination for Samples with Calculated or/and Measured Assays over 1000 ppb or/and More Than 10 Grains Visible Gold

A third screening method is the direct elimination of nugget anomalies by check panning and analysis. Table 6, in addition to Low Assays and Good Correlation, includes another category - High Assays - which refers to those samples in which the number of gold grains sighted was not sufficient to explain the anomalies obtained. High Assays can be caused by any one of the following;

1. A missed nugget.
2. A sighted nugget for which the actual thickness is greater than the assumed thickness (0.1-0.2 x diameter) used in the assay calculation.
3. The difference in weight between the total concentrate on which the calculation is based and the assay portion of the 3/4 concentrate, (applied only to samples in which a nugget is present and a pulp and metallics assay is not done, as fine gold is evenly distributed and a metallics assay overcomes the problem of uneven gold distribution).
4. A large number of missed fine gold grains.
5. Invisible gold in pyrite or other heavy minerals.

Missed nuggets normally account for about 80 percent of High Assays, the thickness and weight factors for 10-20 percent, and fine gold and invisible gold for less than 10 percent. Only the fine gold and invisible gold anomalies are significant.

One method of evaluating anomalies in the High Assay category is to pan the retained 1/4 concentrates (Table 7). An absence or minimal amount of fine visible gold or less than ten percent sulfides in the 1/4 concentrate precludes the occurrence of fine gold or sulphide gold in anomalous concentrations in the 3/4 analytical split, and such anomalies can be assumed to have been caused by a missed or unusually thick nugget. Samples which apparently contain multiple gold particles but do not meet the ten grain minimum (assuming visible gold in the 1/4 and 3/4 splits is directly proportional) are grouped with nugget anomalies provided sulphide levels are low. Where uncertainty exists the 1/4 concentrate can be analyzed by INA with the hope of duplicating the 3/4 analysis.

Hole No.	Sample No.	Strat. Cont.	Anal. Portion 3/4 H Pulp(g)	ppb Au	V.G. ± Sf. in 1/4 conc.	Remarks
			Group 1: Table Gold Present			
BPS-86						
100	09	Chance	7	13,840	No V.G.	Missed nugget
102	04	No	10	330,400	No V.G., 5% py.	Missed nugget
104	08	Chance	10	2,355	3A @ L 25x25 25x25 75x75 1D @ 25x25 15% cpy., bornite	Possible train Sulphide boulder
105	06	Chance	10	1,040	1A @ 25x75	Missed nugget
111	01	No	10	630	1A @ 25x25 1I @ 50x75 2D @ 25x25, 1% py.	Missed nugget
124	02	No	9	2,370	1I @ 25x25, 5% py.	Missed nugget
11013	02(614)	No	4	1,805	No V.G., 10% py.	Missed nugget
1134	06(692)	Basal	1	6,480	Not panned	Possible train
11311	01(797)	No	7	3,090	No V.G., 5% py.	Missed nugget
11335	01(950)	No	20	530	No V.G.	Missed nugget
			Group 2: No Table Gold Present			
100	10	Chance	9	1,355	No V.G.	Missed nugget
103	07	No	8	3,970	No V.G., 5% py.	Missed nugget
104	07	Chance	10	1,100	1I @ 50x50	Missed nugget
108	03	No	8	15,515	No V.G.	Missed nugget
109	07 10	Chance No	10 6	1,240 1,010	No V.G. 2A @ 25 x 25 50x75	Missed nugget Missed nugget
112	07	No	10	270,000	No V.G.	Missed nugget
114	05	No	6	1,990	No V.G., 10% py.	Missed nugget
118	07	No	7	1,440	No V.G.	Missed nugget
11012	06(612)	Basal	6	1,205	No V.G., 10% py.	Possible train
1137	22(745)	No	4	1,560	No V.G.	Missed nugget
11322	04(858)	No	6	950	No V.G., 2% py.	Missed nugget
11333	12(934)	Chance	10	2,741	No V.G.	Missed nugget
11335	02(951)	No	9	3,595	No V.G., 7% py.	Missed nugget
11336	02(961)	No	10	2,580	No V.G., 15% py.	Missed nugget

Table 7: Visible Gold and Sulphides in Panned 1/4 Concentrates of Samples With High Measured Assays

Using the screening processes described, the majority of Selbaie anomalies can be confidently discounted. Single sample anomalies are most easily discounted. If three adjacent anomalous samples in a thick overburden section are considered, more difficulty may be encountered in relegating the results because of their apparent stratigraphic continuity. However, one anomaly may be due entirely to a single nugget observed initially. Another may be due to five or six background gold grains having a good correlation of measured and calculated assays. This leaves a single sample anomaly now having no stratigraphic continuity. The high frequency of background gold grains makes chance repetition of nugget anomalies in adjacent samples common. For multiple sample anomalies to be considered dispersion from a unique source, each anomalous sample must have the same parameters (i.e. type, size and shape of gold, pathfinder elements, etc.).

6.6.1 Visible Gold Anomalies

Sufficient visible gold was seen in twenty-three (48 percent) of the forty-eight anomalous samples to explain the assays obtained (Good Correlation or Low Assays in Table 6).

Eleven of the twenty-three anomalies show Good Correlation; six of these have only one gold grain present and are clearly of the background nugget type. Three of the one-grain occurrences also have no stratigraphic continuity and two show chance continuity with another anomaly. None have pathfinder mineral or element associations.

Three of the remaining five anomalous samples with Good Correlation contain two gold grains while Samples 11024-14 and 11340-03 contain three and fourteen gold grains, respectively. In all cases the gold is abraded and vari-sized. In addition, two of these multi-grain anomalies have no stratigraphic continuity, two show chance continuity with another anomaly and one is from a basal sample.

Twelve of the twenty-three samples in which sufficient visible gold was seen to account for the anomalies have Low Assays suggesting that not all of the observed gold was in the analyzed portion of the 3/4 concentrate. In all twelve samples one or more gold nuggets over 150 microns were observed during initial processing. A pulp and metallics assay was done to correct for the problem of nugget smearing during pulping. Check panning of the 1/4 concentrates of two samples produced the single original nuggets. In the case of sample 11330-03, seven of the original nine gold particles were found in the 1/4 split. In the remaining nine samples, the original nuggets -- either one or two -- must have been lost at some point during sample processing. This could have occurred at any one of three stages.

1. While ODM was studying the grains under the microscope.

2. While Bondar-Clegg was screening the coarse metallics from the pulped 3/4 concentrate.
3. While ODM was check panning the 1/4 concentrates.

There is no evidence for loss during microscope examination as all the nuggets were coarse and not difficult to handle.

Loss during check panning is considered improbable because the pan rejects were re-panned as many as three times if the nuggest could not be found on the first attempt.

There is considerable evidence that most of the loss occurred during pulp and metallics processing. Bondar-Clegg is supposed to use a very short pulping time that would normally reduce only 10 to 20 percent of any nugget gold to -150 mesh and leave 80 to 90 percent of it as flattened metallics in the +150 mesh fraction. Very low +150 mesh weights from concentrates of normal size for Samples 99-05 (0.3 grams) and 1137-06 (0.4 grams) indicate a much longer pulping time was sometimes used. This would probably smear the gold nugget on the sides of the shatter box effectively removing it from the analysis. Other losses may have occurred through improper handling while the nuggest were being screened.

6.6.2 Unexpected Gold Anomalies

Little or no gold was seen while processing twenty-five anomalous samples. (High Assay category). Fire assay/atomic absorption analysis precludes check panning of the 3/4 concentrates. Check panning results of the retained 1/4 splits are summarized in Table 7.

Visible gold was observed during initial processing of ten of the High Assay samples (Group 1). No additional visible gold or sulphide concentrations equal to or greater than ten percent were noted during 1/4 concentrate check pannings of four of these samples clearly indicating the presence of a nugget missed during processing. A fifth sample, No. 11013-02, contains 10% sulphides but lacks stratigraphic continuity.

Two of the remaining five 1/4 concentrates in Group 1 (Samples 105-06 and 124-02) contain one abraded or irregular gold grain - insufficient for a significant dispersion train. Samples 104-08 and 111-01 contain four gold grains. The final 1/4 concentrate, Sample 1134-06, was not panned but assayed 1540 ppb gold.

No visible gold was observed during the initial processing of fifteen of the High Assay samples (Group 2). No visible gold and less than 10 percent sulphides were found during 1/4 concentrate check pannings of ten of these samples, indicating the presence of a nugget that was missed during processing. In addition, all of these samples have analytical sample weights under fifteen grams. One small gold grain in a small concentrate can produce a large measured assay.

Three of the remaining five 1/4 concentrates in Group 2 (Samples 114-05, 11012-06 and 11336-02) do not contain visible gold but sulphide values are between ten and twenty percent. Samples 114-05 and 11336-02 have no stratigraphic continuity and therefore are not considered significant. Sample 11012-06 is from the basal portion of the Matheson Till and the anomaly could theoretically represent dispersion of invisible sulphide gold from a local source.

The 1/4 concentrates of the two remaining samples in Group 2 both contain visible gold. Two gold grains are present in Sample 109-10. However, the gold is abraded and the sample lacks stratigraphic continuity, indicating that the anomaly is not significant. Sample 104-07 contains only one irregular gold grain in the 1/4 concentrate but the sample shows chance continuity with another anomaly.

6.6.3 Potentially Significant Gold Anomalies

6.6.3.1 Grid 10-2 (Fig. 26)

Twenty-eight of the forty-eight Selbaie gold anomalies (58 percent) occur on Grid 10-2, representing 12 percent of the 236 samples collected on this grid. The screening process has effectively eliminated all but four of the anamolous samples - No. 99-25, 104-07 and 08, and 111-01.

(a) Hole 99 Anomaly:

The Hole 99 anomaly is in a basal sample of a three metre Missinaibi fluvial interglacial sand and gravel section overlying bedrock at a depth of forty-four metres (Section F-F'). Initial panning produced twelve abraded gold grains of various diameters (25 to 450 microns) giving an impressive calculated assay of 34,189 ppb. No anomalous base metal or pathfinder element values are present in the sample but none would be expected because the host gravel is oxidized. The anomaly represents placer gold and therefore would not normally be considered significant. However, the occurrence is near the zones of gold enrichment associated with the granodiorite stock and part of the placer gold may be derived from this source.

(b) Hole 104 Anomaly:

The anomaly in Hole 104 occurs in consecutive samples 07 and 08 of Matheson Till one metre above bedrock at a depth of 19 metres (Section D-D'). Assays are 1,100 and 2,355 ppb. Tabling produced only one abraded gold grain of 100 microns in diameter from Sample 08 for a calculated assay of 183 ppb, and no gold grains from Sample 07. Check panning of the 1/4 concentrates produced a total of four very fine to fine gold grains - three abraded and one delicate. Sample 08 also yielded a 51,700 ppm copper anomaly.

The anomalous section is underlain by a basal till sample (Sample 104-09) assaying 270 ppb Au. Tabling produced no visible gold but panning of the 1/4 concentrate revealed four fine gold grains - three abraded and one irregular.

The 1/4 concentrate of the upper anomalous sample (104-07) contained only 1 percent pyrite. Thus this part of the anomaly can be explained by a missed nugget and the anomaly now has no stratigraphic continuity.

The remaining 1 gram portion of the pulped 3/4 concentrate of Sample 104-08 was analyzed to check the initial analysis. It assayed only 55 ppb. This indicates that most of the gold present in the 3/4 concentrate was in the form of a nugget. Thus the gold-copper association is strictly coincidental and the gold component of the anomaly is not significant.

(c) Hole 111 Anomaly:

The Hole 111 anomaly is located 100 m west of Hole 104 in the upper half of a 3 metre section of Matheson Till that overlies bedrock at a depth of 7.5 metres. Panning produced 18 very fine to fine, mainly irregular gold grains. Three of the grains were delicate. This shape population suggests a relatively short transport distance of 100-300 metres. Due to the very fine size of the grains, the concentrate assayed only 630 ppb.

Hole 111 is located on the southeast edge of a bedrock high (Fig. 20) that could have caused the dispersion to rise rapidly from the base of the glacier. The hole is also 150 metres down-ice from diamond drill hole D-2-7 which intersected a sericite - carbonate alteration zone with anomalous gold contents while following up the overburden anomaly of 1985 reverse circulation Hole 88. This zone is the probable source of the Hole 111 anomaly.

6.6.3.2 Grid 10-113 (Fig. 27)

Fifteen of the forty-eight Selbaie gold anomalies (30 percent) occur on Grid 10-113, representing 5 percent of the 324 samples collected on this grid. The screening process has effectively eliminated all of the anomalous samples except 1134-06 and 11340-03.

(a) Hole 1134 Anomaly:

The anomaly in Hole 1134 occurs less than 100 metres south of the Penarroya occurrence in the basal sample of a 1.8 metre Lower Till section, at a depth of 31 metres (Section K-K'). The till is preserved in a northeast-southwest trending, fault-controlled bedrock valley. Of three additional holes drilled in the immediate area, Lower Till was only intersected in Hole 1132 as a 0.3 metre section overlying bedrock. This sample assayed only 105 ppb gold.

The concentrate from Hole 1134 assayed 6480 ppb gold and 1150 ppm copper. Initial panning produced 2 abraded gold grains accounting for only 558 ppb gold. The 1/4 concentrate was not panned but a grain count revealed 1 percent pyrite and less than 0.1 percent chalcopyrite. INA analysis of the 1/4 concentrate yielded 1540 ppb gold. This result could have been caused by the larger of the two original grains and the stronger anomaly in the 3/4 concentrate could have been caused by a larger unsighted nugget. However, these grains were recovered from a sample weight of 1.6 kilograms, far below the recommended 7 kilogram weight. Thus, the 10 gold grain dispersion train threshold would probably have been met had the sample been of the desired weight.

Hole 1134 intersected intermediate volcanic bedrock assaying 762 ppm copper and described as altered with 1 percent tourmaline and 5 percent chalcopyrite in 5 percent of the rock chips. This alteration together with the presence of gold grains in the overlying till and the proximity to a major fault support the positive initial results reported by Penarroya rather than the negative follow-up results reported by Newmont from the same area. The abraded character of the gold grains is puzzling considering their apparent proximity to source but could reflect a multi-cyclic history involving a residual preglacial or fluvial interglacial stage.

(b) Hole 11340 Anomaly:

The Hole 11340 anomaly occurs in Sample 03 near the top of a 37 metre Matheson Till section overlying bedrock at a depth of 40 metres (Section I-I'). Panning revealed fourteen very fine to fine gold grains. The majority of the gold grains are abraded indicating considerable glacial transport (greater than 1,000 metres). The anomaly is also very weak (500 ppb) and lacks stratigraphic continuity. Similar occurrences elsewhere in the Abitibi show clear evidence of formation as placers in Lake Ojibway II. Although the Hole 11340 anomaly occurs below the Ojibway II sediments, it is in the upper stratified part of the underlying till section where lake sedimentation and till melt-out occurred simultaneously. Thus the anomaly is dismissed as an insignificant placer occurrence.

6.6.3.3 Grid 10-110 (Fig. 28)

Five of the forty-eight Selbaie gold anomalies occur on Grid 10-110, representing 4 percent by the seventy-four samples collected on this grid. The screening process has effectively eliminated all of the anomalous samples except Sample 06 in Hole 11012.

The Hole 11012 anomaly occurs in the basal sample of a six-sample Matheson Till section resting on bedrock at a depth of 16 metres (Section L-L'). The sample assayed 1205 ppb gold and no visible gold was found during tabling. Panning of the 1/4 concentrate revealed 10 percent pyrite suggesting sulphide-included gold. The 1/4 concentrate has been submitted for INA check analysis. Results are excepted in two weeks. A matching analysis will indicate auriferous pyrite and a low analysis will indicate a nugget anomaly.

If the anomaly is caused by auriferous pyrite, the pyrite is probably derived from the underlying bedrock which is an altered granitic rock of the Brouillan Batholith lobe assaying 105 ppb gold and containing 0.1 percent tourmaline and 1 percent pyrite.

6.6.3.4 Main Grid

Only one of the forty-eight Selbaie gold anomalies (2 percent) occurs on the Main Grid, representing 1 percent of the seventy-two samples collected here. The screening process has eliminated this anomaly.

6.7 Selbaie Heavy Mineral Arsenic, Silver and Base Metal Anomalies

Thirty-five of the seven hundred and six overburden samples (5 percent) from thirty overburden drill holes (31 percent) produced assays over anomaly threshold levels for arsenic, copper, zinc (all 700 ppm) or silver (2 ppm). Figures 29-32 are diagrammatic representations of these anomalies. In these figures the thirty holes that contain anomalies are plotted INPUT - fashion. Where two or more anomalies are present in a hole, the best anomaly is shown. Quadrants one through four (clockwise from upper right) represent greater than or equal to 700 ppm Cu, Zn and As and greater than or equal to 2 ppm Ag respectively.

As numerous anomalous samples and holes are present, a limited screening process, similar to that previously used for gold anomalies, can be employed to separate background noise from those anomalies which are, or may be, related to significant mineralized sources. The screening process and anomalies are summarized in Table 8, and the potentially significant anomalies are shown in Figures 33-36. In some cases anomalies are discounted for more than one reason.

As with gold anomalies, one screening method is to eliminate anomalies which have no stratigraphic continuity. Eleven of the arsenic, silver and base metal anomalies have no stratigraphic continuity and all of these anomalies are weak.

Hole No.	Sample No. Field	Lab	Strat. Cont.	Strat. Unit	Assay Values (ppm) Cu	Zn	Ag	As	1/4 H.M.C.	Remarks
GRID 10-2										
BPS-86- 101	02		Basal	M. Till	1,550	40	1.6	18	1% py., 500 gr. aspy., 0.4% cpy.	Possible train
102	18		No	M. Till	275	850	0.8	40	1% py.	Not significant
103	18		Yes	M. Till	575	810	1.7	56	5% py., 2 gr. cpy./sphal./qtz.	Weak train
	19		Yes	M. Till	410	1,800	2.0	38	3% py., 1 gr. sphal./cpy./qtz., 0.2% sphal.	Weak train
	20		Yes	M. Till	360	1,025	2.2	79	5% py., 1 gr. cpy./qtz. 0.1% sphal.	Weak train
	21		Yes	M. Till	385	735	1.3	129	5% py., 0.1% sphal.	Weak train
	22		Yes	M. Till	465	1,150	1.5	60	5% py., 0.1% sphal.	Weak train
104	08		Yes	M. Till	51,700	536	35.2	6	10% py., 10% cpy., 5% bornite (boulder)	Weak train
	09		Basal	M. Till	2,000	52	1.2	*L 5	1% py., 0.25% cpy., 0.25% bornite, 30 gr. aspy.	Weak train
105	11		Basal	M. Till	340	3,125	1.1	10	5% py., 0.5% sphal	Weak train
107	01		No	M. Till	1,600	22	L 0.1	L 5	1% py., 1 gr. cpy.	Not significant
108	05		Basal	M. Till	280	3,500	0.3	12	1% py., 0.5% sphal	Weak train
110	03		Basal	M. Till	620	36	0.3	28	15% py.	Not significant
113	10		Basal	M. Till	640	78	0.5	25	5% py.	Possible train
115	03		Basal	M. Till	434	274	3.0	100	20% py., 1 gr. galena, 10 gr. aspy.	Not significant
121	03		No	M. Till	136	64	2.9	68	15% py., 15 gr. aspy.	Not significant
127	10		Basal	M. Till	1,600	60	L 0.1	18	3% py., 0.3% cpy.	Possible train
GRID 10-113										
1134	06	(692)	Basal	L. Till	1,150	79	0.6	12	INAA for Au, 5 cpy grains	Possible train
1135	08	(700)	No	L. Till	32	22	4.3	L 5	0.5% py.	Not significant
1136	08	(731)	No	M. Till	206	121	3.2	307	7% py.	Not significant
11311	01	(797)	No	M. Till	217	389	7.2	272	5% py.	Not significant
11318	07	(831)	Basal	L. Till	840	179	1.3	254	5% py., 0.1% soft sulphide grains with yellow surfaces but whiter inside	Possible train
11319	03	(834)	Basal	M. Till	880	48	1.4	212	No 1/4 split	Not significant
11325	04	(870)	No	M. Till	840	82	1.0	433	10% py.	Not significant
11327	01	(873)	Basal	M. Till	224	892	0.8	103	5% py. 0.1% sphal.	Possible train
11337	01	(968)	No	M. Till	101	86	2.8	86	1% py.	Not significant

*L = Less than

Table 8: Heavy Mineral Arsenic, Silver and Base Metal Anomaly Summary

Hole No.	Sample No. Field	Sample No. Lab	Strat. Cont.	Strat. Unit	Assay Values (ppm) Cu	Zn	Ag	As	1/4 H.M.C.	Remarks
GRID 10-110										
1109	01	(601)	Basal	M. Till	1,830	62	2.5	362	No 1/4 split	Not significant
11012	04	(610)	No	M. Till	191	122	4.8	60	7% py., 20 gr. aspy.	Not significant
11013	02	(614)	No	M. Till	200	47	3.5	134	10% py	Not significant
11017	01	(620)	Basal	M. Till	961	57	1.2	47	2% py., 15 gr. native Cu (50x50,100x100)	Possible train
11022	08	(651)	Basal	M. Till	262	1,057	8.2	231	3% py., 1 gr. py./sphal., 0.1% sphal.	Possible train
11024	08	(655)	No	M. Till	165	100	3.4	28	1% py., 40 gr. aspy.	Not significant
MAIN GRID										
130	08		Basal	M. Till	133	64	3.3	11	0.5% py., 10 gr. aspy.	Possible train
131	07		Basal	M. Till	1,310	49	L 0.5	L 5	0.5% py., 0.3% cpy.	Possible train
140	01		Basal	M. Till	605	754	L 0.5	L 5	50 gr. py., less than 0.1% cpy., 3 gr. bornite, 0.1% sphal.	Possible train

*L = Less than

Table 8: Heavy Mineral Arsenic, Silver and Base Metal Anomaly Summary

A second screening method is the direct mineralogical elimination of anomalies. The retained 1/4 concentrates were visually examined under a binocular microscope to ascertain the percentages of copper, zinc, silver and arsenic minerals present relative to the percentage of pyrite. In addition, small incorporated rock chips were observed for the presence of economically viable banded massive base metal sulphides versus less attractive vein-hosted disseminated sulphides. Anomalies can be eliminated where the percentage of iron sulphide is greater than ten percent and the percentage of copper or zinc minerals is less than 0.1 percent. Two of the thirty-five anomalies are in this category.

For concentrates weighing less than 5 grams, a 1/4 split was not retained and the mineralogy could not be checked. This was the case for Samples 1109-01 and 11319-03 which assayed 1,830 and 880 ppm copper, respectively. However, the copper value in each sample is not accompanied by anomalous zinc or silver, suggesting a vein source. Only a small amount of chalcopyrite would be needed to produce these weak anomalies because the concentrates are very small.

The remaining base metal anomalies encompassing twenty samples in fifteen holes occur mainly at the base of the Matheson Till horizon and are suggestive of dispersion from low grade but potentially significant subcropping mineralization. These anomalies are discussed below by property in numerical order.

6.7.1 Grid 10-2 (Fig. 33)

Seventeen of the thirty-five base metal anomalies (49 percent) occur on Grid 10-2, representing 7 percent of the 236 samples collected on the grid. The screening process eliminated only five of the anomalies, leaving twelve potentially significant anomalies in Holes 101, 103 (five samples), 104 (two samples), 105, 108, 113 and 127.

6.7.1.1 <u>Hole 101 Anomaly</u>

The anomaly in Hole 101 occurs in a 2 metre basal sample of a 2.5 metre till section overlying bedrock (Section D-D'). The sample produced a copper anomaly of 1550 ppm and the 1/4 concentrate contains 0.4% chalcopyrite plus 1% pyrite. The underlying bedrock, a mafic volcanic, yielded an elevated copper value of 169 ppm and is most likely the source of the till anomaly. Low grade copper mineralization is common around the granodiorite stock on Grid 10-2, and the Hole 101 occurrence is of no special significance.

6.7.1.2 Hole 103/104/105/108 Anomaly

The Hole 103 anomaly consists of five consecutive anomalous zinc values (Samples 18 to 22) varying from 735 to 1800 ppm (Section E-E'). This anomaly is in the lower eight metres of a thirty-two metre Matheson Till sequence overlying bedrock. The samples also contain elevated levels of copper ranging from 360 to 575 ppm and silver ranging from 1.3 to 2.2 ppm.

The 1/4 concentrates contain 3-5% pyrite and 0.1 to 0.2 percent sphalerite except in Sample 18 where only 2 grains of sphalerite with chalcopyrite were noted. In the upper three samples, quartz is associated with some of the sulphide grains suggesting a vein type source. The underlying bedrock, classed as an intermediate volcanic, contains only an elevated copper value of 136 ppm.

Hole 104, 100 metres northeast of Hole 103 contains a 14 metre section of Matheson Till overlying bedrock. The lower two samples (No. 08 and 09) contain anomalous levels of copper with Sample 08 assaying 51,700 ppm accompanied by 35.2 ppm silver and 536 ppm zinc. Sample 09 assayed 2000 ppm copper and 1.2 ppm silver with background zinc. As discussed in an earlier section, Sample 08 is also a gold anomaly, assaying 2355 ppb, but most of the gold appears to have been contained in a random nugget and thus is not related to the copper. Examination of the 1/4 concentrates showed 10 percent pyrite, 10 percent chalcopyrite and 5 percent bornite in Sample 08 and 1 percent pyrite, 0.25 percent chalcopyrite and 0.25 percent bornite in Sample 09. In both cases, the chalcopyrite and bornite concentrations fully account for the anomaly values. The plus 10 mesh fraction of Sample 08 was examined under a binocular microscope. It is clear from this examination that a sulphide boulder was encountered during drilling as numerous chalcopyrite-bornite-quartz fragments were observed. The quartz association suggests a vein-hosted source. Carryover could account for the anomalous copper levels in the underlying sample. No elevated metal values are present in the underlying bedrock.

No silver minerals were identified in the 1/4 concentrate of Sample 104-08. It is normal to have base metal to silver ratios of 2,000:1 in copper-zinc deposits, where the silver occurs in several forms associated with either sphalerite or chalcopyrite. Thus the 51,700 ppm Cu and 35.2 ppm silver values are compatible.

Anomalous zinc values and elevated copper and silver levels are also present in Hole 105, located 100 metres northeast of Hole 103 and 200 metres northeast of Hole 104. The anomaly occurs in the basal sample of a 17 metre Matheson Till horizon overlying bedrock. A zinc content of 3,125 ppm is substantiated by the presence of 0.5% sphalerite in the 1/4 concentrate. No elevated metal values or pathfinder elements are present in the underlying bedrock.

Hole 108, 200 metres further to the north, yielded an anomalous zinc value of 3,500 ppm and an elevated copper value of 280 ppm. The anomaly occurs in the basal sample of a 7 metre Matheson Till section overlying bedrock. No elevated metal values or pathfinder element levels are present in the underlying bedrock. The common metal associations (Cu-Zn) and stratigraphic positions (base of Matheson Till) of the Hole 103, 104, 105 and 108 anomalies suggest that the anomalies define a single dispersion train. This train appears to follow a south-southeast trending bedrock valley, an orientation that is a significant departure from the regional south-southwest direction of ice advance for the Matheson Till. However local ice deflections of this magnitude by bedrock valleys are not uncommon.

Elevated copper levels ranging from 118 to 1548 ppm are present in bedrock samples of seventeen of the thirty holes drilled on Grid 10-2, but none of these occurrences have zinc contents that can explain the anomalous or elevated zinc values present in the dispersion train. Also the sulphide boulder present in Hole 104 cannot be explained by the weak copper values in the surrounding bedrock. The probable source of the train is the eastern extension of the conductive shear zone that was drilled by Selco in 1985, as the dispersion thins northward toward the shear and the Selco drill hole intersected chalcopyrite, sphalerite and gold mineralization hosted by quartz-carbonate veinlets.

6.7.1.3 Hole 113 Anomaly

In Hole 113, an elevated copper value of 640 ppm occurs in the basal sample of a 14 metre Matheson Till section overlying bedrock at a depth of 22 metres. The 1/4 concentrate contains 5 percent pyrite. The underlying bedrock, an intermediate volcanic, assayed 264 ppm copper which probably explains the elevated till value.

6.7.1.4 Hole 127 Anomaly

In Hole 127, an anomaly of 1600 ppm copper is present in the basal sample of an 11 metre Matheson Till section overlying bedrock. The 1/4 concentrate contains 0.3 chalcopyrite and 3% pyrite. The anomaly is probably related to one of the numerous copper occurences around the granodiorite stock.

6.7.2 Grid 10-113 (Fig. 34)

Nine of the thirty-five base metal anomalies (26 percent) occur on Grid 10-113, representing three percent of the 324 samples collected on this grid. The screening process has effectively eliminated all but three of the anomalous samples - No. 1134-06, 11318-07 and 11324-01.

6.7.2.1 Hole 1134 Anomaly

The Hole 1134 anomaly is both a copper and gold anomaly and the gold portion has been described as being possibly related to the Penarroya occurrence. The anomaly occurs in the basal portion of the Lower Till in an area where till distribution is poor (Section K-K'). The copper signature is 1150 ppm but the underlying bedrock contains 762 ppm Cu and the till anomaly probably resulted from the inevitible carryover of some bedrock cuttings while the samples were being collected. Nevertheless the anomaly helps substantiate the positive results reported from this area by Penorroya.

6.7.2.2 Hole 11318 Anomaly

The anomaly in Hole 11318 is an 880 ppm copper anomaly in Sample 07. It occurs at the base of a seven metre Lower Till section overlying bedrock at a depth of 51.2 metres. The 1/4 concentrate contains 5 percent pyrite and 0.1 percent chalcopyrite. The sample overlies bedrock classed as gabbro. Since weak copper mineralization is common in gabbro sills the till anomaly is not considered significant.

6.7.2.3 Hole 11327 Anomaly

The only sample obtained from Hole 11327 gave a weak 892 ppm zinc anomaly and elevated copper and arsenic levels of 224 and 103 ppm respectively. Five percent pyrite and 0.1 percent sphalerite are present in the 1/4 concentrate. Metal and pathfinder element values in the underlying bedrock are not elevated. However, it is difficult to completely discount the anomally since no holes have been drilled up ice from or west of Hole 11327.

6.7.3 Grid 10-110 (Fig. 35)

Six of the thirty-five base metal anomalies (17 percent) occur on Grid 10-110, representing eight percent of the 74 samples collected on this grid. The screening process effectively eliminated all but two of the anomalous samples - No. 11017-01 and 11022-08.

6.7.3.1 Hole 11017 Anomaly

The only sample obtained from Hole 11017 gave a weak 961 ppm copper anomaly accompanied by an elevated silver value of 1.2 ppm. The 1/4 concentrate contains 2 percent pyrite and 15 grains of native copper. Native copper in the Abitibi is normally restricted to zones of supergene enrichment produced by preglacial weathering of fresh chalcopyrite mineralization. Dispersion from these enriched zones must be strong to be significant. Thus the weak till anomaly in Hole 11017 is not considered significant.

6.7.3.2 Hole 11022 Anomaly

The anomaly in Hole 11022 occurs in Sample 08 at the base of an 11 m thick Matheson Till section (Section M-M'). This sample is weakly anomalous in zinc (1057 ppm) but also shows elevated copper, silver and arsenic levels of 262, 8.2 and 231 ppm, respectively. The 1/4 concentrate contains 0.1 percent sphalerite and 3 percent pyrite, with one composite grain of pyrite and sphalerite noted. The underlying bedrock, which is completely silicified and of unknown lithology, assayed 1610 ppm zinc, 77 ppm arsenic, 14.9 ppm silver, 273 ppm lead and 30 ppb gold. It contains 0.2 to 0.3 percent sphalerite, less than 0.1 percent fine-grained galena and 2-3 percent pyrite. The anomaly in Sample 08 is probably due to contamination of the till by mineralized bedrock cuttings.

6.7.4 **Main Grid (Fig. 36)**

Three of the thirty-five base metal anomalies (8 percent) occur on the Main Grid, respresenting 4 percent of the 72 samples collected on this grid. All three anomalies -- Samples 130-08, 131-07 and 140-01 -- survived the screening process.

6.7.4.1 Hole 130 Anomaly

In Hole 130, Sample 08 at the base of a 14 m Matheson Till section gave a weak 3.3 ppm silver anomaly accompanied by a slightly elevated copper value of 133 ppm. The 1/4 concentrate contains 0.5 percent pyrite and the underlying bedrock yielded an elevated zinc value of 197 ppm. This weak silver anomaly is not considered significant.

6.7.4.2 Hole 131 Anomaly

The Hole 131 anomaly occurs in basal Sample 07 of a 13 metre section of Matheson Till overlying bedrock (Section N-N'). The sample assayed 1310 ppm copper with no associated pathfinder elements. The 1/4 concentrate contains 0.3 percent chalcopyrite and 0.5 percent pyrite. The underlying bedrock contains elevated levels of copper and zinc at 115 and 160 ppm, respectively. The weak till anomaly is probably due to contamination of the till sample by bedrock cuttings and thus is not significant.

6.7.4.3 Hole 140 Anomaly

The anomaly in Sample 140-01 (754 ppm Zn, 605 ppm Cu) occurs in a one sample thick Matheson Till section overlying bedrock at depth of 3.5 metres. The 1/4 concentrate contains 0.1 percent sphalerite, less than 0.1 percent chalcopyrite, and a trace of bornite and pyrite. The underlying bedrock yielded an elevated zinc value of 191 ppm. As in Hole 131 the weak till anomaly is probably due to contamination of the till sample by bedrock cuttings and thus is not significant.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Property Mineral Potential From the Bedrock Perspective

Tholeiitic stratigraphy of the type encountered on Grid 10-110 east of the Brouillan Batholith is generally of interest for epigenetic gold mineralization whereas the calc-alkalic stratigraphy on the three grids west of the batholith could be expected to host either syngenetic base metal massive sulphide deposits or epigenetic gold or base metal mineralization. However, the main potential of all four areas appears to be for epigenetic mineralization as metal values appear to be determined mainly by the degree of alteration and veining rather than by bedrock lithology.

Elevated to weakly anomalous copper, zinc and gold values are common in the bedrock. Many of the copper and zinc occurrences are erratic but a few of them as well as all of the gold anomalies occur in specific geologic environments and therefore warrant further investigation. The areas of interest will be reviewed by property.

7.1.1 Grid 10-2

The area of prime importance on Grid 10-2 is the perimeter of the granodiorite stock. The gold anomalies of 280, 735 and 600 ppb in Holes 115 and 125 and 1985 Hole 88 all occur along this contact. In each case the gold occurs in quartz-carbonate veins indicating epigenetic deposition. The gold-copper-zinc mineralization intersected in the conductive shear zone 200 m north of the granodiorite by Selco's diamond drill Hole No. D-2-7 also occurs in quartz-carbonate veins. In Hole 115 the host rock is granodiorite suggesting that the mineralization is related to emplacement of the stock. Offsets in the regional aeromagnetic trends suggest that a major north-northeast striking fault parallel to and 3 km east of the one at the Penarroya occurrence on Grid 10-113 passes through Grid 10-2. Granodiorite emplacement and gold mineralization could be related to this structure.

Elevated copper values (greater than 200 ppm) occur throughout the grid area. The highest copper value of 1,548 ppm occurs in Hole 122 adjacent to the E.M. conductor. However, additional holes drilled along strike do not show elevated base metal values. Chalcopyrite present in Holes 110, 120 and 122 occurs in secondary quartz-carbonate veins in intermediate to mafic volcanic rocks and, like the gold, appears to be related to the intrusion of the granodiorite.

7.1.2 Grid 10-113

The only significant bedrock anomaly on Grid 10-113 is the 762 ppm copper value in Hole 1134 near the Penarroya occurrence. Chalcopyrite mineralization in the sample is accompanied by carbonate-tourmaline alteration, and the intersection is in a northeast-trending fault valley. These features suggest that the positive gold values reported by Penarroya are real and that Newmont's follow-up holes, which were orirented to test the east-west trending stratigraphy, missed the gold-bearing structure.

7.1.3 Grid 10-110

The area of importance on Grid 10-110 is the margin of the granodiorite lobe or dike swarm that extends eastward from the Brouillan Batholith. Here, weak gold anomalies of 105 ppb and 30 ppb were obtained from Holes 11012 and 11022. The Hole 11012 anomaly is accompanied by tourmaline-carbonate alteration and occurs within the lobe itself, suggesting that the mineralization is related to granodiorite emplacement as on Grid 10-2. The weaker anomaly in Hole 11022 occurs in completely silicified rock of unknown original lithology adjacent to the granodiorite contact. Epigenetic-type mineralization is indicated both by the silicification and by metal association, with the gold being accompanied by 14.9 ppm Ag, 273 ppm Pb, 1610 ppm Zn, 4 ppm Mo, and 77 ppm As.

7.1.4 Main Grid

The only bedrock anomalies on the Main Grid are 359 ppm Cu in Hole 138 and 198 ppm Cu accompanied by 669 ppm Zn in adjacent Hole 139. These anomalies are due to disseminated chalcopyrite $\pm$ sphalerite hosted by intermediate volcanic flow-top breccia. The mineralization is probably syngenetic but is very weak and of a style that rarely attains commercial grade in Canada.

7.2 Property Mineral Potential From the Overburden Perspective

The overburden heavy mineral analyses basically mirror the bedrock analyses, with weak dispersion evident in most of the areas where low grade bedrock mineralization was intersected and no dispersion encountered elsewhere. Gold anomalies are common but most are attributable to the nugget effect and do not represent significant dispersion. Significant dispersion will be reviewed by property.

7.2.1 Grid 10-2

Significant dispersion on Grid 10-2 comprises the eighteen fine, irregular to delicate gold grains found in Hole 111 and the weak Zn ($\pm$ Cu and Ag) train outlined by Holes 103, 104, 105 and 108. The gold grains appear to be derived from the segment of the conductive shear zone that was tested by diamond drill hole No. D-2-7 while the zinc dispersion suggests that a zone of slight zinc enrichment is present 150 m further east along the same shear zone.

7.2.2 Grid 10-113

The only significant overburden anomaly on Grid 10-113 is the copper-gold anomaly in Hole 1134, 100 m south of the Penarroya occurrence. The copper is probably drill carryover from mineralization in the underlying bedrock and the gold grains are of the abraded type that normally indicates long transport. However, similar anomalies were not encountered elsewhere on the property. Thus the anomaly is probably not a coincidence and the positive gold results reported by Penarroya appear to be real.

7.2.3 Grid 10-110

The only significant overburden anomalies on Grid 10-110 are those overlying the grandiorite-associated bedrock mineralization in Holes 11012 and 11022. In both cases the anomalies are weak indicating that the grade of the bedrock mineralization is unlikely to improve in the up-ice direction. The metals in the till samples are the same as those in the bedrock and could have been introduced as drill carryover.

7.2.4 Main Grid

No significant overburden anomalies are present on the Main Grid. The lack of dispersion in the vicinity of the mineralized flow-top breccia interesected in Holes 138 and 139 confirms that the mineralization is not of economic interest.

7.3 Follow-Up Recommendations

Till cover in the Selbaie area is excellent and the integrated data obtained from the reverse circulation drilling programs has proved very effective in identifying mineralized areas. Some additional reverse circulation drilling is required to better define these areas or to cover geology that has not yet been tested. In other areas target definition has progressed to the stage where diamond drilling is required. Specific follow-up recommendations will be made by property.

7.3.1 Grid 10-2

The mineralizing system associated with the granodiorite on Grid 10-2 appears to have been a strong one as the mineralization is widespread and gold values of up to 735 ppb were obtained from 1.5 m vertical bedrock intersections with holes drilled at 100 m centres. However, the mineralization is not well represented in the till, a problem that ODM has encountered with other granite-hosted deposits due to their resistance to erosion by glaciers.

The mineralization will be difficult to evaluate until the attitudes of the various granodiorite contacts and quartz-carbonate vein system are known. For these reasons a diamond drilling program should be undertaken and reverse circulation drilling should be used only to define and evaluate the untested southwestern contact of the granodiorite. The following program is recommended:

1. Three 100-metre diamond drill holes positioned as shown in Fig. 37 to intersect the north contact of the granodiorite below the Hole 88/115 gold anomalies, the west contact of the granodiorite below the Hole 125 gold anomaly, and the EM conductor at the head of the zinc dispersion train.

2. A minimum of nine reverse circulation drill holes at 100 m centres positioned along the probable southwestern extension of the granodiorite as shown in Fig. 37

7.3.2 Grid 10-113

The silicification and chalcopyrite-tourmaline mineralization observed in the bedrock of Hole 1134 on Grid 10-113 and the presence of visible gold in the overlying till indirectly corroborate the positive gold assays reported from the nearby Penarroya diamond drill holes. The bedrock alteration is suggestive of a structural rather than stratigraphic control and is probably related to the north-northeast trending fault that controls the bedrock valley here and offsets and the gabbro sill to the northeast. By inference, the Penarroya gold mineralization is also related to the fault and was missed by Newmont's follow-up holes which were positioned to intersect an east-west trending stratigraphic target.

Till cover is very poor at the Penarroya occurrence and additional reverse circulation drilling would not be appropriate. It is recommended that a VLF survey be undertaken to establish the location and dip of the fault and that a 200 m diamond drill hole be used to sample a wide section of the fault zone. It will probably be necessary to drill the hole toward the northwest as shown in Fig. 38 because the west wall of the bedrock valley that hosts the fault is steep (Fig. 21).

Due to budget limitations and deeper-than-expected overburden, the portion of Grid 10-113 west of the Theo River was not covered by the 1986 reverse circulation drilling program. It is recommended that thirty-four holes be drilled here using the reconnaissance pattern shown in Fig. 39.

7.3.3 Grid 10-110

The granodiorite-related gold mineralization intersected in Holes 11012 and 11022 on Grid 110 is very similar to but weaker than the mineralization on Grid 10-2. A detailed reverse circulation drilling program similar to that already conducted on Grid 10-2 is recommended to identify the best mineralized areas and to develop targets for diamond drilling. However the area of interest is much larger than on Grid 10-2 and the drilling would be very expensive if the same 100 m hole separation were used. It is therefore recommended that twenty-eight holes be drilled using a 200 to 300 m separation as shown in Fig. 40. If positive results are obtained, fill-in drilling can be performed in specific areas as required. Selco's property position here is limited, and acquisition of additional lands to the east should be considered.

7.3.4 Main Grid

No follow-up work is warranted on the Main Grid.

7.4 Follow-up Budget

Assuming an average hole depth of 25 metres, the recommended seventy-one reverse circulation drill holes will involve 1775 metres of drilling while the four diamond drill holes total 500 metres. At an average cost of $110.00/metre for reverse circulation drilling and $90.00/metre for diamond drilling, and allowing $2,000 for 2 to 3 km of line cutting and VLF surveying at the Penarroya occurrence, the total budget for the recommended work is $242,250.00. Of this total, $148,750.00 is for follow-up and $93,500 is for the untested area on Grid 10-113.

8. REFERENCES

Averill, S.A. 1978: Overburden Exploration and the new Glacial History of Northern Canada; Canadian Mining Journal, Vol. 99, No. 4, p. 58-64.

Averill, S.A., MacNeil, K.A. & Huneault, R.G. 1984: Rotasonic Drilling Operations and Overburden Heavy Mineral Studies; Ontario Geological Survey, Open File Report 5569.

Averill, S.A. 1986 "Advice for juniors following dispersion trains"; The Northern Miner, Junior Mining section, June 16th, 1986. pg. B12.

Baker, C.L. 1985: The Quaternary Geology of the Kirkland Lake Area - Processes and Environments; unpublished paper presented at CIM Till Tomorrow symposium, Kirkland Lake, Ontario, May 1984.

Boissonneau, A.N. 1966: Algoma-Cochrane - Surficial Geology; Ontario Department Lands and Forests, Map 5365, scale 1:506,880.

Bostock, H.S. 1967: Geology and Economic Minerals of Canada: Maps and Charts, Physiographic Regions. Edited by R.J.W. Douglas.

Brereton, W.E. 1975: Report on Overburden Drill Drift Prospecting, Orientation Survey, Brouillan Twp., Quebec; prepared for Selco Mining Corporation Ltd. by Driftex Ltd.

Burns, T.E. and MacNeil, K.A.: Overburden Drilling Report, Selbaie Main Claim Block, Brouillan Township, Quebec; prepared for Selco Division, BP Resources Canada Ltd. by ODM.

Burns, T.E. and Averill, S.A.: Overburden Drilling Report, Brouillan and Carheil Townships, Quebec; prepared for Selco Division, BP Resources Canada Ltd. by ODM.

Clifton, H.E. Hubert, A., Phillips, R.L. 1967: Marine Sediment Sample Preparation for Analysis for Low Concentrations of Fine Detrital Gold, U.S. Dept. Interior, Geol. Surv. Circ. 545, 11p.

Deptuck, R., Squair, H., Wierzbick, V. 1982: Geology of the Detour Zinc-Copper Deposits, Brouillan Township, Quebec; Precambrian Sulphide Deposits, H.S. Robinson Memorial Volume, edited by R.W. Hutchison, C.D. Spence and J.M. Frankin; Geological Association of Canada Special Paper 25.

Dimock, B.K. 1985: A Comparative Study of Sample Recovery Systems in Glacial Overburden Exploration; Student Work Report Prepared for Overburden Drilling Management Limited and Faculty of Science, University of Waterloo.

Dykes, A.S., Dredge, L.A., Vincent, J.S. 1982: Configuration and Dynamics of the Laurentide Ice Sheet During the Late Wisconsin Maximum Géographic physique et Quaternaire, Vol. XXXVI, Nos. 1-2, p.5-14.

Goodwin, A.M. 1982: Archean Volcanoes in Southwestern Abitibi Belt, Ontario and Quebec: form, composition, and development; Canadian Journal of Earth Sciences, Vol. 19, No. 6, p. 1140-1155.

Gray, R.S. 1983: Overburden Drilling as a Tool for Gold Exploration; 25th Annual General Meeting of CIM-1983; Paper No. 19.

Hughes, O.L. 1959: Surficial Geology of Iroquois Falls, Cochrane District, Ontario; Geological Survey of Canada, Map 46-1959.

Jensen, L.S. 1976: A New Cation Plot for Classifying Subalkalic Volcanic Rocks; Ontario Div. Mines, MP-66, 11p.

MacNeil, K. 1983: Overburden Drilling Report - Grid 10-501, Brouillan and Beschefer Townships, Quebec; prepared for Selco Mining Corporation, by ODM.

MERQ 1982: Lévé aéroporté INPUT dans la région de Brouillan-Manthet; Ministère de l'Energie et des Ressources du Québec; DP-866.

MERQ-OGS 1983: Lithostratigraphic Map of the Abitibi Subprovince; Ontario Geological Survey/Ministère de l'ENergie et des Ressources, Québec, 1:500,000 Catalogued as "Map 2484" in Ontario and "DV 83-16" in Québec.

MERQ 1985: Project Harricana - Grasset; Ministère de l'Energie et des Ressources du Québec; ET85-08.

Moorhouse, W.W. 1959: The Study of Rocks in Thin Section; Harper and Row, New York, p. 437-469.

Skinner, R.G. 1973: Quaternary Stratigraphy of the Moose River Basin, Ontario; Geol. Surv. Can., Bull. 225.

APPENDIX A

REVERSE CIRCULATION DRILL HOLE LOGS

GRID 10-2

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 15,16 19 86

HOLE NO BPS-86-99 LOCATION L62E 10+50N
GEOLOGIST D.HOLMES DRILLER D. BUSSIERE BIT NO. CBG7843 BIT FOOTAGE 0-45.3

SHIFT HOURS
____ TO ____

MOVE TO HOLE
DRILL 1:00 - 6:00PM

TOTAL HOURS

~~MECHANICAL DOWN TIME~~ mobilization 7:00 - 1:00PM
DRILLING PROBLEMS

CONTRACT HOURS

OTHER travel/pickups 6:30-7:00 AM, travel/pickups 6:00-6:30PM
MOVE TO NEXT HOLE

NEW BIT NEW SUB

DEPTH IN METRES	SAMPLE NO.	DESCRIPTIVE LOG
0–1		0 - 0.2 Organics
1–2		0.2-4.6 TILL (COCHRANE)
2–3	01	- gray, gritty, moderately compact clay matrix, occasional pebbles and granules < 1% of till
4–5		4.6 -6.2 SEDIMENTS (OJIBWAY)
5		4.6-4.8 Fine beige sand with interlayers of small pebbles
5–6	02	4.8-6.2 cobbly gravel, no fines clast composition approximately 60% volcanics/sediments 40% granitic trace limestone
6–7	03	
8	04	6.2 - 37.8 TILL (MATHESON) - gradational contact with overlying sediments
9–10	05	6.2-6.5 pebbly, cobbly till Fine gray-beige sand matrix, clast composition approximately 80% volcanics/sediments 20% granites
11	06	
13	07	6.5-7.4 till becomes clay-rich Fine gray sand and soft gray-green gritty clay matrix, few clasts
15	08	7.4-12.0 sandy pebbly till, occasional small cobble, cobbly down section Fine beige to gray-beige sand matrix clast composition approximately 60% volcanics/sediments 40% granites - low sample return 12.0-12.5
17	09	
18–19	10	12.5-14.0 till very cobbly, matrix poor clast supported till, clast composition 70% volcanics/sediments 30% granites
20	11	14.0 - 18.0 till same as 7.4 to 12.0
		18.0 - 19.3 till same as 12.5 to 14.0
		19.3 - 19.6 boulder - intermediate/mafic volcanic

FEB 16
travel 6:30 -7:00 AM
drill 7:00 - 9:30, 10:00-2:00
drill problems - rods plugged with ice 7:00 - 8:00
downtime - 9:30 - 10:00 wait for water, mushy down

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 15, 16 19 86

SHIFT HOURS ______ TO ______

TOTAL HOURS ______

CONTRACT HOURS ______

HOLE NO BPS-86-99 LOCATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

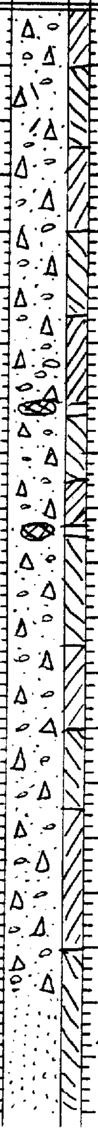
DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______



DEPTH IN METRES	SAMPLE NO.	DESCRIPTIVE LOG	
	11	19.6-21.4 till same as 7.4 to 12.0	
21		21.4-22.4 till as above with thin	
	12	- zones of gray-green gritty clay	
22		22.4-26.2 till cobbly, pebbly	
		Fine gray beige sand matrix,	
23	13	clast composition approximately	
		70% volcanics/sediments	
24		30% granites	
	14	26.2-27.1 till cobbly, sandy	
25		Fine and very fine gray-beige	
		sand matrix, clast composition	
26	15	60% volcanics/sediments	
		40% granites	
27		27.1-27.3 boulder - granite	
28	16	27.3-29.3 till same as 26.2-27.1	
		- at 27.5 - end of shift	
29	17	29.3-29.5 boulder - intermediate/mafic volcanic	
30		29.5-37.0 pebbly, cobbly till,	
	18	occasional sandy intervals	
31		Fine gray sand to gray-beige	
		sand matrix, clast composition	
32		70% volcanics/sediments	
	19	30% granites	
33		37.0-37.8 till pebbly, sandy	
	20	Fine beige sand matrix,	
34		clast composition 60% volcanics/seds	
		40% granites	
35			DH July, 1986
	21	37.8-41.0 SEDIMENTS (MISSINAIBIE)	Character sample
36		- gradational contact with	analysis of sample 21
		overlying till unit	indicates that this
37		- Fine and very fine beige sand	interval consists of
38		occasional thin pebble and compact	beige coloured sand in
	22	pure gray clay interlayers	the 50 to 200 u range.
39			
40			

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE FEB 15,16 19 96 | HOLE NO BB-86-99 | LOCATION

SHIFT HOURS ____ TO ____ | GEOLOGIST ____ DRILLER ____ BIT NO. ____ BIT FOOTAGE ____

TOTAL HOURS ____ | MOVE TO HOLE ____

CONTRACT HOURS ____ | DRILL ____

MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

page 3 of 3

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			22	41.0 - 43.8 TILL (LOWER)
41			23	41.0-41.8 till cobbly, pebbly
42				Fine gray sand to fine gray-beige sand matrix clast composition
43			24	60% volcanics/sediments 40% granites
			25	41.8-43.4 till very cobbly, - clast
44				supported - matrix poor zone
45			26 BEDROCK	clast composition 60% volcanics/sediments
46				40% granites
47				43.4-43.8 till cobbly Fine gray-beige sand matrix
48				clast composition 70% volcanics/sediments
49				30% granites
50				43.8 - 45.3 BEDROCK
11				- dark green to olive green colour
12				- very fine grained
13				- massive structure
14				- minor quartz veins
15				- at 44.8 rock appears siliceous, gray-green colour
16				- intermediate/mafic volcanic
17				45.3 E.O.H.
18				Don Holmes
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb16 17/18 19 86

SHIFT HOURS
____ TO ____

TOTAL HOURS
____

CONTRACT HOURS
____

HOLE NO BPS-86-100 LOCATION L62E 14+50N

GEOLOGIST Holmes DRILLER Bussiere BIT NO. CB67842 / A000024 BIT FOOTAGE 0-26.2 / 0-58

MOVE TO HOLE 2:00 - 2:15

DRILL 2:15 - 5:00

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER travel 5:00 - 5:30 by pickup

MOVE TO NEXT HOLE

NEW BIT CB67842 - defective(?)
NEW BIT A000024

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG							
				0 - 1.0 NO RETURN			Feb 17				
1				1.0 - 3.9 TILL (Cochrane)			travel 6:30 - 7:00				
2				- oxidized brown to brown-beige compact, very gritty clay matrix, granules and pebbles <5% of till			drill 7:00 - 11:00				
							downtime 11:00 - 5:00				
3							Feb 18				
				3.9 - 5.2 SEDIMENTS (OJIBWAY)			travel 6:30 - 7:00				
4			01	- fine to very fine gray-beige and beige sand, poor return			drill 7:00 - 12:30				
5											
6				5.2 - 24.9 TILL (MATHESON)							
				- gradational contact with overlying sediment unit							
7				- very sandy, clay till							
8				5.2 - 8.0 - fine and very fine gray-beige to beige sand matrix, very clay rich, small gritty gray clay lumps, pebble composition 50% volcanics/sediments 50% granites							
9			02								
10											
11				8.0 - 13.8 till as above with few sandy intervals in till							
12			03								
13				13.8 - 20.2 - at 13.8 - occasional cobbles							
14				- till compact to moderately compact clayey, sandy, till, granules and pebbles approximately 50% volcanics 50% granites							
15			04								
16											
17											
18			05								
19											
20			06								

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 16 17 18 19 86

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO BPS-86-10D LOCATION ______
GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______
MOVE TO HOLE ______
DRILL ______
MECHANICAL DOWN TIME ______
DRILLING PROBLEMS ______
OTHER ______
MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21			06	20.2 - 21.4 sandy, pebbly till - Few small gritty clay lumps Fine gray to gray-beige sand matrix, clast composition 60% volcanics/sediments 40% granites
22			07	
23			08	21.4 - 21.7 boulder - gabbro
24				21.7 - 22.3 very cobbly till - clast supported, matrix poor zones Fine gray sand matrix, clast composition approximately 60% volcanics sediments 40% granites
25			09	
26			10	
27			10	22.3 - 22.6 boulder - intermediate/mafic volcanic
28				22.6 - 23.0 till similar to 20.2 - 21.4
29			11	23.0 - 24.2 till similar to 21.7 - 22.3
30				24.2 - 24.8 boulder - granite
31			12 BEDROCK	24.8 - 30.3 SEDIMENTS (MISSINAIBI) - gradational contact with overlying till unit - cobbly, pebbly gravel with small amount fine gray sand, clast composition approximately 50% volcanics/sediments 50% granites - high sample return
32				
33				
14				
15				27.1 - 27.3 boulder granite
16				27.3 - 27.5 gravel - pebbly, cobbly, very little fine and medium gray sand clast composition approximately 60% volcanics/sediments 40% granites
17				27.5 - 28.5 boulder - intermediate/mafic volcanic
18				28.5 - 30.3 fine beige sand overlying gravel similar to 27.3 to 27.5
19				30.3 - 32.0 BEDROCK - dark gray to black to light green colour
20				- fine to very fine grained

- siliceous
- occasional veins of yellow-white colour contains very fine dessaminated sulphides
- massive structure
- slightly graphitic
- Intermediate/mafic volcanic

32.0 E.O.H Don Holmes

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 18 1986

HOLE NO RPS-86-101 LOCATION L62E 12+50 N
GEOLOGIST SHELP DRILLER Bussiere BIT NO A000020 BIT FOOTAGE 0 - 8.0

SHIFT HOURS
____ TO ____

MOVE TO HOLE 12:30 - 12:45
DRILL 12:45 — 4:15

TOTAL HOURS

MECHANICAL DOWN TIME
DRILLING PROBLEMS

CONTRACT HOURS

OTHER
MOVE TO NEXT HOLE

NEW BIT.

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			01	
			02	
			03 BEDROCK	

0 - 1.5 No return.

1.5 - 1.7 Organics

1.7 - 4.0 CLAY (COCHRANE)
- gritty brown beige clay.
- soft

4.0 - 6.2 TILL (COCHRANE)
- brown beige clay.
- < 5% clasts.
- clay changes to grey beige down section.
- moderately compact present in small lumps
- minor am'ts fine beige sand

5.2 - 5.4 - increase % of clasts to ≃ 15-20%, 70% vol/sed, 30% granitic

6.2 - 6.4 boulder - intermediate to mafic volcanic

6.4 - 6.6 TILL (MATHESON ?)
- minor grey clay lumps
- sandy pebbly till
- fine beige sand.
- pebbles 70% vol/sed - 30% granitic
- small amount of sample collected

6.6 - 8.0 BEDROCK
- DARK to Lighter green rocks (vol)
- massive with numerous, finegrained fractures containing pyrrhotite (po) (magnetic)
- pyrrhotite also as disseminated blebs throughout rock.
- calcite present in pyrrhotite veins down section.
- intermediate to mafic volcanic

8.0. E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 19/20 19 86

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO BPS-86-102 LOCATION L60E 9+50N

GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. A000020 BIT FOOTAGE 8.0-48.5

MOVE TO HOLE

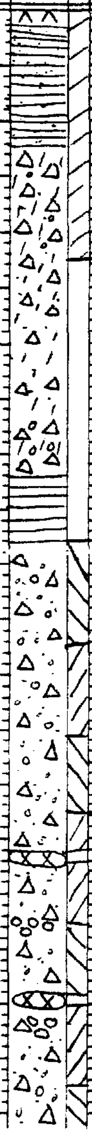
DRILL 7:00 AM - 5:00 PM

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER Travel 6.30-7.00 AM (pickup) 5.00-5.30 PM (pickup)

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-.2 Organics
1				.2-2.5 SEDIMENTS (COCHRANE)
				- soft gritty brown beige clay
2			01	
				2.5-8.4 TILL (COCHRANE)
3				2.5-4.4 - brown beige clay till
				- < 5% clasts
4				- minor fine beige sand.
				- clay appears in large cylindrical lumps
5				
				4.4-7.4 - very gritty (coarse sand) grey clay
6				- very minor clasts
				- poor return
7				7.4-8.4 - a grey clay till now present
8				- pebbles < 5%
				- minor fine beige sand
9				- poor return
				* no sample between 4.4-8.4 due to poor return
10			02	8.4-9.6 SEDIMENTS (OJIBWAY)
11				- soft grey varved clay
				- clay appears in thin slices
12			03	
13				9.6-23.2 TILL (MATHESON)
14			04	- very sandy pebbly till with cobbly sections throughout.
15			05	- high sample return in sandy pebble sections
16				- sand - fine to medium grey - beige sand.
17			06	- pebbles - 60% volcanic/seds - 40% granites
18			07	changing to 70% volcanics/seds
19				30% granites
20			08	down section (16.6)

15.2-15.4 Boulder - interm/mafic

17.8-18.0 boulder volcanic. granitic (qtz monzonite?)

-16.4-16.6 cobbly section (very) alternating granitic and mafic cobbles.

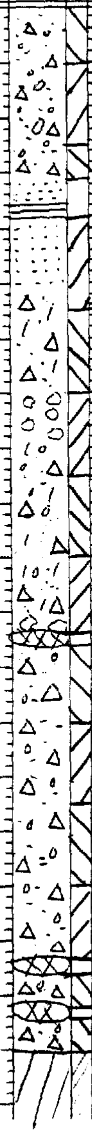
-18.2-18.4 very cobbly section granitic cobbles

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __	HOLE NO 102 LOCATION ________
	GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________
SHIFT HOURS	MOVE TO HOLE ________
______ TO ______	DRILL ________
TOTAL HOURS	MECHANICAL DOWN TIME ________
______	DRILLING PROBLEMS ________
CONTRACT HOURS	OTHER ________
______	MOVE TO NEXT HOLE ________

HOLE 102 Page 2 of 3

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21			08	
22			09	
23			10	23.2–25.0 SEDIMENTS (MISSINAIBI ??)
				23.2 – 23.5 fine grey beige sand.
24				23.5 – 23.8 · grey-green clay -very compact, occurs as irregular angular chunks - calcareous clay
				Abrupt contact between upper sand and clay
25			11	23.8–25.0 fine grey beige sand
26			12	Abrupt contact between clay and underlying sand.
27				
28			13	
29			14	25.0–39.0 TILL (LOWER ?? or continuation of MATHESON)
30			15	Abrupt contact between till and overlying sand.
31				25.0–25.2 grey clay till
32			16	25.2 – 39.0 - very sandy pebbly till. with occasional cobbles and minor amounts of gritty grey clay
33			17	
34				- Clast composition 60% volc/seds 40% granitic
35			18	
36				- Sand - grey beige fine to medium sand.
37			19	*- distinct hard (lithified) gritty grey clay clasts with granules.
38			20	
39			20	-occasional (lenses?) of very fine sand.
40			21 BEDROCK	



25.4 - 31.1 - thin seams of hard compact calcareous grey clay

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO 102 LOCATION

GEOLOGIST ____ DRILLER ____ BIT NO. ____ BIT FOOTAGE ____

MOVE TO HOLE

DRILL

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Feb 20
travel 6:30 - 7.00 AM
downtime 700 - 8.30 work on pump
drill 8.30 - 9.45.

HOLE 102 Page 3 of 3

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				27.0 - 27.8 Cobbles alternating volc/seds and granitic cobbles
1				
2				27.8 - 31.1 very pebbly sandy section 70% volcanic/seds 30% granitic. high sample return
3				
4				31.1 - 31.3 cobbles same as 27.0 - 27.8
5				31.3 - 31.5 . boulder - granite (qtz monzonite ?)
6				
7				31.5 - 37.4 very pebbly sandy fill section - same composition as 27.8 - 31.2 - high sample return
8				
9				37.4 - 37.6 boulder - granite.
10				37.6 - 38.2 cobbles same as 27.0 - 27.8
11				38.2 - 38.4 - boulder - intermediate/mafic volc.
12				
13				39.0 - 40.5 BEDROCK siliceous light green rock (rhyolite)? - massive to schistose structure - minor disseminated sulphides (pyrite). - small quartz veins with minor calcite
14				
15				
16				
17				
18				40.5 EOH
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 20 19 86
21, 22, 23
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO BPS86-103 LOCATION L60E 10750N
GEOLOGIST SHELP DRILLER D BUSSIERE BIT NO. A0000 14 BIT FOOTAGE 0-37.5
MOVE TO HOLE 9:45-10.00
DRILL 10:30-10:45
MECHANICAL DOWN TIME 10:00-10.30, 10.45 - end of shift
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

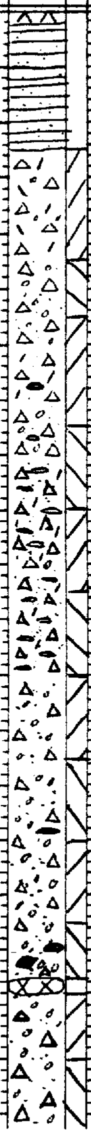
Feb 21 - Downday

Feb 22 travel 6.30-7.00 Am
downtime 7.00-7.30 (waterpump problems)
drill 7.30-8.15
downtime 8.15 - end of shift

Page 1 of 3

New Bit

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



Depth (m): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

Sample No.: 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12

0-0.2 Organics
0.2-2.5 SEDIMENTS. (COCHRANE)
- beige-brown gritty clay
- moderately compact
- poor return

2.5-4.5 TILL (COCHRANE)
- gradational contact

2.5-3.5 - beige brown gritty clay with occasional granules
- <1% pebbles
- clay is moderately compact

3.5-4.5 - grey gritty clay
- clay is calcareous.
- moderately compact to compact
- ≃10% clasts.
- clasts comp. 60% volc/seds
40% granitics
- occasional Lmst clasts

4.5-36.3 TILL (MATHESON)
- abrupt contact

4.5-5.0 sandy pebbly till
- grey to grey beige fine to med sand
- pebble comp. - 70% volc/seds
30% granite
- occasional lmst pebble
- occasional granitic cobble

5.0-6.0 pebble comp 60% volc/seds
40% granite

6.0-7.0 thin grey clay layers occur in the sandy pebbly till.
- the clay is not gritty but may contain up to 5% clasts.
- occasional mafic cobble

7.0-8.1 sandy pebbly till
- grey fine-med. sand
- pebbles 60% volc/seds
40% granitic
- occasional cobble

8.1-9.8 - cobbly till
- grey fine to med sand matrix
- occasional grey gritty clay clasts.
- occasional grey gritty clay draped pebbles.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

HOLE NO BPs-86-103 LOCATION ______

DATE ______ 19 __

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS ______ TO ______

MOVE TO HOLE ______

DRILL ______

TOTAL HOURS ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

CONTRACT HOURS ______

OTHER ______

MOVE TO NEXT HOLE ______

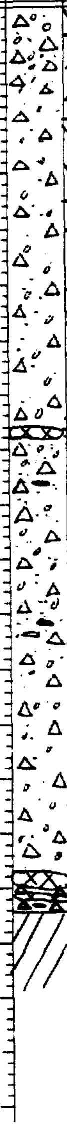
Feb 23 travel 6.30 - 7.00 AM
downtime 7.00 - 8.00 AM (no water)
drill 8.00 - 3.45 PM

Page 2 of 3

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG

Depth in metres: 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40

Sample no.: 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24



9.8 – 10.0 grey gritty clay till
- 10% clasts 70% volc/seds
30% granitic
- minor grey fine-med sand
- low return

10.0 – 12.0 cobbly till
same as 8.1 – 9.8

12.0 – 16.8 very sandy, very pebbly till
- grey to grey beige medium sand
- pebbles 60% volc/seds
40% granitic
- occasional cobbles of both volc/seds and granites
- good return

14.8 – 16.8 pebble comp.
70% volc/seds
30% granitic

16.8 – 17.9 cobbly pebble till
- matrix poor - grey beige medium to coarse sand.
16.8 – 17.1 clasts 20% volc/seds
80% granitic
17.1 – 17.4 clasts 60% volc/seds
40% granitic
17.4 – 17.6 boulder
inter/mafic volc.
17.6 – 17.9 matrix rich cobbly till
grey beige fine sand

17.9 – 21.3 very sand, very pebbly till
- beige fine-med sand
- pebbles 70% volc/seds
30% granitic
- occasional cobble (granitic)
- good return.

21.3 – 21.5 till same as 9.8 – 10.0

21.5 – 27.6 till same as 17.9 – 21.3
- occasional beige lmst clast

27.6 – 27.8 boulder - granite

27.8 – 28.5 till same as 17.9 – 21.3

16.8 – 17.9 - could be "GRAVEL"?
- med-coarse sand.
- matrix poor
- but only one meter

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

CONTRACT HOURS

HOLE NO BPS-86-103 LOCATION ________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ________

DRILL ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				28.5 - 28.8 cobbly till - grey to grey beige fine to medium sand - cobbles 80% volc/seds 20% granitic 28.8 - 31.0 till same as 17.9 - 21.3 31.0 - 31.3 cobbly till grey beige fine to med sand. - felsic volc. cobbles. 31.3 - 35.6 till same as. 17.9 - 21.3. 35.6 - 35.8 boulder intmed/mafic volc 35.8 - 36.0 cobbly till same as 28.5 - 28.8 36.0 - 36.1 boulder - gabbro 36.1 - 36.3 cobbly till same as 28.5 - 28.8 36.3 - 37.5 BEDROCK - dark green mafic volc - massive with numerous micro fractures containing occasional calcite and pyrite 37.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 23 19 86

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

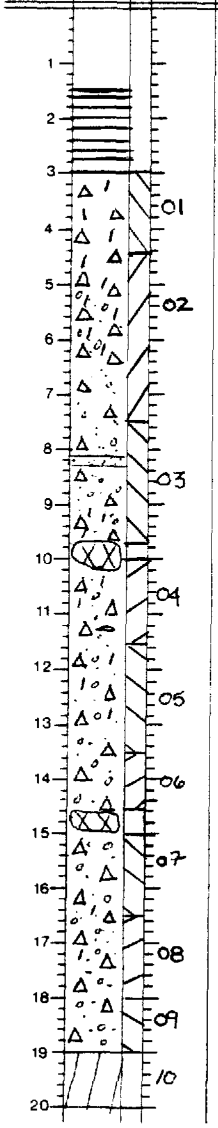
CONTRACT HOURS
______

HOLE NO BPS-86-109 LOCATION L 60 E 11+50 N
GEOLOGIST G SHELP DRILLER D. BUSSIERE BIT NO ACCOC14 BIT FOOTAGE 375-600
MOVE TO HOLE 3.45 - 4.00 PM
DRILL 4.00 - 6.00 PM
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

Feb 24 Travel 6.30-7.00 AM
Drill 7.00-8.00 AM
move 8.00-8:15 AM

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0-1.5 NO RETURN

1.5-3.0 SEDIMENTS (COCHRANE)
- grey gritty clay
- present in soft cylindrical lumps

3.0-4.7 TILL (COCHRANE)
- grey, gritty, calcareous clay till
- clay is soft
- clasts <5%, mainly lmst.

4.7-19.0 TILL (MATHESON)

4.7-6.6 - sandy pebbly clayey till
- grey gritty clay
- grey-beige fine to med sand
- pebbles 60% vol c/seds
40% granitic
- occasional granitic cobble

6.6-8.0 - very sandy pebbly till
- grey beige fine to med. sand
- pebbles 70% volc/seds
30% granitic

8.0-8.3 - light grey clay and grey beige fine to med sand

8.3-9.0 - till same as 6.6 - 8.0

9.0-9.7 - grey gritty clay till
- grey fine sand
- < 5% clasts
- poor return

9.7-10.0 boulder (granitic)

10.0-11.0 till same as 9.0 - 9.7 except
10% clasts
- clasts comp 90% volc/seds
10% granitic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO RPS-86-104 LOCATION L 60 E 11+50 N

GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. A000014 BIT FOOTAGE 375-600

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

Pg 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				11.0 - 11.5 Cobbly sandy till - grey fine - med. sand - cobbles volc / seds.
1				11.5 - 13.0 - till same as 9.0 - 9.7
2				13.0 - 14.6. till same as 6.6 - 8.0
3				14.6 - 15.0 boulder (granitic)
				15.0 - 16.3 till same as 6.6 - 8.0 < 5% grey gritty clay clasts.
4				16.3 - 16.5 till same as 10.0 - 11.0
5				16.5 - 17.0 till same as 14.6 - 16.3
				17.0 - 17.5 till same as 10.0 - 11.0 - occasional sulphide rich clasts
6				17.5 - 19.0 till same as 15.0 - 16.3 - occasional cobble (volc / seds)
7				
8				19.0 - 20.0 BEDROCK. - dark green colour - fine grained - massive. - minor calcite veins - minor quartz veins with disseminated pyrite.
9				
10				
11				
12				* Did not complete 1 1/2 meters into bedrock on clients request.
13				
14				20.0 E.O.H.
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 24 1986

HOLE NO BPS-86-105 LOCATION L 60E 12+50N

GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. BC00022 BIT FOOTAGE 0-21.9

SHIFT HOURS ______ TO ______

MOVE TO HOLE 8.00 - 8:

DRILL 8.15 - 3.30

TOTAL HOURS ______

MECHANICAL DOWN TIME

DRILLING PROBLEMS

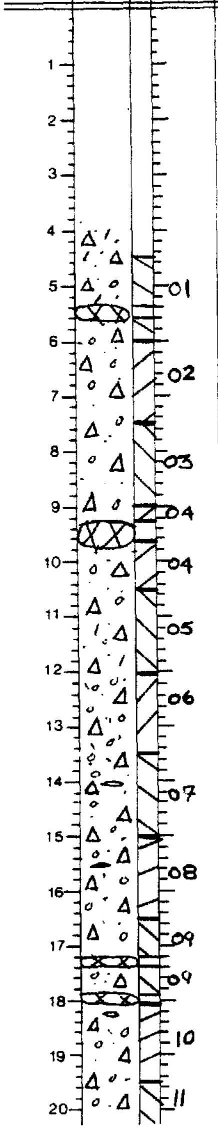
CONTRACT HOURS ______

OTHER

MOVE TO NEXT HOLE 3.30 - 3.45

Pg 1 of 2 NEW BIT, NEW SUB.

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 4.0 No Return
- bit plugged with clay

4.0 - 4.5 TILL (COCHRANE)
- gritty grey - grey beige clay
- clay calcareous
- < 1% pebbles.
- poor return.

4.5 - 21.0 TILL (MATHESON).
- abrupt contact.

4.5 - 5.3 very sandy pebbly till
- grey to grey-beige fine-med. sand.
- pebbles comp. 60% volc/seds
40% granitic
- occasional grey gritty clay clasts
- occasional cobble

5.3 - 5.4 - grey clay till
- clay calcareous.
- 10% pebbles
90% volc/seds
10% granitic

5.4 - 5.6 boulder (gabbro).

5.6 - 9.3 till same as 4.5-5.3.
-9.1 pebble comp.
70% volc/seds
30% granitic

9.1 - 9.3 20% grey gritty clay clasts. and grey gritty clay draped clasts.

9.3 - 9.7 boulder (granitic)

9.7 - 11.0 till same as 4.5-5.3

11.0 - 12.0 clayey till
- 10-15% clasts.
- minor grey fine sand

12.0 - 13.9 Sandy, very pebbly till
- grey beige fine-med sand
- pebbles 80 volc/seds
20% granitics
- occasional cobble (granitic)
- good return

13.0 - 13.9 Pebble comp 70% volc/seds
30% granitic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

HOLE NO BPS-86-105 LOCATION ____________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

SHIFT HOURS

______ TO ______

MOVE TO HOLE ____________

DRILL ____________

TOTAL HOURS

MECHANICAL DOWN TIME ____________

DRILLING PROBLEMS ____________

CONTRACT HOURS

OTHER ____________

MOVE TO NEXT HOLE ____________

Pg 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			11	13.9-14.2 cobbly till - matrix poor - grey fine-med sand
21			12	- cobbles 60% volc/seds 40% granitic
22				14.2-17.2 till same as 4.5-5.3 except no clay clasts
23				- pebble 70% volc/sed 30% granitic downsection
24				15.3-15.5 rust coloured sand. beige fine-med sand
25				17.2-17.4 boulder (granitic)
26				17.4-17.7 till same as 14.2-17.2 17.7-17.9 Cobbly till
27				matrix poor, grey fine-med. sand. - cobbles - volc/seds - poor return
28				17.9-18.0 boulder (mafic volcanic)
29				18.0-18.3 till same as 17.7-17.9
30				18.3-20.0 till same as 5.6-9.1
31				20.0-20.1 boulder (granitic) 20.1-20.8 till same as 17.7-17.9.
32				20.8-20.9 boulder (felsic volcanic)
33				20.9-21.0 cobbly till - matrix poor - grey fine-med. sand.
34				- cobbles 80% volc/seds
35				20% granitic. 21.0-21.8 BEDROCK
36				- dark green colour (mafic volc ?)
37				- fine grained - massive
38				- trace pyrite and pyrrhotite. - minor calcite.
39				- Bit damaged, hole completed
40				21.8 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 24 1986
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO BPS-86-106 LOCATION L60E 13+50N
GEOLOGIST G. Shelp DRILLER D. Bussiere BIT NO A000018 BIT FOOTAGE 0-6.7
MOVE TO HOLE 3.30 - 3.45 Pm
DRILL 3.45 - 5.00
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER Travel 6:30-7.00 Am, 5.00-5.30 Pm
MOVE TO NEXT HOLE

Feb 25 travel 6.30 - 7.00 AM
drill 7.00 - 8.30 AM
move 8.30 - 8.45 AM

NEW BIT

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 - 1.7 No Return.
				1.7-2.2 SEDIMENTS (COCHRANE)
				1.7-1.9 dark brown clay
				1.9-2.2 gray clay
				2.2-2.5 SEDIMENTS (OJIBWAY)??
			01	- rusty coloured fine-coarse sand with minor amounts of grey clay.
			02	
			03	2.5-4.7 TILL (MATHESON).
				2.5-3.0 sandy pebbly clay till - rusty beige fine-med sand - gritty grey clay - pebbles 80% volc/seds 20% granitic
				3.0-4.7 sandy pebbly till - beige fine-med. sand - pebbles 60% volc/seds 40% granitic
				4.7-6.2 BEDROCK - dark green and white in colour (gabbro) - occasional calcite veins
				6.2 E.O.H.

Depth scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 25 1986

HOLE NO BPS-86-107 LOCATION L60E 14+50 N

GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. A000018 BIT FOOTAGE 6.2-15.6

SHIFT HOURS

_____ TO _____

MOVE TO HOLE 8:30 - 8:45 AM

DRILL 8:45 - 10:15 AM

TOTAL HOURS

MECHANICAL DOWN TIME

DRILLING PROBLEMS

CONTRACT HOURS

OTHER

MOVE TO NEXT HOLE 10:15 - 10:30

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0.0 - 0.2 Organics
1				.2 - 3.0 SEDIMENTS (COCHRANE) - beige gritty clay
2				3.0 - 3.5 TILL (COCHRANE) - beige soft gritty clay till
3				- clay is calcareous
4			01	- < 1% clasts
5			02	3.5 - 8.4 TILL (MATHESON). 3.5-4.0 clayey, sandy, pebbly till
6				- light grey clay
7			03	- grey fine-med. sand. - pebbles 60% volc/seds
8				40% granitic
9			04	4.0 - 4.2 - rusty beige fine-med. sand with
10				a minor amount of light grey clay
11				4.2 - 6.0 very sandy pebbly till
12				- beige fine-med sand. - pebble 60% volc/seds.
13				40% granitic - occasional cobble.
14				6.0 - 6.3 - light grey beige
15				gritty clay till - < 5% clasts
16				6.3 - 6.5 - till same as 4.2 - 6.0
17				6.5 - 8.4 - till same as 6.0 - 6.3
18				8.4 - 9.4 BEDROCK
19				- siliceous dark and light green coloured rock
20				- fine grained - massive.

- qtz eyes present. (qtz eye porphyry?).
- trace sulphides (py).

9.4. E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 25 1986

SHIFT HOURS
____ TO ____

TOTAL HOURS
____

CONTRACT HOURS
____

HOLE NO BPS-86-108 LOCATION L59E 14N
GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. A000018 BIT FOOTAGE 156-279
MOVE TO HOLE 10.15 – 10.30 AM
DRILL 10.30 – 12.45 M
MECHANICAL DOWN TIME ____
DRILLING PROBLEMS ____
OTHER ____
MOVE TO NEXT HOLE 12.45 – 1.00 PM.

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-0.2 Organics
1				0.2-1.5 No Return
2				1.5-3.0 SEDIMENTS (COCHRANE) beige gritty calcareous clay
3				3.0-4.0 TILL (COCHRANE) beige gritty calcareous clay <1% clasts
4				
5			01	4.0-11.4 TILL (MATHESON)
6				4.0-6.0 sandy pebble clay till - grey gritty clay - grey fine-med sand. - ≃ 15% pebbles 60% volc/seds 40% granitic
7			02	- occasional cobble (granitic)
8			03	6.0-7.0 very sandy pebbly till - grey - grey beige fine-med sand - pebbles 60% volc/seds 40% granitic
9				7.0-7.2 till same as 4.0-6.0 40% pebbles.
10			04	7.2-7.9 till same as 6.0-7.0
11			05	7.9-8.2 cobbly till - matrix poor grey beige fine-med sand. - cobbles 80% volc/seds 20% granitic
12			06	8.2-8.4 till same as 6.0-7.0 - pebbles 70% volc/seds 30% granitic
13				8.4-9.4 till same as 4.0-6.0 - pebbles 90% volc/seds 10% granitic
14–20				9.4-9.9 cobbly clay till - grey gritty clay - very little grey fine-med sand - Cobbles (volc/seds)

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 25 1986

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO BPS-86-108 LOCATION L59E 14N
GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______
MOVE TO HOLE ______
DRILL ______
MECHANICAL DOWN TIME ______
DRILLING PROBLEMS ______
OTHER ______
MOVE TO NEXT HOLE ______

Pg 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				9.9–11.4 pebbly clay till -grey gritty clay -minor grey fine-med sand -pebbles 70% volc/seds 30% granitic 11.4–12.3 BEDROCK -siliceous, dark green rock -massive -fine grained -quartz eyes -"quartz eye porphyry" 12.3 E.O.H. -drilled only .9 meters into bedrock at the client's request

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 25 1986

HOLE NO BPS-86-109 LOCATION L59E 13N

GEOLOGIST G SHELP DRILLER D. BUSSIERE BIT NO. A000018 BIT FOOTAGE 27.9-54.9 m

SHIFT HOURS ____ TO ____

MOVE TO HOLE 12.45 - 1.00 PM.

DRILL 1.00 - 5.00 PM

TOTAL HOURS ____

MECHANICAL DOWN TIME

DRILLING PROBLEMS

CONTRACT HOURS ____

OTHER TRAVEL 5.00 - 5.30 PM

MOVE TO NEXT HOLE

Feb 26/86 TRAVEL 6.30 - 7.00 AM
DRILL 7.00 - 10.45 AM.
MOVE 10.45 - 11.00 AM.

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-0.2 ORGANICS.
1				0.2-2.5 SEDIMENTS (COCHRANE) - deep brown to beige clay - gritty
2				2.5-3.5 TILL (COCHRANE). -beige gritty clay -<1% clasts.
3				
4			01	3.0-3.5 grey gritty clay till - appears in cylindrical chunks
5				3.5-25.5 TILL (MATHESON). abrupt contact.
6			02	3.5-4.7 sandy pebble till -grey-beige fine-med. sand. -pebbles 60% volc/seds. 40% granitic
7				
8			03	-occasional cobble.
9				4.7-5.3 boulder (granite). 5.3-9.5 very sandy pebbly till
10			04	-grey to grey beige fine - med. sand.
11			05	- pebbles 60% volc/seds 40% granitic
12				9.5-10.6 sandy pebbly clay till
13			06	-grey gritty clay -grey fine-med. sand. -approx. 30% pebbles
14			07	- pebble comp. 60% volc/seds 40% granitic
15				10.6-10.8 cobbly till
16			08	- matrix poor, grey fine-med. sand. -cobbles 90% volc/seds.
17			09	10% granitic
18			10	10.8-11.5 till same as 5.3-9.5. -pebbles 70% volc/seds
19			10	30% granitic 11.5-11.6 till same as 9.5-10.6.
20			11	11.6-12.0 till same as 10.6-10.8 12.0-12.2 boulder (mafic volc)

12.2-12.4 till same as 10.6-10.8
cobbles 80% volc/seds
20% granitic.

12.4-12.6 clayey, very sandy, pebbly till
-grey gritty clay
-grey-greybeige fine-med sand.
-pebbles 70% volc/seds
30% granitic

? SEDIMENTS (COCHRANE) -only two clasts noticed and these could be drop clasts

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

HOLE NO BPS-86-109 LOCATION L59E 13N

DATE ______ 19 __

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS ______ TO ______

MOVE TO HOLE ______

DRILL ______

TOTAL HOURS ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

CONTRACT HOURS ______

OTHER ______

MOVE TO NEXT HOLE ______

Pg 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20			11, 12, 12, 13, 13, 14, 15, 16	

12.6-16.5 till same as 5.3-9.5
pebbles 70% volc/seds
30% granitic
12.6-14.0 occasional grey gritty clay clasts

16.5-17.0 Cobbly till
matrix poor, grey fine-med sand
cobbles 60% volc/seds
40% granitic

17.0-17.2 boulder (gabbro).

17.2-17.5 pebbly clay till
- grey beige gritty clay
- pebbles 80% volc/seds
20% granitic

17.5-17.7 till same as 12.6-16.5

17.7-17.9 boulder (mafic volc)

17.9-18.7 till same as 12.6-16.5
by 18.2 - very sandy pebbly till

18.7-19.2 till same as 16.5-17.0

19.2-19.3 boulder (granitic)

19.3-19.4 till same as 12.6-16.5

19.4-19.5 boulder (volc/seds)

19.5-20.0 sandy cobbly pebble till
grey beige fine-med sand
pebbles 60% volc/seds
40% granitic
cobbles 60% volc/seds
40% granitic

20-20.7 till same as 12.6-16.5

20.7-20.8 clayey pebble till
grey nongritty clay
pebble 70% volc/seds
30% granitic.

20.8-21.3 till same as 16.5-17.0

21.3-21.6 till same as 12.4-12.6

21.6-22.0 till same as 12.6-16.5

22.0-22.1 boulder (volc/seds)

22.1-22.3 till same as 20.7-20.8

22.3-22.9 till same as 12.6-16.5
- occasional grey clay clasts

22.9-23.1 boulder (granitic)

23.1-24.8 till same as 12.6-16.5

24.8-24.9 grey clay till
<1% clasts
grey gritty clay

24.9-25.0 boulder (granitic)

25.0-25.1 boulder (volc/seds)

25.1-25.5 till same as 12.6-16.5

25.5-27.0 BEDROCK
- siliceous light green-grey colour
- finegrained, massive
- trace disseminated sulphides

27.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 26 1986

SHIFT HOURS
______ TO ______

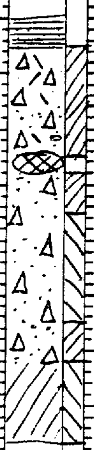
TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO BPS-86-110 LOCATION L59E 12+00N
GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. A000023 BIT FOOTAGE 0 - 9.7
MOVE TO HOLE 10:45 - 11:00
DRILL 11:00 - 1:30
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE 1:30 - 1:45

NEW BIT

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



Sample No.: 01, 01, 02, 03, 04 BEDROCK

0 - 2.0 NO RETURN

2.0 - 2.5 SEDIMENTS (COCHRANE)
2.0 - 2.1 chocolate-brown, moderately compact pure clay
2.1 - 2.5 beige, gritty, moderately compact clay

2.5 - 3.5 TILL (COCHRANE)
- gray, gritty clay till
< 1% pebbles, calcareous
- poor return

3.5 - 8.2 TILL (MATHESON)
- abrupt contact with overlying till unit
3.5 - 4.3 sandy pebbly till, gray to gray-beige fine medium grained sand matrix pebble composition
60% volcanics/sediments
40% granites
4.3 - 4.5 clay-rich sand, pebbly till
- gray-gritty clay calcareous
- gray to gray beige fine-medium sand
4.5 - 4.8 boulder (granitic)
4.8 - 8.2 very sandy pebbly till
gray to gray-beige fine to medium sand, pebbles
composition approximately
60% volcanics/sediments
40% granites
with occasional gray gritty clay clasts

8.2 - 9.7 BEDROCK
- dark green colour
- fine grained with few quartz eyes, feldspar phenocrysts
- massive structure
- bleached zone down section
~ 1-2% sulphides
- Quartz feldspar porphyry dyke?

9.7 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 26 1986.

SHIFT HOURS
____ TO ____

TOTAL HOURS
____

CONTRACT HOURS
____

HOLE NO BPS-86-111 LOCATION L59E 11+00N
GEOLOGIST G SHELP DRILLER D. BUSSIERE BIT NO. A0000Z3 BIT FOOTAGE 9.7-17.9
MOVE TO HOLE 1:30 - 1:45 PM.
DRILL 1.45 - 5.00 PM.
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER TRAVEL 5.00 - 5.30 PM
MOVE TO NEXT HOLE

Feb 27/86 TRAVEL 6.30 - 7.00 A.M
DRILL 7.00 - 7.30 AM
MOVE 7.30 - 7.45

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-2.5 NO RETURN
1				2.5-4.2 TILL (COCHRANE)
				- grey, gritty, calcareous clay
2				- < 1% Lmst pebbles
				4.2-7.5 TILL (MATHESON).
3				- abrupt contact
				4.2-4.5 sandy pebbly till
4				grey to grey beige fine-med sand
				pebbles 60% volc/seds
5			01	40% granitic
				4.5-4.7 sandy pebbly clay till
6				grey gritty calcareous clay
			02	grey - grey beige fine-med sand
7				pebbles 60% volc/seds
				40% granitic
8			03	4.7-7.2 till same as 4.2-4.5
				- abundant sulphide rich pebbles
9				(from bedrock - BPS-86-110)
				7.2-7.5 Cobbly till
10				- no matrix
				- cobbles 60% volc/seds
11				40% granitic
				7.5-8.2 BEDROCK
12				- dark green colour
				- fine grained
13				- massive
				- olive green areas (epidote?)
14				- 5 to 10% sulphides (py).
				- occasional quartz vein (<.2cm).
15				
				8.2 EOH
16				faulty bit
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 27 1986

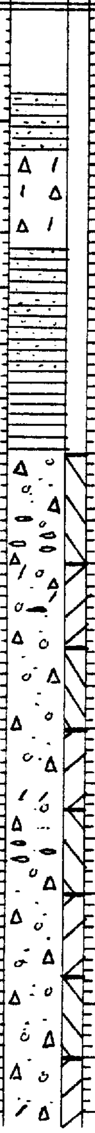
SHIFT HOURS
____ TO ____

TOTAL HOURS
____

CONTRACT HOURS
____

HOLE NO BPS-86-112 LOCATION L59E 10+00N
GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. ACOCO18 BIT FOOTAGE 549-79.6
MOVE TO HOLE 07.30 - 07.45 AM.
DRILL 07.45 - 1.45 PM
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE 1.45 - 2.00 PM.

Pg 1 of 2



DEPTH IN METRES	SAMPLE NO.	DESCRIPTIVE LOG
0–1.5		0 - 1.5 No RETURN
1.5–2.5		1.5-2.5 SEDIMENTS (COCHRANE). -grey, gritty, calcareous clay
2.5–4.3		2.5-4.3 TILL (COCHRANE). -grey, gritty, calcareous clay -<1% clasts.
4.3–6.5		4.3-6.5 SEDIMENTS (COCHRANE). -grey, gritty, calcareous clay - moderately compact cylindrical pieces
6.5–8.0		6.5-8.0 SEDIMENTS (OJIBWAY). -grey soft clay - appears in thin ribbons
8.0–24.0	01, 02, 03, 04, 05, 06, 07, 08	8.0-24.0 TILL (MATHESON) -abrupt contact 8.0-9.8 very sandy, pebbly till -grey - grey beige fine-med. sand -pebbles 20% volc/seds 80% granitic. Lmst clasts present. -9.0-9.8 cobbles present 20% volc/seds 80% granitic 9.8-15.0 sandy pebbly till -beige fine-med. sand -pebbles 70% volc/seds 30% granitic -occasional grey gritty clay -occasional cobbles (granitic) -abundant Lmst pebbles. 15.0-15.4 Cobbly pebble till -matrix poor, beige fine-med sand. -pebbles 60% volc/seds 40% granitic -cobbles 80% volc/seds 20% granitic 15.4-24.0 till same as 9.8-15.0

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 27 1986

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO RPS-86-112 LOCATION L59E 10+00N

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			08	
21				
			09	
22				21.7-21.9 boulder (granitic)
23			10	24.0-24.4 SEDIMENTS (MISSINAIBI).
				- grey silty clay
24			11	- calcareous
			12	- very compact, dry
25				- poor return.
6				24.4-24.7 BEDROCK.
				- dark green colour
7				- fine grained.
				- massive.
8				- mafic volcanic
				24.7 E.O.H.
9				- bit no longer cutting, no return.
10				- client ended hole
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 27 19 86

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS-86-113 LOCATION L59E 9+00 N

GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. AC00015 BIT FOOTAGE 0-23.5

MOVE TO HOLE 1.45 - 2.00 PM

DRILL 2.00 - 5.00 PM

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER TRAVEL 5.00 - 5.30 PM

MOVE TO NEXT HOLE

Feb 28 TRAVEL 6.30-7.00 AM

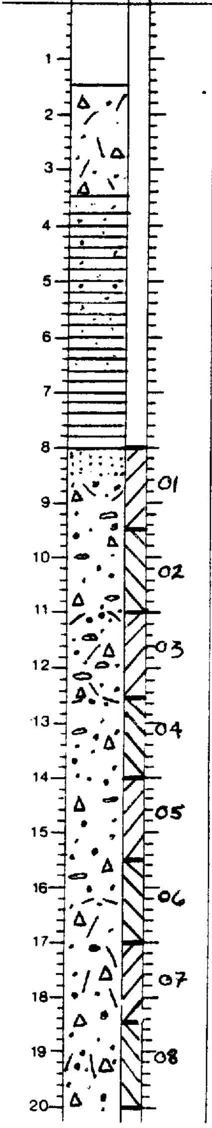
DOWNTIME 7.00 - 10.00 AM (MUSKEG problems).

DRILL 10.00 - 2:45 PM.

MOVE 2.45 - 3.00 PM.

Pg 1 of 2 New Bit

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0 – 1.5 No Return.

1.5 – 3.5 TILL (COCHRANE)
- beige, gritty, calcareous clay
- <1% clasts

3.5 – 6.5 SEDIMENTS (COCHRANE)
- grey, gritty, calcareous clay

6.5 – 8.5 SEDIMENTS (OJIBWAY)
6.5-8.0 – grey, soft clay appearing as ribbons.
8.0 – 8.5 – grey very fine-fine sand

8.5 – 22.0 TILL (MATHESON).

8.5 – 8.9 sandy pebbly clay till
grey calcareous clay
grey beige fine-med sand
pebbles 60% volc/seds
40% granitic

8.9 – 11.0 sandy pebbly till
grey beige fine-med. sand
pebbles 60% volc/seds
40% granitic
occasional cobble
occasional lmst pebble (beige)

11.0 – 11.2 clayey pebble till
- grey gritty clay
- minor grey beige fine-med sand
- pebble 90% volc/seds
10% granitic

11.2 – 12.4 sandy cobbly till
- grey-greybeige fine-med sand
- cobbles 30% volc/seds
70% granitic
- occasional grey gritty clay clasts
- occasional sandy pebbly sections

12.4 – 12.5 till same as 11.0-11.2

12.5 – 16.6 sandy pebbly till
- grey-greybeige fine-med sand
- pebble 70% volc/seds
30% granitic
- occasional cobble (granitic)
- occasional very sandy sections

16.3 thin grey gritty clay lense.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 ___

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO BPS-86-113 LOCATION L59E 9+00N

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			09	16.6 - 18.4 sandy pebbly clay till - grey gritty, calcareous clay - grey fine-med sand - pebble 70% volc/seds 30% granitic
21			10	18.0 - organic pieces. (recycled missinaibi ?).
22			11	18.4 - 19.0 - till same as 12.5 - 16.6
23				19.0 - 19.5 till same as 16.6 - 18.4
24				19.5 - 20.0 till same as 12.5 - 16.6 - organic pieces
25				20.0 - 21.3 till same as 16.6 - 18.4 - occasional cobble (vol) with sulphides (py).
6				21.3 - 22.0 till same as 12.5 - 16.6
7				22.0 - 23.5 BEDROCK. - dark green colour - fine grained - massive. - "mafic volcanic" - very minor sulphides - minor hematite staining
8				23.5 E.O.H.
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Feb 28 1986

SHIFT HOURS
_____ TO _____

TOTAL HOURS
_____

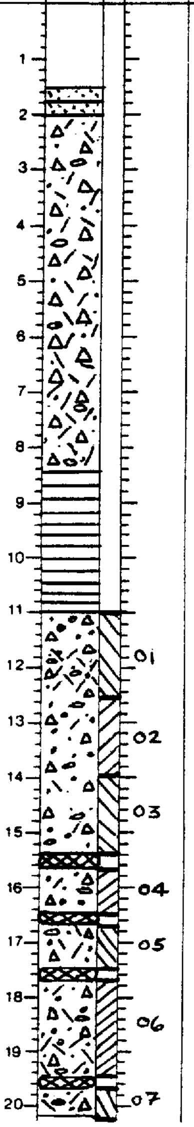
CONTRACT HOURS
_____

HOLE NO BPS-86-114 LOCATION L58E 9+50N
GEOLOGIST G SHELP DRILLER D. BUSSIERE BIT NO. A000015 BIT FOOTAGE 23.5-45.0
MOVE TO HOLE 2:45 - 3.00 Pm
DRILL 3.00 - 5.00 Pm
MECHANICAL DOWN TIME _____
DRILLING PROBLEMS _____
OTHER TRAVEL 5.00 - 5.30 Pm
MOVE TO NEXT HOLE _____

MAR 1/86 TRAVEL 6.30-7.00 AM
DRILL 7.00 - 9.00
DOWNTIME 9.00 - 12.45 PM
MOVE 12.45 - 1.00 PM

Pg 1 of 2.

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0-1.5 No Return.
1.5-2.0 SEDIMENTS (COCHRANE)
1.5-1.7 chocolate gritty clay
1.7-2.0 beige, gritty, calcareous clay
2.0-8.5 TILL (COCHRANE)
- beige, gritty, clay
- <1% clasts
- by 2.5 m, grey, gritty, calcareous clay
- present in cylindrical chunks
8.5-11.0 SEDIMENTS (OJIBWAY)
- grey soft clay
- present in cylindrical and ribbon pieces
11.0-20.1 TILL (MATHESON)
11.0-11.6 sandy pebbly till
- grey-grey-beige fine-med sand
- pebbles 60% volc/seds 40% granitic
11.6-12.4 sandy, pebbly, clay till
- grey gritty clay
- grey beige fine-med sand
- pebble (volc/seds)
- occasional cobble (granitic)
12.4-15.4 very sandy pebbly till
- grey-greybeige fine-med sand
- pebbles 70% volc/seds 30% granitic
- occasional grey gritty clay clasts.
15.4-15.7 boulder (granite).
15.7-16.5 till same as 12.4-15.4.
16.5-16.7 boulder (mafic volc)
16.7-17.5 till same as 11.6-12.4
17.5-17.7 boulder (mafic volc) (≃ 1% sulphides).
17.7-18.7 till same as 12.4-15.4 (occasional clay lenses).
18.7-19.3 till same as 11.6-12.4
pebbles 70% volc/seds 30% granitic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

HOLE NO BPS-86-114 LOCATION L58E 9+50N.

DATE ______ 19 __

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS
______ TO ______

MOVE TO HOLE ______

DRILL ______

TOTAL HOURS
______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

CONTRACT HOURS
______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21			08	19.3-19.5 cobbly, sandy, pebbly till - grey-grey beige fine-med sand - pebbles 70% volc/seds 30% granitic - Cobbles 50% volc/seds 50% granitic 19.5-19.7 boulder (granitic). 19.7-20.1 sandy pebbly clay till - grey ; calcareous, compact clay - grey-grey beige fine-med sand. - pebbles 80% volc/seds 20% granitic 20.1-21.5 BEDROCK. - white and dark green in colour (qtz) (biotite). - medium-grained - massive - granodiorite ? - very minor epidote and sulphides (py). 21.5 E.O.H.
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE March 1 1986

SHIFT HOURS ____ TO ____

TOTAL HOURS ____

CONTRACT HOURS ____

HOLE NO BPS-86-115 LOCATION L58E 10+50N

GEOLOGIST D.HOLMES DRILLER D. BUSSIERE BIT NO. A000015 / A000017 BIT FOOTAGE 45.0 - 55.0 / 0 - 2.6

MOVE TO HOLE 12:45 - 1:00

DRILL 1:00 - 5:00

MECHANICAL DOWN TIME

DRILLING PROBLEMS 1.45 - 2:30 pull rods to change bit

OTHER travel 5:00 - 5:30

MOVE TO NEXT HOLE

NEW BIT

Note: bit A000021 defective threads - no charge

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
1 – 3				0 - 3.2 NO RETURN - suspected organics 3.2 - 4.0 SEDIMENTS (COCHRANE) - gray, gritty, moderately compact clay
4 – 7			01	4.0 - 7.4 TILL (COCHRANE) - gradational contact with overlying sediment unit - gray gritty moderately compact to compact clay matrix with approximately 5% clasts - zones within the till appear to contain very few clasts
8				7.4 - 8.5 SEDIMENTS (OJIBWAY) 7.4-8.2 gray, pure to slightly gritty clay 8.2-8.5 Fine beige to gray-beige sand
9 – 10			02, 03	8.5 - 10.0 TILL (MATHESON) - abrupt contact - sandy, pebbly till - Fine beige sand matrix, clast composition approximately 40% volcanics/sediments 40% granites 20% limestone
11 – 12	grn dyke / qtz grn		04, 2 BEDROCK SAMPLES	10.0 - 10.7 SEDIMENTS (MISSINAIBI) - pebbly, cobbly gravel with same clast composition as overlying till unit - some medium and coarse sand with clasts after 10.5 and occasional gray, gritty clay lumps at 10.5
13 – 20				10.7 - 12.6 BEDROCK (2 SAMPLES) 10.7 - 11.6 - white, pink, green and black colour - medium to coarse grained K feldspar, plagioclase quartz, pyroxene and hornblende - massive structure - slightly siliceous - approximately 1% pyrite - granite

BPS-86-04 (1) → granite
BPS-86-04 (2) → quartz & dyke

11.6 - 11.9 - thin oxidized zone in rock
- pistachio green colour
- Fine grained, massive structure
- < 1% desseminated pyrite
- quartz vein

11.9 - 12.2 - dark green colour
- Fine grained, massive structure
- dyke

12.2 to 12.4 same as 11.6 to 11.9
12.4 to 12.6 same as 10.7 to 11.6

12.6 EOH.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 2 1986

HOLE NO BPS-86-116 LOCATION L53E 11+50N

GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. 4000017 BIT FOOTAGE 2.6-11.4

SHIFT HOURS ______ TO ______

MOVE TO HOLE 07.00 - 07.15 AM

DRILL 07.15 - 11.00 AM

TOTAL HOURS ______

MECHANICAL DOWN TIME

DRILLING PROBLEMS

CONTRACT HOURS ______

OTHER TRAVEL 0630-0700 AM

MOVE TO NEXT HOLE 11.00-11.15

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 - 1.5 NO RETURN
1				1.5-3.5 SEDIMENTS (COCHRANE) 1.5-2.1 dark brown soft clay
2				2.1-3.5 grey, gritty, calcareous clay
3				3.6-6.5 TILL (COCHRANE)
4				- grey, gritty, calcareous clay - <1% clasts. - poor return.
5				
6				6.5-7.3 TILL (MATHESON). - sandy, very pebbly till
7			01	- grey beige fine-med sand. - pebbles 60% volc/seds 40% granitic
8			02	(minor Lmst pebbles)
9				- occasional grey, gritty, calcareous, clay clasts
10				- occasional cobble.
				7.3-8.8. BEDROCK
11				- dark green colour
12				- siliceous - fine-grained (Basalt?)
13				- massive - small calcite veins
14				- minor disseminated pyrite
				8.8 E.O.H.
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 2 19 86

SHIFT HOURS ____ TO ____

TOTAL HOURS ____

CONTRACT HOURS ____

HOLE NO BPS-86-117 LOCATION L58E 12+50 N

GEOLOGIST G SHELP DRILLER D. BUSSIERE BIT NO. A000017 BIT FOOTAGE 11.4-27.2

MOVE TO HOLE 11.00-11.15 AM

DRILL 11.15 - 3.00 PM.

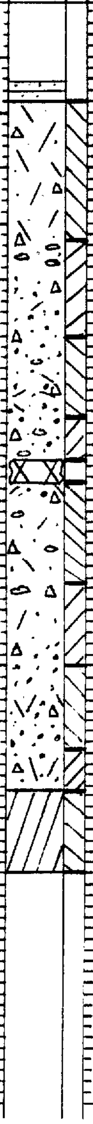
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE 3.00 - 3.15 PM.

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
1				0-1.5 NO RETURN
2				1.5-1.8 SEDIMENTS (COCHRANE) - grey, gritty, calcareous clay
3			01	1.8-4.3 TILL (COCHRANE) grey, gritty, calcareous clay - < 1% clasts, poor return
4				4.3-14.3 TILL (MATHESON)
5			02	4.3-4.8 Sandy cobbly till - grey beige fine-med sand - cobble 10% volc/seds 90% granitic
6				
7			03	4.8-7.2 very sandy, pebble till - grey beige fine-med sand. - pebble 60% volc/seds 40% granitic - occasional cobble (granitic) - occasional grey, gritty, clay clasts.
8			04	
9				
10			05	7.2-7.5 clayey, very sandy, pebble till - grey, gritty, calcareous clay grey beige fine-med sand - pebbles 70% volc/seds 30% granitic
11			06	
12				
13			07	7.5-8.3 cobbly, very sandy, pebble till - grey beige fine-med sand. - pebble 60% volc/seds 40% granitic - cobbles 90% volc/seds 10% granitic - occasional grey, gritty clay clasts
14			08	
15			09	
16				
17				
18				8.3-8.7. boulder (granitic).
19				8.7-8.9 till same as 7.2-7.5
20				8.9-11.5 sandy cobble till - grey beige fine-med sand - cobbles 50% volc/seds 50% granitic - occasional grey, gritty, calcareous clay clasts - at 10.4 - wood chips (reworked Missinaibi ?)

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 2 1986

HOLE NO BPS-86-117 LOCATION L58E 12+50N

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS ______ TO ______

MOVE TO HOLE ______

DRILL ______

TOTAL HOURS ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

CONTRACT HOURS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				11.5-12.5 till same as 4.8-7.2
				12.5-13.0 very sandy pebble clay till
				-grey, gritty, calcareous clay
				-grey beige fine-med sand.
				-pebbles 60% volc/seds
				40% granitic
				13.0-13.5 till same as 4.8-7.2
				13.5-14.3 till same as 12.5-13.0
				pebbles 80% volc/seds
				20% granitic
				14.3-15.8 BEDROCK.
				- medium dark green colour
				- fine grained
				- massive
				- interm/mafic volc (andesite?)

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 2 1986

HOLE NO BPS-86-118 LOCATION L57E 13+00 N

GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. A000017 BIT FOOTAGE 272-562

SHIFT HOURS ____ TO ____

MOVE TO HOLE 3.00-3.15 PM

DRILL 3.15 - 5.00 PM

TOTAL HOURS ____

MECHANICAL DOWN TIME

DRILLING PROBLEMS

CONTRACT HOURS ____

OTHER TRAVEL 5.00-5.30 PM

MOVE TO NEXT HOLE

Mar 3/86 TRAVEL 6.30-7.00

DRILL 7.00-1.30

Pg 1 of 3

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
1–20			01 (3), 02 (6), 03 (8), 04 (9), 05 (11), 06 (12.5), 07 (14), 08 (15.5), 09 (17), 10 (18.5), 11 (20)	

0 - 1.5 No RETURN

1.5 - 1.8 SEDIMENTS (COCHRANE)
- dark grey gritty clay

1.8 - 5.0 TILL (COCHRANE)
- grey gritty calcareous clay
- <1% clasts

5.0 - 19.9 TILL (MATHESON)
abrupt contact

5.0 - 5.5 sandy cobbly till
- grey beige fine-med sand
- cobbles 50% volc/seds
50% granitic

5.5 - 5.8 Sandy, pebbly, clay till
- grey beige fine-med sand
- pebbles 60% volc/seds
40% granitic

5.8 - 9.0 very sandy, pebble till
- grey beige fine-med sand
- pebbles 60% volc/seds
40% granitic
- occasional grey, gritty, calcareous clay

9.0 - 11.5 cobbly, sandy, pebble till
- grey beige fine-med sand
- pebble 60% volc/seds
40% granitic
- cobbles 20% volc/seds
80% granitic

10.0 grey gritty calcareous clay
10.8 grey gritty calcareous clay

11.5 - 11.6 boulder (granitic)

11.6 - 14.5 till same as 9.0-11.5
cobbles 50% volc/seds
50% granitic

12.8 - thin seam of grey
@
13.8 calcareous compact clay
@
14.0

14.5 - 19.0 till same as 5.8-9.0
- pebble 70% volc/seds
30% granitic
- occasional cobble
- occasional lithified grey calcareous granular clay clasts

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 2 19 86

SHIFT HOURS

_____ TO _____

TOTAL HOURS

CONTRACT HOURS

HOLE NO RPS-86-118 LOCATION L57E 13+00N

GEOLOGIST _____ DRILLER _____ BIT NO. _____ BIT FOOTAGE _____

MOVE TO HOLE _____

DRILL _____

MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21			12, 12	19.0-19.6 cobbly sandy pebble till grey beige fine-med sand. pebble 70% volc/seds 30% granitic cobbles 70% volc/seds 30% granitic
22, 23			13	19.6-19.9 Sandy pebbly clay till - grey, calcareous, compact clay - grey fine-med sand - 10% pebbles 90% volc/seds 10% granitic
24, 25			14, 14, 15	19.9-20.5 SEDIMENTS (MISSINAIBI)? gradational contact. - grey, calcareous, compact clay - organic chips. (minor).
26, 27, 28, 29			16, 17	20.5-27.3 TILL (LOWER TILL)? 20.5-20.7 pebbly clay till - grey, gritty, calcareous clay - ≃ 10% pebbles 90% volc/seds 10% granitic
30, 11, 12				20.7-21.0 cobbly till - matrix poor. - cobbles 90% volc/seds 10% granitic 21.0-21.2 boulder (mafic volc)
13, 14, 15				21.2-21.7 cobbly pebble till. matrix poor cobble 70% volc/seds 30% granitic pebble 70% volc/seds 30% granitic 21.7-21.8 boulder (gabbro)
16, 17, 18, 19, 20				21.8-23.3 very sandy pebble till - grey fine-med sand. - pebbles 70% volc/seds 30% granitic - very good return - occasional lithified grey, calcareous, granular clay clasts. 23.3-23.4 boulder (granitic)

23.4-23.7 cobbly sandy pebble till
- grey beige fine-med sand
- pebbles 70% volc/sed
30% granitic
- Cobble 70% volc/seds
30% granitic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 2 1986

HOLE NO BPS-86-118 LOCATION L57E 13400N

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS

______ TO ______

MOVE TO HOLE ______

DRILL ______

TOTAL HOURS

______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

CONTRACT HOURS

______

OTHER ______

MOVE TO NEXT HOLE ______

Pg 3 of 3.

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				23.7-23.9 boulder (granitic)
1				23.9-24.2 till same as 23.4-23.7
				24.2-24.5 till same as 21.8-23.3
2				24.5-25.4 sandy cobble till
				-grey beige fine-med sand.
3				-cobbles 70 % volc/seds
				30 granitic
4				24.6-24.8 beige lmst frag.
				25.4-25.6 sandy, pebbly clay till
5				-grey, calcareous, compact clay
				-grey beige fine-med sand.
6				-pebble 70% volc/seds
				30% granitic
7				25.6-25.7 till same as 23.4-23.7
8				25.7-26.3 boulder (gabbro)
				26.3-27.3 same as 24.5-25.4
9				cobbles 90% volc/seds
				10% granitic
10				27.3-29.0 BEDROCK
				-light olive green colour
11				-very siliceous
				-numerous qtz eyes
12				-very minor calcite
				-(qtz porphyry)?
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 3 1986
SHIFT HOURS
____ TO ____
TOTAL HOURS
CONTRACT HOURS

HOLE NO BPS-86-119 LOCATION L57E 12+00N
GEOLOGIST G.SHELP DRILLER D.BUSSIERE BIT NO. A000025 BIT FOOTAGE 0-8.8
MOVE TO HOLE 1:30 - 1.45 PM
DRILL 1.45 - 3.00 PM
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE 3.00 - 3.15 PM

New Bit.

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0-2				0.0-2.0 No RETURN
2-4				2.0-4.0 SEDIMENTS (COCHRANE) -grey, gritty, soft, calcareous clay
4-4.5				4.0-4.5 TILL (COCHRANE) -grey, gritty, calcareous clay - <1% clasts (Lmst clasts) - poor return
4.5-7.2			01	4.5-7.2 SEDIMENTS (OJIBWAY) 4.5-6.8 grey, soft clay very poor return 6.8-7.2 grey beige very fine - fine sand.
7.2-8.8			02	7.2-8.8 BEDROCK. -dark green colour -fine grained. -massive. - interm/mafic volc (Andesite?)

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 3 1986

SHIFT HOURS

_____ TO _____

TOTAL HOURS

CONTRACT HOURS

HOLE NO BPS-86-120 LOCATION L57E 11+00N

GEOLOGIST C. SHELP DRILLER D. BUSSIERE BIT NO. A000025 BIT FOOTAGE 88-18.3

MOVE TO HOLE 3.00 - 3.15 PM

DRILL 3.15 - 5.00 PM

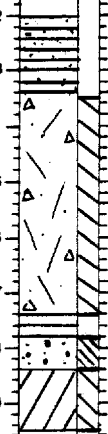
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER TRAVEL 5.00 - 5.30 PM

MOVE TO NEXT HOLE

MAR 4 TRAVEL 6.30-7.00 AM
DRILL 7.00 - 8.15 AM
MOVE 8.15 - 8.30 AM

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0–20			01 (at ~5.5 m), 02 (at ~9 m)	see below

0 - 2.0 No Return

2.0 - 3.5 Sediment (Cochrane)
- grey, gritty, calcareous clay

3.5 - 7.4 Till (Cochrane)
- grey, gritty, calcareous clay
- <1% clasts

7.4 - 8.4 - Sediments (Ojibway)

7.4 - 7.8 soft, grey, calcareous clay

7.8 - 8.4 gravel
- very sandy with <10% pebbles
- beige med-coarse sand
- pebbles 50% volc/seds 50% granitic

8.4 - 9.5 Bedrock
- dark green colour
- feldspar phenocrysts
- mafic volc (basalt?)

8.5 - 8.7 ≃ 10% sulphides (po?)

9.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 4 19 86

HOLE NO BPS-86-121 LOCATION L 57E 10+00N

GEOLOGIST G. SHELP DRILLER D BUSSIERE BIT NO. A000025 BIT FOOTAGE 18.3-33.3

SHIFT HOURS ______ TO ______

MOVE TO HOLE 8.15 - 8.30 AM

DRILL 8.30 - 12.00

TOTAL HOURS ______

MECHANICAL DOWN TIME

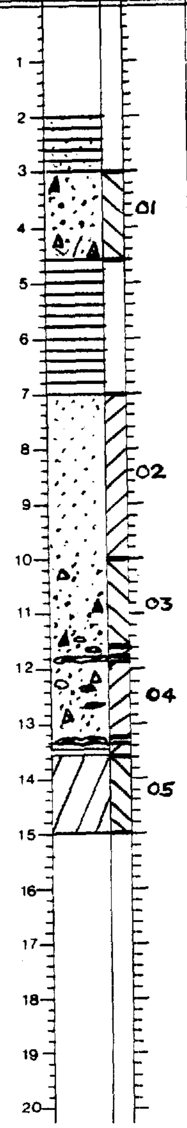
DRILLING PROBLEMS

CONTRACT HOURS ______

OTHER TRAVEL 6.30-7.00 AM

MOVE TO NEXT HOLE 12.00 - 12.15 PM

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0 - 2.0 No RETURN

2.0-3.0 SEDIMENTS (COCHRANE)
- beige, gritty, calcareous clay

3.0-4.6 TILL (COCHRANE)
3.0-3.5 - beige, gritty, calcareous clay
- <1% clasts (Lmst)
- poor return
3.5-4.2 - gravel sequence
- matrix poor
- 30% Lmst.
4.2-4.6 - beige, gritty, calcareous clay changing to grey clay by 4.4
- <1% clasts

4.6-10.0 SEDIMENTS (OJIBWAY)
4.6-7.0 grey soft calcareous clay
7.0-10.0 grey very fine - fine sand

10.0-13.5 TILL (MATHESON)
10.0-11.3 very sandy, very pebbly till
grey beige fine-med sand
pebbles 60% volc/seds
40% granitic
11.3-11.8 very sandy, pebbly, cobble till
- grey beige fine-med sand
- pebbles 60% volc/seds
40% granitic
- cobbles 50% volc/seds
50% granitic
11.8-11.9 boulder (interm volc)
11.9-13.3 till same as 11.3-11.8
cobbles 70% volc/seds
30% granitic
12.9 - thin seam of grey compact, calcareous clay
13.3-13.4 boulder (granitic)
13.4-13.5 grey clay

13.5 - 15.0 BEDROCK
- white and dark green in colour
- med-coarse grained
- massive
- granitic
- very minor sulphides

15.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE MAR 4 19 86

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO BPS-86-122 LOCATION L56E 11+50N

GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. A000025 BIT FOOTAGE 333-45.2

MOVE TO HOLE 12.15 - 12.30 PM

DRILL 12.30 - 5.00 PM

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER TRAVEL 5.00 - 5.30 PM.

MOVE TO NEXT HOLE

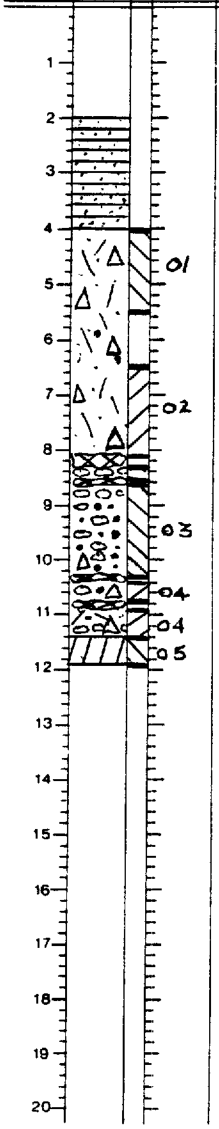
MAR 5/86 TRAVEL 6:30 - 7.00

DRILL 7.00 - 9.15

MOVE 9.15 - 9.30

Pg 1 of 2

DEPTH IN METRES | GRAPHIC LOG | INTERVAL | SAMPLE NO. | DESCRIPTIVE LOG



0.- 2.0 No Return

2.0-4.0 Sediments (Cochrane)
- beige gritty calcareous clay
- mod compact

4.0-8.1 Till (Cochrane)

4.0-5.5 grey beige, gritty, calcareous clay
- mod compact, cylindrical pieces
- <1% clasts

5.5-6.5 grey, gritty, calcareous clay
- very minor clasts

6.5-8.1 - grey beige, gritty, calcareous clay
- 1-2% clasts

Samples: 01, 02, 03, 04, 04, 05

8.1-9.8 Sediments (Ojibway)

8.1-8.3 boulder (granitic)

8.3-8.5 cobbles 30% volc/seds, 70% granitic
- occasional beige Lmst fragments

8.5-8.6 boulder (mafic volc).

8.6-8.8 cobbles same as 8.3-8.5

8.8-9.8 Cobbly pebbly gravel.
- matrix poor - med-coarse sand
- Pebbles & cobbles 40% volc/seds, 60% granitic
- very high return.

9.8-11.4 Till (Matheson).

9.8-10.3 cobbly, sandy, pebbly till
- grey beige fine-med sand
- occasional gritty, granular calcareous clay clasts.
- pebble 60% volc/seds, 40% granitic
- cobbles 80% volc/seds, 20% granitic

10.2 - Lmst ≈ 10%

10.3-10.4 - boulder (granitic).

10.4-10.8 till similar to 9.8-10.3 but no matrix

10.8-10.9 boulder (granitic)

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ______ 19 __

HOLE NO BPS-86-122 LOCATION L56E 11+50N

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS ______ TO ______

MOVE TO HOLE ______

DRILL ______

TOTAL HOURS ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

CONTRACT HOURS ______

OTHER ______

MOVE TO NEXT HOLE ______

Pg 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
1–20				10.9-11.2 clay till -grey gritty calcareous clay -10% clasts volc/seds. 11.2-11.4 Cobbles -no matrix (sand) -cobbles 90% volc/seds. 10% granitic -numerous mafic volc. fragments with sulphides -occasional grey, calcareous, gritty clay 11.4-11.9 BEDROCK - dark green colour - fine grained - massive - 10-15% sulphides (po, minor cp) 11.9 E.O.H -at clients request

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 5 1986

HOLE NO BPS-86-123 LOCATION L56E 10+50N

GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. A00001G BIT FOOTAGE 0-10.8

SHIFT HOURS ______ TO ______

MOVE TO HOLE 9.15 - 9.30

DRILL 9.30 - 11.00

TOTAL HOURS ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

CONTRACT HOURS ______

OTHER ______

MOVE TO NEXT HOLE 11.00 - 11.15

NEW BIT

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-1.5 No Return
1				1.5-2.0 Sediments (Cochrane)
				- beige, gritty, calcareous clay
2				2.0-5.5 TILL (Cochrane).
				- grey, gritty, calcareous, clay
3			01	- <1% clasts (some Lmst).
				- mod. compact.
4				5.5-8.0 Sediments (Ojibway)
5				5.5-5.7 - very soft light grey clay mixed with very fine grey sand
6			02	5.7-7.0 grey silt - very fine sand
7				7.0-7.2 very soft light grey clay with 2% pebbles.
8				7.2-8.0 sand same as 5.7-7.0 (abrupt contact)
			03	8.0-9.3 TILL (Matheson)
9				- very sandy pebbly till
10			04	- grey beige fine-med sand.
				- pebble 60% volc/seds
				40% granitic
11				- occasional cobble.
12				9.3-10.8 Bedrock
13				- dark green colour
				- massive
14				- fine grained
				- minor calcite.
15				- "mafic volcanic"
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE *MAR 5* 19 *86*

HOLE NO *BPS-86-124* LOCATION *L56E 9+50N*

GEOLOGIST *G. SHELP* DRILLER *D. BUSSIERE* BIT NO. *A0000 16* BIT FOOTAGE *10.8-24.3*

SHIFT HOURS ______ TO ______

MOVE TO HOLE *11.00 - 11.15 AM*

DRILL *11.15 AM - 2.00 PM*

TOTAL HOURS ______

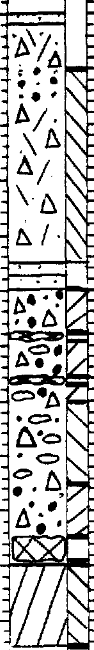
MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

CONTRACT HOURS ______

OTHER ______

MOVE TO NEXT HOLE *2.00 - 2.15 PM*

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
1–20			01, 02, 02, 02, 03, 04, 05	see below

0-2.0 <u>No Return</u>

2.0-2.2 <u>Sediments</u> (COCHRANE)
beige, gritty, soft clay

2.2-6.5 <u>Till</u> (COCHRANE)
2.2-3.0 grey beige, calcareous gritty clay till
<1% clasts
3.0-3.5 gravel
- rust coloured med-coarse sand
- pebbles 50% volc/seds
50% granitic
3.5-6.5 grey beige, gritty, calcareous clay
- 5% clasts

6.5-7.0 <u>Sediments</u> (OJIBWAY)
- Light grey very soft clay
mixed with grey very fine sand

7.0-12.0 <u>Till</u> (MATHESON)
7.0-7.8 very sandy pebbly till
- grey beige very fine - med sand
- pebbles 60% volc/seds
40% granitic
- occasional cobble
7.8-7.9 boulder (mafic volc).
7.9-8.6 cobbly pebbly till
- matrix poor with matrix rich sections (grey beige fine-med sand
- pebbles 60% volc/seds
cobbles 40% granitic
- cobbles - 10% Lmst
8.6-8.7 boulder (granitic)
8.7-9.0 till same as 7.9-8.6
9.0-10.5 very sandy, cobble till
- grey beige fine-med sand
- cobble 70% volc/seds
30% granitic
10.5-11.5 till same as 7.0-7.8
11.5-11.9 boulder (mafic volc)
11.9-12.0 pebbly clay till
- grey, calcareous, gritty clay
- 20% pebbles

12.0-13.5 <u>Bedrock</u> (felsic volcanic)
12.0-12.3 light green colour
- siliceous, finegrained, schistose
- <<1% sulphides (py)
12.3-13.2 - cream colour
- siliceous, schistose
- <<1% sulphides (py)
13.2-13.5 - quartz vein
- <<1% sulphides (cp)

13.5 <u>E.O.H.</u>

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 5 1986

SHIFT HOURS
____ TO ____

TOTAL HOURS
____

CONTRACT HOURS
____

HOLE NO BPS-86-125 LOCATION L57E 9+00 N
GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. A000016 BIT FOOTAGE 243-511
MOVE TO HOLE 2.00 - 2.15 Pm
DRILL 2.15 - 5.00 Pm
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER TRAVEL 5.00 - 5.30 Pm
MOVE TO NEXT HOLE

MAR 6/86 TRAVEL 6:30 - 7.00 Am
DRILL 7.00 - 11.30 Am
MOVE 11.30 - 11.45

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0–20			01 (≈5.3), 02 (≈11.0), 03 (≈12.1), 03 (≈13.1), 04 (≈13.6), 04 (≈15.0), 05 (≈16.7), 06 (≈18.6), 07 (≈19.6)	see below

0-1.5 No Return

1.5-1.8 SEDIMENTS (COCHRANE)
- beige, gritty, calcareous clay

1.8-8.0 TILL (COCHRANE)
1.8-3.0 - beige, gritty, calcareous clay
- mod. compact clay, cylindrical pieces
- <1% clasts

3.0-4.2 very sand pebbly till
- grey beige fine-med sand
- pebbles 60% volc/seds
40% granitic

4.2-8.0 - grey, gritty, calcareous clay till
- 5% clasts.
- clay mod. compact in cylindrical pieces.

8.0-10.5 SEDIMENTS (OJIBWAY)
8.0-10.5 grey soft clay
10.5-11.5 grey very fine sand
11.3 thin seam of light grey clay and pebbles

10.5-25.3 TILL (MATHESON)
11.5-12.5 very sandy pebbly till
- grey beige very fine- fine sand
- ~10% pebbles 60% volc/seds
40% granitic.
- occasional cobble

12.5-12.6 boulder (mafic volcanic)
12.7-13.7 Cobbly very sandy pebbly till
- grey beige- beige fine-med. sand
- pebble 60% volc/seds
40% granitic
- cobble 50% volc/seds
50% granitic

13.7-14.2 boulder (granitic)
14.2-14.4 cobbles
- matrix poor
- cobbles 10% volc/seds
90% granitic

14.4-16.0 sandy cobble till
- grey beige fine-med sand
- cobbles 30% volc/seds
70% granitic.
- minor pebbles
- occasional hard clay clasts
- occasional very sandy sections

16.0-16.5 cobbles 10% volc/seds
90% granitic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE *MAR. 5* 19 *86*

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO *BPS-86-125* LOCATION *L57E 9+00N*

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			07	16.5-17.8 till same as 14.9-16.0
21				17.8-18.2 boulder (gabbro).
			08	18.2-19.2 till same as 14.9-16.0
22				19.2-19.6 clayey pebble till - grey, gritty, calcareous clay - pebble 60% volc/seds 40% granitic
23			09	
24			10	19.6-20.1 sandy, pebbly, till grey beige fine-med sand pebble 60% volc/seds 40% granitic
25			10	20.1-24.3 clayey, sandy, pebbly till - grey gritty calcareous clay - grey beige fine. med. sand - pebble 60% volc/seds 40% granitic
26			11	
27				
28				24.3-24.5 boulder (granitic)
9				24.5-25.3 sandy, clay, cobble till - grey calcareous clay - grey-beige fine-med sand - alternating clay and sand matrix - cobbles 50% volc/seds 50% granitic
10				
11				
12				25.3-26.8 <u>BEDROCK</u>
13				- cream coloured, oxidized areas - very siliceous - fine-grained
14				25.3-25.5 - stockwork type fracturing - <<1% disseminated py - trace of emerald green mineral (greenmica?)
15				25.5-26.0 quartz vein - sulphides at contact of vein and wallrock.
16				
17				26.0-26.8 similar to 25.3-25.5 but more massive - minor quartz veins ($\frac{1}{4}$-$\frac{1}{2}$") "felsic volcanic"
18				
19				26.8 <u>E.O.H.</u>
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE March 1986

SHIFT HOURS
____ TO ____

TOTAL HOURS
____

CONTRACT HOURS
____

HOLE NO BPS-86-126 LOCATION L58E 8+50 N
GEOLOGIST G. SHEEP DRILLER D. BUSSIERE BIT NO CB67970 BIT FOOTAGE 0-18.5
MOVE TO HOLE 11.30-11.45 AM
DRILL 11.45 AM - 2.15 PM
MECHANICAL DOWN TIME ____
DRILLING PROBLEMS ____
OTHER ____
MOVE TO NEXT HOLE 2.15-2.30 PM.

NEW BIT.

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
1–20			01, 02, 03, 04, 05, 06, 07, 08, 09	see below

0-1.0 No Return

1.0-2.0 Sediments (Cochrane)
- grey beige, gritty, mod. compact, calcareous, clay

2.0-5.0 Till (Cochrane)
- grey, gritty, calcareous, mod-compact clay
- < 1% clasts

3.0-3.2 Sandy pebbly till
- gb-b fine-med sand
- pebbles 60% volc/seds 40% granitic

5.0-5.3 Sediments (Cochrane)
- grey, gritty, calcareous, mod. compact clay

5.3-8.5 Sediments (Ojibway)

5.3-6.0 grey, soft, clay

6.0-8.5 grey silt-very fine sand

8.5-17.0 Till (Matheson)
- abrupt contact

8.5-13.0 very sandy pebble till
- greybeige-beige very fine to med. sand
- pebble 60% volc/seds 40% granitics

11.6-11.8 boulder (interm volc)

13.0-13.5 cobbly, sandy, pebbly till
- grey-beige-beige fine-med. sand
- pebbles 60% volc/seds 40% granitic
- cobbles 30% volc/seds 70% granitic

13.5-13.7 boulder (granitic).

13.7-14.8 till same as 13.0-13.5.

14.8-17.0 sandy, pebbly, clay, till
- grey, gritty, clay
- grey very fine-fine sand.
- pebbles ≃ 20%
- occasional granitic cobble.
- by 16.5 pebbles ≃ 1%.

17.0-18.5 Bedrock
- whitish, darkgreen, pink colour
- med-coarse grained, massive
- chloritic alteration?
- granitic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 6 1986

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO BPS-86-127 LOCATION L57E 8+00N

GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. CB67970 BIT FOOTAGE 18.5-40.7

MOVE TO HOLE 2.15-2.30 PM

DRILL 2.30-5.00 PM

MECHANICAL DOWN TIME

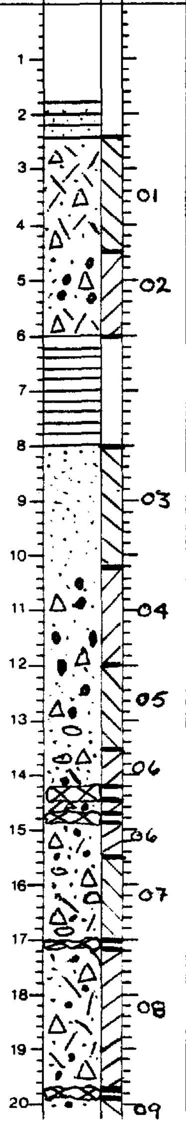
DRILLING PROBLEMS

OTHER TRAVEL 5.00-5.30 PM

MOVE TO NEXT HOLE

MAR 7/86 TRAVEL 6'30-7.00 AM
DRILL 7.00-10.15 AM
MOVE 10.15-10.30 AM

(New Bit CB67968 0-1.0 meters)

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				

0-1.8 No Return

1.8-2.4 Sediments (Cochrane)
- 1.8-1.9 dark brown clay
- 1.9-2.4 grey, gritty, calcareous clay

2.4-6.0 Till (Cochrane)
- 2.4-4.5 grey, gritty, calcareous clay
  - <1% clasts
- 4.5-5.5 very sandy pebble till
  - grey beige - beige fine-med sand
  - pebbles 60% volc/seds
    40% granitic
- 5.5-6.0 grey, gritty, clay
  - 2-3% clasts

6.0-10.2 Sediments (Ojibway)
- 6.0-8.0 grey, soft, clay
- 8.0-10.2 grey silt - very fine sand
  - occasional thin lense of grey clay

10.2-21.7 Till (Matheson)
- 10.2-13.0 very sandy pebbly till
  - grey beige - beige fine-med sand
  - pebbles 30% volc/seds
    70% granitic
  - occasional cobble
- 13.0-14.0 very sandy cobble till
  - grey beige - beige fine-med sand
  - cobbles 80% volc/seds
    20% granitic
- 14.0-14.2 sandy, pebble, clay till
  - grey clay
  - grey beige - beige fine-med sand
  - pebbles 30% volc/seds
    70% granitic
- 14.2-14.5 boulder (granitic)
- 14.5-14.7 till same as 14.0-14.2
- 14.7-14.9 boulder (granitic)
- 14.9-15.5 till same as 14.0-14.2
  - occasional grey, gritty, clay clasts
- 15.5-16.4 till same as 13.0-14.0
  cobbles 40% volc/seds
  60% granitic
- 16.4-17.0 till same as 14.0-14.2
- 17.0-17.2 boulder (granitic)

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

HOLE NO BPS-86-127 LOCATION L57E 8+00N

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

SHIFT HOURS

______ TO ______

MOVE TO HOLE ________

DRILL ________

TOTAL HOURS

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

CONTRACT HOURS

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			09	17.2-19.7 till same as 14.0-14.2 pebbles 80% volc/seds 20% granitic
21			10	19.7-19.9 boulder (gabbro).
22			11	19.9-20.1 till same 10.2-13.0
23				20.1-21.7 till same as 14.0-14.2 - 1-2% pebbles. -occasional wood chips (reworked missinaibi)
24				
25				21.7-23.2 BEDROCK
6				-white and dark green colour -medium to coarse grained
7				- massive -granitic
8				23.2. E.O.H.
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE *MAR 7* 19 *86*

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO *BPS-86-128* LOCATION *L56E 8+50N*

GEOLOGIST *G.SHELP* DRILLER *D.BUSSIERES* BIT NO. *CB67968* BIT FOOTAGE *1-10.1*

MOVE TO HOLE *10.15 - 10.30*

DRILL *10.30 - 12.00 AM*

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER *TRAVEL 5.00-5.30 PM*

MOVE TO NEXT HOLE *12.00 - 5.00 PM*

- move drilling rig to grid 113, North of camp.

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 - 1.5 <u>NO RETURN</u>
				1.5 - 2.0 <u>SEDIMENTS</u> (COCHRANE) - beige, gritty, calcareous, clay
				2.0 - 5.5 <u>TILL</u> (COCHRANE)
			01	2.0 - 3.5 grey beige, gritty, calcareous clay - <1% clasts
				3.5 - 4.5 very sandy pebbly till - grey beige fine-med sand - pebbles 60% volc/seds, 40% granitic - 10% Lmst.
				4.5 - 5.5 same as 2.0 - 3.5.
			02	5.5 - 8.0 <u>SEDIMENTS</u> (OJIBWAY)
				5.5 - 7.0 grey, soft, clay
				7.0 - 8.0 grey very fine - fine sand
			03	8.0 - 8.6 <u>TILL</u> (MATHESON)
				8.0 - 8.4 very sandy, cobbly pebbly till - grey beige - beige fine - med sand - pebbles & cobbles 60% volc/seds 40% granitic
				8.4 - 8.6 boulder (granitic)
			04	8.6 - 10.1 <u>BEDROCK</u> (mafic volc) - dark green colour - fine-grained - massive - minor quartz veins - minor disseminated py

GRID 10-113

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 8 19 86
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO BPS-86-1131 LOCATION 2150N TWP LINE (EAST)
GEOLOGIST G SHELP DRILLER D. BUSSIERE BIT NO. CB67968 BIT FOOTAGE 18.5-52.5
MOVE TO HOLE
DRILL 2.00 - 5.00 pm.
MECHANICAL DOWN TIME 7.00 Am - 2.00 pm
DRILLING PROBLEMS
OTHER TRAVEL 5.00 - 5.30 pm.
MOVE TO NEXT HOLE

MAR 9/86 TRAVEL 6.30-7.00 AM
DRILL 7.00 - 10.45 AM.
Move 10.45 - 11.15 AM

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-2.0 NO RETURN
1				2.0-4.5 TILL (COCHRANE)
2				- beige, gritty, calcareous clay
3			01	- <1% clasts (occasional Lmst)
				4.0-4.2 beige Lmst cobbles
4				4.5-15.5 SEDIMENTS (OJIBWAY)
5				4.5-14.0 grey beige - beige silt - very fine sand
6				- occasional thin seam of clay and/or pebbles.
7				14.0-15.5 grey, soft clay
8				
9				
10				
11				
12				
13				
14				
15			02	15.5-32.5 SEDIMENTS (MISSINAIBI)
16				15.5-16.0 sand. - black fine-coarse sand
17				16.0-18.8 clay - steel grey, mod.-compact clay - hard, dry
18				
19			03	18.8-19.1 sand, pebbles - black fine-coarse sand with pebbles
			03	
20				19.3-19.4 - sand same as 18.8-19.1
				19.4-20.5 clay same as 16.0-18.8

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS-86-1131 LOCATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

Pg 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			03	20.5-20.7 Sand same as 18.8 - 19.1
21				20.7-29.3 clay same as 16.0-18.8-
22				
23				
24				
25				
26				
27				
28				
29				
30				29.3-29.5 grey silt 29.5-30.1 clay same as 16.0-18.8
31				30.1-32.5 silt - grey silt with occasional thin clay and/or pebble seam.
32				
33			04	32.5-34.0 <u>BEDROCK</u>
34				- medium to dark green colour - fine-grained - massive - (interm/mafic volc)
35				
36				
37				
38				
39				
40				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE MAR 9 19 86
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO BPS-86-1132 LOCATION 2150 N TWP LINE (CENTER NORTH)
GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. CB67969 BIT FOOTAGE 0-37.3
MOVE TO HOLE 10.45 - 11.15
DRILL 11.15 AM - 5.00 PM
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER TRAVEL 5.00 - 5.30 PM
MOVE TO NEXT HOLE

MAR 10/86 TRAVEL 0630-7.00 AM
DRILL 07.00 AM - 3.15 PM
MOVE 3.15-3.30 PM.

Pg 1 of 2 NEW BIT

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-1.5 NO RETURN
1				1.5-3.5 SEDIMENTS (COCHRANE)
				1.5-2.0 grey soft clay
2				2.0-3.5 beige, gritty, mod. compact clay
3				3.5-6.0 TILL (COCHRANE)
4				3.5-4.8 beige, gritty, mod. compact clay -<1% clasts (Cmst)
5			01	4.8-5.0 beige fine-med sand
6				5.0-6.0 till same as 3.5-4.8
7				6.0-22.5 SEDIMENTS (OJIBWAY)
8				6.0-8.5 grey soft clay -minor grit (silt).
9				8.5-22.5 grey beige silt - very fine sand - occasional thin grey clay seam
10				
11				
12				
13				
14				
15				
16				
17				17.5 thin seam of grey clay and pebbles (some Cmst).
18				
19				
20				19.5 Clay and pebbles same as 17.5

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BRS-86-1132 LOCATION 2+50 N TWP LINE

GEOLOGIST ________ DRILLER ________ BIT NO ________ BIT FOOTAGE ________

MOVE TO HOLE ________

DRILL ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21				
22				
23			02	22.5-23.5 TILL (MATHESON) abrupt contact - very sandy pebble till - grey beige - beige fine-med sand - pebble 60% volc/seds 40% granitic
24				
25				23.5-35.5 SEDIMENTS (MISSINAIBI) abrupt contact 23.5-32.5 steel grey, hard, dry, clay 32.5-35.5 grey silt - very fine sand - occasional grey clay seam
26				
27				
28				
29				
30				
31				
32				
33				
34				
35			03	35.5-35.8 TILL (Lower Till) - pebbly, cobbly till - matrix poor - grey fine to med. sand changing to green rock flour with depth - pebbles & cobbles 95% volc/seds 5% granitic
36			04	
37				
38				
39				
40				35.8-37.3 BEDROCK - medium green colour - fine grained - massive - siliceous - (interm/mafic volc)

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 10 19 86
HOLE NO BPS-86-1133 LOCATION 2+50N TWP LINE (WEST)
GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. CB67969 BIT FOOTAGE 373 - 833
SHIFT HOURS ___ TO ___
MOVE TO HOLE 07.45 - 08.00 AM
DRILL 08.00 AM - 5.00 PM
TOTAL HOURS
MECHANICAL DOWN TIME
DRILLING PROBLEMS
CONTRACT HOURS
OTHER TRAVEL 5.00 - 5.30 PM.
MOVE TO NEXT HOLE

DEPTH IN METRES	SAMPLE NO.	DESCRIPTIVE LOG
0-1.5		No RETURN
1.5-2.0		SEDIMENTS (COCHRANE) - beige, gritty, calcareous clay
2.0-5.5	01	TILL (COCHRANE). -beige, gritty, calcareous clay -<1% clasts (occ. Lmst)
		2.5-2.7 sandy pebbly till - beige very fine-med. sand - pebbles 90% volc/seds 10% granitic.
		3.5-3.7 till same as 2.5-2.7
5.5-14.5		SEDIMENTS (OJIBWAY). silt- beige.
14.5-20.5	02, 03, 04, 04, 05	TILL (MATHESON)
		14.5-19.5 very sandy pebbly till -grey beige-beige fine -med sand. -pebble 80% volc/seds 20% granitic -≥ 5% Lmst
		18.3-18.5 boulder (mafic volc)
		19.5-20.0 sandy, cobbly till -grey -grey beige fine-med sand. -cobbles 90% volc/seds 10% granitic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS-86-1133 LOCATION ______________________

GEOLOGIST __________ DRILLER __________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ______________________

DRILL ______________________

MECHANICAL DOWN TIME ______________________

DRILLING PROBLEMS ______________________

OTHER ______________________

MOVE TO NEXT HOLE ______________________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			05	20.0 - 20.2 boulder (Lmst)
				20.2 - 20.5 sandy pebble till -grey fine-med sand -pebbles 90% volc/seds 10% granitic
21			06	
22				20.5 - 40.5 SEDIMENTS (MISSINAIBI)
23				20.5 - 22.7 black fine-med sand
24				21.8 thin seam of grey clay and pebbles
25				22.0 grey fine-coarse sand with small pebbles
26				22.5 black sand and pebbles with organic pieces.
27				22.7 - 33.0 steel grey, hard, dry, clay
28				
29				
30				
31				
32				
33				33.0 - 34.5 thin seams of grey silt interbedded with steel-grey clay
34				
35				34.5 - 39.5 grey silt
36				
37				
38				
39				39.5 - 44.3 grey-beige silt.
40				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS-86-1133 LOCATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG							
41											
42											
43											
44				44.3-44.5 boulder (gabbro)							
45			07	44.5-46.0 BEDROCK - Light green colour - siliceous - fine grained, massive - felsic → interm volcanic (possible chloritic alteration).							
46											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE MAR10 19 86

HOLE NO BPS-86-1134 LOCATION 1100 N of TWP LINE

GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. CB67969 BIT FOOTAGE 833-1143

SHIFT HOURS ____ TO ____

MOVE TO HOLE 3.15 - 3.30 PM.

DRILL 3.30 - 5.00 PM.

TOTAL HOURS ____

MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

CONTRACT HOURS ____

OTHER TRAVEL 5.00 - 5.30 PM

MOVE TO NEXT HOLE ____

MAR 11/86
TRAVEL 6.30 - 7.00 AM
DRILL 7.00 AM - 4.00 PM
MOVE 4.00 - 5.00 PM
TRAVEL 5.00 - 5.30 PM

Pg 1 of 2

New Bit (start at 31.9 m)
CB 67971

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 - 1.5 **No RETURN**
1				1.5 - 1.7 **SEDIMENTS** (COCHRANE)
				beige, gritty, soft, clay
2				1.7 - 7.5 **TILL** (COCHRANE).
3			01	1.7 - 4.0 - beige, gritty, calcareous clay
				- <1% clasts
4				4.0 - 5.3 - grey, gritty, calcareous clay
5			02	- <1% clasts
				5.3 - 5.4 boulder (granitic)
6			02	5.4 - 7.5 till same as 4.0 - 5.3
7				7.5 - 20.5 **SEDIMENTS** (OJIBWAY)
8				7.5 - 9.5 - grey soft clay (minor grit-silt)
9				9.5 - 18.5 - grey beige silt
10				
11				
12				
13				
14				
15				
16				
17				
18				18.5 - 18.7 - grey clay (mod. compact)
19				18.7 - 19.5 - black sands
20				- very fine - med. sand with occasional pebbles
				19.5 - 20.5 grey, mod compact, clay

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS-86-1134 LOCATION ________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ________

DRILL ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21			03	20.5-23.0 TILL (MATHESON). 20.5-22.0 very sandy, cobbly pebble till -grey fine-med sand -cobbles 90% volc/seds pebbles 10% granitic
22			04	
23				
24				22.0-23.0 sandy, pebble, clay till -grey med-compact clay -grey fine-med. sand. -20% pebbles 90% volc/seds 10% granitic.
25				
26				
27				23.0-29.5 SEDIMENTS (MISSINAIBI)
28				23.0-28.0 steel grey, compact, dry clay
29				28.0-29.5 grey silt
30			05	29.5-31.3 TILL (LOWER TILL). - pebbly, cobble till
31			06	- matrix poor- grey fine-med sand.
32			07	- pebbles 95% volc/seds 5% granitic (occasional cmst).
33				
34				31.3-33.0 BEDROCK - dark green colour - fine grained - schistose.
35				
36				- minor py, cp
37				- interm/mafic volc.
38				
39				
40				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE MAR 12 1986

HOLE NO BPS-86-1135 LOCATION LINE 137, 4+00 W

GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. CB67971 BIT FOOTAGE 1.5 - 32.9

SHIFT HOURS ____ TO ____

MOVE TO HOLE 07.00 - 0800 am

DRILL 08.00 AM - 5.00 PM

TOTAL HOURS ____

MECHANICAL DOWN TIME

DRILLING PROBLEMS

CONTRACT HOURS ____

OTHER TRAVEL 06.30 - 7.00 AM, 5.00 - 5.30 PM.

MOVE TO NEXT HOLE

Pg 1 of 2 New bit (start at 31.4, drilled for 9.1 meters) CB67966

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0				0-1.5 <u>NO RETURN</u>
1				1.5-3.5 <u>SEDIMENTS</u> (COCHRANE) - grey gritty clay
3				3.5-12.0 <u>TILL</u> (COCHRANE)
4			01	3.5-4.5 grey gritty clay - <1% clasts (Lmst) (very poor return)
5				4.5-7.5 silt - fine sand - grey-greybeige silt with minor amounts of grey soft clay
7				7.5-10.3 silt - fine sand. - beige colour.
10				10.3-10.5 beige fine-med sand and granules - small pebbles
11			01	10.5-12.0 grey calcareous clay with 1% clasts (Lmst)
12				12.0-16.0 <u>SEDIMENT</u> (OJIBWAY) - grey soft clay appearing in ribbons
16				16.0-26.5 <u>TILL</u> (MATHESON)
17			02	16.0-20.3 sandy, pebble, clay till - greybeige gritty clay - grey fine-med sand - 10-20% pebbles 90% volc/seds 10% granitic
18			03	
20			04	

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS-86-135 LOCATION ____________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ____________

DRILL ____________

MECHANICAL DOWN TIME ____________

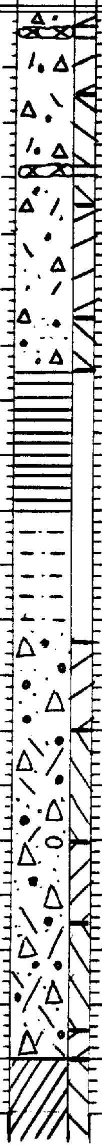
DRILLING PROBLEMS ____________

OTHER ____________

MOVE TO NEXT HOLE ____________

Pg 2 of 2

DEPTH IN METRES | GRAPHIC LOG | INTERVAL | SAMPLE NO. | DESCRIPTIVE LOG



Depths: 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40

Sample No.: 04, 05, 06, 07, 08, 09, 10, 11, 12, 13

20.3 - 20.5 boulder (mafic volc)
20.5 - 22.8 till same as 16.0 - 20.3

22.8 - 23.0 boulder (mafic volc)
23.0 - 24.8 till same as 16.0 - 20.3
24.8 - 25.4 clasts reduced to << 1%
25.4 - 26.5 very sandy pebble till
- grey beige fine-med sand
- pebbles 60% volc/seds 40% granitic

26.5 - 31.4 SEDIMENTS (MISSINAIBI)
26.5 - 29.0 grey beige hard dry, clay
29.0 - 30.5 silt - grey
occasional grey clay lense
30.5 - 31.4 interbedded silt (grey) and pebbles
(appears to be repeated coarse-fine sequences)

31.4 - 39.0 TILL (LOWER TILL)
31.4 - 33.0 sandy pebble till
- grey beige fine-med sand.
- pebbles 50% volc/seds 50% granitic
33.0 - 34.2 clay till
- grey, hard with < 1% clasts
34.2 - 36.0 till same as 31.4 - 33.0
- occasional cobble and lithified clay clasts
36.0 - 39.0 sandy, pebble, clay, till
- grey beige fine-med sand
- grey gritty clay
- pebbles ≥ 5%

39.0 - 40.5 BEDROCK (felsic volc)
- light-medium green colour
- fine grained
- massive
by 39.7. - very schistose
- disseminated fine-grained pyrite
- chloritic alteration

40.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE MAR 12 1986

SHIFT HOURS ______ TO ______

TOTAL HOURS ______

CONTRACT HOURS ______

HOLE NO BPS-86-1136 LOCATION LINE 113-1, 8+00W

GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. CB47944 BIT FOOTAGE 91-646

MOVE TO HOLE 07.00-07.15 AM

DRILL 07.15 AM - 4.45 PM

MECHANICAL DOWN TIME

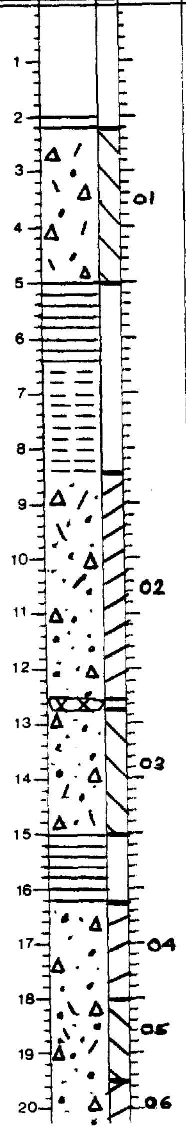
DRILLING PROBLEMS

OTHER TRAVEL 06:30-07.00 AM, 5.00-5.30 PM

MOVE TO NEXT HOLE 4.45-5.00 PM

Pg 1 of 3

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			01	
			02	
			03	
			04	
			05	
			06	



0-2.0 No Return

2.0-2.2 Sediments (Cochrane)
beige, soft, clay

2.2-5.0 Till (Cochrane)
- grey, gritty, calcareous clay
- <1% clasts (Lmst).

5.0-8.5 Sediments (Ojibway)
5.0-6.5 grey smooth clay appearing in ribbons
6.5-8.5 silt - grey

8.5-31.5 Till (Matheson)
8.5-10.5 sandy, pebbly, clay till
- grey gritty clay
- beige fine-med. sand
- ≃ 10-15% pebbles (occasional Lmst).

10.5-12.5 very sandy, pebbly, till
- beige fine-med. sand.
- pebbles 40% volc/seds 60% granitic

12.5-12.7 boulder (granitic).

12.7-14.0 till same 10.5-12.5
- abundant beige Lmst.
- occasional cobble

14.0-15.0 till same as 8.5-10.5

15.0-16.2 grey hard clay

16.2-18.2 sandy pebble till
- grey beige - beige fine-med sand.
- pebbles 60% volc/seds 40% granitic

18.2-19.2 sandy, pebble, clay till
- grey beige, gritty clay
- grey beige fine-med sand
- pebbles 60% volc/seds 40% granitic

19.2-23.0 till same as 16.2-18.2
- pebbles 10% volc/seds 90% granitic
- occasional cobble
- occasional Lithified clay clasts

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO BPS-86-1136 LOCATION ____________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ____________

DRILL ____________

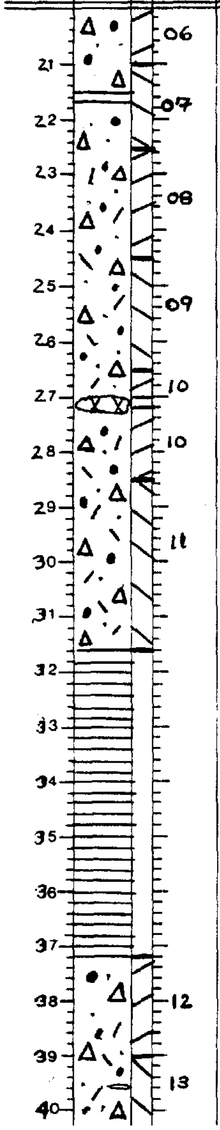
MECHANICAL DOWN TIME ____________

DRILLING PROBLEMS ____________

OTHER ____________

MOVE TO NEXT HOLE ____________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



21.5-21.7 grey hard clay
with organic
pieces

23.0-31.5 till same as
18.2-19.2
pebbles 20% volc/seds
80% granitic

27.0-27.2 boulder
(granitic)

31.5-37.2 SEDIMENTS (MISSINAIBI)
- grey beige hard dry
clay

37.2-54.0 TILL (LOWER TILL)

37.2-38.0 sandy pebbly till
- grey fine-med. sand.
- pebbles 70% volc/seds
30% granitic

38.0-42.3 very sandy, pebbly,
clay till
- grey clay
- occasional cobble

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

HOLE NO BRS-86-1136 LOCATION ________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

SHIFT HOURS ________ TO ________

MOVE TO HOLE ________

DRILL ________

TOTAL HOURS ________

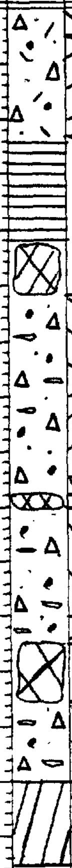
MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

CONTRACT HOURS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
41–42			13, 14	
42–44				42.3 - 44.3 grey soft clay - minor grit (silt)
44–45				44.3 - 45.2 boulder (interm/mafic volc)
45–47			15	45.2 - 47.5 till same as 37.2 - 38.0 - cobbles
47–48			16	47.5 - 47.7 till same as 38.0 - 42.3
48–49			17	47.7 - 48.8 till same as 37.2 - 38.0 - occasional clay draped pebble.
49			17	48.8 - 49.0 boulder (mafic volc)
49–51			18	49.0 - 51.5 till same as 37.2 - 38.0 - cobbles
51–52				51.5 - 52.5 boulder (interm. volc)
52–54			19	52.5 - 54.0 till same as 37.2 - 38.0 - cobbles
54–55.5			20	54.0 - 55.5 BEDROCK (mafic volc). - dark green - fine-grained - foliated.
56–60				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE March 14 1986
HOLE NO 1137 LOCATION L 113-1, 1200 W
GEOLOGIST B. Zabey DRILLER D. Bussiere BIT NO. CB67967 BIT FOOTAGE 0-57m.
SHIFT HOURS
_____ TO _____
MOVE TO HOLE
DRILL 7:00 - 3:10 ; 3:10 - 5:00 Pull rods out
TOTAL HOURS
MECHANICAL DOWN TIME
DRILLING PROBLEMS
CONTRACT HOURS
OTHER
MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG							
				0 - 1.5 No return							
				1.5 - 7.4 Sediments							
				1.5-4.0 Clay - brown, gritty							
				4.0-4.9 - minor pebbles							
				4.9-6.9 - Silt gray-beige							
				6.9-7.4 Clay gray, soft							
				7.4-14.3 Till							
			01	7.4-10.5 Clayey - gray, gritty - Pebbles <1% with minor fine-to med. gray sand							
			02	10.5-12.7 Pebbly - clast composition 10-20% Limestone, 30% volcanics, 50% intrusives							
			03	12.7-14.3 Clayey - gray clay coating pebbles - ~5% pebbles.							
				14.3-20.1 Sediments							
				14.3-16.5 Clay - gray, smooth							
				16.5-16.70 very few granitic pebbles							
				16.7-19.3 Silt - gray							
				19.3-20.1 Silt - gray with occ. clay seams							

Depth scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO 1137 ______ LOCATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.
21			04
22			
23			05
24			06
25			
26			07
27			08
28			
29			09
30			10
31			
32			11
33			12
34			
35			
36			
37			
38			
39			
40			

DESCRIPTIVE LOG

20.1 - 20.5 Boulder - granitic

20.5 - 33.6 TILL

20.5 - 23.9 Pebbly - clasts composition: volcanics 65%, intrusives 35%.
- matrix fine to medium beige sand.
- Higher % of matrix from 22m. and ~ 4% Limestone clasts. occ. cobble at 22.5m.

23.1 - Thin seam of clayey matrix

23.35 - Limestone cobble

23.9 - 24.9 Sandy, pebbly
- fine to medium beige to gray sand matrix
- volcanics 40%
- intrusives 60%

24.9 - 25.7 Clayey - gray small gritty lumps

25.3 - 25.5 - Boulder - mafic volc.

25.7 - 28.6 Pebbly, cobbly with fine to med. beige sand as matrix

28.6 - 33.6 Sandy - beige fine to med. sand as matrix
- volcanics 60%
- intrusives 40%

Volcanic clasts increasing toward bottom.

30.1 cobbles

33.6 - 39.8 Sediments - Clay
- gray, hard, compact clays. As small ribbons (3cm) and small lumps.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO 1137 LOCATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.
41			13
42			
43			14
44			15
45			
46			16
47			17
48			
49			18
50			19
51			
52			20
53			21
54			
55			22
56			23
57			
58			
59			
60			

DESCRIPTIVE LOG

39.8 - 57.0 TILL

39.8 - 41.4 - Pebbly, sandy
- fine to medium gray sand
- clast composition:
volcanics 60%
intrusives 40%

41.3 Boulder - granitic

41.4 - 45.6 Sandy
high % of sand matrix -
beige to gray fine sand
- volcanics 70%, intrus 30%

45.6 - 48.7 Clayey - matrix
is gray gritty clay

48.7 - 49.6 Pebbly, sandy
- clasts: volcanics 90%
intrusives 10%
- matrix fine to med
gray to beige sand

49.6 - 53.5 Sandy
- high % of sandy matrix
with occ. clayey
interbeds

53.5 - 55.3 Clayey matrix
is gray to greenish
gritty clay clasts.

55.3 - 57.0 Pebbly, Sandy
- clasts: volcanics 80%
intrusives 20%

57.0 - EOH. Loss of return due to
blockage of the bit.
Rods pulled out. Tried to
lower rods back next morning
the hole was collapsed.
Hole abandoned.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 15 19 86

HOLE NO BPS-86-113B LOCATION LINE 113-1, 16+00 W

GEOLOGIST G. SHELP DRILLER D. BUSSIERE BIT NO. CB67962 BIT FOOTAGE 57.0-83.5

SHIFT HOURS ____ TO ____

MOVE TO HOLE 09.15 - 09.30

DRILL 09.30 - 17.00

TOTAL HOURS ____

MECHANICAL DOWN TIME

DRILLING PROBLEMS

CONTRACT HOURS ____

OTHER TRAVEL 17.00 - 17.30

MOVE TO NEXT HOLE

Mar 16/86 TRAVEL 0630-0700
DRILL 0700-10.00
MOVE 10.00 - 10.15

Pg 1 of 3 (NEW BIT at 26.5 m, drill 19.5 meters)
CB67962

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-2.0 No Return
				2.0-3.5 Sediments (Cochrane)
				-grey-grey beige soft clay
				- minor grit
				3.5-6.5 TILL (Cochrane)
				-grey-beige gritty clay
				- 1% clasts (Lmst-beige)
				6.5-20.5 TILL (Matheson)
7			01	6.5-11.5 sandy pebbly till
				-grey-grey beige fine-med sand
				- pebble 60% volc/seds, 40% granitic
9			02	- occasional cobble (granitic)
				- occasional Lithified clay clasts
				8.5 thin seam of clay and pebbles
11			03	8.6-11.5 till becomes very sandy
12			04	11.5-12.0 sandy, pebbly, clay till
				-grey beige gritty clay
13			04	-grey beige fine-med sand
				- pebbles 60% volc/seds, 40% granitic
14			05	12.0-12.3 boulder (granitic)
				12.3-13.0 sandy, pebbly, cobble till
				-beige fine-med sand
16			06	- pebbles & cobbles 50% volc/seds, 50% granitic
				13.0-13.2 boulder (granitic)
				13.2-13.5 till same as 12.3-13.0
				13.5-15.5 pebble clay till
18			07	-grey beige gritty clay
				- ≈5% pebbles
				15.5-20.5 very sandy, pebbly, clay till
19.5			08	- greybeige gritty clay
				- ≃35% pebbles 40% volc/seds, 60% granitic
				16.0-20.5 ≃5% pebbles

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

HOLE NO RPS-86-1138 LOCATION ______

DATE ______ 19 __

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS

______ TO ______

MOVE TO HOLE ______

DRILL ______

TOTAL HOURS

______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

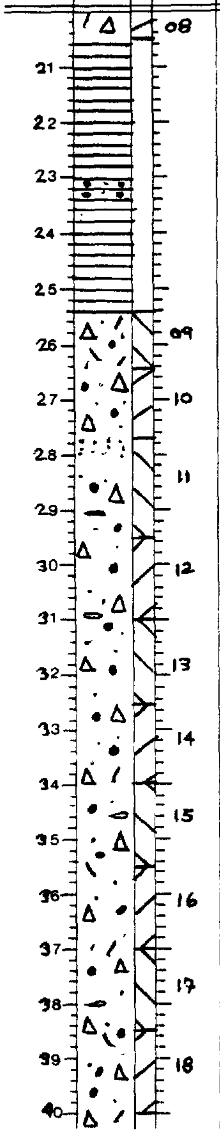
CONTRACT HOURS

______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES | GRAPHIC LOG | INTERVAL | SAMPLE NO. | DESCRIPTIVE LOG



20.5 - 25.3 SEDIMENTS (MISSINAIBI)
- dark green, hard, dry clay

23.0-23.4 grey beige, gritty clay with <1% clasts

25.3 - 42.0 TILL (LOWER TILL)

25.3-26.5 clayey, very sandy, pebble till
- grey beige, gritty, clay
- beige, fine-med sand
- pebbles 30% volc/seds 70% granitic

26.5 - 42.0 very sandy, pebble till
- grey - grey beige fine - med. sand
- pebbles 70% volc/seds 30% granitic
- occasional cobbles

27.7-28.0 beige fine sand

33.5-42.0 occasional Lithified clay clasts and/or clay draped pebbles

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS-86-113R LOCATION ____________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ____________

DRILL ____________

MECHANICAL DOWN TIME ____________

DRILLING PROBLEMS ____________

OTHER ____________

MOVE TO NEXT HOLE ____________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			19	
41				
			20	
42				42.0 -46.0 BEDROCK
43				42-44.5 bright green and yellow rock floor in form of clay
			21	
44				
				44.5-46.0 - rusty colour - decomposing rock "saprolite" - very schistose. - numerous quartz eyes - minor black veinlets. "Sericite schist"
45				
46				
47				
48				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE March 16 19 86

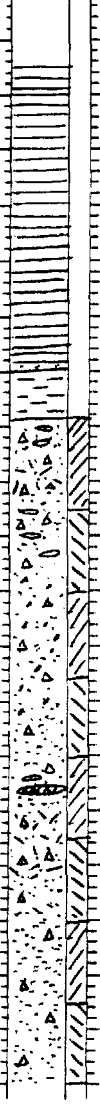
SHIFT HOURS
_____ TO _____

TOTAL HOURS
_____

CONTRACT HOURS
_____

HOLE NO ~~BPS-86-~~ 113-9 LOCATION L 113-1, 20+00W
GEOLOGIST B. Zabev DRILLER D. Bussiere BIT NO. CB67962 BIT FOOTAGE 19.5 → 56.4
MOVE TO HOLE 10:00 - 10:15
DRILL 10:15 - 4:40
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE 4:40 - 5:00

page 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0–20		8–20	01, 02, 03, 04, 05, 06, 07, 08	see below

0-1 No return
1-1.5 organics
1.5-6.6 Sediments - Clay
grey, fine, gritty

6.6 - 7.9 Sediments - Clay
6.6 - 7.0 - Gray, soft, smooth
occ. clast.
7.0 - 7.9 Silt
beige to gray

7.9 - 34.6 Till
7.9 - 8.5 Pebbly, cobbly
- little matrix (10%)
- clasts: volcanics 40%
intrusives 60%
- <1% limestone clasts.
8.5-9.30 Clayey - with beige
sand and clay matrix
9.30-10.40 Cobbly - mainly of
granitic compos.
10.40-13.20 Pebbly, sandy with
occ. thin clayey interbeds
13.20-15.0 Sandy - beige to gray
f. sand matrix up to 70%
- clasts: volcanics 45%
intrusives 55%
14.6-14.7 Boulder - granitic
15.0-16.3 Clayey
16.3 - 30.5 Sandy to very sandy
sand matrix 60-80%

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS 86-113-9 LOCATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21			09	fine to medium, beige to gray sand - clasts: volcanics 50% intrusives 50% - rare clayey intercalations - occ. cobbles
22			10	
23				
24			11	
25			12	
26				
27			13	
28			14	
29				
30			15	
31			16	30.5 - 31.5 Clayey till - - small % of clasts - mainly gray gritty clayey clasts with beige to gray silt matrix
32				
33			17	31.5 - 33.47 Pebbly, sandy with occ. cobbles - clasts: volcanics 60% intrusives 40% 31.6 - Boulder (15cm) mafic volc.
34			18	
35				
36			19	33.47 - 34.1 Boulder - granitic
37				34.1 - 34.6 Clayey till with clay coated mafic volcanic clasts.
38				
39				34.6 - 36.9 Bedrock - f. grained, light brownish to light green, v. siliceous, some cherty looking chips. - rhyolitic composition - strong fabric, sericite on foliation planes
40				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 17 1986

HOLE NO BFS-86-11310 LOCATION L 113-1, 24+00 W

GEOLOGIST G SHELP DRILLER D BUSSIERE BIT NO CB67963 BIT FOOTAGE 0-38.3

SHIFT HOURS
______ TO ______

MOVE TO HOLE 07.00 - 07.15

DRILL 08.20 - 12.00

TOTAL HOURS
______

MECHANICAL DOWN TIME 07:15 - 8:20

DRILLING PROBLEMS ______

CONTRACT HOURS
______

OTHER ______

MOVE TO NEXT HOLE ______

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-4.0 No RETURN
4				4.0-4.3 SEDIMENTS (COCHRANE) - grey soft clay
				4.3-6.5 TILL (COCHRANE) - grey gritty clay - 1-2% clasts (some Lmst)
				6.5-7.3 SEDIMENTS (COCHRANE) - grey gritty clay
				7.3-17.0 SEDIMENTS (OJIBWAY)
				7.3-10.3 grey soft clay
				10.3-13.8 grey silt
				13.8-14.5 grey soft clay
				14.5-16.7 grey silt
				16.7-17.0 grey soft clay
17			01	17.0-36.8 TILL (MATHESON)
			02	17.0-21.4 sandy, very pebbly till - beige fine-med sand - pebble 70% volc/seds 30% granitic - occasional beige Lmst clasts - occasional cobble

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS-86-11310 LOCATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						
21			03	21.4 - 22.0 sandy, pebbly, clay till -grey gritty clay -grey-grey beige fine-med sand -≃50% pebbles 70% volc/seds 30% granitic						
22			04							
23										
24				22.0 - 22.8 very sandy pebble till - grey beige fine-med sand - pebbles 70% volc/seds 30% granitic						
25			05	22.8 - 23.8 grey hard clay						
26				23.8 - 26.5 clay till -grey clay - pebbles vary from 1-15% - minor grey fine-med sand		poor	return	23.8 - 29.0		
27										
28			06	26.5 - 29.0 sandy pebble till -beige fine-med sand -pebble 70% volc/seds 30% granitic						
29										
30			07	27.5 - 29.0 presence of grey-beige gritty clay (10-15%)						
31			07	29.0 - 29.5 till same as 23.8 - 26.5						
			08	29.5 - 31.1 pebbly cobble till - minor grey beige fine-med sand - pebbles 90% volc/seds -cobbles 10% granitic						
32			08							
33			09	30.0 - 30.2 boulder (mafic volc)						
34				31.1 - 33.0 till same as 26.5 - 27.5						
			10	31.5 - 31.7 boulder (mafic volc)						
35				33.0 - 34.0 till same as 22.0 - 22.8						
36			11	34.0 - 35.0 sand - beige fine-med						
				35.0 - 35.5 till same as 26.5 - 27.5						
37				35.5 - 36.8 till same as 21.4 - 22.0						
38			12	36.8 - 38.3 BEDROCK -dark green colour - fine grained - massive - siliceous "mafic volcanic"						
39										
0										

38.3 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE March 18 19 86

SHIFT HOURS

_____ TO _____

TOTAL HOURS

CONTRACT HOURS

HOLE NO 11311 LOCATION L 113-1, 28+00 W

GEOLOGIST B. Zabev DRILLER R. Du BIT NO. CB67963 BIT FOOTAGE 38.3 → 65.3

MOVE TO HOLE 7:00 - 7:15

DRILL 7:15 - 10:30

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE 10:30 - 10:45

New bit A000027 replaced at 27.0m.
The bit, sub and 3 rods Lost in the hole (Lodged in a boulder)

page 1

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						
				0 - 1 No return						
1				1 - 1.5 Organics						
2				1.5 - 9.8 Sediments - Clay (cochrane) - beige and gray, gritty clays						
3										
4										
5										
6										
7										
8										
9										
10				9.8 - 13.1 Till (Cochrane) - grey, gritty clay Lumps - minor clasts (<1%)						
11										
12										
13				13.1 - 20.0 Sediments - (Ojibway) 13.1 - 18.0 clays - gray, soft, smooth clays - few (several) clasts at 14.1m.						
14										
15										
16										
17										
18				18.0 - 20.0 Silt - grey with occasional clay seam.						
19										
20										

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS-86-11311 LOCATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

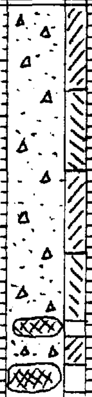
MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.
20–21			01
22			02
23–24			03
25			04
26–27			05



DESCRIPTIVE LOG

20 - 27.0 TILL (Matheson)

20 - 22.9 Pebbly with gray fine to med. sand as matrix. Pebbles ~65%.
- occ. limestone clasts.
- clasts: volcanics 60%, intrusives 40%
- becoming more sandy at 22.3m.

22.9 - 23.4 - V. Sandy (could be sand Lens)
- gray to beige sand - medium grained.
- pebbles ~5%.

23.4 - 27.0 Pebbly
clasts: volcanics 40%, intrusives 60%

25.7 - 26.0 Boulder - granitic

26.5 - 27.0 Boulder - gabbro

Hole abandoned at 27.0.

Bit 4000027, sub and 3 rods Lost in the hole.

Depth scale: 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE *March 18* 19*86*

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO *11311A* LOCATION *L113-1, 28+05 W*

GEOLOGIST *B. Zabev* DRILLER ______ BIT NO *CB67961* BIT FOOTAGE *0 → 33.5m*

MOVE TO HOLE *10:30 – 10:45*

DRILL *10:45 – 12:15 ; 1:15 – 4:00*

MECHANICAL DOWN TIME *12:15 – 1:15*

DRILLING PROBLEMS *problems with the swivel*

OTHER ______

MOVE TO NEXT HOLE *4:00 – 4:15*

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						
21				*Note: Hole 11311A is a redrill of hole 11311. For description of units above 27.0 refer to previous Log.*						
22										
23										
24										
25										
26										
27		*NOT SAMPLED*		*26.5 – 30.1 No return due to faulty swivel.*						
28										
29										
30				*30.1 – 33.5 Bedrock.*						
31			06	*Recovering only minor amount of rock chips. Mainly yellow clayey material (rock flour)*						
32				*- Highly siliceous rock. Strongly weathered, brownish, leached,*						
33				*- some chips schistouse*						
34										
35										
36										
37										
38										
39										
40										

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE MAR 18 19 86

SHIFT HOURS ____ TO ____

TOTAL HOURS ____

CONTRACT HOURS ____

HOLE NO BPS-86-11312 LOCATION LINE 113-1, 32+00 W

GEOLOGIST G SHELP DRILLER R. L. egault BIT NO. CBG7961 BIT FOOTAGE 335-77.5

MOVE TO HOLE 16.00-16.15

DRILL 16.15 - 17.00

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER TRAVEL 17.00-17.30

MOVE TO NEXT HOLE

MAR 19 186 TRAVEL 6.30 - 7.20

DRILL 7.20 - 9.30

MOVE 9.30 - 9.45

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-0.3 Organics.
1				0.3-5.5 Sediments (Cochrane)
				-beige gritty clay
2				
3				
				3.5-6.5 clay now is grey
4				
5				
6				5.5-17.0 Sediments (Ojibway)
				5.5-13.6 grey, soft, clay appearing in ribbons
7				
8				
9				
10				
11				
12				
13				
				13.5-17.0 Silt-grey
14				
15				
16				
17				17.0-22.5 Till (Matheson)
				17.0-17.8 boulder (granitic)
18				17.8-19.0 sandy, pebble, till
			01	- grey beige fine-med sand
19				- pebbles 80% volc/seds
20			02	20% granitic
				(15-25% beige Lmst).

19.0-22.5 very sandy, pebble till
- grey beige fine-med sand
- pebbles 80% volc/seds
20% granitic
(5% Lmsts)
- occasional grey, gritty, clay clasts

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS-86-11312 LOCATION LINE 113-1 , 32+00W

GEOLOGIST ______ DRILLER ______ BIT NO ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				20.5 – 22.0 No RETURN
21			02	
22				
				22.5 - 24.0 BEDROCK - dark green colour - fine grained - massive - "mafic volcanic"
23			03	
24				
5				
				24.0 E.O.H
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE March 19 1986

SHIFT HOURS ______ TO ______

TOTAL HOURS ______

CONTRACT HOURS ______

HOLE NO 113-13 LOCATION L113-1, 36+00 W

GEOLOGIST B. Zabev DRILLER R. Legault BIT NO. CB67161 BIT FOOTAGE 77.5 → 96.1 m

MOVE TO HOLE 9:30 - 9:45

DRILL 9:45 - 11:30

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE 11:30 - 11:45

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 - 1.5 No return
				1.5 - 4.0 Brown to beige, gritty clay
				4.0-4.5 Till (?) - Brown to beige, very gritty clay matrix ~90% - Clasts ~ 1-2% mainly brown-beige limestone and minor granitic.
				4.5 - 8.3 Sediments - Clay (Cochrane) - Gritty, gray clay
				8.3 - 15.5 Sediments (Ojibway) 8.3 - 11.20 Clay - Gray, soft, smooth 11.20 - 15.5 Silt - gray to beige with occasional clay (gray) intercalations
			01 02 03	15.5 - 17.15 - Till (Matheson) - pebbly till with gray fine to medium sand matrix - clasts · volcanics 60%, intrusives 40%. At 16.20 - 16.80 - Boulder - mafic volcanic
				17.15 - 18.60 Bedrock - green, f. grained, foliated mafic volcanic

EOH at 18.60 m.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 19 1986

HOLE NO BPS-86-113/4 LOCATION LINE 113-1, 40+00 W

GEOLOGIST Q. SHELP DRILLER R. LEGAULT BIT NO CB67961 BIT FOOTAGE 96.1-108.1

SHIFT HOURS ______ TO ______

MOVE TO HOLE 11.30 - 11.45

DRILL 11.45 - 14.45

TOTAL HOURS ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

CONTRACT HOURS ______

OTHER ______

MOVE TO NEXT HOLE 14.45 - 15.00

NEW BIT L00464
(put on at 12.0 meters depth, drilled 4.4 meters)

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0–20			01, 02, 02, 03, 04, 05	0-4.4 NO RETURN
				4.4-4.6 SEDIMENTS (COCHRANE) -grey gritty clay
				4.6-8.0 SEDIMENTS (OJIBWAY)
				4.6-7.5 grey soft clay (very little return)
				7.5-8.0 Silt - grey
				8.0-14.8 TILL (MATHESON)
				8.0-10.2 Sandy, very pebbly till -beige fine-med sand -pebbles 60% volc/seds 40% granitic -occasional cobble
				10.2-10.5 boulder (granitic)
				10.5-11.6 Sandy, pebbly, clay till -grey beige gritty clay -grey-beige fine-med sand -pebbles 60% volc/seds 40% granitic
				11.6-12.2 boulder (mafic volc)
				12.2-13.0 till same as 10.5-11.6
				13.0-13.5 sand. greenish grey med sand
				13.5-14.8 very sandy, pebble till -greenish grey fine-med sand. -pebbles 60% volc/seds 40% granitic
				14.8-16.3 BEDROCK

- dark green colour
- fine grained
- folliated
- carbonate veins.

" mafic volcanic"

16.3 E.O.H

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 21 1986

HOLE NO BPS-86-11317 LOCATION LINE 113-2, 24+00 W

GEOLOGIST G. Shelp DRILLER R. Legault BIT NO. CB67960 BIT FOOTAGE 10.5-55.5

SHIFT HOURS ____ TO ____

MOVE TO HOLE 10.00 - 13.00

DRILL 13.00 - 17.00

TOTAL HOURS ____

MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

CONTRACT HOURS ____

OTHER TRAVEL 17.00 - 17.30

MOVE TO NEXT HOLE ____

MAR 22/86 TRAVEL 07.00 - 0730
DRILL 07.30 - 12.00

(New bit (L000465) and sub, for test)
(bit collapsed.)

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 – 1.0 No Return
1				1 - 2.0 Sediments (Cochrane) – beige gritty clay
2				2.0 - 13.2 Till (Cochrane) - grey, gritty, calcareous clay - <1% clasts (Cmst).
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				13.2 - 40.3 Sediments (Ojibway)
14				13.2-15.0 grey, soft, smooth clay
15				15.0-15.5 interbedded grey silts and grey clay
16				15.5 -22.0 silt (grey) -occasional thin grey clay seam.
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS-86-11317 LOCATION ________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ________

DRILL ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG							
21											
22				22.0 -30.0 silt - beige - occasional thin beige clay seam							
23											
24											
25											
26											
27											
28											
29											
30				30.0 -30.5 Sand. - beige fine-medium							
31				30.5 -34.6 Sand. - beige medium-coarse. sand with granules and small pebbles. (esker sands)							
32			01								
33											
34			02	34.6-37.6 Sand. - beige fine-medium							
35											
36											
37											
38				37.6-40.3 silt- fine sand. -grey beige -occasional wood chips - occasional pebble and grey clay seams							
39											
40											

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO RPS-86-113/7 LOCATION ________
GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______
MOVE TO HOLE ________
DRILL ________
MECHANICAL DOWN TIME ________
DRILLING PROBLEMS ________
OTHER ________
MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
41				40.3 - 43.4 TILL (MATHESON) - clay, very sandy, pebble till
42				-grey, gritty clay
43			03	-grey beige fine-med. sand
44			04	- pebbles ? (Lmst) - poor return.
45				43.4 - 45.0 BEDROCK -dark green and cream coloured - Coarse-grained -massive. -"gabbro"
46				
47				
48				45.0 E.O.H.
49				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE March 24 1986

HOLE NO BB86-113-18 LOCATION L 113-2, 20+00W

GEOLOGIST B. Zabev DRILLER R. Legault BIT NO. CB67960 BIT FOOTAGE 0→48.1

MOVE TO HOLE CB67965 0→4.4

SHIFT HOURS ____ TO ____

DRILL 12:15 – 5:00pm.

TOTAL HOURS

MECHANICAL DOWN TIME

DRILLING PROBLEMS

CONTRACT HOURS

OTHER

MOVE TO NEXT HOLE

March 25/86:
Drill 7:00 – 8:15

New bit at 48.1m.

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-1.2 No return
1				1.2-2.2 Sediments (Chochrane)
2				- beige-brownish gritty clays
3				2.2-4.4 Till (Chochrane)
4				- beige to brownish gritty clay with minor clasts
5				- at 4.0m changes to gray
6				4.4-24.0 Sediments (Ojibway)
7				4.4-12.50 - Silt - beige with occ. thin clay horizons.
8				
9				12.5-19.5 - Fine sand beige to gray
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				19.5-24.0 Coarse sand beige with occ. granules

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS86 113-18 LOCATION ________

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ________

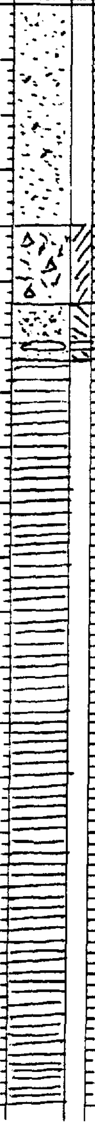
DRILL ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

OTHER ________

MOVE TO NEXT HOLE ________



DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21				
22				
23				
24				24.0 – 25.4 Till (Matheson – clayey, gray pebbles and beige fine sand as matrix
25			01	
26			02	25.4 – 44.2 Sediments (Missinaibi) 25.4 – 26.1 Gravel – granules with med. to coarse sand as matrix 26.1 – 26.2 – Boulder – granitic 26.2 – 26.4 Sand – medium to fine – beige to gray 26.4 – 42.5 – Clay – mixing with pebbles at the top – compact, gray to bluish smooth
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS86-113-18 LOCATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

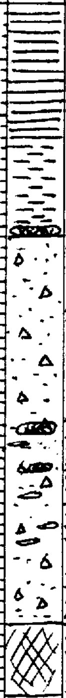
MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
41				
42				
43				42.5-44.1 Silt - gray
44				44.1-44.2 - Boulder - gabbro
45			03	44.2 - 51.2 Till (Lower) - pebbly till with low % (5%) gray fine sand
46			04	- clasts: green/dark volcan. 80% granitic 20%
47				47.5-47.8 - Boulder - gabbro
48			05	47.8 - 49.8 Cobbles - mainly rhyolitic
49				
50			06	- Little matrix - green rock flour
51			07	
52			08	51.2-52.5 Bedrock -green, coarse grained mafic intrusive - gabbro
53				
54				
55				
56				
57				
58				
59				
60				



OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 25 19 86

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO BPS-86-11319 LOCATION L-113-2, 16+00 W

GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO. CB67965 BIT FOOTAGE 44-26.9

MOVE TO HOLE 8.15-8.30

DRILL 8:30 - 10:15

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE 10.15-10.30

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 - 1.3 No Return
1				1.3-3.5 Till (Cochrane)
2				1.3-1.5 grey, gritty clay <1% clasts
3				1.5-3.5 beige, gritty clay <1% clasts
4				3.5-21.0 Sediments (Ojibway)
5				3.5-10.8 Sand beige very fine-fine
6				-occasional thin clay layer with pebbles and thin pebble layers (≃ 10% beige (mst)
7				
8				
9				
10				
11				10.8-15.0 Gravel
12			01	-grey beige med-coarse sand
13				- 15% pebbles 30% volc/seds 70% granitic
14			02	- occasional wood chips
15				15.0-18.0 Sand
16				grey beige very fine - fine sand
17				
18				
19				18.0-20.5 silt - grey beige
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS-86-11317 LOCATION ____________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ____________

DRILL ____________

MECHANICAL DOWN TIME ____________

DRILLING PROBLEMS ____________

OTHER ____________

MOVE TO NEXT HOLE ____________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				20.5 - 21.0 Interbedded grey clays and pebbles
21			03	
22			04	21.0 - 21.4 TILL (MATHESON)
23				- pebble till.
				- matrix poor - green rock flour.
24				- pebbles 95% volc/seds
				5% granitic
5				21.4 - 22.5 BEDROCK
6				- Light green colour
7				- fine-grained
				- massive
8				22.0 - 22.2 oxidized zone
9				(fracture zone ?)
				" felsic volcanic
10				with chloritic alt^Δ"
11				22.5 E.O.H.
12				
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE March 25 1986

HOLE NO BPS86-113-20 LOCATION L113-2, 12+00 W

GEOLOGIST B. Zabev DRILLER R. Legault BIT NO CB67965 BIT FOOTAGE 26 -> 65.4m.

SHIFT HOURS ____ TO ____

MOVE TO HOLE 10:15 - 10:30

DRILL 10:30 - 2:30

TOTAL HOURS ____

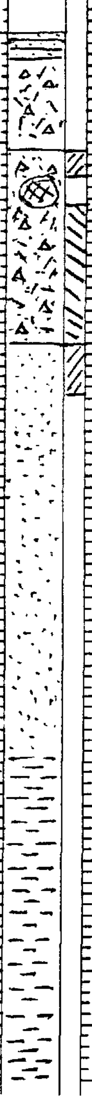
MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

CONTRACT HOURS ____

OTHER ____

MOVE TO NEXT HOLE ____

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
1–20			01 (≈3.3), 02 (≈5.4), 03 (≈7.0)	

0-1.0 No return

1.0 - 1.5 Sediments (chochrane)
- gritty beige clays

1.5 - 3.1 Till (Chochrane)
- beige gritty clay with light beige clasts ~10%

3.1 - 6.6 Till
- pebbly with gray fine grained sand as matrix (~10%)
- clasts: dark volc. 90%
  granitic 10%

3.6 - 4.1 Boulder - felsic volc.

4.1 - 6.6 Clayey till - gray clay coating pebbles

6.6 - 25.2 Sediments

6.6 - 14.0 Sand - fine to very fine gray to beige sand

14.0 - 25.2 Silt
gray to beige

occ. gray hard sandstone "clasts"

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 ___

HOLE NO BPS86-113-20 LOCATION ________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

SHIFT HOURS ________ TO ________

MOVE TO HOLE ________

DRILL ________

TOTAL HOURS ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

CONTRACT HOURS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21				
22				
23				
24				
25				25.2 - 30.3 Sediments
26				25.2 - 26.5 - Gravel and coarse sand - gray to beige
27				
28				26.5 - 26.8 - mixing of granules and gray clay
29				
30				26.8 - 30.3 Clay
31			04	- gray-greenish to bluish, compact, smooth.
32			05	
33				30.3 - 37.5 Till
34			06	- pebbly with low % of fine gray sand (5%)
35			07	- clasts: dark volc. predominate ~80%.
36				31.0 - 32 - Cobbles At: 34.6 Boulder granitic (30cm) 35.9 Boulder granitic (20cm)
37			08	36.1 Boulder gabbro (20cm)
38			09	37.5 - 38.5 - Bedrock
39				- green, coarse grained - gabbro
40				

EOH at 38.5m.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 25 1986

HOLE NO BPS-86-113-21 LOCATION L113-2, 8+00W

GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO. CRG7964 BIT FOOTAGE 0 – 48.5

SHIFT HOURS ____ TO ____

MOVE TO HOLE 14.30 – 14.45

DRILL 14.45 – 17.00

TOTAL HOURS ____

MECHANICAL DOWN TIME

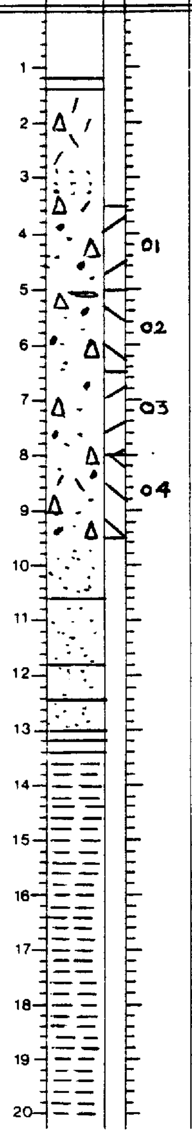
DRILLING PROBLEMS

CONTRACT HOURS ____

OTHER TRAVEL 17.00 – 17.30

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0 – 1.2 No Return

1.2 – 1.5 Sediments (Cochrane)
- grey, moderately compact clay

1.5 – 3.5 Till (Cochrane)
- 1.5 – 2.8 beige, gritty, clay; 1% clasts (Cmst); - occasional cobble
- 2.8 – 3.2 beige fine sand
- 3.2 – 3.5 till same as 1.5 – 2.8

3.5 – 9.5 Till (Matheson)
- 3.5 – 5.0 pebbly till
  - matrix poor - grey fine - (but distinct) medium sand
  - pebbles 50% volc/seds, 50% granitic
- 5.0 – 5.2 cobbles (granitic)
- 5.2 – 9.5 sandy pebbly till
  - grey - grey beige fine - med. sand
  - pebbles 50% volc/seds, 50% granitic
  - occasional cobble
- 8.4 – 8.6 occurrence of grey clay within the till

9.5 – 34.6 Sediments (Missinaibi)
- 9.5 – 13.0 sand - beige, fine sand
- 13.0 – 13.5 grey hard clay
- 13.5 – 28.2 silt - grey beige
  - occasional thin layers of grey clay and pebbles

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

HOLE NO BPS-86-113-21 LOCATION L 113-2, 8400W

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

SHIFT HOURS ________ TO ________

MOVE TO HOLE ________

DRILL ________

TOTAL HOURS ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

CONTRACT HOURS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21				
22				
23				
24				
25				
26				
27				
28				
29				28.2-29.0 . grey hard clay mixed with (5%) pebbles and silt - clay is smooth, ∴ not till
30				
31				
32				29.0-34.6 grey hard clay
33				
34				34.6-47.2 TILL (LOWER TILL)
35			05	34.6-37.0 sandy, pebbly till - grey fine-med sand. - pebbles 70% vdc/seds 30% granitic - occasional cobble.
36				
37			06	
38			06	37.0-37.2 boulder (granitic)
39			07	37.2-37.5 till same as 34.6-37.0
40				38.6-47.2 Sandy, pebbly, clay till - grey gritty clay - grey fine-medium sand - 10-25% pebbles - occasional cobbles (gabbro)

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO BPS-86-11321 LOCATION L-113-2 , 8+00W

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ________

DRILL ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			08	
41				
42			09	
43				
			10	
44				
45			11	
46				
			12	
47				47.2-48.5 BEDROCK
48			13	- dark green colour - fine grained - moderately foliated - siliceous - "interm/mafic volcanic"
49				48.5 E.O.H.
50				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 26 19 86

SHIFT HOURS ____ TO ____

TOTAL HOURS ____

CONTRACT HOURS ____

HOLE NO BP5-86-11322 LOCATION L 113-2, 4+00 W

GEOLOGIST G SHELP DRILLER R LEGAULT BIT NO. LC0046 BIT FOOTAGE 0-435

MOVE TO HOLE 09 00 - 09 15

DRILL 09 15 - 13 00

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE 13 00 - 14 00

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-2.0 No Return
				2.0-4.0 Organics
				4.0-4.4 Till (Cochrane) - beige gritty clay - 1% clasts
			01	
				4.4-17.2 Till (Matheson) 4.4-6.0 - cobbly, sandy, pebble till - grey beige fine-med sand - pebbles 60% volc/seds 40% granitic - cobbles 50% volc/seds 50% granitic
			02	
			03	
				6.0-7.5 sandy cobble till - grey beige fine-med sand - cobbles 50% volc/seds 50% granitic
			04	
				7.5-17.2 till same as 4.4-6.0 - beginning at 10.5 pebbles 70% volc/seds 30% granitic - beginning at 11.0 - occasional grey, gritty, clay clasts
			05	
			06	
				17.2-38.0 Sediments (Missinaibi) 17.2-22.4 silt - grey - occasional pebbles

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

HOLE NO BPS-86-11322 LOCATION L 113-2 , 4+00 W

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

SHIFT HOURS ________ TO ________

MOVE TO HOLE ________

DRILL ________

TOTAL HOURS ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

CONTRACT HOURS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
22.4				22.4 - 27.5 pebble seams interbedded with grey silt
27.5				27.5 - 28.4 beige fine sand
28.4				28.4 - 28.6 beige fine sand and granules
28.6				28.6 - 28.8 medium to coarse sand and pebbles
28.8				28.8 - 38.0 grey, hard clay
38.0				38.0 - 42.5 TILL (LOWER TILL)
38.0				38.0 - 38.5 boulder (Felsic volc)
39			07	
38.5				38.5 - 40.0 Cobbly, sandy, pebble till - grey fine-medium sand. - pebbles 95 % volc/seds 5 % granitic - cobbles (volcanics)

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

HOLE NO BPS-86-11322 LOCATION L 113-2 , 4+00 W

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

SHIFT HOURS ________ TO ________

MOVE TO HOLE ________

DRILL ________

TOTAL HOURS ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

CONTRACT HOURS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				40.0-40.3 boulder (mafic volc).
41			08	40.3-42.5 till same as 38.5-40.0
42			09	
43			10	42.5-43.5 BEDROCK - dark green and cream colour - medium - coarse grained - massive - " gabbro"
44				
45				
6				43.5 E.O.H.
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 2 19 86
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO BPS-86-11323 LOCATION L113-2 , 28+00 W
GEOLOGIST C SHELP DRILLER R LEGAULT BIT NO. CB67833 BIT FOOTAGE 0-8.5
MOVE TO HOLE 09.00 - 09.30
DRILL 09.30 - 10.45
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER TRAVEL
MOVE TO NEXT HOLE 10.45 - 11.00

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 - 1.2 No RETURN
				1.2-2.5 SEDIMENTS (COCHRANE) -grey soft clay
				2.5-6.0 TILL (COCHRANE) -grey gritty clay - < 1% clasts (Cmst present)
				6.0-7.1 SEDIMENTS (OJIBWAY) -beige very fine-fine sand
			01	7.1-8.5 BEDROCK -medium green colour -fine grained -massive. -very siliceous -chloritic altn (?) -very minor pyrite (chalcopyrite ?) in occasional qtz vein (1/8" thickness) - "felsic-interm volcanic" 7.1-7.2 oxidized,
				8.5 EOH.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 2 19 86

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO BPS-86-11324 LOCATION Line 113-2 32+00W

GEOLOGIST D HOLMES DRILLER R. LEGAULT BIT NO. CB67833 BIT FOOTAGE 8.5-19.0

MOVE TO HOLE 10:45 - 11:00

DRILL 11:00 - 12:15

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0. - 0.6 Organics
1				0.6 - 1.5 SEDIMENTS (COCHRANE) - compact pure beige clay
2				
3				1.5 - 5.2 TILL (COCHRANE) - compact gritty beige (oxidized) clay matrix, matrix gray colour 3.8 to 5.2 < 5% pebbles
4				
5				
6			01	5.2 - 9.2 TILL (MATHESON) - distinct contact with overlying till unit - cobbly, pebbly till
7				5.2-8.2 Fine gray-beige sand matrix with occasional small soft gritty clay lumps
8			02	-clast composition approximately 60% volcanics/sediments 40% granites <1% limestone
9			03	8.2-8.4 boulder - intermediate/mafic volcanic
10			04 BEDROCK	8.4-9.2 till cobbly with pebbles Fine beige sand matrix clast composition approximately 75% volcanics/sediments 25% granites
11–20				9.2 - 10.5 BEDROCK - medium to dark green colour - massive structure - fine grained - chlorite alteration - thin siliceous zones - intermediate/mafic volcanic

10.5 EOH

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 2 1986

SHIFT HOURS
_____ TO _____

TOTAL HOURS
_____

CONTRACT HOURS
_____

HOLE NO BPS-86-11325 LOCATION L 113-2, 36+00 W

GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO. CB67833 BIT FOOTAGE 19.0-39.0

MOVE TO HOLE 12.15 - 12.30

DRILL 12.30 - 15.15

MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE 15.15 - 15.30

(NEW BIT · CB67827 at 20.0 m, drill for 2.5m) Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-1.2 NO RETURN
				1.2-1.7 SEDIMENTS (COCHRANE)
				-grey, soft, gritty clay
				1.7-9.5 TILL (COCHRANE)
				- grey, moderately compact, gritty, clay
				- <1% pebbles (70% beige Lmst.)
				9.5-13.0 SEDIMENTS (OJIBWAY)
				9.5-11.0 grey, soft clay
				11.0-13.0 silt - grey
			01	13.0-21.0 TILL (MATHESON)
				13.0-13.8 sandy, pebble till
				- grey beige very fine - fine sand
			02	- pebbles 70% volc/seds 30% granitoid
			03	13.8-15.5 silt - very fine sand. - grey
			04	15.5-18.2 sandy, pebble till
				-Same as 13.0-13.8.
				- occasional cobble.

18.2-18.5 boulder (granite)

18.5-19.4 Sandy, cobbly, pebble till
pebble & cobble 90% volc/seds 10% granitoid.

19.4-20.0 boulder (gabbro)

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS-86-1132.5 LOCATION L113-2, 36+00 W

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21			05	20.0-21.0 pebbly, cobble till - matrix poor - grey beige fine-medium sand. - pebbles & cobbles 90% volc/seds 10% granitoid
22			06	21.0-22.5 BEDROCK
23				21.0-21.8 - olive green colour - oxidized. - very rotten (saprolite?). - fine grained - massive. - occasional qtz vein (½"). - "felsic to intermediate volcanic"
24				21.8-22.0 med. green colour - fine-grained - massive. - "interm. volcanic"
25				22.0-22.5 same as 21.0-21.8
6				22.5 E.O.H
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 2 1986

HOLE NO BPS-86-11326 LOCATION Line 113-2 40+00 W

GEOLOGIST D. HOLMES DRILLER R. LEGAULT BIT NO. CB67027 BIT FOOTAGE 2.5 - 22.9

SHIFT HOURS ______ TO ______

MOVE TO HOLE 3:15 - 3:30

DRILL 3:30 - 4:30

TOTAL HOURS ______

MECHANICAL DOWN TIME

DRILLING PROBLEMS

CONTRACT HOURS ______

OTHER

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 - 0.2 Organics
				0.2 - 10.4 TILL (COCHRANE) - soft beige colour, very gritty clay matrix, colour changes to gray from 6.0 to 10.4 < 10 % clasts
				10.4 - 18.4 SEDIMENTS (OJIBWAY) - soft, pure gray clay 11.5 to 13.5 gray and beige varved clay - abrupt contact at 13.5 13.5 - 18.4 blue - gray, very compact pure clay - interbedded with silt after 17.8
			01	18.4 - 18.6 TILL (MATHESON) - very thin horizon of cobbly till - fine gray sand matrix clast composition approximately 95 % volcanics / sediments 5 % granites
			02 BEDROCK	18.6 - 20.4 BEDROCK - medium green colour, siliceous veins beige-white - moderate to well foliated structure - fine grained siliceous - < 1 % quartz veins - << 1 % desseminated sulphides - Felsic volcanic (Rhyolite)

20.4 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 2 19 86

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO BPS-86-1132 LOCATION LINE 113-2, 44+00 W

GEOLOGIST G.SHELP DRILLER R.LEGAULT BIT NO. CB67827 BIT FOOTAGE 22.7-52.2

MOVE TO HOLE 16.30 - 16.45

DRILL 16.45 - 17.30

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE 17.30-1800 (still 2Km left to move)

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-.2 ORGANICS
1				.2-1.4 SEDIMENTS (COCHRANE) - dark beige, soft, slightly gritty clay
2				
3				1.4-18.0 TILL (COCHRANE)
4				1.4-3.0 beige, gritty clay <1% clasts (beige Lmst)
5				
6				3.0-8.0 grey, gritty clay <1% clasts.
7				
8				8.0-13.0 sandy clay till - grey fine-med sand. -5% clasts - same grey, gritty clay
9				
10				
11				
12				
13				13.0-18.0 only a minor amount of sand present - 1-2% clasts
14				
15				
16				
17				
18				18.0-28.0 SEDIMENTS (OJIBWAY)
19				18.0-22.6 grey, soft clay
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

HOLE NO BPS-86-11327 LOCATION LINE 113-2, 44+00 W

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

SHIFT HOURS
________ TO ________

MOVE TO HOLE ________

DRILL ________

TOTAL HOURS
____

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

CONTRACT HOURS
____

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21				
22				
23				22.6-27.8 silt-grey -occasional grey, soft, clay layers
24				
25				
26				
27				
28			01	27.8-28.2 TILL (MATHESON) sandy, pebble till -grey, fine-med. sand - pebbles 95% volc/seds 5% granitoid
29			02	
30				
31				
32				28.2-29.5 BEDROCK -medium green colour - fine-grained - moderately - strongly foliated. - very siliceous. - "felsic - interm volcanic"
33				
34				
35				
36				29.5 E.O.H.
37				
38				
39				
40				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 3 19 86
SHIFT HOURS
______ TO ______
TOTAL HOURS
______
CONTRACT HOURS
______

HOLE NO BPS-86-1132B LOCATION L-113-3 , 32+00W
GEOLOGIST D. HOLMES DRILLER R. LEGAULT BIT NO CB67827 BIT FOOTAGE 52.2-78.7
MOVE TO HOLE 7:30 - 8:00
DRILL 8:00 - 10:30
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER Travel by muskeg 6:30 - 7:30
MOVE TO NEXT HOLE

Page 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0–20			01, 02, 03, 04, 05, 06, 07, 08, 09	0 - 1.6 Organics (PEAT) 1.6 - 2.0 SEDIMENTS (COCHRANE) - compact, pure, gray clay 2.0 - 7.4 TILL (COCHRANE) - moderately compact very gritty gray clay matrix < 10% pebbles 7.4 - 24.9 TILL (MATHESON) - abrupt contact with overlying till 7.4 - 9.0 sandy, cobbly, pebbly till very fine and fine gray-beige sand matrix with occasional gray gritty clay lumps clast composition approximately 50% volcanics/sediments 50% granites 9.0 - 9.4 boulder intermediate/mafic volcanic 9.4 - 17.6 till similar to 7.4 to 9.0 with no clay lumps 17.6 - 24.9 till becomes clay-rich - moderately compact, gritty, gray clay lumps and fine to very-fine gray sand matrix, pebble and cobble composition 60% volcanics/sediments 40% granites

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr. 13 1986

HOLE NO BRS-86-11328 LOCATION L · 113-3 32+00 W

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS ______ TO ______

MOVE TO HOLE ______

DRILL ______

TOTAL HOURS ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

CONTRACT HOURS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			09	
21				24.9 - 26.5 BEDROCK
			10	- medium green colour
22				- very fine to fine grained, - siliceous
23			11	- moderate to poor foliation
24			12	- << 1% sulphides
25				- intermediate to felsic volcanic
26			13 BEDROCK	
27				26.5 E.O.H.
28				
29				
30				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 3 1986

HOLE NO BPS-86-11329 LOCATION LINE 113-3, 28+00 W

GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO. CB67827 BIT FOOTAGE 78.7-107.2

SHIFT HOURS ____ TO ____

MOVE TO HOLE 10.30-10.45

DRILL 10.45-12.45

TOTAL HOURS ____

MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

CONTRACT HOURS ____

OTHER ____

MOVE TO NEXT HOLE 12.45-13.00

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0				0-.2 ORGANICS
1				.2-8.0 TILL (COCHRANE)
2				.2-3.5 beige, gritty clay <1% clasts.
3				
4				3.5-8.0 grey, gritty clay <1% clasts (beige Lmst)
8				8.0-10.4 SEDIMENTS (OJIBWAY)
9				8.0-10.0 grey, moderately compact, clay
10				10.0-10.4 silt-grey
11			01	10.4-27.2 TILL (MATHESON)
12				10.4-11.5 sandy, cobble till -grey fine-med sand. -cobbles 95% volc/seds 5% granitoid (occasional beige Lmst) (occasional sulphide rich cobble)
13			02	
14				
15			03	11.5-12.0 sandy, pebbly, clay till -grey, gritty clay
16			04	
17			05	12.0-13.0 grey beige very fine sand
18				13.0-13.3 sandy pebble till - grey fine-med sand - pebbles 90% volc/seds. 10% granitoid
19			06	
20			07	13.3-13.7 boulder (felsic volc)

13.7-16.5 sandy, pebble till
- grey fine-med. sand
- pebbles 60% volc/seds. 40% granitoid.

16.0-16.5 <1% grey gritty clay

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO BPS-86-11329 LOCATION LINE 113-3, 28+00 W

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21			07	16.5 - 21.2 sandy, pebbly clay till - grey, gritty clay - grey fine sand
22			08	21.2 - 27.2 very sandy, pebble till - grey fine-med. sand - pebbles 60% volc/seds 40% granitoid
23			09	
24				
25			10	
26			11	
27				27.2 - 28.8 BEDROCK
28			12	- medium green colour - fine-grained - weakly - moderately folliated - very siliceous - "felsic volcanic"
29				
30				
31				27.2 - 27.5 oxidized
32				28.2 - 28.8 light olive green - highly folliated - very siliceous
33				28.8 E.O.H.
34				
35				
36				
37				
38				
39				
40				

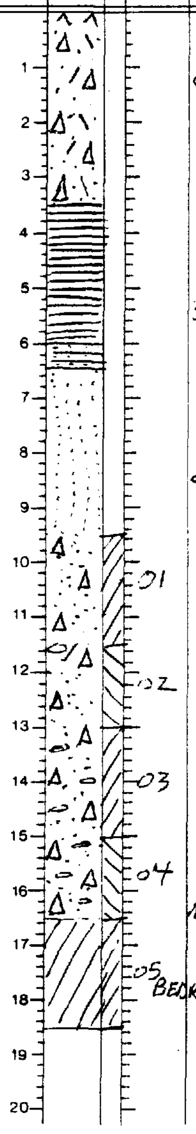
OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 3 1986
HOLE NO BPS-86-11330 LOCATION Line 113-3 24+00W
GEOLOGIST D. HOLMES DRILLER R. LEGAULT BIT NO. CB67827 BIT FOOTAGE 107.2-125.7

SHIFT HOURS
________ TO ________
TOTAL HOURS
CONTRACT HOURS

MOVE TO HOLE 12:45 - 1:00
DRILL 1:00 - 2:15
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0 - 0.2 Organics

0.2-3.5 TILL (COCHRANE)
- moderately compact gritty oxidized beige clay matrix
pebbles approximately
30% volcanics/sediments
30% granites
40% limestone

3.5-9.5 SEDIMENTS (OJIBWAY)
3.5-6.0 soft pure gray clay
6.0-6.5 soft gritty gray clay
6.5-9.5 fine to very fine gray sand

9.5-16.5 TILL (MATHESON)
- distinct contact with overlying sediment unit
- pebbly, sandy till
9.5-13.0 fine beige to gray-beige sand matrix,
clast composition approximately
60% volcanics/sediments
40% granites
13.0-16.5 till becomes very cobbly, very pebbly
- fine gray-beige sand matrix
clast composition
60% volcanics/sediments
40% granites

16.5-18.5 BEDROCK
- medium green colour
- fine grained, siliceous
- moderate to well foliated structure
- < 1% quartz veins with sulphides
- at 17.4 to 18.0 yellow-green well foliated siliceous zone
- intermediate / felsic volcanic

18.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 3 19 86

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO BPS-86-1133 LOCATION LINE 113-3, 20+00 W

GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO. CB67826 BIT FOOTAGE 0-24.5

MOVE TO HOLE 14.15 - 14.30

DRILL 14.30 - 16.45

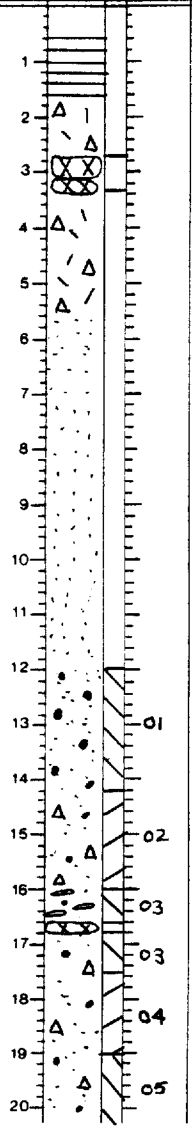
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE 16.45 - 17.00

DEPTH IN METRES | GRAPHIC LOG | INTERVAL | SAMPLE NO.



DESCRIPTIVE LOG

0-.5 NO RETURN

.5-1.5 SEDIMENTS (COCHRANE)
- grey gritty clay

1.5-5.5 TILL (COCHRANE)
- grey gritty clay
- minor fine-med sand
- 5% clasts (beige lmst present)

2.7-3.1 boulder (mafic volcanic)
3.1-3.3 boulder (felsic volcanic)

5.5-14.2 SEDIMENTS (OJIBWAY)

5.5-12.0 grey beige fine sand

12.0-14.2 gravel
- very pebbly - 20% volc/seds
80% granitoid
- minor med-coarse sand

14.2-23.0 TILL (MATHESON)

14.2-16.6 sandy, pebble till
- grey fine-med sand
- pebbles 70% volc/seds
30% granitoid

16.0-16.6 cobbles
30% volc/seds
70 granitoid

16.6-16.8 boulder (granite)

16.8-23.0 till same as 14.2-16.6.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO BPS-86-11331 LOCATION LINE 113-3 20+00W

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ________

DRILL ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			05	
21			06	
22				
			07	
23				23.0 - 24.5 BEDROCK.
			08	-dark green colour
24				-fine grained
25				- moderate - strongly foliated
26				- very soft
27				- <<1% disseminated pyrite.
				- "interm - mafic volcanic"
28				24.5 E.O.H.
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 4 1986
SHIFT HOURS
______ TO ______
TOTAL HOURS
______
CONTRACT HOURS
______

HOLE NO BPS-86-11332 LOCATION L 113-3 16+00 W
GEOLOGIST D. HOLMES DRILLER R. LEGAULT BIT NO. CB67826 BIT FOOTAGE 24.6-49.0
CB67835 0 - 4.0
MOVE TO HOLE
DRILL 8:30 - 12:15
MECHANICAL DOWN TIME
DRILLING PROBLEMS pull rods to replace bit 11:00 - 11:30
OTHER travel by muskeg 6:30 - 8:30
MOVE TO NEXT HOLE

NEW BIT

DEPTH IN METRES	SAMPLE NO.	DESCRIPTIVE LOG
0		0 - 0.2 Organics
1		0.2 - 4.2 TILL (COCHRANE)
2		- beige to brown colour moderately compact gritty clay matrix,
3		granules and pebbles composition 35% volcanics/sediments
4		35% granites 30% limestone
5	01	4.2 - 27.0 TILL (MATHESON)
6		4.2-4.4 Fine beige sand
7	02	4.4-10.0 pebbly, cobbly, sandy till -Fine beige to grey-beige sand matrix
8	03	-clast composition approximately 49% volcanics/sediments
9	04	49% granites 2% limestone
10		10.0-10.3 boulder - diorite
11	05	10.3-13.5 till similar to 4.4 to 10.0 with more cobbles downsection
12		13.5-14.0 boulder - gabbro
13	06	14.0-20.5 till similar to 10.3-13.5
14		
15	07	
16	08	
17	09	
18		
19	10	
20	11	

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 4 1986

HOLE NO BPS-86-11332 LOCATION L 113-3 16+00 W

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS ______ TO ______

MOVE TO HOLE ______

DRILL ______

TOTAL HOURS ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

CONTRACT HOURS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	SAMPLE NO.	DESCRIPTIVE LOG
	11	20.5-21.5 till similar to 14.0 to 20.5 with soft gritty gray clay lumps
21		
22	12	21.5-27.0 till becomes cobbly Fine gray-beige sand matrix clast composition approximately 60% volcanics/sediments 40% granites
23	13	
24		
25	14	24.5 pull rods at 11:00 to 11:30 to replace bit CB67826 lost blade
26	15	
27		27.0-28.5 BEDROCK
28	16 BEDROCK	- medium to dark green - Fine grained - moderate to poor Foliation - occasional siliceous zone (light green colour) - < 1% quartz veins - << 1% sulphides - Intermediate/mafic volcanic
29		
30		
31		
12		
13		28.5 E.O.H.
14		
15		
16		
17		
18		
19		
20		

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 4 1986

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO RPS-86-11333 LOCATION LINE 113-3, 12+00 W

GEOLOGIST G.SHELP DRILLER R.LEGAULT BIT NO. CB67835 BIT FOOTAGE 40-36.0

MOVE TO HOLE 12.15 - 12.30

DRILL 12.30 - 15.00

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE 15.00 - 15.15

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG							
				0 - .2 ORGANICS							
1				.2 - 1.5 SEDIMENTS (COCHRANE)							
2				- grey fine sand - <1% granules.							
3				1.5 - 6.0 TILL (COCHRANE)							
4				- grey gritty clay - grey fine - med. sand. - 1% clasts (<5% beige Lmst.)							
5											
6				6.0 - 8.5 SEDIMENTS (OJIBWAY)							
7				- 6.0 - 7.6 grey soft clay							
8				7.6 - 8.5 silt - grey.							
9				8.5 - 30.5 TILL (MATHESON)							
10			01	- 8.5 - 30.5 cobbly, sandy, pebble till							
11			02	- grey fine sand - pebbles & cobbles 40% volc/seds 60% granitoid							
12			03	- <1% beige Lmst							
13				- occasional sulphide rich cobbles							
14			04								
15				13.0 - 13.2 1% grey gritty clay							
16			05	15.0 - 15.2 boulder (granite) 15.2 - 15.3 20% grey gritty clay							
17			06	15.8 - 16.0 20% grey gritty clay							
18			07	18.0 - 18.2 20% grey gritty clay							
19											
20			08								

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 4 19 86

HOLE NO BPS-86-11333 LOCATION LINE 113-3, 12 +00 W

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS

______ TO ______

MOVE TO HOLE ______

DRILL ______

TOTAL HOURS

______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

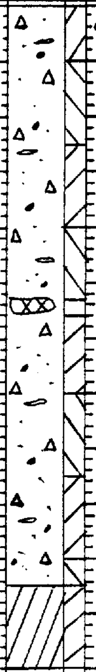
CONTRACT HOURS

______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			08	
21			09	
22				
23			10	
24			11	
25				25.3-25.6 boulder (granite)
26			12	
27			13	
28				
29			14	
30			15	30.0-30.5 Sandy, pebbly, clay till -grey, gritty clay -grey fine-med. sand -2-15% clasts
31			16	
32				30.5-32.0 Bedrock -dark green colour -fine-grained -weakly-moderately folliated -very soft, chlorite? -oxidized -"mafic volcanic"
33				
34				
35				
36				
37				32.0 E.O.H.
38				
39				
40				



OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 4,5 1986

SHIFT HOURS

_____ TO _____

TOTAL HOURS

CONTRACT HOURS

HOLE NO BPS-86-11334 LOCATION L 113-3 8+00 W

GEOLOGIST D. HOLMES DRILLER R. LEGAULT BIT NO. CB67835 / CB67828 BIT FOOTAGE 36.0 - 54.5 / 0 - 7.5

MOVE TO HOLE 3:00 - 3:15

DRILL 3:15 - 5:00

MECHANICAL DOWN TIME

DRILLING PROBLEMS

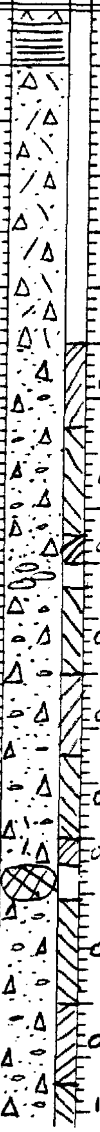
OTHER travel by muskeg 5:00 to 7:00

MOVE TO NEXT HOLE

NEW BIT NEW SUB

page 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						
				0-0.2 Organics				April 5		
1				0.2-1.0 SEDIMENTS (COCHRANE) - compact pure brown clay		travel by muskeg			6:30-8:15	
2						drill			8:15-10:15	
						problems: pull rods to replace bit and sub			8:15 to 8:45	
3				1.0-6.1 TILL (COCHRANE) - beige moderately compact very gritty clay matrix < 5% clasts - decrease in % of clasts downsection - gray colour after 2.5						
7			01							
8			02	6.1-24.4 TILL (MATHESON) 6.1-10.5 pebbly sandy till with occasional cobbles - Fine gray-beige sand matrix clast composition approximately 60% volcanics/sediments 40% granites < 1% limestone - till very cobbly 10.0 to 10.5						
10			03							
11			04							
13			05	10.5-14.8 till cobbly with pebbles - Fine gray to gray-beige sand matrix clast composition approximately 60% volcanics/sediments 40% granites < 1% limestone						
14			06							
15			07	14.8-15.5 till same as above with few soft gritty gray clay lumps						
17			08	15.5-16.1 boulder - granodiorite						
19			09	16.1-24.4 till similar to 10.5 to 14.8						
20			10	- pull rods at 18.5 to replace bit						



OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 25 1986

HOLE NO BPS-86-11334 LOCATION L 113-3 8+00W

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

SHIFT HOURS

____ TO ____

MOVE TO HOLE ________

DRILL ________

TOTAL HOURS

____

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

CONTRACT HOURS

____

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21			10	
22			11	24.4 - 26.0 BEDROCK
23				- light to medium green colour
24			12	- fine grained siliceous rock
25			13 BEDROCK	- poorly foliated structure
26				- granular texture
27				- From 24.4 to 24.6 1 to 2% fine dessiminated sulphides
28				- From 24.6 to 26.0 << 1% pyrite
29				- Felsic/Intermediate Volcanic
30				26.0 E.O.H.
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 5 19 86
HOLE NO BPS-86-11335 LOCATION L 113-3 , 4+00W
GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO. CB67828 BIT FOOTAGE 7.5-34.5
SHIFT HOURS ____ TO ____
MOVE TO HOLE 10.15 - 10.30
DRILL 10.30 - 13.15
TOTAL HOURS ____
MECHANICAL DOWN TIME
DRILLING PROBLEMS
CONTRACT HOURS ____
OTHER
MOVE TO NEXT HOLE 13.15 - 13.30

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0–4				0 – 4.0 NO RETURN
4–7.4				4.0 – 7.4 TILL (COCHRANE) - grey gritty clay - 1-2% clasts (50% beige Lmst)
7.4–9.2			01	7.4 – 9.2 TILL (MATHESON) - 7.4 - 7.6 clayey, sandy, pebble till - grey, gritty clay - grey fine-med. sand - pebbles 60% volc/seds 40% granitoid 7.6 - 9.2 cobbly, sandy, pebble till - grey fine-med. sand - pebbles 60% volc/seds 40% granitoid
9.2–12.0				9.2 – 12.0 SEDIMENTS (MISSINAIBI) grey hard clay
12.0–20			02, 03, 04, 05, 05, 06, 06, 07	12.0 – 25.4 TILL (LOWER TILL) 12.0 - 12.8 clayey, pebble till - grey gritty clay - pebbles 90% volc/seds 10% granitoid 12.8 - 13.3 cobbles - matrix poor - 90% volc/seds 10% granitoid 13.3 - 13.5 boulder (int/mafic volc) - <<1% pyrite 13.5 - 15.3 sandy, pebbly, clay till - grey gritty clay - grey fine-med sand - pebbles 80% volc/seds 20% granitoid - occasional cobble

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 5 19 86

SHIFT HOURS
______TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO BPS-86-11335 LOCATION L-113-3 4+00 W
GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______
MOVE TO HOLE ______
DRILL ______
MECHANICAL DOWN TIME ______
DRILLING PROBLEMS ______
OTHER ______
MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			07	17.3-17.5 boulder (granite)
21				17.5-18.8 sandy, cobble till -grey fine-med sand 17.5-18.0 cobbles 10% volc/seds 90% granitoid
22			08	18.0-18.8 cobbles 80% volc/seds 20% granitoid
23			09	18.8-19.0 boulder (int/mafic volc)
24				19.0-19.5 sandy cobbly till -grey fine-med. sand -cobbles 20% volc/seds 80% granitoid
25			10	
26			11	19.5-20.8 sandy, pebble till -grey, fine-med. sand -pebbles 10% volc/seds 90% granitoid -occasional cobbles
27				
28				20.8-21.0 boulder (granite).
29				21.0-22.5 sandy, cobble till -grey, fine-med sand -cobbles (granitoid). -<1-5% grey, gritty clay
10				
11				22.5-23.0 till same as 13.5-15.3
12				23.0-25.4 sandy, pebble till -grey, fine-med sand -pebbles 60% volc/seds 90% granitoid. -occasional cobble.
13				
14				25.4-27.0 BEDROCK - medium green colour - fine-grained - massive - very siliceous - "felsic volcanic" 26.8-27.0 <1% disseminated py
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 5,6 19__

HOLE NO BPS-86-11336 LOCATION L 113-3 36+00 W

GEOLOGIST D. Holmes DRILLER R. Legault BIT NO CBX7828 BIT FOOTAGE 345·68.7

SHIFT HOURS ____ TO ____

MOVE TO HOLE 1:15 - 3:15

DRILL 3:15 - 5:00

TOTAL HOURS ____

MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

CONTRACT HOURS ____

OTHER Travel by muskeg 5:00 - 6:30

MOVE TO NEXT HOLE ____

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG							
0–1.4				0-1.4 Organics				April 6			
								Travel	6:30 - 8:00		
								drill	8:00 - 9:30		
1.4–2.0				1.4-2.0 SEDIMENTS (COCHRANE) - slightly gritty compact gray clay							
2.0–14.5				2.0-14.5 TILL (COCHRANE) - soft to moderately compact gray gritty clay matrix <2% clasts							
14.5–20.5				14.5-20.5 SEDIMENTS (OJIBWAY) - soft, pure gray and beige varved clay							

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr. 15, 16 19 86

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO BPS-86-11336 LOCATION L 113-3 36+00 W

GEOLOGIST ____ DRILLER ____ BIT NO. ____ BIT FOOTAGE ____

MOVE TO HOLE ____

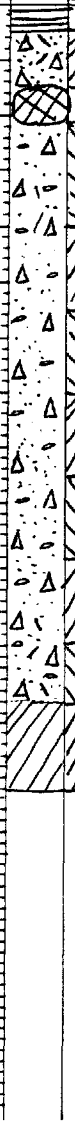
DRILL ____

MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21 – 40			01, 02, 03, 04, 05, 06, 07, 08, 09 BEDROCK	

20.5 - 32.6 TILL (MATHESON)

20.5 - 21.2 clay-rich till
soft gray gritty clay and
fine beige sand matrix
pebbles composition approximately
60% volcanics/sediments
40% granites

21.2 - 21.5 sandy, pebbly till
fine beige sand matrix
clast composition approximately
50% volcanics/sediments
50% granites

21.5 - 22.1 boulder - intermediate/Felsic volcanic

22.1 - 23.0 pebbly, cobbly till
fine gray sand matrix, clast
composition approximately
60% volcanics/sediments
40% granites
<1% limestone

23.0 - 24.2 cobbly till
fine gray sand matrix with gray
gritty soft clay lumps,
clast composition approximately
80% volcanics/sediments
20% granites

24.2 - 31.0 till very cobbly
fine gray sand matrix
clast composition approximately
70% volcanics/sediments
30% granites

31.0 - 32.6 till contains moderately
compact gritty gray clay lumps
clay content increases downsection

32.6 - 34.2 BEDROCK

- gray-green matrix with yellowish, pinkish white phenocrysts
- reddish-orange stain 32.6 to 33.1
- brown rock-flour clay 32.6 to 32.7
- very fine mafic matrix
- phenocrysts of feldspar up to 1cm
- quartz veinlets
- Feldspar porphyry or Altered granite

34.2 EOH

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 6 1986

HOLE NO BPS-86-11337 LOCATION L 113-3, 40+00 W

GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO CR68027 BIT FOOTAGE 0-29.0

SHIFT HOURS ____ TO ____

MOVE TO HOLE 09.30 - 09.45

DRILL 09.45 - 11.45

TOTAL HOURS ____

MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

CONTRACT HOURS ____

OTHER ____

MOVE TO NEXT HOLE 11.45 - 15.45

(NEW BIT)

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0–3.5				0-3.5 ORGANICS
3.5–16.4				3.5-16.4. TILL (COCHRANE) -grey gritty clay -1% clasts (5% beige Lmst). 7.0 - 16.4 2-15% clasts (1-5% beige Lmst) - minor grey fine-med sand
16.4–19.4				16.4-19.4 SEDIMENTS (OJIBWAY) 16.4-19.0 grey, soft clay 19.0-19.4 silt - grey
19.4–20			01	19.4-28.4 TILL (MATHESON) 19.4-27.2 Sandy, pebble till - grey, fine sand - pebbles 60% volc/seds 40% granitoid.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 6 19 96

SHIFT HOURS
____ TO ____

TOTAL HOURS
____

CONTRACT HOURS
____

HOLE NO BPS-86-11337 LOCATION LINE 113-3 40+00
GEOLOGIST ____ DRILLER ____ BIT NO. ____ BIT FOOTAGE ____
MOVE TO HOLE ____
DRILL ____
MECHANICAL DOWN TIME ____
DRILLING PROBLEMS ____
OTHER ____
MOVE TO NEXT HOLE ____

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			01	24.5-27.2 occasional cobble.
21				26.4-26.6 20-30% grey beige gritty clay
22			02	
23				
24			03	
25				
26			04	
27			05	27.2-28.4 pebble clay till -grey, gritty clay -10-15% pebbles
28				
29				28.4-30.0 SEDIMENTS (MISSINAIBI). -grey clay
30			06	30.0-30.3 TILL (LOWER TILL) clayey, sandy, pebble till -grey clay -grey fine sand. -pebbles 70% volc/seds 30% granitoid.
31			07	30.3-32.0 BEDROCK - white, pink, darkgreen colour - coarse grained. - 1/4" feldspar phenocrysts - "granite" 30.6-31.4. quartz vein.
32				32.0 E.O.H.
33				
34				
35				
36				
37				
38				
39				
40				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 6 1986

HOLE NO BPS-86-113 38 LOCATION L 113-1 52+00 W

GEOLOGIST D. HOLMES DRILLER R. LEGAULT BIT NO. CB68027 BIT FOOTAGE 29.0 - 48.0

SHIFT HOURS ____ TO ____

TOTAL HOURS ____

CONTRACT HOURS ____

MOVE TO HOLE 11:45 - 3:45

DRILL 3:45 - 5:15

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER travel muskeg 5:15 - 6:30

MOVE TO NEXT HOLE

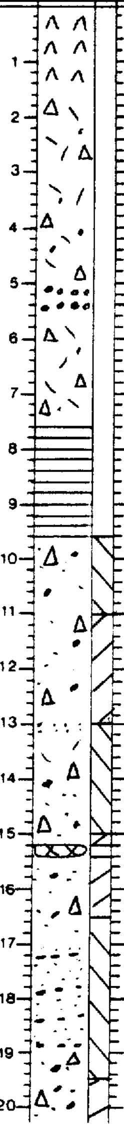
DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						
0–1				0 - 1.0 Organics						
1–3				1.0 - 3.5 SEDIMENTS (COCHRANE) - dark gray moderately compact pure clay						
3–12				3.5 - 12.2 TILL (COCHRANE) - gray gritty moderate compact clay matrix < 1% clasts matrix becomes less compact downsection						
12–17				12.2 - 17.0 SEDIMENTS (OJIBWAY) 12.2 - 16.4 pure gray and beige varved clay, gray clay moderately compact, beige clay soft 16.4 - 17.0 pebble gravel with occasional cobbles, some medium and coarse sand - clast composition approximately 50% volcanics/sediments 50% granites						
17–19			01	17.0 - 19.0 BEDROCK - medium green colour - Fine grained siliceous - well foliated structure	DH July, 1986 character sample analysis of sample 01 indicates a gray fine sand matrix < 50 to 200μ with abundant angular pebbles and cobble cuttings. HMConcentrate contains angular unsorted grains 100 to 1200μ and > 25% pyrite.					
18			02	- Felsic volcanic						
19–20				19.0 EOH						

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 7 1986
SHIFT HOURS ______ TO ______
TOTAL HOURS ______
CONTRACT HOURS ______

HOLE NO BPS-86-11339 LOCATION L113-1, 48+20 W.
GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO CB68027 BIT FOOTAGE 48.0-85.0
MOVE TO HOLE 17.15-17.30 on Apr 6/86
DRILL 08.00-10.45
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER TRAVEL 07.00-08.00
MOVE TO NEXT HOLE 10.45-11.00

DEPTH IN METRES | GRAPHIC LOG | INTERVAL | SAMPLE NO. | DESCRIPTIVE LOG



Sample nos.: 01, 02, 03, 04, 04, 05, 06

0-1.4 ORGANICS.

1.4-7.4 TILL (COCHRANE)
- grey, gritty clay
- 1% clasts (50% beige lmst)

4.0-4.2 15-20% clasts

5.0-5.6 pebble (gravel)
- 50% volc/seds
50% granitoid.

7.4-9.5 SEDIMENTS (OJIBWAY)
- grey and greybeige soft clay

9.5-24.0 TILL (MATHESONS).

9.5-13.0 sandy pebble till
- grey beige-beige fine sand
- pebbles 60% volc/seds
40% granitoid.

13.0-13.2 beige fine sand.

13.2-13.8 very sandy, pebble till
- beige fine sand
- 10% pebbles
- <1% grey, gritty clay

13.8-15.2 sandy, pebble till
- beige fine sand
- pebbles 30% volc/seds
70% granitoid

15.2-15.4 boulder (inter/mafic volcanic).

15.4-16.4 till same as 13.8-15.2
except pebbles 60% volc/seds
40% granitoid

16.4-19.0 beige fine sand
with interlayered clayey pebble layers

19.0-24.0 sandy, very pebbly till
- grey-grey beige fine-med sand
- pebbles 60% volc/seds
40% granitoid
- occasional cobble.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 7 19 86
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO BPS-86-11339 LOCATION L 113-1 , 48+20 W
GEOLOGIST _____ DRILLER _____ BIT NO. _____ BIT FOOTAGE _____
MOVE TO HOLE _____
DRILL _____
MECHANICAL DOWN TIME _____
DRILLING PROBLEMS _____
OTHER _____
MOVE TO NEXT HOLE _____

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21			06, 07	
22				22.0 - 22.3 - 30% grey, gritty clay
23			08, 08	22.7 - 23.0 boulder (int/mafic volc) 23.0 - 24.0 occasional lithified grey, granular, clay clasts
24–29			09, 10	24.0 - 29.6 SEDIMENTS (MISSINAIBI) - grey beige - beige very fine - fine sand interlayered with occasional seams of pebbles and clay
29–35			11, 12, 13, 14	29.6 - 35.5 TILL (LOWER TILL) sandy pebble till - grey fine - med. sand - pebbles 70% volc/seds 30% granitoid 32.0 - 35.5 1 - 20% grey gritty clay
36–37			15	35.5 - 37.0 BEDROCK - dark green - fine grained - massive "inter/mafic volcanic"
38				
39				
40				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 7 19 86

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO BPS-86-11340 LOCATION L 113-1 44+20 W

GEOLOGIST D Holmes DRILLER R. Legault BIT NO CB67829 BIT FOOTAGE 0 - 42.6

MOVE TO HOLE 10:45 - 11:00

DRILL 11:00 - 4:30

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE 4:30 - 7:00

MOVE TO NEXT HOLE APRIL 8 8:00 - 3:30

NEW BIT

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0–3				0 - 3.2 TILL (COCHRANE) - beige moderately compact gritty clay matrix with fine beige sand < 5% clasts
4			01	3.2 - 40.4 TILL (MATHESON) 3.2 - 13.4 sandy pebbly till Fine beige sand matrix, clast composition approximately 40% volcanics/sediments 60% granites
5			02	
7			03	13.4 - 14.8 till as above with occasional cobbles
8			04	14.8 - 15.2 boulder - granite 15.2 - 19.7 clay-rich till - soft gray gritty clay matrix with fine gray sand pebbles and cobbles approximately 50% volcanics/sediments 50% granites
10			05	
11			06	
13			07	19.7 - 20.2 pebbly cobbly till Fine gray-beige sand matrix clast composition approximately 60% volcanics/sediments 40% granites
14			08	
16			09	
18			10	
20			11	

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 7 19 86

HOLE NO BPS-86-11340 LOCATION L113-1 44+20 W

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS ______ TO ______

MOVE TO HOLE ______

DRILL ______

TOTAL HOURS ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

CONTRACT HOURS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21–40			11, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23	20.2 - 20.8 boulder - granite 20.8 - 30.0 till sandy, pebbly with occasional cobbles - fine gray sand matrix with soft gritty gray clay lumps - clast composition approximately 60% volcanics/sediments 40% granites 30.0 - 30.4 boulder - intermediate/mafic volcanic 30.4 - 40.4 till very cobbly Fine gray to gray-beige matrix clast composition approximately 75% volcanics/sediments 25% granites

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 7 19 86

HOLE NO BPS-86-11340 LOCATION L113·1 44+20 W

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS
______ TO ______

MOVE TO HOLE ______

DRILL ______

TOTAL HOURS
______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

CONTRACT HOURS
______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			23	
41				
42			24 BEDROCK	
43				
				40.4 - 42.6 - BEDROCK
44				40.4 - 41.8 ochre-yellow-pink colour clay, occasional quartz fragments indicate veins
45				
46				41.8 - 42.6 Few small rock chips within clay
47				chips - light green colour
48				- fine grained
				- well foliated structure
49				- highly oxidized
50				- contains quartz veins
11				42.6 EOH
12				
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE March 19 1986 — HOLE NO DPS86-113-15 — LOCATION L 113-1, 44+00W

GEOLOGIST D. Zabey — DRILLER R. Legault — BIT NO. 600464 — BIT FOOTAGE 4.4 → 47.9

SHIFT HOURS ____ TO ____ — MOVE TO HOLE 2:45 - 3:00

DRILL 3:05 - 5:00

TOTAL HOURS ____ — MECHANICAL DOWN TIME ____

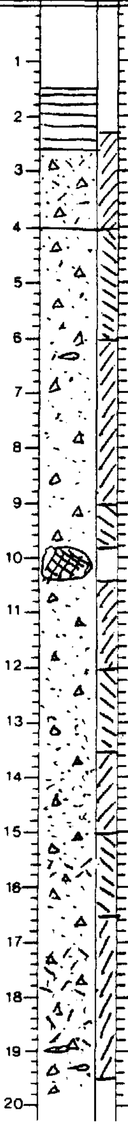
DRILLING PROBLEMS ____

CONTRACT HOURS ____ — OTHER major problems with return. Hole abandoned at 43.5m.

MOVE TO NEXT HOLE On March 21 7:30 - 7:45

New bit CB67960 and new sub at 43.5m.

March 20/86 start at 8:00 to 4:30 pm.



DEPTH IN METRES	SAMPLE NO.	DESCRIPTIVE LOG						
		0-1.5 No return						
1–2		1.5 - 2.6 Organics and brown-beige gritty clay						
3	01	2.6 - 4.0 Till						
4–6	02	- Brown-beige clayey with 10 - 20% clasts mainly light brown limestone and some pinkish granitic clasts. - fine sand matrix ~ 15% - beige.						
7–8	03 (poor return)	4.0 - Till (Matheson) 4.0-6.0 - Pebbly with beige to gray, fine to med. sand matrix.						
9	04	- clasts: green volc/sed. 70% intrusives 30%	Note:	poor	return	7.0 - 8.5		
10–11	05	6.0 - 8.5 - Sandy, pebbly with occ. cobbles at 6.30						
12–13	06	8.5 - 15.60 - V. sandy till - beige to gray sandy matrix - clasts: volcanics 40% intrusives 60%						
14	07	- occ. limestone clasts. 9.8 - 10.40 - Boulder - granitic						
15	08	From 13.0 volc/sed. clasts 60%.						
16–17		15.6 - 15.7 Clayey till gray clay coating clasts After 15.7 gray to beige fine sand dominant.						
18	09 (poor return)							
19–20	no return	17.0 Clayey till - Low % of clasts (~10%) - volc. 80% intr. 20%. mafic cobbles at 19.30m						

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

HOLE NO BPS86- 113-15 LOCATION ________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

SHIFT HOURS ________ TO ________

MOVE TO HOLE ________

DRILL ________

TOTAL HOURS ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

CONTRACT HOURS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						
21				No return - occ. gray clayey clasts						
22										
23				poor return						
24			10							
25										
26										
27										
28										
29										
30										
31										
32				poor return - fine sand - grayish						
33			11							
34										
35										
36										
37										
38			12	v. poor return At 38 - minor pebbles						
39										
40										

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO BPS86-113-15 LOCATION ____

GEOLOGIST ____ DRILLER ____ BIT NO. ____ BIT FOOTAGE ____

MOVE TO HOLE ____

DRILL ____

MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
41				minor chips - no matrix
42				No return
43				
44				
45				Hole abandoned at 43.5m due to return problems.
46				
47				Notes: Driller opinion is that the return problems are due to water ~~to~~ bearing horizon (???)
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Mar 21 19 86

SHIFT HOURS
____ TO ____

TOTAL HOURS
____

CONTRACT HOURS
____

HOLE NO BPS-86-11316 LOCATION LINE 113-1 , 48+00 W
GEOLOGIST G. SHEEP DRILLER R LEGAULT BIT NO. CB67960 BIT FOOTAGE 0 - 10.5
MOVE TO HOLE 7.30 - 7.45 am.
DRILL 7.45 - 10.00 AM.
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER TRAVEL 06.30 - 07.30
MOVE TO NEXT HOLE 10.00 - 13.00

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0–1.2				0 - 1.2 Organics
1.2–3.5				1.2 - 3.5 Sediments (COCHRANE) - grey, soft, gritty clay
3.5–7.0				3.5 - 7.0 Till (COCHRANE) - grey gritty clay - 1% clasts (Lmst)
7.0–9.0				7.0 - 9.0 Sediments (OJIBWAY) - grey, soft, non-gritty, clay
9.0–				9.0 - Till (MATHESON) 9.0 sandy pebbly till. very poor return.
10.5				10.5 HOLE aborted., no return move to line 113-2.

GRID 10-110

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 9 19 86

SHIFT HOURS ____ TO ____

TOTAL HOURS ____

CONTRACT HOURS ____

HOLE NO BPS-86-11009 LOCATION Angle River, 24+00S

GEOLOGIST ____ DRILLER R. LEGAULT BIT NO. B000073 BIT FOOTAGE 0-20.5

MOVE TO HOLE 7.15 - 8.30

DRILL 9.30 - 9.32

MECHANICAL DOWN TIME 8.30-9.30 fix hydraulic clamp

DRILLING PROBLEMS at 9.32, the head came off its track

OTHER rest of day - downtime

MOVE TO NEXT HOLE ____

Apr 10/86 7.00 - 11.30 down time.
11.30 - 13.00 move.
13.00 - 14.15 drill

NEW BIT

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0–3				0-3.0 NO RETURN
3–14.5				3.0-14.5 TILL (COCHRANE) - grey-beige, slightly gritty, mod. compact clay - <1% granules, pebbles. - clay becomes softer and has less grit down section (Cochrane Sediments?)
14.5–18.6				14.5-18.6 SEDIMENTS (OJIBWAY) - gray, soft, pure clay - occasional dropstone pebbles
18.6–18.8				18.6-18.8 boulder (interm/mafic volc) - <1% pyrite.
18.8–19.2			01	18.8-19.2 TILL (MATHESON) - gray fine sand matrix - very cobbly - clasts 60% volc/seds 40% granitic
19.2–20.5			02	19.2-20.5 BEDROCK ("Felsic/inter volc") - light - medium green and white. - fine grained - moderate - strong folliation - ≃ 2% qtz veins with <<1% pyrite. - << 1% sulphides (chalcopyrite, pyrite) - some carbonate
				20.5 - E.O.H

Depth scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 10 1986
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO BPS-86-11010 LOCATION Angle River, 20+00S
GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO. 8000073 BIT FOOTAGE 20.5-45.5
MOVE TO HOLE 14.15 - 14.30
DRILL 14.30 - 15.45.
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE 15.45 - 16.00

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 - 1.0 ORGANICS.
1				1.0 - 12.0 TILL (COCHRANE) - grey beige gritty clay - <1% clasts. (10% beige Cmst)
12				12.0 - 17.0 SEDIMENTS (COCHRANE) -grey beige, gritty clay
17				17.0 - 18.5 SEDIMENTS (OJIBWAY) -grey and grey beige, soft, pure clay
19			01	18.5 - 23.6 TILL (MATHESON)
20			02	18.5-20.5 very sandy, very pebbly till -grey fine-med sand. -pebbles 50% volc/seds 50% granitoid. -occasional cobble 19.2-19.4 boulder (gabbro).

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 10 1986

SHIFT HOURS
____ TO ____

TOTAL HOURS
____

CONTRACT HOURS
____

HOLE NO BPS-86-11010 LOCATION Angle River, 20+00W
GEOLOGIST ____ DRILLER ____ BIT NO. ____ BIT FOOTAGE ____
MOVE TO HOLE ____
DRILL ____
MECHANICAL DOWN TIME ____
DRILLING PROBLEMS ____
OTHER ____
MOVE TO NEXT HOLE ____

DEPTH IN METRES	SAMPLE NO.	DESCRIPTIVE LOG
21–23	02, 03, 04	20.5-23.6 sandy, pebbly, clay till - grey, gritty clay - 20-30 % pebbles 90% volc/seds 10% granitoid - grey fine-med. sand
24–25	05	23.6-25.0 BEDROCK. - dark green colour - fine-grained - massive. - oxidized fractures - "interm/mafic volc" 24.2-24.5 <1% pyrite. 25.0 E.O.H.

Depth scale: 21, 22, 23, 24, 25, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 10 1986

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO BPS-86-11011 LOCATION Angle River, 16+00S

GEOLOGIST D. HOLMES DRILLER R. LEGAULT BIT NO. 8000073 BIT FOOTAGE 455-527

MOVE TO HOLE 15.45 - 16.00

DRILL 16.00 - 16.45

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER TRAVEL 17.00 - 18.00

MOVE TO NEXT HOLE 16.45 - 17.00

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 - 0.2 ORGANICS
1				0.2 - 2.5 SEDIMENTS (COCHRANE). - dark brown pure clay underlain by beige pure clay - mod. compact
3				2.5 - 9.2 TILL (COCHRANE) - grey - grey beige compact gritty clay matrix - < 5 % clasts - Softer and less grit downsection (COCHRANE? SEDIMENTS)
8				9.2 - 10.6 TILL (MATHESON) - cobbly, pebbly, sandy till - grey beige fine sand matrix - pebbles 50% volc/seds 50% granitic - compact, grey, gritty, clay lumps at 10.4
10			01	10.4 - 10.6 boulder (interm/mafic volc)
11			02	10.6 - 12.2 BEDROCK. - Light green to white colour - fine grained. - massive. - < 1% pyrite - "felsic volcanic"
12				12.2 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 11 1986
SHIFT HOURS
____ TO ____
TOTAL HOURS
CONTRACT HOURS

HOLE NO BPS-86-11012 LOCATION Angle River, 12+00S
GEOLOGIST G SHELP DRILLER R. LEGAULT BIT NO. B000073 BIT FOOTAGE 57.7-75.2
MOVE TO HOLE
DRILL 08.30 - 10.15
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER TRAVEL 06.30 – 08.30
MOVE TO NEXT HOLE 10.15 – 10.30

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-.2 ORGANICS.
1				.2-1.2 SEDIMENTS (COCHRANE) - beige, slightly gritty, moderately compact clay
3				1.2-7.0 TILL (COCHRANE) -grey beige gritty clay -<1% clasts (10% beige Lmst) -3.2-3.6 boulder (granite) << 1% pyrite -5.0-7.0 NO SAMPLE RETURN (very soft clays ??).
7			01	7.0-16.0 TILL (MATHESON) -7.0-7.8 sandy, very pebbly till - grey fine-med. sand - pebbles 70% volc/seds 30% granitoid - occasional cobble - occasional pyrite bleb (≃1/8") 7.6-7.8 <1% grey, gritty clay 7.8-8.0 boulder (felsic volcanic) 10.4—10.8 15% grey gritty clay
9			02	
10			03	
12			04	
14			05	
15			06	
16			07	16.0-17.5 BEDROCK 16.0-16.1 qtz vein (oxidized). 16.1-17.5 white, dark green colour -med-coarse grained -massive -very siliceous. - "granite" 16.1-17.0 ≃ 1% pyrite 17.0-17.5 << 1% pyrite.

17.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 11 1986

SHIFT HOURS
____ TO ____

TOTAL HOURS
____

CONTRACT HOURS
____

HOLE NO BRS-86-11013 LOCATION Angle River, 8100 S.
GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO CA 68046 BIT FOOTAGE 0-13.5
MOVE TO HOLE 10.15 - 10.30
DRILL 10.30 - 11.30
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE 11.30 - 11.45

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 - 0.5 NO RETURN
1				0.5 - 4.5 TILL (COCHRANE)
2				- beige, gritty clay
3				- < 1% clasts.
4				
5				4.5 - 7.4 SEDIMENTS (COCHRANE)
6				- grey gritty clay
7				
8				7.4 - 7.6 SEDIMENTS (OJIBWAY)
9			01	- grey and beige soft pure clay (varves).
10			02	7.6 - 12.1 TILL (MATHESON)
11			03	7.6 - 11.2 sandy, pebble till
12				- grey fine-med. sand
13			04	- pebble 50% volc/seds, 50% granitoid
				- occasional cobble.
14				10.0 - 11.2 pebble 70% volc/seds 30% granitoid
15				
16				11.2 - 12.1 pebble, clay till
				- grey, gritty clay
17				- 10-40% pebbles.
				- occasional cobble.
18				12.1 - 13.5 BEDROCK
19				- dark green colour
20				- fine grain
				- massive
				- " mafic volcanics"

12.1-12.5 - <1% euhedral pyrite (1/16")

13.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 1986

SHIFT HOURS
_____ TO _____

TOTAL HOURS
_____

CONTRACT HOURS
_____

HOLE NO BPS-86-11014 LOCATION Angle River, 0400 S
GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO. CR68096 BIT FOOTAGE 13.5-24.0
MOVE TO HOLE 11.30 - 11.45
DRILL 11.45 - 13.00
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE 13.00 - 13.15

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 – 1.2 No Return
1				1.2 – 5.0 Till (Cochrane)
2				- beige, gritty, moderately compact clay
3				- < 1% clasts (≃ 8% beige) Lmst
4				4.4 – 5.0 Cobbles 80% volc/seds 20% granitoid.
5				5.0 – 6.5 Sediments (Ojibway)
6				- Light grey, soft, pure clay
7				
8			01	6.5 – 8.8 Till (Matheson)
9				7.3-8.6 – pebble, clay till
10			02	- grey gritty clay - 5-15% pebbles
11				8.6-8.8 grey soft clay
12				8.8 – 10.5 Bedrock
13				- Light green colour
14				- fine grained matrix with medium-coarse grained mafics.
15				- very siliceous
16				- "felsic volc or granite"
17				8.8–8.9 & 9.4–9.7 oxidized zones
18				10.5 E.O.H.
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 11 1986

SHIFT HOURS
____ TO ____

TOTAL HOURS
____

CONTRACT HOURS
____

HOLE NO BPS-86-11015 LOCATION Angle River, 0+00
GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO CB68046 BIT FOOTAGE 24.0-38.0
MOVE TO HOLE 1300-13.15
DRILL 13.15-14.30
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE 14.30-14.45

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-.2 ORGANICS
1				.2-3.5 SEDIMENTS (COCHRANE)
				- beige gritty clay
2				
3				
				3.5-9.0 TILL (COCHRANE)
4				- grey gritty clay
				- <1% clasts (<5% beige Lmst)
5				
6				
7				
8				
9				9.0-10.4 SEDIMENTS (COCHRANE)
				- grey, slightly gritty clay
10				- clay is moderately compact
11			01	- occasional dropstone
12			02	10.4-12.4 TILL (MATHESON)
				10.4-10.6 boulder (granite)
13			03	10.6-12.4 sandy, very pebbly till
14				- grey fine-med. sand
15				- pebble 60% volc/seds
				- occasional cobble
16				- occasional sulphide rich fragments
17				12.4-14.0 BEDROCK
18				- reddish brown colour
				- fine-grained
19				- massive
				- very siliceous
20				- "felsic volcanic"

14.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 11 1986
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO BPS-86-11016 LOCATION Angle River, 4+00 N
GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO. CB68046 BIT FOOTAGE 38.0-55.5
MOVE TO HOLE 14.30-14.45
DRILL 14.45-15.30
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE 15.30-15.45

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0				0-.2 ORGANICS
1				.2-10.0 TILL (COCHRANE). - grey, gritty, compact clay - <1% clasts (≃20% beige Lmst)
10				10.0-15.6 SEDIMENTS (OJIBWAY) - grey and grey beige coloured (varves) clay - soft and pure.
15			01	15.6-15.8 TILL (MATHESON) - cobbles 90% volc/seds 10% granitoid - minor amount of grey fine-med. sand.
16-17			02	15.8-17.5 BEDROCK - dark green - fine grained - massive. - "mafic volcanic"

17.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 11 1986

SHIFT HOURS

___ TO ___

TOTAL HOURS

CONTRACT HOURS

HOLE NO BPS-86-11017 LOCATION Angle River, 8+00 N

GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO. CB68046 BIT FOOTAGE 555 - 81.0

MOVE TO HOLE 15.30 - 15.45

DRILL 15.45 - 16.45

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER TRAVEL 16.45 - 17.30

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0				0 - .2 ORGANICS
1				.2 - 3.5 SEDIMENTS (COCHRANE) - grey gritty clay
3				3.5 - 12.2 TILL (COCHRANE) - grey gritty clay - <1% clasts (30% beige cmst)
12				12.2 - 23.6 SEDIMENTS (OJIBWAY) - grey, soft, very slightly gritty clay
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

HOLE NO 11017 LOCATION

DATE ______ 19 __

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS

MOVE TO HOLE

______ TO ______

DRILL

TOTAL HOURS

MECHANICAL DOWN TIME

DRILLING PROBLEMS

CONTRACT HOURS

OTHER

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21				
22				
23				23.6 - 23.8 TILL (MATHESON)
24			01	sandy pebble till - grey fine - med sand. - pebbles 90% volc/seds 10% granitoid.
25			02	
26				23.8 - 25.5 BEDROCK.
27				- dark green colour
28				- fine grained.
29				- massive. - "mafic volcanic"
10				- 25.0 - 25.5 qtz vein.
11				- minor thin carbonate veins at 24.2, 25.4.
12				25.5 E.O.H.
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 12 1986

HOLE NO -86- BPS-11018 LOCATION 12+00N, Angle River

GEOLOGIST G SHELP DRILLER R. LEGAULT BIT NO. CB68046 BIT FOOTAGE 810-1250

SHIFT HOURS ____ TO ____

MOVE TO HOLE 7:40 - 8:00

DRILL 8:00 - 13:00

TOTAL HOURS ____

MECHANICAL DOWN TIME

DRILLING PROBLEMS

CONTRACT HOURS ____

OTHER Travel 7:00 - 7:30

MOVE TO NEXT HOLE 13:00 - 13:15

New Bit (CB68026, start at 31.2 m, drill to 440 = 12.8 m)

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0				0 - .2 ORGANICS
1				.2 - 12.0 TILL (COCHRANE)
2				- grey, gritty, mod. compact clay
3				- <1 % clasts (10% beige Cmst)
7				7.0 - 7.4 10-25% clasts
12				12.0 - 15.0 SEDIMENTS (COCHRANE) - grey, slightly gritty, soft clay
15				15.0 - 22.8 SEDIMENTS (OJIBWAY)
16				- grey and grey beige clays (varves) - soft, pure clay
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS-86-1101B LOCATION Angle River, 12+00 N

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ________

DRILL ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

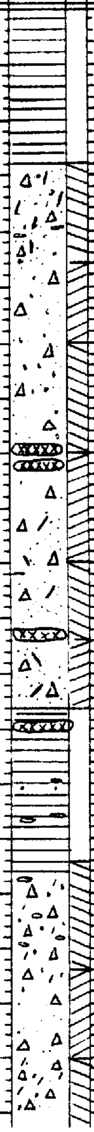
OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG

Depth scale: 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40

Sample nos.: 01, 02, 03, 04, 05, 06, 07, 08, 09



22.8-32.6 TILL (MATHESON).

22.8-27.8 very sandy, pebble till
- grey fine-med. sand
- pebbles 60% volc/seds 40% granitoid
- occasional cobble.

23.8-24.6 10-30% grey gritty clay

25.0-27.2 pebbles 70% volc/seds 30% granitoid

27.2-27.8 pebbles 90% volc/seds 30% granitoid.

27.8-28.0 boulder (gabbro)

28.0-28.3 boulder (mafic volcanic)

28.3-29.4 till same as 22.8-27.8

29.4-31.2 pebble, clay till
- grey, gritty clay
- 10-20% pebbles reduced to 1-2% by 30.0.

31.2-31.4 boulder (felsic volc)

31.4-32.0 till same as 29.4-31.2

32.0-32.3 boulder (granite)

32.3-32.6 till same as 29.4-31.2

32.6-35.6 SEDIMENTS (MISSINAIBI)

32.6-34.6 grey, pure, mod. compact clay

32.8-33.0 boulder (felsic volcanic).

34.0-34.6 occasional pebbles

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO ARS-86-1018 LOCATION Angle River, 12+00N

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

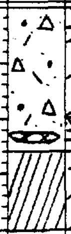
DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.
			09
41			10
42			11
			11
43			12
44			
45			
46			
47			
48			
49			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

DESCRIPTIVE LOG

35.6 - 42.6. TILL (LOWER).

35.6 - 35.8 Cobbles
60% volc/seds
40% granitoid.

35.8 - 39.2 Cobbly, pebbly, clay till
- grey beige gritty clay
- pebbles & cobbles 70% volc/seds 30% granitoid.

39.2 - 40.6 Cobbly, sandy pebble till
- grey fine-med sand.
- pebble & cobble 70% volc/seds 30% granitoid.

40.6 - 42.4. boulder (granite)

42.6 - 44.0 BEDROCK
- dark green and cream colour
- med-coarse grained.
- massive
- "gabbro"
- << 1% disseminated pyrite

44.0 E.O.H

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 12 1986

SHIFT HOURS ____ TO ____

TOTAL HOURS ____

CONTRACT HOURS ____

HOLE NO BPS-86 11019 LOCATION 16+00N , Angle River

GEOLOGIST ____ DRILLER ____ BIT NO. CB68026 BIT FOOTAGE 128-418

MOVE TO HOLE 13:00 - 13:15

DRILL 13:15 - 14:45

MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE 14:45 - 15:00

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-.2 ORGANICS
1				.2-9.2 TILL (COCHRANE).
2				.2-3.0 grey gritty clay <1% clasts (<5% beige cmst).
3–4				3.0 -clay changes to grey beige
5–9				
10				9.2-11.6 SEDIMENTS (COCHRANE) -grey beige gritty clay
11–12				11.6-23.0 SEDIMENTS (OJIBWAY) -grey and grey beige, slightly gritty clay (varves).
13–20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO BPS-86-11019 LOCATION Angle River, 16+00N
GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________
MOVE TO HOLE ________
DRILL ________
MECHANICAL DOWN TIME ________
DRILLING PROBLEMS ________
OTHER ________
MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21				
22				
23				23.0-27.6 TILL (MATHESON)
24			01	23.0-23.3 cobbly, sandy, pebble till -grey fine-med sand -pebbles 40% volc/seds -cobbles 60% granitoid.
25				
26			02	23.3-23.6 boulder (interm/mafic volc)
27			03	23.6-24.6 till same as 23.0-23.3
28			04	24.6-25.3 boulder (interm/mafic volc).
29				25.3-27.6 till same as 23.0-23.3 <<1% pyrite blebs
30				27.6-29.0 BEDROCK -dark green colour - fine-grained. - weakly foliated. - siliceous - occasional carbonate veins (1/8") - <<1% euhedral pyrite - "interm/mafic volcanic"
11				
12				
13				
14				
15				
16				29.0 E.O.H.
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 12 1986
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO BPS-86 11020 LOCATION Angle River, 20+00 N
GEOLOGIST G SHELP DRILLER R. LEGAULT BIT NO CB18026 BIT FOOTAGE 918-933
MOVE TO HOLE 14.45 - 15.00
DRILL 15.00 - 17.00
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER TRAVEL 17.00-18.00
MOVE TO NEXT HOLE

April 13/86 TRAVEL 7.00-8.00
DRILL 8.00 - 9.30
MOVE 9.30 - 9.45.

DEPTH IN METRES	DESCRIPTIVE LOG
0	0 - .5 ORGANICS
1	.5 - 11.6 TILL (COCHRANE)
2	- grey beige gritty, mod compact clay
3	- <1% clasts (20% beige Lmst)
4	
5	
6	
7	
8	
9	
10	
11	
12	11.6 - 15.2 SEDIMENTS (COCHRANE)
13	- grey beige, soft, gritty clay - occasional dropstone
14	
15	15.2 - 34.0 SEDIMENTS (OJIBWAY)
16	- grey beige and grey slightly gritty, soft clay (varves).
17	
18	
19	
20	

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO BPS 86-11020 LOCATION Angle River, 20+00 N

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				34.0 - 37.8 TILL (MATHESON)
35				34.0 - 37.8 sandy, pebble clay till
36			01	- grey, gritty clay
37				- grey fine-med sand - 10-25% pebbles
38				36.2 - 36.3 grey fine sand
39			02	36.3 - 36.5 grey-beige clay
40				37.8 - 44.4 SEDIMENTS (MISSINAIBI)

- grey fine sand with thin pebble and clay interlayers

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS-86-11020 LOCATION Angle River, 20+00N

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ________

DRILL ________

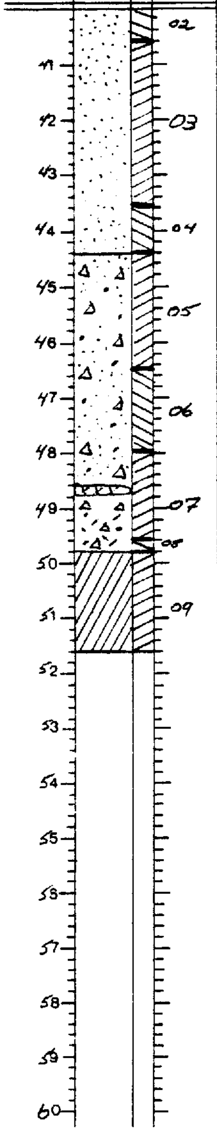
MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



44.4-49.8 TILL (LOWER TILL)

44.4-48.6 Sandy, pebble till
- grey fine-med sand
- pebbles 40% volc/seds
60% granitoid

by 45.0 pebbles
60% volc/seds
40% granitoid

48.6-48.8 boulder (mafic volcanic)

48.8-49.8 pebbly clay till
- grey gritty clay
- 20-40% pebbles
80% volc/SEDS
20% granitoid.
- occasional cobble.

49.8-51.6 BEDROCK
- dark green
- fine-grained
- massive
- siliceous
- "interm/mafic volcanic"
- << 1% disseminated pyrite
- occasional thin carbonate vein

51.6 E.O.H

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 13 1986

HOLE NO BPS-86 11021 LOCATION Angle River, 23+80N

GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO. B000071 BIT FOOTAGE 0-13.5

SHIFT HOURS ____ TO ____

MOVE TO HOLE 9.30 - 9.45

DRILL 9.45 - 11.00

TOTAL HOURS ____

MECHANICAL DOWN TIME

DRILLING PROBLEMS

CONTRACT HOURS ____

OTHER

MOVE TO NEXT HOLE 11.00 - 12.00

New BIT and SuB.

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 - .4 ORGANICS
1				.4 - 11.8 TILL (COCHRANE)
				- beige gritty clay
2				- < 1% clasts (≃ 10% beige Lmst)
3				- by 3.0 clay is grey and gritty
8				8.2-8.4 gravel (pebbly) 70% volc/seds 30% granitoid (≃ 30% beige Lmst)
11			01	10.6-10.8 boulder (mafic volcanic)
12			02	10.8 - 11.8 TILL (MATHESON)
				cobbly, sandy, pebble till
				- grey fine-med. sand
				- pebbles + cobbles 70% volc/seds 30% granitoid
16				11.8 - 13.5 BEDROCK
				- dark green
				- fine-grained
				- massive
				- siliceous
				- "mafic volcanic"
				- << 1% euhedral pyrite
20				- occasional thin carbonate veins

13.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 13 19 86
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO BPS 86-11022 LOCATION Angle River, 4700 W
GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO. B0000 71 BIT FOOTAGE 13.5-42.0
MOVE TO HOLE 11.00-12.00
DRILL 12.00-14.30
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE 14.30-14.45

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0				0-1.4 ORGANICS
1				1.4-11.2 TILL (COCHRANE)
2				- grey beige, gritty clay - 1% clasts (10-20% beige Lmst)
3				
4				
5				
6				
7				
8				
9				
10				
11				11.2-15.4 SEDIMENTS (OJIBWAY) - grey and grey-beige, soft, pure clays (varves)
12				
13				
14				
15				15.4-26.8 TILL (MATHESON)
16			01	- sandy, very pebbly till - grey fine-med sand
17				- pebbles 60% volc/seds 40% granitoid
18			02	- occasional cobbles
19			03	- occasional lithified, gritty, granular grey clay clasts
20			04	

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

HOLE NO BPS-86-11022 LOCATION Angle River, 4+00W

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

SHIFT HOURS ________ TO ________

MOVE TO HOLE ________

DRILL ________

TOTAL HOURS ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

CONTRACT HOURS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			04	
21			05	
22				22.6-22.8 boulder (granite)
23			06	
24				24.0-24.4 <<1% sulphide clasts.
25			07	25.0 -26.8 Sandy, cobble till -grey fine-med sand -cobbles 60% volc/seds 40% granitoid
26			08	
27			09	
28				26.8-28.4 BEDROCK - bleached green colour - fine grained - massive - very siliceous - <<1% pyrite - "felsic volcanic" 27.8-28.0 1-3% pyrite
29				
10				
11				
12				
13				28.4 E.O.H
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 13 1986

SHIFT HOURS
____ TO ____

TOTAL HOURS
____

CONTRACT HOURS
____

HOLE NO BPS 86 11023 LOCATION Angle River, 8400W

GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO. 8000071 BIT FOOTAGE 42.0-74.5

MOVE TO HOLE 1930 - 1945

DRILL 1945 - 1700

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Apr 14/86 TRAVEL 7.00 - 7.30
DRILL 7.30 - 8.30
MOVE 8.30 - 8.45

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0				0 - .2 ORGANICS
1				.2 - 13.0 TILL (COCHRANE)
				- dark beige, gritty clay
2				- < 1% clasts
3				2.0 - 2.2 boulder (granite)
4				by 2.2 clay is grey beige
5				
6				
7				
8				
9				
10				
11				
12				
13				13.0 - 18.0 SEDIMENTS (COCHRANE)
14				- grey beige, soft, slightly gritty clay
15				- occasional dropstone
16				
17				
18				18.0 - 21.8 SEDIMENTS (OJIBWAY)
19				- grey and grey-beige,
20				pure, soft clay (varves)

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ______ 19 __

SHIFT HOURS
____ TO ____

TOTAL HOURS
____

CONTRACT HOURS
____

HOLE NO BPS-86-11023 LOCATION Angle River, 8+00 W
GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______
MOVE TO HOLE ______
DRILL ______
MECHANICAL DOWN TIME ______
DRILLING PROBLEMS ______
OTHER ______
MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21				
22			01	21.8 - 31.0 TILL (MATHESON)
23				21.8-22.8 Sandy, very pebbly till -grey fine-med. sand -pebbles 60% volc/seds 40% granitoid. -occasional cobble
24			02	
25				
26			03	22.8-23.2 boulder (granite)
27				23.2-24.0 cobbles 10% volc/seds 90% granitoid -minor grey fine sand
28			04	
29			05	24.0-25.0 cobbly, sandy, pebble till -grey fine-med sand -pebble 20% volc/seds & cobble 80% granitoid
30			06	
31				
32			07	25.0-25.2 boulder (granite)
33				25.2-25.4 boulder (gabbro) <1% pyrite
34				26.4-27.4 cobbles 20% volc/seds 80% granitoid
35				27.4-31.0 till same as 24.0-25.0 pebbles & cobbles 40% volc/seds 60% granitoid
36				
37				
38				31.0-32.5 BEDROCK
39				- dark green - fine-grained, massive - siliceous
40				- << 1% euhedral pyrite - "interm/mafic volcanic"

32.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 14 1986

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO BPS 86 11024 LOCATION Angle River, 11+00 W

GEOLOGIST G SHELP DRILLER R. LEGAULT BIT NO. RC00075 BIT FOOTAGE 0 - 60.0

MOVE TO HOLE 8.30 - 8.45

DRILL 8.45 - 14.45

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 1 of 3

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0				0 - .6 ORGANICS
1				.6 - 3.8 TILL (COCHRANE)
				- beige gritty clay
2				- <1% clasts
3				3.5 - 3.8 pebbly gravel
4				3.8 - 4.8 SEDIMENTS (COCHRANE)
5				- grey beige, slightly gritty, soft clay
6				- occasional dropstone
7				4.8 - 27.8 SEDIMENTS (OJIBWAY)
8				- grey and grey-beige, soft clay (varves)
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

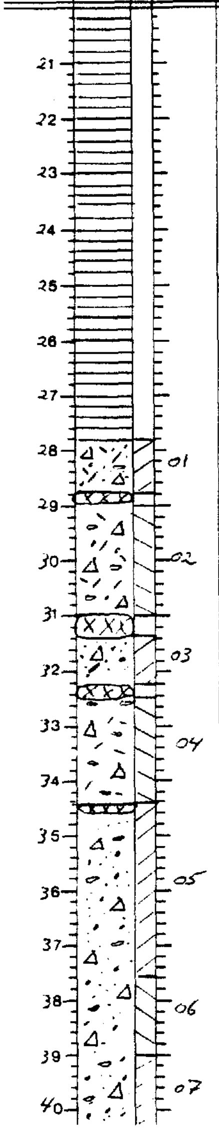
SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO *BPS-86-11024* LOCATION *Angle River, 11+00W*
GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________
MOVE TO HOLE ________
DRILL ________
MECHANICAL DOWN TIME ________
DRILLING PROBLEMS ________
OTHER ________
MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



27.8-58.6 TILL (MATHESON)

27.8-28.8 cobbly, pebbly, clay till
- grey gritty clay
- 10-35% pebbles
  70% volc/seds
  30% granitoid
- cobbles
  90% volc/seds
  10% granitoid
- very pebbly and sandy sections

28.8-29.0 boulder (gabbro)

29.0-31.0 till same as 27.8-28.8

31.0-31.4 boulder (mafic volcanic)

31.4-32.3 sandy, pebble till
- grey fine-med. sand
- pebble 90% volc/seds
  10% granitoid
- occasional grey gritty clay rich sections

32.3-32.5 boulder (felsic volcanic)

32.5-34.5 cobbly, clay till
- grey, gritty clay
- cobbles 50% volc/seds
  50% granitoid
- occasonal sandy, pebble thin seams

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS-86-11024 LOCATION Angle River, 11 +00 W

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ________

DRILL ________

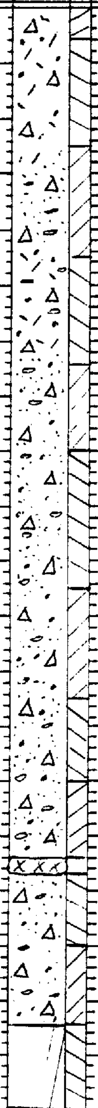
MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



Sample nos.: 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18

Depths: 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60

34.5 - 34.7 boulder (mafic volc)

38.0 - 43.0 cobbly, sandy, pebble till
- grey fine-med. sand.
- pebbles & cobbles 80 % volc/seds, 20 % granitoid

40.8 - 43.0 pebbly, clay till
- grey beige clay
- pebble 70 % volc/seds. 30 % granitoid

42.2 - 42.8 cobbles 40 % volc/seds 60 % granitoid

43.0 - 44.0 till same as 38.0 - 43.0

44.0 - 46.0 till same as 40.8 - 43.0 cobbles 90 % volc/seds 10 % granitoid.

46.0 - 58.6 till same as 38.0 - 43.0 pebbles & cobbles 80 % volc/seds 20 % granitoid

55.4 - 55.7 boulder (mafic volc)

56.0 - 58.0 pebbles 60 % volc/seds 40 % granitoid.

58.6 - 60.0 BEDROCK
- dark pink colour
- coarse grained
- massive
- <<1 % disseminated pyrite
- "granite"

MAIN GRID

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 15 1986

SHIFT HOURS

_____ TO _____

TOTAL HOURS

CONTRACT HOURS

HOLE NO BPS-86-129 LOCATION LINE 22N, 40+00 W

GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO. B000076 BIT FOOTAGE 0-11

MOVE TO HOLE 14.45 - 15.00

DRILL 15.00 - 16.15

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE 16.15 - 16.30

NEW BIT

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0–0.4				0 - .4 ORGANICS
0.4–2.8				.4 - 2.8 TILL (COCHRANE) - grey green gritty clay - < 1% clasts
2.8–9.5			01, 02, 03	2.8 - 9.5 TILL (MATHESON) cobbly, sandy, pebble till - grey fine-med-sand - pebbles 40% volc/seds 60% granitoid - cobbles 90% volc/seds 10% granitoid 7.8-8.2 10-20% grey, gritty clay
9.5–11.0			04	9.5 - 11.0 BEDROCK - dark green colour - fine-grained - massive - very siliceous - qtz phenocrysts - "quartz porphyry"
11.0				11.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr. 15 19 86

SHIFT HOURS ______ TO ______

TOTAL HOURS ______

CONTRACT HOURS ______

HOLE NO BPS-86-130 LOCATION Line 22+00N 36+00W

GEOLOGIST B. Bark DRILLER R. Legault BIT NO. B000075 BIT FOOTAGE 60.0 - 78.6

MOVE TO HOLE 0800 - 13:00

DRILL 13.00 - 14.45

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER Travel 0700 - 08:00

MOVE TO NEXT HOLE 14.45 - 15.00

DEPTH IN METRES	SAMPLE NO.	DESCRIPTIVE LOG
		0 - 0.4 ORGANICS
		.4-3.0 TILL (COCHRANE)
1		- grey, gritty, mod. compact clay
2		- < 1% clasts
3		3.0 - 16.8 TILL (MATHESON).
		3.0 - 7.0 - Sandy pebble fill
4	01	- occasional clay rich sections
		- grey-beige fine-med. sand.
5		- pebbles 60% Volcanics
6	02	40% granitics
7		7.0 - 7.2 - boulder (mafic volcanics)
8	03	8.5 - 8.7 - grey gritty clay section.
9		
10	04	10m - 12.8 - pebbly sandy till
		- beige fine grained sand.
11	05	- pebbles 60% Volcanics
		40% granitics
12		- occasional cobble
13	06	12.8 - 16.8 - occasional Lithified sand clay clasts.
14	07	
15		
16	08	16.8 - 18.6 BEDROCK
17		- green-white
		- fine grained
18	09	- occasional oxidized zone
		- felsic very silaceous volcanics
19		- < 1% pyrite
20		18.6 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 15 19 86

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO BPS-86-131 LOCATION Line 22N 32+00W

GEOLOGIST ____ DRILLER ____ BIT NO. 8000076 BIT FOOTAGE 11-35.8

MOVE TO HOLE 16:15-16:30

DRILL 16:30-7:15

MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE 7:15-

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0				0-0.3 ORGANICS
1				0.3-1.5 TILL (COCHRANE)
				- pebbly clay till
2			01	- Beige gritty clay
				- pebbles 30% (granitic composition)
3				1.5-14.2 TILL (MATHESON)
4			02	1.5-11.5 pebbly sand till
				- beige fg. sand
				- pebbles 30% volcanics
5			03	70% granitic
				- occasional cobbles.
6				11.5-11.7 - Boulder
				- granitic
7			04	13.7-13.9 - Boulder
				- granitic
8			05	
9				
10			06	
11				
12				
13			07	
14				14.2-15.8 BEDROCK
15			08	- green fine grained
				- mafic volcanics
16				15.8 EOH
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 16 19 86

SHIFT HOURS ______ TO ______

TOTAL HOURS ______

CONTRACT HOURS ______

HOLE NO BPS-86-132 LOCATION L22N, 28+00 W

GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO. B000076 BIT FOOTAGE 358-448

MOVE TO HOLE 07.15-8.00

DRILL 08.00-9.45

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER TRAVEL 6.45-7.15

MOVE TO NEXT HOLE 9.45-10.00

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			01	0-.2 ORGANICS
			02	.2-1.2 TILL (COCHRANE)
			03	

0-.2 ORGANICS

.2-1.2 TILL (COCHRANE)
- beige, gritty clay
- <1% clasts

1.2-7.4 TILL (MATHESON)

1.2-3.0 sandy, pebble till
- beige fine-med sand
- pebbles + cobbles 50% volc/seds, 50% granitoid

3.0-5.8 sandy, pebbly, clay till
- beige gritty clay
- beige fine-med. sand
- pebbles 40% volc/seds, 60% granitoid
- cobbles (granitic).

5.8-6.0 boulder (mafic volcanic)

6.0-6.5 Cobbles 80% volc/seds, 20% granitoid

6.5-7.4 Sandy, pebble till
- beige fine-med. sand.
- pebbles 80% volc/seds, 20% granit

7.4-9.0 BEDROCK
- dark green colour
- fine grained
- massive - weakly foliated
- siliceous
- "mafic volcanic"

9.0 E.O.H

Sample nos.: 01 (at c. 3 m), 02 (at c. 5.5 m), 03 (at c. 8 m); depth scale 1-20 m.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr. 16 1986

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO BPS 86-133 LOCATION Line 22N 24+00 W

GEOLOGIST R. Bark DRILLER R. Legault BIT NO. A000076 BIT FOOTAGE 448-523

MOVE TO HOLE 9:45 - 10:00

DRILL 10:00 - 10:30

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE 10:30 - 10:45

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-0.4 ORGANICS
				0.4-3.2 TILL (COCHRANE)
1				-pebbly clay till
2				-grey gritty clay
				-10% pebbles (granitic)
3				0.8-1.0 -sandy interbed
			01	-beige f.g. sand
4	XXX			3.2-6.0 TILL (MATHESON)
				-pebbly sandy till
5			02	-fine-med. grained grey-beige sand
6				-pebbles 40% volcanics
			03	60% granitics
7				3.8-4.2 - Boulder
				-mafic volcanic
8				5.5-5.7 -Clay rich section
9				-grey gritty clay
				6.0-7.5 BEDROCK
10				-dark green, f.g.
11				-minor qtz. veins
				- mafic volcanics
12				7.5 E.O.H
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 16 19 86

HOLE NO BPS-86-134 LOCATION L22N , 20+00 W
GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO B000076 BIT FOOTAGE 52.3-62.8

SHIFT HOURS
_____ TO _____
MOVE TO HOLE 10.30-10.45.
DRILL 10.45-11.20

TOTAL HOURS
MECHANICAL DOWN TIME
DRILLING PROBLEMS

CONTRACT HOURS
OTHER
MOVE TO NEXT HOLE 11.20-11.50

DEPTH IN METRES	SAMPLE NO.	DESCRIPTIVE LOG
		0 - .4 ORGANICS.
1		.4 - 2.0 TILL (COCHRANE)
		-beige gritty clay
2		-<1% clasts
3	01	2.0-9.2 TILL (MATHESON)
4		2.0-9.2 sandy, pebble till
5		-beige fine-med sand
		-pebbles 20% volc/seds
6	02	80% granitoid
7		4.8-5.2 boulder (granite)
8	03	8.5-9.2 cobbly section
		10% volc/seds
9		90% granitoid.
10	04	9.2-10.5 BEDROCK
		-dark green colour
11		-fine-grained
		- massive (appears fragmental in sections)
12		- siliceous
13		- occasional thin quartz vein.
14		- "mafic volcanic"?
15		10.5 E.O.H.
16		
17		
18		
19		
20		

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 16 1986

SHIFT HOURS ____ TO ____

TOTAL HOURS ____

CONTRACT HOURS ____

HOLE NO BPS-86-135 LOCATION 22N 12W

GEOLOGIST B. Park DRILLER R. Legault BIT NO. 8? BIT FOOTAGE 0-13.5

MOVE TO HOLE 11:20-11:50

DRILL 11:50-12:45

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE 12:45-13:00

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-0.2 ORGANICS
1				0.2-3.8 TILL (COCHRANE) - grey gritty clay - occasional pebble
2			01	
3				
4				3.8-12.0 TILL (MATHESON) - pebbly sand till - pebbles 10% volcanics 90% granitic - fine-med. grained grey-beige sand
5			02	
6			03	4.1-4.6 - boulder - granitic
7				7.1-12.0 - Sandy pebbly clay till - grey, fine grained sand - grey very gritty clay - <10% pebbles. - 90% volcanics 10% granitics
8			04	
9				
10			05	9.2-9.4 - occasional cobble
11			06	
12				12.0-13.5 BEDROCK - dark green, fine grained - mafic volcanic
13			07	
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 16 1986
HOLE NO BPS-86-136 LOCATION L22N, 8+00 W
GEOLOGIST G SHELP DRILLER R LEGAULT BIT NO B000064 BIT FOOTAGE 13.5-32.0

SHIFT HOURS ____ TO ____
MOVE TO HOLE 12.45-13.00
DRILL 13.00-15.15
TOTAL HOURS ____
MECHANICAL DOWN TIME
DRILLING PROBLEMS
CONTRACT HOURS ____
OTHER
MOVE TO NEXT HOLE 15.15-15.30

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG

0-.5 ORGANICS

.5-2.8 TILL (COCHRANE)
- grey gritty clay
- <1% clasts (20% beige Lmst)

2.8-21.6 TILL (MATHESON)

2.8-4.6 sandy, pebble till
- grey fine-med sand
- pebble 40% volc/seds, 60% granitoid

4.6-6.0 sandy, pebble clay till
- grey gritty clay
- grey fine-med sand
- pebbles 40% volc/seds, 60% granitoid

6.0-6.2 boulder (mafic volcanic)

6.2-9.6 cobbly sandy, pebble till
- grey fine-med. sand
- pebbles & cobbles 20% volc/seds, 80% granitoid

9.6-9.8 boulder (granite)

9.8-13.7 till same as 6.2-9.6

13.7-13.9 boulder (granite)

13.7-15.0 till same as 6.2-9.6

15.0-16.2 very sandy, cobble till
- grey fine-med. sand
- cobbles 10% volc/seds, 90% granitoid

16.2-16.6 till same as 6.2-9.6

16.6-19.8 grey fine sand, very minor pebbles

18.2-18.4 pebbly clay till

19.8-20.0 med-coarse sand and pebbles

20.0-20.4 sandy, cobbly till
- g fine sand
- cobbles (granitoid)

Sample Nos.: 01, 02, 03, 04, 04, 05, 06, 07, 07, 08, 09, 10, 11

Depth (m): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

CONTRACT HOURS

HOLE NO BPS-86-136 LOCATION L22N, 8+00 W

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			11	20.4-20.8 boulder (granite)
21			12	20.8 - 21.6 very cobbly, sandy, pebble till
22			13	- grey fine-med sand.
23				- pebbles 40% volc/seds 60% granitoid
24				- cobbles 20% volc/seds 80% granitoid
25				21.6 -22.5 BEDROCK
26				- dark green colour (pink and cream blotches)
27				- fine-grained - massive
28				- very siliceous - "felsic volcanic"
29				- (chloritic alteration)?
30				22.5 E.O.H.
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 16 1986
HOLE NO BPS-86-137 LOCATION L22N, 4+00W
GEOLOGIST G. SHELP DRILLER R. LEGAULT BIT NO. B000077 BIT FOOTAGE 0-19.5
SHIFT HOURS ____ TO ____
MOVE TO HOLE 15.15 - 15.30
DRILL 15.30 - 16.30
TOTAL HOURS ____
MECHANICAL DOWN TIME
DRILLING PROBLEMS
CONTRACT HOURS ____
OTHER
MOVE TO NEXT HOLE 16.30 - 17.00

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0				0 - .2 ORGANICS
1				.2 - 2.5 TILL (COCHRANE)
2				- beige gritty clay
				- < 1% clasts
3			01	2.5 - 18.2 TILL (MATHESON)
4				2.5 - 2.7 boulder (interm/mafic volcanic)
5			02	2.7 - 18.2 very cobbly, very sandy pebble till
6				- grey beige fine-med sand
				- pebbles 30% volc/seds
				70% granitoid
7			03	- cobbles 10% volc/seds
8				90% granitoid.
9				7.6 - 8.5 cobbles absent
10			04	
11				
12			05	
13				
14			06	
15				
16				15.8 - 18.2 pebbles
17			07	10% volc/seds
				90% granitoid.
18				18.2 - 19.5 BEDROCK
19			08	- Light to dark green colour
				- fine grained
20				- massive
				- very siliceous
				- "felsic volcanic"
				(chloritic alteration ?)
				- 19.1 << 1% pyrite
				19.5 E.O.H

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 17 1986

HOLE NO BB-86-138 LOCATION L 26+00N , 20+00 W
GEOLOGIST G. SHELP DRILLER R LEGAULT BIT NO B000077 BIT FOOTAGE 19.5-300

SHIFT HOURS
_____ TO _____

MOVE TO HOLE 7.00-8.00
DRILL 8.00-8.45

TOTAL HOURS
_____

MECHANICAL DOWN TIME
DRILLING PROBLEMS

CONTRACT HOURS
_____

OTHER
MOVE TO NEXT HOLE 845-9.15

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 - .2 ORGANICS
1				.2 - 2.8 TILL (COCHRANE)
				-grey beige gritty clay
2				-< 1% clasts
3				2.8-9.2 TILL (MATHESON)
			01	2.8 - 3.0 boulder (granite)
4				3.0 - 74 clayey, sandy, pebble till
5				-beige fine-med sand
6			02	-grey beige gritty clay
				-pebbles 50% volc/seds 50% granitoid
7				
8			03	3.6-7.4 clay rich section (30-40%)
9				7.4 - 9.2 sandy pebble till
10			04	-beige fine-med sand
				-pebbles 50% volc/seds 50% granitoid
11				
				9.2 - 10.5 BEDROCK
12				- dark green colour
13				- fine-grained
				- massive
14				- very siliceous
				- "felsic volcanic" (chloritic altn)?
15				
16				10.2-10.5 <1% pyrite with thin quartz veins
17				10.5 E.O.H.
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE April 17 1986

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO BPS-86-139 LOCATION Line 30+00 N 20+00 W

GEOLOGIST B. Bork DRILLER R. Legault BIT NO. B00077 BIT FOOTAGE 300-370

MOVE TO HOLE 8:45 - 9:15

DRILL 9:15 - 9:45

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE 9:45 - 10:15

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0-0.4 ORGANICS
1				0.4-3.0 TILL (COCHRANE) - gritty clay - grey beige in colour
2				
3				3.0-5.5 TILL (MATHESON)
4			01	3.0-4.0 - clay sand pebble till - f.g.-m.g. beige sand - pebbles 30% volcanics 70% granitics
5			02	4.0-4.5 - pebbly sand till - pebbles 60% volcanics 40% granitics - sand grey-beige fine-med grained
6			03	
7				
8				4.5-5.0 - Boulder - green porphory - <1% pyrite
9				
10				5.0-5.5 - pebbly clay sand till - pebbles 70% volcanics 30% granitics - grey gritty clay - fine-med. grained grey-beige sand.
11				
12				
13				5.5-7.0 BEDROCK - dark green colour - mafic volcanics - occasional quartz vein
14				
15				
16				7.0 - E.O.H.
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Apr 17 19 86

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO BPS-86-140 LOCATION L 34+00 N, 20+00 W

GEOLOGIST G. SHELP DRILLER R LEGAULT BIT NO. B0000 77 BIT FOOTAGE 37.0-42.0

MOVE TO HOLE 9.45-10.00

DRILL 10.00 - 10.30

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE 10.30 - 10.45

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 - .2 ORGANICS
1				.2 - 1.6 TILL (COCHRANE)
				- beige gritty clay
2				- <1% clasts
			01	
3				1.6 - 3.4 TILL (MATHESON)
4			02	1.6 - 2.0 boulder (granite)
				2.0 - 3.4 sandy, pebble till
5				- grey fine-med. sand
6				- pebbles 50% volc/seds
				50% granitoid
7				3.4 - 5.0 BEDROCK
8				- dark green colour
				- fine-grained
9				- massive - weakly foliated
10				- very siliceous
				- "felsic volcanic"
11				(chloritic alteration?)
12				5.0 E.O.H.
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

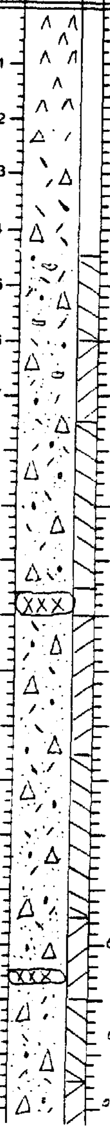
DATE April 17 19 86

SHIFT HOURS
_____ TO _____

TOTAL HOURS
_____

CONTRACT HOURS
_____

HOLE NO BPS-86-141 LOCATION L38+00N 20+00W
GEOLOGIST B. Bark DRILLER R. Loquelt BIT NO. B000077 BIT FOOTAGE 420 - 78.5
MOVE TO HOLE 10 30 10.45
DRILL 10:45 - 1:00
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE 1:00 - 2:00

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				0 - 2.0 ORGANICS
1				2.0 - 4.4 TILL (COCHRANE)
2				-grey gritty clay
				-< 10% pebbles (volcanic)
3				4.4-35.0 TILL (MATHESON)
4				4.4-25.0 - clay pebbly sandy till
				-gritty grey clay
5			01	- pebbles 50% Volcanics
				50% granitic
6				- sand fine-med. grained
				beige.
7			02	-occasional cobble (granitic)
				10.6-11.0 - Boulder (granitic)
8			03	
9				
10				
11				
12			04	
13				
14				
15			05	
16				
17			06	17.5-17.7 - Boulder (granitic)
18				
19			07	
20			08	

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO BPS-86-141 LOCATION ______
GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______
MOVE TO HOLE ______
DRILL ______
MECHANICAL DOWN TIME ______
DRILLING PROBLEMS ______
OTHER ______
MOVE TO NEXT HOLE ______

pg. 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
1			08	
2			09	
23				
24			10	
25				25.0 - 35.0 - pebble sand till - pebbles 70% Volcanics 30% Granitics - Sand - fine - med. grained - gray beige
26			11	
27				
28			12	
29				
30			13	30.5 - 30.7 - boulder (granitic)
31				
32			14	
33				
34			15	
35				35.0 - 36.5 <u>BEDROCK</u> - dark green - fine grained - felsic volcanic with possible chloritic alteration - very siliceous - <1% pyrite
36			16	
37				
38				
39				36.5 <u>E.O.H.</u>
40				

APPENDIX B

SAMPLE WEIGHTS - HEAVY MINERAL CIRCUIT

bps12may.86

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET)			WEIGHT (GRAMS DRY)		M. I. CONC			AU		DESCRIPTION: CLAST					DESCRIPTION: MATRIX						CLASS
	TABLE SPLIT	+10 CHIPS	TABLE FEED	TABLE CONC	M.I. LIGHTS	CONC. TOTAL	NON MAG	MAG	NO. V.G.	CALC PPB	SIZE	% V/S	% GR	% LS	% OT	S/U	SD	ST	CY	COLOR SD	COLOR CY	
BPS-86																						
99-01	3.0	0.0	3.0	100.8	80.0	20.8	15.9	4.9	0	NA	TR	NA	NA	NA	NA	S	F	Y	Y	B	B	SAND
-02	6.8	1.0	5.8	145.6	118.7	26.9	18.2	8.7	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-03	7.1	1.2	5.9	98.6	76.0	22.6	13.9	8.7	0	NA	P	70	20	10	NA	U	Y	Y	Y	B	B	TILL
-04	6.9	0.8	6.1	111.8	87.3	24.5	15.0	9.5	1	25	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-05	6.9	0.7	6.2	107.9	82.2	25.7	14.6	11.1	2	1950	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-06	7.1	0.9	6.2	92.3	67.5	24.8	15.1	9.7	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-07	7.8	2.0	5.8	96.2	73.0	23.2	13.6	9.6	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-08	7.2	0.6	6.6	106.7	79.2	27.5	16.6	10.9	2	2234	P	65	35	NA	NA	U	Y	Y	Y	B	B	TILL
-09	7.3	0.5	6.8	244.1	213.0	31.1	18.6	12.5	0	NA	C	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-10	7.5	0.7	6.8	207.9	178.6	29.3	17.6	11.7	0	NA	P/C	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-11	7.1	0.7	6.4	254.4	232.1	22.3	12.5	9.8	0	NA	P/C	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-12	6.6	0.6	6.0	195.7	172.1	23.6	14.5	9.1	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-13	7.3	0.9	6.4	229.0	217.6	11.4	6.2	5.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
-14	8.0	0.8	7.2	204.9	169.6	35.3	23.7	11.6	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
-15	7.2	0.7	6.5	210.5	179.2	31.3	19.7	11.6	1	7614	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
-16	7.3	1.6	5.7	208.6	182.9	25.7	15.4	10.3	1	502	P	65	35	NA	NA	U	Y	Y	Y	GB	GB	TILL
100-01	7.8	0.5	7.3	129.1	104.9	24.2	16.7	7.5	0	NA	P	30	60	10	NA	U	Y	Y	Y	B	B	TILL
-02	7.5	0.6	6.9	176.3	146.8	29.5	18.7	10.8	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-03	7.6	0.6	7.0	164.2	136.7	27.5	17.3	10.2	0	NA	P	70	30	NA	1	U	Y	Y	Y	GB	GB	TILL
101-01	7.8	0.7	7.1	103.9	75.2	28.7	19.3	9.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
102-01	2.1	0.1	2.0	105.4	103.9	1.5	1.1	0.4	0	NA	P	90	10	NA	NA	S	F	Y	Y	B	B	SAND
-02	8.0	0.4	7.6	260.2	227.7	32.5	21.7	10.8	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-03	8.5	1.5	7.0	254.8	232.0	22.8	15.1	7.7	0	NA	P	65	35	NA	NA	U	Y	Y	Y	GB	GB	TILL
-04	8.7	1.3	7.4	214.7	168.1	46.6	27.0	19.6	1	7163	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-05	9.0	0.7	8.3	185.7	152.0	33.7	19.3	14.4	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
103-01	4.2	0.2	4.0	96.8	84.6	12.2	8.9	3.3	0	NA	P	10	90	NA	1	U	Y	Y	Y	B	B	TILL
-02	8.8	1.1	7.7	152.1	119.8	32.3	18.5	13.8	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-03	8.3	0.8	7.5	148.6	121.9	26.7	15.9	10.8	0	NA	P	80	20	NA	1	U	Y	Y	Y	GB	GB	TILL
-04	8.4	0.7	7.7	234.1	206.1	28.0	15.9	12.1	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-05	8.5	0.5	8.0	166.0	136.6	29.4	16.3	13.1	1	383	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-06	8.1	1.0	7.1	227.5	200.0	27.5	15.2	12.3	0	NA	P	50	50	NA	NA	U	Y	Y	Y	GB	GB	TILL
-07	7.6	1.3	6.3	254.7	229.2	25.5	14.8	10.7	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-08	9.2	1.5	7.7	93.0	68.8	24.2	13.3	10.9	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-09	8.7	1.3	7.4	131.0	100.0	31.0	18.1	12.9	0	NA	P	50	50	NA	NA	U	Y	Y	Y	GB	GB	TILL
-10	8.3	2.4	5.9	78.6	56.7	21.9	11.7	10.2	0	NA	P	50	50	NA	NA	U	Y	Y	Y	GB	GB	TILL
-11	9.5	1.8	7.7	73.3	44.9	28.4	14.8	13.6	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-12	8.6	1.0	7.6	100.9	64.4	36.5	18.0	18.5	1	213	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-13	8.5	1.7	6.8	81.1	53.6	27.5	16.4	11.1	0	NA	P	40	60	NA	NA	U	Y	Y	Y	GB	GB	TILL
-14	9.1	1.4	7.7	71.9	47.5	24.4	14.4	10.0	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-15	9.1	1.6	7.5	122.2	86.3	35.9	22.4	13.5	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-16	9.1	0.9	8.2	265.0	225.6	39.4	25.1	14.3	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-17	9.0	0.7	8.3	187.5	149.1	38.4	23.0	15.4	1	1238	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
104-01	5.4	0.5	4.9	112.2	99.2	13.0	9.1	3.9	0	NA	P	18	80	2	NA	U	Y	Y	Y	B	B	TILL
-02	8.4	1.1	7.3	162.0	132.7	29.3	18.6	10.7	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL

bpsl2may.86 OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET)			WEIGHT (GRAMS DRY)		M. I. CONC			AU		DESCRIPTION: CLAST						MATRIX						CLASS
	TABLE SPLIT	+10 CHIPS	TABLE FEED	TABLE CONC	M.I. LIGHTS	CONC. TOTAL	NON MAG	MAG	NO. V.G.	CALC PPB	SIZE	% V/S	% GR	% LS	% OT	S/U	SD	ST	CY	COLOR SD	COLOR CY	
BPS-86																						
-03	8.2	0.8	7.4	223.3	196.9	26.4	15.0	11.4	0	NA	P	40	60	NA	NA	U	Y	Y	Y	GB	GB	TILL
-04	8.0	1.1	6.9	237.9	213.1	24.8	14.8	10.0	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
105-01	6.0	0.7	5.3	201.7	177.3	24.4	15.1	9.3	0	NA	P	60	40	TR	NA	U	Y	Y	Y	GB	GB	TILL
-02	8.2	0.6	7.6	209.5	178.9	30.6	17.4	13.2	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-03	7.0	0.4	6.6	171.3	147.8	23.5	9.4	14.1	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
-04	7.8	0.6	7.2	171.0	140.4	30.6	10.7	19.9	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-05	8.2	0.2	8.0	191.9	171.5	20.4	12.3	8.1	0	NA	P	50	50	NA	NA	U	Y	Y	Y	GB	GB	TILL
-06	8.0	0.8	7.2	213.0	179.9	33.1	18.4	14.7	1	157	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
109-01	8.1	0.5	7.6	174.2	147.6	26.6	15.4	11.2	0	NA	P	40	60	NA	NA	U	Y	Y	Y	B	GB	TILL
-02	7.5	0.6	6.9	234.7	212.1	22.6	12.3	10.3	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	GB	TILL
-03	8.2	0.4	7.8	133.0	107.9	25.1	14.5	10.6	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
-04	8.0	0.0	8.0	134.3	109.4	24.9	15.1	9.8	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-05	8.1	1.0	7.1	119.9	89.5	30.4	18.7	11.7	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
-06	9.0	1.2	7.8	194.6	155.8	38.8	20.2	18.6	1	1409	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-07	8.7	0.8	7.9	117.9	78.5	39.4	19.3	20.1	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
-08	7.8	0.8	7.0	146.1	118.7	27.4	13.9	13.5	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-09	8.2	0.6	7.6	191.7	155.9	35.8	19.4	16.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
112-01	8.6	2.2	6.4	208.9	183.2	25.7	13.3	12.4	0	NA	P	60	35	5	NA	U	Y	Y	Y	B	B	TILL
-02	8.9	1.5	7.4	297.7	274.1	23.6	5.5	18.1	0	NA	P	45	50	5	NA	U	Y	Y	Y	B	B	TILL
-03	8.8	1.1	7.7	142.3	118.1	24.2	13.4	10.8	1	1618	P	60	40	TR	NA	U	Y	Y	Y	B	GB	TILL
-04	8.9	0.5	8.4	183.4	156.0	27.4	14.8	12.6	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-05	8.7	1.1	7.6	208.3	182.1	26.2	13.9	12.3	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	GB	TILL
129-01	7.7	0.9	6.8	336.2	288.9	47.3	25.3	22.0	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	GB	TILL
-02	10.8	0.4	10.4	180.1	147.6	32.5	17.2	15.3	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
-03	8.6	0.6	8.0	133.2	107.9	25.3	15.4	9.9	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
130-01	8.8	0.5	8.3	148.1	119.7	28.4	17.4	11.0	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
-02	8.6	0.4	8.2	185.8	143.3	42.5	27.3	15.2	0	NA	P	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-03	7.7	1.0	6.7	169.8	150.0	19.8	12.1	7.7	0	NA	C	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-04	8.3	0.8	7.5	137.8	103.1	34.7	20.2	14.5	0	NA	P	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-05	7.9	0.9	7.0	139.1	112.2	26.9	14.7	12.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-06	8.4	0.3	8.1	176.9	130.0	46.9	29.0	17.9	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
-07	8.1	0.2	7.9	186.4	151.3	35.1	19.6	15.5	1	19	P	60	40	NA	1	U	Y	Y	Y	B	GB	TILL
-08	8.5	0.5	8.0	167.2	153.4	13.8	6.6	7.2	0	NA	P	70	30	TR	NA	U	Y	Y	Y	B	B	TILL
131-01	6.4	0.2	6.2	167.6	133.8	33.8	18.3	15.5	0	NA	P	60	40	NA	3	U	Y	Y	Y	B	BN	TILL
-02	6.4	0.6	5.8	109.4	83.9	25.5	15.3	10.2	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-03	7.1	0.2	6.9	130.7	100.5	30.2	17.8	12.4	1	21	C	15	85	TR	NA	U	Y	Y	Y	B	B	TILL
-04	7.4	0.4	7.0	128.4	99.1	29.3	18.2	11.1	0	NA	P	20	80	TR	NA	U	Y	Y	Y	B	B	TILL
-05	7.8	0.4	7.4	121.1	95.0	26.1	15.4	10.7	4	78	P	20	80	NA	NA	U	Y	Y	Y	B	B	TILL
-06	7.3	0.0	7.3	176.9	158.5	18.4	11.5	6.9	1	32	TR	NA	NA	NA	NA	U	Y	Y	Y	B	B	TILL
-07	3.5	0.2	3.3	122.5	109.7	12.8	5.3	7.5	0	NA	P	5	95	NA	NA	U	Y	Y	Y	GB	B	TILL
132.01	7.4	0.6	6.8	145.3	117.5	27.8	14.2	13.6	4	92	P	40	60	NA	1	U	Y	Y	Y	B	B	TILL
-02	5.9	0.6	5.3	111.5	94.1	17.4	10.9	6.5	1	34	P	30	70	NA	NA	U	Y	Y	Y	B	B	TILL
133-01	3.7	0.6	3.1	77.5	58.0	19.5	10.1	9.4	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
-02	6.0	0.9	5.1	98.1	77.1	21.0	12.4	8.6	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET) TABLE SPLIT	+10 CHIPS	TABLE FEED	WEIGHT (GRAMS DRY) TABLE CONC	M.I. LIGHTS	M. I. CONC CONC. TOTAL	NON MAG	MAG	AU NO. V.G.	CALC PPB	DESCRIPTION CLAST SIZE	% V/S	GR	LS	OT	MATRIX S/U	SD	ST	CY	COLOR SD	CY	CLASS
BPS-86																						
99-17	7.4	0.3	7.1	134.9	111.7	23.2	12.9	10.3	0	NA	P	85	15	NA	NA	U	Y	Y	Y	B	B	TILL
-18	7.5	0.6	6.9	142.2	120.0	22.2	13.1	9.1	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-19	7.4	0.7	6.7	126.2	89.6	36.6	21.3	15.3	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-20	7.6	0.4	7.2	127.6	91.2	36.4	18.7	17.7	2	114	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-21	6.9	0.0	6.9	113.5	81.1	32.4	19.6	12.8	0	NA	TR	NA	NA	NA	NA	S	F	Y	Y	B	B	SAND
-22	7.3	0.0	7.3	112.4	85.4	27.0	14.3	12.7	2	176	TR	NA	NA	NA	NA	S	F	Y	Y	B	B	SAND
23	7.3	1.1	6.2	121.0	95.6	25.4	14.6	10.8	1	26	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-24	7.0	1.8	5.2	175.8	156.1	19.7	11.5	8.2	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-25	6.8	0.5	6.3	200.3	172.8	27.5	12.5	15.0	12	34189	C	95	5	TR	NA	U	Y	Y	Y	B	B	TILL
100-04	7.3	0.8	6.5	144.0	121.8	22.2	11.0	11.2	2	2107	P	85	16	NA	1	U	Y	Y	Y	GB	GB	TILL
-05	7.6	0.7	6.9	131.2	105.7	25.5	15.0	10.5	1	43	P	85	15	NA	1	U	Y	Y	Y	B	B	TILL
-06	8.0	0.6	7.4	135.0	106.6	28.4	16.2	12.2	2	271	P	80	20	NA	1	U	Y	Y	Y	B	B	TILL
-07	7.3	1.4	5.9	188.8	147.4	41.4	16.5	24.9	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
-08	7.4	1.1	6.3	125.2	89.1	36.1	20.5	15.6	4	570	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-09	8.0	3.0	5.0	159.5	129.0	30.5	14.5	16.0	1	1105	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-10	7.2	2.4	4.8	153.5	126.3	27.2	15.2	12.0	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-11	7.0	2.2	4.8	152.8	124.6	28.2	15.1	13.1	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
101-02	4.5	0.5	4.0	83.4	67.5	15.9	9.9	6.0	0	NA	C	95	5	NA	NA	U	Y	Y	Y	GB	GB	TILL
101-06	8.9	0.6	8.3	140.5	119.2	21.3	11.0	10.3	0	NA	P/C	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-07	8.7	0.8	7.9	134.3	111.5	22.8	11.1	11.7	0	NA	P/C	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-08	9.1	1.0	8.1	166.7	146.6	20.1	10.5	9.6	1	1086	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-09	8.5	1.0	7.5	125.6	110.5	15.1	8.2	6.9	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-10	8.8	0.6	8.2	158.1	138.3	19.8	10.8	9.0	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-11	8.8	0.8	8.0	167.0	144.8	22.2	10.8	11.4	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-12	9.3	1.1	8.2	176.3	156.1	20.2	9.0	11.2	1	71	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-13	8.9	0.6	8.3	222.1	192.9	29.2	14.4	14.8	1	343	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET)			WEIGHT (GRAMS DRY)					AU		DESCRIPTION											CLASS
						M. I. CONC					CLAST					MATRIX						
	TABLE SPLIT	+10 CHIPS	TABLE FEED	TABLE CONC	M.I. LIGHTS	CONC. TOTAL	NON MAG	MAG	NO. V.G.	CALC PPB	SIZE	% V/S	% GR	% LS	% OT	S/U	SD	ST	CY	COLOR SD	COLOR CY	
BFS-86																						
102-14	8.9	1.0	7.9	122.3	102.7	19.6	8.9	10.7	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-15	8.7	1.1	7.6	128.2	109.8	18.4	12.1	6.3	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-16	9.2	0.9	8.3	141.9	124.3	17.6	11.1	6.5	0	NA	P	65	35	NA	NA	U	Y	Y	Y	B	B	TILL
-17	8.3	0.8	7.5	94.3	69.1	25.2	12.6	12.6	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-18	8.9	1.3	7.6	217.0	187.8	29.2	14.3	14.9	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-19	9.1	1.0	8.1	154.7	132.1	22.6	8.7	13.9	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-20	8.9	0.9	8.0	156.6	133.3	23.3	10.2	13.1	2	1540	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
103-18	9.2	1.8	7.4	140.5	103.0	37.5	24.4	13.1	0	NA	P,C	80	20	TR	NA	U	Y	Y	Y	B	B	TILL
-19	9.1	1.4	7.7	129.4	93.5	35.9	22.4	13.5	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-20	9.0	1.3	7.7	179.7	146.5	33.2	18.7	14.5	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-21	8.9	1.1	7.8	156.1	115.2	40.9	18.7	22.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-22	9.0	2.2	6.8	277.8	248.0	29.8	17.9	11.9	1	84	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-23	9.0	1.3	7.7	178.3	147.8	30.5	16.7	13.8	0	NA	P	85	15	NA	NA	U	Y	Y	Y	GB	GY	TILL
104-05	8.3	1.2	7.1	128.2	94.0	34.2	21.8	12.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-06	7.9	0.8	7.1	158.7	116.7	42.0	31.4	10.6	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-07	8.7	1.0	7.7	166.8	144.9	21.9	15.3	6.6	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-08	7.9	0.8	7.1	267.6	222.3	45.3	15.8	29.5	1	183	P	65	35	NA	NA	U	Y	Y	Y	GB	GY	TILL
-09	8.0	0.8	7.2	125.3	95.7	29.6	20.4	9.2	1	379	P	85	15	NA	NA	U	Y	Y	Y	GB	GY	TILL
105-07	7.7	1.2	6.5	250.4	218.3	32.1	18.1	14.0	2	1208	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-08	8.3	0.9	7.4	205.2	172.9	32.3	18.3	14.0	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	GB	TILL
-09	7.9	0.7	7.2	176.3	144.6	31.7	17.5	14.2	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	GB	TILL
-10	8.2	1.0	7.2	250.4	211.8	38.6	22.4	16.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-11	8.1	1.4	6.7	220.9	180.4	40.5	27.1	13.4	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
106-01	8.2	1.0	7.2	239.4	203.6	35.8	21.5	14.3	0	NA	P	40	55	5	NA	U	Y	Y	Y	B	B	TILL
-02	2.6	0.2	2.4	148.3	141.5	6.8	4.1	2.7	0	NA	P	85	15	NA	NA	U	Y	Y	Y	B	B	TILL
107-01	8.4	1.6	6.8	222.5	196.8	25.7	14.9	10.8	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-02	8.3	0.8	7.5	153.0	127.4	25.6	15.1	10.5	0	NA	P	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-03	7.3	0.5	6.8	166.1	150.1	16.0	10.0	6.0	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GY	TILL
108-01	8.0	0.6	7.4	162.2	138.6	23.6	14.5	9.1	1	534	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-02	8.4	0.8	7.6	266.6	241.7	24.9	13.5	11.4	0	NA	C	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-03	8.8	1.2	7.6	134.5	105.7	28.8	15.5	13.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-04	8.7	1.2	7.5	225.8	199.9	25.9	14.9	11.0	0	NA	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
-05	8.1	1.6	6.5	160.2	132.3	27.9	17.1	10.8	0	NA	P	85	15	NA	NA	U	Y	Y	Y	B	GB	TILL
109-10	8.6	0.6	8.0	193.7	170.9	22.8	12.2	10.6	0	NA	P	85	15	NA	NA	U	Y	Y	Y	B	GB	TILL
-11	8.0	0.9	7.1	153.3	118.1	35.2	18.9	16.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	GB	TILL
-12	8.1	0.9	7.2	151.3	122.8	28.5	15.1	13.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	GB	TILL
-13	8.6	0.6	8.0	185.8	150.5	35.3	19.6	15.7	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	GB	TILL
-14	8.3	0.5	7.8	211.5	128.4	83.1	68.3	14.8	0	NA	P	75	25	NA	NA	U	Y	Y	Y	GB	GY	TILL
-15	7.9	0.5	7.4	261.3	177.9	83.4	74.4	9.0	0	NA	C,BR	100	TR	NA	NA	U	Y	Y	Y	GB	GY	TILL
110-01	7.9	0.5	7.4	206.4	177.5	28.9	17.7	11.2	0	NA	P	75	25	NA	NA	U	Y	Y	Y	GY	GY	TILL
-02	7.8	0.4	7.4	219.1	192.3	26.8	14.5	12.3	0	NA	P	65	35	NA	NA	U	Y	Y	Y	B	B	TILL
-03	8.2	0.6	7.6	194.3	165.5	28.8	14.8	14.0	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
111-01	8.2	1.4	6.8	141.6	109.5	32.1	20.2	11.9	18	217	P	70	30	TR	NA	U	Y	Y	Y	B	B	TILL
-02	8.6	0.3	8.3	194.5	163.3	31.2	17.5	13.7	1	167	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET) TABLE SPLIT	+10 CHIPS	TABLE FEED	WEIGHT (GRAMS DRY) TABLE CONC	M.I. LIGHTS	M. I. CONC CONC. TOTAL	NON MAG	MAG	AU NO. V.G.	CALC PPB	DESCRIPTION CLAST SIZE	% V/S	GR	LS	OT	MATRIX S/U	SD	ST	CY	COLOR SD	CY	CLASS
112-06	8.7	0.9	7.8	244.6	206.5	38.1	22.9	15.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-07	8.0	0.7	7.3	255.3	214.5	40.8	22.6	18.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-08	8.3	0.4	7.9	222.7	198.1	24.6	13.6	11.0	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-09	8.5	0.5	8.0	243.1	211.1	32.0	18.2	13.8	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-10	8.3	0.6	7.7	345.5	306.7	38.8	26.4	12.4	0	NA	C	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
113-06	8.0	0.6	7.4	171.3	149.5	21.8	12.3	9.5	0	NA	C	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
-07	8.4	0.6	7.8	169.9	150.0	19.9	10.3	9.6	0	NA	C	65	35	NA	NA	U	Y	Y	Y	B	B	TILL
-08	8.6	0.7	7.9	178.8	154.4	24.4	13.0	11.4	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
-09	8.5	0.8	7.7	155.5	128.9	26.6	13.9	12.7	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-10	5.2	0.3	4.9	125.0	111.4	13.6	7.2	6.4	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
114-03	7.8	0.5	7.3	140.9	119.7	21.2	11.3	9.9	0	NA	P	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-04	8.3	0.2	8.1	183.5	160.4	23.1	12.7	10.4	0	NA	P	30	70	NA	NA	U	Y	Y	Y	B	B	TILL
-05	7.3	0.5	6.8	140.3	114.6	25.7	15.2	10.5	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-06	8.9	0.6	8.3	158.2	119.5	38.7	25.3	13.4	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
-07	6.4	0.4	6.0	139.3	113.8	25.5	17.3	8.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
115-02	8.4	2.5	5.9	184.4	156.8	27.6	16.8	10.8	0	NA	P	50	50	TR	NA	U	Y	Y	Y	B	B	TILL
-03	6.7	2.5	4.2	162.0	144.6	17.4	11.3	6.1	0	NA	P	50	50	TR	NA	U	Y	Y	Y	B	GB	TILL
116-01	8.8	1.7	7.1	180.9	158.9	22.0	13.2	8.8	0	NA	P	50	50	TR	NA	U	Y	Y	Y	B	B	TILL
117-04	8.1	0.5	7.6	113.2	89.5	23.7	12.1	11.6	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
-05	8.5	0.5	8.0	161.8	133.7	28.1	14.5	13.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-06	8.4	0.5	7.9	187.3	157.8	29.5	16.3	13.2	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-07	8.3	0.7	7.6	133.8	111.6	22.2	11.6	10.6	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-08	4.2	0.6	3.6	147.4	131.6	15.8	11.5	4.3	0	NA	P	95	5	NA	NA	U	Y	Y	Y	GB	GB	TILL
118-07	8.7	0.8	7.9	228.5	205.0	23.5	11.0	12.5	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-08	8.7	1.1	7.6	138.7	117.5	21.2	10.5	10.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-09	8.4	0.9	7.5	129.5	100.5	29.0	14.8	14.2	1	1923	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-10	8.2	0.8	7.4	148.5	115.3	33.2	17.5	15.7	0	NA	P	90	10	NA	NA	U	Y	Y	Y	B	B	TILL
-11	7.0	0.9	6.1	139.9	117.9	22.0	12.0	10.0	0	NA	P	90	10	NA	NA	U	Y	Y	Y	B	B	TILL
120-01	3.6	0.1	3.5	182.0	178.0	4.0	2.8	1.2	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
121-03	8.3	1.8	6.5	151.7	104.8	46.9	26.5	20.4	1	292	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-04	8.1	0.6	7.5	128.1	93.5	34.6	20.1	14.5	1	19	P	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
122-03	8.1	1.6	6.5	224.6	154.3	70.3	36.2	34.1	6	566	P	70	30	NA	NA	U	Y	Y	Y	GY	GB	TILL
-04	8.4	1.7	6.7	178.3	131.2	47.1	25.2	21.9	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
123-03	8.4	0.6	7.8	147.5	121.9	25.6	15.1	10.5	2	165	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL

bpsl1jun.86

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET)			WEIGHT (GRAMS DRY)					AU		DESCRIPTION											CLASS
						M. I. CONC					CLAST					MATRIX						
	TABLE SPLIT	+10 CHIPS	TABLE FEED	TABLE CONC	M.I. LIGHTS	CONC. TOTAL	NON MAG	MAG	NO. V.G.	CALC PPB	SIZE	% V/S	% GR	% LS	% OT	S/U	SD	ST	CY	COLOR SD	COLOR CY	
BPS-86																						
118-12	8.9	2.0	6.9	162.6	127.0	35.6	24.6	11.0	0	NA	C	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-13	8.9	1.5	7.4	196.6	163.1	33.5	21.8	11.7	0	NA	C	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-14	8.2	1.3	6.9	138.6	106.5	32.1	20.3	11.8	3	218	C	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-15	6.1	0.8	5.3	132.2	109.2	23.0	14.5	8.5	1	6	F	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-16	8.1	1.3	6.8	164.8	118.3	46.5	29.5	17.0	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL

BP/SEL2APR.86

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET) TABLE SPLIT	+10 CHIPS	TABLE FEED	WEIGHT (GRAMS DRY) TABLE CONC	M.I. LIGHTS	M. I. CONC CONC. TOTAL	NON MAG	MAG	AU NO. V.G.	CALC PPB	DESCRIPTION CLAST SIZE	% V/S	GR	LS	OT	MATRIX S/U	SD	ST	CY	COLOR SD	CY	CLASS
BPS-86																						
124-02	8.3	1.5	6.8	137.4	105.6	31.8	15.2	16.6	1	325	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-03	7.5	1.0	6.5	155.6	123.0	32.6	19.2	13.4	2	20	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-04	6.6	0.8	5.8	101.0	74.4	26.6	16.6	10.0	0	NA	P/C	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
125-06	8.2	1.0	7.2	132.1	107.6	24.5	13.0	11.5	1	877	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-10	8.1	1.2	6.9	125.1	102.8	22.3	12.8	9.5	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
126-04	6.2	0.6	5.6	139.6	120.9	18.7	10.5	8.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
-05	8.1	2.1	6.0	161.4	133.8	27.6	15.9	11.7	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	GB	TILL
-06	8.7	1.3	7.4	100.4	76.8	23.6	12.9	10.7	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
-07	7.3	0.8	6.5	100.2	75.8	24.4	15.6	8.8	0	NA	P	70	30	NA	1	U	Y	Y	Y	B	GB	TILL
-08	3.4	0.4	3.0	116.6	103.3	13.3	9.4	3.9	0	NA	P	70	30	NA	1	U	Y	Y	Y	B	GB	TILL
127-06	8.8	0.9	7.9	105.0	76.2	28.8	15.4	13.4	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	GB	TILL
-07	7.9	0.6	7.3	252.0	220.5	31.5	16.8	14.7	0	NA	P	55	45	NA	NA	U	Y	Y	Y	B	GB	TILL
-08	7.0	0.8	6.2	267.0	239.9	27.1	15.4	11.7	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	GB	TILL
-09	8.3	1.0	7.3	147.6	124.1	23.5	12.9	10.6	0	NA	C	75	25	NA	NA	U	Y	Y	Y	B	GB	TILL
-10	4.4	0.8	3.6	101.7	86.4	15.3	10.0	5.3	0	NA	C	60	40	NA	NA	U	Y	Y	Y	B	GB	TILL
128-03	8.1	1.1	7.0	162.5	133.6	28.9	16.5	12.4	0	NA	C	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
125-07	8.2	1.1	7.1	164.3	128.7	35.6	24.6	11.0	0	NA	C	50	50	NA	NA	U	Y	Y	Y	B	GB	TILL
-08	7.1	0.8	6.3	197.0	170.3	26.7	18.0	8.7	0	NA	P/C	70	28	2	NA	U	Y	Y	Y	B	GB	TILL
-09	8.1	1.6	6.5	102.9	78.0	24.9	16.7	8.2	0	NA	C	60	38	2	NA	U	Y	Y	Y	B	GB	TILL
			0.0	0.0		0.0			0	NA				NA	NA							

bpsl2may.86

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET) TABLE SPLIT	+10 CHIPS	TABLE FEED	WEIGHT (GRAMS DRY) TABLE CONC	M.I. LIGHTS	M. I. CONC CONC. TOTAL	NON MAG	MAG	AU NO. V.G.	CALC PPB	DESCRIPTION CLAST SIZE	% V/S	GR	LS	OT	MATRIX S/U	SD	ST	CY	COLOR SD	CY	CLASS
BPS-86																						
134-01	3.5	0.1	3.4	109.5	103.7	5.8	3.7	2.1	0	NA	P	5	95	NA	3	U	Y	Y	Y	B	B	TILL
-02	7.4	0.8	6.6	151.1	135.0	16.1	9.6	6.5	0	NA	P	10	90	NA	NA	U	Y	Y	Y	B	B	TILL
-03	7.6	0.4	7.2	187.7	161.2	26.5	16.6	9.9	0	NA	P	15	85	NA	NA	U	Y	Y	Y	B	B	TILL
135-01	8.4	0.6	7.8	193.5	156.6	36.9	23.5	13.4	0	NA	P	20	80	NA	NA	U	Y	Y	Y	B	B	TILL
-02	8.4	0.4	8.0	186.0	138.8	47.2	27.7	19.5	0	NA	P	30	70	NA	NA	U	Y	Y	Y	B	B	TILL
-03	7.3	0.5	6.8	173.0	141.9	31.1	21.0	10.1	0	NA	P	20	80	NA	NA	U	Y	Y	Y	B	GB	TILL
-04	6.3	0.6	5.7	200.5	173.6	26.9	18.0	8.9	0	NA	P/C	20	80	NA	NA	U	Y	Y	Y	GB	GB	TILL
-05	6.9	0.4	6.5	155.2	126.6	28.6	18.8	9.8	0	NA	P	10	90	NA	NA	U	Y	Y	Y	GB	GB	TILL
125-08	5.6	0.0	5.6	135.9	118.0	17.9	15.0	2.9	0	NA	TR	NA	NA	NA	NA	U	Y	Y	Y	B	GB	TILL
-09	5.9	0.0	5.9	176.1	157.4	18.7	16.7	2.0	0	NA	TR	NA	NA	NA	NA	U	Y	Y	Y	B	GB	TILL
135-06	3.8	0.4	3.4	152.3	133.4	18.9	13.2	5.7	0	NA	C	30	70	NA	NA	U	Y	Y	Y	GB	GB	TILL
136-01	6.2	0.2	6.0	174.7	145.2	29.5	18.1	11.4	0	NA	P	20	80	NA	NA	U	Y	Y	Y	B	GB	TILL
-02	5.0	0.6	4.4	137.4	115.6	21.8	14.0	7.8	0	NA	P	40	60	NA	1	U	Y	Y	Y	B	GB	TILL
-03	8.7	1.0	7.7	217.7	177.7	40.0	26.2	13.8	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-04	8.9	0.4	8.5	180.4	139.2	41.2	23.4	17.8	0	NA	C	20	80	NA	NA	U	Y	Y	Y	B	GB	TILL
-05	6.7	0.6	6.1	154.4	124.3	30.1	18.4	11.7	0	NA	P/C	30	70	NA	NA	U	Y	Y	Y	GB	GB	TILL
-06	8.7	0.3	8.4	177.3	133.6	43.7	24.1	19.6	0	NA	P/BD	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL/BLR
-07	8.3	0.3	8.0	159.7	120.3	39.4	21.5	17.9	0	NA	P	40	60	NA	NA	U	Y	Y	Y	GB	GB	TILL
-08	7.9	0.3	7.6	178.1	132.7	45.4	25.7	19.7	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GY	TILL
-09	6.7	0.1	6.6	169.2	130.7	38.5	22.7	15.8	0	NA	P	80	20	NA	NA	S	F	Y	Y	B	GB	SAND
-10	7.0	0.5	6.5	212.8	179.0	33.8	15.5	18.3	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GY	TILL
-11	7.6	0.6	7.0	271.0	224.6	46.4	21.8	24.6	1	2331	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-12	7.1	1.0	6.1	190.1	162.7	27.4	11.8	15.6	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GY	TILL
137-01	7.1	0.5	6.6	140.3	111.8	28.5	14.5	14.0	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-02	5.9	0.2	5.7	118.6	95.3	23.3	12.4	10.9	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-03	7.7	0.5	7.2	105.9	74.4	31.5	17.3	14.2	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-04	5.5	0.2	5.3	102.4	80.8	21.6	12.4	9.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-05	6.7	0.3	6.4	131.1	106.5	24.6	13.4	11.2	0	NA	P	60	40	NA	1	U	Y	Y	Y	B	B	TILL
-06	5.2	0.1	5.1	160.5	144.6	15.9	8.5	7.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-07	7.3	0.1	7.2	118.6	94.4	24.2	13.2	11.0	1	49	P	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
139-02	4.2	0.8	3.4	100.4	83.1	17.3	9.3	8.0	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
140-01	6.2	0.5	5.7	131.6	114.9	16.7	9.4	7.3	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
141-01	8.3	0.8	7.5	135.2	103.1	32.1	17.2	14.9	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
-02	7.6	0.8	6.8	113.8	85.3	28.5	15.4	13.1	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-03	7.3	0.4	6.9	75.5	47.8	27.7	14.8	12.9	0	NA	P	65	35	NA	NA	U	Y	Y	Y	B	B	TILL
-04	7.1	0.5	6.6	93.7	66.9	26.8	14.3	12.5	0	NA	P	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-05	7.4	0.5	6.9	86.4	58.1	28.3	14.5	13.8	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL

BPSB1AUG.86

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET) TABLE SPLIT	+10 CHIPS	TABLE FEED	WEIGHT (GRAMS DRY) TABLE CONC	M.I. LIGHTS	M. I. CONC: CONC. TOTAL	NON MAG	MAG	AU: NO. V.G.	CALC PPB	DESCRIPTION: CLAST: SIZE	%: V/S	GR	LS	OT	MATRIX: S/U	SD	ST	CY	COLOR: SD	CY	CLASS
BPS-86																						
138-01	8.8	0.9	7.9	141.0	124.2	16.8	8.0	8.8	1	80	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-02	8.4	0.8	7.6	85.5	63.1	22.4	11.7	10.7	0	NA	P	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-03	5.9	0.4	5.5	69.6	51.0	18.6	11.3	7.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
139-01	6.4	0.7	5.7	75.4	64.1	11.3	6.7	4.6	0	NA	P	30	70	NA	NA	U	Y	Y	Y	B	B	TILL
123-02	7.8	0.0	7.8	59.1	42.6	16.5	10.4	6.1	0	NA	TR	NA	NA	NA	NA	U	Y	Y	Y	B	B	TILL
141.06	5.8	0.6	5.2	72.0	55.3	16.7	9.1	7.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-07	7.1	0.0	7.1	39.1	24.4	14.7	7.0	7.7	0	NA	TR	NA	NA	NA	NA	U	Y	Y	Y	B	GY	TILL
-08	7.7	0.6	7.1	68.8	51.9	16.9	8.2	8.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	GY	TILL
-09	5.1	0.6	4.5	60.2	50.0	10.2	5.0	5.2	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	GY	TILL
-10	8.1	0.8	7.3	104.7	83.6	21.1	10.6	10.5	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	GY	TILL
-11	6.3	0.6	5.7	111.1	93.7	17.4	8.9	8.5	0	NA	P	85	15	NA	NA	U	Y	Y	Y	B	GY	TILL
-12	8.2	0.4	7.8	58.0	39.0	19.0	11.3	7.7	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	GY	TILL
-13	8.4	1.2	7.2	62.5	45.7	16.8	9.4	7.4	0	NA	C	40	60	NA	NA	U	Y	Y	Y	GB	GY	TILL
-14	6.7	0.6	6.1	101.7	88.1	13.6	7.8	5.8	0	NA	C	50	50	NA	NA	U	Y	Y	Y	GB	GB	TILL
141-15	8.8	1.2	7.6	147.7	130.1	17.6	8.9	8.7	0	NA	C	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL

BPSL4MAY.86

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET) TABLE SPLIT	+10 CHIPS	TABLE FEED	WEIGHT (GRAMS DRY) TABLE CONC	M.I. LIGHTS	M. I. CONC CONC. TOTAL	NON MAG	MAG	AU NO. V.G.	CALC PPB	DESCRIPTION CLAST SIZE	% V/S	GR	LS	OT	MATRIX S/U	SD	ST	CY	COLOR SD	CY	CLASS
BPS-86-110																						
09-01-601	2.3	0.6	1.7	45.6	38.6	7.0	4.5	2.5	1	225	P	90	10	NA	NA	U	Y	Y	Y	GB	B	TILL
10-01-602	8.5	1.7	6.8	93.1	62.0	31.1	17.9	13.2	1	84	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
02-603	7.6	1.5	6.1	81.3	56.0	25.3	14.3	11.0	0	NA	C	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
03-604	8.5	1.8	6.7	105.4	72.1	33.3	19.9	13.4	1	145	C	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
04-605	7.0	1.2	5.8	96.5	67.5	29.0	18.0	11.0	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
11-01-606	8.8	1.2	7.6	97.0	58.5	38.5	22.1	16.4	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
12-01-607	8.6	2.2	6.4	93.4	63.6	29.8	17.2	12.6	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
02-608	8.6	0.8	7.8	98.6	64.0	34.6	20.3	14.3	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
03-609	8.4	1.1	7.3	103.7	65.0	38.7	22.4	16.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
04-610	8.2	0.8	7.4	217.9	187.1	30.8	17.9	12.9	0	NA	P/C	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
05-611	8.2	0.6	7.6	210.5	180.5	30.0	17.4	12.6	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
06-612	5.3	0.5	4.8	135.6	114.5	21.1	11.9	9.2	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
13-01-613	8.4	1.2	7.2	268.8	233.6	35.2	19.3	15.9	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
02-614	8.4	1.1	7.3	232.5	217.9	14.6	8.0	6.6	1	617	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
03-615	8.1	0.5	7.6	201.3	161.9	39.4	21.6	17.8	0	NA	P	75	25	NA	NA	U	Y	Y	Y	GB	GB	TILL
14-01-616	7.4	0.7	6.7	156.4	139.4	17.0	9.9	7.1	0	NA	P	50	50	TR	NA	U	Y	Y	Y	GB	GB	TILL
15-01-617	8.4	0.2	8.2	218.6	181.3	37.3	17.1	20.2	0	NA	P	50	50	TR	NA	U	Y	Y	Y	B	B	TILL
02-618	7.1	0.7	6.4	282.4	248.1	34.3	18.4	15.9	4	672	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
16-01-619	3.0	0.6	2.4	96.3	82.1	14.2	6.9	7.3	0	NA	P	75	25	TR	NA	U	Y	Y	Y	B	B	TILL
17-01-620	2.9	0.6	2.3	103.5	90.3	13.2	5.3	7.9	0	NA	BR	95	5	NA	NA	U	Y	Y	Y	GN	GG	TILL/BR
18-01-621	7.0	1.1	5.9	159.8	131.7	28.1	16.3	11.8	0	NA	P	75	25	TR	NA	U	Y	Y	Y	B	B	TILL
02-622	8.0	0.8	7.2	146.4	118.2	28.2	16.5	11.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
03-623	7.9	0.7	7.2	198.5	168.8	29.7	17.1	12.6	0	NA	BD	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
04-624	8.2	0.4	7.8	154.7	124.5	30.2	17.2	13.0	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
05-625	1.0	0.0	1.0	68.2	65.9	2.3	1.6	0.7	0	NA	NA	NA	NA	NA	NA	S	F	Y	Y	B	B	SAND
06-626	3.3	0.4	2.9	91.1	83.4	7.7	3.6	4.1	0	NA	P	75	25	NA	NA	U	Y	Y	Y	GB	GB	TILL
07-627	6.8	1.6	5.2	107.2	89.5	17.7	10.1	7.6	2	305	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
08-628	6.5	0.6	5.9	112.5	86.0	26.5	13.5	13.0	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
09-629	7.7	1.2	6.5	143.7	111.0	32.7	16.8	15.9	1	60	C	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
10-630	6.1	0.6	5.5	150.9	116.7	34.2	18.4	15.8	3	394	P	65	35	NA	NA	U	Y	Y	Y	B	B	TILL
11-631	4.9	0.8	4.1	133.6	113.0	20.6	10.5	10.1	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
19-01-632	7.6	1.0	6.6	112.7	78.0	34.7	22.5	12.2	2	73	C	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
02-633	7.3	0.6	6.7	136.8	107.2	29.6	18.2	11.4	5	35	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
03-634	6.6	1.0	5.6	140.2	109.6	30.6	17.9	12.7	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
20-01-635	6.4	0.4	6.0	161.3	139.9	21.4	13.3	8.1	1	113	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
02-636	6.2	0.2	6.0	132.4	99.9	32.5	22.5	10.0	1	129	P	35	65	NA	NA	U	Y	Y	Y	B	B	TILL
03-637	7.3	0.1	7.2	114.4	87.1	27.3	17.6	9.7	1	164	P	30	70	NA	NA	S	F	Y	Y	B	B	SAND
04-638	1.8	0.3	1.5	38.2	32.1	6.1	4.1	2.0	0	NA	P	30	70	NA	NA	U	Y	Y	Y	B	B	TILL
05-639	9.0	0.1	8.9	178.7	150.0	28.7	15.9	12.8	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
06-640	7.7	1.5	6.2	136.1	113.2	22.9	13.0	9.9	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
07-641	7.8	1.0	6.8	101.7	75.3	26.4	14.7	11.7	0	NA	C	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
08-642	5.7	1.0	4.7	86.6	65.9	20.7	11.3	9.4	0	NA	C	70	30	NA	NA	U	Y	Y	Y	GG	GB	TILL
21-01-643	5.1	1.1	4.0	191.4	168.8	22.6	13.6	9.0	0	NA	C	75	25	NA	NA	U	Y	Y	Y	GG	GG	TILL
22-01-644	8.0	1.5	6.5	134.8	99.9	34.9	19.7	15.2	1	147	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL

BPSL4MAY.86 OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET) TABLE SPLIT	+10 CHIPS	TABLE FEED	WEIGHT (GRAMS DRY) TABLE CONC	M.I. LIGHTS	M. I. CONC CONC. TOTAL	NON MAG	MAG	AU NO. V.G.	CALC PPB	DESCRIPTION CLAST SIZE	% V/S	GR	LS	OT	MATRIX S/U	SD	ST	CY	COLOR SD	CY	CLASS
BPS-86-110																						
02-645	8.5	1.6	6.9	178.4	136.0	42.4	22.3	20.1	1	13393	P	65	35	NA	NA	U	Y	Y	Y	B	B	TILL
03-646	8.5	0.6	7.9	259.4	220.8	38.6	20.0	18.6	1	570	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
04-647	8.0	0.4	7.6	105.0	64.1	40.9	22.7	18.2	1	93	P	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
05-648	8.0	0.4	7.6	144.6	98.3	46.3	25.7	20.6	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
06-649	7.7	0.4	7.3	145.2	127.9	17.3	10.2	7.1	0	NA	C	30	70	NA	NA	U	Y	Y	Y	B	B	TILL
07-650	8.1	0.5	7.6	151.4	116.2	35.2	20.4	14.8	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
08-651	7.2	0.8	6.4	137.9	107.7	30.2	17.8	12.4	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
23-01-652	8.0	0.6	7.4	88.2	56.3	31.9	16.8	15.1	1	38	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
02-653	7.6	0.5	7.1	95.2	65.0	30.2	16.5	13.7	1	91	C	60	40	TR	NA	U	Y	Y	Y	B	B	TILL
03-654	8.1	0.9	7.2	92.2	56.5	35.7	17.8	17.9	1	84	C	65	35	NA	NA	U	Y	Y	Y	B	B	TILL
04-655	8.5	1.4	7.1	86.8	56.3	30.5	17.1	13.4	0	NA	C	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
05-656	8.6	0.6	8.0	82.3	53.9	28.4	16.3	12.1	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
06-657	7.1	0.5	6.6	78.3	51.2	27.1	16.9	10.2	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
24-01-658	7.3	0.7	6.6	79.9	49.7	30.2	17.1	13.1	1	169	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
02-659	7.2	2.2	5.0	93.3	67.4	25.9	15.8	10.1	1	12	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
03-660	5.7	0.7	5.0	90.8	66.7	24.1	14.1	10.0	2	213	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
04-661	7.4	0.8	6.6	92.7	70.2	22.5	13.0	9.5	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
05-662	8.1	1.2	6.9	126.0	99.7	26.3	15.7	10.6	5	405	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
06-663	6.2	0.3	5.9	33.6	11.7	21.9	12.8	9.1	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
07-664	7.5	0.9	6.6	107.5	85.4	22.1	12.8	9.3	1	117	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
08-665	7.1	1.3	5.8	112.3	94.3	18.0	11.1	6.9	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
09-666	7.1	0.9	6.2	119.5	97.0	22.5	12.6	9.9	5	217	P	40	60	NA	NA	U	Y	Y	Y	GB	GB	TILL
10-667	7.9	0.8	7.1	187.8	168.4	19.4	10.7	8.7	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
11-668	7.8	1.4	6.4	187.0	157.3	29.7	16.0	13.7	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
12-669	8.1	0.8	7.3	205.0	171.0	34.0	17.6	16.4	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
13-670	7.5	1.0	6.5	190.3	123.6	66.7	31.3	35.4	1	512	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
14-671	7.8	1.4	6.4	192.4	139.8	52.6	15.5	37.1	3	540	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
15-672	7.9	1.5	6.4	200.7	147.9	52.8	24.2	28.6	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
16-673	7.5	1.2	6.3	176.8	139.7	37.1	15.1	22.0	0	NA	P	30	70	NA	NA	U	Y	Y	Y	B	B	TILL
17-674	7.7	0.9	6.8	172.6	140.0	32.6	14.1	18.5	0	NA	P	40	60	NA	NA	U	Y	Y	Y	B	B	TILL

bps13may.86

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET)			WEIGHT (GRAMS DRY)					AU		DESCRIPTION											CLASS
						M. I. CONC					CLAST					MATRIX						
	TABLE SPLIT	+10 CHIPS	TABLE FEED	TABLE CONC	M.I. LIGHTS	CONC. TOTAL	NON MAG	MAG	NO. V.G.	CALC PPB	SIZE	% V/S	GR	LS	OT	S/U	SD	ST	CY	COLOR SD	CY	
BPS-86-113																						
1-01-675	6.8	0.4	6.4	106.1	97.9	8.2	5.6	2.6	0	NA	P	5	5	90	3	S	F	Y	Y	B	B	SAND/CLAY
02-676	5.3	0.2	5.1	122.5	115.1	7.4	6.1	1.3	0	NA	G	90	10	NA	NA	S	C	N	Y	GY	GY	SAND
03-677	6.6	0.4	6.2	142.0	131.1	10.9	8.7	2.2	0	NA	P/G	95	5	NA	1	U	Y	Y	Y	GY	GY	TILL
2-01-678	7.5	0.3	7.2	180.5	166.2	14.3	9.2	5.1	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
02-679	5.2	0.5	4.7	186.1	181.0	5.1	3.7	1.4	0	NA	P	60	40	TR	1	U	Y	Y	Y	B	B	TILL
03-680	2.7	0.8	1.9	70.0	65.1	4.9	3.6	1.3	0	NA	P	90	10	NA	NA	U	Y	Y	Y	GN	B	TILL
3-01-681	7.6	0.3	7.3	90.7	71.1	19.6	13.7	5.9	1	74	P	10	85	5	NA	U	Y	Y	Y	B	B	TILL
02-682	8.9	1.5	7.4	186.3	145.6	40.7	24.6	16.1	1	41	P	85	15	TR	NA	U	Y	Y	Y	B	B	TILL
03-683	8.6	1.0	7.6	164.5	125.2	39.3	25.2	14.1	0	NA	P	45	50	5	NA	U	Y	Y	Y	B	B	TILL
04-684	8.6	1.0	7.6	163.3	116.3	47.0	30.7	16.3	0	NA	P	40	55	5	NA	U	Y	Y	Y	B	GN	TILL
05-685	8.9	2.2	6.7	122.4	92.7	29.7	18.3	11.4	3	192	P	60	30	10	NA	U	Y	Y	Y	B	B	TILL
06-686	7.9	1.0	6.9	132.9	110.3	22.6	16.9	5.7	2	33	P	80	20	TR	NA	U	Y	Y	Y	GG	B	TILL
4-01-687	5.6	0.3	5.3	63.2	55.6	7.6	5.4	2.2	1	119	P	5	90	5	3	U	Y	Y	Y	B	B	TILL
02-688	3.9	0.3	3.6	67.8	61.9	5.9	4.0	1.9	0	NA	G	5	90	5	NA	U	Y	Y	Y	B	B	TILL
03-689	8.7	1.7	7.0	166.4	138.2	28.2	15.5	12.7	0	NA	C	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
04-690	4.7	0.5	4.2	98.1	83.6	14.5	8.9	5.6	0	NA	P	95	5	NA	NA	U	Y	Y	Y	GY	GB	TILL
05-691	8.9	2.8	6.1	179.8	153.0	26.8	16.4	10.4	0	NA	C	100	0	TR	NA	U	Y	Y	Y	GN	GG	TILL/BD
06-692	2.4	0.8	1.6	42.7	36.1	6.6	4.5	2.1	2	558	C	90	10	NA	NA	U	Y	Y	Y	GN	GG	TILL/BR
5-01-693	4.9	0.6	4.3	134.7	125.4	9.3	5.5	3.8	0	NA	P	10	90	NA	NA	U	Y	Y	Y	B	B	TILL
02-694	5.9	0.7	5.2	134.1	113.1	21.0	13.6	7.4	1	27	P	90	10	NA	3	U	Y	Y	Y	B	B	TILL
03-695	8.0	0.6	7.4	194.3	165.8	28.5	18.2	10.3	3	353	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
04-696	9.0	0.9	8.1	220.0	187.1	32.9	20.2	12.7	0	NA	P	40	60	TR	NA	U	Y	Y	Y	B	B	TILL
05-697	7.9	0.5	7.4	183.7	151.5	32.2	22.1	10.1	1	131	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
06-698	7.1	0.4	6.7	113.9	94.2	19.7	12.9	6.8	0	NA	P	60	40	NA	1	U	Y	Y	Y	B	B	TILL
07-699	8.5	0.7	7.8	194.0	175.4	18.6	11.4	7.2	0	NA	P	30	70	TR	NA	U	Y	Y	Y	B	B	TILL
08-700	9.1	0.9	8.2	171.5	141.0	30.5	17.4	13.1	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
09-701	8.1	0.8	7.3	130.0	105.9	24.1	13.6	10.5	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
10-702	8.1	0.7	7.4	170.7	141.5	29.2	16.0	13.2	0	NA	P	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
11-703	7.7	0.8	6.9	144.1	115.8	28.3	15.3	13.0	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
12-704	1.9	0.2	1.7	51.1	44.8	6.3	3.9	2.4	0	NA	P	30	70	NA	NA	U	Y	Y	Y	B	B	TILL
6-01-705	5.1	0.3	4.8	101.6	96.2	5.4	3.7	1.7	0	NA	P	20	70	10	3	S	F	Y	Y	B	B	SAND
02-706	8.7	0.6	8.1	133.8	110.4	23.4	17.3	6.1	1	167	P	10	90	NA	1	U	Y	Y	Y	B	B	TILL
03-707	8.8	1.9	6.9	145.0	120.0	25.0	15.7	9.3	0	NA	P	10	90	TR	2	U	Y	Y	Y	B	B	TILL
04-708	8.5	1.0	7.5	127.0	90.5	36.5	22.2	14.3	1	46	C	80	20	TR	NA	U	Y	Y	Y	B	GB	TILL
05-709	8.1	0.8	7.3	109.2	75.1	34.1	20.9	13.2	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	GB	TILL
06-710	8.0	0.6	7.4	130.1	94.3	35.8	21.7	14.1	1	69	P	30	70	NA	NA	U	Y	Y	Y	B	GB	TILL
07-711	6.3	0.4	5.9	84.8	60.3	24.5	15.1	9.4	0	NA	P	40	60	NA	NA	U	Y	Y	Y	B	GB	TILL
08-712	7.8	0.4	7.4	116.4	87.7	28.7	16.3	12.4	1	39	P	60	40	NA	NA	U	Y	Y	Y	B	GB	TILL
09-713	7.6	0.5	7.1	98.4	69.5	28.9	10.2	18.7	1	284	P	50	50	NA	NA	U	Y	Y	Y	B	GB	TILL
10-714	7.9	0.5	7.4	120.3	92.8	27.5	10.1	17.4	1	100	P	60	40	NA	NA	U	Y	Y	Y	B	GB	TILL
11-715	8.2	0.5	7.7	154.5	120.5	34.0	22.2	11.8	0	NA	P	60	40	NA	1	U	Y	Y	Y	B	GB	TILL
12-716	6.2	0.4	5.8	118.0	88.2	29.8	18.0	11.8	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
13-717	6.5	0.7	5.8	116.1	89.1	27.0	16.0	11.0	1	23	P	60	40	NA	NA	U	Y	Y	Y	B	GB	TILL

BPSL2JUN.86

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET) TABLE SPLIT	+10 CHIPS	TABLE FEED	WEIGHT (GRAMS DRY) TABLE CONC	M.I. LIGHTS	M. I. CONC CONC. TOTAL	NON MAG	MAG	AU NO. V.G.	CALC PPB	DESCRIPTION CLAST SIZE	% V/S	GR	LS	OT	MATRIX S/U	SD	ST	CY	COLOR SD	CY	CLASS
BPS-86-113																						
6-14-718	5.9	0.5	5.4	114.2	92.7	21.5	13.4	8.1	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-15-719	8.2	0.7	7.5	137.6	104.2	33.4	19.1	14.3	1	34	P	50	50	NA	NA	U	Y	Y	Y	B	GB	TILL
-16-720	7.0	0.6	6.4	191.4	166.7	24.7	13.5	11.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
-17-721	6.9	0.7	6.2	139.5	106.2	33.3	18.4	14.9	0	NA	C	40	60	NA	NA	U	Y	Y	Y	B	GB	TILL
-18-722	6.9	0.8	6.1	135.4	108.1	27.3	15.8	11.5	0	NA	C	80	20	NA	NA	U	Y	Y	Y	B	GB	TILL
-19-723	3.6	0.1	3.5	100.8	86.7	14.1	8.7	5.4	0	NA	C	40	60	NA	NA	U	Y	Y	Y	B	GB	TILL
7-01-724	7.6	0.0	7.6	124.0	113.4	10.6	5.9	4.7	0	NA	TR	NA	NA	NA	NA	S	F	Y	Y	B	B	SAND
-02-725	7.8	0.4	7.4	143.4	116.0	27.4	18.9	8.5	0	NA	P	20	70	10	NA	U	Y	Y	Y	B	B	TILL
-03-726	3.7	0.4	3.3	80.4	68.6	11.8	7.7	4.1	1	83	P	10	50	40	NA	U	Y	Y	Y	B	B	TILL
-04-727	8.4	2.0	6.4	192.0	161.8	30.2	15.7	14.5	1	96	P	60	30	10	NA	U	Y	Y	Y	B	GB	TILL
-05-728	8.4	2.0	6.4	172.3	146.6	25.7	13.0	12.7	0	NA	P	60	30	10	NA	U	Y	Y	Y	GB	GB	TILL
-06-729	8.8	1.6	7.2	178.2	141.1	37.1	20.3	16.8	2	932	P	65	25	10	NA	U	Y	Y	Y	GB	GB	TILL
-07-730	8.9	1.4	7.5	177.8	126.6	51.2	26.9	24.3	2	51	P	70	25	5	NA	U	Y	Y	Y	GB	GB	TILL
-08-731	8.9	2.5	6.4	214.9	176.4	38.5	21.7	16.8	0	NA	P	70	25	5	NA	U	Y	Y	Y	GB	GB	TILL
-09-732	8.6	2.2	6.4	163.6	124.1	39.5	22.4	17.1	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-10-733	8.8	0.8	8.0	135.9	102.8	33.1	19.2	13.9	0	NA	C	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
-11-734	8.8	1.7	7.1	166.8	131.2	35.6	20.2	15.4	1	32	C	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-12-735	4.7	0.2	4.5	127.7	108.4	19.3	12.0	7.3	0	NA	P	70	30	NA	A	U	Y	Y	Y	GB	GB	TILL
-13-736	8.3	1.2	7.1	158.5	126.6	31.9	17.9	14.0	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-14-737	8.1	0.4	7.7	148.5	117.1	31.4	19.1	12.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-15-738	8.1	0.7	7.4	144.4	110.1	34.3	19.0	15.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	GB	TILL
-16-739	7.8	0.3	7.5	161.7	125.5	36.2	20.3	15.9	3	46	P/C	80	20	NA	NA	U	Y	Y	Y	B	GB	TILL
-17-740	7.7	0.3	7.4	148.3	112.1	36.2	20.1	16.1	1	75	P	75	25	NA	NA	U	Y	Y	Y	B	GB	TILL
-18-741	8.4	0.9	7.5	130.2	100.4	29.8	15.7	14.1	1	64	C	95	5	NA	NA	U	Y	Y	Y	GB	GB	TILL
-19-742	8.3	0.6	7.7	137.7	104.8	32.9	16.8	16.1	0	NA	P	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
-20-743	8.3	0.5	7.8	169.3	134.6	34.7	18.5	16.2	0	NA	P	75	25	NA	NA	U	Y	Y	Y	GB	GB	TILL
-21-744	8.3	0.5	7.8	162.3	135.1	27.2	14.1	13.1	0	NA	P	75	25	NA	NA	U	Y	Y	Y	GB	GB	TILL
-22-745	8.4	0.8	7.6	130.2	111.5	18.7	9.1	9.6	0	NA	P	75	25	NA	NA	U	Y	Y	Y	GB	GB	TILL
-23-746	8.5	1.5	7.0	141.6	116.8	24.8	11.2	13.6	1	342	C	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
8-01-747	8.9	2.1	6.8	126.1	105.1	21.0	11.7	9.3	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-02-748	8.4	1.1	7.3	149.6	127.0	22.6	11.1	11.5	0	NA	P	65	35	NA	NA	U	Y	Y	Y	GB	GB	TILL
-03-749	7.1	0.4	6.7	131.5	110.5	21.0	11.6	9.4	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-04-750	7.5	0.7	6.8	128.6	96.7	31.9	20.7	11.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-05-751	7.9	0.5	7.4	157.3	126.1	31.2	20.1	11.1	0	NA	P	60	40	NA	A	U	Y	Y	Y	B	B	TILL
-06-752	7.6	0.7	6.9	112.2	80.1	32.1	20.3	11.8	0	NA	P	65	35	NA	A	U	Y	Y	Y	GB	GB	TILL
-07-753	8.0	0.7	7.3	141.0	111.5	29.5	17.2	12.3	4	243	P	60	40	NA	A	U	Y	Y	Y	B	B	TILL
-08-754	6.3	0.6	5.7	105.1	80.2	24.9	15.5	9.4	0	NA	P	60	40	NA	A	U	Y	Y	Y	B	B	TILL
-09-755	8.2	0.3	7.9	130.5	101.4	29.1	17.3	11.8	1	22	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-10-756	8.2	0.6	7.6	156.2	113.7	42.5	26.6	15.9	0	NA	P	60	40	TR	NA	U	Y	Y	Y	B	B	TILL
-11-757	8.4	0.5	7.9	181.0	131.8	49.2	27.9	21.3	1	23	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-12-758	8.6	0.6	8.0	140.4	105.9	34.5	18.9	15.6	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-13-759	8.7	0.5	8.2	161.9	122.0	39.9	21.9	18.0	1	17	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-14-760	8.4	0.4	8.0	137.5	100.9	36.6	21.4	15.2	1	99	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-15-761	8.4	0.5	7.9	126.9	90.3	36.6	19.3	17.3	1	52	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL

BPSL2JUN.86

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET) TABLE SPLIT	+10 CHIPS	TABLE FEED	WEIGHT (GRAMS DRY) TABLE CONC	M.I. LIGHTS	M. I. CONC CONC. TOTAL	NON MAG	MAG	AU NO. V.G.	CALC PPB	DESCRIPTION CLAST SIZE	% V/S	GR	LS	OT	MATRIX S/U	SD	ST	CY	COLOR SD	CY	CLASS
BPS-86-113																						
-16-762	8.1	0.6	7.5	148.1	114.6	33.5	16.5	17.0	1	12	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-17-763	7.9	0.3	7.6	128.5	95.7	32.8	17.5	15.3	0	NA	P	65	35	NA	NA	U	Y	Y	Y	B	B	TILL
-18-764	8.6	0.7	7.9	181.0	143.8	37.2	19.8	17.4	0	NA	P	65	35	TR	NA	U	Y	Y	Y	B	B	TILL
-19-765	8.3	0.4	7.9	130.6	94.3	36.3	20.0	16.3	0	NA	P	65	35	TR	NA	U	Y	Y	Y	B	B	TILL
-20-766	8.6	0.4	8.2	136.6	98.0	38.6	20.8	17.8	0	NA	P	65	35	TR	NA	U	Y	Y	Y	B	B	TILL
9-01-767	9.2	2.0	7.2	154.3	119.1	35.2	20.3	14.9	1	243	P	65	30	5	NA	U	Y	Y	Y	B	B	TILL
-02-768	8.8	1.1	7.7	111.7	79.7	32.0	18.7	13.3	0	NA	C	70	30	TR	NA	U	Y	Y	Y	B	B	TILL
-03-769	7.9	1.0	6.9	128.5	100.0	28.5	16.9	11.6	0	NA	C	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
-04-770	7.8	0.5	7.3	119.7	93.9	25.8	14.3	11.5	0	NA	C	70	30	TR	NA	U	Y	Y	Y	B	B	TILL
-05-771	6.3	0.5	5.8	94.8	77.7	17.1	10.0	7.1	0	NA	C	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-06-772	8.6	0.9	7.7	173.3	147.7	25.6	13.4	12.2	0	NA	P	60	40	TR	NA	U	Y	Y	Y	B	B	TILL
-07-773	6.6	1.0	5.6	106.2	84.2	22.0	11.9	10.1	0	NA	C	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-08-774	6.7	0.6	6.1	134.9	111.1	23.8	13.8	10.0	0	NA	P	65	35	NA	NA	U	Y	Y	Y	B	B	TILL
-09-775	6.7	0.4	6.3	128.7	104.6	24.1	14.3	9.8	0	NA	C	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-10-776	8.1	0.5	7.6	117.3	89.0	28.3	15.9	12.4	0	NA	C	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-11-777	8.4	0.8	7.6	105.7	77.5	28.2	15.3	12.9	0	NA	C	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-12-778	7.5	0.9	6.6	114.5	89.6	24.9	13.7	11.2	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-13-779	8.4	0.7	7.7	123.1	100.0	23.1	12.9	10.2	0	NA	P	40	60	NA	NA	U	Y	Y	Y	GB	GB	TILL
-14-780	8.2	0.6	7.6	120.1	90.3	29.8	17.1	12.7	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-15-781	8.0	0.8	7.2	142.3	111.3	31.0	17.8	13.2	1	57	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-16-782	8.1	0.4	7.7	159.1	134.9	24.2	14.2	10.0	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-17-783	7.8	0.5	7.3	95.8	61.7	34.1	21.8	12.3	0	NA	P	50	50	NA	NA	U	Y	Y	Y	GB	GB	TILL
-18-784	4.1	0.5	3.6	81.9	68.4	13.5	8.9	4.6	0	NA	C	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
10-01-786	8.0	0.8	7.2	83.0	60.8	22.2	8.0	14.2	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-02-787	9.1	2.6	6.5	134.5	109.1	25.4	14.1	11.3	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-03-788	8.8	1.3	7.5	60.3	40.0	20.3	11.2	9.1	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-04-789	8.4	0.3	8.1	81.7	60.5	21.2	12.1	9.1	0	NA	P	75	25	NA	A	U	Y	Y	Y	GB	GB	TILL
-05-790	6.8	0.4	6.4	85.9	68.9	17.0	11.1	5.9	0	NA	P	70	30	NA	A	U	Y	Y	Y	GB	GB	TILL
-06-791	8.5	0.7	7.8	85.0	51.1	33.9	20.9	13.0	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-07-792	8.5	1.4	7.1	163.0	128.4	34.6	20.0	14.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-08-793	8.6	0.7	7.9	241.9	220.0	21.9	11.6	10.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-09-794	8.4	0.5	7.9	152.8	120.7	32.1	22.4	9.7	0	NA	P	60	40	TR	NA	U	Y	Y	Y	B	B	TILL

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OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET) TABLE SPLIT	+10 CHIPS	TABLE FEED	WEIGHT (GRAMS DRY) TABLE CONC	M.I. LIGHTS	M. I. CONC CONC. TOTAL	NON MAG	MAG	AU NO. V.G.	CALC PPB	DESCRIPTION CLAST SIZE	% V/S	GR	LS	OT	MATRIX S/U	SD	ST	CY	COLOR SD	CY	CLASS
BPS-86-113																						
10-10-795	8.1	0.0	8.1	154.5	119.3	35.2	25.4	9.8	0	NA	TR	NA	NA	NA	NA	U	Y	Y	Y	B	B	TILL
11-796	4.2	0.3	3.9	76.2	64.6	11.6	7.3	4.3	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
11-01-797	9.3	1.0	8.3	132.4	95.1	37.3	23.1	14.2	2	1245	P	65	35	TR	NA	U	Y	Y	Y	GB	GB	TILL
02-798	8.7	0.7	8.0	90.9	68.3	22.6	14.7	7.9	1	144	P	70	30	TR	NA	U	Y	Y	Y	B	B	TILL
03-799	9.1	0.5	8.6	146.2	125.0	21.2	14.0	7.2	0	NA	P	75	25	TR	NA	S	M	Y	N	B	NA	SAND
04-800	8.0	1.1	6.9	121.0	91.0	30.0	19.9	10.1	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
05-801	8.5	0.8	7.7	142.1	100.1	42.0	25.3	16.7	0	NA	P	60	40	TR	NA	U	Y	Y	Y	B	B	TILL
12-01-802	8.8	1.1	7.7	125.7	89.8	35.9	23.9	12.0	0	NA	P	70	25	5	NA	U	Y	Y	Y	B	B	TILL
02-803	8.7	0.2	8.5	77.4	43.0	34.4	22.2	12.2	0	NA	F	75	25	TR	NA	U	Y	Y	Y	B	B	TILL
13-01-804	6.6	0.8	5.8	92.7	68.9	23.8	12.3	11.5	0	NA	P	70	30	TR	NA	U	Y	Y	Y	B	B	TILL
02-805	5.5	0.8	4.7	95.9	78.2	17.7	9.8	7.9	1	65	P	75	20	5	NA	U	Y	Y	Y	B	B	TILL
14-01-806	8.7	1.6	7.1	194.5	159.3	35.2	21.7	13.5	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
02-807	8.8	0.9	7.9	142.7	118.6	24.1	13.6	10.5	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
03-808	8.3	0.5	7.8	150.7	141.1	9.6	6.2	3.4	0	NA	P	75	25	NA	NA	U	Y	Y	Y	BN	BN	TILL
04-809	8.4	0.5	7.9	175.5	143.4	32.1	18.6	13.5	0	NA	C	70	30	NA	NA	U	Y	Y	Y	BN	BN	TILL
17-01-822	8.5	0.8	7.7	128.8	118.4	10.4	6.7	3.7	0	NA	P	30	70	NA	NA	U	Y	Y	Y	B	B	TILL
02-823	8.2	0.0	8.2	139.4	120.5	18.9	12.3	6.6	0	NA	TR	NA	NA	NA	NA	U	Y	Y	Y	B	GB	TILL
03-824	7.9	0.2	7.7	134.9	110.0	24.9	15.8	9.1	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
18-01-825	8.4	2.6	5.8	132.7	117.4	15.3	8.8	6.5	0	NA	P	30	70	NA	NA	U	Y	Y	Y	B	B	TILL
02-826	7.8	0.3	7.5	134.8	113.5	21.3	13.8	7.5	0	NA	G	40	60	NA	NA	U	Y	Y	Y	B	GB	TILL
03-827	9.1	2.4	6.7	110.7	73.7	37.0	22.0	15.0	1	132	C	90	10	NA	NA	U	Y	Y	Y	GY	GY	TILL
04-828	8.9	2.0	6.9	93.2	67.5	25.7	13.7	12.0	0	NA	C	95	5	NA	NA	U	Y	Y	Y	GY	GY	TILL
05-829	9.0	1.6	7.4	86.6	59.9	26.7	14.4	12.3	0	NA	C	95	5	NA	NA	U	Y	Y	Y	GY	GY	TILL
06-830	8.1	2.1	6.0	194.7	179.4	15.3	6.6	8.7	1	8526	P/C	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
07-831	8.3	2.2	6.1	146.6	127.6	19.0	9.7	9.3	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GG	GG	TILL
19-01-832	8.4	1.1	7.3	186.7	180.1	6.6	3.9	2.7	0	NA	P	30	70	NA	NA	U	Y	Y	Y	B	B	TILL
02-833	6.9	0.1	6.8	124.9	106.0	18.9	12.7	6.2	1	15	G	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
03-834	3.8	1.3	2.5	85.6	80.8	4.8	2.7	2.1	0	NA	C/BK	95	5	NA	NA	U	Y	Y	Y	GB	GB	TILL/BDK
20-01-835	3.4	0.5	2.9	82.4	69.9	12.5	7.0	5.5	0	NA	P	90	10	NA	NA	U	Y	Y	Y	B	B	TILL
02-836	5.5	0.2	5.3	142.1	96.7	45.4	27.7	17.7	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
03-837	7.4	0.0	7.4	138.2	118.3	19.9	10.8	9.1	0	NA	TR	NA	NA	NA	NA	S	F	Y	Y	B	B	SAND
04-838	9.2	1.9	7.3	117.0	82.9	34.1	18.7	15.4	1	54	P	90	10	NA	NA	U	Y	Y	Y	GG	GG	TILL
05-839	8.0	1.5	6.5	159.2	127.2	32.0	18.5	13.5	0	NA	C	70	30	NA	NA	U	Y	Y	Y	GG	GG	TILL
06-840	8.9	1.5	7.4	150.3	130.9	19.4	10.7	8.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
07-841	8.1	1.2	6.9	145.9	113.0	32.9	17.7	15.2	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GG	GG	TILL
08-842	9.0	1.4	7.6	136.5	95.2	41.3	23.6	17.7	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GG	GG	TILL
21-01-843	7.2	0.8	6.4	122.9	101.1	21.8	12.8	9.0	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
02-844	8.3	1.0	7.3	92.2	65.7	26.5	15.1	11.4	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
03-845	7.5	0.6	6.9	86.3	67.0	19.3	10.8	8.5	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
04-846	7.5	0.6	6.9	59.8	42.8	17.0	11.2	5.8	0	NA	P	40	60	NA	B	S	F	Y	Y	B	GB	SAND
05-847	8.9	1.8	7.1	125.7	95.6	30.1	17.1	13.0	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
06-848	8.9	1.3	7.6	102.4	77.7	24.7	13.9	10.8	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
07-849	8.2	0.9	7.3	82.0	55.9	26.1	15.4	10.7	0	NA	C	50	50	NA	NA	U	Y	Y	Y	B	GB	TILL
08-850	7.5	0.3	7.2	97.4	74.1	23.3	13.6	9.7	1	363	C	40	60	NA	NA	U	Y	Y	Y	GB	GB	TILL

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OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET)			WEIGHT (GRAMS DRY)					AU		DESCRIPTION											CLASS
						M. I. CONC					CLAST					MATRIX						
	TABLE SPLIT	+10 CHIPS	TABLE FEED	TABLE CONC	M.I. LIGHTS	CONC. TOTAL	NON MAG	MAG	NO. V.G.	CALC PPB	SIZE	% V/S	% GR	% LS	% OT	S/U	SD	ST	CY	COLOR SD	COLOR CY	
BPS-86-113																						
09-851	7.4	0.9	6.5	164.2	145.1	19.1	11.3	7.8	0	NA	C	50	50	NA	NA	U	Y	Y	Y	GB	GB	TILL
10-852	7.4	0.9	6.5	153.7	129.7	24.0	14.0	10.0	0	NA	P	65	35	NA	NA	U	Y	Y	Y	GB	GB	TILL
11-853	7.9	1.5	6.4	138.6	115.5	23.1	14.2	8.9	1	204	C	65	35	NA	NA	U	Y	Y	Y	GG	GG	TILL
21-12-854	6.9	0.9	6.0	180.3	154.3	26.0	14.8	11.2	0	NA	C	65	35	NA	NA	U	Y	Y	Y	GB	GB	TILL

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OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET) TABLE SPLIT	+10 CHIPS	TABLE FEED	WEIGHT (GRAMS DRY) TABLE CONC	M.I. LIGHTS	M.I. CONC CONC. TOTAL	NON MAG	MAG	AU NO. V.G.	CALC PPB	DESCRIPTION CLAST SIZE	% V/S	GR	LS	OT	MATRIX S/U	SD	ST	CY	COLOR SD	CY	CLASS
BPS-86-113																						
22-01-855	5.1	0.5	4.6	162.1	144.2	17.9	10.4	7.5	0	NA	C	50	50	NA	NA	U	Y	Y	Y	GB	GB	TILL
-02-856	6.6	0.6	6.0	143.5	120.5	23.0	10.1	12.9	0	NA	C	40	60	NA	NA	U	Y	Y	Y	GB	GB	TILL
-03-857	7.2	0.8	6.4	156.2	126.0	30.2	18.5	11.7	0	NA	C	15	85	NA	NA	U	Y	Y	Y	B	B	TILL
-04-858	8.6	1.1	7.5	173.4	151.8	21.6	11.6	10.0	0	NA	C	60	40	NA	TR	U	Y	Y	Y	B	GB	TILL
-05-859	7.3	0.8	6.5	144.8	121.0	23.8	13.7	10.1	0	NA	C	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-06-860	7.4	0.6	6.8	127.2	102.6	24.6	13.6	11.0	0	NA	C	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-07-861	9.2	3.0	6.2	177.5	152.6	24.9	14.0	10.9	0	NA	C	80	20	NA	TR	U	Y	Y	Y	GY	GY	TILL
-08-862	9.2	2.6	6.6	164.6	138.9	25.7	14.0	11.7	0	NA	C	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
-09-863	7.0	1.8	5.2	112.8	89.0	23.8	13.4	10.4	1	6090	C	85	15	NA	TR	U	Y	Y	Y	GG	GB	TILL
24-01-864	8.5	1.3	7.2	147.3	111.2	36.1	22.0	14.1	1	4	C	80	20	NA	NA	U	Y	Y	Y	GB	GY	TILL
-02-865	6.7	1.0	5.7	121.0	89.4	31.6	17.4	14.2	0	NA	C	75	20	NA	5	U	Y	Y	Y	GB	GY	TILL
-03-866	9.0	2.4	6.6	153.9	111.5	42.4	20.5	21.9	4	94	C	85	15	NA	NA	U	Y	Y	Y	GN	B	TILL
25-01-867	4.0	0.5	3.5	85.0	76.4	8.6	5.2	3.4	0	NA	C	70	30	NA	TR	U	Y	Y	Y	GY	GY	TILL
-02-868	8.5	1.1	7.4	133.5	96.1	37.4	23.0	14.4	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-03-869	8.3	0.9	7.4	145.6	98.4	47.2	28.7	18.5	0	NA	C	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-04-870	8.0	2.4	5.6	119.1	93.5	25.6	15.3	10.3	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GG	GG	TILL
-05-871	5.4	1.0	4.4	189.5	109.1	80.4	52.1	28.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
26-01-872	2.2	0.4	1.8	49.5	42.6	6.9	4.5	2.4	0	NA	P	100	TR	NA	NA	U	Y	Y	Y	GG	GY	TILL
27-01-873	3.6	0.8	2.8	95.7	82.6	13.1	8.1	5.0	0	NA	P	90	10	NA	NA	U	Y	Y	Y	GG	GY	TILL
28-01-874	7.7	1.2	6.5	105.9	76.6	29.3	18.9	10.4	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-02-875	8.0	0.7	7.3	143.7	105.4	38.3	22.7	15.6	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-03-876	7.2	0.8	6.4	121.3	86.6	34.7	21.6	13.1	1	69	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-04-877	8.6	1.2	7.4	130.5	97.4	33.1	20.2	12.9	1	32	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
-05-878	8.6	1.2	7.4	131.5	100.8	30.7	17.5	13.2	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	GB	TILL
-06-879	8.1	0.7	7.4	155.9	117.8	38.1	21.7	16.4	0	NA	P	50	50	NA	NA	U	Y	Y	Y	GB	GB	TILL
-07-880	7.2	0.7	6.5	152.6	121.4	31.2	18.7	12.5	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-08-881	7.7	0.6	7.1	166.5	143.0	23.5	15.0	8.5	0	NA	P	40	60	NA	A	U	Y	Y	Y	GB	GB	TILL
-09-882	5.8	0.8	5.0	123.3	95.3	28.0	18.9	9.1	0	NA	C	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-10-883	8.0	0.8	7.2	169.5	141.6	27.9	18.2	9.7	0	NA	C	80	20	NA	A	U	Y	Y	Y	GB	GB	TILL
-11-884	5.6	0.6	5.0	124.7	97.1	27.6	18.9	8.7	0	NA	C	30	70	NA	A	U	Y	Y	Y	GB	GB	TILL
-12-885	5.1	0.3	4.8	128.3	113.9	14.4	9.1	5.3	0	NA	P	90	10	NA	A	U	Y	Y	Y	GB	GB	TILL
29-01-886	5.5	0.9	4.6	157.2	125.3	31.9	19.9	12.0	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-02-887	8.6	0.5	8.1	208.8	172.8	36.0	22.6	13.4	0	NA	P	60	40	TR	NA	U	Y	Y	Y	B	GB	TILL
-03-888	9.1	1.2	7.9	187.3	153.1	34.2	20.2	14.0	0	NA	P	40	50	10	NA	U	Y	Y	Y	GB	GB	TILL
-04-889	9.3	0.5	8.8	178.6	143.0	35.6	20.7	14.9	0	NA	P	60	30	10	NA	U	Y	Y	Y	GB	GB	TILL
-05-890	5.7	0.2	5.5	128.3	107.2	21.1	14.1	7.0	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-06-891	9.1	0.7	8.4	187.2	154.7	32.5	22.0	10.5	1	29	P	95	5	NA	NA	U	Y	Y	Y	GB	GB	TILL
-07-892	7.5	0.6	6.9	173.5	142.3	31.2	19.9	11.3	0	NA	P	95	5	NA	NA	U	Y	Y	Y	GB	GB	TILL
-08-893	8.6	0.4	8.2	153.0	131.2	21.8	12.8	9.0	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-09-894	8.5	1.4	7.1	177.5	156.3	21.2	11.2	10.0	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-10-895	9.2	1.3	7.9	206.1	181.9	24.2	13.5	10.7	0	NA	P	60	40	TR	NA	U	Y	Y	Y	B	B	TILL
-11-896	9.0	0.9	8.1	192.6	170.1	22.5	12.6	9.9	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
30-01-897	8.5	0.3	8.2	137.5	103.4	34.1	22.6	11.5	0	NA	P	10	90	NA	A	U	Y	Y	Y	B	B	TILL
-02-898	8.6	1.0	7.6	188.3	170.0	18.3	10.0	8.3	0	NA	P	20	80	TR	NA	U	Y	Y	Y	B	B	TILL

BPSL6JUN.86 OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET) TABLE SPLIT	+10 CHIPS	TABLE FEED	WEIGHT (GRAMS DRY) TABLE CONC	M.I. LIGHTS	M. I. CONC CONC. TOTAL	NON MAG	MAG	AU NO. V.G.	CALC PPB	DESCRIPTION CLAST SIZE	% V/S	GR	LS	OT	MATRIX S/U	SD	ST	CY	COLOR SD	CY	CLASS
BPS-86-113																						
-03-899	9.4	2.7	6.7	210.7	165.9	44.8	22.6	22.2	9	1376	P	45	50	5	NA	U	Y	Y	Y	B	B	TILL
-04-900	8.8	1.5	7.3	164.2	128.1	36.1	19.3	16.8	1	591	C	50	50	TR	NA	U	Y	Y	Y	B	B	TILL
31-01-901	9.0	2.2	6.8	221.2	211.2	10.0	6.1	3.9	0	NA	P	20	80	TR	NA	U	Y	Y	Y	B	B	TILL
-02-902	9.3	2.1	7.2	192.5	154.1	38.4	21.8	16.6	1	355	C	50	45	5	NA	U	Y	Y	Y	B	B	TILL
-03-903	8.8	1.8	7.0	184.0	152.0	32.0	17.8	14.2	0	NA	C	50	50	TR	NA	U	Y	Y	Y	B	B	TILL
-04-904	9.1	1.8	7.3	180.0	137.8	42.2	25.3	16.9	0	NA	C	80	20	TR	NA	U	Y	Y	Y	B	B	TILL
-05-905	9.2	1.5	7.7	167.7	134.5	33.2	19.0	14.2	1	201	C	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-06-906	7.5	1.2	6.3	135.4	107.2	28.2	18.1	10.1	0	NA	C	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-07-907	8.6	0.9	7.7	189.7	151.9	37.8	17.8	20.0	3	272	C	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
32-01-908	9.1	0.5	8.6	171.6	147.2	24.4	14.1	10.3	0	NA	P	50	50	TR	NA	U	Y	Y	Y	B	B	TILL
-02-909	8.9	0.7	8.2	186.9	156.6	30.3	18.3	12.0	0	NA	C	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-03-910	9.5	0.7	8.8	182.3	152.2	30.1	18.0	12.1	1	118	C	50	50	TR	NA	U	Y	Y	Y	B	B	TILL
-04-911	9.5	0.8	8.7	135.9	106.8	29.1	17.9	11.2	0	NA	C	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
-05-912	9.3	0.7	8.6	175.0	140.9	34.1	22.2	11.9	0	NA	C	20	80	NA	NA	U	Y	Y	Y	B	B	TILL
-06-913	9.3	1.1	8.2	180.6	151.2	29.4	16.8	12.6	0	NA	C	30	70	TR	NA	U	Y	Y	Y	B	B	TILL
-07-914	9.4	1.0	8.4	162.4	132.0	30.4	18.4	12.0	0	NA	C	85	15	NA	NA	U	Y	Y	Y	B	B	TILL
-08-915	9.6	1.1	8.5	146.3	120.1	26.2	14.3	11.9	1	148	C	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-09-916	9.5	1.0	8.5	151.1	124.6	26.5	15.6	10.9	0	NA	C	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-10-917	9.9	1.6	8.3	160.7	137.1	23.6	13.7	9.9	0	NA	C	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-11-918	9.7	1.1	8.6	170.7	144.9	25.8	15.4	10.4	0	NA	C	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-12-919	9.5	1.0	8.5	196.3	179.9	16.4	8.8	7.6	0	NA	C	70	30	NA	A	U	Y	Y	Y	B	B	TILL
-13-920	10.0	1.1	8.9	194.8	167.4	27.4	15.9	11.5	0	NA	C	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-14-921	9.5	0.9	8.6	164.6	138.3	26.3	15.2	11.1	1	42	C	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-15-922	9.3	0.8	8.5	224.2	203.5	20.7	10.8	9.9	0	NA	C	40	60	NA	C	U	Y	Y	Y	B	B	TILL
33-01-923	9.1	0.7	8.4	168.8	137.0	31.8	19.3	12.5	0	NA	C	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-02-924	8.7	0.8	7.9	159.2	130.3	28.9	17.4	11.5	0	NA	C	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-03-925	9.0	0.7	8.3	160.8	137.2	23.6	13.0	10.6	0	NA	C	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-04-926	9.0	1.3	7.7	165.1	134.5	30.6	18.3	12.3	0	NA	C	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-05-927	9.2	1.3	7.9	186.8	165.0	21.8	11.5	10.3	0	NA	C	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-06-928	9.2	0.9	8.3	197.8	177.1	20.7	10.6	10.1	0	NA	C	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-07-929	9.0	0.8	8.2	210.5	181.8	28.7	16.2	12.5	0	NA	C	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-08-930	8.4	1.2	7.2	196.2	171.8	24.4	14.8	9.6	0	NA	C	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-09-931	9.1	0.9	8.2	161.5	134.7	26.8	16.2	10.6	0	NA	C	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-10-932	9.6	0.5	9.1	236.0	209.3	26.7	15.4	11.3	0	NA	P	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-11-933	9.5	0.9	8.6	238.0	213.1	24.9	13.3	11.6	1	2741	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
-12-934	9.0	1.0	8.0	240.3	203.1	37.2	22.0	15.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-13-935	9.0	1.0	8.0	140.1	108.9	31.2	18.4	12.8	1	20	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-14-936	8.1	1.6	6.5	96.4	69.1	27.3	17.0	10.3	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-15-937	5.6	0.9	4.7	96.8	83.1	13.7	8.8	4.9	0	NA	P	70	30	NA	A	U	Y	Y	Y	GB	GY	TILL
34-01-938	8.3	0.9	7.4	146.6	112.0	34.6	22.0	12.6	1	17	P	60	40	NA	A	U	Y	Y	Y	GB	GY	TILL
-02-939	8.6	0.6	8.0	158.0	121.3	36.7	23.3	13.4	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GY	TILL
-03-940	7.7	0.8	6.9	152.4	124.0	28.4	17.5	10.9	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GY	TILL
-04-941	9.3	1.0	8.3	167.1	132.0	35.1	21.3	13.8	2	34	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-05-942	9.1	0.9	8.2	150.1	115.2	34.9	20.0	14.9	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL

BPSL6JUN.86

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET) TABLE SPLIT	+10 CHIPS	TABLE FEED	WEIGHT (GRAMS DRY) TABLE CONC	M.I. LIGHTS	M. I. CONC CONC. TOTAL	NON MAG	MAG	AU NO. V.G.	CALC PPB	DESCRIPTION CLAST SIZE	% V/S	GR	LS	OT	MATRIX S/U	SD	ST	CY	COLOR SD	CY	CLASS
BPS-86-113																						
-06-943	9.0	1.1	7.9	134.1	103.4	30.7	18.8	11.9	0	NA	P	75	25	NA	NA	U	Y	Y	Y	GB	GB	TILL
-07-944	8.1	1.1	7.0	169.4	136.5	32.9	20.4	12.5	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-08-945	8.8	1.0	7.8	160.3	127.5	32.8	19.2	13.6	1	33	P	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-09-946	9.3	0.9	8.4	159.4	127.9	31.5	19.1	12.4	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-10-947	8.1	0.8	7.3	140.3	106.4	33.9	21.5	12.4	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
-11-948	9.2	2.0	7.2	187.9	159.2	28.7	15.9	12.8	0	NA	C	50	50	NA	NA	U	Y	Y	Y	GB	GB	TILL
-12-949	8.7	1.4	7.3	131.8	102.9	28.9	16.9	12.0	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
35-01-950	9.1	1.1	8.0	218.5	148.0	70.5	41.8	28.7	8	210	C	70	30	TR	NA	U	Y	Y	Y	GY	GY	TILL
-02-951	8.4	1.8	6.6	150.6	125.9	24.7	14.7	10.0	0	NA	C	70	30	TR	NA	U	Y	Y	Y	B	B	TILL
-03-952	9.1	2.4	6.7	124.0	90.1	33.9	17.6	16.3	1	121	C	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-04-953	9.2	2.2	7.0	133.7	102.1	31.6	18.8	12.8	1	154	C	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-05-954	9.1	1.2	7.9	190.0	156.9	33.1	20.2	12.9	0	NA	C	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-06-955	9.5	1.8	7.7	151.4	116.1	35.3	22.6	12.7	0	NA	C	50	50	TR	NA	U	Y	Y	Y	B	B	TILL
-07-956	9.0	0.6	8.4	156.5	115.4	41.1	25.6	15.5	0	NA	C	40	60	TR	NA	U	Y	Y	Y	B	B	TILL
-08-957	8.9	0.8	8.1	148.7	117.4	31.3	18.9	12.4	1	34	C	50	50	TR	NA	U	Y	Y	Y	B	B	TILL
-09-958	8.9	0.8	8.1	138.7	106.4	32.3	20.0	12.3	0	NA	C	20	80	TR	NA	U	Y	Y	Y	B	B	TILL
-10-959	9.2	1.0	8.2	174.7	133.4	41.3	25.3	16.0	0	NA	C	50	50	TR	NA	U	Y	Y	Y	B	B	TILL
36-01-960	4.7	0.6	4.1	118.9	103.7	15.2	10.5	4.7	0	NA	C	45	45	10	NA	U	Y	Y	Y	B	B	TILL
-02-961	9.3	1.9	7.4	260.5	219.8	40.7	25.2	15.5	1	8	C	50	45	5	NA	U	Y	Y	Y	B	B	TILL
-03-962	9.0	0.8	8.2	177.7	142.2	35.5	19.4	16.1	0	NA	C	70	30	TR	NA	U	Y	Y	Y	B	GB	TILL
-04-963	8.8	0.6	8.2	168.6	134.7	33.9	19.4	14.5	0	NA	C	80	20	TR	NA	U	Y	Y	Y	B	B	TILL
-05-964	8.7	0.8	7.9	169.4	134.4	35.0	19.6	15.4	0	NA	C	60	40	TR	NA	U	Y	Y	Y	B	GB	TILL
-06-965	7.4	0.4	7.0	198.2	162.8	35.4	20.6	14.8	0	NA	C	60	40	TR	NA	U	Y	Y	Y	B	GB	TILL
-07-966	8.6	0.6	8.0	208.3	172.3	36.0	21.3	14.7	0	NA	C	60	40	TR	NA	U	Y	Y	Y	B	GB	TILL
-08-967	3.0	0.5	2.5	114.3	101.2	13.1	7.6	5.5	0	NA	C	75	25	TR	NA	U	Y	Y	Y	B	GB	TILL
37-01-968	8.7	2.4	6.3	180.7	147.7	33.0	20.6	12.4	0	NA	C	60	30	10	NA	U	Y	Y	Y	B	GB	TILL
-02-969	9.6	0.7	8.9	200.0	155.3	44.7	28.7	16.0	0	NA	C	55	35	10	NA	U	Y	Y	Y	B	GB	TILL
-03-970	9.2	1.7	7.5	182.4	132.7	49.7	28.1	21.6	1	76	C	60	40	TR	NA	U	Y	Y	Y	GB	GB	TILL
-04-971	9.1	1.2	7.9	156.5	107.3	49.2	30.3	18.9	0	NA	C	70	30	TR	NA	U	Y	Y	Y	GB	GB	TILL
-05-972	7.9	0.8	7.1	106.2	86.2	20.0	11.0	9.0	0	NA	C	85	15	NA	NA	U	Y	Y	Y	GB	GY	TILL
-06-973	3.0	0.7	2.3	82.2	72.1	10.1	6.7	3.4	0	NA	P	70	30	TR	NA	U	Y	Y	Y	GB	GY	TILL
38-01-974	6.8	2.1	4.7	163.5	142.5	21.0	12.3	8.7	0	NA	P	60	40	TR	NA	U	Y	Y	Y	GB	GB	TILL

BPSB1JUL.86 OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET) TABLE SPLIT	+10 CHIPS	TABLE FEED	WEIGHT (GRAMS DRY) TABLE CONC	M.I. LIGHTS	M. I. CONC CONC. TOTAL	NON MAG	MAG	AU NO. V.G.	CALC PPB	DESCRIPTION CLAST SIZE	% V/S	GR	LS	OT	MATRIX S/U	SD	ST	CY	COLOR SD	CY	CLASS
BPS-86-113																						
39-01-975	9.3	1.0	8.3	138.7	102.0	36.7	22.4	14.3	0	NA	C	60	40	TR	NA	U	Y	Y	Y	B	GB	TILL
-02-976	9.5	0.6	8.9	205.1	143.8	61.3	50.4	10.9	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
-03-077	9.3	0.7	8.6	148.1	122.8	25.3	13.6	11.7	0	NA	P	60	40	TR	NA	U	Y	Y	Y	B	GB	TILL
-04-978	9.1	0.5	8.6	147.8	114.5	33.3	20.7	12.6	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	GB	TILL
-05-979	9.3	0.5	8.8	152.1	120.3	31.8	19.3	12.5	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-06-980	9.2	0.9	8.3	174.3	138.7	35.6	19.8	15.8	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
-07-981	9.3	0.6	8.7	183.3	143.2	40.1	22.9	17.2	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	GB	TILL
-08-982	9.0	0.4	8.6	140.8	82.8	58.0	34.1	23.9	5	58	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-09-983	9.2	0.0	9.2	149.3	115.4	33.9	22.8	11.1	4	286	TR	NA	NA	NA	NA	S	F	Y	Y	B	B	SAND
-10-984	8.7	0.0	8.7	139.8	113.6	26.2	16.6	9.6	1	12	TR	NA	NA	NA	NA	S	F	Y	Y	B	B	SAND
-11-985	9.2	0.8	8.4	156.0	118.5	37.5	22.9	14.6	5	127	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-12-986	9.0	0.5	8.5	122.4	90.1	32.3	19.9	12.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-13-987	9.5	0.6	8.9	135.3	101.0	34.3	20.7	13.6	1	9	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-14-988	8.5	0.6	7.9	124.7	95.4	29.3	18.0	11.3	1	21	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
40-01-989	8.5	0.9	7.6	138.0	105.8	32.2	20.0	12.2	3	20	P	30	65	5	NA	U	Y	Y	Y	B	B	TILL
-02-990	5.9	0.3	5.6	107.5	81.9	25.6	15.8	9.8	0	NA	P	30	70	NA	NA	U	Y	Y	Y	B	B	TILL
-03-991	8.6	1.2	7.4	150.3	116.9	33.4	18.5	14.9	14	314	P	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-04-992	5.4	0.4	5.0	188.9	167.4	21.5	11.5	10.0	1	32	P	30	70	NA	NA	U	Y	Y	Y	B	B	TILL
-05-993	7.7	0.9	6.8	172.2	150.0	22.2	12.5	9.7	0	NA	P	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-06-994	5.2	0.5	4.7	190.2	165.5	24.7	15.4	9.3	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
-07-995	8.2	0.8	7.4	156.4	123.8	32.6	19.1	13.5	0	NA	P	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-08-996	7.9	0.5	7.4	275.2	241.9	33.3	16.2	17.1	0	NA	P	40	60	NA	NA	U	Y	Y	Y	B	B	TILL
-09-997	5.9	0.6	5.3	121.9	103.7	18.2	11.0	7.2	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	GB	TILL
-10-998	7.2	0.6	6.6	208.4	197.5	10.9	4.8	6.1	1	133	P	90	10	NA	NA	U	Y	Y	Y	B	GB	TILL
-11-999	8.6	0.8	7.8	141.2	111.5	29.7	16.7	13.0	0	NA	P	90	10	NA	NA	U	Y	Y	Y	B	GB	TILL
-12-1000	7.2	0.6	6.6	145.1	118.1	27.0	16.3	10.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	GB	TILL
-13-1001	8.6	0.6	8.0	178.0	146.9	31.1	16.7	14.4	1	61	P	75	25	NA	NA	U	Y	Y	Y	B	GB	TILL
-14-1002	6.1	0.7	5.4	225.9	200.0	25.9	16.0	9.9	0	NA	C	75	25	NA	NA	U	Y	Y	Y	GB	GB	TILL
-15-1003	8.3	0.8	7.5	171.5	138.8	32.7	20.5	12.2	0	NA	C	75	25	NA	TR	U	Y	Y	Y	B	GB	TILL
-16-1004	7.6	0.7	6.9	132.1	103.4	28.7	16.4	12.3	0	NA	C	75	25	NA	NA	U	Y	Y	Y	GB	GB	TILL
-17-1005	8.6	1.1	7.5	120.5	92.5	28.0	17.5	10.5	0	NA	C	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-18-1006	4.6	0.2	4.4	87.5	68.2	19.3	11.5	7.8	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
-19-1007	8.4	1.0	7.4	121.1	87.5	33.6	18.6	15.0	1	54	P	70	30	NA	NA	U	Y	Y	Y	B	GB	TILL
-20-1008	8.8	1.5	7.3	138.9	110.1	28.8	16.0	12.8	1	1001	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-21-1009	8.3	1.2	7.1	125.9	82.0	43.9	23.6	20.3	1	64	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-22-1010	9.4	1.3	8.1	146.0	103.7	42.3	23.5	18.8	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
-23-1011	9.1	1.3	7.8	142.6	92.1	50.5	30.8	19.7	1	94	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL

APPENDIX C

GOLD GRAIN COUNTS AND CALCULATED VISIBLE GOLD ASSAYS

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

bps12may.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86													
99-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
-04	N	50 X 75	13 C			1				1			
									TOTAL	1	15.0	25	
-05	Y	50 X 100	15 C					1		1			EST: 2% PYRITE
		250 X 300	50 C	1						1			
									TOTAL	1	14.6	1950	
-06	N	NO VISIBLE GOLD											
-07	N	NO VISIBLE GOLD											
-08	Y	50 X 100	15 C			1				1			EST: 2% PYRITE
		200 X 400	54 C	1						1			
									TOTAL	2	16.6	2234	
-09	N	NO VISIBLE GOLD											
-10	N	NO VISIBLE GOLD											
-11	N	NO VISIBLE GOLD											
-12	N	NO VISIBLE GOLD											
-13	N	NO VISIBLE GOLD											
-14	N	NO VISIBLE GOLD											
-15	N	375 X 625	80 C	1						1			
									TOTAL	1	19.7	7614	
-16	N	150 X 200	34 C	1						1			
									TOTAL	1	15.4	502	
100-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

bpsl2may.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86													
-03	N	NO VISIBLE GOLD											
101-01	N	NO VISIBLE GOLD											
102-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
-04	N	500 X 600	85 C			1				1			
									TOTAL	1	27.0	7163	
-05	N	NO VISIBLE GOLD											
103-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
-04	N	NO VISIBLE GOLD											
-05	N	150 X 175	31 C	1						1			
									TOTAL	1	16.3	383	
-06	N	NO VISIBLE GOLD											
-07	N	NO VISIBLE GOLD											
-08	N	NO VISIBLE GOLD											
-09	N	NO VISIBLE GOLD											
-10	N	NO VISIBLE GOLD											
-11	N	NO VISIBLE GOLD											
-12	N	125 X 150	27 C	1						1			
									TOTAL	1	18.0	213	
-13	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
==================

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

bps12may.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86													
-14	N	NO VISIBLE GOLD											
-15	N	NO VISIBLE GOLD											
-16	N	NO VISIBLE GOLD											
-17	N	225 X 325	50 C	1						1			
									TOTAL	1	23.0	1238	
104-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
-04	N	NO VISIBLE GOLD											
105-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
-04	N	NO VISIBLE GOLD											
-05	N	NO VISIBLE GOLD											
-06	N	125 X 125	25 C	1						1			
									TOTAL	1	18.4	157	
109-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
-04	N	NO VISIBLE GOLD											
-05	N	NO VISIBLE GOLD											
-06	N	250 X 300	50 C	1						1			
									TOTAL	1	20.2	1409	
-07	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
==================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

bps12may.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86													
-08	N	NO VISIBLE GOLD											
-09	N	NO VISIBLE GOLD											
112-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	200 X 300	46 C	1						1			
									TOTAL	1	13.4	1618	
-04	N	NO VISIBLE GOLD											
-05	N	NO VISIBLE GOLD											
129-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
130-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
-04	N	NO VISIBLE GOLD											
-05	N	NO VISIBLE GOLD											
-06	N	NO VISIBLE GOLD											
-07	N	50 X 75	13 C	1						1			
									TOTAL	1	19.6	19	
-08	N	NO VISIBLE GOLD											
131-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	50 X 75	13 C	1						1			

GOLD CLASSIFICATION
==================

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

bps12may.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86													
									TOTAL	1	17.8	21	
-04	N	NO VISIBLE GOLD											
-05	Y	25 X 50	8 C		1					1			EST: 125 GRAINS ARSENOPYRITE (FINE)
		50 X 75	13 C	2	1					3			NO SULPHIDES
									TOTAL	4	15.4	78	
-06	N	50 X 75	13 C			1				1			
									TOTAL	1	11.5	32	
-07	N	NO VISIBLE GOLD											
132-01	Y	25 X 25	5 C		1					1			EST: 150 GRAINS ARSENOPYRITE (FINE)
		25 X 50	8 C		1					1			NO SULPHIDES
		50 X 50	10 C	1						1			
		75 X 100	18 C	1						1			
									TOTAL	4	14.2	92	
-02	N	50 X 75	13 C	1						1			
									TOTAL	1	10.9	34	
133-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
134-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
135-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
-04	N	NO VISIBLE GOLD											
-05	N	NO VISIBLE GOLD											
125-08	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
==================

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

bpsl2may.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86													
-09	N	NO VISIBLE GOLD											
135-06	N	NO VISIBLE GOLD											
136-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
-04	N	NO VISIBLE GOLD											
-05	N	NO VISIBLE GOLD											
-06	N	NO VISIBLE GOLD											
-07	N	NO VISIBLE GOLD											
-08	N	NO VISIBLE GOLD											
-09	N	NO VISIBLE GOLD											
-10	N	NO VISIBLE GOLD											
-11	N	250 X 425	59 C	1						1			
									TOTAL	1	21.8	2331	
-12	N	NO VISIBLE GOLD											
137-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
-04	N	NO VISIBLE GOLD											
-05	N	NO VISIBLE GOLD											
-06	N	NO VISIBLE GOLD											
-07	N	50 X 100	15 C	1						1			
									TOTAL	1	13.2	49	

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

bps12may.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86													
139-02	N	NO VISIBLE GOLD											
140-01	N	NO VISIBLE GOLD											
141-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
-04	N	NO VISIBLE GOLD											
-05	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS: ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86													
99-17	N	NO VISIBLE GOLD											
18	N	NO VISIBLE GOLD											
-19	N	NO VISIBLE GOLD											
-20	Y	75 X 75	15 C	1						1			EST. 25 GRAINS PYRITE
		100 X 100	20 C	1						1			
								TOTAL		2	18.7	114	
-21	N	NO VISIBLE GOLD											
-22	Y	75 X 100	18 C	1						1			NO SULPHIDES
		75 X 125	20 C	1						1			
								TOTAL		2	14.3	176	
-23	N	50 X 75	13 C	1						1			
								TOTAL		1	14.6	26	
-24	N	NO VISIBLE GOLD											
-25	Y	25 X 25	5 C		1					1			EST: 50 GRAINS PYRITE
		25 X 75	10 C		1					1			
		75 X 125	20 C				1			1			
		100 X 150	25 C		1					1			
		150 X 200	34 C		1					1			
		150 X 250	38 C	1						1			
		200 X 300	46 C	1						1			
		250 X 400	58 C	1						1			
		250 X 650	74 C	1						1			
		300 X 350	58 C	1						1			
		300 X 400	61 C	1						1			
		450 X 475	76 C	1						1			
								TOTAL		12	12.5	34189	
100-04	Y	75 X 125	20 C	1						1			EST: 0.25% PYRITE
		200 X 300	46 C	1						1			
								TOTAL		2	11.0	2107	
-05	N	75 X 75	15 C	1						1			
								TOTAL		1	15.0	43	

GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
-06	Y	75 X 125	20 C	1						1			EST: 0.25% PYRITE
		100 X 150	25 C	1						1			
									TOTAL	2	16.2	271	
-07	N	NO VISIBLE GOLD											
-08	Y	25 X 50	5 C		1					1			EST: 1% PYRITE
		50 X 100	15 C		1					1			
		75 X 125	20 C	1						1			
		175 X 200	36 C	1						1			
									TOTAL	4	20.5	570	
-09	N	175 X 275	42 C			1				1			
									TOTAL	1	14.5	1105	
-10	N	NO VISIBLE GOLD											
-11	N	NO VISIBLE GOLD											
101-02	N	NO VISIBLE GOLD											
102-06	N	NO VISIBLE GOLD											
-07	N	NO VISIBLE GOLD											
-08	N	150 X 250	38 C			1				1			
									TOTAL	1	10.5	1086	
-09	N	NO VISIBLE GOLD											
-10	N	NO VISIBLE GOLD											
-11	N	NO VISIBLE GOLD											
-12	N	50 X 100	15 C	1						1			
									TOTAL	1	9.0	71	
-13	N	100 X 200	29 C	1						1			
									TOTAL	1	14.4	343	

GOLD CLASSIFICATION
===================

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86													
102-14	N	NO VISIBLE GOLD											
-15	N	NO VISIBLE GOLD											
-16	N	NO VISIBLE GOLD											
-17	N	NO VISIBLE GOLD											
-18	N	NO VISIBLE GOLD											
-19	N	NO VISIBLE GOLD											
-20	Y	100 X 125	22 C	1						1			EST. 3% PYRITE
		200 X 225	40 C	1						1			300 GRAINS ARSENOPYRITE (FINE)
								TOTAL		2	10.2	1540	
103-18	N	NO VISIBLE GOLD											
-19	N	NO VISIBLE GOLD											
-20	N	NO VISIBLE GOLD											
-21	N	NO VISIBLE GOLD											
-22	N	100 X 100	20 C	1						1			
								TOTAL		1	17.9	84	
-23	N	NO VISIBLE GOLD											
104-05	N	NO VISIBLE GOLD											
-06	N	NO VISIBLE GOLD											
-07	N	NO VISIBLE GOLD											
-08	N	100 X 150	25 C	1						1			
								TOTAL		1	15.8	183	
-09	N	150 X 200	34 C	1						1			
								TOTAL		1	20.4	379	
105-07	Y	50 X 50	10 C	1						1			EST. 3% PYRITE
		200 X 300	45 C	1						1			500 GRAINS ARSENOPYRITE

GOLD CLASSIFICATION
===================

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS ABBRADED T	P	IRREGULAR T	P	DELICATE T	P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
									TOTAL	2	18.1	1208	
-08	N	NO VISIBLE GOLD											
-09	N	NO VISIBLE GOLD											
-10	N	NO VISIBLE GOLD											
-11	N	NO VISIBLE GOLD											
106-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
107-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
108-01	N	150 X 200	34 C	1						1			
									TOTAL	1	14.5	534	
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
-04	N	NO VISIBLE GOLD											
-05	N	NO VISIBLE GOLD											
109-10	N	NO VISIBLE GOLD											
-11	N	NO VISIBLE GOLD											
-12	N	NO VISIBLE GOLD											
-13	N	NO VISIBLE GOLD											
-14	N	NO VISIBLE GOLD											
-15	N	NO VISIBLE GOLD											
110-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
-03	N	NO VISIBLE GOLD											
111-01	Y	25 X 25	5 C				5		1	6			EST. 5% PYRITE
		25 X 50	8 C				1		1	2			100 FINE MARCASITE PELLETS
		25 X 75	10 C				1			1			50 FINE GRAINS ARSENOPYRITE
		50 X 50	10 C	1			1	1		3			
		50 X 75	13 C				2			2			
		50 X 100	15 C	1			3			4			
									TOTAL	18	20.2	217	
-02	Y	25 X 25	5 C						1	1			EST. 10% PYRITE
		100 X 150	25 C	1						1			1000 GRAINS ARSENOPYRITE
									TOTAL	2	17.5	167	
112-06	N	NO VISIBLE GOLD											
-07	N	NO VISIBLE GOLD											
-08	N	NO VISIBLE GOLD											
-09	N	NO VISIBLE GOLD											
-10	N	NO VISIBLE GOLD											
113-06	N	NO VISIBLE GOLD											
-07	N	NO VISIBLE GOLD											
-08	N	NO VISIBLE GOLD											
-09	N	NO VISIBLE GOLD											
-10	N	NO VISIBLE GOLD											
114-03	N	NO VISIBLE GOLD											
-04	N	NO VISIBLE GOLD											
-05	N	NO VISIBLE GOLD											
-06	N	NO VISIBLE GOLD											
-07	N	NO VISIBLE GOLD											
115-02	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
===================

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
-03	Y	NO VISIBLE GOLD											EST. 20% PYRITE 50 GRAINS ARSENOPYRITE (FINE)
116-01	N	NO VISIBLE GOLD											
117-04	N	NO VISIBLE GOLD											
-05	N	NO VISIBLE GOLD											
-06	N	NO VISIBLE GOLD											
-07	N	NO VISIBLE GOLD											
-08	N	NO VISIBLE GOLD											
118-07	N	NO VISIBLE GOLD											
-08	N	NO VISIBLE GOLD											
-09	N	150 X 400	50 C	1						1			
									TOTAL	1	14.8	1923	
-10	N	NO VISIBLE GOLD											
-11	N	NO VISIBLE GOLD											
120-01	N	NO VISIBLE GOLD											
121-03	N	150 X 200	34 C	1						1			
									TOTAL	1	26.5	292	
-04	N	50 X 75	13 C	1						1			
									TOTAL	1	20.1	19	
122-03	Y	25 X 25	5 C		1					1			EST. 15% PYRITE
		25 X 75	10 C						1	1			250 GRAINS ARSENOPYRITE (FINE)
		50 X 100	15 C		1					1			
		75 X 150	22 C	1						1			
		100 X 100	20 C	1						1			
		200 X 250	42 C	1						1			
									TOTAL	6	36.2	566	
-04	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
===================

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

bps11jun.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86													
118-12	N	NO VISIBLE GOLD											
-13	N	NO VISIBLE GOLD											
-14	Y	25 X 25	5 C						1	1			EST: 3% PYRITE
		100 X 100	20 C			1				1			30 GRAINS ARSENOPYRITE (FINE)
		125 X 125	25 C	1						1			
									TOTAL	3	20.3	218	
-15	N	25 X 50	8 C	1						1			
									TOTAL	1	14.5	6	
-16	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
123-03	Y	50 X 75	13 C	1						1			EST. 10% PYRITE
		100 X 125	22 C	1						1			50 GRAINS ARSENOPYRITE (FINE)
									TOTAL	2	15.1	165	

GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86													
124-02	N	150 X 150	29 C			1				1			
									TOTAL	1	15.2	325	
-03	N	50 X 50	10 C	2						2			
									TOTAL	2	19.2	20	
-04	N	NO VISIBLE GOLD											
125-06	N	200 X 200	38 C	1						1			
									TOTAL	1	13.0	877	
-10	N	NO VISIBLE GOLD											
126-04	N	NO VISIBLE GOLD											
-05	N	NO VISIBLE GOLD											
-06	N	NO VISIBLE GOLD											
-07	N	NO VISIBLE GOLD											
-08	N	NO VISIBLE GOLD											
127-06	N	NO VISIBLE GOLD											
-07	N	NO VISIBLE GOLD											
-08	N	NO VISIBLE GOLD											
-09	N	NO VISIBLE GOLD											
-10	N	NO VISIBLE GOLD											
128-03	N	NO VISIBLE GOLD											
125-07	N	NO VISIBLE GOLD											
-08	N	NO VISIBLE GOLD											
-09	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
===================

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSB1AUG.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86													
138-01	N	50 X 100	15 C	1						1			
									TOTAL	1	8.0	80	
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
139-01	N	NO VISIBLE GOLD											
123-02	N	NO VISIBLE GOLD											
141-06	N	NO VISIBLE GOLD											
-07	N	NO VISIBLE GOLD											
-08	N	NO VISIBLE GOLD											
-09	N	NO VISIBLE GOLD											
-10	N	NO VISIBLE GOLD											
-11	N	NO VISIBLE GOLD											
-12	N	NO VISIBLE GOLD											
-13	N	NO VISIBLE GOLD											
-14	N	NO VISIBLE GOLD											
141-15	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
==================

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL4MAY.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-110													
09-01-601	Y	75 X 100	18 C	1						1			EST: 15% PYRITE
									TOTAL	1	4.5	225	
10-01-602	N	100 X 100	20 C	1						1			
									TOTAL	1	17.9	84	
02-603	N	NO VISIBLE GOLD											
03-604	N	100 X 150	25 C	1						1			
									TOTAL	1	19.9	145	
04-605	N	NO VISIBLE GOLD											
11-01-606	N	NO VISIBLE GOLD											
12-01-607	N	NO VISIBLE GOLD											
02-608	N	NO VISIBLE GOLD											
03-609	N	NO VISIBLE GOLD											
04-610	N	NO VISIBLE GOLD											
05-611	N	NO VISIBLE GOLD											
06-612	N	NO VISIBLE GOLD											
13-01-613	N	NO VISIBLE GOLD											
02-614	N	125 X 175	29 C	1						1			
									TOTAL	1	8.0	617	
03-615	N	NO VISIBLE GOLD											
14-01-616	N	NO VISIBLE GOLD											
15-01-617	N	NO VISIBLE GOLD											
02-618	Y	50 X 75	13 C		1					1			EST: 3% PYRITE
		100 X 125	22 C	1						1			
		100 X 200	29 C	1						1			
		150 X 150	29 C		1					1			

GOLD CLASSIFICATION
==================

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL4MAY.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-110													
									TOTAL	4	18.4	672	
16-01-619	N	NO VISIBLE GOLD											
17-01-620	N	NO VISIBLE GOLD											
18-01-621	N	NO VISIBLE GOLD											
02-622	N	NO VISIBLE GOLD											
03-623	N	NO VISIBLE GOLD											
04-624	N	NO VISIBLE GOLD											
05-625	N	NO VISIBLE GOLD											
06-626	N	NO VISIBLE GOLD											
07-627	Y	50 X 50	10 C					1		1			EST: 15% PYRITE
		125 X 125	25 C				1			1			20 GRAINS ARSENOPYRITE
									TOTAL	2	10.1	305	
08-628	N	NO VISIBLE GOLD											
09-629	N	75 X 100	18 C	1						1			
									TOTAL	1	16.8	60	
10-630	Y	50 X 75	13 C	1						1			EST: 10% PYRITE
		50 X 100	15 C		1					1			10 GRAINS ARSENOPYRITE
		150 X 175	31 C			1				1			
									TOTAL	3	18.4	394	
11-631	N	NO VISIBLE GOLD											
19-01-632	Y	50 X 100	15 C	1						1			EST: 10% PYRITE
		75 X 100	18 C			1				1			
									TOTAL	2	22.5	73	
02-633	Y	25 X 25	5 C				1		2	3			EST: 10% PYRITE
		50 X 50	10 C	1						1			
		50 X 75	13 C	1						1			
									TOTAL	5	18.2	35	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL4MAY.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-110													
03-634	N	NO VISIBLE GOLD											
20-01-635	N	100 X 100	20 C	1						1			
									TOTAL	1	13.3	113	
02-636	N	100 X 150	25 C	1						1			
									TOTAL	1	22.5	129	
03-637	N	100 X 150	25 C	1						1			
									TOTAL	1	17.6	164	
04-638	N	NO VISIBLE GOLD											
05-639	N	NO VISIBLE GOLD											
06-640	N	NO VISIBLE GOLD											
07-641	N	NO VISIBLE GOLD											
08-642	N	NO VISIBLE GOLD											
21-01-643	N	NO VISIBLE GOLD											
22-01-644	N	100 X 150	25 C	1						1			
									TOTAL	1	19.7	147	
02-645	N	600 X 700	94 C	1						1			
									TOTAL	1	22.3	13393	
03-646	N	50 X 350	38 C	1						1			
									TOTAL	1	20.0	570	
04-647	N	75 X 150	22 C	1						1			
									TOTAL	1	22.7	93	
05-648	N	NO VISIBLE GOLD											
06-649	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL4MAY.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-110													
07-650	N	NO VISIBLE GOLD											
08-651	N	NO VISIBLE GOLD											
23-01-652	N	50 X 100	15 C	1						1			
									TOTAL	1	16.8	38	
02-653	N	75 X 125	20 C	1						1			
									TOTAL	1	16.5	91	
04-654	N	75 X 125	20 C	1						1			
									TOTAL	1	17.8	84	
04-655	N	NO VISIBLE GOLD											
05-65	N	NO VISIBLE GOLD											
06-657	N	NO VISIBLE GOLD											
24-01-658	N	100 X 150	25 C	1						1			
									TOTAL	1	17.1	169	
02-659	N	50 X 50	10 C	1						1			
									TOTAL	1	15.8	12	
03-660	Y	100 X 100	20 C	2						2			EST: 15% PYRITE 250 GRAINS ARSENOPYRITE
									TOTAL	2	14.1	213	
04-661	N	NO VISIBLE GOLD											
05-662	Y	25 X 25	5 C				1			1			EST: 15% PYRITE
		25 X 75	10 C				1			1			300 GRAINS ARSENOPYRITE (FINE
		50 X 50	10 C				1			1			
		75 X 100	18 C	1						1			
		150 X 150	29 C	1						1			
									TOTAL	5	15.7	405	
06-663	N	NO VISIBLE GOLD											
07-664	N	100 X 100	20 C	1						1			

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL4MAY.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-110													
									TOTAL	1	12.8	117	
08-665	N	NO VISIBLE GOLD											
09-666	Y	25 X 25	5 C		1					1			EST: 1% PYRITE
		50 X 50	10 C	1						1			100 GRAINS ARSENOPYRITE (FINE
		50 X 75	13 C		1					1			
		50 X 100	15 C	1						1			
		75 X 125	20 C						1	1			
									TOTAL	5	12.6	217	
10-667	N	NO VISIBLE GOLD											
11-668	N	NO VISIBLE GOLD											
12-669	N	NO VISIBLE GOLD											
13-670	N	150 X 300	42 C	1						1			
									TOTAL	1	31.3	512	
14-671	Y	50 X 50	10 C	1						1			EST: 0.5% PYRITE
		75 X 75	15 C		1					1			100 GRAINS ARSENOPYRITE (FINE
		200 X 250	42 C	1						1			
									TOTAL	3	31.2	540	
15-672	N	NO VISIBLE GOLD											
16-673	N	NO VISIBLE GOLD											
17-674	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

bps13may.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
1-01-675	N	NO VISIBLE GOLD											
02-676	N	NO VISIBLE GOLD											
03-677	N	NO VISIBLE GOLD											
2-01-678	N	NO VISIBLE GOLD											
02-679	N	NO VISIBLE GOLD											
03-680	N	NO VISIBLE GOLD											
3-01-681	N	75 X 100	18 C			1				1			
									TOTAL	1	13.7	74	
02-682	Y	75 X 100	18 C				1			1			EST: 25% PYRITE
									TOTAL	1	24.6	41	
03-683	N	NO VISIBLE GOLD											
04-684	N	NO VISIBLE GOLD											
05-685	Y	75 X 100	18 C	1	1					2			EST: 20% PYRITE
		100 X 100	20 C			1				1			
									TOTAL	3	16.3	192	
06-686	Y	50 X 50	10 C	1						1			EST: 200 GRAINS MARCASITE
		50 X 75	13 C	1						1			
									TOTAL	2	16.9	33	
4-01-687	N	50 X 100	15 C	1						1			
									TOTAL	1	5.4	119	
02-688	N	NO VISIBLE GOLD											
03-689	N	NO VISIBLE GOLD											
04-690	N	NO VISIBLE GOLD											
05-691	N	NO VISIBLE GOLD											
06-692	Y	50 X 125	18 C	1						1			EST: 2% PYRITE

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

bps13may.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
		75 X 125	20 C	1						1			
									TOTAL	2	4.5	558	
5-01-693	N	NO VISIBLE GOLD											
02-694	N	50 X 75	13 C	1						1			
									TOTAL	1	13.6	27	
03-695	Y	75 X 75	15 C	1						1			EST: 3% PYRITE
		125 X 125	25 C	1						1			
		100 X 150	25 C	1						1			
									TOTAL	3	18.2	353	
04-696	N	NO VISIBLE GOLD											
05-697	N	100 X 150	25 C	1						1			
									TOTAL	1	22.1	131	
06-698	N	NO VISIBLE GOLD											
07-699	N	NO VISIBLE GOLD											
08-700	N	NO VISIBLE GOLD											
09-701	N	NO VISIBLE GOLD											
10-702	N	NO VISIBLE GOLD											
11-703	N	NO VISIBLE GOLD											
12-704	N	NO VISIBLE GOLD											
6-01-705	N	NO VISIBLE GOLD											
02-706	N	100 X 150	25 C	1						1			
									TOTAL	1	17.3	167	
03-707	N	NO VISIBLE GOLD											
04-708	N	75 X 100	18 C	1						1			
									TOTAL	1	22.2	46	

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

bps13may.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
05-709	N	NO VISIBLE GOLD											
06-710	N	100 X 100	20 C	1						1			
									TOTAL	1	21.7	69	
07-711	N	NO VISIBLE GOLD											
08-712	N	75 X 75	15 C	1						1			
									TOTAL	1	16.3	39	
09-713	N	100 X 150	25 C	1						1			
									TOTAL	1	10.2	284	
10-714	N	75 X 100	18 C	1						1			
									TOTAL	1	10.1	100	
11-715	N	NO VISIBLE GOLD											
12-716	N	NO VISIBLE GOLD											
13-717	N	50 X 75	13 C	1						1			
									TOTAL	1	16.0	23	

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL2JUN.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
6-14-718	N	NO VISIBLE GOLD											
15-719	N	50 X 100	15 C	1						1			
									TOTAL	1	19.1	34	
16-720	N	NO VISIBLE GOLD											
17-721	N	NO VISIBLE GOLD											
18-722	N	NO VISIBLE GOLD											
19-723	N	NO VISIBLE GOLD											
7-01-724	N	NO VISIBLE GOLD											
02-725	N	NO VISIBLE GOLD											
03-726	N	50 X 100	15 C	1						1			
									TOTAL	1	7.7	83	
04-727	N	100 X 100	20 C	1						1			
									TOTAL	1	15.7	96	
05-728	N	NO VISIBLE GOLD											
06-729	Y	100 X 150	25 C	1						1			EST: 5% PYRITE
		200 X 250	42 C	1						1			
									TOTAL	2	20.3	932	
07-730	Y	50 X 75	13 C	1						1			EST: 5% PYRITE
		75 X 100	18 C	1						1			
									TOTAL	2	26.9	51	
08-731	N	NO VISIBLE GOLD											
09-732	N	NO VISIBLE GOLD											
10-733	N	NO VISIBLE GOLD											
11-734	N	50 X 100	15 C	1						1			
									TOTAL	1	20.2	32	

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL2JUN.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
12-735	N	NO VISIBLE GOLD											
13-736	N	NO VISIBLE GOLD											
14-737	N	NO VISIBLE GOLD											
15-738	N	NO VISIBLE GOLD											
16-739	Y	50 X 50	10 C	1						1			EST: 3% PYRITE
		50 X 75	13 C	1	1					2			
									TOTAL	3	20.3	46	
17-740	N	100 X 100	20 C	1						1			
									TOTAL	1	20.1	75	
18-741	N	75 X 100	18 C	1						1			
									TOTAL	1	15.7	64	
19-742	N	NO VISIBLE GOLD											
20-743	N	NO VISIBLE GOLD											
21-744	N	NO VISIBLE GOLD											
22-745	N	NO VISIBLE GOLD											
23-746	N	125 X 150	27 C	1						1			
									TOTAL	1	11.2	342	
8-01-747	N	NO VISIBLE GOLD											
02-748	N	NO VISIBLE GOLD											
03-749	N	NO VISIBLE GOLD											
04-750	N	NO VISIBLE GOLD											
05-751	N	NO VISIBLE GOLD											
06-752	N	NO VISIBLE GOLD											
07-753	Y	50 X 50	10 C	1						1			EST: 0.5% PYRITE

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL2JUN.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
		50 X 75	13 C	1						1			
		100 X 100	20 C	1						1			
		100 X 125	22 C		1					1			
									TOTAL	4	17.2	243	
08-754	N	NO VISIBLE GOLD											
09-755	N	50 X 75	13 C			1				1			
									TOTAL	1	17.3	22	
10-756	N	NO VISIBLE GOLD											
11-757	N	75 X 75	15 C	1						1			
									TOTAL	1	27.9	23	
12-758	N	NO VISIBLE GOLD											
13-759	N	50 X 75	13 C	1						1			
									TOTAL	1	21.9	17	
14-760	N	75 X 150	22 C	1						1			
									TOTAL	1	21.4	99	
15-761	N	50 X 125	18 C	1						1			
									TOTAL	1	19.3	52	
16-762	N	50 X 50	10 C			1				1			
									TOTAL	1	16.5	12	
17-763	N	NO VISIBLE GOLD											
18-764	N	NO VISIBLE GOLD											
19-765	N	NO VISIBLE GOLD											
20-766	N	NO VISIBLE GOLD											
9-01-767	N	100 X 200	29 C			1				1			
									TOTAL	1	20.3	243	

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL2JUN.86

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS ABRADED T	P	IRREGULAR T	P	DELICATE T	P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
02-768	N	NO VISIBLE GOLD											
03-769	N	NO VISIBLE GOLD											
04-770	N	NO VISIBLE GOLD											
05-771	N	NO VISIBLE GOLD											
06-772	N	NO VISIBLE GOLD											
07-773	N	NO VISIBLE GOLD											
08-774	N	NO VISIBLE GOLD											
09-775	N	NO VISIBLE GOLD											
10-776	N	NO VISIBLE GOLD											
11-777	N	NO VISIBLE GOLD											
12-778	N	NO VISIBLE GOLD											
13-779	N	NO VISIBLE GOLD											
14-780	N	NO VISIBLE GOLD											
15-781	N	75 X 100	18 C	1						1			
								TOTAL		1	17.8	57	
16-782	N	NO VISIBLE GOLD											
17-783	N	NO VISIBLE GOLD											
18-784	N	NO VISIBLE GOLD											
10-01-786	N	NO VISIBLE GOLD											
02-787	N	NO VISIBLE GOLD											
03-788	N	NO VISIBLE GOLD											
04-789	N	NO VISIBLE GOLD											
05-790	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL2JUN.86

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS ABBRADED T	P	IRREGULAR T	P	DELICATE T	P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
06-791	N	NO VISIBLE GOLD											
07-792	N	NO VISIBLE GOLD											
08-793	N	NO VISIBLE GOLD											
09-794	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

bps14jun.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
10-10-795	N	NO VISIBLE GOLD											
11-796	N	NO VISIBLE GOLD											
11-01-797	Y	75 X 200	27 C	1						1			EST: 5% PYRITE
		200 X 325	48 C	1						1			
									TOTAL	2	23.1	1245	
02-798	N	100 X 125	22 C	1						1			
									TOTAL	1	14.7	144	
03-799	N	NO VISIBLE GOLD											
04-800	N	NO VISIBLE GOLD											
05-801	N	NO VISIBLE GOLD											
12-01-802	N	NO VISIBLE GOLD											
02-803	N	NO VISIBLE GOLD											
13-01-804	N	NO VISIBLE GOLD											
02-805	N	50 X 100	15 C	1						1			
									TOTAL	1	9.8	65	
14-01-806	N	NO VISIBLE GOLD											
02-807	N	NO VISIBLE GOLD											
03-808	N	NO VISIBLE GOLD											
04-809	N	NO VISIBLE GOLD											
17-01-822	N	NO VISIBLE GOLD											
02-823	N	NO VISIBLE GOLD											
03-824	N	NO VISIBLE GOLD											
18-01-825	N	NO VISIBLE GOLD											
02-826	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

bps14jun.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
03-827	N	100 X 150	25 C	1						1			
									TOTAL	1	22.0	132	
04-828	N	NO VISIBLE GOLD											
05-829	N	NO VISIBLE GOLD											
06-830	N	200 X 500	61 C	1						1			
									TOTAL	1	6.6	8526	
07-831	N	NO VISIBLE GOLD											
19-01-832	N	NO VISIBLE GOLD											
02-833	N	50 X 50	10 C	1						1			
									TOTAL	1	12.7	15	
03-834	N	NO VISIBLE GOLD											
20-01-835	N	NO VISIBLE GOLD											
02-836	N	NO VISIBLE GOLD											
03-837	N	NO VISIBLE GOLD											
04-838	N	50 X 125	18 C	1						1			
									TOTAL	1	18.7	54	
05-839	N	NO VISIBLE GOLD											
06-840	N	NO VISIBLE GOLD											
07-841	N	NO VISIBLE GOLD											
08-842	N	NO VISIBLE GOLD											
21-01-843	N	NO VISIBLE GOLD											
02-844	N	NO VISIBLE GOLD											
03-845	N	NO VISIBLE GOLD											
04-846	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

bps14jun.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
05-847	N	NO VISIBLE GOLD											
06-848	N	NO VISIBLE GOLD											
07-849	N	NO VISIBLE GOLD											
08-850	N	125 X 175	29 C	1						1			
									TOTAL	1	13.6	363	
09-851	N	NO VISIBLE GOLD											
10-852	N	NO VISIBLE GOLD											
11-853	N	100 X 150	25 C	1						1			
									TOTAL	1	14.2	204	
12-854	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL6JUN.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
22-01-855	N	NO VISIBLE GOLD											
-02-856	N	NO VISIBLE GOLD											
-03-857	N	NO VISIBLE GOLD											
-04-858	N	NO VISIBLE GOLD											
-04-859	N	NO VISIBLE GOLD											
-06-860	N	NO VISIBLE GOLD											
-07-861	N	NO VISIBLE GOLD											
-08-862	N	NO VISIBLE GOLD											
-09-863	N	350 X 450	68 C	1						1			
									TOTAL	1	13.4	6090	
24-01-864	N	25 X 50	8 C	1						1			
									TOTAL	1	22.0	4	
-02-865	N	NO VISIBLE GOLD											
-03-866	Y	25 X 50	8 C		1					1			EST: 1% PYRITE
		50 X 50	10 C	1						1			
		50 X 100	15 C		1					1			
		50 X 125	18 C	1						1			
									TOTAL	4	20.5	94	
25-01-867	N	NO VISIBLE GOLD											
-02-868	N	NO VISIBLE GOLD											
-03-869	N	NO VISIBLE GOLD											
-04-870	N	NO VISIBLE GOLD											
-05-871	N	NO VISIBLE GOLD											
26-01-872	N	NO VISIBLE GOLD											
27-01-873	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL6JUN.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
28-01-874	N	NO VISIBLE GOLD											
-02-875	N	NO VISIBLE GOLD											
-03-876	N	75 X 125	20 C	1						1			
								TOTAL		1	21.6	69	
-04-877	N	50 X 100	15 C	1						1			
								TOTAL		1	20.2	32	
-05-878	N	NO VISIBLE GOLD											
-06-879	N	NO VISIBLE GOLD											
-07-880	N	NO VISIBLE GOLD											
-08-881	N	NO VISIBLE GOLD											
-09-882	N	NO VISIBLE GOLD											
-10-883	N	NO VISIBLE GOLD											
-11-884	N	NO VISIBLE GOLD											
-12-885	N	NO VISIBLE GOLD											
29-01-886	N	NO VISIBLE GOLD											
-02-887	N	NO VISIBLE GOLD											
-03-888	N	NO VISIBLE GOLD											
-04-889	N	NO VISIBLE GOLD											
-05-890	N	NO VISIBLE GOLD											
-06-891	N	50 X 100	15 C	1						1			
								TOTAL		1	22.0	29	
-07-892	N	NO VISIBLE GOLD											
-08-893	N	NO VISIBLE GOLD											
-09-894	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL6JUN.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
-10-895	N	NO VISIBLE GOLD											
-11-896	N	NO VISIBLE GOLD											
30-01-897	N	NO VISIBLE GOLD											
-02-898	N	NO VISIBLE GOLD											
-03-899	Y	25 X 25	5 C						1	1			EST: 10% PYRITE
		50 X 50	10 C		2					2			1% MARCASITE
		50 X 75	13 C		1					1			
		75 X 150	22 C	1						1			
		100 X 100	20 C	1						1			
		100 X 125	22 C	1						1			
		100 X 150	25 C		1					1			
		250 X 250	46 C	1						1			
								TOTAL		9	22.6	1376	
-04-900	N	150 X 250	38 C	1						1			
								TOTAL		1	19.3	591	
31-01-901	N	NO VISIBLE GOLD											
-02-902	N	100 X 250	34 C	1						1			
								TOTAL		1	21.8	355	
-03-903	N	NO VISIBLE GOLD											
-04-904	N	NO VISIBLE GOLD											
-05-905	N	100 X 175	27 C	1						1			
								TOTAL		1	19.0	201	
-06-906	N	NO VISIBLE GOLD											
-07-907	Y	50 X 75	13 C	1						1			EST: 5% PYRITE
		75 X 75	15 C	1						1			
		100 X 175	27 C	1						1			
								TOTAL		3	17.8	272	
32-01-908	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL6JUN.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
-02-909	N	NO VISIBLE GOLD											
-03-910	N	100 X 125	22 C			1				1			
								TOTAL		1	18.0	118	
-04-911	N	NO VISIBLE GOLD											
-05-912	N	NO VISIBLE GOLD											
-06-913	N	NO VISIBLE GOLD											
-07-914	N	NO VISIBLE GOLD											
-08-915	N	100 X 125	22 C	1						1			
								TOTAL		1	14.3	148	
-09-916	N	NO VISIBLE GOLD											
-10-917	N	NO VISIBLE GOLD											
-11-918	N	NO VISIBLE GOLD											
-12-919	N	NO VISIBLE GOLD											
-13-920	N	NO VISIBLE GOLD											
-14-921	N	50 X 100	15 C	1						1			
								TOTAL		1	15.2	42	
-15-922	N	NO VISIBLE GOLD											
33-01-923	N	NO VISIBLE GOLD											
-02-924	N	NO VISIBLE GOLD											
-03-925	N	NO VISIBLE GOLD											
-04-926	N	NO VISIBLE GOLD											
-05-927	N	NO VISIBLE GOLD											
-06-928	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL6JUN.86

NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
-07-929	N	NO VISIBLE GOLD											
-08-930	N	NO VISIBLE GOLD											
-09-931	N	NO VISIBLE GOLD											
-10-932	N	NO VISIBLE GOLD											
-11-933	N	250 X 350	54 C	1						1			
									TOTAL	1	13.3	2741	
-12-934	N	NO VISIBLE GOLD											
-13-935	N	50 X 75	13 C	1						1			
									TOTAL	1	18.4	20	
-14-936	N	NO VISIBLE GOLD											
-15-937	N	NO VISIBLE GOLD											
34-01-938	N	50 X 75	13 C	1						1			
									TOTAL	1	22.0	17	
-02-939	N	NO VISIBLE GOLD											
-03-940	N	NO VISIBLE GOLD											
-04-941	Y	25 X 50	8 C	1						1			EST: 3% PYRITE
		50 X 100	15 C	1						1			
									TOTAL	2	21.3	34	
-05-942	N	NO VISIBLE GOLD											
-06-943	N	NO VISIBLE GOLD											
-07-944	N	NO VISIBLE GOLD											
-08-945	N	50 X 100	15 C	1						1			
									TOTAL	1	19.2	33	
-09-946	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL6JUN.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
-10-947	N	NO VISIBLE GOLD											
-11-948	N	NO VISIBLE GOLD											
-12-949	N	NO VISIBLE GOLD											
35-01-950	Y	25 X 25	5 C		3					3			EST: 100 GRAINS PYRITE
		25 X 75	10 C	1						1			5 GRAINS GALENA
		50 X 50	10 C		2					2			
		50 X 75	13 C		1					1			
		150 X 200	34 C	1						1			
									TOTAL	8	41.8	210	
-02-951	N	NO VISIBLE GOLD											
-03-952	N	75 X 150	22 C	1						1			
									TOTAL	1	17.6	121	
-04-953	N	100 X 150	25 C			1				1			
									TOTAL	1	18.8	154	
-05-954	N	NO VISIBLE GOLD											
-06-955	N	NO VISIBLE GOLD											
-07-956	N	NO VISIBLE GOLD											
-08-957	N	50 X 100	15 C	1						1			
									TOTAL	1	18.9	34	
-09-958	N	NO VISIBLE GOLD											
-10-959	N	NO VISIBLE GOLD											
36-01-960	N	NO VISIBLE GOLD											
-02-961	Y	50 X 50	10 C					1		1			EST: 10% PYRITE
									TOTAL	1	25.2	8	
-03-962	N	NO VISIBLE GOLD											
-04-963	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSL6JUN.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
-05-964	N	NO VISIBLE GOLD											
-06-965	N	NO VISIBLE GOLD											
-07-966	N	NO VISIBLE GOLD											
-08-967	N	NO VISIBLE GOLD											
37-01-968	N	NO VISIBLE GOLD											
-02-969	N	NO VISIBLE GOLD											
-03-970	N	75 X 150	22 C	1						1			
									TOTAL	1	28.1	76	
-04-971	N	NO VISIBLE GOLD											
-05-972	N	NO VISIBLE GOLD											
-06-973	N	NO VISIBLE GOLD											
38-01-974	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSB1JUL.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
39-01-975	N	NO VISIBLE GOLD											
-02-976	N	NO VISIBLE GOLD											
-03-977	N	NO VISIBLE GOLD											
-04-978	N	NO VISIBLE GOLD											
-05-979	N	NO VISIBLE GOLD											
-06-980	N	NO VISIBLE GOLD											
-07-981	N	NO VISIBLE GOLD											
-08-982	Y	25 X 25	5 C		1					1			NO SULPHIDES
		25 X 50	8 C		1					1			
		50 X 50	10 C	1	1					2			
		75 X 125	20 C	1						1			
								TOTAL		5	34.1	58	
-09-983	Y	50 X 50	10 C	1						1			NO SULPHIDES
		50 X 75	13 C	1						1			
		100 X 125	22 C	1						1			
		100 X 175	27 C			1				1			
								TOTAL		4	22.8	286	
-10-984	N	50 X 50	10 C	1						1			
								TOTAL		1	16.6	12	
-11-985	Y	25 X 25	5 C		1					1			NO SULPHIDES
		25 X 75	10 C		1					1			EST: 1 COARSE GRAIN ARSENOPYRITE
		50 X 50	10 C	1						1			
		50 X 75	13 C	1						1			
		75 X 150	22 C		1					1			
								TOTAL		5	22.9	127	
-12-986	N	NO VISIBLE GOLD											
-13-987	N	50 X 50	10 C	1						1			
								TOTAL		1	20.7	9	
-14-988	N	50 X 75	13 C	1						1			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSB1JUL.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED T	ABRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
									TOTAL	1	18.0	21	
40-01-989	Y	25 X 25	5 C		1					1			EST: 20 GRAINS PYRITE
		50 X 50	10 C	2						2			
									TOTAL	3	20.0	20	
02-990	N	NO VISIBLE GOLD											
-03-991	Y	25 X 25	5 C		3				3	6			NO SULPHIDES
		25 X 50	8 C	1						1			
		50 X 50	10 C	1						1			
		50 X 75	13 C	1		2				3			
		50 X 100	15 C	1						1			
		75 X 125	20 C			1				1			
		100 X 125	22 C		1					1			
									TOTAL	14	18.5	314	
-05-992	N	50 X 75	13 C	1						1			
									TOTAL	1	11.5	32	
-05-993	N	NO VISIBLE GOLD											
-06-994	N	NO VISIBLE GOLD											
-07-995	N	NO VISIBLE GOLD											
-08-996	N	NO VISIBLE GOLD											
-09-997	N	NO VISIBLE GOLD											
-10-998	N	75 X 75	15 C			1				1			
									TOTAL	1	4.8	133	
-11-999	N	NO VISIBLE GOLD											
-12-1000	N	NO VISIBLE GOLD											
-13-1001	N	75 X 100	18 C	1						1			
									TOTAL	1	16.7	61	
-14-1002	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

BPSB1JUL.86 NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABBRADED T	ABBRADED P	IRREGULAR T	IRREGULAR P	DELICATE T	DELICATE P	TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
BPS-86-113													
-15-1003	N	NO VISIBLE GOLD											
-16-1004	N	NO VISIBLE GOLD											
-17-1005	N	NO VISIBLE GOLD											
-18-1006	N	NO VISIBLE GOLD											
-19-1007	N	75 X 100	18 C	1						1			
									TOTAL	1	18.6	54	
-20-1008	N	200 X 250	42 C	1						1			
									TOTAL	1	16	1001	
-21-1009	N	75 X 125	20 C	1						1			
									TOTAL	1	23.6	64	
-22-1010	N	NO VISIBLE GOLD											
-23-1011	N	100 X 150	25 C	1						1			
									TOTAL	1	30.8	94	

APPENDIX D

BONDAR-CLEGG HEAVY MINERAL ANALYSES

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BONDAR-CLEGG

Geochemical Lab Report

REPORT: 016-1773

PROJECT: NONE PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB
BPS-86-99-01		80	58	13	<0.5	32	185
DUPLICATE		85	62	11	<0.5	35	
BPS-86-99-02		135	93	14	<0.5	44	20
BPS-86-99-03		186	161	24	<0.5	45	20
BPS-86-99-04		54	31	23	<0.5	21	320
BPS-86-99-06		92	41	30	<0.5	29	<10
BPS-86-99-07		178	100	28	<0.5	77	80
BPS-86-99-09		149	61	33	<0.5	23	<5
BPS-86-99-10		149	57	11	<0.5	134	645
BPS-86-99-11		134	50	19	<0.5	29	<10
BPS-86-99-12		103	36	<5	<0.5	20	25
DUPLICATE		103	32	<5	<0.5	22	
BPS-86-99-13		211	63	13	<0.5	36	<20
BPS-86-99-14		91	18	8	<0.5	16	40
BPS-86-100-01		16	13	<5	<0.5	27	5
BPS-86-100-02		79	45	9	<0.5	26	35
BPS-86-100-03		71	31	12	<0.5	16	<5
BPS-86-101-01		69	16	<5	<0.5	26	80
BPS-86-102-01		IS	IS	IS	IS	IS	155
BPS-86-102-02		127	73	47	<0.5	52	75
DUPLICATE		120	58	55	<0.5	46	
BPS-86-102-03		192	79	37	<0.5	38	35
BPS-86-102-04		129	82	44	<0.5	55	>20000

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Geochemical Lab Report

REPORT: 116-1773

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	TestWt gm
86-102-04		>20000	7.00

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Geochemical Lab Report

REPORT: 116-1244

PROJECT: SELBAIE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM
BPS-86-99-17-3/4		221	62	31	0.7	103
DUPLICATE		220	61	23	0.6	93
BPS-86-99-18-3/4		108	27	<5	<0.5	32
BPS-86-99-19-3/4		183	16	<5	<0.5	25
BPS-86-99-20-3/4		49	12	6	<0.5	23
BPS-86-99-21-3/4		18	12	<5	<0.5	17
BPS-86-99-22-3/4		15	11	<5	<0.5	34
BPS-86-99-23-3/4		81	50	14	<0.5	24
BPS-86-99-24-3/4		54	15	<5	<0.5	35
BPS-86-100-05-3/4		82	41	18	<0.5	21
BPS-86-100-06-3/4		137	20	<5	<0.5	21
DUPLICATE		147	21	<5	<0.5	20
BPS-86-100-07-3/4		141	28	6	<0.5	37
BPS-86-100-10-3/4		226	48	<5	<0.5	38
BPS-86-100-11-3/4		281	49	8	<0.5	54
BPS-86-101-02-3/4		1690	78	18	1.0	415
BPS-86-102-06-3/4		131	55	111	<0.5	45
BPS-86-102-07-3/4		160	59	27	<0.5	40
BPS-86-102-09-3/4		131	71	15	<0.5	47
BPS-86-102-10-3/4		110	46	38	<0.5	52
BPS-86-102-11-3/4		67	24	7	<0.5	25
DUPLICATE		68	23	7	<0.5	30

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BONDAR-CLEGG

Geochemical Lab Report

REPORT: 016-1244

PROJECT: NONE PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	Au PPB	TestWt gm
BPS-86-99-17-3/4		230	65	1.2	45	7.00
DUPLICATE		230	65	0.9		
BPS-86-99-18-3/4		96	28	0.4	<10	7.50
BPS-86-99-19-3/4		174	16	0.2	15	
BPS-86-99-20-3/4		40	15	0.2	20	
BPS-86-99-21-3/4		14	14	<0.1	5	
BPS-86-99-22-3/4		14	13	<0.1	465	8.40
BPS-86-99-23-3/4		72	49	0.1	175	8.50
BPS-86-99-24-3/4		46	17	0.1	10	6.50
BPS-86-100-05-3/4		75	49	<0.1	185	9.00
BPS-86-100-06-3/4		112	22	0.1	485	9.00
DUPLICATE		120	21	0.2		
BPS-86-100-07-3/4		112	31	0.2	20	
BPS-86-100-10-3/4		220	50	0.5	1355	9.00
BPS-86-100-11-3/4		260	50	0.5	145	8.00
BPS-86-101-02-3/4		1550	40	1.6	430	4.60
BPS-86-102-06-3/4		124	62	0.3	20	5.00
BPS-86-102-07-3/4		148	63	0.3	50	5.40
BPS-86-102-09-3/4		122	74	0.6	120	3.60
BPS-86-102-10-3/4		116	52	0.5	<25	2.00
DUPLICATE		102	51	0.3		
BPS-86-102-11-3/4		62	28	0.2	35	6.00

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Geochemical Lab Report

REPORT: 116-1243

PROJECT: SELBAIE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM
BPS-86 99-25		18	10	<5	<0.5	23
DUPLICATE		19	10	<5	<0.5	19
BPS-86 100-04		105	36	31	<0.5	12
BPS-86 100-08		66	13	<5	0.7	18
BPS-86 100-09		201	57	<5	<0.5	25

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BONDAR-CLEGG

Geochemical Lab Report

REPORT: 016-3095

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	WT g
BPS-86-102-04		24	6.66
BPS-86-112-07		1840	4.16

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Geochemical Lab Report

REPORT: 016-1795

PROJECT: SELBAIE   PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-102-05		104	43	23	<0.5	37	140	
DUPLICATE		100	42	19	<0.5	34		
BPS-86-103-01		116	95	10	<0.5	61	<5	4.00
BPS-86-103-02		122	46	51	<0.5	48	120	
BPS-86-103-03		85	23	30	<0.5	37	45	
BPS-86-103-04		50	27	18	<0.5	27	<10	
BPS-86-103-05		108	35	28	<0.5	23	<10	8.00
BPS-86-103-06		114	57	33	<0.5	35	15	8.00
BPS-86-103-07		103	41	22	<0.5	25	3970	8.00
BPS-86-103-08		113	41	24	<0.5	31	130	7.00
BPS-86-103-09		149	40	33	<0.5	33	15	2.00
DUPLICATE		155	39	28	<0.5	28		
BPS-86-103-10		169	135	30	<0.5	34	35	5.00
BPS-86-103-11		151	31	41	<0.5	27	185	8.00
BPS-86-103-12		101	36	38	<0.5	28	865	8.00
BPS-86-103-13		153	104	28	<0.5	31	55	1.50
BPS-86-103-14		193	183	45	<0.5	57	160	7.00
BPS-86-103-15		187	201	35	<0.5	43	30	
BPS-86-103-16		283	351	26	<0.5	52	145	
BPS-86-104-01		155	87	72	<0.5	42	95	4.00
DUPLICATE		152	84	73	<0.5	45		
BPS-86-104-02		177	43	30	<0.5	26	15	9.00
BPS-86-104-03		106	34	20	<0.5	23	5	7.50
BPS-86-104-04		108	37	15	<0.5	22	265	5.00
BPS-86-105-01		102	27	7	<0.5	23	45	6.50
BPS-86-105-02		91	32	40	<0.5	27	5	
BPS-86-105-03		127	33	12	<0.5	24	<10	8.00
BPS-86-105-04		125	34	<5	<0.5	18	120	
BPS-86-105-05		138	48	9	<0.5	25	<10	6.00
BPS-86-105-06		61	21	<5	<0.5	22	1040	
BPS-86-109-01		84	33	20	<0.5	31	<10	8.00
BPS-86-109-02		84	35	27	<0.5	25	40	7.00
BPS-86-109-03		42	21	38	<0.5	18	<10	8.00
BPS-86-109-04		112	48	18	<0.5	17	480	7.00
BPS-86-109-05		237	55	7	<0.5	20	40	9.00
BPS-86-109-07		44	19	11	<0.5	20	1240	
BPS-86-109-08		41	17	22	<0.5	19	50	7.00
BPS-86-109-09		288	17	13	<0.5	18	<5	
DUPLICATE		282	18	14	<0.5	21		
BPS-86-112-01		190	110	109	1.5	194	75	7.00

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Geochemical Lab Report

REPORT: 016-1467

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	WT g
BPS-86-104-08		240	0.05

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Geochemical Lab Report

REPORT: 216-1317

PROJECT: SELBAIE

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	TestWt gm
BPS-86-104-09		55	1.10

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Geochemical Lab Report

REPORT: 116-1370

PROJECT: SELBAIE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM
BPS-86 108-01		363	22	18	<0.5	23
DUPLICATE		351	25	17	<0.5	15
BPS-86 118-09		58	24	30	<0.5	33

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Geochemical Lab Report

REPORT: 116-1318

PROJECT: SELBAIE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM
BPS-86-102-12-3/4		73	101	33	<0.5	24
DUPLICATE		72	99	37	<0.5	23
BPS-86-102-14-3/4		151	110	20	0.5	32
BPS-86-102-15-3/4		153	124	43	<0.5	25
BPS-86-102-16-3/4		128	92	<5	<0.5	24
BPS-86-102-17-3/4		354	282	32	0.9	40
BPS-86-102-18-3/4		215	659	40	0.5	92
BPS-86-102-19-3/4		378	482	55	1.1	62
BPS-86-103-18-3/4		78	463	56	1.6	736
BPS-86-103-19-3/4		73	332	38	1.3	1561
BPS-86-103-20-3/4		301	928	72	1.7	68
DUPLICATE		296	945	79	1.5	68
BPS-86-103-21-3/4		315	650	129	1.3	51
BPS-86-103-22-3/4		365	1020	60	0.9	45
BPS-86-103-23-3/4		201	133	13	0.8	24
BPS-86-104-05-3/4		81	34	15	<0.5	16
BPS-86-104-06-3/4		152	38	6	<0.5	23
BPS-86-104-07-3/4		111	39	<5	<0.5	19
BPS-86-104-08-3/4		>20000	536	6	35.2	57
BPS-86-105-08-3/4		270	101	<5	<0.5	29
DUPLICATE		263	98	<5	<0.5	28
BPS-86-105-09-3/4		527	32	17	<0.5	15
BPS-86-105-10-3/4		211	23	19	1.7	27

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Geochemical Lab Report

REPORT: 016-1318

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	Au PPB	TestWt g*
BPS-86-102-12-3/4		88	116	0.4	165	4.00
DUPLICATE		89	117	0.3		
BPS-86-102-14-3/4		182	126	0.7	15	6.00
BPS-86-102-15-3/4		175	144	0.5	10	6.00
BPS-86-102-16-3/4		143	113	0.3	20	8.00
BPS-86-102-17-3/4		420	320	0.8	45	4.00
BPS-86-102-18-3/4		275	850	0.8	100	5.00
BPS-86-102-19-3/4		460	560	1.3	110	
BPS-86-103-18-3/4		575	810	1.7	50	
BPS-86-103-19-3/4		410	1800	2.0	50	
BPS-86-103-20-3/4		360	1025	2.2	910	
DUPLICATE		370	1100	1.9		
BPS-86-103-21-3/4		385	735	1.3	165	
BPS-86-103-22-3/4		465	1150	1.5	215	
BPS-86-103-23-3/4		230	166	1.1	75	
BPS-86-104-05-3/4		81	40	0.5	95	9.00
BPS-86-104-06-3/4		165	46	0.2	5	
BPS-86-104-07-3/4		116	51	0.2	1100	
BPS-86-104-08-3/4		>20000	156	39.0	2355	
BPS-86-105-08-3/4		300	104	1.1	140	
DUPLICATE		320	108	1.1		
BPS-86-105-09-3/4		600	35	1.2	85	
BPS-86-105-10-3/4		280	29	2.1	290	

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Geochemical Lab Report

REPORT: 116-1369

PROJECT: SELBAIE PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM
BPS-86 105-11		287	2642	10	1.0	389
DUPLICATE		298	2705	6	1.1	398
BPS-86 106-01		45	32	<5	<0.5	20
BPS-86 106-02		122	41	14	<0.5	26
BPS-86 107-01		1310	28	<5	<0.5	18
BPS-86 107-02		82	17	10	<0.5	17
BPS-86 107-03		100	39	36	<0.5	73
BPS-86 108-02		102	41	20	<0.5	27
BPS-86 108-03		95	118	21	<0.5	21
BPS-86 108-04		201	53	17	<0.5	23
BPS-86 108-05		264	3027	12	<0.5	19
DUPLICATE		280	3159	7	<0.5	20
BPS-86 109-10		131	31	10	<0.5	17
BPS-86 109-11		148	49	6	<0.5	18
BPS-86 109-12		275	14	<5	<0.5	20
BPS-86 109-13		64	16	<5	<0.5	18
BPS-86 109-14		140	12	<5	<0.5	7
BPS-86 109-15		36	11	<5	<0.5	14
BPS-86 110-01		177	28	35	<0.5	26
BPS-86 110-02		44	26	15	<0.5	16
DUPLICATE		47	29	16	<0.5	16
BPS-86 110-03		489	29	28	0.5	36
BPS-86 111-01		99	68	80	0.5	47
BPS-86 111-02		304	19	26	<0.5	29
BPS-86 112-06		128	62	28	<0.5	36
BPS-86 112-07		115	32	22	<0.5	93
BPS-86 112-08		89	51	17	<0.5	23
BPS-86 112-09		171	104	20	<0.5	22
BPS-86 112-10		342	135	21	<0.5	23
BPS-86 113-06		109	42	32	<0.5	24
BPS-86 113-07		108	47	28	<0.5	26
BPS-86 113-08		184	106	19	<0.5	27
BPS-86 113-09		232	115	25	<0.5	26
BPS-86 113-10		505	79	25	<0.5	26
BPS-86 114-03		81	35	19	<0.5	17
BPS-86 114-04		137	76	8	<0.5	27
BPS-86 114-05		142	38	17	1.3	33
PS-86 114-06		184	32	11	<0.5	15
DUPLICATE		179	34	12	<0.5	22
BPS-86 114-07		277	221	9	<0.5	30

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Geochemical Lab Report

REPORT: 016-1369

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	Au PPB	TestWt gm
BPS-86-105-11-3/4		335	3000	1.0	305	
DUPLICATE		340	3125	1.1		
BPS-86-106-01-3/4		50	36	<0.1	10	
BPS-86-106-02-3/4		120	46	0.1	65	2.00
BPS-86-107-01-3/4		1600	22	<0.1	80	8.00
BPS-86-107-02-3/4		76	21	<0.1	50	8.00
BPS-86-107-03-3/4		102	40	<0.1	215	4.00
BPS-86-108-02-3/4		92	42	<0.1	20	7.00
BPS-86-108-03-3/4		92	128	0.2	15515	8.00
BPS-86-108-04-3/4		230	64	0.3	35	8.00
BPS-86-108-05-3/4		280	3500	0.3	245	9.00
DUPLICATE		320	3600	0.3		
BPS-86-109-10-3/4		134	32	<0.1	1010	6.00
BPS-86-109-11-3/4		150	52	0.2	10	
BPS-86-109-12-3/4		300	32	<0.1	<10	8.00
BPS-86-109-13-3/4		54	18	<0.1	145	
BPS-86-109-14-3/4		22	14	<0.1	30	
BPS-86-109-15-3/4		25	12	<0.1	<5	
BPS-86-110-01-3/4		180	33	0.2	10	
BPS-86-110-02-3/4		48	34	<0.1	585	7.00
DUPLICATE		46	36	<0.1		
BPS-86-110-03-3/4		620	36	0.3	30	8.00
BPS-86-111-01-3/4		120	86	0.4	630	
BPS-86-111-02-3/4		400	26	<0.1	670	9.00
BPS-86-112-06-3/4		132	72	0.1	225	
BPS-86-112-07-3/4		134	44	0.2	>20000	
BPS-86-112-08-3/4		84	68	<0.1	130	8.00
BPS-86-112-09-3/4		178	126	0.3	35	
BPS-86-112-10-3/4		370	152	0.7	15	
BPS-86-113-06-3/4		93	46	0.2	70	6.00
BPS-86-113-07-3/4		102	50	<0.1	<10	5.00
BPS-86-113-08-3/4		194	124	0.4	<10	6.00
BPS-86-113-09-3/4		260	128	0.4	230	7.00
BPS-86-113-10-3/4		640	78	0.5	<20	3.00
BPS-86-114-03-3/4		76	38	<0.1	360	6.00
BPS-86-114-04-3/4		136	95	<0.1	30	6.00
BPS-86-114-05-3/4		148	40	1.0	1990	8.00
BPS-86-114-06-3/4		194	40	0.2	90	
DUPLICATE		190	33	0.4		
BPS-86-114-07-3/4		300	240	0.2	95	

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Geochemical Lab Report

REPORT: 116-1369

PROJECT: SELBAIE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM
BPS-86 115-02		185	122	37	1.3	106
BPS-86 115-03		434	274	100	3.0	174
BPS-86 116-01		227	108	65	1.2	99
BPS-86 117-04		67	16	35	<0.5	15
BPS-86 117-05		110	27	8	<0.5	17
BPS-86 117-06		67	31	<5	<0.5	18
BPS-86 117-07		122	23	6	<0.5	14
BPS-86 117-08		136	20	11	<0.5	21
DUPLICATE		123	17	5	<0.5	21
BPS-86 118-07		118	39	54	<0.5	26
BPS-86 118-08		43	23	15	<0.5	16

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Geochemical Lab Report

REPORT: 016-1369

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	Au PPB	TestWt gm
BPS-86-115-02-3/4		210	134	1.3	30	
BPS-86-115-03-3/4		440	240	2.4	45	3.00
BPS-86-116-01-3/4		250	110	1.5	15	7.00
BPS-86-117-04-3/4		56	18	0.1	180	7.00
BPS-86-117-05-3/4		108	22	0.1	<10	8.00
BPS-86-117-06-3/4		68	31	0.3	65	9.00
BPS-86-117-07-3/4		138	24	0.2	<10	6.00
BPS-86-117-08-3/4		112	20	0.4	<10	6.00
DUPLICATE		124	20	0.6		
BPS-86-118-07-3/4		120	40	0.2	1440	6.00
BPS-86-118-08-3/4		42	22	0.1	15	6.00

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Geochemical Lab Report

REPORT: 016-2158

PROJECT: SELBAIE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-118-12-3/4		324	255	38	1.2	43	90	
DUPLICATE		324	264	31	1.0	43		
BPS-86-118-13-3/4		328	195	40	1.3	82	15	
BPS-86-118-14-3/4		290	285	41	1.0	72	60	
BPS-86-118-15-3/4		302	280	58	0.7	48	20	8.00
BPS-86-118-16-3/4		371	144	26	1.1	93	40	

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Geochemical Lab Report

REPORT: 116-1411

PROJECT: SELBAIE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM
BPS-86 118-10		78	30	77	<0.5	17
DUPLICATE		76	28	87	<0.5	16
BPS-86 118-11		125	62	56	<0.5	21
BPS-86 120-01		188	280	75	<0.5	44
BPS-86 121-04		82	36	45	<0.5	25
BPS-86 122-04		226	30	368	<0.5	130
BPS-86 123-03		130	50	69	<0.5	25
BPS-86 124-02		473	39	78	<0.5	24
BPS-86 124-03		66	23	20	<0.5	11
BPS-86 124-04		297	26	62	<0.5	30
BPS-86 125-07		85	14	13	<0.5	10
DUPLICATE		83	19	15	<0.5	9
BPS-86 125-08		102	15	17	<0.5	10
BPS-86 125-09		134	40	<5	<0.5	6
BPS-86 125-10		118	14	33	<0.5	15
.PS-86 126-04		192	68	91	<0.5	33
BPS-86 126-05		155	48	66	<0.5	885
BPS-86 126-06		166	59	45	<0.5	20
BPS-86 126-07		255	28	18	<0.5	12
BPS-86 126-08		209	37	23	<0.5	10
DUPLICATE		220	38	17	<0.5	10
BPS-86 127-06		84	24	29	<0.5	14
BPS-86 127-07		70	35	15	<0.5	15
BPS-86 127-08		136	20	31	<0.5	12
BPS-86 127-09		79	21	13	<0.5	12
BPS-86 127-10		1400	60	18	<0.5	22
BPS-86 128-03		616	69	109	<0.5	35

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Geochemical Lab Report

REPORT: 016-1411

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	Au PPB	TestWt gm
BPS-86-118-10 3/4		84	40	<0.1	5	
DUPLICATE		84	40	<0.1		
BPS-86-118-11 3/4		148	76	0.1	25	6.00
BPS-86-120-01 H		220	260	0.3	<50	1.00
BPS-86-121-04 3/4		98	42	0.4	590	
BPS-86-122-04 3/4		250	39	0.2	55	
BPS-86-123-03 3/4		136	58	0.2	390	8.00
BPS-86-124-02 3/4		600	50	0.1	2370	9.00
BPS-86-124-03 3/4		72	35	<0.1	145	
BPS-86-124-04 3/4		360	30	0.1	30	
BPS-86-125-07 3/4		81	20	<0.1	50	
DUPLICATE		92	18	<0.1		
BPS-86-125-08 3/4		92	20	<0.1	215	
BPS-86-125-09 3/4		146	44	<0.1	5	
BPS-86-125-10 3/4		138	25	<0.1	80	6.00
BPS-86-126-04 3/4		220	80	<0.1	200	5.00
BPS-86-126-05 3/4		174	56	<0.1	295	9.00
BPS-86-126-06 3/4		172	82	<0.1	80	7.00
BPS-86-126-07 3/4		270	38	<0.1	150	9.00
BPS-86-126-08 3/4		220	40	<0.1	170	4.00
DUPLICATE		235	44	<0.1		
BPS-86-127-06 3/4		88	34	<0.1	110	8.00
BPS-86-127-07 3/4		76	47	<0.1	145	
BPS-86-127-08 3/4		152	26	<0.1	225	8.00
BPS-86-127-09 3/4		82	32	<0.1	65	7.00
BPS-86-127-10 3/4		1600	60	<0.1	90	5.00
BPS-86-128-03 3/4		675	72	<0.1	155	9.00

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Geochemical Lab Report

REPORT: 116-1412

PROJECT: SELBAIE PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM
BPS-86 121-03		136	64	68	2.9	32
DUPLICATE		124	54	78	2.7	30
BPS-86 122-03		231	129	209	1.1	80
BPS-86 125-06		86	29	19	<0.5	25

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Geochemical Lab Report

REPORT: 016-1795

PROJECT: SELBAIE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-112-02		213	132	118	0.7	89	65	
BPS-86-112-04		95	33	29	<0.5	32	<10	8.00
BPS-86-112-05		138	53	66	<0.5	35	15	8.00
BPS-86-129-01		182	143	138	0.6	63	55	
BPS-86-129-02		89	31	37	<0.5	25	55	
BPS-86-129-03		110	108	14	<0.5	23	<10	8.00
BPS-86-130-01		74	29	14	<0.5	25	10	
BPS-86-130-02		70	37	44	<0.5	17	90	
DUPLICATE		70	33	55	<0.5	18		
BPS-86-130-03		98	54	37	<0.5	24	15	6.00

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Geochemical Lab Report

REPORT: 016-1877

PROJECT: NONE PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-125-08	3/4	54	27	9	<0.5	11	<10	9.00
BPS-86-125-09	3/4	86	37	<5	<0.5	8	100	
BPS-86-130-04	3/4	93	76	11	<0.5	20	165	9.00
BPS-86-130-05	3/4	245	39	8	<0.5	18	<10	9.00
BPS-86-130-06	3/4	25	18	6	<0.5	15	5	
DUPLICATE		23	17	<5	<0.5	15		
BPS-86-130-07	3/4	29	26	<5	<0.5	15	195	
BPS-86-130-08	3/4	133	64	11	3.3	28	<20	3.00
BPS-86-131-01	3/4	26	14	<5	<0.5	15	15	
BPS-86-131-02	3/4	111	16	<5	<0.5	18	30	9.00
BPS-86-131-03	3/4	45	29	<5	<0.5	14	20	
DUPLICATE		43	27	5	<0.5	15		
BPS-86-131-04	3/4	41	12	8	<0.5	15	25	
BPS-86-131-05	3/4	21	13	<5	<0.5	18	30	
BPS-86-131-06	3/4	138	22	11	<0.5	18	255	7.00
BPS-86-131-07	3/4	1310	49	<5	<0.5	22	30	2.00
BPS-86-132-01	3/4	29	19	<5	<0.5	14	75	9.00
BPS-86-132-02	3/4	71	27	17	<0.5	16	<10	6.00
BPS-86-133-01	3/4	23	12	<5	<0.5	17	<10	6.00
BPS-86-133-02	3/4	49	20	6	<0.5	25	<10	7.00
BPS-86-134-01-H		131	198	17	<0.5	80	<50	1.00
BPS-86-134-02	3/4	35	18	8	<0.5	20	40	5.00
BPS-86-134-03	3/4	191	17	6	<0.5	16	<5	
BPS-86-135-01	3/4	68	46	33	<0.5	20	<5	
DUPLICATE		68	46	25	<0.5	19		
BPS-86-135-02	3/4	101	30	46	<0.5	27	5	
BPS-86-135-03	3/4	89	27	29	<0.5	21	5	
BPS-86-135-04	3/4	125	29	26	<0.5	19	40	
BPS-86-135-05	3/4	164	47	101	1.1	29	25	
BPS-86-135-06	3/4	85	32	12	<0.5	19	<10	8.00
BPS-86-136-01	3/4	75	31	8	<0.5	18	115	
BPS-86-136-02	3/4	73	24	13	<0.5	19	55	9.00
BPS-86-136-03	3/4	248	19	18	<0.5	22	15	
BPS-86-136-04	3/4	59	28	47	<0.5	18	25	
BPS-86-136-05	3/4	79	23	14	<0.5	19	30	
BPS-86-136-06	3/4	30	24	7	<0.5	15	25	
BPS-86-136-07	3/4	85	14	<5	<0.5	14	40	
BPS-86-136-08	3/4	26	15	<5	<0.5	15	<5	
DUPLICATE		24	14	<5	<0.5	13		
BPS-86-136-09	3/4	13	13	<5	<0.5	13	210	

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BONDAR-CLEGG

Geochemical Lab Report

REPORT: 016-1877

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-136-10	3/4	26	14	<5	<0.5	20	75	
BPS-86-136-12	3/4	190	20	27	<0.5	25	145	7.00
BPS-86-137-01	3/4	94	26	20	<0.5	25	30	9.00
BPS-86-137-02	3/4	114	29	18	<0.5	22	<10	7.00
BPS-86-137-03	3/4	124	22	12	<0.5	20	25	
BPS-86-137-04	3/4	68	32	24	<0.5	17	<10	7.00
BPS-86-137-05	3/4	144	17	10	<0.5	18	35	8.00
BPS-86-137-06	3/4	54	13	10	<0.5	22	60	4.00
DUPLICATE		51	14	<5	<0.5	18		
BPS-86-137-07	3/4	36	8	<5	<0.5	20	90	8.00
BPS-86-139-02	3/4	193	14	9	<0.5	30	190	4.00
BPS-86-140-01	3/4	605	754	<5	<0.5	19	125	5.00
BPS-86-141-01	3/4	97	29	51	1.1	44	10	9.00
BPS-86-141-02	3/4	93	57	41	<0.5	30	25	8.00
BPS-86-141-03	3/4	259	47	137	<0.5	32	20	8.00
BPS-86-141-04	3/4	77	33	26	<0.5	24	80	8.00
BPS-86-141-05	3/4	67	24	51	<0.5	38	<10	8.00
DUPLICATE		66	23	49	<0.5	37		

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Geochemical Lab Report

REPORT: 016-1892

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-601-3/4		1830	62	362	2.5	103	100	2.00
BPS-86-602-3/4		232	88	122	0.9	43	155	
BPS-86-603-3/4		424	90	121	0.5	36	40	8.50
BPS-86-604-3/4		330	123	97	0.6	36	395	
BPS-86-605-3/4		406	206	336	0.9	44	60	
BPS-86-606-3/4		299	96	103	0.7	35	270	
BPS-86-607-3/4		235	75	84	<0.5	38	85	
BPS-86-608-3/4		211	181	41	0.9	33	80	
BPS-86-609-3/4		206	324	59	0.8	39	315	
DUPLICATE		212	337	52	0.8	41		
BPS-86-610-3/4		191	122	60	4.8	52	65	
BPS-86-611-3/4		193	72	61	0.6	43	645	
BPS-86-612-3/4		308	71	62	1.2	55	1205	6.00
BPS-86-613-3/4		199	92	76	0.9	41	215	
BPS-86-614-3/4		200	47	134	3.5	109	1805	4.00
BPS-86-615-3/4		215	53	60	1.1	26	50	
DUPLICATE		215	51	54	0.9	26		
BPS-86-616-3/4		194	31	22	<0.5	23	270	5.00
BPS-86-617-3/4		236	52	62	1.0	38	55	
BPS-86-619-3/4		188	47	38	<0.5	30	65	3.00
DUPLICATE		188	48	40	0.5	33		
BPS-86-620-3/4		961	57	47	1.2	23	50	2.00
BPS-86-621-3/4		216	42	41	0.5	23	50	
BPS-86-622-3/4		289	48	22	<0.5	21	40	
BPS-86-623-3/4		300	39	25	<0.5	19	165	
BPS-86-624-3/4		372	121	514	0.5	28	325	
BPS-86-625-H		143	43	20	<0.5	33	100	1.00
BPS-86-626-H		185	33	46	<0.5	26	225	2.00
BPS-86-627-3/4		379	50	55	<0.5	30	610	6.00
BPS-86-628-3/4		62	13	<5	<0.5	16	15	8.00
BPS-86-629-3/4		91	13	9	<0.5	18	20	
BPS-86-630-3/4		90	15	23	<0.5	18	730	
BPS-86-631-3/4		382	28	78	<0.5	22	30	5.50
BPS-86-632-3/4		312	49	63	0.6	51	110	
BPS-86-633-3/4		169	96	57	<0.5	28	45	
BPS-86-634-3/4		211	53	82	<0.5	34	5	
BPS-86-635-3/4		16	45	23	<0.5	23	95	7.00
BPS-86-636-3/4		112	38	13	<0.5	16	10	
DUPLICATE		115	36	15	<0.5	16		
BPS-86-637-3/4		143	38	24	<0.5	19	340	

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Geochemical Lab Report

REPORT: 016-3178

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	WT g
PREFIX BPX-86		659	
11012-06-612 1/4			3.35

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Geochemical Lab Report

REPORT: 016-1892

PROJECT: NONE PAGE 2

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-638-H		116	52	30	<0.5	24	70	2.00
BPS-86-639-3/4		168	52	52	0.5	29	20	
BPS-86-640-3/4		110	106	85	0.6	33	20	7.50
BPS-86-641-3/4		147	77	45	<0.5	35	20	8.50
BPS-86-642-3/4		164	91	77	0.5	37	60	6.50
BPS-86-643-3/4		280	65	52	1.4	45	20	8.00
BPS-86-644-3/4		188	63	116	0.9	37	20	
BPS-86-647-3/4		183	57	63	0.6	28	35	
DUPLICATE		195	59	70	0.7	31		
BPS-86-648-3/4		152	51	69	0.5	32	85	
BPS-86-649-3/4		178	52	54	<0.5	30	50	
BPS-86-650-3/4		234	51	47	0.6	39	25	
BPS-86-651-3/4		262	1057	231	8.2	200	40	
BPS-86-652-3/4		164	45	58	<0.5	37	190	
BPS-86-652-3/4		141	69	49	0.7	34	110	
BPS-86-653-3/4		238	71	50	0.6	40	85	
BPS-86-655-3/4		251	94	64	0.8	35	75	
DUPLICATE		251	89	58	0.5	36		
BPS-86-656-3/4		199	59	50	0.7	36	80	9.50
BPS-86-657-3/4		304	71	50	1.2	45	60	
BPS-86-658-3/4		233	72	25	0.7	23	20	
BPS-86-659-3/4		369	95	45	0.7	34	160	9.50
BPS-86-660-3/4		545	90	34	2.3	48	490	8.50
BPS-86-661-3/4		342	64	22	0.5	22	70	7.50
BPS-86-662-3/4		253	37	62	<0.5	24	885	9.50
BPS-86-663-3/4		170	37	11	0.5	23	205	7.50
BPS-86-664-3/4		175	38	47	0.5	31	15	7.50
BPS-86-665-3/4		165	100	28	3.4	30	600	6.00
BPS-86-666-3/4		179	50	146	<0.5	20	225	7.50
BPS-86-667-3/4		177	66	19	<0.5	18	320	6.00
BPS-86-668-3/4		229	54	78	1.1	33	255	
BPS-86-669-3/4		85	18	15	<0.5	17	104	9.50
BPS-86-672-3/4		124	20	9	<0.5	21	10	
BPS-86-673-3/4		140	20	27	<0.5	20	25	9.00
BPS-86-674-3/4		147	24	9	<0.5	19	35	8.00
BPS-86-675-3/4		260	135	<5	<0.5	37	<25	2.00
BPS-86-676-3/4		32	24	504	<0.5	32	<20	2.50
BPS-86-677-3/4		31	24	22	<0.5	16	<15	4.00
BPS-86-678-3/4		54	41	5	<0.5	52	<15	4.50
BPS-86-679-H		161	131	54	<0.5	37	<35	1.50

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Geochemical Lab Report

REPORT: 016-1892

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-680-H		196	24	11	0.5	25	105	1.50
BPS-86-681-3/4		99	50	<5	<0.5	25	<10	8.00
BPS-86-682-3/4		174	135	123	0.5	42	155	
DUPLICATE		166	133	119	0.5	39		
BPS-86-683-3/4		106	86	175	0.7	44	140	
DUPLICATE		106	85	163	<0.5	43		
BPS-86-684-3/4		201	123	68	<0.5	45	15	
BPS-86-685-3/4		207	107	123	<0.5	62	330	
BPS-86-686-3/4		33	23	37	<0.5	20	40	
BPS-86-687-3/4		80	120	<5	<0.5	53	<35	1.50
BPS-86-688-H		101	95	10	0.6	56	<35	1.50
BPS-86-689-3/4		172	39	49	<0.5	30	55	9.00
BPS-86-690-3/4		118	31	28	<0.5	25	<15	4.00
BPS-86-691-3/4		455	35	26	0.5	28	10	
BPS-86-692-3/4		1150	79	12	0.6	53	6480	1.00
BPS-86-693-3/4		156	84	26	0.8	71	280	2.00
BPS-86-694-3/4		124	44	30	<0.5	24	45	8.00
BPS-86-695-3/4		55	26	23	<0.5	22	30	
BPS-86-696-3/4		182	37	164	<0.5	22	180	
BPS-86-697-3/4		78	25	14	<0.5	21	15	
DUPLICATE		78	25	12	<0.5	21		
BPS-86-698-3/4		47	27	20	<0.5	26	<10	7.00
BPS-86-699-3/4		44	23	<5	<0.5	21	<10	6.00
BPS-86-700-3/4		32	22	<5	4.3	18	15	
BPS-86-701-3/4		107	33	33	<0.5	28	<10	7.50
BPS-86-702-3/4		124	32	51	<0.5	36	<10	9.00
BPS-86-703-3/4		100	25	51	0.7	32	<10	8.50
BPS-86-704-H		86	27	29	<0.5	43	55	1.50
BPS-86-705-H		100	82	11	<0.5	69	<35	1.50
BPS-86-706-3/4		110	124	18	0.6	63	155	9.50
BPS-86-707-3/4		125	94	16	1.3	98	<10	9.00
BPS-86-708-3/4		106	44	39	<0.5	24	140	
DUPLICATE		106	46	38	<0.5	24		
BPS-86-709-3/4		53	38	26	<0.5	24	15	
BPS-86-710-3/4		57	30	32	<0.5	20	10	
BPS-86-711-3/4		57	36	20	<0.5	23	<10	9.00
BPS-86-712-3/4		63	35	14	<0.5	24	45	
BPS-86-713-3/4		44	30	13	<0.5	21	30	
BPS-86-714-3/4		51	33	32	<0.5	24	125	
BPS-86-715-3/4		65	24	15	<0.5	19	15	

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Geochemical Lab Report

REPORT: 016-2277

PROJECT: SELBAIE

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	WT g
BPS-86-692-1/4		1540	0.86

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Geochemical Lab Report

REPORT: 016-1951

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-716-3/4		49	22	40	<0.5	14	35	
DUPLICATE		50	23	45	<0.5	16		
BPS-86-717-3/4		82	31	166	<0.5	20	20	9.00
BPS-86-718-3/4		56	31	62	<0.5	26	30	8.00
BPS-86-719-3/4		28	13	<5	<0.5	13	35	
BPS-86-720-3/4		65	38	11	<0.5	18	490	8.00
BPS-86-721-3/4		69	15	7	<0.5	15	190	
BPS-86-722-3/4		42	14	<5	<0.5	14	40	
BPS-86-723-3/4		43	19	8	<0.5	19	130	4.00
BPS-86-724-3/4		68	71	5	<0.5	41	<10	9.00
BPS-86-725-3/4		98	87	12	0.9	74	55	
DUPLICATE		101	87	14	0.9	72		
BPS-86-726-3/4		109	114	10	0.9	73	80	3.00
BPS-86-727-3/4		131	220	183	0.5	43	385	9.00
BPS-86-728-3/4		166	68	143	0.5	45	95	7.00
BPS-86-730-3/4		169	53	119	<0.5	47	40	
BPS-86-731-3/4		206	121	307	3.2	80	340	
BPS-86-732-3/4		210	118	364	0.6	65	215	
BPS-86-733-3/4		218	35	24	<0.5	22	125	
BPS-86-734-3/4		240	46	103	<0.5	41	125	
DUPLICATE		235	48	98	<0.5	41		
BPS-86-735-3/4		93	30	13	<0.5	19	<10	6.00
BPS-86-736-3/4		124	33	103	<0.5	29	20	
BPS-86-737-3/4		18	19	7	<0.5	15	<5	
BPS-86-738-3/4		19	17	22	<0.5	17	80	
BPS-86-739-3/4		28	19	16	<0.5	15	160	
BPS-86-740-3/4		58	31	26	<0.5	14	370	
BPS-86-741-3/4		120	28	55	<0.5	19	110	9.00
BPS-86-742-3/4		61	32	34	<0.5	21	230	9.00
BPS-86-743-3/4		66	23	25	<0.5	16	<5	
BPS-86-744-3/4		74	46	34	<0.5	16	110	8.00
BPS-86-745-3/4		75	28	30	<0.5	19	1560	4.00
BPS-86-746-3/4		62	18	22	<0.5	20	<10	5.00
BPS-86-747-3/4		154	101	194	0.6	86	105	5.00
BPS-86-748-3/4		105	37	50	0.5	29	60	5.00
BPS-86-749-3/4		41	33	22	<0.5	23	55	6.00
BPS-86-750-3/4		72	41	16	<0.5	23	70	
BPS-86-751-3/4		62	26	20	<0.5	22	50	
DUPLICATE		58	26	18	<0.5	22		
BPS-86-752-3/4		47	30	14	<0.5	15	25	

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Geochemical Lab Report

REPORT: 016-1951

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-753-3/4		48	25	21	<0.5	17	295	
BPS-86-754-3/4		56	23	13	<0.5	16	<10	9.00
BPS-86-755-3/4		33	32	12	<0.5	15	35	
BPS-86-756-3/4		28	16	6	<0.5	14	10	
BPS-86-757-3/4		9	12	<5	<0.5	13	20	
BPS-86-758-3/4		21	13	<5	<0.5	14	20	
BPS-86-759-3/4		16	14	<5	<0.5	14	295	
BPS-86-760-3/4		20	12	9	<0.5	15	5	
DUPLICATE		20	10	7	<0.5	16		
BPS-86-761-3/4		14	10	5	<0.5	13	50	
BPS-86-762-3/4		14	13	7	<0.5	15	25	9.00
BPS-86-763-3/4		22	10	6	<0.5	14	30	
BPS-86-764-3/4		20	9	<5	<0.5	14	85	
BPS-86-765-3/4		17	11	18	<0.5	17	10	

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Geochemical Lab Report

REPORT: 016-1982

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pt PPM	Au PPB	TestWt gm
BPS-86-766-3/4		50	24	41	<0.5	22	10	
DUPLICATE		47	24	42	<0.5	24		
BPS-86-768-3/4		55	22	33	<0.5	15	15	
BPS-86-769-3/4		56	28	16	<0.5	16	15	
BPS-86-770-3/4		49	24	23	<0.5	17	125	9.00
BPS-86-771-3/4		68	26	22	<0.5	22	<10	5.50
BPS-86-772-3/4		90	45	23	<0.5	20	<10	8.00
BPS-86-773-3/4		71	25	39	<0.5	18	30	7.00
BPS-86-774-3/4		60	32	52	<0.5	24	15	8.00
BPS-86-775-3/4		56	27	18	<0.5	18	45	9.00
BPS-86-776-3/4		57	26	37	<0.5	22	10	
DUPLICATE		55	24	40	<0.5	23		
BPS-86-777-3/4		64	29	34	<0.5	19	5	
BPS-86-778-3/4		77	23	58	<0.5	29	20	7.50
BPS-86-779-3/4		75	30	36	<0.5	24	<10	7.50
BPS-86-780-3/4		85	50	56	<0.5	20	230	
BPS-86-781-3/4		79	32	32	<0.5	21	20	
BPS-86-782-3/4		98	36	46	<0.5	22	<10	8.50
BPS-86-783-3/4		97	34	42	<0.5	20	<10	5.20
BPS-86-784-3/4		75	38	28	<0.5	16	85	
DUPLICATE		76	41	21	<0.5	15		
BPS-86-786-3/4		97	35	71	<0.5	20	110	
BPS-86-787-3/4		173	62	130	<0.5	41	25	8.50
BPS-86-788-3/4		98	30	49	<0.5	22	<10	6.50
BPS-86-789-3/4		58	20	33	<0.5	20	<10	7.50
BPS-86-790-3/4		122	21	51	<0.5	17	15	7.00

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Geochemical Lab Report

REPORT: 016-2128

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-791-3/4		88	26	10	<0.5	25	<5	
DUPLICATE		84	24	11	<0.5	23		
BPS-86-792-3/4		112	27	21	0.5	25	30	
BPS-86-793-3/4		132	27	39	0.8	25	<10	5.00
BPS-86-794-3/4		26	13	<5	<0.5	17	50	
BPS-86-795-3/4		37	17	<5	0.6	15	<5	
BPS-86-796-3/4		103	30	17	<0.5	24	300	2.00
BPS-86-798-3/4		104	84	64	0.7	44	30	8.00
BPS-86-799-3/4		105	75	81	0.7	44	430	5.00
BPS-86-800-3/4		138	130	98	0.7	65	90	
BPS-86-801-3/4		125	86	105	0.7	45	60	
DUPLICATE		136	91	113	0.9	50		
BPS-86-802-3/4		109	143	42	1.0	39	45	
BPS-86-803-3/4		102	125	47	<0.5	39	10	
BPS-86-804-3/4		104	51	111	<0.5	37	85	7.00
BPS-86-805-3/4		122	74	83	0.6	33	65	4.00
BPS-86-806-3/4		92	39	100	0.6	26	35	
BPS-86-807-3/4		44	22	43	0.6	21	25	8.00
BPS-86-808-3/4		24	25	<5	<0.5	25	25	2.00
BPS-86-809-3/4		28	15	<5	<0.5	24	20	
DUPLICATE		25	15	<5	0.5	22		
BPS-86-822-3/4		10	18	<5	<0.5	21	700	2.00
BPS-86-823-3/4		7	13	<5	<0.5	22	<10	6.00
BPS-86-824-3/4		37	33	7	0.6	21	110	9.00
BPS-86-825-3/4		19	19	<5	<0.5	20	15	4.00
BPS-86-826-3/4		11	15	<5	<0.5	16	<10	7.00
BPS-86-827-3/4		231	50	57	1.0	70	40	
BPS-86-828-3/4		434	81	179	1.2	44	55	8.00
BPS-86-829-3/4		280	65	68	0.9	31	35	7.00
BPS-86-831-3/4		840	179	254	1.3	72	140	4.00
BPS-86-832-H		108	200	20	0.6	30	25	2.00
BPS-86-833-3/4		103	70	15	0.6	27	160	6.00
BPS-86-834-H		880	48	212	1.4	37	<30	1.77
BPS-86-835-3/4		70	40	<5	<0.5	25	35	3.00
BPS-86-836-3/4		9	15	<5	<0.5	18	<5	
BPS-86-837-3/4		22	20	<5	0.6	19	<10	5.00
BPS-86-838-3/4		127	29	8	<0.5	17	70	
BPS-86-839-3/4		94	31	30	<0.5	15	10	
DUPLICATE		96	31	33	<0.5	15		
BPS-86-840-3/4		74	20	6	<0.5	17	20	5.00

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Geochemical Lab Report

REPORT: 016-2128

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-841-3/4		48	20	<5	<0.5	16	40	
BPS-86-842-3/4		102	14	6	<0.5	13	120	
BPS-86-843-3/4		87	77	36	<0.5	23	10	7.00
BPS-86-844-3/4		67	21	24	<0.5	20	10	8.00
BPS-86-845-3/4		95	29	61	<0.5	43	185	6.00
BPS-86-846-3/4		22	20	<5	<0.5	19	<10	6.00
BPS-86-847-3/4		85	33	53	<0.5	29	30	
BPS-86-848-3/4		122	32	40	<0.5	22	35	7.00
DUPLICATE		114	34	36	<0.5	22		
BPS-86-849-3/4		65	24	30	<0.5	21	35	9.00
BPS-86-850-3/4		196	41	65	<0.5	39	145	7.00
BPS-86-851-3/4		128	39	36	0.8	24	45	6.00
BPS-86-852-3/4		198	39	32	<0.5	208	40	8.00
BPS-86-853-3/4		162	24	36	<0.5	22	315	9.00
BPS-86-854-3/4		126	20	158	<0.5	22	240	9.00
BPS-86-855-3/4		173	24	22	<0.5	22	195	6.00
BPS-86-856-3/4		213	30	155	<0.5	22	<10	7.00
DUPLICATE		229	32	163	<0.5	23		
BPS-86-857-3/4		72	27	13	<0.5	21	10	
BPS-86-858-3/4		98	37	32	<0.5	23	950	6.00
BPS-86-859-3/4		76	24	25	<0.5	25	500	8.00
BPS-86-860-3/4		69	32	35	<0.5	32	<10	8.00
BPS-86-861-3/4		342	47	119	1.2	44	55	8.00
BPS-86-862-3/4		335	50	143	<0.5	72	260	8.00
BPS-86-864-3/4		217	104	67	0.5	36	75	
BPS-86-865-3/4		124	31	29	<0.5	20	25	
BPS-86-866-3/4		26	14	<5	<0.5	10	260	
BPS-86-867-3/4		382	77	101	0.6	49	60	2.00
BPS-86-868-3/4		155	63	74	<0.5	45	55	
BPS-86-869-3/4		98	43	35	<0.5	25	10	
BPS-86-870-3/4		840	82	433	1.0	55	45	8.00
BPS-86-871-3/4		124	21	22	<0.5	13	<5	
BPS-86-872-H		670	33	65	0.8	29	25	2.00
BPS-86-873-3/4		224	892	103	0.8	42	35	3.00
BPS-86-874-3/4		84	34	36	<0.5	20	10	
DUPLICATE		80	35	33	<0.5	23		
BPS-86-875-3/4		86	23	30	<0.5	17	400	
BPS-86-876-3/4		92	22	28	<0.5	16	60	
BPS-86-877-3/4		85	26	32	<0.5	19	130	
BPS-86-878-3/4		89	36	43	<0.5	37	15	

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Geochemical Lab Report

REPORT: 016-2128

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-879-3/4		71	26	33	<0.5	14	10	
BPS-86-880-3/4		69	19	26	<0.5	17	10	
BPS-86-881-3/4		78	23	26	<0.5	18	50	8.00
BPS-86-882-3/4		60	31	16	<0.5	17	100	
BPS-86-883-3/4		66	41	25	0.5	20	45	
DUPLICATE		62	39	28	0.5	18		
BPS-86-884-3/4		51	27	16	<0.5	19	75	
BPS-86-885-3/4		130	39	33	<0.5	30	90	4.00
BPS-86-886-3/4		195	100	19	<0.5	22	5	
BPS-86-887-3/4		70	36	14	<0.5	20	15	
BPS-86-888-3/4		100	114	37	<0.5	27	60	
BPS-86-889-3/4		75	70	22	0.5	26	210	
BPS-86-890-3/4		61	44	18	<0.5	19	50	7.00
BPS-86-891-3/4		65	41	22	<0.5	31	<5	
DUPLICATE		61	38	23	<0.5	28		
BPS-86-892-3/4		72	40	12	<0.5	21	30	
BPS-86-893-3/4		44	21	5	<0.5	21	<10	6.00
BPS-86-894-3/4		90	22	<5	<0.5	25	<10	5.00
BPS-86-895-3/4		86	23	<5	<0.5	21	20	7.00
BPS-86-896-3/4		58	22	<5	<0.5	18	<10	6.00
BPS-86-897-3/4		113	128	12	1.3	91	15	
BPS-86-898-3/4		131	103	32	1.2	84	20	5.00
BPS-86-901-3/4		147	59	49	<0.5	31	25	2.00
BPS-86-903-3/4		185	315	68	1.0	76	55	
BPS-86-904-3/4		175	33	52	0.7	25	25	
BPS-86-905-3/4		146	73	57	0.5	47	450	
BPS-86-906-3/4		86	36	49	<0.5	26	680	
BPS-86-907-3/4		114	64	59	0.6	43	420	
BPS-86-908-3/4		80	29	26	<0.5	25	80	8.00
BPS-86-909-3/4		57	59	16	<0.5	21	35	
BPS-86-910-3/4		89	19	21	<0.5	70	10	
BPS-86-911-3/4		50	16	13	<0.5	54	5	
DUPLICATE		47	15	11	<0.5	55		
BPS-86-912-3/4		65	10	19	<0.5	42	15	
BPS-86-913-3/4		60	29	12	<0.5	101	10	
BPS-86-914-3/4		45	19	11	<0.5	140	5	
BPS-86-915-3/4		104	24	27	<0.5	91	80	8.00
BPS-86-916-3/4		112	57	23	<0.5	55	185	9.00
BPS-86-917-3/4		71	41	35	<0.5	31	300	8.00
BPS-86-918-3/4		75	38	19	<0.5	29	35	9.00

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Geochemical Lab Report

REPORT: 016-2128

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-919-3/4		98	70	75	<0.5	30	<15	4.33
BPS-86-920-3/4		137	59	39	0.5	32	25	8.50
DUPLICATE		130	59	42	0.5	29		
BPS-86-921-3/4		106	42	39	<0.5	59	170	8.51
BPS-86-922-3/4		98	44	56	<0.5	41	<10	5.97
BPS-86-923-3/4		76	46	18	<0.5	28	5	
BPS-86-924-3/4		71	43	29	<0.5	20	10	
BPS-86-925-3/4		88	89	36	<0.5	23	<10	7.38
BPS-86-926-3/4		122	60	16	<0.5	28	100	10.01
BPS-86-927-3/4		112	39	31	<0.5	23	45	6.28
BPS-86-928-3/4		95	103	51	<0.5	32	55	5.20
DUPLICATE		92	97	50	<0.5	31		
BPS-86-929-3/4		82	51	19	<0.5	20	10	9.64
BPS-86-930-3/4		87	40	11	<0.5	19	<10	9.13
BPS-86-931-3/4		65	35	19	<0.5	16	105	9.00
BPS-86-932-3/4		82	50	60	<0.5	22	65	9.00
BPS-86-934-3/4		67	29	54	<0.5	16	1650	
BPS-86-935-3/4		80	48	14	<0.5	22	65	
BPS-86-936-3/4		68	48	19	<0.5	60	70	

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Geochemical Lab Report

REPORT: 016-2190

PROJECT: SELBAIE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-937-3/4		111	36	19	<0.5	17	<15	4.00
DUPLICATE		118	38	25	<0.5	19		
BPS-86-938-3/4		69	54	20	<0.5	22	170	
BPS-86-939-3/4		66	30	28	<0.5	26	5	
BPS-86-940-3/4		88	46	22	<0.5	17	10	
BPS-86-941-3/4		84	28	42	<0.5	22	70	
BPS-86-942-3/4		93	41	19	<0.5	20	25	
BPS-86-943-3/4		71	42	36	<0.5	20	45	
BPS-86-944-3/4		84	47	11	<0.5	20	25	
BPS-86-945-3/4		165	36	24	<0.5	19	55	
BPS-86-946-3/4		79	50	20	<0.5	31	145	
DUPLICATE		83	46	26	<0.5	31		
BPS-86-947-3/4		90	42	13	<0.5	21	30	
BPS-86-948-3/4		116	105	44	<0.5	23	10	
BPS-86-949-3/4		145	96	77	<0.5	41	70	
BPS-86-951-3/4		475	77	82	1.0	36	3595	9.00
BPS-86-952-3/4		273	31	59	0.9	28	240	
BPS-86-953-3/4		164	55	72	1.0	33	265	
BPS-86-954-3/4		285	64	86	1.4	49	105	
BPS-86-955-3/4		292	52	66	1.4	40	40	
DUPLICATE		285	51	66	1.0	41		
BPS-86-956-3/4		132	76	95	0.6	41	25	
BPS-86-957-3/4		179	49	35	0.6	35	280	
BPS-86-958-3/4		140	88	52	0.8	29	30	
BPS-86-959-3/4		137	89	69	0.6	31	30	
BPS-86-960-3/4		214	146	26	<0.5	32	65	6.00
BPS-86-961-3/4		178	231	131	0.5	79	2580	
BPS-86-962-3/4		82	64	137	0.7	30	55	
BPS-86-963-3/4		69	30	68	<0.5	27	45	
BPS-86-964-3/4		118	47	98	<0.5	46	40	
BPS-86-965-3/4		69	45	63	<0.5	23	15	
BPS-86-966-3/4		78	32	92	<0.5	27	15	
BPS-86-967-3/4		158	72	106	<0.5	50	<20	3.00
BPS-86-968-3/4		101	86	86	2.8	384	10	
BPS-86-969-3/4		104	85	86	0.5	32	50	
BPS-86-970-3/4		126	74	210	<0.5	54	700	
BPS-86-971-3/4		94	59	371	<0.5	32	165	
BPS-86-972-3/4		150	94	356	0.6	84	55	5.00
DUPLICATE		147	89	348	<0.5	82		
BPS-86-973-3/4		114	82	106	<0.5	48	<25	2.00

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Geochemical Lab Report

REPORT: 016-2190

PROJECT: SELBAIE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-974-3/4		296	70	238	0.9	65	195	6.00
BPS-86-975-3/4		55	20	33	<0.5	20	15	
BPS-86-976-3/4		31	12	24	<0.5	17	15	8.00
BPS-86-977-3/4		21	10	9	<0.5	18	110	7.00
BPS-86-978-3/4		66	14	<5	<0.5	18	5	
BPS-86-979-3/4		12	12	<5	<0.5	16	15	
BPS-86-980-3/4		23	13	11	<0.5	16	120	
BPS-86-981-3/4		34	15	14	0.6	16	15	
DUPLICATE		37	14	13	<0.5	16		
BPS-86-982-3/4		22	10	5	<0.5	15	45	
BPS-86-983-3/4		11	10	<5	<0.5	16	110	
BPS-86-984-3/4		12	10	<5	<0.5	16	175	9.00

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Geochemical Lab Report

REPORT: 016-2329

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au PPB	TestWt gm
BPS-86-985-3/4		57	24	17	<0.5	21	60	10.00
DUPLICATE		57	25	21	<0.5	21		
BPS-86-986-3/4		40	22	14	<0.5	18	15	10.00
BPS-86-987-3/4		39	17	9	<0.5	18	10	10.00
BPS-86-988-3/4		49	20	14	<0.5	18	290	10.00
BPS-86-989-3/4		18	13	<5	<0.5	17	120	10.00
BPS-86-990-3/4		19	12	6	<0.5	16	<10	9.50
BPS-86-991-3/4		14	19	6	<0.5	19	500	9.30
BPS-86-992-3/4		30	21	<5	<0.5	19	100	6.10
BPS-86-993-3/4		24	18	<5	<0.5	19	<10	6.80
BPS-86-994-3/4		71	12	5	<0.5	17	10	8.50
DUPLICATE		72	14	<5	<0.5	19		
BPS-86-995-3/4		30	16	9	<0.5	21	5	10.00
BPS-86-996-3/4		56	24	18	<0.5	27	20	9.00
BPS-86-997-3/4		106	43	49	<0.5	23	60	5.60
BPS-86-998-H		105	36	73	<0.5	31	<20	2.80
BPS-86-999-3/4		69	99	52	<0.5	27	175	9.40
BPS-86-1000-3/4		51	29	8	<0.5	20	50	9.40
BPS-86-1001-3/4		58	25	22	<0.5	18	55	8.90
BPS-86-1002-3/4		181	28	30	<0.5	32	<10	8.80
DUPLICATE		175	27	40	<0.5	29		
BPS-86-1003-3/4		58	37	18	<0.5	23	5	10.00
BPS-86-1004-3/4		48	25	11	<0.5	21	<10	9.20
BPS-86-1005-3/4		79	32	23	<0.5	22	100	10.00
BPS-86-1006-3/4		38	25	<5	<0.5	21	25	5.80
BPS-86-1007-3/4		48	16	12	<0.5	21	20	10.00
BPS-86-10-09		49	16	8	<0.5	17	640	10.00
BPS-86-10-10		34	16	<5	<0.5	18	40	10.00
BPS-86-10-11		101	26	<5	<0.5	19	440	10.00

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Geochemical Lab Report

REPORT: 016-1774

PROJECT: NONE PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au-150 PPM	Au+150 PPM	Au AV PPM	TestWt gms	-150Wt gms	+150Wt gms
BPS-86-99-05		103	46	34	<0.5	43	0.17	0.40	0.18	7.00	8.46	0.30
DUPLICATE		98	51	36	<0.5	35						
BPS-86-99-08		100	38	18	<0.5	34	0.19	0.20	0.19	8.00	9.59	0.50
BPS-86-99-15		119	31	14	<0.5	18	0.13	0.14	0.13	10.00	12.45	0.70
BPS-86-99-16		149	61	22	<0.5	37	0.07	0.15	0.07	8.00	9.50	0.40

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Geochemical Lab Report

REPORT: 016-1243

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	Au-150 PPM	Au+150 PPM	Au AV PPM	TestWt gms	-150Wt gms	+150Wt gms
BPS-86-99-25-3/4		18	15	0.1	1.30	20.00	2.78	5.00	7.77	0.67
DUPLICATE		20	15	0.1						
BPS-86-100-04-3/4		95	42	0.3	0.14	40.76	2.85	5.00	6.99	0.50
BPS-86-100-08-3/4		62	19	0.6	0.03	0.19	0.03	10.00	14.49	0.42
BPS-86-100-09-3/4		162	52	0.7	1.43	161.62	13.84	7.00	8.81	0.74
BPS-86-102-08-3/4		100	73	0.7	0.09	0.47	0.11	4.00	6.12	0.43

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Geochemical Lab Report

REPORT: 016-1317

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	Au-150 PPM	Au+150 PPM	Au AV PPM	TestWt gms	-150Wt gms	+150Wt gms
BPS-86-102-13		137	53	0.7	0.29	<0.01	0.28	5.90	8.10	0.24
DUPLICATE		134	53	0.5						
BPS-86-102-20		510	505	1.2	0.04	12.00	1.12	13.00	14.71	1.46
BPS-86-104-09		2000	51	1.2	0.27	2.00	0.27	4.00	6.20	0.01
BPS-86-105-07		137	64	0.2	0.32	34.66	2.30	10.00	11.94	0.73

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Geochemical Lab Report

REPORT: 016-1796

PROJECT: SELBAIE PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au-150 PPM	Au+150 PPM	Au AV PPM	TestWt gms	-150Wt gms	+150Wt gms
BPS-86-103-17		274	443	44	0.9	40	0.24	8.89	1.64	11.00	13.44	2.59
DUPLICATE		275	420	46	1.2	44						
BPS-86-109-06		120	21	10	<0.5	18	0.25	17.24	1.66	11.00	13.00	1.18
BPS-86-112-03		62	26	27	<0.5	19	0.01	0.11	0.02	7.00	8.77	0.57

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Geochemical Lab Report

REPORT: 016-1370

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	Au-150 PPM	Au+150 PPM	Au AV PPM	TestWt gms	-150Wt gms	+150Wt gms
BPS-86-108-01-3/4		420	36	0.1	0.05	0.14	0.05	7.00	9.39	0.29
DUPLICATE		420	28	<0.1						
BPS-86-118-09-3/4		60	36	<0.1	0.15	63.88	4.39	7.00	9.40	0.67

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Geochemical Lab Report

REPORT: 016-1412

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	Au-150 PPM	Au+150 PPM	Au AV PPM	TestWt gms	-150Wt gms	+150Wt gms
BPS-86-121-03 3/4		129	65	2.7	0.53	0.25	0.52	15.50	17.69	0.49
DUPLICATE		128	66	2.3						
BPS-86-122-03 3/4		256	128	0.9	0.09	32.63	0.53	20.00	25.45	0.35
BPS-86-125-06 3/4		95	40	0.1	0.15	0.13	0.15	7.00	8.75	0.47

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Geochemical Lab Report

REPORT: 016-1878

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au-150 PPM	Au+150 PPM	Au AV PPM	TestWt gms	-150Wt gms	+150Wt gms
BPS-86-136-11		46	16	<5	<0.5	20	0.02	<0.01	0.02	10.50	12.77	3.24
DUPLICATE		43	17	7	<0.5	19						

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Geochemical Lab Report

REPORT: 016-1893

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au-150 PPM	Au+150 PPM	Au AV PPM	TestWt gms	-150Wt gms	+150Wt gms
BPS-86-618		208	62	54	0.5	52	0.27	0.03	0.25	10.00	11.40	1.15
DUPLICATE		208	57	53	0.5	55						
BPS-86-645		269	71	102	0.9	45	0.16	118.86	20.95	12.00	13.23	2.81
BPS-86-646		250	75	96	0.5	46	0.05	0.06	0.05	8.00	10.33	3.13
BPS-86-670		117	14	<5	<0.5	18	0.29	5.13	0.97	17.00	18.93	3.09
BPS-86-671		118	26	5	<0.5	14	0.26	2.46	0.79	15.00	16.87	5.30

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Geochemical Lab Report

REPORT: 016-1952

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au-150 PPM	Au+150 PPM	Au AV PPM	TestWt gms	-150Wt gms	+150Wt gms
BPS-86-729-3/4		119	53	131	<0.5	75	0.04	<0.01	0.04	12.00	14.23	0.38
DUPLICATE		119	50	136	<0.5	84						

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Geochemical Lab Report

REPORT: 016-1983

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au-150 PPM	Au+150 PPM	Au AV PPM	TestWt gms	-150Wt gms	+150Wt gms
BPS-86-767-374		124	42	57	<0.5	26	0.16	0.81	0.34	9.00	10.45	4.01
DUPLICATE		121	43	54	<0.5	26						

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Geochemical Lab Report

REPORT: 016-2127

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au-150 PPM	Au+150 PPM	Au AV PPM	TestWt gms	-150Wt gms	+150Wt gms
BPS-86-797-3/4		217	389	272	7.2	140	1.27	5.59	3.09	7.00	9.41	6.82
DUPLICATE		219	405	265	6.3	146						
BPS-86-830-3/4		306	104	179	0.8	102	0.24	<0.01	0.17	2.02	2.66	1.19
BPS-86-863-3/4		377	35	103	1.3	48	0.45	0.04	0.40	6.00	7.65	1.47
BPS-86-899-3/4		162	205	275	<0.5	59	0.54	0.12	0.46	8.00	10.24	2.25
BPS-86-900-3/4		136	50	28	<0.5	34	0.02	<0.01	0.02	8.00	9.85	4.08
BPS-86-902-3/4		202	167	138	0.7	52	1.13	0.02	0.86	10.00	11.81	3.82
BPS-86-933-3/4		111	125	80	<0.5	27	0.03	11.84	5.62	4.12	4.79	4.30

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Geochemical Lab Report

REPORT: 016-2189

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au-150 PPM	Au+150 PPM	Au AV PPM	TestWt gms	-150Wt gms	+150Wt gms
BPS-86-950-3/4		53	13	<5	<1.0	11	0.44	0.89	0.53	20.00	24.44	6.20
DUPLICATE		41	11	<5	<1.0	13						

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REPORT: 016-2330

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM	Au-150 PPM	Au+150 PPM	Au AV PPM	TestWt gms	-150Wt gms	+150Wt gms
BPS-86-1008-3/4		150	18	30	<0.5	28	0.06	0.23	0.09	6.60	8.94	1.77
DUPLICATE		145	19	24	<0.5	25						

APPENDIX E

BONDAR-CLEGG BEDROCK ANALYSES

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REPORT: 016-1200

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	Au PPB
BPS-99-26-B		11	37	<0.1	<5
DUPLICATE		11	35	<0.1	
BPS-100-12-B		56	39	0.1	<5
BPS-101-03-B		169	47	0.2	<5
BPS-102-21-B		146	60	0.1	<5
BPS-103-24-B		136	42	<0.1	<5
BPS-104-10-B		31	23	0.1	<5
BPS-105-12-B		57	31	0.1	<5
BPS-106-03-B		60	33	0.2	<5
BPS-107-02-B		80	64	0.9	10
BPS-108-06-B		8	50	0.2	<5
DUPLICATE		8	55	0.1	
BPS-109-16-B		209	42	0.1	<5
BPS-110-04-B		640	29	0.1	<5
BPS-111-03-B		23	43	0.2	<5
BPS-112-12-B		33	45	0.1	<5
BPS-113-11-B		264	38	<0.1	<5
BPS-114-08-B		67	32	<0.1	<5
BPS-115-04-B(1)		598	36	0.2	15
BPS-115-04-B(2)		179	31	0.2	280
DUPLICATE		186	35	0.2	
BPS-116-02-B		110	38	0.1	<5
BPS-117-09-B		52	51	0.1	<5
BPS-118-17-B		7	42	0.1	<5
BPS-119-02-B		89	72	0.1	<5
BPS-120-02-B		805	50	0.1	<5
BPS-121-05-B		70	31	0.1	<5
BPS-122-05-B		1548	61	0.5	<5
BPS-123-04-B		266	60	0.2	<5
BPS-124-05-B		337	49	0.7	<5
BPS-125-11-B		118	29	0.8	735
BPS-126-09-B		24	29	<0.1	<5

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Geochemical Lab Report

REPORT: 216-1200

PROJECT: SELBAIE   PAGE 1A

SAMPLE NUMBER	ELEMENT UNITS	V PPM	Cr PPM	Mn PPM	Fe PCT	Co PPM	Ni PPM	Cu PPM	Zn PPM	As PPM	Se PPM	Mo PPM	Ag PPM
BPS-99-26 B		117	284	397	4.1	20	63	11	43	<5	<5	<1	<0.5
DUPLICATE		107	269	475	4.2	18	60	11	48	<5	<5	2	<0.5
BPS-100-12 B		105	347	603	4.6	20	65	66	42	<5	<5	<1	<0.5
BPS-101-03 B		160	231	3925	12.8	48	113	212	84	<5	5	2	1.7
BPS-102-21 B		84	146	1046	5.3	25	59	170	67	<5	<5	4	<0.5
BPS-103-24 B		118	221	667	4.5	21	59	147	63	<5	<5	<1	<0.5
BPS-104-10 B		147	207	2007	7.5	1018	137	24	59	<5	17	8	0.7
BPS-105-12 B		135	227	1348	4.2	165	90	61	43	<5	<5	3	<0.5
BPS-106-03 B		185	441	1492	7.3	51	100	67	70	<5	<5	1	1.7
BPS-107-02 B		72	305	1897	6.1	21	33	78	68	23	7	2	<0.5
BPS-108-06 B		2	170	1210	2.9	5	8	7	70	<5	<5	<1	<0.5
DUPLICATE		3	151	1132	2.6	4	8	10	65	<5	<5	1	<0.5
BPS-109-16 B		174	208	1691	8.6	34	96	241	63	<5	<5	3	0.6
BPS-110-04 B		168	223	1504	8.0	34	107	693	80	<5	5	8	0.9
BPS-111-03 B		127	135	968	4.8	20	29	23	62	<5	<5	<1	<0.5
BPS-112-12 B		119	216	633	5.7	27	84	38	75	<5	<5	4	0.5
BPS-113-11 B		119	258	945	5.2	22	63	277	71	<5	<5	15	0.6
BPS-114-08 B		34	212	312	2.3	121	21	81	42	<5	<5	1	<0.5
BPS-115-04 B (1)		61	262	479	4.5	25	33	641	45	<5	6	3	<0.5
BPS-115-04 B (2)		55	391	557	3.4	19	91	205	49	8	5	2	<0.5
DUPLICATE		56	392	550	3.4	20	91	207	49	6	<5	2	0.6
BPS-116-02 B		178	254	1531	7.0	30	126	128	77	<5	<5	9	<0.5
BPS-117-09 B		147	229	2101	7.0	79	105	53	74	<5	<5	2	<0.5
BPS-118-17 B		4	223	306	1.8	41	5	4	55	<5	<5	2	<0.5
BPS-119-02 B		145	136	1437	6.9	34	110	96	86	<5	<5	4	<0.5
BPS-120-02 B		186	209	1630	9.8	38	140	801	96	<5	<5	5	<0.5
BPS-121-05 B		31	257	249	2.1	7	21	75	40	<5	<5	2	<0.5
BPS-122-05 B		76	205	4901	18.1	255	76	1730	124	<5	13	6	0.8
BPS-123-04 B		169	190	964	6.2	35	125	290	82	<5	<5	12	0.5
BPS-124-05 B		99	248	877	5.1	22	64	341	62	13	<5	14	0.6
BPS-125-11 B		71	273	681	3.1	11	35	132	32	12	<5	<1	0.6
BPS-126-09 B		26	269	264	2.1	8	18	23	36	<5	<5	<1	<0.5

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PROJECT: SELBAIE PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Ag PPM	Pb PPM
BPS-86-102-13		120	42	19	<0.5	19
DUPLICATE		119	44	24	<0.5	20
BPS-86-102-20		401	448	19	0.7	58
BPS-86-104-09		1630	52	<5	0.5	24
BPS-86-105-07		134	57	<5	0.5	21

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PROJECT: SELBAIE

SAMPLE NUMBER	ELEMENT UNITS	Cd PPM	Sn PPM	Sb PPM	Te PPM	W PPM	Pb PPM	Bi PPM	U PPM
BPS-99-26 B		<1.0	<10	<5	<10	<10	33	<2	<10
DUPLICATE		<1.0	<10	<5	<10	<10	29	<2	<10
BPS-100-12 B		<1.0	<10	<5	<10	<10	37	<2	<10
BPS-101-03 B		<1.0	<10	<5	<10	<10	99	<2	<10
BPS-102-21 B		<1.0	<10	<5	<10	<10	39	<2	<10
BPS-103-24 B		<1.0	<10	<5	<10	<10	22	<2	<10
BPS-104-10 B		<1.0	<10	<5	<10	>2000	51	<2	<10
BPS-105-12 B		<1.0	<10	<5	<10	500	29	<2	<10
BPS-106-03 B		<1.0	<10	<5	<10	<10	55	<2	<10
BPS-107-02 B		<1.0	<10	<5	<10	50	51	<2	<10
BPS-108-06 B		<1.0	<10	<5	<10	19	16	<2	<10
DUPLICATE		<1.0	<10	10	<10	24	22	<2	<10
BPS-109-16 B		<1.0	<10	5	<10	12	64	<2	<10
BPS-110-04 B		<1.0	<10	<5	<10	16	57	<2	<10
BPS-111-03 B		<1.0	<10	<5	<10	<10	33	<2	<10
BPS-112-12 B		<1.0	<10	7	<10	<10	41	<2	<10
BPS-113-11 B		<1.0	<10	8	<10	<10	35	<2	<10
BPS-114-08 B		<1.0	<10	<5	<10	500	17	<2	<10
BPS-115-04 B (1)		<1.0	<10	14	<10	<10	40	<2	<10
BPS-115-04 B (2)		<1.0	<10	<5	<10	<10	29	<2	<10
DUPLICATE		<1.0	<10	<5	<10	<10	32	2	<10
BPS-116-02 B		<1.0	<10	<5	<10	<10	47	<2	<10
BPS-117-09 B		<1.0	<10	5	<10	240	49	<2	<10
BPS-118-17 B		<1.0	<10	<5	<10	120	17	2	<10
BPS-119-02 B		<1.0	<10	6	<10	<10	51	<2	<10
BPS-120-02 B		<1.0	<10	<5	<10	<10	73	<2	<10
BPS-121-05 B		<1.0	<10	<5	<10	<10	18	<2	<10
BPS-122-05 B		<1.0	<10	<5	12	1000	133	<2	<10
BPS-123-04 B		<1.0	<10	5	<10	<10	44	<2	<10
BPS-124-05 B		<1.0	<10	<5	<10	<10	38	<2	<10
BPS-125-11 B		<1.0	<10	<5	<10	<10	26	<2	<10
BPS-126-09 B		<1.0	<10	<5	<10	<10	18	<2	<10

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REPORT: 116-1800

PROJECT: SELBAIE PAGE 1A

SAMPLE NUMBER	ELEMENT UNITS	V PPM	Cr PPM	Mn PPM	Fe PCT	Co PPM	Ni PPM	Cu PPM	Zn PPM	As PPM	Se PPM	Mo PPM
BPS-86-127-11-B		26	15	200	1.7	8	12	116	37	<5	<5	<1
DUPLICATE		29	11	201	1.5	6	10	119	30	<5	<5	1
BPS-86-128-04-B		134	113	996	4.6	21	81	115	60	<5	<5	8
BPS-86-129-04-B		104	77	1025	4.6	22	74	50	75	<5	<5	<1
BPS-86-130-09-B		154	75	2250	6.0	25	72	61	197	<5	<5	1
BPS-86-131-08-B		148	8	622	5.1	12	16	155	160	<5	<5	1
BPS-86-132-03-B		161	48	1450	6.3	26	73	3	137	<5	<5	<1
BPS-86-133-03-B		106	8	765	5.1	16	13	24	74	<5	<5	2
BPS-86-134-04-B		144	48	1750	5.0	18	52	39	167	<5	<5	<1
BPS-86-135-07-B		156	60	1100	6.1	24	65	66	87	<5	<5	<1
BPS-86-136-13-B		19	3	548	2.8	4	5	4	42	<5	<5	<1
DUPLICATE		22	1	598	2.6	<1	5	4	41	8	12	<1
BPS-86-137-08-B		12	6	354	2.2	5	2	4	34	<5	<5	<1
BPS-86-138-04-B		108	18	1532	5.6	22	39	359	114	<5	<5	<1
BPS-86-139-03-B		154	39	2450	6.2	30	35	298	469	<5	<5	1
BPS-86-140-02-B		121	27	1460	5.4	19	29	88	191	<5	<5	2
BPS-86-141-11-B		138	17	1060	5.2	22	50	28	87	6	<5	1
BPS-86-1131-04-B		142	73	1153	4.9	22	69	6	89	<5	<5	<1
BPS-86-1132-04-B		153	70	1020	4.6	22	66	40	75	<5	7	1
BPS-86-1133-07-B		129	72	1080	4.9	26	67	2	89	6	<5	<1
DUPLICATE		140	73	1070	5.0	31	68	2	87	<5	<5	<1
BPS-86-1134-07-B		116	127	1910	8.1	34	89	762	155	<5	10	1
BPS-86-1135-13-B		3	4	606	1.8	<1	5	6	52	16	<5	6
BPS-86-1136-20-B		136	99	667	5.7	28	77	50	90	<5	7	<1
BPS-86-1138-21-B		1	5	301	1.7	<1	7	8	20	<5	<5	<1
BPS-86-1139-19-B		1	4	548	1.6	1	3	4	60	<5	<5	<1
BPS-86-11009-02-B		121	284	1380	2.1	30	190	84	103	<5	<5	<1
BPS-86-11010-05-B		179	132	1920	4.5	38	65	145	147	<5	<5	<1
BPS-86-11011-02-B		4	6	621	9.5	2	5	8	70	<5	<5	<1
BPS-86-11012-07-B		57	28	1150	3.8	15	20	64	46	<5	<5	2
BPS-86-11013-04-B		138	111	2240	9.7	41	60	45	183	<5	5	1
BPS-86-11014-02-B		<1	5	746	3.4	2	3	20	90	<5	<5	1
BPS-86-11015-03-B		<1	4	1060	2.7	1	5	<1	89	<5	<5	1
BPS-86-11016-02-B		88	66	1040	5.9	23	36	9	120	<5	<5	1
BPS-86-11017-02-B		275	1269	2280	9.3	76	367	111	138	<5	<5	2
BPS-86-11018-12-B		387	73	2160	9.6	67	112	155	122	<5	<5	2
BPS-86-11019-04-B		27	18	774	3.3	5	13	9	110	<5	<5	<1
BPS-86-11020-09-B		56	6	760	5.2	8	7	28	77	<5	<5	<1
DUPLICATE		53	10	797	5.4	11	6	26	82	<5	<5	1
BPS-86-11021-02-B		148	118	1628	5.7	29	94	54	139	<5	<5	1

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cd PPM	Sn PPM	Sb PPM	Te PPM	W PPM	Pb PPM	Bi PPM	U PPM	Au PPB
BPS-86-127-11-B		<0.5	<1.0	<10	<5	<10	<10	17	2	<10	<5
DUPLICATE		<0.5	<1.0	<10	<5	<10	<10	15	2	<10	
BPS-86-128-04-B		<0.5	<1.0	12	<5	<10	<10	24	<2	<10	5
BPS-86-129-04-B		<0.5	<1.0	14	<5	<10	<10	23	6	<10	<5
BPS-86-130-09-B		<0.5	<1.0	20	<5	<10	<10	32	<2	<10	<5
BPS-86-131-08-B		<0.5	<1.0	14	<5	<10	<10	22	4	<10	<5
BPS-86-132-03-B		<0.5	<1.0	23	<5	<10	<10	28	5	<10	<5
BPS-86-133-03-B		<0.5	<1.0	19	<5	<10	<10	24	4	<10	5
BPS-86-134-04-B		<0.5	<1.0	25	<5	<10	<10	27	5	<10	5
BPS-86-135-07-B		<0.5	<1.0	28	<5	<10	<10	29	8	<10	5
BPS-86-136-13-B		0.5	<1.0	<10	<5	<10	<10	9	<2	<10	<5
DUPLICATE		<0.5	<1.0	<10	<5	<10	<10	13	<2	<10	
BPS-86-137-08-B		<0.5	<1.0	<10	<5	<10	<10	7	<2	<10	<5
BPS-86-138-04-B		<0.5	<1.0	12	<5	<10	<10	21	3	<10	5
BPS-86-139-03-B		<0.5	1.6	<10	<5	<10	<10	26	7	<10	10
BPS-86-140-02-B		<0.5	<1.0	<10	<5	<10	<10	24	<2	<10	10
BPS-86-141-11-B		<0.5	<1.0	<10	<5	<10	<10	20	<2	<10	5
BPS-86-1131-04-B		<0.5	<1.0	<10	<5	<10	<10	21	3	<10	<5
BPS-86-1132-04-B		<0.5	<1.0	<10	<5	<10	<10	23	<2	<10	5
BPS-86-1133-07-B		<0.5	<1.0	<10	8	<10	<10	19	<2	<10	<5
DUPLICATE		0.8	<1.0	<10	<5	<10	<10	24	<2	<10	
BPS-86-1134-07-B		<0.5	<1.0	<10	9	<10	<10	26	<2	<10	<5
BPS-86-1135-13-B		<0.5	<1.0	<10	8	<10	<10	12	<2	<10	10
BPS-86-1136-20-B		<0.5	<1.0	<10	<5	<10	<10	22	<2	<10	10
BPS-86-1138-21-B		<0.5	<1.0	<10	<5	<10	<10	9	<2	<10	<5
BPS-86-1139-19-B		<0.5	<1.0	<10	<5	<10	<10	12	<2	<10	5
BPS-86-11009-02-B		<0.5	<1.0	<10	<5	<10	<10	32	<2	<10	<5
BPS-86-11010-05-B		<0.5	<1.0	<10	<5	<10	<10	43	<2	<10	<5
BPS-86-11011-02-B		<0.5	<1.0	<10	<5	<10	<10	19	<2	<10	5
BPS-86-11012-07-B		<0.5	<1.0	<10	5	<10	<10	23	<2	<10	105
BPS-86-11013-04-B		<0.5	<1.0	<10	<5	<10	<10	38	2	<10	<5
BPS-86-11014-02-B		<0.5	<1.0	<10	<5	<10	<10	23	<2	<10	<5
BPS-86-11015-03-B		<0.5	<1.0	<10	<5	<10	<10	14	<2	<10	<5
BPS-86-11016-02-B		<0.5	<1.0	<10	<5	<10	<10	29	<2	<10	10
BPS-86-11017-02-B		<0.5	<1.0	<10	<5	<10	<10	44	<2	<10	<5
BPS-86-11018-12-B		<0.5	<1.0	<10	<5	<10	<10	43	<2	<10	15
BPS-86-11019-04-B		<0.5	<1.0	<10	<5	<10	<10	18	<2	<10	5
BPS-86-11020-09-B		<0.5	<1.0	<10	<5	<10	<10	31	<2	<10	5
DUPLICATE		<0.5	<1.0	<10	<5	12	<10	33	<2	<10	
BPS-86-11021-02-B		0.5	<1.0	<10	<5	<10	<10	28	<2	<10	<5

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cd PPM	Sn PPM	Sb PPM	Te PPM	W PPM	Pb PPM	Bi PPM	U PPM	Au PPB
BPS-86-11022-09-B		14.9	8.2	<10	<5	<10	<10	273	<2	<10	30
BPS-86-11023-07-B		<0.5	<1.0	<10	<5	<10	<10	27	<2	<10	<5
BPS-86-11024-18-B		<0.5	<1.0	<10	<5	<10	<10	9	<2	<10	<5
BPS-86-11310-12-B		<0.5	<1.0	<10	<5	<10	<10	23	<2	<10	<5
BPS-86-11311-29-B		0.7	<1.0	<10	<5	<10	<10	29	<2	<10	<5
BPS-86-11312-03-B		<0.5	<1.0	<10	5	<10	<10	32	<2	<10	<5
BPS-86-11313-03-B		<0.5	<1.0	<10	<5	<10	<10	42	<2	<10	<5
BPS-86-11314-05-B		<0.5	<1.0	<10	<5	<10	<10	41	<2	<10	<5
DUPLICATE		<0.5	<1.0	12	8	11	<10	49	<2	<10	
BPS-86-11317-04-B		<0.5	<1.0	<10	<5	<10	<10	35	<2	<10	<5
BPS-86-11318-08-B		<0.5	<1.0	<10	<5	<10	<10	31	<2	<10	<5
BPS-86-11319-04-B		<0.5	<1.0	<10	<5	<10	<10	20	<2	<10	<5
BPS-86-11320-09-B		<0.5	<1.0	<10	<5	<10	<10	34	<2	<10	<5
BPS-86-11321-13-B		<0.5	<1.0	<10	<5	<10	<10	39	<2	<10	<5
BPS-86-11322-10-B		<0.5	<1.0	10	<5	<10	<10	45	<2	<10	<5
BPS-86-11323-01-B		0.5	<1.0	<10	<5	<10	<10	53	<2	<10	<5
BPS-86-11324-04-B		<0.5	<1.0	<10	<5	<10	<10	44	<2	<10	<5
DUPLICATE		<0.5	<1.0	<10	<5	16	<10	48	<2	<10	
BPS-86-11325-06-B		<0.5	<1.0	<10	6	<10	<10	32	<2	<10	<5
BPS-86-11326-02-B		<0.5	<1.0	<10	<5	<10	<10	19	<2	<10	<5
BPS-86-11327-02-B		<0.5	<1.0	<10	<5	<10	<10	21	<2	<10	<5
BPS-86-11328-13-B		<0.5	<1.0	<10	5	<10	<10	55	<2	<10	<5

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SAMPLE NUMBER	ELEMENT UNITS	V PPM	Cr PPM	Mn PPM	Fe PCT	Co PPM	Ni PPM	Cu PPM	Zn PPM	As PPM	Se PPM	Mo PPM
BPS-86-11022-09-B		88	14	245	1.1	22	32	51	1610	77	<5	4
BPS-86-11023-07-B		72	28	1725	6.8	13	24	41	122	<5	<5	1
BPS-86-11024-18-B		3	2	231	1.2	2	5	23	15	<5	<5	2
BPS-86-11310-12-B		131	26	980	6.0	18	38	8	82	<5	<5	1
BPS-86-11311-29-B		143	53	884	5.6	21	51	37	82	<5	<5	1
BPS-86-11312-03-B		118	1527	1502	6.3	50	371	1	80	<5	<5	<1
BPS-86-11313-03-B		144	61	1140	7.3	29	55	43	100	<5	<5	1
BPS-86-11314-05-B		63	13	2231	7.4	23	9	3	96	<5	<5	1
DUPLICATE		62	14	2236	7.1	17	10	5	96	<5	<5	2
BPS-86-11317-04-B		267	348	1596	8.5	47	173	64	89	<5	<5	2
BPS-86-11318-08-B		253	248	1490	9.6	41	307	86	109	<5	<5	<1
BPS-86-11319-04-B		63	36	768	3.7	12	22	35	68	<5	<5	1
BPS-86-11320-09-B		243	425	1642	7.8	63	219	55	86	6	<5	1
BPS-86-11321-13-B		301	411	2873	8.0	73	243	170	147	<5	<5	1
BPS-86-11322-10-B		223	368	1559	8.4	57	259	100	89	<5	<5	1
BPS-86-11323-01-B		295	248	1976	8.0	42	82	60	89	<5	<5	<1
BPS-86-11324-04-B		486	24	2271	11.8	49	27	44	151	<5	<5	2
DUPLICATE		488	26	2339	11.7	51	26	43	156	<5	<5	1
BPS-86-11325-06-B		265	577	1516	8.9	55	208	110	119	<5	<5	<1
BPS-86-11326-02-B		125	55	1290	5.6	22	57	20	84	<5	<5	1
BPS-86-11327-02-B		129	63	885	5.3	20	45	79	72	<5	<5	1
BPS-86-11328-13-B		113	184	911	5.4	19	78	42	101	<5	<5	1

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SAMPLE NUMBER	ELEMENT UNITS	V PPM	Cr PPM	Mn PPM	Fe PCT	Co PPM	Ni PPM	Cu PPM	Zn PPM	As PPM	Se PPM	Mo PPM
BPS-86-11329-12		47	64	287	3.2	10	31	37	61	<5	<5	2
DUPLICATE		40	61	256	2.8	8	30	31	55	<5	<5	3
BPS-86-11330-05		72	86	585	4.1	17	48	47	84	28	<5	8
BPS-86-11331-08		141	195	501	6.1	24	90	55	114	16	<5	2
BPS-86-11332-16		153	193	446	5.6	26	90	59	89	<5	<5	3
BPS-86-11333-16		169	239	791	5.8	29	104	73	107	24	7	1
BPS-86-11334-13		76	130	289	3.0	15	48	40	93	<5	<5	3
BPS-86-11335-11		69	449	740	3.5	19	144	18	49	<5	<5	2
BPS-86-11336-09		46	27	644	2.0	10	46	5	46	<5	<5	2
BPS-86-11337-07		43	22	301	1.9	8	16	7	71	<5	6	3
BPS-86-11338-02		31	6	477	2.3	6	6	18	64	<5	<5	1
DUPLICATE		32	6	512	2.3	6	5	19	63	<5	<5	1
BPS-86-11339-15		134	96	767	4.8	24	79	21	68	<5	<5	1
BPS-86-11340-24		91	100	998	2.3	14	41	16	48	<5	<5	2

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PROJECT: SELBAIE

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cd PPM	Sn PPM	Sb PPM	Te PPM	W PPM	Pb PPM	Bi PPM	U PPM	Au PPB
BPS-86-11329-12		<0.5	<1.0	<10	<5	<10	<10	32	<2	<10	<5
DUPLICATE		<0.5	<1.0	<10	<5	<10	<10	27	<2	<10	
BPS-86-11330-05		<0.5	<1.0	<10	<5	<10	<10	40	<2	<10	10
BPS-86-11331-08		<0.5	<1.0	<10	6	<10	<10	57	<2	<10	<5
BPS-86-11332-16		<0.5	<1.0	<10	<5	<10	<10	29	<2	<10	5
BPS-86-11333-16		<0.5	<1.0	<10	<5	<10	<10	70	<2	<10	<5
BPS-86-11334-13		<0.5	<1.0	<10	<5	<10	<10	30	<2	<10	5
BPS-86-11335-11		<0.5	<1.0	<10	<5	<10	<10	19	<2	<10	<5
BPS-86-11336-09		<0.5	<1.0	<10	<5	<10	<10	12	<2	<10	5
BPS-86-11337-07		<0.5	<1.0	<10	<5	<10	<10	13	<2	<10	<5
BPS-86-11338-02		<0.5	<1.0	<10	<5	<10	<10	13	<2	<10	<5
DUPLICATE		<0.5	<1.0	<10	<5	<10	<10	14	<2	<10	
BPS-86-11339-15		<0.5	<1.0	<10	<5	<10	<10	27	<2	<10	5
BPS-86-11340-24		<0.5	<1.0	<10	<5	<10	<10	13	<2	<10	10

APPENDIX F

BONDAR-CLEGG DC PLASMA WHOLE ROCK ANALYSIS

BEDROCK CHIP SAMPLES

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SAMPLE NUMBER	ELEMENT UNITS	SiO2 PCT	TiO2 PCT	Al2O3 PCT	Fe2O3* PCT	MnO PCT	MgO PCT	CaO PCT	Na2O PCT	K2O PCT	P2O5 PCT	LOI PCT	Total PCT
BPS-99-26-B		62.70	0.59	16.20	5.88	0.06	4.31	4.72	3.45	1.36	0.14	1.70	101.11
DUPLICATE		61.60	0.58	15.90	5.71	0.06	4.18	4.61	3.31	1.34	0.15	1.85	99.28
BPS-100-12-B		61.90	0.57	16.20	6.70	0.08	3.46	2.65	3.93	1.28	0.15	2.40	99.33
BPS-101-03-B		43.30	0.68	14.30	18.90	0.43	7.39	12.30	0.74	0.61	0.17	2.90	101.72
BPS-102-21-B		52.10	0.38	11.30	7.10	0.12	4.65	9.12	2.20	0.89	0.18	11.25	99.29
BPS-103-24-B		61.10	0.57	16.20	6.92	0.10	3.88	6.00	2.58	1.07	0.19	1.20	99.82
BPS-104-10-B		53.90	0.69	15.30	10.70	0.23	5.79	7.30	3.31	1.54	0.16	1.40	100.33
BPS-105-12-B		60.50	0.62	14.40	6.69	0.18	2.68	8.95	3.85	0.69	0.14	1.20	99.90
BPS-106-03-B		46.40	0.46	15.30	9.78	0.16	9.72	10.20	1.56	2.23	0.15	3.15	99.12
BPS-107-02-B		62.50	0.28	10.20	9.30	0.25	4.36	5.50	2.35	0.68	0.06	3.15	98.63
BPS-108-06-B		70.70	0.07	11.40	3.42	0.13	1.47	2.66	0.66	3.73	<0.01	4.00	98.26
DUPLICATE		71.40	0.08	11.40	3.44	0.14	1.45	2.72	0.68	3.79	<0.01	3.95	99.00
BPS-109-16-B		56.20	0.71	15.20	11.30	0.18	5.62	7.03	1.80	1.33	0.13	2.35	101.86
BPS-110-04-B		55.40	0.70	15.10	10.00	0.16	4.62	7.63	3.81	1.24	0.21	1.65	100.52
BPS-111-03-B		61.40	0.58	15.20	6.19	0.12	3.39	2.96	4.25	1.29	0.09	1.95	97.41
BPS-112-12-B		57.00	0.62	16.30	7.78	0.08	5.25	5.88	3.06	0.70	0.17	1.35	98.19
BPS-113-11-B		61.50	0.58	15.30	6.34	0.09	3.89	6.53	3.70	0.68	0.11	1.45	100.17
BPS-114-08-B		65.30	0.22	15.90	2.62	0.03	1.42	3.93	4.98	1.65	0.14	3.20	99.40
BPS-115-04-B(1)		61.10	0.26	15.80	5.35	0.05	2.24	4.96	4.02	1.40	0.16	4.70	100.04
BPS-115-04-B(2)		56.10	0.30	14.90	3.83	0.06	2.94	5.49	3.28	2.68	0.18	8.25	98.01
DUPLICATE		58.78	0.31	14.00	3.81	0.06	2.98	5.47	3.06	2.51	0.29	7.55	98.82
BPS-116-02-B		52.40	0.75	16.50	9.08	0.17	5.23	8.44	2.66	0.88	0.14	1.90	98.14
BPS-117-09-B		52.70	0.65	14.60	9.45	0.24	5.19	6.01	3.90	0.35	0.19	4.65	97.94
BPS-118-17-B		75.60	0.12	10.90	2.61	0.04	1.55	0.75	0.68	3.05	0.01	2.25	97.56
BPS-119-02-B		48.90	0.74	15.00	9.78	0.18	5.08	5.74	3.88	1.18	0.23	7.80	98.51
BPS-120-02-B		48.40	0.77	16.60	13.70	0.18	6.71	7.06	2.99	1.85	0.22	2.10	100.58
BPS-121-05-B		67.84	0.23	15.20	2.44	0.03	1.40	3.73	4.46	1.51	0.16	1.00	98.00
BPS-122-05-B		47.25	0.33	11.00	25.00	0.53	3.26	7.00	0.98	1.24	0.12	3.40	100.11
BPS-123-04-B		56.43	0.70	15.30	7.51	0.10	5.06	3.99	4.40	0.64	0.21	4.85	99.19
BPS-124-05-B		54.46	0.62	14.00	6.45	0.10	3.26	5.50	2.50	2.51	0.18	8.40	97.92
BPS-125-11-B		60.01	0.38	13.32	3.70	0.08	2.15	5.04	2.94	1.83	0.17	8.20	97.81
BPS-126-09-B		66.60	0.25	16.00	2.64	0.03	1.40	2.87	4.89	2.15	0.21	1.40	98.44

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Geochemical Lab Report

REPORT: 016-1800

PROJECT: SELBAIE PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	SiO2 PCT	TiO2 PCT	Al2O3 PCT	Fe2O3* PCT	MnO PCT	MgO PCT	CaO PCT	Na2O PCT	K2O PCT	P2O5 PCT	LOI PCT	Total PCT
BPS-86-127-11-B		67.30	0.24	16.00	2.42	0.03	1.24	3.70	4.97	2.54	0.21	1.65	100.30
DUPLICATE		67.30	0.23	15.90	2.21	0.03	1.21	3.40	4.68	2.38	0.31	1.55	99.20
BPS-86-128-04-B		59.40	0.68	15.40	6.50	0.12	4.40	7.51	3.76	0.88	0.17	1.55	100.37
BPS-86-129-04-B		57.50	0.53	14.80	6.55	0.12	7.66	1.39	4.96	0.51	0.19	4.65	98.86
BPS-86-130-09-B		50.80	0.68	14.50	8.54	0.26	6.86	2.55	2.10	2.93	0.15	8.15	97.52
BPS-86-131-08-B		62.30	0.78	15.00	7.32	0.08	5.51	0.49	0.14	3.75	0.26	4.10	99.73
BPS-86-132-03-B		58.00	0.85	14.70	8.97	0.16	9.08	0.53	2.22	0.95	0.50	4.65	100.61
BPS-86-133-03-B		63.70	0.68	14.10	7.27	0.10	4.82	0.26	1.10	2.75	0.20	3.65	98.63
BPS-86-134-04-B		57.80	0.69	14.40	7.14	0.17	5.50	2.70	4.01	1.74	0.39	5.75	100.29
BPS-86-135-07-B		54.60	0.93	15.40	8.70	0.12	5.90	3.39	4.42	0.89	0.50	5.40	100.25
BPS-86-136-13-B		67.30	0.46	13.80	4.02	0.07	1.08	3.46	4.90	1.31	0.25	3.10	99.75
DUPLICATE		68.80	0.44	13.60	3.77	0.06	1.05	3.28	4.81	1.26	0.35	3.15	100.57
BPS-86-137-08-B		78.90	0.24	10.10	3.16	0.05	0.90	0.79	4.07	0.48	0.15	1.60	100.44
BPS-86-138-04-B		59.30	0.60	13.70	8.01	0.18	5.47	1.33	2.70	1.35	0.41	4.60	97.65
BPS-86-139-03-B		55.90	0.81	14.90	8.92	0.26	5.74	1.57	2.97	1.64	0.44	5.30	98.45
BPS-86-140-02-B		59.00	0.77	14.60	7.92	0.15	6.70	0.58	1.06	2.79	0.29	4.60	98.46
BPS-86-141-11-B		56.10	0.66	15.60	7.38	0.12	3.97	4.08	5.12	1.17	0.33	5.00	99.53
BPS-86-1131-04-B		53.90	0.57	13.90	6.98	0.11	3.79	6.90	2.37	1.00	0.37	8.65	98.54
BPS-86-1132-04-B		59.20	0.59	13.50	6.58	0.10	3.24	6.72	2.21	1.31	0.24	6.75	100.44
BPS-86-1133-07-B		54.20	0.59	14.00	7.04	0.12	4.16	7.37	0.79	1.43	0.24	8.45	98.39
DUPLICATE		55.20	0.55	13.80	7.19	0.11	3.83	7.24	0.73	1.36	0.13	8.45	98.59
BPS-86-1134-07-B		52.00	0.51	13.20	11.50	0.21	4.90	5.62	1.04	0.65	0.20	1.05	99.88
BPS-86-1135-13-B		75.70	0.19	9.38	2.54	0.08	0.90	3.03	1.19	2.10	0.09	3.35	98.55
BPS-86-1136-20-B		58.90	0.68	16.70	8.16	0.08	5.26	1.29	3.02	1.68	0.13	4.25	100.15
BPS-86-1138-21-B		79.70	0.15	10.10	2.45	0.05	0.33	0.04	0.07	2.82	<0.01	2.65	98.36
BPS-86-1139-19-B		79.80	0.14	10.60	2.35	0.04	0.27	0.06	0.08	2.74	<0.01	1.30	97.38
BPS-86-11009-02-B		72.00	0.13	9.83	3.05	0.07	0.31	0.19	3.99	1.48	0.11	9.50	100.66
BPS-86-11010-05-B		55.20	0.48	13.20	6.38	0.14	6.32	7.38	1.64	1.22	<0.01	5.40	97.36
BPS-86-11011-02-B		50.20	1.53	13.70	13.60	0.19	4.63	6.53	2.48	0.57	0.17	3.80	97.40
BPS-86-11012-07-B		60.60	0.41	12.70	5.45	0.13	1.80	5.01	3.04	1.59	0.30	7.20	98.23
BPS-86-11013-04-B		47.00	1.36	11.40	13.90	0.22	3.92	8.22	1.99	0.08	0.32	8.85	97.26
BPS-86-11014-02-B		71.00	0.19	10.80	4.92	0.08	0.59	1.91	3.51	1.22	0.13	3.55	97.90
BPS-86-11015-03-B		71.70	0.16	10.50	3.75	0.11	0.32	2.09	4.50	0.89	0.15	2.85	97.02
BPS-86-11016-02-B		56.80	1.09	13.90	8.47	0.11	2.54	4.36	4.26	1.37	0.26	5.10	98.26
BPS-86-11017-02-B		46.70	1.04	10.50	13.30	0.22	10.70	9.94	0.15	0.02	0.12	7.20	99.89
BPS-86-11018-12-B		48.40	1.07	12.30	13.70	0.21	7.35	11.20	1.35	0.15	0.08	2.80	98.61
BPS-86-11019-04-B		70.20	0.33	11.00	4.75	0.08	1.43	3.39	1.00	1.68	0.06	4.55	98.47
BPS-86-11020-09-B		65.50	0.77	12.90	6.18	0.08	1.38	3.18	3.61	1.33	0.30	3.55	98.78
DUPLICATE		65.70	0.77	12.70	5.96	0.08	1.42	3.13	3.57	1.29	0.34	3.45	98.41
BPS-86-11021-02-B		53.30	0.71	13.50	8.13	0.15	4.28	6.51	3.47	0.70	0.28	7.60	98.63

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Geochemical Lab Report

REPORT: 016-1800

PROJECT: SELBAIE

SAMPLE NUMBER	ELEMENT UNITS	SiO2 PCT	TiO2 PCT	Al2O3 PCT	Fe2O3* PCT	MnO PCT	MgO PCT	CaO PCT	Na2O PCT	K2O PCT	P2O5 PCT	LOI PCT	Total PCT
BPS-86-11022-09-B		71.50	0.65	12.40	1.29	0.03	0.52	2.04	3.23	2.59	0.34	2.60	97.89
BPS-86-11023-07-B		56.60	0.75	12.60	8.09	0.17	2.24	5.02	2.95	1.89	0.34	6.80	97.45
BPS-86-11024-18-B		76.10	0.14	9.75	1.43	0.02	1.23	1.54	2.82	1.85	0.26	2.90	98.04
BPS-86-11310-12-B		62.00	0.65	15.60	6.79	0.09	4.95	1.10	4.78	1.04	0.31	3.25	100.56
BPS-86-11311-06-B		59.00	0.54	15.40	6.50	0.08	1.68	7.70	2.83	0.06	0.24	4.65	98.68
BPS-86-11312-03-B		41.40	0.32	9.73	7.00	0.13	12.50	8.86	1.32	0.04	0.26	16.75	98.31
BPS-86-11313-03-B		60.00	0.65	14.30	7.80	0.11	4.94	2.43	4.58	0.02	0.28	4.00	99.11
BPS-86-11314-05-B		40.10	0.86	11.40	9.32	0.23	7.77	11.00	0.94	1.15	0.53	17.50	100.80
DUPLICATE		40.60	0.86	11.80	9.16	0.23	7.71	11.40	0.95	1.17	0.45	17.40	101.73
BPS-86-11317-04-B		47.30	1.07	15.90	11.10	0.17	8.09	10.40	2.18	<0.01	0.10	3.95	100.26
BPS-86-11318-08-B		46.30	1.06	14.70	12.40	0.19	9.58	8.82	3.11	0.02	0.36	3.20	99.74
BPS-86-11319-04-B		65.80	0.47	12.80	4.71	0.09	1.78	4.14	2.06	1.85	0.17	6.30	100.18
BPS-86-11320-09-B		47.90	0.83	15.10	10.80	0.17	9.39	10.30	1.93	0.04	0.26	3.40	100.12
BPS-86-11321-13-B		48.10	1.18	16.00	10.60	0.33	4.60	7.71	1.30	1.23	0.26	10.10	101.41
BPS-86-11322-10-B		44.50	0.84	17.40	11.30	0.17	9.25	10.80	2.05	0.02	0.08	3.00	99.41
BPS-86-11323-01-B		44.40	1.39	12.50	11.90	0.22	5.93	9.58	3.50	0.01	0.15	11.50	101.07
BPS-86-11324-04-B		48.50	2.15	12.60	16.50	0.24	5.09	8.30	1.99	0.04	0.23	3.55	99.19
DUPLICATE		49.60	2.36	12.30	16.60	0.26	5.10	8.57	2.23	0.05	0.15	3.60	100.82
BPS-86-11325-06-B		51.50	0.79	15.60	11.80	0.16	8.45	2.32	2.50	0.04	0.10	7.35	100.61
BPS-86-11326-02-B		56.30	0.63	13.30	6.95	0.15	3.10	6.59	3.53	0.84	0.22	7.65	99.26
BPS-86-11327-02-B		58.50	0.65	14.50	6.52	0.10	3.61	5.90	3.00	0.94	0.21	7.00	100.93
BPS-86-11328-13-B		59.20	0.54	15.30	7.24	0.11	2.75	2.66	2.47	3.32	0.18	7.15	100.92

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Geochemical Lab Report

REPORT: 016-1865

PROJECT: SELBAIE PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	SiO2 PCT	TiO2 PCT	Al2O3 PCT	Fe2O3* PCT	MnO PCT	MgO PCT	CaO PCT	Na2O PCT	K2O PCT	P2O5 PCT	LOI PCT	Total PCT
BPS-86-11329-12		66.90	0.30	13.40	4.12	0.04	1.73	1.80	2.65	2.77	0.13	3.95	97.79
DUPLICATE		66.60	0.29	13.20	4.11	0.03	1.76	1.76	2.60	2.80	0.14	3.95	97.24
BPS-86-11330-05		57.40	0.46	15.80	5.23	0.07	2.47	3.49	1.95	3.61	0.19	6.75	97.42
BPS-86-11331-08		61.30	0.64	16.70	8.73	0.07	3.36	0.92	2.74	2.56	0.29	3.30	100.61
BPS-86-11332-16		60.70	0.65	18.20	7.82	0.06	3.07	0.89	2.33	3.87	0.25	3.75	101.59
BPS-86-11333-16		60.60	0.70	17.60	7.54	0.10	2.44	0.42	2.26	3.81	0.26	3.95	99.68
BPS-86-11334-13		69.30	0.44	13.40	3.88	0.04	1.95	0.85	3.29	1.63	0.26	2.90	97.94
BPS-86-11335-11		51.60	0.30	12.40	4.73	0.09	6.55	6.08	2.58	2.05	0.23	10.80	97.41
BPS-86-11336-09		56.50	0.35	16.60	3.30	0.07	1.42	5.90	4.68	1.38	0.29	7.80	98.29
BPS-86-11337-07		63.80	0.29	14.30	2.62	0.04	1.43	4.45	3.35	1.41	0.30	5.25	97.24
BPS-86-11338-02		67.60	0.49	11.80	3.63	0.06	0.75	5.03	1.07	1.70	0.20	5.50	97.83
DUPLICATE		67.40	0.50	11.80	3.62	0.06	0.79	5.10	1.08	1.68	0.25	5.55	97.83
BPS-86-11339-15		58.10	0.67	14.70	7.54	0.09	4.31	3.30	3.64	0.16	0.25	4.70	97.46
BPS-86-11340-24		81.90	0.42	8.00	4.15	0.15	1.17	0.27	0.24	1.40	0.10	2.90	100.70

APPENDIX G

BINOCULAR LOGS - BEDROCK CHIP SAMPLES

GRID 10-2

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY Silicates	Carbonates	Sulphides	Other	NAME
99-26	Medium to dark green	massive to weakly foliated Amygdaloidal	0.05-0.1 mm Amygdules 0.5-1.0 mm	Equigranular, interlocking	15-20 % mafics (chlorite) Undifferentiated qtz and feldspar	NIL	NIL		INTERMED. VOLC.
100-12	medium to dark green with whitish (bleached) areas	Massive. 5-10 % qtz veining and occasional chloritic veinlets	Fragments 0.5-1.5 mm matrix <0.05 mm	Fragmental 50 % fragments (angular) hard, some are rounded 50% matrix - soft equigranular interlocking	Fragments - cherty matrix 10-15 % mafic chlorite undifferentiated qtz/plag.	NIL	NIL		INTERMED VOLC (FLOW BRECCIA)
101-03	Dark green with bleached patches	Moderately foliated	0.05-0.1 mm	Equigranular, interlocking	Extensive saussuritization of plag. - 35-40% chlorite with 10-15% in bleached areas - qtz-rich	<1% calcite (dissem)	1% pyrrhotite		MAFIC VOLC.
102-21	Leucocratic white to light yellow green	Schistose country rock with brecciated carbonate veins	qtz eyes 0.5 mm groundmass has gradational grain size 0.05-0.5 mm	ashy texture of country rock (qtz-sericite schist) - carbonate vein brecciated	15-20% sericite < 5% chlorite Undifferentiated qtz/feldspar - occasional qtz eyes preserved but stretched	15-20 % slow reacting carbonate (dolomite) in vein - carbonitization of country rock	Trace pyrite	Trace fuchsite.	FRAGMENTAL (ASH TUFF) WITH QTZ-CARBONATE VEINING
103-24	Medium to dark green with bleached patches	Massive weakly fractured (30%) (qtz carbonate veinlets) amygdaloidal	Phenocrysts 0.3-1.5 mm matrix 0.05-0.1 mm	Phenocrysts 5-10 % Equigranular, interlocking	30% chlorite but < 5% in bleached areas - Amygdules chlorite, plag - undifferentiated plag/qtz	<1 % slow reacting carbonate in fractures	5-10 % pyrite in bleached areas		INTERMED VOLC.

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY Silicates	Carbonates	Sulphides	Other	NAME
104-10	Dark green	Massive	Phenocryst 0.5 - 1.5mm matrix <0.05 mm	Equigranular, interlocking 5% phenocryst	Plag. phenocrysts matrix undifferentiated qtz/plag. 25-30% chlorite	Trace slow reacting carbonate	.1% pyrite		INTERMED. VOLC.
105-12	Light to medium green	Massive to weakly foliated Amygdaloidal minor qtz carbonate veinlets	Amygdules 0.5 - 3.0 mm matrix 0.05 - 0.1mm	Equigranular, Interlocking	Amygdules of qtz, chlorite, carbonate matrix undifferentiated qtz/plag.	.1% slow reacting carbonate in veinlets	.1% pyrite with carbonate veins Trace pyrrhotite		INTERMED. VOLC.
106-13	Dark green with white patches	Massive	Relic xstals of pyroxene 2.0 - 3.0mm	Texture obscured by alteration	45-50% mafics chlorite 45-55% plag	1% slow reacting carbonate, dissemin.		Trace leucoxene	GABBRO
107-02	Medium to dark green with bleached areas	Massive silicified areas - minor qtz/carbonate veining	qtz eyes 0.4 - 1.0mm matrix .1-.3	Equigranular, Interlocking	3-5% qtz eyes 30-35% mafics with 5%-10% in silicified areas - undifferentiated qtz/plag	1% calcite in veinlet + dissemin.	.1% pyrite		INTERMED VOLC
108-06	Light green	Massive	qtz eyes 1mm matrix <0.05mm	Equigranular, interlocking	5-10% qtz eyes qtz-rich matrix <5% mafics (chlorite)	<1% calcite	NIL		FELSIC VOLC

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY Silicates	Carbonates	Sulphides	Other	NAME
109-16	Medium green	Massive Siliceous (hard) - Amygdaloidal	<0.05mm	Equigranular, interlocking	Undifferentiated Pyroxene, plagioclase	NIL	NIL		INTERMED VOLC.
110-04	Medium to dark green	massive minor qtz-carbonate (calcite) vein (1%) with fragments	Phenocryst 0.5-1.0 mm matrix 0.05-0.1mm	Equigranular, interlocking. phenocrysts - 5-10%	Plag. phenocrysts undifferentiated plag/qtz	Trace calcite in vein	-1% py/po in host rock (deciminated) - 5-10% po/py qtz-ca vein - <1% cpy		INTERMED VOLC
111-03	Dark green	Massive Amygdaloidal 1-2% qtz-carbonate vein	Phenocryst 0.5-1.0mm matrix 0.1-0.2mm	Equigranular, interlocking Phenocrysts of plag.	Plag phenocrysts 5% Amygdules, qtz/plag matrix - 30-35% chlorite - undifferentiated qtz/plag	5-10% of vein is calcite	5% pyrite		INTERMED VOLC.
112-12	Dark green	Massive .1% qtz veinlet	<0.05mm	Equigranular, interlocking	35-40% mafics (chlorite) undifferentiated plag/qtz	NIL	Trace pyrite		INTERMED VOLC.
113-11	Dark green	Massive 2-3% quartz veinlets	0.1-0.2mm	Equigranular, interlocking	35-40% mafics (chlorite, pyroxene) Undifferentiated plag/qtz	NIL	1% pyrite		INTERMED VOLC

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY Silicates	Carbonates	Sulphides	Other	NAME
114-08	White and dark green patches	Massive Slightly altered (saussuritization of feldspars)	1.0-2.0mm	Granitic Phaneritic	15% quartz 10-15% mafic (hornblende, biotite chlorite from hornblende) -feldspars mainly plag.	•1% dissem.	•1% pyrite	Trace hematite	GRANO-DIORITE
115-04 (1)	White and dark green patches	massive slightly to moderately altered (biotite altered to chlorite)	1.0-2.0mm	Granitic Phaneritic	10-15% quartz 15-20% chlorite from biotite -feldspars	<1% dissemin. slow reacting carbonate	.4% pyrite .1% cpy		GRANO-DIORITE
115-04 (2)	Light green (bleached) 50% qtz-carbonate vein	massive strongly altered (soft) amygdaloidal	Amygdules 0.5-0.6mm matrix 0.05-0.1mm	Texture obscured due to strong alteration	Amygdules of qtz, chlorite, matrix 5-10% mafics feldspar (plag)	50% qtz/carbonate vein	NIL		INTERMED VOLC
116-02	Dark green	Massive amygdaloidal	Amygdules, phenocrysts .5-2.5mm matrix. 0.05-0.1mm	Equigranular, interlocking	Amygdules of qtz, plag. 35-40% mafic (chlorite) undifferentiated plag/qtz	NIL	•1-.5% pyrite		INTERMED VOLC.
117-09	MEDIUM green (bleached)	Massive to moderately foliated amygdaloidal	<0.05mm	Equigranular, interlocking	Amygdules of chlorite, qtz -relic plag. phenocrys -10-15% chlorite -undifferentiated plag/qtz	1% dissemin. slow react carbonate	Trace pyrite.		INTERMED VOLC.

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY Silicates	Carbonates	Sulphides	Other	NAME
118-17	Light green with dark patches	Massive	Qtz eyes 0.5 - 1.0 mm matrix <0.05 mm	Equigranular, interlocking. with porphyritic look due to qtz eyes	20-25% qtz eyes matrix qtz rich 5-10% chlorite	.1% slow reacting dissemin. Carbonate	NIL		(QUARTZ EYE RHYOLITE) FELSIC VOLC
119-02	Medium green with bleached patches	Weakly to moderately foliated	Phenocryst 0.5 mm matrix 0.05 - 0.1 mm	Equigranular, interlocking with plag phenocrysts	5% plag. phenocrysts 15-20% chlorite - plagioclase dominant matrix	1% slow reacting dissemin. carbonate	1% pyrite		MAFIC VOLC.
120-02	Dark green	Massive to weakly foliated 1 qtz veinlets	0.05 - 0.1 mm	Equigranular, interlocking with plag. phenocrysts.	5% plag. phenocryst 50-60% mafics (chlorite) 40% plag.	NIL	2-3% pyrite <.2% cpy disseminated and in veinlets		MAFIC VOLC.
121-05	White and medium green patches	Massive	1.0 - 2.0 mm	Granitic, Phaneritic	15% qtz 10-15% mafic (biotite, chlorite from hornblende) - feldspars	Trace slow reacting dissemin. Carbonate	Trace pyrite		GRANO-DIORITE
122-05	Dark green to black	Massive to moderately foliated < 1% qtz veinlets	0.05 - 0.1 mm	Equigranular, interlocking	50% mafics (biotite) 40%-45%	NIL	- 10% pyrite and pyrrhotite with .4% cpy in veinlets		MAFIC VOLC.

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
123-04	Medium green	Massive amygdaloidal	0.05-0.1mm	Equigranular, interlocking	amygdules of chlorite, plag -qtz eyes <1% -10-15% chlorite Undifferentiated plag/qtz	NIL	.1% pyrite.		INTERMED VOLC
124-05	Light to medium green (Bleached zones) 60% of country rock	Schistose -extreme folding -30-40% qtz-carbonate vein	<0.05mm	Texture obscured by deformation	10% sericite trace fuchsite 20-30% chlorite but 1-2% in bleached zones -undifferentiated qtz/feldspar	20-25% slow reacting carbonate in qtz/carbonate vein	.1% pyrite		INTERMED VOLC and. QUARTZ CARBONATE VEIN
125-11	Totally bleached	Massive Strongly fractured 20% qtz/carbonate veinlets	<0.05mm	Equigranular, interlocking	<1% mafics - Undifferentiated plag/qtz	10% slow reacting carbonate in country rock and veinlets -Carbonitization	1-2% Pyrite in veinlets and dissemin.		INTERMED VOLC. and QUARTZ CARBONATE VEIN
126-09	white, dark green and orange	Massive	1.0 -1.5mm	Granitic, Phaneritic -saussuritization of feldspar	10% mafic (chlorite biotite) 15% quartz -feldspars	Trace slow reacting carbonate	NIL		GRANO-DIORITE
127-11	White, dark green	Massive	1.0 -2.0mm	Granitic Phaneritic. -saussuritization of feldspar	10-15% qtz 10-15% biotite chlorite feldspars	Trace slow reacting carbonate	NIL		GRANO-DIORITE

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
128-04	Dark green	Massive	Phenocryst 0.2 -0.5mm matrix 0.05 -0.1mm	Equigranular, interlocking, with 5 % plag. phenocryst	5% plag phenocryst 20-25 mafic's undifferentiated plag/qtz	Trace of dissemin. slow reacting carbonate	NIL		INTERMED VOLC.

GRID 10-113

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
1131-04	Medium to dark green	Well foliated to Schistose - 1% carbonate, quartz, chlorite veinlets	<.05mm	Equigranular, interlocking	15-20% incipient chlorite -undifferentiated quartz and plag.	2-3% dissem. calcite	NIL		INTERMED. VOLC.
1132-04	Medium green	Well foliated to schistose -20% silicified zones (hard)	.05-.1mm	Equigranular, interlocking	15-20% chlorite in areas not silicified 5% chlorite in areas silicified. - undifferentiated quartz and plag.	2-3% dissem. calcite	NIL		INTERMED VOLC.
1133-07	medium green	Strongly sheared and crushed	qtz eyes .1-.5mm matrix <.05mm	Equigranular, interlocking	1% quartz eyes 10% sericite 0-20% chlorite (variable due to shearing) -undifferentiated plag. and qtz.	3-5% dissem. calcite	NIL		INTERMED VOLC
1134-07	medium green	Well foliated to schistose -amygdaloidal - 30-40% bleached zones	<.05mm	Equigranular, interlocking -amygdules (.5mm) of chlorite	20-30% chlorite decreasing to 0-5% in bleached zones -1% tourmaline in bleached zones -Undifferentiated qtz. and plag.	3-5% dissem. slow reacting carbonate.	5% of chips contain 5% cpy		INTERMED VOLC
1135-13	Light to medium green	Well foliated to schistose	qtz eyes 0.5mm - matrix <.05mm	Equigranular, interlocking	3-5% qtz eyes - 5-10% chlorite qtz-rich (hard) - 20% sericite	1-2% dissem. slow reating carbonate	.1% pyrite		FELSIC VOLC. (Ryholite)

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm)	TEXTURE	MINERALOGY Silicates	Carbonates	Sulphides	Other	NAME
1136-20	Medium green	Well foliated	Phenocrysts .2mm matrix <.05mm	Equigranular, interlocking < 1% plag. phenocrysts	- 30% chlorite - < 1% plag. pheno. - undifferentiated qtz. and feldspar	<1% dissem. slow reacting carbonate.	NIL		INTERMED VOLC.
1137	NO	BEDROCK	SAMPLE						
1138-21	Pinkish yellow orange	- Schistose. - strongly weathered. (leached)	qtz eyes .3-.5mm	weathered rock (saprolite)	30% sericite - 3-5% qtz eyes similar to 1135, 1139.	NIL	NIL		FELSIC VOLC. (RHYOLITE)
1139-19	medium yellowish green	Strongly foliated to Schistose	qtz eyes .2-.5mm matrix <.05mm	Equigranular, interlocking	1-2% chlorite mainly along fractures - 1-2% qtz eyes - 20% sericite.	NIL	NIL		FELSIC VOLC. (RHYOLITE)
11310-12	Medium green	Strongly foliated to schistose	qtz eyes .5mm matrix <.05mm	Equigranular, interlocking	1-2% qtz eyes - 30% chlorite - undifferentiated quartz and feldspar	<1 dissem. slow reacting carbonate	NIL		INTERMED VOLC

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY Silicates	Carbonates	Sulphides	Other	NAME
11311-06	Rust orange	massive. - 80% soft - 20% hard.	cherty chips <0.05mm	80% of chips completely weathered rock (saprolite) - 20% cherty chips. - silica content 59%	20% chert - rock type inferred from surrounding lithology	NIL	NIL		INTERMED VOLC
11312-03	medium green with white patches	strongly foliated to schistose - 5-10% whitish areas predominantly qtz	<.05mm	Equigranular, interlocking	20-25% chlorite to 0-5% in silicified zones 15-20% sericite undifferentiated qtz/feldspar	10% slow reacting (dolomite)	NIL		INTERMED VOLC.
11313-03	Medium green	Strongly foliated to schistose - 5% silicified zones (hard) Amygdaloidal (chlorite, feldspar, qtz)	amygdules 1-1.5mm matrix <.05mm	Equigranular, interlocking	25-30% chlorite decreasing to 1-5% in silicified zones undifferentiated qtz/feldspar	1% disseminated (slow reacting) carbonate	.1% pyrite (dissem)		INTERMED VOLC.
11314-05	Medium green	Schistose with 20-30% carbonate veinlets	.05-.1mm	Equigranular, interlocking	40-45% chlorite, 55-60% plag.	veinlets of slow reacting carbonate (dolomite)	NIL		MAFIC VOLC.
11317-04	green and whitish zones	Massive	crystals .5 - 2mm	Ophitic texture - smaller plag. coarser pyroxene xstals	50% plag. 45% pyroxene 5% chlorite	1% dissem. carbonate (slow reacting)	Trace pyrite	1% leucoxene	GABBRO

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
11318-08	Dark green and whitish zones	Massive to moderately foliated	plag. .2-.5mm pyroxene .5-.8mm	Ophitic interlocking	30 % plag. 60 % pyroxene 10 % chlorite.	<< 1% slow reacting carbonate restricted to micro-fractures	Trace pyrite	1% leucoxene	GABBRO
11319-04	Light to medium green with pale yellow zones	Strongly foliated to schistose	Fragments .5->5mm matrix <.05mm	30-50 % fragment in a cherty matrix -fragments leucocratic, their size suggesting blocky agglomerate	10 % sericite ribbons Fragments - plag/qtz 5-8% chlorite 2-5% qtz eyes .1% tourmaline in occasional fragment. - Cherty matrix	10-20 % slow carbonate in some fragments	1-15 % pyrite in 1% of rock chips		INTERMED FRAGMENTAL
11320-09	Dark green and whitish zones	Massive to weakly foliated	.5-1mm	Ophitic	40 pyroxene 10-15 % chlorite from pyroxene 45-50 % plag	Trace slow reacting carbonate	Trace pyrite	5% leucoxene	GABBRO
11321-13	Dark green with rust coloured oxidation	Strongly foliated to Schistose (sheared)	<.05mm plag and mafic remnants .5-.6mm	Texture obscured by alteration and oxidation -leucoxene remnants of mafics ≃ .5-.6mm - plag. remnants - .5mm	40-50 % chlorite 50-60% plag. 1% tourmaline in sericitized zones	2-3% calcite	NIL	3-5% leucoxene	GABBRO
11322-10	Dark green and whitish zones	Massive	.5-1mm	Ophitic	55-60 % plag. 35% pyroxene 5 % chlorite	Trace slow reacting carbonate	1% pyrite	1-2 % leucoxene	GABBRO

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY Silicates	Carbonates	Sulphides	Other	NAME
11323-01	Dark green	Moderately to strongly foliated 1% calcite veinlets	Plag .5-.6mm calcite 0.2-0.5 mm	Texture obscured by foliation	40-45% chlorite 50-55% plag.	5% calcite crystals 1% calcite veinlets.	Trace pyrite	1-2% leucoxene	GABBRO
11324-04	Dark green	Strongly foliated	magnetite (.05-.1mm) and (.5-1.0mm)	Texture obscured by foliation	40% chlorite 40% plag (saussuritized) .1% qtz eyes	1% dissemin. calcite	NIL	20% magnetite	GABBRO
11325-06	70% chips rusty colour 30% chips med-dark green	Strongly foliated and strongly weathered (soft) 2-3% qtz veinlets	.05-.2mm	Equigranular, interlocking (unweathered rock)	-45% chlorite 50-55% plag. 2-3% qtz veinlets .1% qtz eyes.	1-2% dissem. calcite in unweathered chips	NIL		MAFIC VOLC.
11326-02	Medium green	Strongly foliated to schistose (soft) Amygdaloidal 5% qtz veinlets	Amygdules 1-3 mm matrix <.05mm	Equigranular, interlocking	25-30% chlorite Undifferentiated plag and qtz	1% dissem. calcite	NIL		INTERMED VOLC.
11327-02	Medium green	Strongly foliated to schistose (soft) Amygdaloidal	Amygdules .2-1 mm matrix .05-.1mm	Equigranular, interlocking - Amygdules of chlorite	5-10% sericite 15-20% chlorite undifferentiated plag and qtz	3% calcite	NIL		INTERMED VOLC.

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
11328-13	Light green	Schistose (very soft)	<.05mm	Equigranular, interlocking	Up to 20% chlorite sericite in some chips - 10-15% chlorite (dissem & veinlets) - undifferentiated plag. and qtz.	<1% dissem. Slow reacting carbonate	Trace pyrite		INTERMED VOLC.
11329-12	Light green	Strongly foliated to schistose. 60% chips soft while remaining chips hard (silicified)	<.05 to .1mm	Equigranular, interlocking	10-20% sericite in 60-70% of chips - 10-15% chlorite - undifferentiated qtz and plag.	<1% dissem. slow reacting carbonate	NIL		INTERMED VOLC.
11330-05	Medium green	Strongly foliated to schistose 5% veinlets (soft)	qtz eyes .2-.5mm matrix .1-.2mm	Equigranular, interlocking	3-5% qtz eyes 5-10% chlorite 5-10% sericite 70% plag	5% slow reacting carbonate veinlets 1% dissem. slow reacting carbonate.	.1% pyrite (dissem. and veinlets)		INTERMED VOLC.
11331-08	Medium green	Schistose (soft)	<.05mm	Equigranular, interlocking	30-40% chlorite and sericite 60-70% plag/qtz	NIL	5-10% of chips contain 10-20% Pyrite		INTERMED VOLC.
11332-16	Medium green	Schistose (soft) 5-10% veinlets qtz	<.05mm	Equigranular, interlocking	30-40% chlorite 60-70% plag/qtz	<<1% dissem. slow reacting carbonate	NIL		INTERMED VOLC.

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY Silicates	Carbonates	Sulphides	Other	NAME
11333-16	Medium green	Strongly foliated to schistose (soft) 1% chlorite veinlets	<.05mm	Equigranular, interlocking	35-40% chlorite 60-65% plag.	NIL	NIL		INTERMED VOLC.
11334-13	Medium greenish grey	Strongly foliated 1% qtz, carbonate veinlets	.2-.4mm	Equigranular, sandy	10% chlorite 40-50% qtz. 40-50% feldspar (saussuritization of feldspar)	Trace dissem. slow reacting carbonate.	.1% pyrite		GRAYWACKE
11335-11	Light green (bleached)	Moderately to strongly foliated amygdaloidal	<0.05mm	Texture obscurred due to strong alteration (carbonitization) -relic amygdules (chlorite)	5-10% chlorite Plag-rich 70-75% trace fuchsite	10% -15% dissem. slow reacting carbonate	NIL	1% leucoxene	MAFIC VOLC.
11336-09	Green, white and pink	Massive slightly oxidized	Phenocryst .5-3mm matrix <.05mm -.2mm	Porphyritic - plagioclase phenocrysts comprise 30-35% of sample	Phenocrysts -plagioclase matrix -5-10% chlorite -undifferentiated feldspar/qtz	3-5% dissem. slow reacting carbonate	NIL	5% hematite	FELDSPAR PORPHYRY
11337-07	Predominantly medium green with whitish and pink zones	Slightly to moderately foliated 30% of rock is quartz/carbonate vein	Phenocryst .5-3mm matrix <.05mm	Porphyritic -plag. phenocryst -	Phenocrysts plag. -20-30% matrix 0. 5% chloritic patches -undifferentiated feldspar/qtz	1-2% dissem. slow reacting carbonate	NIL	3-5% hematite -gives pink stain.	FELDSPAR PORPHYRY

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
11338-21	green	Schistose (soft)	<.05mm	Equigranular, interlocking	10% sericite or clear chlorite 15-20% chlorite undifferentiated feldspar, qtz	1-2 % dissem. relatively fast acting carbonate	NIL		INTERMED VOLC
11339-15	Medium to dark green	Strongly foliated <1% calcite veinlet	.1-.2mm	Equigranular, interlocking	20-30% chlorite undifferentiated plag/qtz	<1% calcite in veinlet.	NIL		INTERMED VOLC
11340-24	YELLOW green	Schistose (strongly weathered) 70% qtz vein	<0.05mm	Original texture obscured by extensive weathering	20% sericite, chlorite schist 70-80% vein - qtz	NIL	NIL		INTERMED VOLC QUARTZ VEIN

GRID 10-110

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
11009-02	Light to medium green	Schistose. (soft) 2-3 % qtz/carbonate veinlets	<0.05mm	Equigranular, interlocking	10-15 % sericite 5-10 % chlorite qtz - rich	3-5 % dissem calcite	Trace pyrite		FELSIC VOLC (RHYOLITE)
11010-05	Medium to dark green	Strongly foliated.	qtz eyes 0.05 to 0.2 mm matrix 0.05 to 0.1 mm	Equigranular, interlocking	1-2 % qtz eyes 30-35 % chlorite Undifferentiated plag. and qtz	1-2 % dissem. calcite	NIL		INTERMED VOLC
11011-02	Whitish with dark green patches (5-10%)	Moderately to strongly foliated -strongly altered	<0.05mm	Texture obscured by alteration carbonitization	5-10 % mafics (chlorite) - plag.	10-20% dissem. Slow reacting carbonate	Trace pyrite		MAFIC VOLC.
11012-07	Whitish with medium to dark green patches (10-15%)	Strongly foliated	Phenocryst qtz eyes (blue) -0.5mm matrix <0.05 mm -0.2mm	Porphyritic majority of phenocrysts indistinct due to strong foliation - groundmass has gradation - al grain size	Phenocrysts 1-2 % qtz eyes. ·1 % tourmaline Groundmass 2-3% sericite 10-15 % chlorite. -plagioclase/qtz	5-10 % dissem. calcite	·1 % pyrite		GRANODIORITE
11013-04	Dark green	Strongly foliated	qtz eyes 0.2-0.5mm matrix 0.2-0.3mm	Equigranular, interlocking	1% blue qtz eyes. 35-40% chlorite - plagioclase	10 % calcite		·1 % magnetite	MAFIC VOLC.

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
11014-02	whitish grey	Massive with microfractures	Leucocratic material 0.05mm - 0.1mm	Aplitic - fine-grained	10 % of mafic material is euhedral amphibole rest chlorite (mafics 5% of rock) - Leucocratic matrix is qtz-rich	<1% dissem. slow reacting carbonate.	.1 % pyrite restricted to micro fractures		GRANITIC PHASE (APLITE)
11015-03	Pinkish brown	Massive with minor fractures	<0.05 - 0.1 mm matrix <0.05mm	Aplitic - fine-grained	1% sericite 5-10 % chlorite dissemin. and micro fractures (chl. from amphibole) - qtz- rich	Trace dissem. slow reacting carbonate	NIL	2-3 % hematite	GRANITIC PHASE (APLITE)
11016-02	Dark green	Moderately to strongly foliated	Qtz eyes 0.3-1.3mm matrix 0.05 - 0.1mm	Equigranular, interlocking	1-2 % qtz eyes 30 % chlorite undifferentiated qtz / feldspar	<1 % moderately fast reacting carbonate. - dissemin. and in very minor carbonate veinlets.	NIL	.1 % magnetite	INTERMED. VOLC.
11017-02	Dark green with light whitish green patches	Strongly foliated (soft) - 1-2% calcite veinlets	Magnetite 0.2- 0.5 mm remnant phenocrysts 0.5-1.0 mm	Texture obscured by strong foliation - remnant pheocrysts plag + pyroxene (0.5 - 1mm)	45-50% mafics (chlorite) 50-55% plag.	2-3 % calcite predominantly veinlets	NIL	1 %-2 % magnetite	GABBRO
11018-12	Dark green with light whitish green patches	Weakly to moderately foliated.	0.5 to 2.0 mm	Ophitic (sub), interlocking	55-60 % mafics (pyroxene, chlorite) 40% plag. 1% blue qtz. eyes	Trace slow reacting dissem. carbonate	0.1 % pyrite	5 - 10 % leucoxene	GABBRO

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
11019-04	Medium green with whitish patches	massive - generally soft	Gradation from 0.1 to 2.0mm with Lapilli fragments > 2.0mm	Fragmental with ashy texture 10-20% lapilli (>2mm) -matrix composed of ash ranging in size 0.1-2.0mm	10% mafics (chlorite) present as xenoliths in fragments and as infillings - Lapilli 1) glassy qtz-rich 2) feldspar, qtz,	<<1.0% dissem slow reacting Carbonate	NIL		LAPILLI TUFF
				- vesicular, needle like bodies probably glass shards.	chlorite Some lapilli leuco-cratic, others similar in colour to matrix matrix - mineral composition similar to lapilli				
11020-09	Medium to dark green	Moderately to strongly foliated 1% calcite veinlets	Plag. phenocrysts 0.2-0.6mm matrix 0.05-0.1mm	Equigranular, interlocking	1% plag-phenocrysts 15-20% chlorite undifferentiated qtz/plag.	1-2% dissem. and veinlet calcite	NIL	.1% hematite Trace magnetite	INTERMED VOLC.
11021-02	Medium to dark green	Moderately to strongly foliated Amygdaloidal 1% Calcite veinlets	0.1-0.2mm amygdules 1.0-1.5mm	Equigranular, interlocking	1% blue qtz eyes plag. amygdules undifferentiated qtz/plag	2-3% calcite crystals, veinlets and dissemin.	.1% pyrite		INTERMED. VOLC.
11022-09	Whitish to light green (leucocratic)	Strongly foliated to Schistose - strongly silicified	Fragments gradational 0.5-6mm matrix <0.05 mm very siliceous	Fragmental 70% matrix - highly silicified what was probably ash 30% fragments -very siliceous	Fragments 1) yellowish, soft plagioclase, calcite 2) whitish, hard siliceous (qtz, plag) 3) glassy, hard siliceous Matrix - siliceous hard	.1% calcite fragments and trace dissem.	0.2-0.3% Sphalerite (as infillings and euhedral xstals) - Trace very fine grained galena - 2-3% pyrite		LAPILLI TUFF

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
11023-07	Medium - dark green	Strongly folliated to schistose (soft) 2-3 % calcite veinlets	Calcite xstals 0.1-0.5mm matrix <0.05mm qtz eyes 0.1-0.3mm	Equigranular, interlocking amygdaloidal (qtz, chlorite)	10-15 % mafics (chlorite) •1% qtz eyes	2-3 % calcite xstals		•1 % hematite	INTERMED VOLC.
11024-18	Orange with dark green patches (hematite stain)	Massive but fractured. (hard)	Phenocrysts 0.2 - 2.5mm matrix <0.05mm	Porphyritic - qtz phenocrysts comprise 15-20% of sample hard to tell if fine-grained material or pegmatite with grain boundaries obscured by colour	-Qtz phenocrysts 15-20% undifferentiated qtz and feldspar in matrix	NIL	Trace pyrite	Trace hematite	GRANODIORITE

MAIN GRID

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
129-04	Dark green	Massive	<0.05mm	Equigranular, interlocking	30-35% chlorite Undifferentiated plag/qtz .1% qtz eyes	5% calcite xstals	NIL		INTERMED VOLC
130-09	Light to medium green	Massive (soft) amygdaloidal (chlorite)	matrix <0.05mm phenocryst 0.5–1.0mm	Equigranular, interlocking with plag. phenocrysts	5% plag phenocryst 10%-15% mafics (chlorite) 80% plagioclase	Trace slow reacting carbonate	Trace pyrite		MAFIC VOLC.
131-08	Medium to dark green	moderate to strong foliation (soft)	< 0.05mm	Equigranular, interlocking	25% mafics (chlorite) Undifferentiated qtz / feldspar	NIL	NIL		INTERMED VOLC.
132-03	Dark green	Moderate to strong foliation (soft) - amygdaloidal (chlorite)	<0.05mm	Equigranular, interlocking	chlorite amygdules 30-35% chlorite Undifferentiated plag. / qtz	NIL	NIL		INTERMED VOLC.
133-03	Light green with dark green patches	Weakly foliated	Fragments -gradation 0.2 – 4 mm matrix <0.05 -0.1	Fragmental -matrix ashy (soft) 25-30% fragments (angular) - trace qtz eyes.	Fragments a) mafic (chlorite) b) siliceous Matrix 20-25% chlorite Undifferentiated qtz / feldspar	NIL	NIL		FRAGMENTAL (LAPILLI TUFF)

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY Silicates	Carbonates	Sulphides	Other	NAME
134-04	Dark green	Massive	Fragments 0.5 – 3.0 mm matrix. <0.05 – 0.2 mm	Fragmental (angular, rounded) ashy matrix	Fragments (15%) a) mafic (chlorite) b) glassy (hard) matrix 25% chlorite undifferentiated qtz/feldspar	3-5% carbonate veinlet and crystals	Trace pyrite		FRAGMENTAL (LAPILLI TUFF)
135-07	Dark green	Massive minor carbonate veinlet	<0.05 mm	Equigranular, interlocking	35-40% mafics (chlorite) Undifferentiated plag/qtz -plag rich	<<1% dissem. slow reacting carbonate	NIL		INTERMED VOLC.
136-13	Medium green with orange patches	Massive to slightly foliated 2 rock types	① 0.1 – 0.2 mm ② 0.5 mm	① Equigranular, interlocking. ② Granitic	① 15-20% chlorite undifferentiated qtz/feldspar ② qtz - 70% mafics - 5-10% feldspar - 20%	NIL	NIL		① INTERMED VOLC ② GRANITIC INTRUSIVE
137-08	Medium green with bleached zones	Massive	Phenocryst 0.5 – 1.0 mm matrix <0.05 mm	Porphyritic qtz eyes – 5-10% plag. pheno. – 5%	30-40% mafics in dark areas while 2-3% in bleached zones -qtz-rich matrix	1-2% calcite in veinlet	NIL		QUARTZ FELDSPAR PORPHYRY
138-04	Dark green	Massive	matrix 0.05 – 0.1 mm Fragments 0.5 – 75.0 mm	Fragmental - 5-10% fragments - fine-grained - angular to rounded matrix is equigranular, interlocking	matrix 25-30% chlorite -undifferentiated qtz/plag fragments 5-10% fragment -silica rich rock	.5% calcite xstals	Trace pyrite .1% CPY <.1% sphal. (deciminated)		INTERMED VOLC (FLOW BRECCIA)

SAMPLE NUMBER	COLOR	STRUCTURE	GRAIN SIZE(mm	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
139-03	Medium to dark green	Massive to slightly foliated	matrix 0,05 -0,1 mm Fragments 0.5->4mm.	- Fragmental - 5-10% fragments - fragments fine grained with amygdules of Chlorite and quartz - angular to rounded - matrix - interlocking - texture	30-35% mafics with undifferentiated qtz/plag in matrix fragments - hard silicate rich rock	.5% calcite xstals	• 1% cpy • 1% sphal dessiminated.		INTERMED VOLC (FLOW BRECCIA)
140-02	Medium to dark green with bleached zones	Moderately to strongly foliated	0,05 -0.1mm	Equigranular, interlocking - texture obscurred in bleached zones due to strong alteration	20-25% mafics with 5% in bleached zones undifferentiated qtz/ feldsar	Trace slow reacting carbonate	NIL		INTERMED VOLC.
141-11	Dark green	Massive	<0.05mm	Equigranular interlocking	30-35% mafic (chlorite) plag-rich. undifferentiated plag/qtz	2-3% dissem. slow-reacting carbonate	.1-.5% pyrite		INTERMED VOLC.