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REVERSE CIRCULATION OVERBURDEN DRILLING AND HEAVY MINERAL GEOCHEMICAL SAMPLING, LAC SHORTT PROJECT

Énergie et Ressources naturelles
Québec

633

MINNOVA INC.

LAC SHORTT PROJECT
(PN 090, 114 AND 116)

LESUEUR, BOYVINET AND GAND TOWNSHIPS, QUEBEC

REVERSE CIRCULATION OVERBURDEN DRILLING
AND HEAVY MINERAL GEOCHEMICAL SAMPLING

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OVERBURDEN DRILLING MANAGEMENT LIMITED

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1. SUMMARY

The report describes a reverse circulation drilling program conducted by Minnova Inc. on three properties (Wetjack, Lesueur and Boyvinet) in the Lac Shortt area of the Abitibi Greenstone Belt, northwestern Quebec. One hundred and forty-nine vertical holes were drilled and bedrock and overburden were sampled to identify zones of bedrock deformation and alteration that could host epigenetic gold mineralization and to test for glacially dispersed gold indicative of subcropping mineralization within these structural zones. Total project costs averaged $77.83/metre ($23.72/foot).

The drill areas are located either on (Boyvinet) or immediately south of (Wetjack, Lesueur) the Lac Shortt Fault, a regional-scale, east-west trending shear zone. This shear zone forms the contact between two volcano-sedimentary domains -- the southern Caopatina - Quevillon Domain which is dominated by calc-alkalic andesite and turbiditic sediments, and the northern Chibougamau - Matagami Domain which is dominated by layered mafic/ultramafic sills. The drill areas are also immediately north of a second, parallel shear zone -- the Opawica Lake Fault. The volcano-sedimentary rocks of the Caopatina - Quevillon Domain between the faults are intruded by the syntectonic Opawica Pluton. The pluton is zoned with an albite syenite core and chilled quartz diorite, diorite and gabbro border phases. Metamorphic grade in the volcano-sedimentary rocks is greenschist facies, changing to hornblende hornfels facies near the pluton.

All lithologies show significant shear deformation, reflecting their proximity to the major faults. Recognizable east-west trending zones of generally ductile shearing with associated Fe/Mg carbonate alteration are present along the Lac Shortt Fault on Boyvinet, along the southern edge of the turbidites on Wetjack extending eastward to Boyvinet, and along the centre of the turbidites on Lesueur. The Lac Shortt Fault zone is broadly anomalous in gold and the turbidite hosted zone on Lesueur is strongly anomalous in both gold and arsenic. Deformation within the Opawica Pluton is mainly by brittle shearing. The resulting mylonite zones are characterized by hematitization and pyritization of magnetite and are generally too narrow to be intersected in the vertical drill holes. Weakly

anomalous gold values are common along a possible north-northeast trending cross fault in the pluton.

Overburden thickness in the drill holes averages 18.2 m. Quaternary strata are of Illinoian to Holocene age. Pockets of west-southwesterly transported, Illinoian-age Lower Till and Sangamon to Early Wisconsinan-age Missinaibi Formation sediments are preserved in bedrock depressions on the Lesueur and Boyvinet properties where they were protected from the Wisconsinan glaciation. Southwesterly transported, Late Wisconsinan-age Chibougamau Till is the primary sampling medium. It directly overlies bedrock in 71 percent of the drill holes and thus provides good exploration coverage, but is locally supplanted by coeval Ojibway II esker and De Geer moraine sand and gravel. The youngest Quaternary strata comprise Ojibway II clay capped by Holocene peat.

Overburden geochemistry in the areas of good till cover closely mirrors the underlying bedrock geochemistry, with a notable but encouraging exception occurring over the Opawica Pluton in southern and central Boyvinet where the drilling outlined a broad zone of strong gold dispersal train anomalies indicative of proximal bedrock sources of good grade. Overprinting these trends are background visible gold anomalies that are easily distinguished from dispersal train anomalies in the heavy mineral fraction but are indistinguishable in the minus 250 mesh fraction. Consequently almost no reliance was placed on the minus 250 mesh geochemistry, and little of value was obtained from it.

A $160,000.00 diamond drilling program and a $150,000.00 Phase II reverse circulation drilling program are proposed to pursue the encouraging findings of the program. The diamond drilling will test the gold-arsenic zone on southern Lesueur, two anomalous gold zones along the Lac Shortt Fault in northern Boyvinet, and an inferred shear zone under the broad dispersal-train in southern Boyvinet. The new reverse circulation program will consist of detailed drilling to establish structural orientations and pinpoint other dispersion sources under the train, and reconnaissance drilling along the strike extensions of the Lac Shortt Fault and the Lesueur gold-arsenic zone.

2. INTRODUCTION

2.1 Project Outline

Between July 13 and August 6, 1988 Minnova Inc. conducted a 149-hole reverse circulation drilling program for the purpose of chip sampling of the Archean bedrock subcrop and heavy mineral geochemical sampling of the overlying Quaternary overburden on three contiguous gold properties near Opawica Lake west of Lac Shortt in the Abitibi Greenstone Belt, northwestern Quebec (Figs. 1 and 2). The drill area comprises the extreme north of the Wetjack (PN 090) property, all of the Lesueur (PN 116) property, and the west half of the Boyvinet (PN 114) property, and roughly covers an 8 km long, east-northeast trending geological corridor that runs parallel to and 2 km north of the regional Opawica Lake Fault. The centre of the drill area is 15 km west-southwest of Minnova's Lac Shortt Gold Mine and 10 km northeast of the Bachelor Lake Gold Mine.

The drill area is underlain predominantly by east-west trending volcano-sedimentary rocks intruded in the east by the syenitic Opawica Pluton which extends under the large lake of the same name. The principal objectives of the drilling program were to identify zones of bedrock deformation and alteration that could host epigenetic gold mineralization and to test the overburden for glacially dispersed gold indicative of subcropping mineralization within these structural zones. Most of the holes (Nos. PLS-88-01 to 136) were drilled at reconnaissance-scale to test geophysical (EM-VLF and magnetic) and geological targets (Plan 1). Four proposed holes were deleted due to access limitations. The last thirteen holes (Nos. PLS-88-137 to 149) were drilled at detailed-scale to pinpoint sources of gold dispersion identified at the outset of the program (in Holes PLS-88-01, 03 and 07).

Minnova contracted Overburden Drilling Management Limited ("ODM") of Nepean, Ontario, to manage the program and Heath & Sherwood Drilling (1986) Inc. of Kirkland Lake, Ontario, to provide drilling services. Geologist F. Speidel of Minnova prepared the hole layout and ODM made minor revisions to the layout based on outcrop distribution and access. Geologists T. Burns and P. Collins

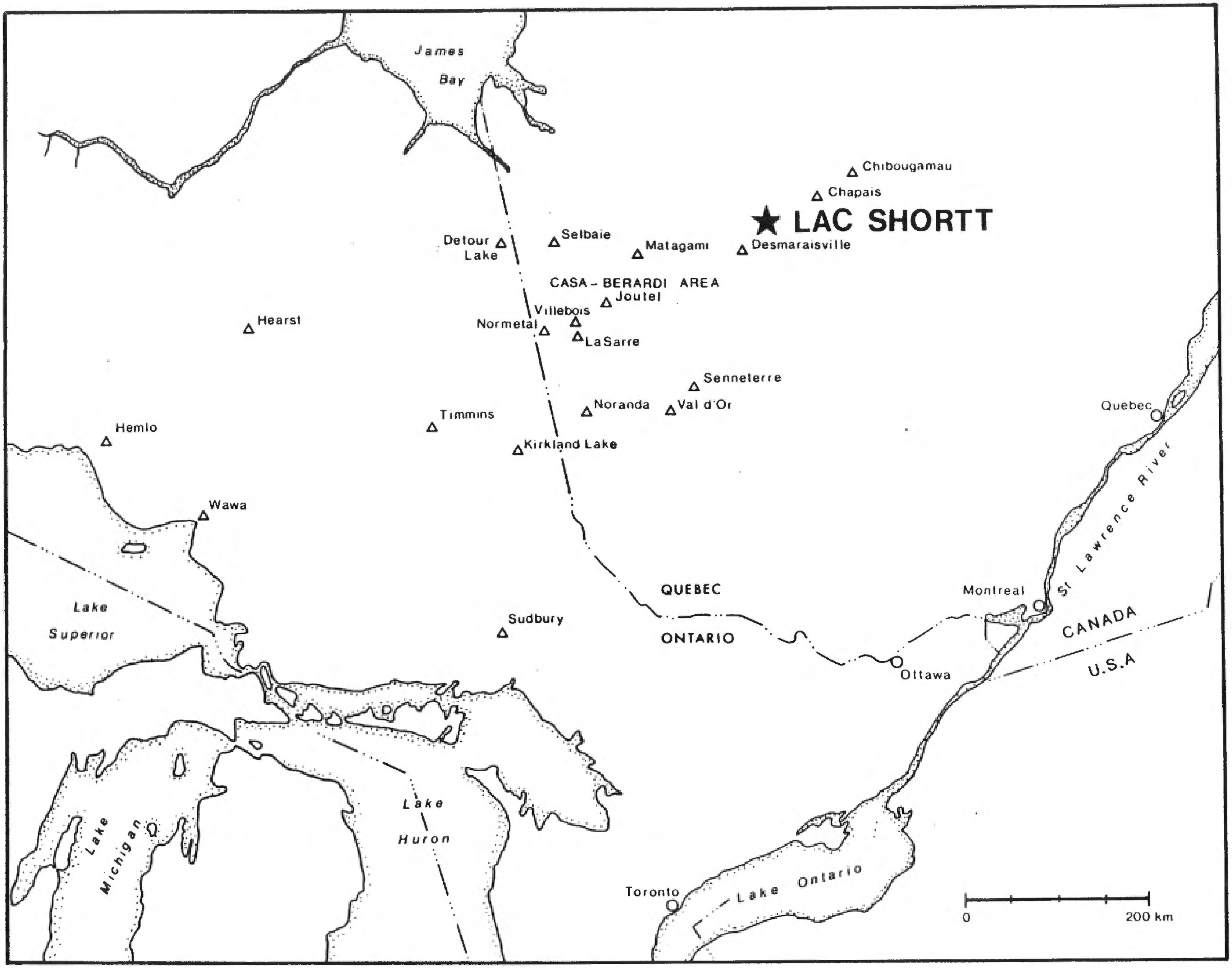

Figure 1 - Lac Shortt Project Location

Microfilm

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POSITIONNÉE À LA SUITE DES
PRÉSENTES PAGES STANDARDS

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together with geotechnicians B. Rudnicki and D. Presswell of ODM logged and sampled the drill holes (Appendix A) and supervised the drilling at various periods during the program.

All except two holes penetrated the entire overburden section and were extended approximately 1.5 m into bedrock. In total, 678 overburden and 148 bedrock samples were collected. Drilling and sampling statistics are presented in Table 1.

Heavy mineral concentrates (Appendix B) were prepared from the overburden samples at ODM's Nepean, Ontario laboratory. Gold particles sighted during processing were measured to determine their individual contributions to the overall gold content of the concentrates and were classified according to their distance of glacial transport (Appendix C). Three-quarter splits of the heavy mineral concentrates were analyzed for gold, arsenic, copper, zinc and silver (Appendix D) and absolute metal contents were calculated (Appendix E). Subsequently, 1/4 splits of selected heavy mineral concentrates were tested to investigate the causes of some of the heavy mineral anomalies (Appendix F). Subsamples of minus 250 mesh raw overburden were also analyzed for gold (Appendix G).

The bedrock chip samples were logged under a binocular microscope (Appendix H) and were analyzed for the major oxides (Appendix I); their lithologies and chemistry were then used to map the geology of the property (Plan 1) in relation to existing interpretations. Subsamples of the bedrock chips were analyzed for gold, arsenic, copper, zinc, silver and zirconium (Appendix I). All geochemical data were reformatted and merged into single computer files (Appendices E, G, I). The original data are ordered chronologically and reflect the processing sequence whereas the reformatted data are ordered numerically and are more accessible.

This report documents and describes the work performed and the results obtained. An analysis of local Archean stratigraphy, plutonism and structural geology and Quaternary stratigraphy is included and used in the interpretation of the bedrock and heavy mineral geochemistry.

Hole Number	Grid Coordinates		Metres Drilled		Hole Depth (metres)	Samples Processed	
			Overburden	Bedrock		Overburden	Bedrock
WETJACK							
PLS-88- 01	L32E;	13+00N	15.4	1.1	16.5	8	1
02	L31E;	14+40N	13.4	1.6	16.5	8	1
03	L34E;	13+90N	16.3	1.7	18.0	6	1
04	L36E;	14+25N	12.4	1.1	13.5	4	1
05	L38E;	15+00N	9.8	0.7	10.5	3	1
06	L40E;	15+25N	8.8	1.2	10.0	1	1
07	L31E;	5+50N	19.5	1.5	21.0	3	1
08	L33E;	6+00N	4.1	1.4	5.5	1	1
09	L35E;	6+00N	4.9	1.6	6.5	1	1
10	L37E;	6+25N	4.5	1.5	6.0	1	1
Subtotal			109.1	13.4	122.5	32	10
LESUEUR							
PLS-88- 11	L72W;	46+25S	16.0	1.5	17.5	8	1
12	L72W;	36+50S	11.6	1.9	13.5	2	1
13	L64W;	36+50S	10.9	1.6	12.5	2	1
14	L61W;	31+00S	15.4	1.1	16.5	2	1
15	L56W;	37+00S	12.1	1.4	13.5	2	1
16	L48W;	36+25S	11.4	1.6	13.0	2	1
17	L44W;	30+00S	11.9	1.6	13.5	2	1
18	L40W;	35+00S	11.1	1.4	12.5	2	1
19	L41W;	42+75S	10.6	1.4	12.0	3	1
20	L72W;	21+50S	30.2	1.3	31.5	15	1
21	L80W;	42+25S	11.4	1.6	13.0	2	1
22	L80W;	35+00S	24.4	1.1	25.5	11	1
23	L76W;	27+00S	32.5	1.5	34.0	14	1
24	L76W;	20+45S	33.5	0	33.5	13	0
25	L68W;	24+00S	40.2	1.8	42.0	6	1
26	L60W;	20+50S	23.0	2.0	25.0	2	1
27	L60W;	15+00S	40.0	2.0	42.0	6	1
28	L60W;	9+50S	42.2	1.3	43.5	7	1
29	L52W;	20+50S	27.2	1.3	28.5	4	1
30	L48W;	13+50S	31.4	1.6	33.0	6	1
31	L48W;	7+25S	41.4	1.6	43.0	10	1
32	L40W;	23+50S	12.9	1.8	14.7	2	1
33	L40W;	15+75S	18.9	2.1	21.0	3	1
34	L40W;	10+50S	36.3	2.7	39.0	8	1
35	L32W;	11+00S	26.0	1.5	27.5	7	1
36	L32W;	2+25S	26.0	1.5	27.5	7	1
37	L34W;	20+50S	10.1	1.9	12.0	2	1
38	L30W;	22+50S	12.6	1.9	14.5	2	1
39	L20W;	18+00S	37.0	2.0	39.0	6	1
40	L32W;	27+50S	10.2	1.3	11.5	2	1
41	L36W;	27+75S	10.2	1.8	12.0	2	1
42	L12W;	18+00S	20.2	1.3	21.5	2	1
43	L13W;	6+50S	10.2	1.3	11.5	2	1
44	L 4W;	11+00S	7.6	1.4	9.0	1	1
45	L16W;	29+00S	5.8	1.7	7.5	2	1
46	L 8W;	39+50S	14.8	1.7	16.5	6	1
47	L 4W;	35+00S	8.0	1.5	9.5	1	1
48	L 3W;	32+50S	6.8	1.4	8.2	1	1
49	L 2W;	42+50S	9.6	1.9	11.5	2	1
50	L12W;	96+50S	14.0	1.5	15.5	3	1
51	L20W;	45+50S	21.3	1.2	22.5	2	1
52	L32W;	42+00S	6.2	1.3	7.5	1	1
53	L32W;	47+00S	19.0	1.5	20.5	2	1
54	L40W;	49+25S	23.3	1.5	24.8	5	1
55	L48W;	51+00S	19.8	1.2	21.0	5	1
56	L52W;	47+00S	6.2	1.3	7.5	1	1
57	L56W;	53+00S	15.0	1.5	16.5	2	1
58	L64W;	53+00S	12.2	1.3	13.5	1	1
59	L74W;	53+00S	17.4	1.6	19.0	5	1
Subtotal			926.0	75.2	1,001.2	204	48
BOYVINET							
PLS-88- 60	L76W;	18+50N	12.6	1.4	14.0	5	1
61	L76W;	29+00N	6.0	1.0	7.0	2	1
62	L72W;	24+00N	4.0	1.5	5.5	1	1
63	L64W;	37+00N	8.0	2.0	10.0	3	1
64	L32W;	20+00N	29.0	1.3	30.3	5	1
65	L36W;	28+00N	26.3	2.2	28.5	4	1
66	L44W;	19+00N	39.5	0.7	40.2	11	1
67	L48W;	12+50N	24.7	2.0	26.7	9	1
68	L52W;	16+75N	16.2	2.5	18.7	3	1
69	L60W;	21+00N	10.5	1.5	12.0	3	1
70	L58W;	9+50N	16.6	1.4	18.0	4	1
71	L66W;	13+00N	4.8	1.2	6.0	1	1
72	L48W;	25+00N	11.9	1.1	13.0	1	1
73	L56W;	29+00N	16.6	1.4	18.0	4	1
PLS-88- 74	L0+00;	34+75N	25.8	1.7	27.5	5	1
75	L 4E;	40+75N	37.2	1.3	38.5	9	1
76	L0;	44+75N	22.0	1.5	23.5	2	1
77	L 4W;	46+00N	10.8	1.5	12.3	1	1
78	L 2W;	54+00N	22.0	1.5	23.5	8	1
79	L 8W;	48+25N	8.6	1.4	30.0	11	1
80	L12W;	45+50N	33.8	1.7	35.5	9	1
81	L 4W;	35+75N	13.0	1.7	14.7	1	1
82	L 9W;	38+25N	10.2	1.8	12.0	1	1
83	L16W;	36+00N	9.2	1.3	10.5	1	1
84	L24W;	32+50N	9.2	1.3	10.5	1	1
85	L30E;	44+50N	12.8	2.4	15.2	1	1
86	L34E;	44+50N	15.0	1.5	16.5	2	1
87	L12E;	38+75N	28.5	-	28.5	5	-
88	L16E;	37+00N	34.0	0.5	34.5	3	1
89	L20E;	33+50N	55.3	1.7	57.0	23	1
90	L24E;	37+00N	26.4	1.6	28.0	4	1
91	L16E;	21+00N	19.0	1.5	20.5	4	1
92	L16E;	21+00N	17.8	1.7	19.5	4	1
93	L20E;	18+20N	7.0	3.5	10.5	1	1
94	L24E;	15+50N	11.0	1.5	12.5	2	1
95	L27E;	16+75N	15.8	1.2	17.0	5	1
96	L 4E;	16+00N	47.0	1.0	48.0	17	1
97	L 4W;	14+00N	46.0	1.5	47.5	13	1
98	L12W;	20+00N	40.0	1.8	41.8	13	1
99	21+35W;	18+50N	5.7	1.5	7.2	2	1
100	L12W;	6+00N	17.8	1.7	19.5	1	1
101	L24W;	2+50N	22.8	1.2	24.2	3	1
102	L36W;	4+25N	21.5	1.5	23.0	5	1
103	L36W;	13+50N	27.0	1.5	28.5	4	1
104	L32W;	3+00S	28.0	1.5	29.5	4	1
105	L36W;	10+00S	30.5	1.5	31.5	7	1
106	L44W;	5+00S	27.2	1.3	28.5	7	1
107	L20W;	12+50S	22.0	1.8	23.8	1	1
108	L 8W;	5+00S	3.5	3.5	7.0	1	1
109	L0+00;	13+25S	0.4	1.6	2.0	0	1
110	L 4W;	17+50S	22.0	2.0	24.0	8	1
111	L20E;	24+75N	17.3	1.3	18.6	4	1
112	L28E;	18+75N	16.0	1.5	17.5	1	1
113	L28E;	7+25N	11.8	1.5	13.3	2	1
114	L20E;	5+25N	13.0	1.5	14.5	2	1
115	L12E;	8+50N	1.5	1.5	3.0	1	1
116	L 8E;	4+50N	16.0	1.3	17.3	4	1
117	L 4E;	9+00N	28.5	2.5	31.0	8	1
118	L 1W;	17+00N	12.4	1.6	14.0	4	1
119	L 4W;	14+75N	17.4	1.6	19.0	3	1
120	L 6W;	12+00N	25.0	1.2	26.2	7	1
121	L16W;	15+00N	36.2	1.2	37.4	10	1
122	L16W;	2+00N	34.8	1.2	36.0	13	1
123	L 8W;	4+00S	25.8	1.2	27.0	11	1
124	L 4W;	13+00S	19.8	1.5	21.3	3	1
125	L 4W;	23+00S	4.6	1.9	6.5	0	1
126	L16W;	26+00S	4.5	1.5	6.0	1	1
127	L20W;	22+50S	10.6	1.6	12.2	4	1
128	L 9W;	23+50S	4.0	2.0	6.0	0	1
129	L 4E;	22+00S	8.4	2.1	10.5	1	2
130	L14E;	21+50S	4.2	2.3	6.5	0	1
131	L22E;	19+25S	5.0	1.5	6.5	2	1
132	L22E;	24+50S	7.2	1.8	9.0	1	1
133	L28E;	19+00S	6.2	1.3	7.5	0	1
134	L26E;	10+75S	11.8	1.7	13.5	5	1
135	L16E;	4+25S	22.2	1.4	23.6	8	1
136	L 4E;	3+75S	5.0	1.7	6.7	1	1
Subtotal			1,421.7	121.0	1,542.7	341	77
WETJACK FOLLOW-UP							
PLS-88- 137	32+95E;	14+90N	20.6	1.4	22.0	9	1
138	33+95E;	14+90N	16.0	1.5	17.5	6	1
139	34+95E;	14+90N	15.6	1.9	17.5	5	1
140	36+00E;	16+00N	17.3	1.7	19.0	6	1
141	35+00E;	16+00N	23.0	2.0	25.0	10	1
142	34+00E;	15+95N	20.0	2.0	22.0	9	1
143	33+00E;	15+00N	21.5	2.5	24.0	9	1
144	32+80E;	13+25N	17.5	1.5	19.0	7	1
145	31+00E;	6+50N	8.5	1.7	10.2	2	1
146	31+00E;	7+50N	31.2	1.3	32.5	13	1
147	32+00E;	7+50N	32.8	1.7	34.5	15	1
148	33+00E;	7+50N	9.5	1.5	11.0	2	1
149	32+00E;	6+50N	19.8	1.2	21.0	5	1
Subtotal			253.3	21.9	275.2	98	13
GRAND TOTAL			2,710.1	231.5	2,941.6	673	148

Table 1 - Drilling and Sampling Statistics

2.2 Principles of Deep Overburden Geochemistry 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 dispersal mechanisms were systematic (Averill, 1978) and the resulting ore "trains" in the overburden are generally long, thin and narrow but most importantly are several hundred times larger than the subcrop of the parent ore bodies. These large trains can be used very effectively to locate the remaining roots of the ore bodies.

Because the dispersal 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 dispersal 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 dispersal 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, including most of the Abitibi Greenstone Belt in northwestern Quebec, 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.

Reverse circulation rotary rigs are much more widely used in the Abitibi than are rotasonic coring rigs. They employ dual-tube pipe and a tricone bit with the outer pipe 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 pipes to deliver a continuous sample of the entire overburden section through the small inner pipe (Fig. 3). 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 metres of the hole until a sediment seal is made around the outer pipe.

Reverse circulation holes are normally extended 1.5 metres into bedrock. Cuttings of maximum 1 cm size are obtained. These cuttings are used to determine the bedrock stratigraphy, structure and geochemistry and are also compared to the till clasts to help determine ice flow directions and glacial dispersal patterns.

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 precipitates. While ore mineral dispersal 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.

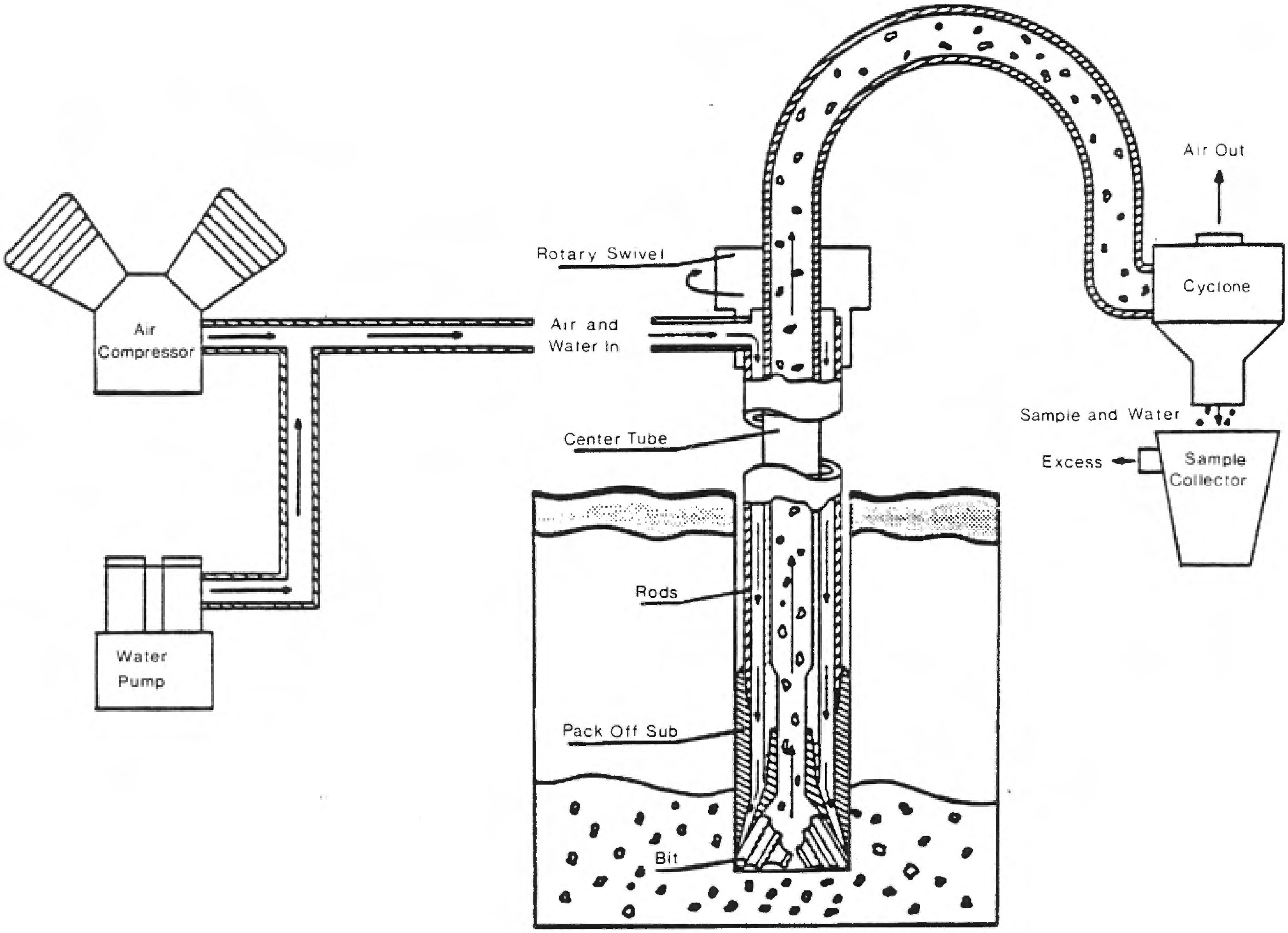


Figure 3 - Schematic Diagram of a Typical Reverse Circulation Rotary Drilling System

2.3 Property Descriptions and Access

The properties are situated in Lesueur, Boyvinet and Gand Townships (Table 2, Fig. 4). The Wetjack property comprises 106 claims in Ranges V to IX of Lesueur Township -- 89 lot or half-lot claims and 17 quarter-mile claims on Bachelor Lake. The Lesueur property comprises 10 claims in Lots 42 to 51, Range X of the township of the same name. The Boyvinet property comprises 73 claims --7 lot claims in northeast Lesueur Township, and 32 and 34 quater-mile claims in Boyvinet and Gand Townships, respectively.

The Wetjack (PN0 90) property is wholly owned by Minnova Inc., and was acquired in 1987 by Minnova's predecessor — Corporation Falconbridge Copper. The Boyvinet (PN 114) and Lesueur (PN 116) properties are held by Chamchib Mines Inc., a wholly-owned subsidiary of Campbell Resources Inc., and are under option to Minnova. Chamchib owns five mineral properties in the Opawica Lake area totalling 294 claims (termed the Opawica Project) and Minnova's option agreement gives Minnova the right to earn up to 60 percent of all five properties.

Reverse circulation drilling was conducted in the extreme north of the Wetjack property (north half of Range IX), on all of the Lesueur property, and on the west half of the Boyvinet property.

Highway 113 crosses the drill area on the Wetjack and Lesueur properties between 8 and 12 km north of the town of Desmaraisville, and continues across the west end of the Boyvinet property, where the all weather Kruger Road branches northeastward to traverse the north half of the Boyvinet drill area. Two km from Highway 113 a gravel road branches southward off the Kruger Road and traverses the south half of the Boyvinet drill area. Logging trails were used on all properties to access most of the drill hole sites (Fig. 5), but trails had to be cut by chainsaw in wooded areas in the north of the Lesueur property and the centre and northeast of the Boyvinet drill area.

WETJACK PROPERTY (PN 090)

PERMIT	CLAIM	TOWNSHIP	RANGE	LOT	HECTARES
398997	2	Lesueur	IX	38	40
398997	1	Lesueur	IX	39	40
398998	2	Lesueur	IX	40	40
398998	1	Lesueur	IX	41	40
398991	2	Lesueur	IX	42	20
398982	1	Lesueur	VIII	27	30
398982	2	Lesueur	VIII	28	40
398983	2	Lesueur	VIII	29	40
398983	1	Lesueur	VIII	30	40
398992	1	Lesueur	VIII	31	40
398999	2	Lesueur	VIII	32	40
398994	1	Lesueur	VIII	33	40
398994	2	Lesueur	VIII	34	40
398995	1	Lesueur	VIII	35	40
398995	2	Lesueur	VIII	36	40
398996	1	Lesueur	VIII	37	40
398996	2	Lesueur	VIII	38	40
398989	1	Lesueur	VIII	39	40
398989	2	Lesueur	VIII	40	40
398990	1	Lesueur	VIII	41	40
398990	2	Lesueur	VIII	42	40
398991	1	Lesueur	VIII	43	40
457618	2	Lesueur	VIII	44	40
457619	1	Lesueur	VIII	45	40
457619	2	Lesueur	VIII	46	40
457636	1	Lesueur	VIII	47	40
457637	1	Lesueur	VIII	48	20
457637	2	Lesueur	VIII	49	20
457637	3	Lesueur	VIII	50	20
457637	4	Lesueur	VIII	51	20
453407	1	Lesueur	VIII	52	40
453407	2	Lesueur	VIII	53	40
457602	1	Lesueur	VII		16
457603	2	Lesueur	VII		16
457603	3	Lesueur	VII		16
457603	4	Lesueur	VII		16
457602	2	Lesueur	VII		16
457602	3	Lesueur	VII		16
457603	5	Lesueur	VII		16
457604	1	Lesueur	VII		16
457604	2	Lesueur	VII		16
457602	4	Lesueur	VII		16
457604	3	Lesueur	VII		16
457604	4	Lesueur	VII		16
457604	5	Lesueur	VII		16
457602	5	Lesueur	VII		16
457605	1	Lesueur	VII		16
457605	2	Lesueur	VII		16
457605	3	Lesueur	VII		16
457608	1	Lesueur	VII	35	40
457608	2	Lesueur	VII	36	40
457609	1	Lesueur	VII	37	40
457609	2	Lesueur	VII	38	40
457610	1	Lesueur	VII	39	40
457610	2	Lesueur	VII	40	40
457620	1	Lesueur	VII	41	40
457620	2	Lesueur	VII	42	40
457621	1	Lesueur	VII	43	40
457621	2	Lesueur	VII	44	40
457622	1	Lesueur	VII	45	40
457622	2	Lesueur	VII	46	40
457623	1	Lesueur	VII	47	40
457623	2	Lesueur	VII	48	40
457624	1	Lesueur	VII	49	40
457624	2	Lesueur	VII	50	40

WETJACK PROPERTY (PN 090) Cont'd

PERMIT	CLAIM	TOWNSHIP	RANGE	LOT	HECTARES
457625	1	Lesueur	VII	51	40
457625	2	Lesueur	VII	52	40
457626	1	Lesueur	VII	53	40
457626	2	Lesueur	VII	58	40
457627	1	Lesueur	VII	59	40
457627	2	Lesueur	VII	60	40
457628	1	Lesueur	VII	61	40
457628	2	Lesueur	VII	62	40
457606	1	Lesueur	VI	28	35
457606	2	Lesueur	VI	29	40
457607	1	Lesueur	VI	30	40
457607	2	Lesueur	VI	31	40
457629	1	Lesueur	VI	45	40
457629	2	Lesueur	VI	46	40
457630	1	Lesueur	VI	47	40
457630	2	Lesueur	VI	48	40
457631	1	Lesueur	VI	49	40
457631	2	Lesueur	VI	50	40
457632	1	Lesueur	VI	51	40
457632	2	Lesueur	VI	52	40
457633	1	Lesueur	VI	53	40
457633	2	Lesueur	VI	54	40
457634	1	Lesueur	VI	55	40
457634	2	Lesueur	VI	56	40
457635	1	Lesueur	VI	57	40
457635	2	Lesueur	VI	58	40
457611	1	Lesueur	VI	59	40
457611	2	Lesueur	VI	60	40
457612	1	Lesueur	VI	61	40
457612	2	Lesueur	VI	62	40
457613	1	Lesueur	V	45	40
457613	2	Lesueur	V	46	40
457614	1	Lesueur	V	47	40
457614	2	Lesueur	V	48	40
457615	1	Lesueur	V	49	40
457615	2	Lesueur	V	50	40
457616	1	Lesueur	V	51	40
457616	2	Lesueur	V	52	40
457617	1	Lesueur	V	53	40
457617	2	Lesueur	V	54	40
457618	1	Lesueur	V	55	40

LESUEUR PROPERTY (PN 116)

PERMIT	CLAIM	TOWNSHIP	RANGE	LOT	HECTARES
412254	2	Lesueur	X	42	40
406339	1	Lesueur	X	43	40
406087	2	Lesueur	X	44	40
406087	1	Lesueur	X	45	40
429074	2	Lesueur	X	46	40
429074	1	Lesueur	X	47	40
429073	2	Lesueur	X	48	40
429073	1	Lesueur	X	49	40
429072	2	Lesueur	X	50	40
429072	1	Lesueur	X	51	40

BOYVINET PROPERTY (PN 114)

PERMIT	CLAIM	TOWNSHIP	RANGE	LOT	HECTARES
383910	1	Boyvinet			16
382744	4	Boyvinet			16
382744	5	Boyvinet			16
382745	5	Boyvinet			16
383712	1	Boyvinet			16
383712	2	Boyvinet			16
382712	3	Boyvinet			16
382710	2	Boyvinet			8
382710	5	Boyvinet			8
382710	3	Boyvinet			8
382710	4	Boyvinet			8
382743	5	Boyvinet			16
382744	3	Boyvinet			16
382745	3	Boyvinet			16
382745	4	Boyvinet			16
383712	4	Boyvinet			8
382712	5	Boyvinet			8
382743	4	Boyvinet			16
382744	2	Boyvinet			16
382745	2	Boyvinet			16
382749	1	Boyvinet			16
382749	2	Boyvinet			16
382749	3	Boyvinet			16
382749	4	Boyvinet			16
382749	5	Boyvinet			16
383711	1	Boyvinet			16
383711	2	Boyvinet			16
383711	3	Boyvinet			16
383711	4	Boyvinet			16
383711	5	Boyvinet			16
382743	1	Boyvinet			16
382743	2	Boyvinet			16
382743	3	Boyvinet			16
382744	1	Boyvinet			16
382745	1	Boyvinet			16
382746	1	Boyvinet			16
382746	2	Boyvinet			16
382746	3	Boyvinet			16
382746	4	Boyvinet			16
382746	5	Boyvinet			16
382748	1	Boyvinet			16
382748	2	Boyvinet			16
382748	3	Boyvinet			16
382748	4	Boyvinet			16
382748	5	Boyvinet			16
429071	1	Boyvinet			16
429070	4	Boyvinet			16
429070	1	Boyvinet			16
382741	1	Boyvinet			16
382741	2	Boyvinet			16
382742	1	Boyvinet			16
382742	2	Boyvinet			16
382742	3	Boyvinet			16
382742	4	Boyvinet			16
382747	1	Boyvinet			16
382747	2	Boyvinet			16
382747	3	Boyvinet			16
382747	4	Boyvinet			16
382747	5	Boyvinet			16
429070	5	Boyvinet			16
429070	3	Boyvinet			16
429070	2	Boyvinet			16
382741	3	Boyvinet			16
382741	4	Boyvinet			16
382741	5	Boyvinet			16
382742	5	Boyvinet			16
383713	1	Lesueur	X	57	40
383713	2	Lesueur	X	58	40
383714	1	Lesueur	X	59	40
383714	2	Lesueur	X	60	40
383715	1	Lesueur	X	61	40
383715	2	Lesueur	X	62	40
383716	1	Lesueur	X	63	40

Table 2 - List of Wetjack, Lesueur and Boyvinet Property Mining Claims

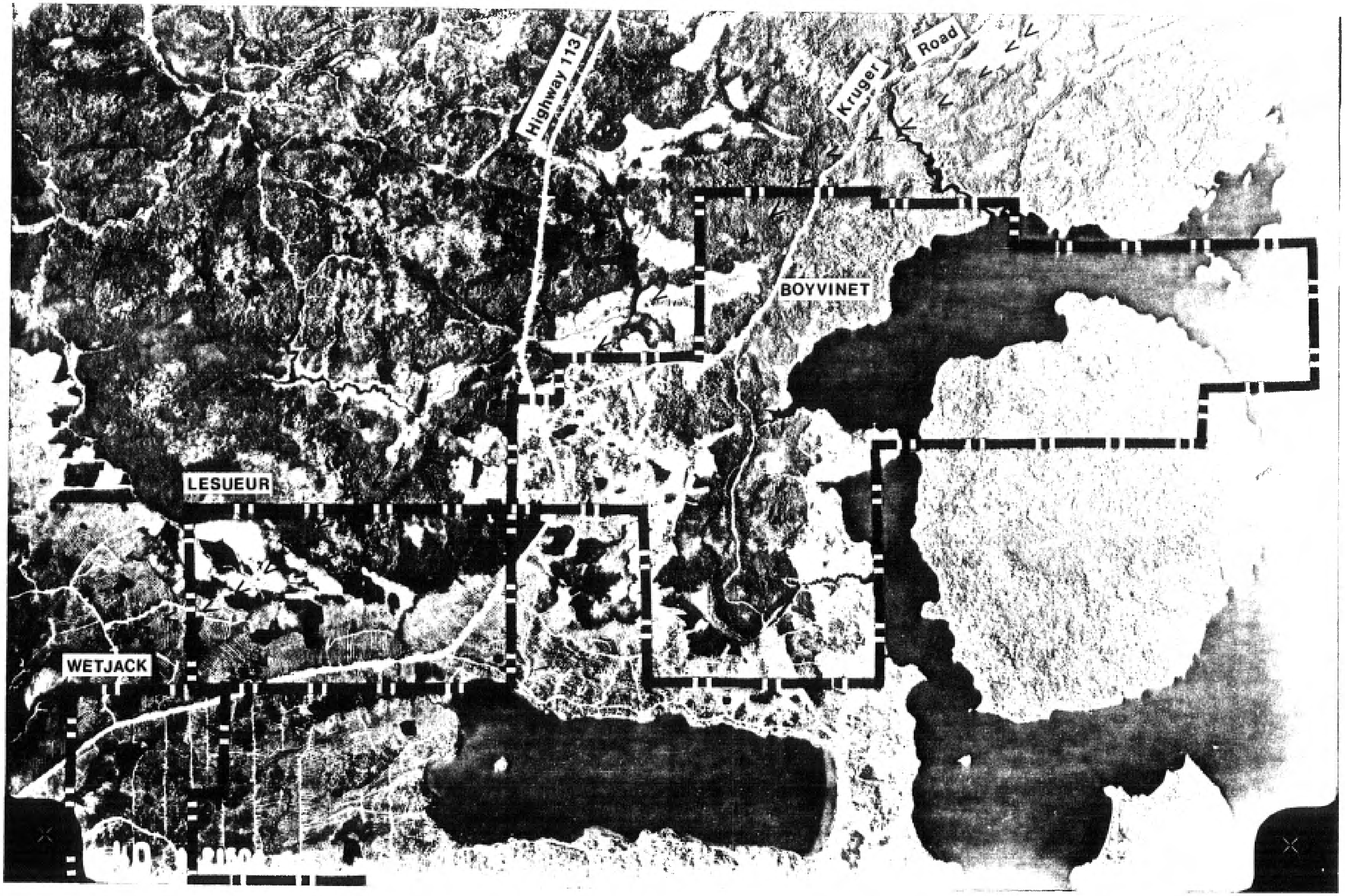


Figure 5 - Surficial Features of the Drill Areas
(NAPL 421504-40)

2.4 Physiography and Vegetation

The Lac Shortt Project lies in the east-central portion of the Abitibi Upland (Bostock, 1968), a north-sloping clay belt region that was covered by Lake Ojibway 10,000 years ago during Late Wisconsinan ice withdrawal. The southern boundary of the clay belt is the Hudson Bay - St. Lawrence River drainage divide, and also roughly coincides with the southern edge of the Abitibi Greenstone Belt. Average overburden thickness in the clay belt ranges from 10 metres in the south where Lake Ojibway was shallow to 30 metres in the north where the lake was deeper. Average overburden thickness in the 149 drill holes was 18.2 metres.

From east to west the three properties have progressively more subdued relief. In the Boyvinet drill area there are numerous hills ranging up to 60 m high along the west shore of Opawica Lake in the area underlain by the Opawica Pluton. These hills invariably have outcrops near their crests, but one in the centre of the Boyvinet drill area is composed largely of glaciofluvial sediments that are part of a southwest-trending esker. The esker (herein informally named the Kruger Road Esker) has a discontinuous surface expression, crosses the north parts of the Boyvinet and Lesueur drill areas and is followed northeastward by the Kruger Road (Fig. 5). Relief in the south of Lesueur and in the Wetjack drill area is more moderate, and poorly drained bogs occur. A low, east-west trending ridge crosses the south parts of the Lesueur and Boyvinet drill areas, forming the north shore of a small lake -- Billy Lake -- between the two drill areas. This ridge is a poorly defined DeGeer moraine and traces an annual line of ice stagnation during glacial recession.

The properties lie within the drainage basin of the north-flowing Nottaway River. Most of the Boyvinet drill area is drained by creeks flowing into the northwestern part of Opawica Lake. The main part of the lake is 5 km across and donut-shaped with 3 km wide Opawica Island occupying the centre. The lake discharges in the northeast via the Opawica River, which flows into the Waswanipi River, thence northwestward to the Nottaway. Northwestern Lesueur is drained by a north flowing creek that flows directly into the Waswanipi River. The remainder of the Lesueur and Boyvinet drill areas and all of the Wetjack drill area are drained via Lac Billy and an unnamed creek to Bachelor Lake. Bachelor Lake discharges southwestward via the Bachelor River to Waswanipi Lake, thence into the Waswanipi River.

Vegetation on the properties is largely immature coniferous regrowth that has developed since the area was logged in the 1960's. Most of the Kruger Road Esker, as well as some hills on Boyvinet, were not logged and support mature jack pine with some poplar and birch.

2.5 Previous Work

Published geological and geophysical work performed in the area of the reverse circulation drilling to January 10, 1983 as compiled by the Ministère de l'Énergie et des Ressources du Québec (MERQ, 1983a and b) is summarized on Plan 1 (MERQ, 1983c).

The Geological Survey of Canada (GSC) conducted regional mapping in the area in the thirties. Norman (1936a) and Shaw (1937) mapped the extreme east of the Boyvinet property drill area at a scale of 1 inch to 1 mile. Norman (1936b) and Sproule (1937) mapped the other parts of the drill areas at a scale of 1 inch to 4 miles.

The Quebec government also conducted early regional mapping but has since conducted more detailed mapping. Longley (1946) mapped all of the drill areas except the easternmost edge of Boyvinet at a scale of 1 inch to 1 mile. Dugas (1950, 1975) mapped the east half of Lesueur Township, encompassing the Wetjack and Lesueur drill areas and the south half of the Boyvinet drill area, at a scale of 1:12,000. Workers in the eighties remapped all of the drill areas at a scale of 1:20,000 but generally visited only a small percentage of the outcrops studied by their predecessors. Sharma and Lacoste (1981) covered the areas lying in NTS map sheet 32G/12 (Plan 1) and Giovanezzo (1983) and Sharma and Lauzière (1983) covered the areas lying in NTS map sheet 32 F/9 north and south of the Boyvinet/Lesueur township line, respectively.

These workers show the drill area to be underlain by steeply dipping, east-west trending, volcano-sedimentary rocks intruded in the east by the syenitic Opawica Pluton and in the north by numerous differentiated mafic to ultramafic sills of the Sturgeon Falls Complex. Outcrops are sparse in the volcano-sedimentary area. The only sedimentary horizon shown is a band of iron formation on the southern edge of the Lesueur property and in northwestern Wetjack; this unit does not outcrop but is known from magnetic data and diamond drilling. Most of the volcanic outcrops were mapped as andesite and dacites. An exceptionally porphyrytic rock of uncertain genesis that occurs in the south and underlies most of the Wetjack drill area was referred to simply as "quartz-feldspar porphyrytic rock" by Dugas (1975) and was mapped as intermediate to felsic tuff by Sharma and Lauzière (1983).

The first regional airborne geophysical survey covering the drill area was a magnetic survey flown by the Dominion Gulf Company in the period 1947-49 and published at a scale one inch to one mile (GSC, 1957a and b). The Quebec government subsequently flew an Input AEM/magnetic survey over the area that was published at 1:20,000 (MERQ, 1981). The only conductor recorded in the drill area is north of the iron formation on the Lesueur property (Plan 1). The magnetics identified the iron formation horizon on Wetjack and Lesueur and its extension through the southeast corner of Boyvinet, and also the mafic/ultramafic sills at the north end of Boyvinet (Fig. 6). The east-west regional magnetic trend is disrupted on the Boyvinet Property by an irregular pattern associated with the Opawica Pluton.

Recorded mineral exploration in the drill areas consists of various geological and geophysical surveys and a limited number of diamond drill holes.

In 1971 Yellowknife Bear Mines Ltd. conducted an AEM survey that covered northeast Lesperance and northwest Lesueur Townships, including the south part of the Boyvinet property, all of the Lesueur property and the east half of the Wetjack drill area (De Carle, 1971). This survey identified two magnetic highs on the Boyvinet property in addition to the one along the iron formation on the Lesueur property, but did not identify any conductors in the drill areas (Plan 1).

No early exploration work is filed for assessment in the Wetjack drill area, but a diamond drill hole by Chesbar Chibougamau Mines Ltd. to test the iron formation west of the property boundary is reported by Dugas (1975) to have cut a 216 foot section averaging 21.5 percent iron. After Corporation Falconbridge Copper acquired the Wetjack property, they conducted a mag-HEM survey (Lavoie, 1981), identifying magnetic highs along and immediately south of the iron formation, and numerous short conductors throughout the drill area (Plan 1). They mapped the single outcrop cluster in the Wetjack drill area as conglomerate, contradicting both Dugas (1975) and Sharma and Lauzière (1983).

Much of the mineral exploration on the Boyvinet and Lesueur properties prior to and after their acquisition by Camchib Mines Inc. is described in detail in a report of 1986 work by Camchib on their Opawica Project (Potapoff, 1987). Other work is described by Dugas (1975).

In the Boyvinet drill area, various early operators performed ground VEM, HEM and magnetic surveys over a small area in the extreme west, and a magnetic survey in the extreme northeast (Plan 1). A total of seven diamond drill holes were drilled (Plan 1). Uranium King Corp. drilled two in the south (Nos. B-4 and B-5; Dugas, 1975), Sullico drilled four on EM targets in the west (Nos. BS-1 to 4; Potapoff, 1987) and intersected graphitic horizons, and Consolidated Professor drilled one at a sheared syenite outcrop (No. FF-1), and Chamchib also drilled one hole in 1984 (FOR-84-1; Potapoff, 1987) at a pyritized, carbonatized (ankerite) syenite outcrop that possibly has a gold showing. Assays are reported only for Chamchib's hole, which intersected minor gold values.

On the Lesueur property, diamond drilling comprises four holes exclusively in the southwest qradrant (Plan 1). Falconbridge Copper drilled one hole (No. 79-2-1) on an HEM conductor and intersected a graphitic horizon (Potapoff, 1987). Chesbar Chibougamau Mines Ltd. drilled Holes L1 and L2 on the iron formation and in one hole they intersected 344 feet of chert-magnetite averaging 19.34 percent iron (Dugas, 1975). McWatters Gold Mines Ltd. drilled one hole (unnumbered on Plan 1) and intersected a "graphitic layer" (Dugas, 1975).

Since 1985, Chamchib has conducted VLF and magnetic surveys and geological mapping on 400 foot grids covering both the Lesueur and Boyvinet properties, including the Opawica Lake and Opawica Island portions of the Boyvinet property, has conducted a HEM (MaxMin II) survey on the north part of Boyvinet, and has performed basal till sampling along some VLF and HEM conductors using a hand-held percussion drill with a small flow-through sampler (Potapoff, 1987). VLF conductors and magnetic high axes from these surveys largely supercede those of all previous geophysical surveys and have been plotted on Plan 1. Potapoff does not specify the basal till sample treatment method, but the anomaly threshold used for gold is 20 ppb, suggesting that raw overburden fines were assayed.

On Boyvinet, Chamchib's magnetic and VLF surveys identified several magnetic axes and conductors. East-west trending magnetic highs in the extreme north and south of the drill area trace known mafic/ultramafic sills and iron formation, respectively. A third magnetic high axis roughly follows the southern edge of the syenite as mapped by Sharma and Lacoste (1981). Only a few strong VLF conductors were identified and these are all short and occur exclusively in the north. Several occur proximal to Sullico's drill holes and may trace the same graphitic zones (Potapoff, 1987) that were intersected by these drill holes. Scattered weak VLF conductors occur throughout the drill area; these trend mainly east-west suggesting a shear or bedding control but some wrap around the syenite hills in the east indicating a topographic control. The HEM results from the northern grid are similar to the VLF results. Basal till sampling performed over ten widely scattered VLF and HEM conductors produced gold anomalies at 22E/5N on the southern grid and at 15+30E/15N on the northern grid.

On Lesueur, Chamchib's magnetic survey produced a pattern similar to but more detailed than that obtained in the government airborne survey and shown in Figure 6. The VLF survey identified numerous conductors that are predominantly weak, short, and east-west trending. The basal till sampling tested two conductors but results were nonanomalous.

2.6 Project Costs

A formal budget proposal was not prepared by ODM for the reverse circulation drilling program. Total invoiced costs as well as a cost breakdown for the project are presented in Table 3.

Total invoiced costs were $228,970.77 or $77.83 per metre. This compares favourably with historical per metre costs of $100.00 incurred on other Abitibi programs.

3. DRILLING AND SAMPLING

3.1 Drill Hole Pattern

The regional directions of ice flow for the two major glaciations (Illinoian and Wisconsinan) that affected the Lac Shortt area were both southwesterly (Veillette, 1986; Averill, 1986), whereas regional bedding-controlled shear zones strike east-west. Thus dispersal trains from any shear-hosted gold deposits should trend at about 45 degrees to the strike of the deposits. Trains oriented at 45 to 90 degrees to known gold deposits have a down-ice length of 400 - 1000 m (Table 4) and a cross-ice width of 300 - 400 m (including low-grade fringes related to the anomalous alteration haloes that enclose most gold deposits). Thus holes drilled at 300 m stations on east-west or northwest-southeast traverses 400 m apart on the Lac Shortt properties would be expected to detect any significant gold deposits provided these deposits have a good subcrop and till is present down-ice from the deposits.

The drill holes were actually positioned at approximately 150 to 250 metre intervals along loosely defined east-west traverses usually spaced no more than 500 metres apart (except on Wetjack where the two traverses are separated by 750 m). Often the traverse separation was roughly equal to the east-west hole spacing, thus in addition to providing good overburden exploration coverage, the holes

Service	Company	Total	Metre	Foot
1. Pre-drilling	ODM	381.00	0.13	0.04
2. Drilling operations and road clearing	Heath and Sherwood, Various	126,735.35	43.08	13.13
3. Field supervision, logging, sampling	ODM	21,634.80	7.35	2.24
4. Sample shipping and processing	Various, DOM	35,923.99	12.21	3.72
5. Analytical	Bondar-Clegg	25,351.63	8.62	2.63
7. Report	ODM	18,944.00	6.44	1.96
TOTALS		228,970.77	77.83	23.72

Table 3 - Invoiced Costs of the Lac Shortt Reverse Circulation Drilling Program

provide very good reconnaissance coverage of the bedrock geology of the drill areas. Emphasis was placed on positioning holes directly over or immediately down-ice from geophysical targets to identify the bedrock structural/stratigraphic settings of these zones as well as their geochemical signatures in the overburden.

3.2 Drilling Equipment

Heath and Sherwood's drill rig employed an Acker MP drill head with a 3 metre feed cylinder. The drill, together with all its ancillary equipment including air compressor, water pump and logging and sampling facilities, was unitized and enclosed on the bed of a Nodwell Model 160 tracked carrier for all-terrain mobility and all-weather operation.

The rig employed an air compressor with a rated capacity of 300 cfm at 160 psi and a water pump having a capacity of 20 gpm at 600 psi. Water flow was normally restricted to 4-5 gpm to improve recovery of fines. The rig was equipped with a 12 volt DC Cool White fluorescent fixture that simulates natural sunlight for accurate sample logging. All equipment except the air compressor and Nodwell carrier was operated hydrostatically from a central diesel engine.

The rig carried twenty 10-foot drill rods. 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.

Heath and Sherwood supported the drill rig with a Nodwell GT-1000 muskeg tractor equipped with a 400-gallon, exhaust-heated water tank.

PROVINCE	GOLD DEPOSIT	TRAIN LENGTH[1](m)	
		TRACED	EST. TOTAL
Saskatchewan	Star Lake	300	800
Saskatchewan	Tower Lake	500	700
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	800	1000[4]
Quebec	Orenada	100	200
Quebec	Kiena	100	300
Quebec	Chimo	600	1000
Newfoundland	Devil's Cove	2000	2000

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 - Occluded gold deposit

4 - Train foreshortened and/or gapped by erosion in last ice advance

Table 4 - Heavy Mineral Gold Dispersal Trains Identified by Overburden Drilling Management Limited Laboratory

3.3 Logging and Sampling

The Lac Shortt 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 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 minerals of low specific gravity such as quartz and feldspar because the flake shape rather than high density of fine gold is the primary factor controlling the rate of settling. Further research conducted by ODM (Kurina, 1986) on various inlet/outlet attachments on the second bucket showed an additional 33 percent of the fine material in the overflow could be retained by utilizing a horizontally curved inlet tube, which induces spiral flow, and a vertical stack skimmer on the outlet. The two-bucket system with the modified flow configuration was employed on the Lac Shortt program.

A 10-mesh (1700 micron) screen was employed over the first bucket to separate and discard the majority of rock cuttings and thereby increase the proportion of matrix material which is used to identify and trace dispersal trains. The +10 mesh rock cuttings were constantly monitored for 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 minus 10 mesh matrix was monitored to differentiate till from sand and gravel.

Till units were sampled continuously using an average sample interval of 1.5 metres. Glaciofluvial and interglacial sand and gravel were sampled over longer, 3 to 6 metre intervals because they are far-travelled and thus generally ineffective for mineral tracing. Glaciolacustrine clay and silt were not sampled because they are of no exploration value.

In the field, both the overburden and bedrock samples were assigned an alphanumeric designation indicating the drilling project, the year the hole was drilled, the position of the hole in the drilling sequence, and the position of the sample in the drill hole. Thus a designation such as PLS-88-25-03 indicates the third sample collected from the twenty-fifth hole, which was drilled in 1988 on Project Lac Shortt.

Following collection, the overburden 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, Ontario.

3.4 Sample Processing

ODM's processing procedures for overburden samples are illustrated in the flow sheet of Figure 7 and may be summarized as follows:

First, two 250 gram character samples are extracted from the bulk sample using a tube-type sampler. Both character samples are dried; one is stored for future reference, the other one is sieved for 5 minutes on a mechanical shaker to obtain a minus 250 mesh fraction that is analyzed for gold. In addition to complementing the heavy mineral data, the minus 250 mesh gold assays serve as a check for gold occluded in minerals of low specific gravity that are not recovered in the heavy mineral concentrates.

The remainder of the bulk sample is weighed wet and is sieved at 1700 microns (10 mesh) to separate the clasts from the matrix. 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 sample weights are listed in Appendix B.

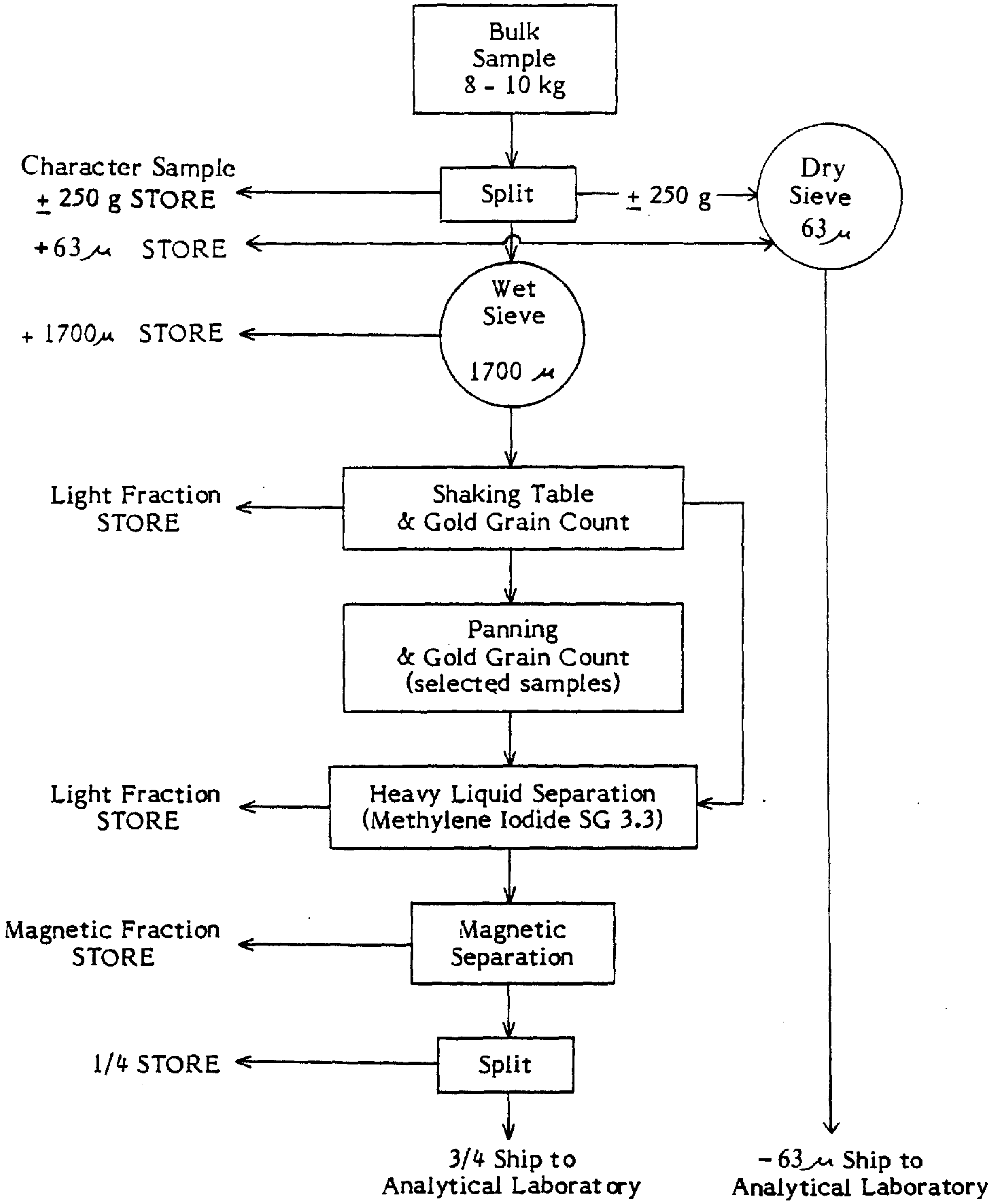


Figure 7 - Sample Processing Flow Sheet

While the samples are being tabled, special procedures developed by ODM are used to effect the separation of gold grains from the other heavy minerals. 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 (Table 5), 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 are readily sighted on the table. Gold particles can also be obscured by pyrite which, if it is abundant, tends to cross the table in the gold path. However, ODM has developed a special panning technique to recover the hidden particles together with some copper, lead and arsenic pathfinder minerals. Samples are normally panned if two or more gold particles are sighted on the table or if any delicate gold is seen or if the table concentrate contains more than 10 percent pyrite. The table and pan gold counts are listed in Appendix C.

After the gold grains have been examined, they are recombined with the table concentrate. This concentrate is dried and a heavy liquid separation in methylene iodide (specific gravity 3.3) is 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 magnetic separates are checked to ensure that they contain not more than five percent pyrrhotite. The non-magnetic heavy minerals are separated into a 3/4 analytical subsample and a 1/4 library subsample using a riffled microsplitter.

Size Classification	Flake Diameter (microns)	ppb Au
Very Fine	50	19
"	63 (250 mesh)	38
"	100	150
Fine	150	494
"	177 (80 mesh)	800
"	200	1,140
Medium	300	3,645
"	400	8,160
"	500	15,000
Coarse	600	24,300
"	700	36,015
"	800	49,920
"	900	65,610
"	1,000	82,500
Very Coarse	1,000+	82,500+

Table 5 - Geochemical Contribution of One Gold Grain to a Ten Gram Sample

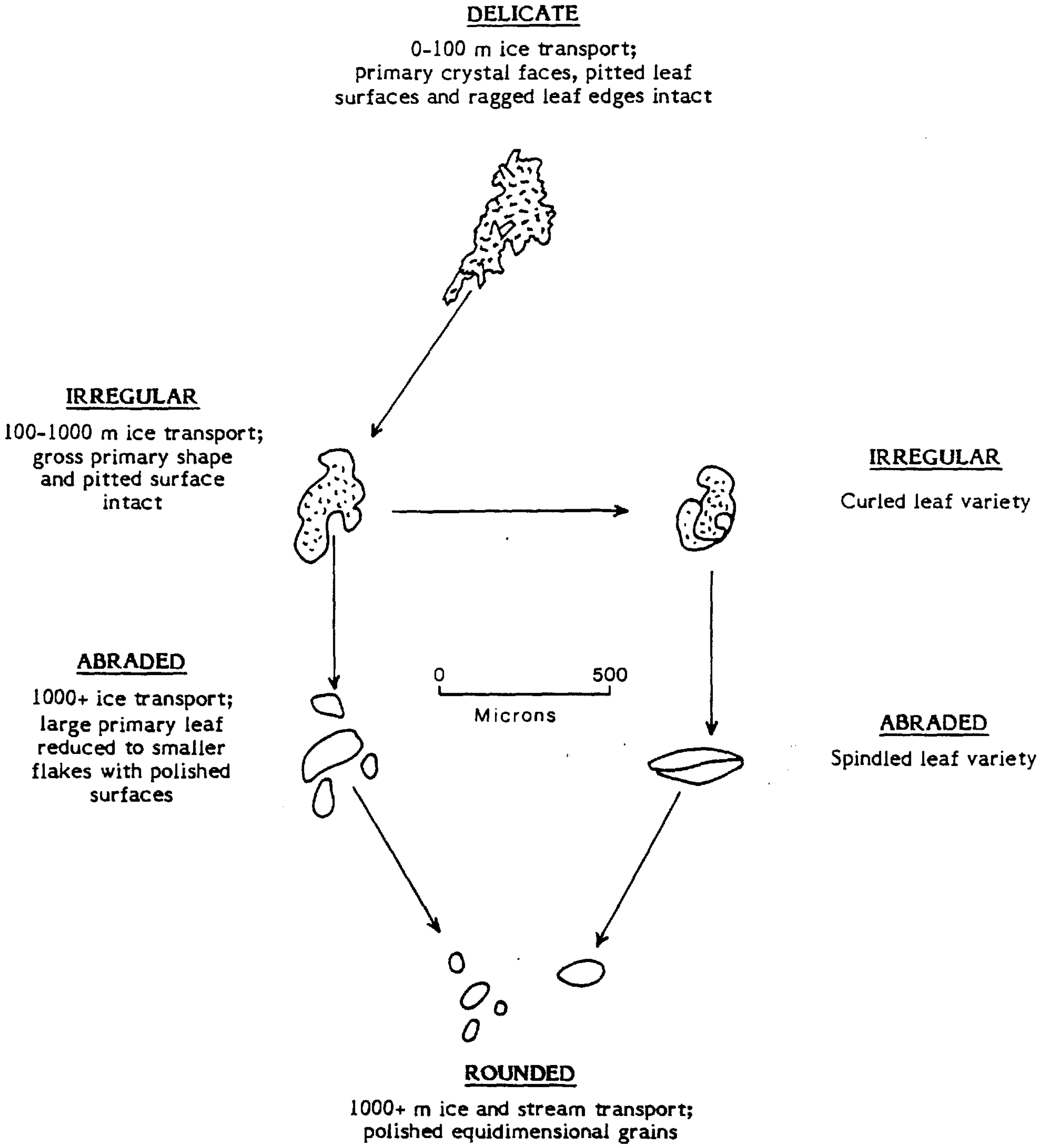


Figure 8 - Effects of Glacial Transport on Gold Particle Size and Shape
(Developed by Overburden Drilling Management Ltd.)

3.5 Sample Analysis

Three-quarter splits of the heavy mineral concentrates (Appendix E) and subsamples of the bedrock chips (Appendix F) were pulped in a shatter box and were analyzed for gold by fire assay with atomic absorption finish (FA/AA), for copper, zinc and silver by AA, and for arsenic by colourimetry. When arsenic values exceeded the 2000 ppm colourimetric detection limit, an assay was done using sodium peroxide fusion and distillation to isolate arsenic followed by measurement of the arsenic content of the distillate with a specific ion meter. Minus 250 mesh subsamples of the overburden samples (Appendix G) were analyzed for gold by FA/AA, and assays over 100 ppb were checked by FA/AA using the remaining material. Whole rock compositions for the bedrock samples (Appendix I) were determined by DC-plasma and gravimetric (LOI) methods, for carbon dioxide by colourimetry and for zirconium by x-ray florescence (XRF).

Gold grains are malleable and thus are difficult to homogenize with the rest of the sample, often forming flattened "metallics" in the pulp. To alleviate this problem and improve assay representativity, concentrates that were known to contain one or more coarse gold grains (generally over 200 microns) capable of producing an anomalous assay (over 1000 ppb) were pulped for shorter periods and screened at 150 mesh after pulping. Separate gold determinations were than made on the -150 mesh pulp and the +150 mesh metallics, and a weighted average assay was calculated.

The 3/4 concentrate analyses contained a number of unexpected and higher than expected gold anomalies. To check the reproducability and significance of these anomalies, the corresponding 1/4 library concentrates were examined for visible gold by panning and submitted for non-destructive INA gold analysis (Appendix F).

All analytical work was done by Bondar-Clegg & Company Ltd. at their Ottawa laboratory and their INA facility in Buffalo, New York. Analytical specifications are given in Table 6.

Sample Type	Sample Preparation	Element		Lower Detection Limit		Extraction	Method
Heavy Mineral Concentrates							
Standard 3/4 splits	Pulverize to -200 mesh	Cu	Copper	1	ppm	$HCl-HNO_3$, (1:3)	Atomic Absorption
		Zn	Zinc	1	ppm	$HCl-HNO_3$, (1:3)	Atomic Absorption
		Ag	Silver	0.1	ppm	$HCl-HNO_3$, (1:3)	Atomic Absorption
		As	Arsenic	2	ppm	HNO_3-HClO_4	Colourimetric
		Au	Gold	5	ppb	Aqua Regia	Fire Assay AA
Pulp and metallics 3/4 splits	Pulverize to -200 mesh; screen 150 mesh, weigh +150 and -150	Au	-150	0.01	ppm	Aqua Regia	Fire Assay AA
		Au	+150	0.01	ppm	Aqua Regia	Fire Assay AA
		Au	Average				Calculated
Selected 1/4 splits	None	Au	Gold	5	ppb	None	Neutron Activation
Minus 250 Mesh Overburden	None	Au	Gold	5	ppb	Aqua Regia	Fire Assay AA
Bedrock Chips	Pulverize to -200 mesh	SiO_2	Silica (SiO_2)	0.01	pct	Borate Fusion	DC Plasma
		TiO_2	Titanium (TiO_2)	0.01	pct	Borate Fusion	DC Plasma
		Al_2O_3	Alumina (Al_2O_3)	0.01	pct	Borate Fusion	DC Plasma
		Fe_2O_3*	Total Iron (Fe_2O_3*)	0.01	pct	Borate Fusion	DC Plasma
		MnO	Manganese (MnO)	0.01	pct	Borate Fusion	DC Plasma
		MgO	Magnesium (MgO)	0.01	pct	Borate Fusion	DC Plasma
		CaO	Calcium (CaO)	0.01	pct	Borate Fusion	DC Plasma
		Na_2O	Sodium (Na_2O)	0.01	pct	Borate Fusion	DC Plasma
		K_2O	Potassium (K_2O)	0.01	pct	Borate Fusion	DC Plasma
		P_2O_5	Phosphorous (P_2O_5)	0.01	pct	Borate Fusion	DC Plasma
		LOI	Loss on Ignition	0.01	gram		Gravimetric
		Total	Whole Rock Total	0.01	pct		Calculated
		CO_2	Carbon Dioxide	0.01	pct	HNO_3-HClO_4	Colourimetric
		Zr	Zirconium	1	ppm	None	X-ray Fluorescence
		Cu	Copper	1	ppm	$HCl-HNO_3$, (1:3)	Atomic Absorption
		Zn	Zinc	1	ppm	$HCl-HNO_3$,(1:3)	Atomic Absorption
		Ag	Silver	0.1	ppm	$HCl-HNO_3$, (1:3)	Atomic Absorption
		Au	Gold	5	ppb	Aqua Regia	FA-AA @ 10 gm weight
High arsenic pulp rejects (Bedrock or H.M.C.s)	None	As	Arsenic	0.01	pct	Sodium Peroxide	Specific Ion

Table 6 - Bondar Clegg Analytical Specifications

4. BEDROCK GEOLOGY

4.1 Regional Geology

The Opawica Lake region is in the northeastern part of the Archean-age Abitibi Greenstone Belt which comprises repeated komatiitic through tholeiitic to calc-alkalic cycles of lavas and volcaniclastics with coeval clastic and exhalative sedimentary rocks, porphyries, layered mafic-ultramafic sills, and plutons of potassium poor dioritic to tonalitic composition. These rocks have been complexly deformed, metamorphosed to the subgreenschist to greenschist facies, and intruded by late kinematic granodiorite and monzonite plutons (Gariepy et al., 1984).

Stratigraphically the Wetjack and Lesueur properties are in the Caopatina - Quevillon Domain while the Boyvinet property straddles the boundary between this domain and the more northerly Chibougamau - Matagami Domain (Giovanezzo, 1983). The two domains contain a similar range of volcano-sedimentary rocks; the main difference between them is that differentiated mafic/ultramafic sills are common in the Chibougamau - Matagami Domain and are rare in the Caopatina - Quevillon Domain.

Formal stratigraphic group names have not yet been developed for the volcano-sedimentary strata of the Opawica Lake area as they have for the Chibougamau area (MERQ-OGS, 1983). However, on examining the collage of maps and reports covering the Opawica Lake area, it is apparent that two main groups are present within the Caopatina - Quevillon Domain: (1) a group that is dominated by tholeiitic basalt and underlies the area south of the Opawica Lake Fault; and (2) a group that is dominated by calc-alkalic andesite, dacite and tuff and underlies the area north of the fault including the Wetjack and Lesueur drill areas and the south part of the Boyvinet drill area. The strata of both groups are steeply dipping, strike east-west and generally face north but the intervening fault obscures the precise age relationship between the two groups. Further to the north in the Chibougamau - Matagami Domain, differentiated mafic/ultramafic sills of the Sturgeon Falls Complex are more abundant than their volcano-sedimentary hosts, precluding subdivision of the volcano-sedimentary strata into groups.

The main structural zone in the area is the Opawica Lake Fault which extends east-northeastward through Lac Billy and the southern part of Opawica Lake (i.e. south of Opawica Island) to the L'Apparent Pluton (Fig. 2). On the opposite side of the pluton, the same structural trend can be traced further east-northeastward through the Opemiska (Chapais) mining district and the western part of the Chibougamau mining district where it is known as the Gwillim Lake Fault (Allard and Gobeil, 1984). Related faults in the Opawica Lake region include a southern splay fault near the Bachelor Lake Mine and a northern splay or parallel fault passing through the Lac Shortt Mine and extending westward through the northern part of Opawica Lake (i.e. north of Opawica Island). Giovanezzo (1983) indicates that the Lac Shortt Fault continues westward from Lac Opawica where it marks the boundary between the northern Chibougamau - Matagami and southern Caopatina - Quevillon Domains.

Cross faults in the Opawica Lake region generally strike north-northeast (MERQ, 1983; Plan 1). The peculiar donut shape of Opawica Lake probably results from the presence of two of these cross-faults between the east-west trending Opawica Lake and Lac Shortt Faults.

The principal mineral deposits in the region are (Fig. 2):

1. The Bachelor Lake gold mine 15 km southwest of Opawica Lake which started production in July, 1982 with preproduction reserves of approximately 900,000 tonnes of ore grading 6.22 g/t including 10 percent dilution. It is an epigenetic, hydrothermal, shear-controlled deposit occurring in a cross-fault between the two branches of the Opawica Lake Fault. The mineralization is characterized by silicification and hematization and is hosted by assorted volcanic and volcaniclastic rocks and comagmatic gabbro sills (Buro, 1984) in the contact zone of the syenitic O'Brien Stock. Fluorite, amethyst and pyrite accompany the gold and also occur throughout the O'Brien Stock. The gold has a grain size of 10 to 50 microns and is closely associated with the pyrite.

2. The small Coniagas Zn-Ag-Pb massive sulphide deposit which is located 1.5 km west of the Bachelor Lake Mine and was mined from 1961 to 1967.

3. Minnova's Lac Shortt gold mine 10 km east of Opawica Lake which started production in September, 1984 with preproduction reserves of approximately 2 million tonnes of 6.0 g/t gold (cut) at a cut-off grade of 3.0 g/t (Morasse, 1986). It is a shear-controlled deposit hosted by silicified, hematized and K-metasomatized rocks of uncertain lithology along the Lac Shortt Fault at the contact zone of a syenite stock. The gold is very fine (average 6 microns) and occurs as disseminated free grains in the gangue and as micro-inclusions in pyrite (Cormier et al., 1984).

4. Minnova's Opemiska gold-copper deposits at Chapais, which occur in sheared mafic/ultramafic sills near the Opawica Lake - Gwillim Lake Fault (Watkins and Riverin, 1982).

5. The Chibougamau gold-copper deposits which occur along the Opawica Lake - Gwillim Lake Fault and in a variety of other structural settings.

Considering the strong association of many of the above gold deposits with the Opawica Lake Fault, and the locations of the Wetjack, Lesueur and Boyvinet properties on or proximal to this fault and the related Lac Shortt Fault, all three properties should have a high gold potential.

4.2 Bedrock Geology of the Reverse Circulation Drill Holes

4.2.1. Bedrock Stratigraphy, Structure, Alteration and Topography

The bedrock geological information obtained from the reverse circulation drilling (Plan 1; Table 7) is similar to that shown on earlier outcrop maps of the area but is more detailed and precise because the drill holes are more closely and uniformly spaced than the outcrops. The main geologic trends confirmed or identified by the drilling are:

1. The Wetjack and Lesueur drill areas and the south part of the Boyvinet drill area are, as previously indicated, located north of the Opawica Lake Fault and are underlain by the dominantly calc-alkalic volcano-sedimentary group that constitutes the northern part of the Caopatina - Quevillon Domain. Here the group comprises two east-west trending, andesite-dominated belts that are separated by a sedimentary belt. The andesites of the southern belt include the strongly porphyrytic outcrops that were mapped as "quartz-feldspar porphyrytic rock" by Dugas (1975), as tuff by Sharma and Lauziére (1983) and as conglomerate by Falconbridge Copper. Also present are dacite, rhyolite, intermediate tuff and one thin siltstone horizon intersected in Hole 149 which was drilled on a HEM conductor. The northern andesites are less porphyrytic and more continuous although two basalt horizons and one intermediate tuff horizon do appear in the east. The central sedimentary belt contains the known iron formation horizon but is actually dominated by previously undocumented turbidites. The iron formation occurs stratigraphically above and proximal to the rhyolites of the southern belt, which may define felsic domes. Also present is a cherty horizon along the north side of the turbidites and coincident with the conductive graphitic zones that were drill-tested by Falconbridge Copper and McWatters.

8	Opawica Pluton 8a - gabbro 8b - diorite 8c - quartz diorite 8d - syenite
7	Gabbro
6	Chemical sediments 6a - iron formation 6b - chert
5	Clastic sediments 5a - greywacke 5b - siltstone
4	Felsic volcanics
3	Intermediate tuffs
2	Intermediate volcanics 2a - andesite 2b - dacite
1	Mafic volcanics

Table 7 - Bedrock Lithologies Intersected in the Reverse Circulation Drill Holes

2. The central part of the Boyvinet drill area is underlain by the Opawica Pluton. Rather than consisting entirely of syenite as indicated by previous mapping, the pluton is a differentiated one having a syenitic core, a gabbroic to dioritic border phase in the southwest and a quartz dioritic border phase in the northwest. Two small satellite plugs or dikes of quartz diorite were also intersected north and south of the pluton in Holes 88 and 133, respectively. The border phases of the pluton are often strongly chilled, and the andesite and basalt along the southwest side of the pluton are contact metamorphosed and variably possess a recrystallized sugary texture or contain aphanitic, feldspar-porphyrytic glass patches or coarser grained "gabbroic" hornblende hornfels spots. This merging of intrusive and volcanic textures, together with the very similar compositions of the intrusive (quartz diorite/diorite/gabbro) and volcanic (andesite/basalt) phases, impairs identification of the actual contact. For instance, most of the area underlain by quartz diorite is shown as andesite on the MERQ compilation map (Plan 1).

3. The Opawica Pluton is truncated in the north by a major fault. This fault occurs along strike from and is assumed to be the Lac Shortt Fault. It is marked by a 20 m deep buried valley. Contact metamorphic effects are not evident north of the fault but one of the satellite quartz diorite bodies does occur there.

4. The area north of the Lac Shortt Fault is dominated by two mafic sills, indicating that the fault forms the southern boundary of the Chibougamau - Matagami Domain as well as the north contact of the Opawica Pluton. The area between the sills is occupied by andesite and basalt. A carbonate-sulphide facies iron formation horizon was intersected adjacent to the fault in Hole 80 and probably has considerable strike extent as HEM conductors are present both to the east and west.

5. Metamorphic grade in all lithologies is greenschist facies. Secondary calcite is ubiquitous and all volcanic pyroxene in the andesite and basalt has been converted to chlorite whereas hornblende in the Opawica Pluton and in the hornfels spots in the adjacent volcanic rocks is often only partly chloritized. Thus emplacement of the pluton probably commenced before and ended during the main period of regional folding and metamorphism.

6. Post-metamorphic shearing and associated hydrothermal alteration are very widespread. Deformational effects observed at chip sample scale range from pervasive microlaminations in the volcano-sedimentary rocks to more confined microfractures and mylonite seams in the syenite. The most common alteration effects are bleaching of chlorite (especially in the volcano-sedimentary rocks; sometimes accompanied by sericitization), Lac Shortt/Bachelor Lake-style pyritization (pyrrhotite is not present in any sample) and hematitization of magnetite (especially in the pluton), and Fe/Mg carbonatization. On the basis of Fe/Mg carbonate contours and subjective estimates of the combined intensity of shear deformation and hydrothermal alteration (Plan 1), three east-west trending shear axes are recognized. One shear axis coincides with the Lac Shortt Fault in northern Boyvinet, one follows the centre of the sedimentary belt on Lesueur and the third roughly follows the southern contact of the sediments. East-west shearing is particularly widespread but only of weak to moderate intensity in the northern andesitic belt on Lesueur. No specific shear axis could be resolved here but several closely spaced VLF conductors are present. Two reentrants suggestive of east-west shear zones are present in the southwest contact of the Opawica Pluton on Boyvinet but the distribution of deformational/alteration effects within the pluton itself is more compatible with a north-northeast trending cross fault than with east-west shearing. The apparent cross fault coincides with a broad, 20 m deep buried valley. Two similar cross faults without associated bedrock valleys are interpreted on the Lesueur property from small offsets in the iron formation horizon.

4.2.2 Lithologic Descriptions

Brief binocular lithologic descriptions of the bedrock samples were prepared (Appendix D) to confirm and amplify field descriptions with the objective of producing an accurate stratigraphic and structural map. Particular attention was paid to primary features, and the rocks were assigned genetic names such as mafic volcanics rather than metamorphic names such as chlorite 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 pale gray-brown and gray-green pyroxene where the grain size is less than 0.1 mm as in many volcanic rocks. This often impedes differentiation of intermediate volcanics from mafic volcanics in greenstone belts as many of these belts have undergone only subgreenschist facies metamorphism such that primary pyroxene is preserved. In greenschist and amphibolite facies belts where primary pyroxene has been largely converted to green chlorite and black amphibole, respectively, intermediate and mafic units can be reliably differentiated but primary textures are often obliterated.
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 and shears.
5. Necessity of inferring gross mineralogy of aphanitic samples from rock colour and hardness.

A summary description of each lithologic unit is presented in the following sections.

4.2.2.1 Mafic Volcanics (Map Unit 1)

Rocks classified as mafic volcanics (i.e. basalt flows) on the basis of their mineralogy and texture were intersected in eleven drill holes. Five of the intersections are proximal to the shear axis that follows the southern edge of the sedimentary belt. These five samples are highly deformed and altered. Three other samples from Holes 49, 50 and 54 in the same area have similar textures but are so bleached and sericitized that they cannot be distinguished from andesite. Elsewhere on the property, basalt was intersected in five holes scattered along the southwest margin of the Opawica Pluton and in Hole 85 between the gabbro sills north of the Lac Shortt Fault.

Where the basalt is least altered, two phases having different colours and textures are recognized: 1) a medium green, strongly chilled phase that has a grain size of less than 0.1 mm, locally contains amygdules and probably represents pillowed flows; and 2) a dark green, "unchilled" phase that has a grain size of 0.1 to 0.2 mm (locally with small, lath-shaped plagioclase phenocrysts to 1 mm) and an equigranular interlocking to sub-diabasic texture and probably represents thick, massive flows. Where the grain size is sufficient to allow observation of the mineralogy, this unaltered basalt consists of 30 to 40 percent chlorite, 50 to 60 percent plagioclase, up to 2 percent quartz and 5 percent metamorphic calcite, trace to 2 percent leucoxene, and trace to 0.5 percent pyrite. The relatively low chlorite content, presence of plagioclase phenocrysts and absence of magnetite suggest alc-alkalic chemistry, and most of the samples plot in or near the calc-alkalic basalt field on the Jensen diagram (Fig. 9). However the sample from Hole 85 between the gabbro sills north of the Lac Shortt Fault is a high-iron tholeiitic basalt. This sample also contains 0.2 percent chalcopyrite occurring in streaks adjacent to brecciated Fe/Mg carbonate veins that comprise 20 percent of the sample.

Sheared and altered basalt samples are a bleached buff colour. They invariably show chlorite depletion that is often accompanied by either Fe/Mg carbonatization or calcite enrichment above the 5 percent ceiling for metamorphic calcite, and locally by sericitization ± silicification but not by pyritization. The

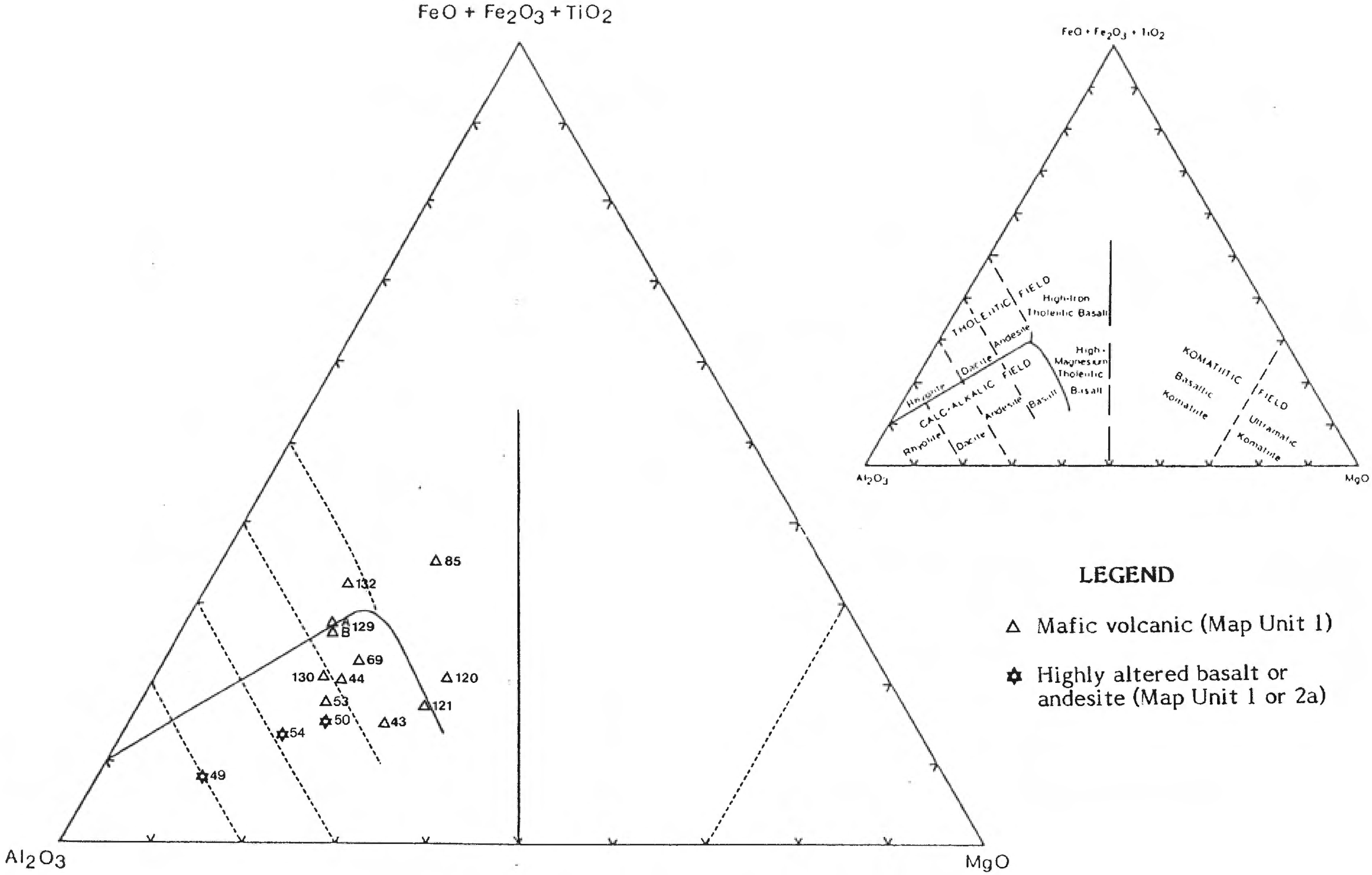


Figure 9 - Jensen Cation Plot of Mafic Volcanics (Map Unit 1)

altering fluids were obviously rich in CO_2 but most of the Fe/Mg was probably supplied by the chlorite of the basalt as the Jensen chemistry of the altered samples is generally similar to that of the unaltered samples.

Contact-metamorphosed basalt intersections near the Opawica Pluton contain one or both of the following hybrid phases: 1) large (greater than chip scale) brown glass patches that are finer-grained than the original basalt, have diffuse boundaries and contain small, euhedral plagioclase metacrysts; and 2) smaller (generally 0.5 to 5 mm), dark green-black, hornblende-bearing, gabbro-like spots that also have diffuse boundaries but are coarser-grained (average 0.2 mm) than the original basalt.

4.2.2.2 Intermediate Volcanics (Map Unit 2)

Rocks classified as intermediate volcanics (i.e. andesite and dacite flows) on the basis of their mineralogy and texture were intersected in forty drill holes. Thirty-five of these intersections are andesites and five are dacites. Andesite comprises most of the volcanic belt between the Opawica Pluton and the sedimentary belt. It is also common in the southern volcanic belt, and was intersected in Hole 78 between the gabbro sills north of the Lac Shortt Fault. Dacite occurs only in the southern volcanic belt and especially on the flanks of the rhyolite dome at the north end of the Wetjack drill area.

In general, the andesite and dacite contain between 10 and 25 percent chlorite whereas the rhyolite contains less than 10 percent and the basalt contains at least 30 percent. However, in establishing the original chlorite content of the volcanic rocks, allowance often has to be made for chlorite loss related to shearing. The dacite contains quartz phenocrysts but so does the rhyolite. The andesite, especially in the southern volcanic belt and in the south part of the belt north of the sediments, often contains abundant large, subhedral plagioclase phenocrysts that contrast with the rare, small diabasic laths in the basalt. The andesite also lacks the amygdules that are found in some chilled basalt samples and, because its feldspar consists of albite/oligoclase instead of calcic plagioclase, it is generally harder and contains less metamorphic calcite (typically trace to 2 percent versus 2 to 5 percent). Fe/Mg carbonatization is also much less common than in the basalt although deformation is widespread, especially on northern Lesueur. This supports the theory that the basalt itself is the main source of the Fe and Mg in the carbonate. The main alteration effect observed is sheared andesite and dacite is remobilization of chlorite from the groundmass to the shear partings, locally with the development of sericite, and in Holes 27 and 32 a trace of fuchsite.

The typical andesite or dacite sample is a medium to pale green colour, reflecting its moderate chlorite content. As with basalt, both strongly chilled and "unchilled" phases having respective groundmass grain sizes of less than 0.1 mm and 0.1 to 0.2 mm are common. This groundmass typically consists of 60 to 70 percent hard, albitic feldspar, 10 to 25 percent chlorite and up to 10 percent quartz and 2 percent metamorphic calcite. However it is inhomogeneous with the chlorite concentrated in irregular patches -- a feature that ODM has observed to be normal for Abitibi andesites and dacites. Most of the andesite samples from the area of weak but widespread shearing on northern Lesueur contain 0.5 to 1 percent pyrite; the pyrite content rises to 3 percent in the Hole 34 sample which also contains 0.2 percent fracture-hosted chalcopyrite, and to 4 percent in Hole 38. Leucoxene concentrations of 1 to 2 percent are common but primary ilmenite is rare. Superimposed on the groundmass in about half of the andesite samples and in all five dacite samples are 5 to 50 percent plagioclase phenocrysts of 0.5 to 3 mm size. The dacite samples also contain 2 to 5 percent quartz phenocrysts of the same size.

Contact metamorphosed andesite along the southwest side of the Opawica Pluton contains the same feldspar-porphyrytic glass patches and hornblende-bearing gabbroic spots as the hornfelsed basalt. The gabbroic spots tend to nucleate on the more chloritic patches in the inhomogeneous groundmass of the andesite, giving the false impression that the andesite is a basalt. Other observed contact metamorphic effects are a sugary, recrystallized texture in Hole 115 and 5 percent epidote metacrysts of 0.2 to 0.5 mm size in Hole 136.

On the Jensen diagram (Fig. 10), the andesite samples are concentrated in the calc-alkalic andesite field with considerable scatter into the bracketing calc-alkalic dacite and calc-alkalic basalt fields. All of the dacite samples fall in the calc-alkalic dacite field.

4.2.2.3 Intermediate Tuff (Map Unit 3)

Tuff dominated by intermediate volcanic fragments and interlayered with andesite was intersected in Holes 08, 09 and 10 in the southern part of the Wetjack drill area and in Holes 123 and 131 on southern Boyvinet.

The sample from Hole 08 contains both tuff and andesite chips. The tuff is a fine to coarse ash variety (0.2 to 1.2 mm particles) while that in the other four samples contain 10 to 40 percent fragments of lapilli (2 to 4 mm) to small block (maximum 20 mm) size. The lapilli, blocks and coarser ash fragments -- and by extension the less visible fine ash fragments -- are mainly intermediate volcanics having aphanitic to feldspar-porphyrytic textures. However, subordinate felsic volcanics, including a pyritic species, are present in some samples. Free chlorite constitutes 20 to 40 percent of the fine ash matrix, or about 10 to 20 percent of the tuff. Also present are 5 to 30 percent plagioclase crystals of 0.5 to 2 mm size and, in the samples from Holes 08, 09 and 131, 1 to 5 percent quartz crystals of the same size. Thus the samples are mainly crystal-lapilli tuffs.

Four of the samples are unsheared but the sample from Hole 131, which was drilled near the southern shear axis on Boyvinet, is highly deformed and contains dark green (i.e. hydrothermal) chlorite/serpentine and 10 percent fracture-hosted talc. As a result, it falls in the basaltic komatiite field on the Jensen diagram (Fig. 11) whereas the other tuff samples correspond to either calc-alkalic dacite (those with quartz crystals) or calc-alkalic andesite (those without quartz crystals).

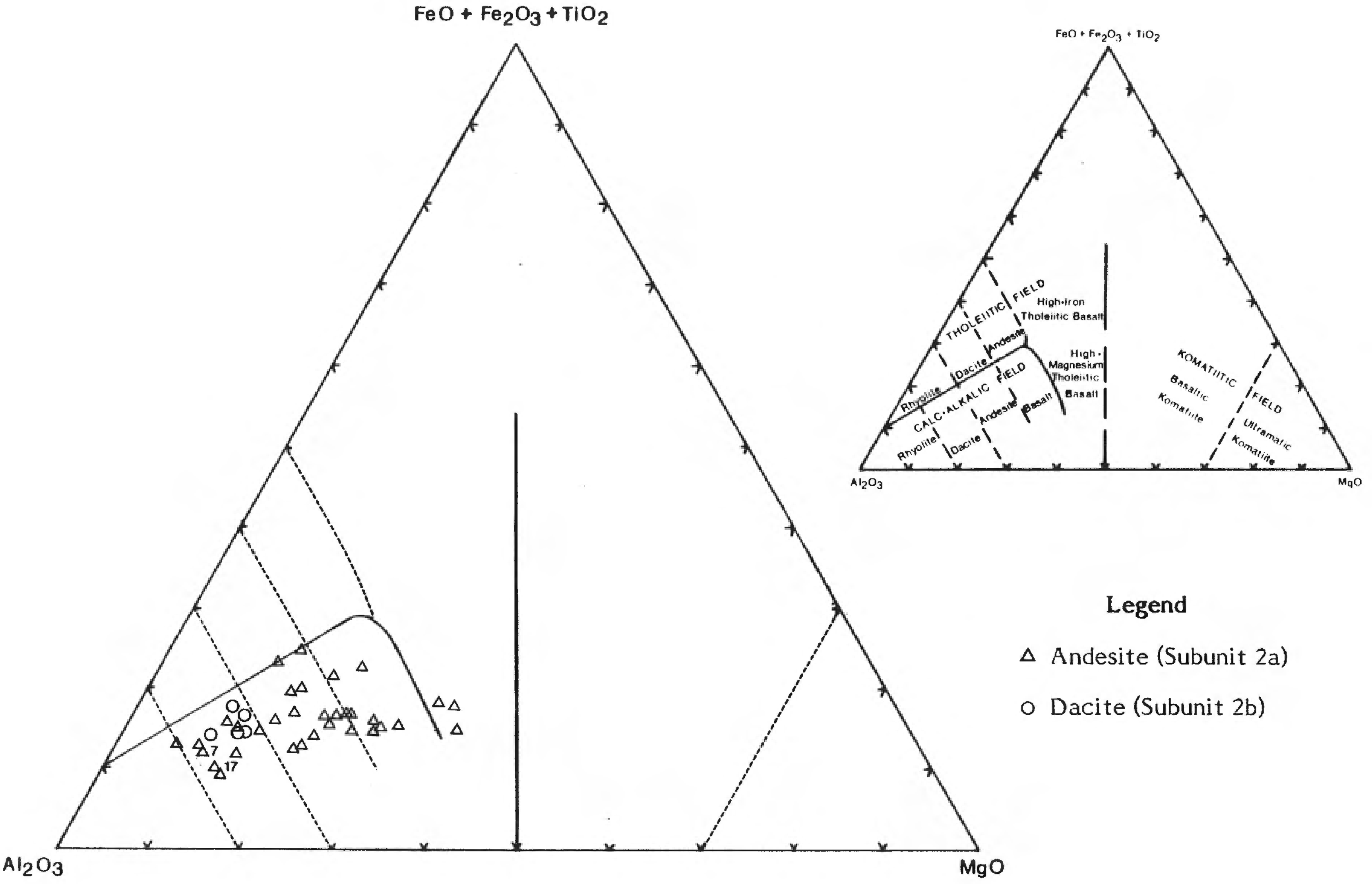


Figure 10 - Jensen Cation Plot of Intermediate Volcanics (Map Unit 2)

4.2.2.4 Felsic Volcanics (Map Unit 4)

Felsic volcanics (i.e. rhyolite flows) were intersected in a cluster of four drill holes -- Nos. 03, 04, 139 and 141 -- in northern Wetjack and also in Hole 126 in southern Boyvinet. All intersections are near and probably stratigraphically below the magnetic iron formation horizon and are also near the southern shear axis. The four Lesueur intersections appear to define a domal structure having dacite flows and clastic and chemical sediments on its flanks.

The rhyolite is a pale gray-green to pale yellow rock. As in the intermediate to mafic volcanics, both strongly chilled and "unchilled" flows having respective groundmass grain sizes of less than 0.1 mm and 0.1 to 0.2 mm are present. All samples except the one from Hole 141 also contain 1 to 5 percent quartz phenocrysts of 0.3 to 1 mm size. Three of the sample also contain 1 to 20 percent plagioclase phenocrysts of 0.3 to 2 mm size. The fine grain size of the groundmass generally precludes determination of the quartz content but the samples are hard and siliceous and the maximum chlorite content is 5 percent. Being from drill holes near a shear axis, all samples contain shear partings hosting 10 to 30 percent sericite. The sample from Hole 139 is very strongly shear laminated and contains 7 percent Fe/Mg carbonate. No sample contains more than a trace of pyrite. On the Jensen diagram (Fig. 12), the samples are densely clustered in the calc-alkalic rhyolite field.

4.2.2.5 Clastic Sediments (Map Unit 5)

The turbidites of the central sedimentary belt were intersected in twenty-seven drill holes including five holes where they are mixed with either chert (Hole 23) or banded chert-magnetite iron formation (Holes 52, 58, 125 and 128). A thin turbidite horizon was also intersected in Hole 149 in the southern part of the Wetjack drill area.

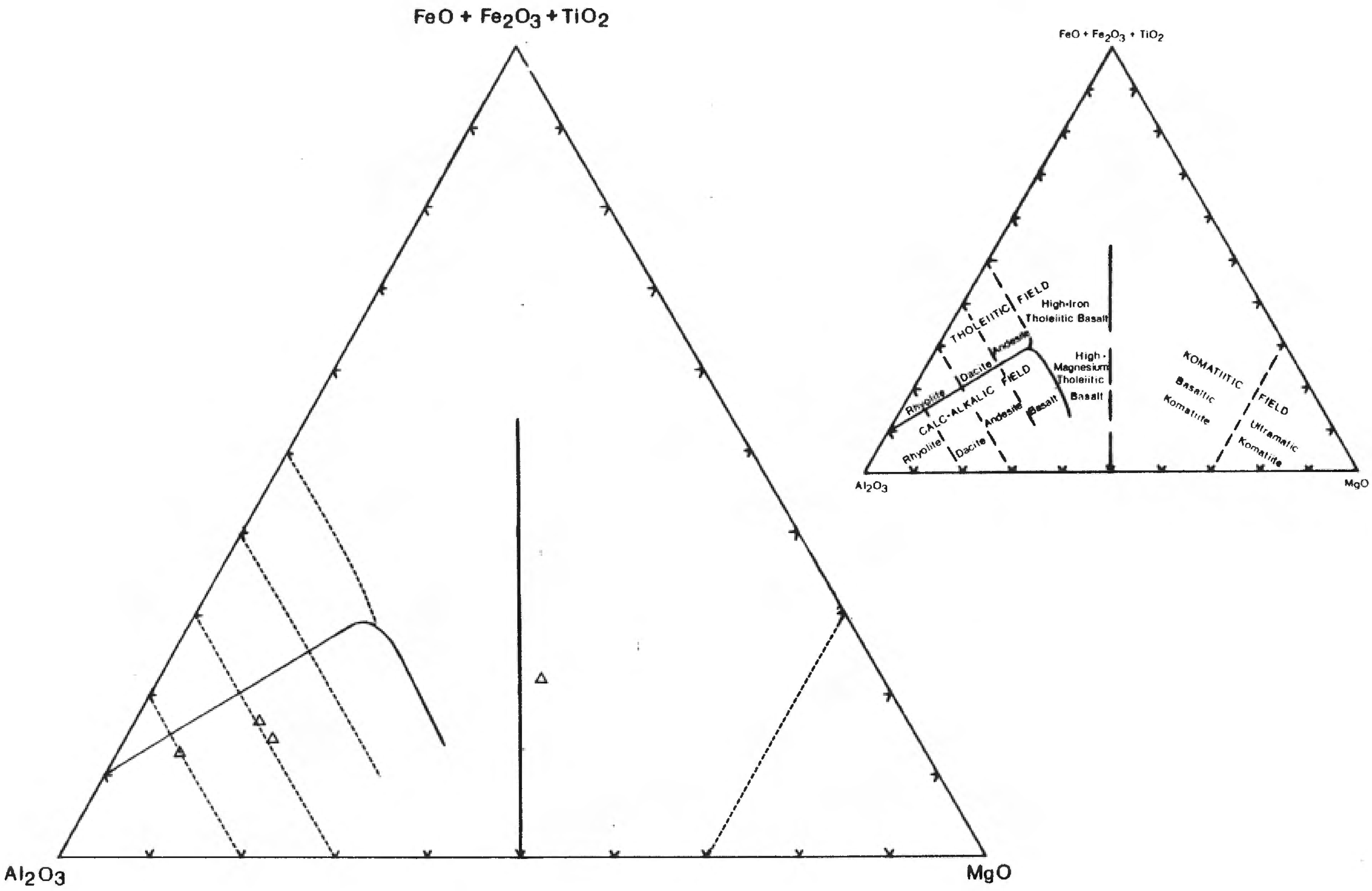


Figure 11 - Jensen Cation Plot of Intermediate Tuff (Map Unit 3)

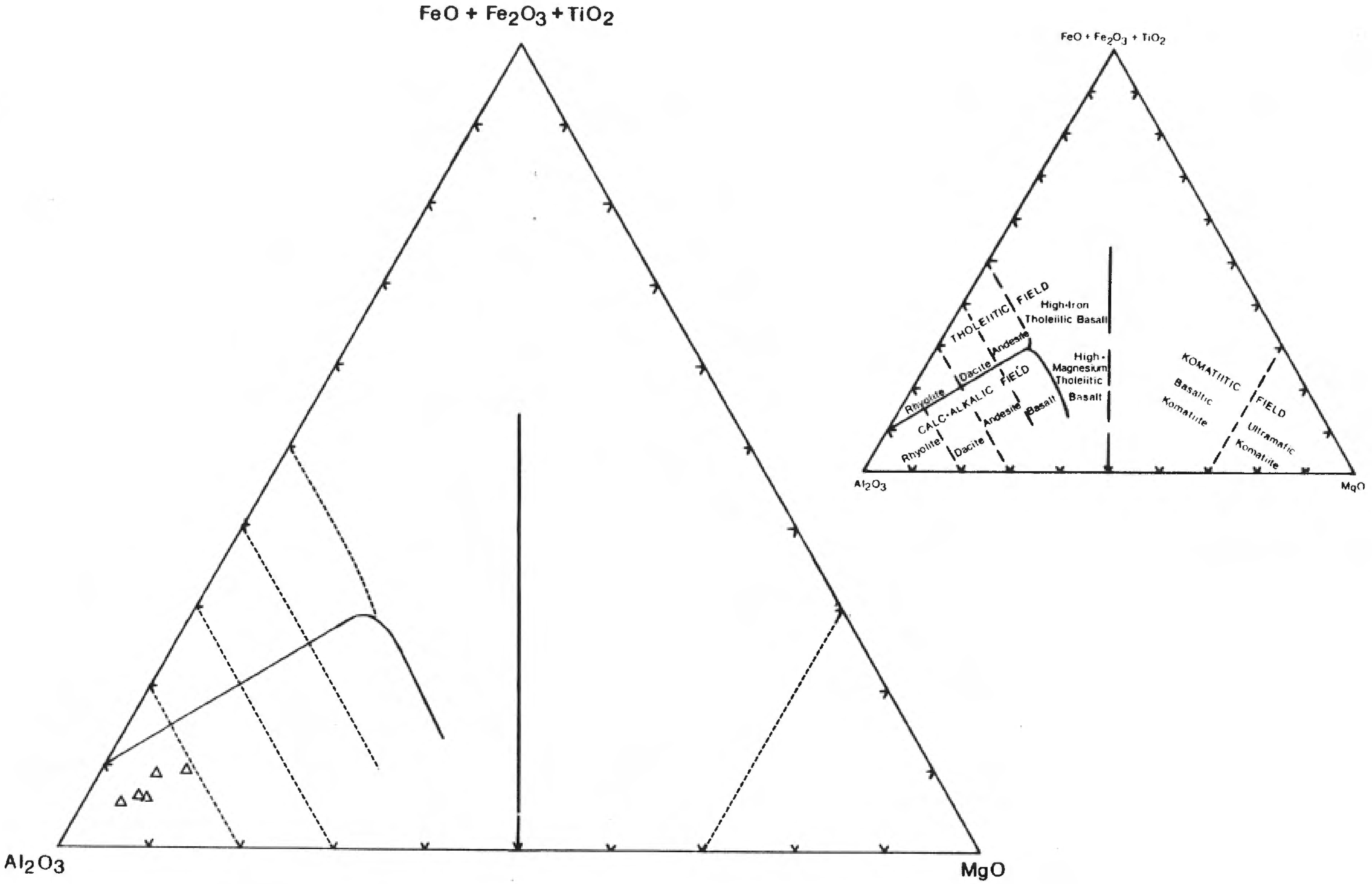


Figure 12 - Jensen Cation Plot of Felsic Volcanics (Map Unit 4)

The turbidites have a gray colour, changing to green in intersections containing iron formation. Most are siltstones having a grain size of less than 0.05 mm. Greywacke, where present, is generally a very fine silty sand (coarsest grains 0.1 mm) but beds of coarse sand (up to 1 mm) are present in the Hole 22 sample. Most of the turbidite samples, like the basalt samples described in Section 4.2.2.1, are strongly sheared and altered. Their shear deformation is manifested both as microlaminations/lozenges and as a crenulation cleavage. These structures often destroy the integrity of the sample and, together with the generally fine grain size, obscure the primary bedding, texture and mineralogy. Plagioclase sand grains and intermediate to mafic volcanic grains, which together constitute 40 to 60 percent of the least sheared samples, are generally shredded and unrecognizable in sheared samples. Quartz and cherty or felsic volcanic grains, which occur at concentrations of about 10 percent and 5 to 20 percent, respectively, are more resistant and may survive. The remaining 20 to 50 percent of the rock is gray chlorite (green in iron-rich turbidites that are interbedded with iron formation). Most of the samples also contain trace to 0.5 percent pyrite, and those that are interbedded with iron formation contain 1 to 20 percent disseminated magnetite.

Because shearing is so widespread in the turbidites, more than half of the samples contain Fe/Mg carbonate. Concentrations are generally 2 to 10 percent but rise to 25 and 50 percent in Holes 15 and 40, respectively. As in carbonatized basalt, most of the Fe and Mg must have been supplied by the host rock because the Jensen compositions (Fig. 13), like those of unaltered turbidites tested by ODM throughout the Abitibi Belt, are equivalent to calc-alkalic andesite and dacite with very little migration into the Fe/Mg rich fields.

Partial sericitization of chlorite is also common in the sheared samples. However, the most pronounced alteration is pyritization which is concentrated in Holes 13, 15 and 16 along the shear axis coinciding with the centre of the sedimentary belt. The reason for the concentration of shearing and alteration in this area, with similar but much less altered rocks on both sides, is not clear but it is possible that the sediments mark a syncline and the shear zone follows the synclinal axis. The pyrite occurs as cubic to dodecahedral metacrysts of 0.1 to 0.5 mm size that cut the schistosity. Its concentration ranges from 1 to 10 percent.

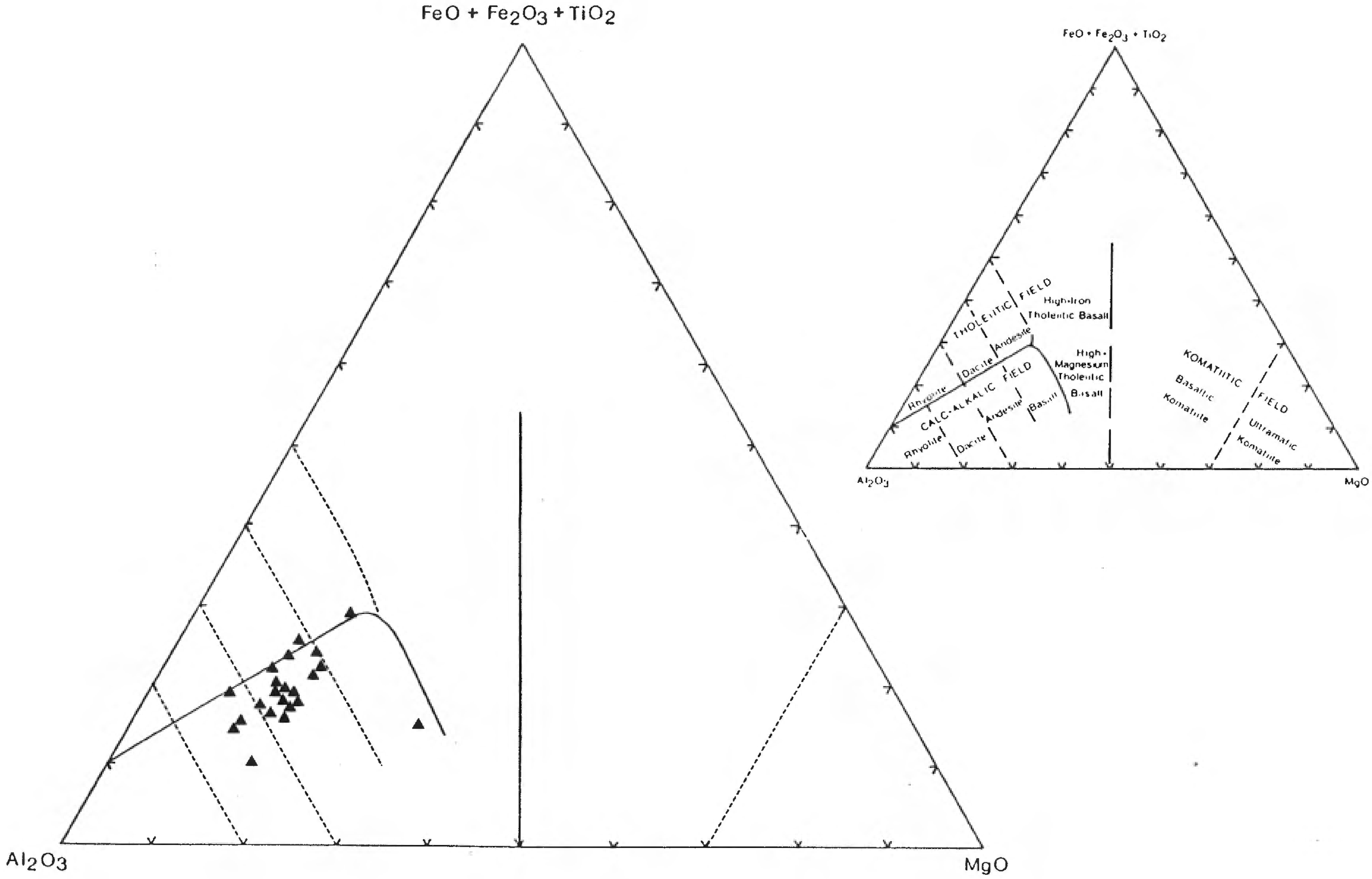


Figure 13 - Jensen Caton Plot of Clastic Sediments (Map Unit 5)

The sample from Hole 13 also contains 0.5 to 1 percent arsenopyrite that is hosted in quartz-Fe/Mg carbonate veins and has the acicular crystal form that is often associated with high grade gold mineralization (Kuryliw, 1988). The sample from Hole 15 contains 2 percent fuchsite.

4.2.2.6 Chemical Sediments (Map Unit 6)

The magnetically traceable banded iron formation horizon on the southern edge of the central sedimentary belt was intersected in six drill holes including the four intersections that contain turbidite interbeds (Holes 52, 58, 125 and 128). The non-magnetic but conductive chert horizon along the northern edge of the same sedimentary belt on western Lesueur was intersected in two holes including the intersection that contains turbidite interbeds (Hole 23). The carbonate-sulphide facies iron formation along the north side of the Lac Shortt Fault was intersected in Hole 80.

The magnetic iron formation horizon, where pure, consists of alternating, 0.5 to 2 mm thick magnetite-chert (i.e. greater than 50 percent magnetite) and chert-magnetite (i.e. less than 50 percent magnetite) bands. The magnetite-chert bands predominate such that the magnetite content averages more than 50 percent. However the presence of magnetite-poor turbidite interbeds in most intersections reduces the overall magnetite content to less than 50 percent, which explains the 20 percent iron content reported by Chesbar Chibougamau Mines Ltd. in their diamond drill holes (Dugas, 1975). The magnetite occurs as crystals and the chert as recrystallized sugary grains. None of the samples show significant shear deformation or pyritization of magnetite.

The chert horizon consists of 0.1 to 10+ mm thick, pale gray to black beds of aphanitic to sugary chert. In Hole 23, the chert is mixed with turbidites and is strongly sheared and contains 30 percent Fe/Mg carbonate. The second chert intersection, from Hole 14, is unsheared and contains 3 percent syngenetic colloform pyrite occurring as disseminations, nodules and thin beds. Primary slump structures are also preserved in this sample.

The carbonate-sulphide facies iron formation intersected in Hole 80 is comprised of 80 percent carbonate-chert beds that contain 80 percent granular siderite and 5 percent syngenetic pyrite, and 20 percent sulphide-chert beds that contain 50 percent syngenetic pyrite. It is sheared-brecciated and the breccia pores host 10 percent Fe/Mg carbonate that, unlike the siderite, reacts with dilute HCl without being heated. Also present are 5 percent graphite-filled shears.

4.2.2.7 Gabbro (Map Unit 7)

The gabbro sill adjacent to the Lac Shortt Fault was intersected in six drill holes and the northern sill was intersected in one drill hole (No. 86).

The gabbro is a dark green rock except in Hole 90 where it is bleached pale gray. Where unsheared, it has a grain size of 0.5 to 2 mm, a sub-diabasic texture, and consists of 40 to 60 percent plagioclase, 40 to 60 percent dark green pyroxene (augite), 0 to 3 percent quartz, 2 to 5 percent leucoxene (magnetite in Hole 75), and trace to 0.2 percent pyrite. Most samples, however, are sheared. This results in the chloritization of pyroxene and the shredding of all minerals except quartz, leucoxene and pyrite which remain more or less intact as a record of the original grain size. The sample from Hole 79 near the Lac Shortt Fault contains 25 percent Fe/Mg carbonate occurring in both disseminated and vein form.

No pyroxenite layers were encountered in the gabbro sill but the presence of magnetite in Hole 75 versus leucoxene in the other holes suggests that some compositional layering is present. The gabbro has a Jensen composition (Fig. 14) similar to that of the high-iron tholeiitic basalt in Hole 85 between the sills. This suggests, as does the location of the sills, that emplacement of the gabbro occurred coevally with the volcanism of the Chibougamau - Matagami Domain and at a different time than the calc-alkalic volcanism of the Caopatina - Quevillon Domain.

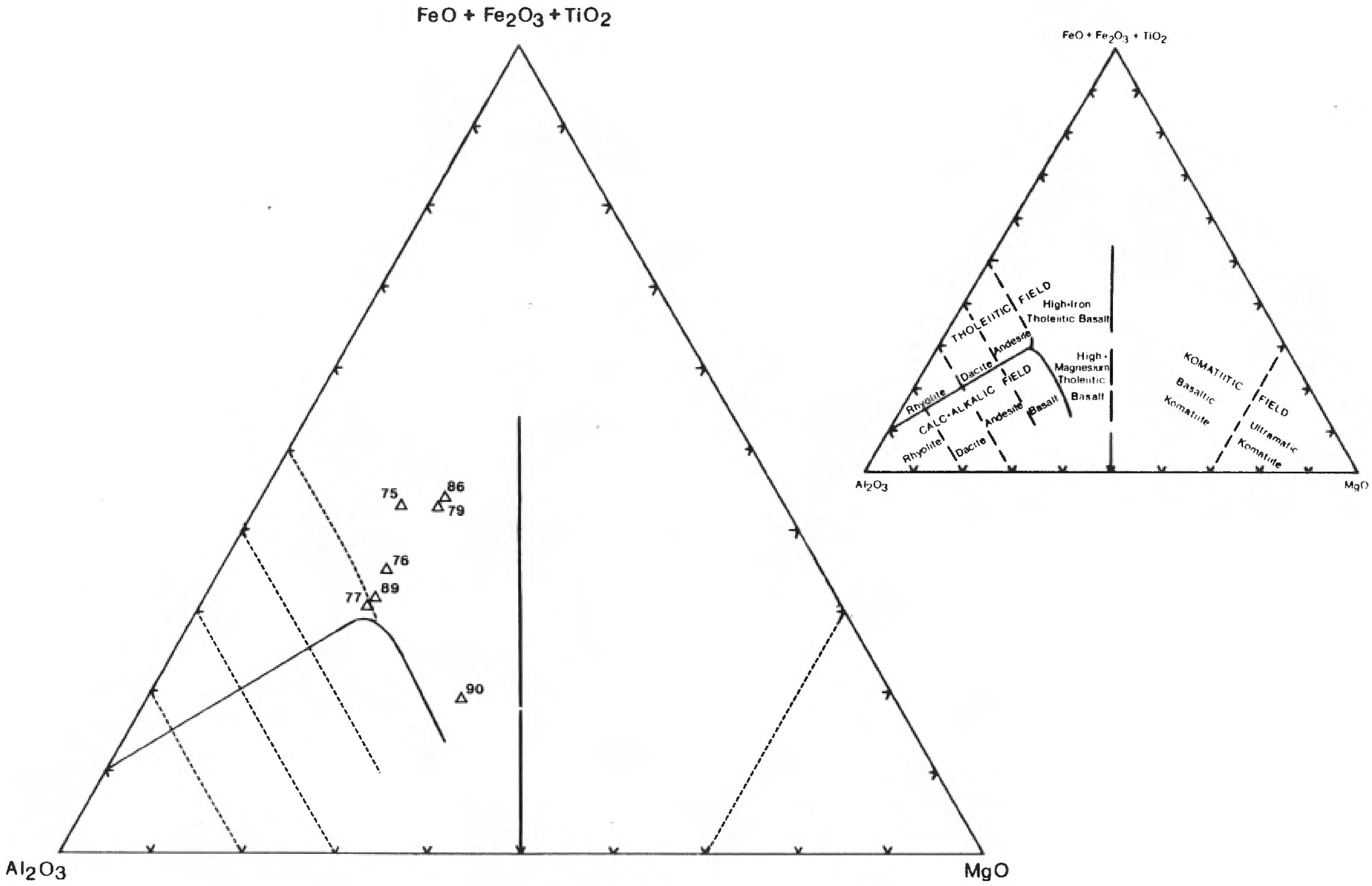


Figure 14 - Jensen Cation Plot of Gabbro (Map Unit 7)

4.2.2.8 Opawica Pluton (Map Unit 8)

As noted in Section 4.2, three separate phases of the Opawica Pluton were intersected: (1) a southwestern dioritic to gabbroic border phase; (2) a northwestern quartz diorite border phase; and (3) a syenite core phase. A central core carbonatite similar to the one occurring in the Lac Shortt syenite (M. Boisvert, Minnova; personal communication) could be present under the western bay of Lac Opawica. The pluton is truncated in the north by the Lac Shortt Fault and probably in the east by a north or north-northeast trending cross fault passing through the channel between Opawica Island and the western shore of the lake. Thus the observed portion of the pluton may represent less than half of the original pluton.

The syenite is not a textbook-style, potassium rich rock but rather an albitic rock similar to the Bachelor Lake and Lac Shortt syenites and having an exceptionally high sodium content of 6 to 9 percent (Appendix I). Even the quartz dioritic to gabbroic border phases of the pluton generally contain 3.5 to 5 percent sodium compared to only 2 to 3.5 percent in their andesitic, basaltic and gabbroic (sill) counterparts in the surrounding volcanic terrane. As a result hornblende is the dominant mafic mineral in the pluton compared to pyroxene (altered to chlorite) in the andesite, basalt and gabbro. On the Jensen diagram, samples of the gabbro/diorite border phase of the pluton are concentrated in the low-iron tholeiitic basalt field (Fig. 15) whereas the andesites and basalts of the Caopatina - Quevillon Domain south of the pluton are calc-alkalic and the basalt and gabbro of the Chibougamau - Matagami Domain north of the pluton are high-iron tholeiites. Also many of border phase samples, even those of gabbroic composition, display a pink stain that is not found in the volcanic rocks or gabbro sills.

The gabbroic to dioritic border phase of the pluton (Subunits 8a, b) was intersected in eight drill holes. Three of the intersections are of gabbro and five are of diorite. The two lithologies are texturally and compositionally similar; the main difference is that the diorite contains about 30 percent hornblende and the gabbro contains 50 to 60 percent hornblende + pyroxene and therefore has a darker green colour. The other major mineral is plagioclase, which is locally stained pink.

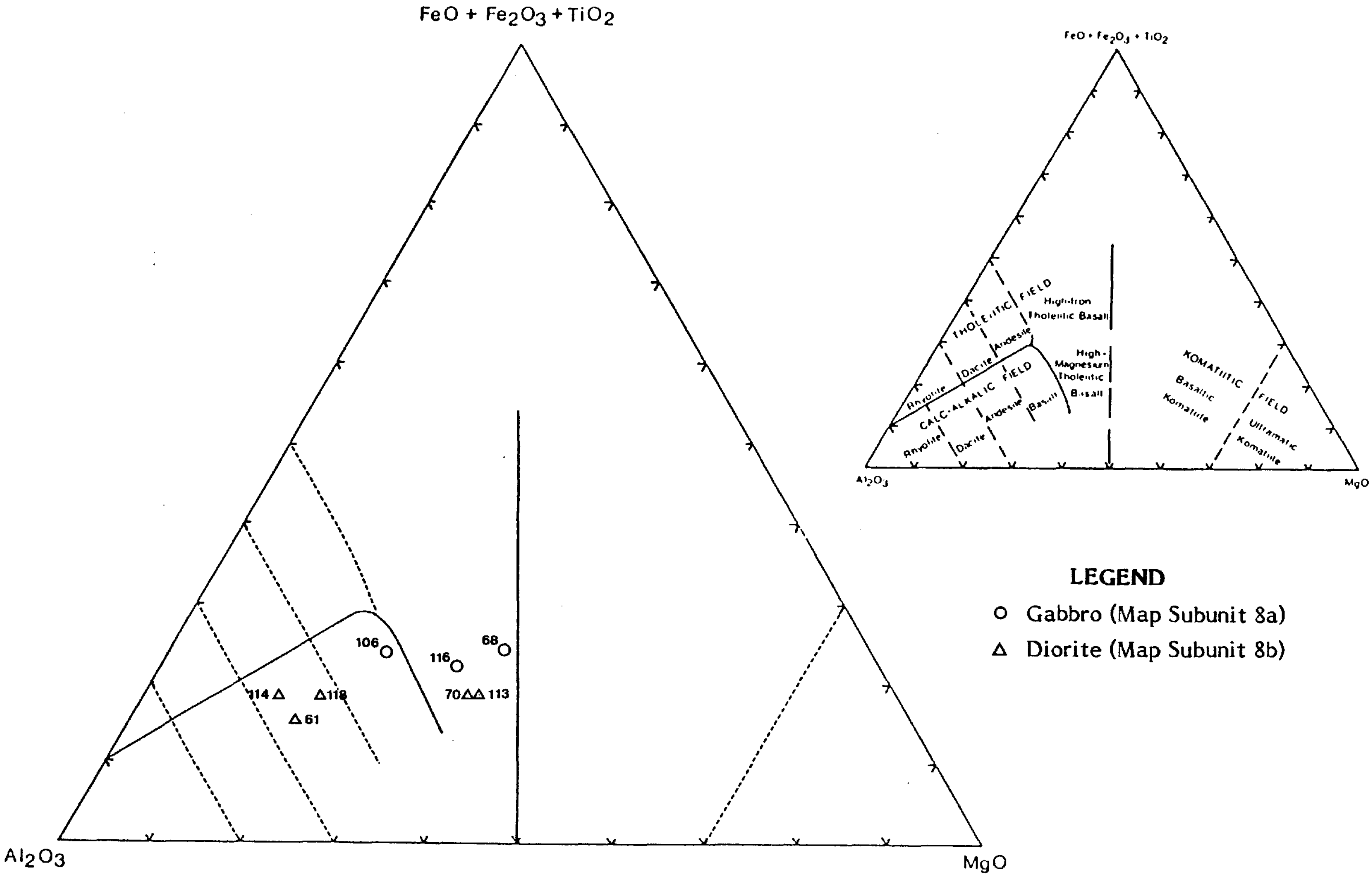


Figure 15 - Jensen Cation Plot of Opawica Pluton Gabbro and Diorite (Map Subunits 8a and b)

The quartz content does not exceed 5 percent. Five of the samples contain magnetite at concentrations ranging from 0.1 to 3 percent, which accounts for magnetic high associated with the margin of the pluton (Fig. 16). This magnetite is very fine grained in contrast to the coarse grained magnetite and ilmenite of the northern gabbro sills. Sphene occurs in three samples at concentrations of trace to 2 percent, and epidote in four samples at concentrations of 2 to 5 percent.

The gabbro/diorite is texturally heterogeneous, reflecting variations in the rate of chilling at the pluton margin. It is generally inequigranular (although non-porphyrytic) but is locally equigranular or sub-diabasic. The minimum and maximum grain sizes are 0.2 to 1.5 mm and a full range of intermediate grain sizes is sometimes evident within a single sample. The only strongly sheared sample is in Hole 118 near the southern reentrant in the pluton contact. This sample contains 25 percent mylonite zones but not all of its original magnetite has been hematitized.

The quartz diorite border phase of the pluton (Subunit 8c) was intersected in fourteen drill holes. Small plugs or dykes of quartz diorite occurring north and south of the pluton were intersected in Holes 88 and 103, respectively.

The quartz diorite is similar to the diorite but contains conspicuous quartz (generally 5 to 20 percent; rarely 30 percent) and often less hornblende/chlorite (typically 10 to 20 percent) although concentrations as high as those of the diorite (30 to 40 percent) do occur locally. The other major mineral is plagioclase, which displays more pink stain than in the diorite and is probably more albitic.

Texturally, the quartz diorite is even more complex than the diorite. All samples contain some material that has been chilled to the 0.05 to 0.2 mm grain size of the surrounding volcanic rocks, but in each case an aplitic to granitoid texture is sufficiently well developed to recognize an intrusive origin. Half of the samples contain 5 to 50 percent plagioclase phenocrysts of 0.5 to 2 mm size, and some contain sparse hornblende phenocrysts of similar size. A few contain aplite dikelets. Many contain small, (up to 10 mm) rounded, resorbed glass xenoliths. These are autogenous xenoliths representing earlier-crystallized portions of the quartz diorite. Several samples near the gabbro/diorite border phase of the pluton contain small, ragged xenoliths of the gabbro that resemble the gabbroic hornfels spots in contact metamorphosed andesite and basalt samples. On the other hand, the syenite core of the pluton often contains patches of groundmass of quartz dioritic composition. Thus the crystallization sequence in the pluton appears to have been: (1) gabbro/diorite border phase; (2) quartz diorite border phase (glass portion followed by granitoid-textured portion); and (3) syenite core.

Accessory sphene occurs in three samples at concentrations of trace to 1 percent, magnetite in four samples at concentrations of 0.1 to 3 percent, and ilmenite (or leucoxene) in five samples at concentrations 0.5 to 2 percent. The sample from Hole 63 near the northern re-entrant in the pluton's margin is dismembered by shear-lozenging and those from Holes 82 and 83 near the Lac Shortt Fault contain 10 to 20 percent purple mylonite zones. These samples contain 0.5 to 1 percent specular hematite instead of magnetite. The Hole 63 sample also contains 5 to 10 percent Fe/Mg carbonate and is the only example of carbonatization of the quartz diorite. Pyrite concentrations are mostly trace to 0.1 percent; higher concentrations of 2 to 3 percent in Holes 66, 82 and 103 appear to be shear-controlled although only the Hole 82 sample is strongly sheared.

The syenite core of the pluton (Subunit 8d) was intersected in 19 drill holes. The syenite is a distinctive rock as it has a pink to red colour and generally contains 60 to 90 percent feldspar phenocrysts that are lath shaped, 0.5 to 4 mm long, and often display a trachytic flow alignment. Perthitic laths are rare, and the high sodium content of the syenite indicates that most of the feldspar is albite. The red colour is due to hematite staining, not to potash.

The texture of the syenite is less varied than that of the border phases of the pluton because cooling was more regular in the core of the pluton than at its margins. However, the groundmass between the albite phenocrysts is generally chilled to the same degree (i.e. 0.1 to 0.5 mm grains) as the quartz diorite border phase of the pluton. Half of the samples also contain 1 to 5 percent intersertal quartz of intermediate grain size (0.5 mm).

The syenite groundmass is compositionally as well as texturally similar to the quartz diorite. It generally contains 10 to 30 percent hornblende (variably chlorite), 40 to 60 percent feldspar, 5 to 10 percent quartz, 5 to 10 percent metamorphic calcite, 0 to 10 percent sphene and 1 to 20 percent magnetite. However, the groundmass represents only 10 to 40 percent of the sample such that the overall magnetite content never exceeds 5 percent and the syenite is actually less magnetic than the gabbro/diorite border phase (Fig. 16). In sheared samples, the magnetite is altered to specular hematite and to a lesser degree to pyrite; Fe/Mg carbonate is not present. Weak shearing is manifested as hairline cross fractures and microbreccia seams and stronger shearing as mylonite zones. The strongest shearing observed is in Hole 94 near the Lac Shortt Fault where the syenite has been transformed to a protomylonite. Significant mylonite seams are also present in the samples from nearby Holes 91, 93 and 95. The sample from Hole 91 contains a trace of fuchsite. It is not clear whether the broad deformation zone indicated by these four drill holes is related to the main fault, to a conjugate east-west trending fault, or to the north-northeast trending cross fault that could extend through the same area. Mylonite zones that may be related to other east-west conjugate faults or to the same cross fault are present in Holes 104 and 105 near the southern edge of the syenite.

4.3 Bedrock Geochemistry

The bedrock chip samples from the reverse circulation drill holes were analyzed for gold, arsenic, copper, zinc and silver (Appendix I). The majority of the samples assayed less than 5 ppb gold, 2 ppm arsenic, 150 ppm copper and 150 ppb zinc. All silver assays are less than 1 ppm.

Elevated gold (over 10 ppb), arsenic (20+ ppm), copper (over 200 ppm) and zinc (over 200 ppm) values are listed in Table 8 and in the legend of Plan 1 and are also highlighted Input-fashion on this plan. Some of these "anomalies" appear to be erratic because they occur in unaltered rocks, or are deemed to be insignificant for other reasons. For example, the strongest copper anomaly is 450 ppm in Hole 85 which intersected sheared basalt containing 0.2 percent vein-hosted chalcopyrite.

Sample No.	Gold (10 ppb)	Arsenic (20 ppm)	Copper (200 ppm)	Zinc (200 ppm)	Silver (0.5 ppm)
PLS-88- 02-05	L 5	46	54	77	0.1
06-02	13	20	75	32	0.3
11-09	6	45	46	101	0.2
12-03	L 5	21	5	21	L0.1
13-03	614	6,200	105	25	0.1
14-03	L 5	81	55	55	0.2
15-03	35	260	69	28	L0.1
16-03	13	26	38	81	L0.1
18-03	L 5	29	47	72	L0.1
22-12	9	43	51	94	0.1
29-05	12	2	30	61	L0.1
31-11	10	2	18	29	L0.1
34-09	38	2	382	30	0.1
42-03	12	L 2	19	24	0.4
43-03	7	22	26	61	L0.1
56-02	7	28	60	89	L0.1
69-04	L 5	25	58	186	L0.1
79-12	28	56	85	130	L0.1
80-10	66	141	162	122	0.6
82-02	118	L 2	60	51	L0.1
85-02	L 5	83	450	83	L0.1
88-04	13	L 2	27	55	L0.1
89-24	14	3	57	139	L0.1
91-05	110	L 2	28	58	L0.1
92-05	45	L 2	31	60	L0.1
93-02	20	L 2	3	58	L0.1
94-03	82	4	1	45	L0.1
95-06	44	L 2	2	39	L0.1
97-14	27	L 2	1	55	L0.1
100-02	22	L 2	13	63	L0.1
101-04	16	L 2	41	54	L0.1
103-05	11	L 2	34	91	0.1
104-05	25	L 2	10	47	L0.1
105-08	11	L 2	9	43	0.1
110-09	13	2	3	48	L0.1
111-05	12	L 2	26	50	L0.1
123-12	L 5	L 2	27	204	0.1
137-10	L 5	40	58	97	L0.1
138-07	L 5	60	53	98	0.1
139-06	13	13	11	64	0.1
142-10	9	42	43	88	L0.1
146-14	23	L 2	15	56	L0.1
149-06	11	7	64	88	L0.1

Table 8 - Elevated Bedrock Geochemistry

The vein association, together with a coincident 83 ppm arsenic anomaly, indicates a hydrothermal origin but the sample is not anomalous in gold. Thus the copper is not indicative of either significant syngenetic base metal mineralization or hydrothermal gold mineralization. Another example is the andesite of Hole 34 which is anomalous in both copper (382 ppm) and gold (38 ppm) and is strongly sheared but apparently from a very minor shear zone. Despite the interference from these erratic or insignificant anomalies, several important mineralizing trends can be recognized:

1. Weakly anomalous arsenic values of 20 to 50 ppm are common throughout the sheared and carbonatized turbidites of the central sedimentary belt.

2. The stongest gold (614 ppb) and arsenic (6200 ppm) anomalies are in the arsenopyrite-bearing sample from Hole 13 along the pyritized shear zone in the turbidites. The samples from Holes 15 and 16 along this shear zone are also anomalous in gold (35 to 13 ppb, respectively) and arsenic (260 and 26 ppm, respectively).

3. Samples obtained from most drill holes near the Lac Shortt Fault are anomalous in gold regardless of lithology (Holes 79 and 89 -- gabbro sill -- 28 and 14 ppb gold, respectively; Hole 80 -- carbonate-sulphide facies iron formation -- 66 ppb gold; Hole 82 -- quartz diorite -- 118 ppb gold; Holes 91 to 95 -- syenite -- 20 to 110 ppb gold). The Hole 79 gabbro and Hole 80 iron formation are also anomalous in arsenic (56 and 141 ppm, respectively).

4. Most of the syenite intersections near the inferred north-northeast trending cross fault through the Opawica Pluton are weaky anomalous in gold (Holes 97, 100, 101, 104, 105; 11 to 25 ppb) but other syenite-hosted anomalies that are more compatible with east-west shear axes through the reentrants in the pluton contact are also present (Holes 110 and 111; 13 and 12 ppb gold, respectively).

5. OVERBURDEN GEOLOGY

5.1 Quaternary History and Stratigraphy of the Abitibi Region

The Quaternary geology of the Abitibi region, as determined by ODM from thousands of drill holes and scanty literature, is summarized in Figure 17 and Table 9. Tills from three major glaciations and sediments from two interglacial periods are present.

The oldest till was deposited by ice moving southward from Hudson Bay -- possibly 1 million years ago in Kansan time -- and is enriched in clasts of Proterozoic sandstone and Paleozoic limestone. This till is so rarely preserved that it is of no significance in exploration. The next till (Lower Till) was deposited by ice moving southwestward from New Quebec in Illinoian time more than 125,000 years ago. It is preserved in many buried valleys and contains the dispersal trains from any mineralization in these valleys. The youngest till was deposited 10,000 years ago by Late Wisconsinan ice of the Laurentide sheet that originated in New Quebec but had split into a southeast-moving Hudson mass west of Longitude 78°W (Val d'Or and Joutel) and a southwest-moving New Quebec mass in the area east of this longitude which includes the Minnova properties. The esker-like Harricana Interlobate Moraine was deposited at the contact between the two ice masses. The till to the west is known as Matheson Till; that to the east has not been formally named but we call it Chibougamau Till.

In Yarmouth and Sangamon time immediately following the Kansan and Illinoian glaciations, respectively, interglacial sediments including soils and northward-transported fluvial gravels were deposited on the Kansan and Illinoian tills. The gravels consist mostly of recycled till debris, are oxidized, and often contain wood fragments.

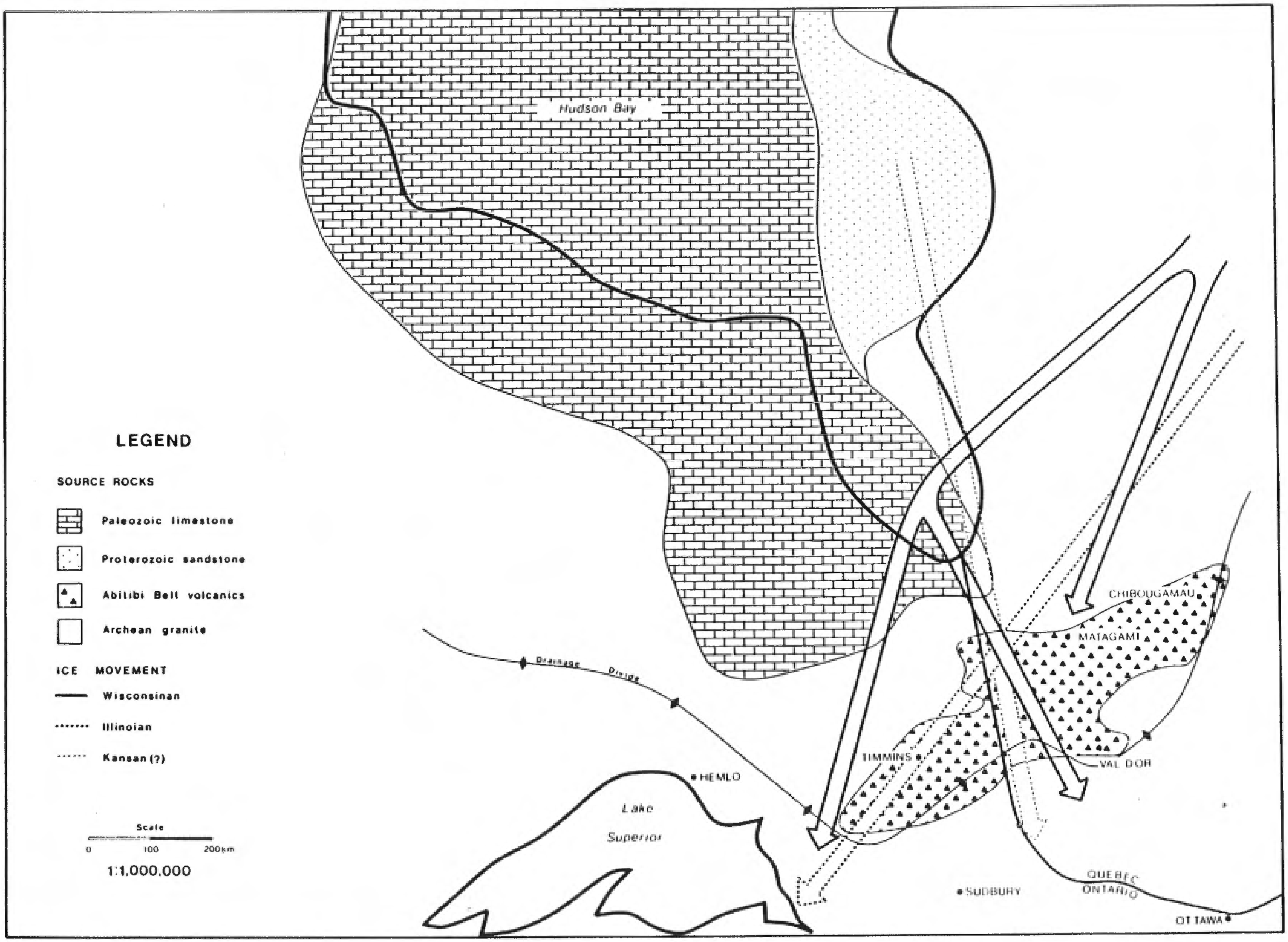


Figure 17 - Glacial History of the Abibi Region

Present		**HOLOCENE**
	7	Holocene sediments 7c - forest-peat member 7b - lacustrine-clay member 7a - fluvial member
10,000 Years B.P.		**PLEISTOCENE**
		LATE WISCONSINAN
	6	Cochrane Till
	5	Ojibway II Sediments 5e - littoral and aeolian member 5d - Cochrane member 5c - glaciolacustrine clay member 5b - glaciolacustrine sand member 5a - glaciofluvial member
	4	Chibougamau/Matheson Till
100,000 Years B.P.		**EARLY WISCONSINAN AND SANGAMON**
	3	Missinaibi Formation 3c - Ojibway I member 3b - forest-peat member 3a - fluvial member
		ILLINOIAN
	2	Lower Till and Sediments
1,000,000 Years B.P.		**YARMOUTH AND KANSAN**
	1	Older Till and Sediments

Table 9 - Quaternary Formations of the Abitibi Region

In Early Wisconsinan time 100,000 years ago and in Late Wisconsinan time 10,000 years ago, the region was flooded by glacial Lakes Ojibway I and II respectively, and varved clay, silt and fine sand sheets up to 30 metres thick were deposited. The Ojibway I sediments conformably overlie the Sangamon interglacial sediments and the complete Sangamon/Early Wisconsinan package is known as the Missinaibi Formation (Skinner, 1973). The Ojibway I sediments coarsen upward because they were deposited from a transgressive ice sheet. They were overridden by the 2 km thick Wisconsinan ice sheet and are overconsolidated, dry and platy whereas the Ojibway II sediments were deposited from regressive ice, fine upward and are soft. Glaciofluvial esker/delta sands and gravels were deposited by the meltwater rivers that fed both lakes.

The final glacial event in the Abitibi region was a minor southeastward re-advance of a thin lobe of ice from the Hudson mass into the north part of Lake Ojibway II, depositing Cochrane Till which consists mainly of clay recycled from the soft lake bed. When the Cochrane ice melted, Lake Ojibway II drained catastrophically northward, exposing the Late Wisconsinan esker ridges to considerable erosion by wave and wind action until they became stabilized by vegetation.

5.2 Quaternary Geology of the Drill Area

Quaternary units intersected in the 1988 reverse circulation drilling include Illinoian-age Lower Till, the Sangamon to Early Wisconsinan-age Missinaibi Formation, Late Wisconsinan-age Chibougamau Till and Ojibway II sediments, and Holocene-age peat. The pre-Wisconsinan deposits are preserved only in bedrock depressions on the Boyvinet and Lesueur properties where they were protected from erosion during the Wisconsinan glaciation. Elsewhere the bedrock is generally overlain by Chibougamau Till but Ojibway II esker/moraine glaciofluvial sediments locally supplant this till. The till and glaciofluval sediments are in turn overlain by Ojibway II glaciolacustrine sediments. Cochrane Till is not present since the limit of the Cochrane re-advance is in the Joutel - Matagami area to the northwest. A veneer of Holocene peat overlies the Pleistocene units and constitutes the surface horizon.

The direction of ice movement for Illinoian-age Lower Till has been determined by ODM to be approximately 225 to 240 degrees across the Abitibi region flowing from a New Quebec centre (Averill, 1986); this has been substantiated by striae measurements associated with the till (Bouchard et al., 1986; Bird and Coker, 1987; Veillette, 1986). The direction of ice movement for Wisconsinan-age Chibougamau Till is more southerly (210 to 220 degrees). Thus differentiation of Lower Till from Chibougamau Till is critical when tracing mineral dispersal trains. Unfortunately Lower Till is generally indistinguishable from Chibougamau Till in character and composition; the two can be reliably differentiated only where the Sangamon to Early Wisconsinan Missinaibi Formation lies between them.

The intersected units are described in detail below and are shown in section in Figures 18 to 31. Lines of section are shown on Plan 2.

5.2.1 Lower Till (Abitibi Unit 2)

Identifiable Lower Till (i.e. overlain by the Missinaibi Formation) was intersected immediately overlying bedrock in six drill holes on Boyvinet and three drill holes on Lesueur. On the Boyvinet property, the thickness of the Lower Till ranges from 1.0 to 13.9 m and averages 8.0 m. Most of the intersections are in the bedrock valley associated with the cross fault through the Opawica Pluton. On the Lesueur Property, the thickness of the Lower Till ranges from 1.2 to 5.3 m and averages 2.9 m. Holes 25 and 28 intersected the till in a southwesterly trending bedrock valley under the Kruger Road Esker in the western portion of the property and Hole 39 intersected the till in a bedrock depression in the northeastern portion of the property (Plan 2).

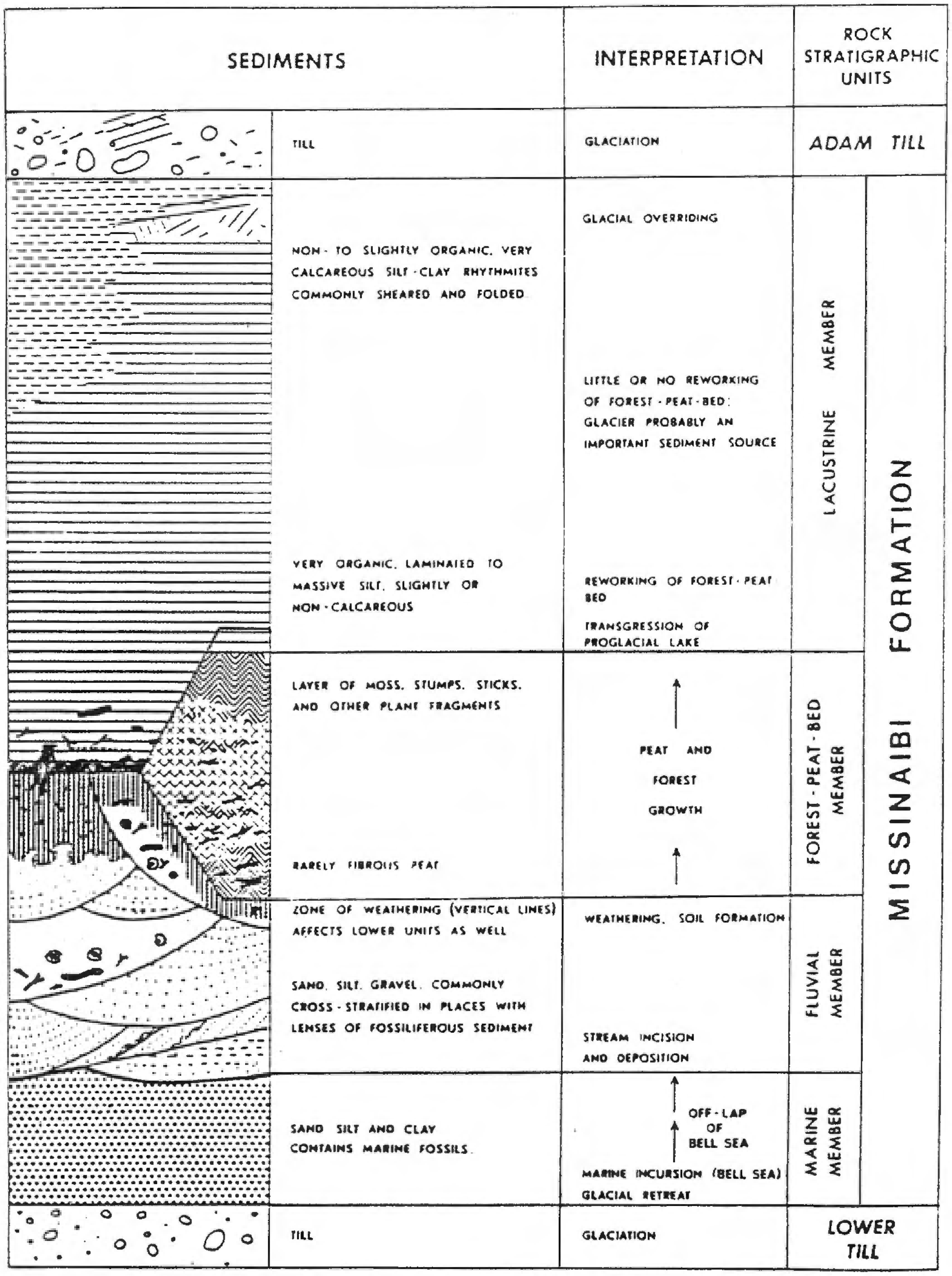
The Lower Till has a grey-beige, fine sand-silt rock flour matrix. Its clasts range in size from pebbles to cobbles with occasional boulders and in composition from 65:35 to 80:20 volcanics and sediments versus granitoids. The proportion of granitics does not increase in the holes on the south side of the Opawica Pluton (Nos. 117 and 121), suggesting that the direction of Illinoian ice flow was very westerly as it was in parts of the Casa-Berardi region (Veillette, personal communication). The position of Lower Till resting directly on bedrock and the predominance of locally-derived rock flour matrix and volcanic/sedimentary clasts indicate that the till is an excellent geochemical sampling medium. However, its limited distribution on the properties reduces its usefulness and results in heavy reliance on the younger Chibougamau Till for geochemical prospecting.

5.2.2 Missinaibi Formation (Abitibi Unit 3)

The Missinaibi Formation was first documented by Skinner (1973) in the Moose River Basin of the James Bay Lowland and since has been shown to be both distinctive and extensive in the Abitibi region (Averill, 1986; DiLabio et al., 1988). The type section from the Moose River Basin is illustrated in Table 10 and includes, from oldest to youngest, a basal marine clay unit related to incursion of the Bell Sea, wood-bearing fluvial interglacial sands and gravels capped by or grading laterally into a weathered soil profile and forest litter, and a sequence of transgressive, upward coarsening glaciolacustrine sediments.

Missinaibi Formation sediments within the Abitibi region do not include the basal marine member as the incursion of the Bell Sea was restricted to the James Bay area. The other members are rarely if ever all intersected in a single drill hole. However, all members have been observed in the Timmins and Casa-Berardi areas as well as in other parts of the Abitibi Belt. In the Timmins area these sediments are called the Owl Creek beds (DiLabio et al., 1988).

Missinaibi Formations sediments were intersected in ten drill holes on Boyvinet and six on Lesueur. Only the fluvial interglacial (Subunit 3a) and Ojibway I glaciolacustrine (Subunit 3c) members of the formation were intersected. Nine of the intersections overlie the nine Lower Till intersections; the other seven intersections occur in the same bedrock valleys and directly overlie bedrock.



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 10 - The Missinaibi Formation of the Moose River Basin

(Source: Skinner, 1973)

The fluvial interglacial member (Subunit 3a) was intersected in Holes 69, 78 and 95 on Boyvinet and in Holes 25, 27 and 28 on Lesueur. It overlies Lower Till in Holes 25, 28 and 78 and bedrock in Holes 27, 69 and 95. Its thickness averages 4.2 m and attains a maximum of 7.5 m in Hole 27. It consists primarily of interbedded sand and gravel. The sand beds are fine to coarse grained and are oxidized to a beige to ochre colour. The gravel is generally clast supported, and has an ochre, medium to coarse sand matrix. Its clasts range from pebble to boulder size, are typically rounded and have rust-coloured pocks where sulphides have been weathered out. The clast composition ranges from 40:60 to 60:40 volcanics and sediments versus granitoids.

The Ojibway I glaciolacustrine member (Subunit 3c) was intersected in thirteen holes. It overlies Missinaibi fluvial sediments (Subunit 3a) in three holes, Lower Till in six holes, and bedrock in four holes. Its thickness averages 4.4 m and reaches a maximum of 11.6 m in Hole 107. It consists of grey, indurated clay with laminations of silt, fine grey sand, and pebbles and contains occasional wood chips (e.g. Holes 66 and 96).

5.2.3 Chibougamau Till (Abitibi Unit 4)

Chibougamau Till deposited during the wasting of the New Quebec mass of the Wisconsinan ice sheet was intersected in 116 of the 149 drill holes (78 percent) and contacts bedrock in 102 of these holes. It was not intersected in 22 holes along the Kruger Road Esker where it is supplanted by glaciovluvial sediments. This is well illustrated on Sections C - C' and L - L' (Figs. 19 and 26) where the lateral continuity and thickness of the till vary inversely with proximity to the esker (Plan 2). In ten other holes the till is supplanted by glaciofluvial sediments of DeGeer moraines, and in one hole bedrock was intersected beneath a thin peat horizon (Hole 109).

On Boyvinet, the thickness of the Chibougamau Till layer averages 6.4 m and attains a maximum of 23.3 m in Hole 122. On Lesueur it averages is 2.4 m and attains a maximum of 10.5 m in Hole 20. On Wetjack it averages 7.5 m and attains a maximum of 20.2 m in Hole 146.

The Chibougamau Till has a grey-beige fine sand and silt matrix. Rarely is the matrix clay rich; however, this does occur in lowermost till samples proximal to and overlying the Ojibway I glaciolacustrine clays and is a good indication that the till is of local provenance.

Clasts in the till range from pebbles to cobbles with occasional boulders. The clast lithologies are generally 60 percent Abitibi Belt volcanics and sediments and 40 percent granitoids. The volcanic/sediment content locally increases to 80 percent near the bedrock surface (Holes 14, 19). On the Boyvinet property, the granitoid component is as high as 60 percent (Hole 99, 104) on the southwestern portion of the Opawica Pluton. The predominance of locally derived bedrock material in the Chibougamau Till, coupled with the fact that the till has a good average thickness and rests directly on bedrock in 102 holes (68 percent) and is present in 14 others, indicates that the till is an excellent sampling medium and provides generally good exploration coverage of the drill areas. However, the absence of the till along the Kruger Road Esker compromises the overburden exploration coverage of this area.

5.2.4 Ojibway II Sediments (Abitibi Unit 5)

The following sediments were deposited while the properties were flooded by glacial Lake Ojibway II:

Subunit 5a:	Ice-contact (esker and moraine) glaciofluvial sand and gravel
Subunit 5b:	Ice/esker/moraine-proximal glaciolacustrine sand
Subunit 5c:	Ice-distal glaciolacustrine clay and silt.

The ice-contact esker and moraine glaciofluvial sand and gravel member (Subunit 5a) was intersected in 64 of the 149 drill holes. Of these, 51 are associated with the Kruger Road Esker. Esker sediments completely supplant the Chibougamau Till horizon in 20 holes -- directly overlying Missinaibi clay in one hole (No. 25) and bedrock in 19 -- and were the lowest unit intersected in two abandoned holes (Nos. 24 and 87). On the Lesueur Property, the esker forms prominent ridges north and west of Hole 36. Southwestward the surface expression is minimal; instead of forming ridges the esker infills a bedrock valley that was intersected in Hole 25, 27 and 28. In the Wetjack drill area, comparatively thin sections of esker sediments intersected in both the reconnaissance and follow-up holes probably outline a subaqueous delta or south-branching distributary of the main esker channel.

The majority of esker intersections comprise thick zones of well sorted beige fine to coarse sand beds overlying predominantly clast supported gravels. The thickness of the intersections averages 16 m and reaches maximums of 34 m (Hole 88) on Boyvinet, 39.4 m (Hole 31) on Lesueur, and 15.5 m (Hole 07) on Wetjack. The esker gravels consist of subrounded pebble to boulder sized clasts with a beige medium to coarse sand matrix. The clast composition is similar to that documented for Chibougamau Till.

The other thirteen glaciofluvial sand and gravel intersections are from a number of DeGeer moraines (Plan 2). The southernmost traverses on Boyvinet and Lesueur (Sections K-K' and R-R', respectively) illustrate most of these intersections. The moraine sediments overlie Chibougamau Till in nine holes and lie directly on bedrock in four holes. Their thickness averages approximately 6 m and reaches a maximum of 16.2 m in Hole 59 on Lesueur. They are generally comprised of pebbly sand underlain by mixed sand and gravel. The pebbly sand is distinguishable from till by its beige colour and predominantly sorted, coarse-biased matrix. The sand and gravel beds are similar to esker sediments but the gravels are rarely clast supported.

Ice/esker/moraine proximal glaciolacustrine sand (Subunit 5b) was intersected in a total of 75 drill holes. The sand overlies Chibougamau Till in 66 holes, bedrock in 5 holes, and moraine glaciofluvial sediments in 4 holes. Its thickness averages 4 metres. Thicker occurrences generally flank the Kruger Road Esker and are comprised of beige to beige-grey, fine to medium sand with occasional coarse sand interbeds. In proximity to the DeGeer moraines the glaciolacustrine sand horizon is generally thin and consists of grey, very fine to fine sand with occasional silt interbeds.

The glaciolacustrine silt and clay member (Subunit 5c) was intersected in 139 of the 149 drill holes. Its thickness ranges from 0.5 to 13.8 m and averages approximately 4 metres. The clay is gray and soft, although in some drill holes the first 0.5 to 1.5 m are oxidized beige or beige-grey and are compact due to soil forming processes.

5.2.5 Holocene Sediments (Abitibi Unit 7)

Peat (Subunit 7b) and organic material, deposited during the 8,000 years that have elapsed since the draining of Lake Ojibway II, overlie the Pleistocene deposits in 133 of the 149 drill holes. The thickness of the peat horizon reaches a maximum of 3 m and averages less than 1 metre.

6. OVERBURDEN GEOCHEMISTRY

6.1 Regional Gold and Base Metal Background and Anomaly Threshold Levels

The interpretation of the heavy mineral gold geochemistry of overburden samples is an involved process. In summary, the gold background of tills is caused mainly by grains of visible gold and these gold grains are so thinly scattered through the till and are of such a wide size range that it is impossible to obtain either a representative number of grains ("particle sparsity effect") or a representative gold assay ("nugget effect"; Table 5) from a sample of reasonable size. In contrast, gold dispersal trains down-ice from known ore bodies have a large concentration of gold grains of a narrow size range such that both representative gold grain counts and gold assays can be obtained. Through experience, we have established a dispersal train threshold of 10 grains of visible gold for the 8 kg samples that are normally collected on reverse circulation drills. Recognizing that not all gold grains are observed during processing and that gold can be occluded in sulphides or other heavy minerals rather than occurring as free gold grains, we also investigate any anomalies over a second, 1000 ppb threshold. The 1000 ppb value is based on the observation that heavy mineral concentrates from most gold dispersal trains have a gold content similar to that of the source mineralization; thus 1000 ppb in the till is suggestive of highly anomalous bedrock and values over 3,000 ppb are suggestive of ore-grade mineralization. Significant anomalies, in addition to being caused by more than 10 gold grains of a similar size or by occluded gold, also generally display vertical stratigraphic continuity within the host till horizon and may have an associated pathfinder metal, particularly arsenic or copper. Delicate or irregular gold grains are also significant as they normally indicate a proximal source (Fig. 8).

The base metal background of a heavy mineral concentrate, and particularly of our high-density methylene iodide concentrates, is higher than that of a raw till 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 potentially economic concentrations, is 800 ppm. Because till concentrates from dispersal 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 800 ppm Cu or Zn is about 2 ppm. Arsenic does not have a well-defined anomaly threshold because arsenic deposits are not in themselves of economic interest. However, arsenic is a very important gold pathfinder. Arsenic values in excess of 800 ppm are normal in till concentrates obtained from dispersal trains down-ice from known gold deposits that contain arsenopyrite but lower values can be significant, especially if the sampling sites are too widely spaced to guarantee sampling of the higher grade core portions of the train. Similarly, Cu and Zn values lower than 800 ppm that would not be of interest in base metal exploration can be significant as indicators of gold mineralization.

Significant Cu, Zn, Ag and As anomalies, like significant gold anomalies, normally display vertical continuity in the host till and have a pathfinder association. In the case of copper and zinc, the presence of grains of banded massive pyrite-chalcopyrite-sphalerite mineralization in the concentrate is a favourable indicator whereas the presence of only coarse crystalline vein-type chalcopyrite or sphalerite is unfavourable unless gold is also present.

The interpretation of minus 250 mesh gold anomalies is greatly aided by integrating heavy mineral data. As stated in Section 2.2, minus 250 mesh (fines) analysis is normally reserved for areas where significant post-glacial oxidation has occurred. This is because in unoxidized till, gold dispersal trains are invariably detectable in the heavy mineral fraction (Averill, 1988).

Gold background in the minus 250 mesh fraction of raw till samples is caused mainly by grains of visible gold just as it is in the heavy mineral fraction (Averill, 1988). Because only a 250 grams subsample is screened to obtain the minus 250 mesh analytical split and because gold grains are not observed during screening as they are during heavy mineral processing, the minus 250 mesh assays are far less representative of gold background than are the heavy mineral data. Gold background in the minus 250 mesh fraction is usually less than 5 ppb (Coker and DiLabio, in prep.) but an anomaly of 248 ppb can be caused by a single gold grain of 63 microns (250 mesh) median diameter in a 10 gram sample (Fig. 32). A single gold grain in the minus 250 mesh split may be due strictly to chance (the particle sparsity effect) or to potentially significant concentrations of visible gold in the whole sample. Potentially significant minus 250 mesh anomalies can also be caused by occluded gold (i.e. gold physically or chemically held in other minerals or mineral aggregates).

Recognizing that minus 250 mesh gold anomalies weaker than those produced by the chance occurrence of a single visible gold grain in the minus 250 mesh fraction can be significant, we have established an anomaly threshold of 20 ppb gold for this fraction. Significant anomalies, in addition to having assays greater than or equal to 20 ppb, also generally display vertical stratigraphic continuity and may have a pathfinder association. If they are caused by visible gold or by gold occluded in mineral aggregates having a specific gravity of greater than 3.3, anomalies will also be present in the heavy mineral fraction.

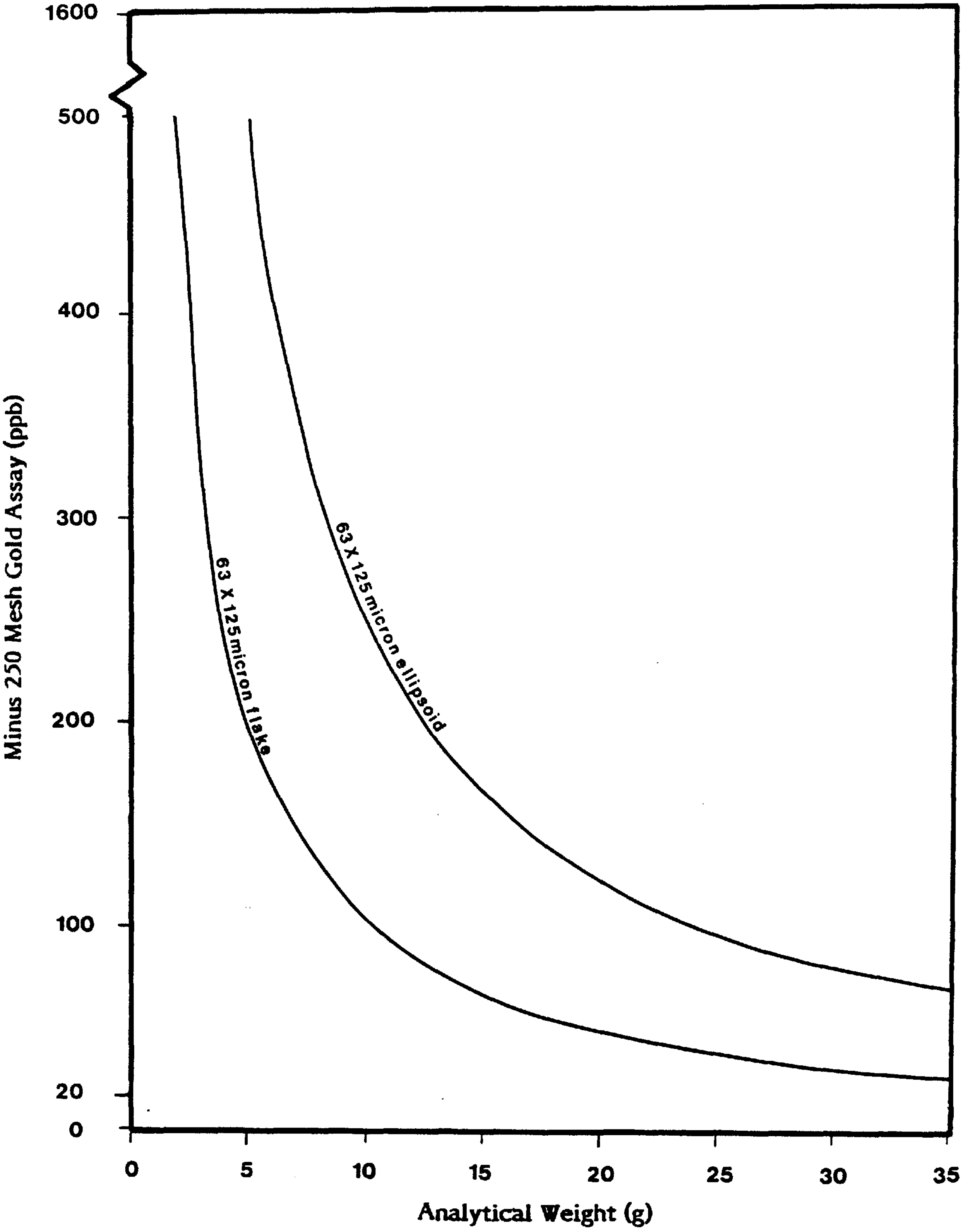


Figure 32 - Gold Assay Versus Analytical Weight Showing the Contribution of a 63 Micron Gold Flake and Grain

6.2 Lac Shortt Overburden Geochemistry

6.2.1 Heavy Mineral Gold Anomalies

Of the 67˜ Lac Shortt heavy mineral concentrates, 74 exceeded our first anomaly thresheld of ten or more grains of visible gold, and 29 of these as well as 52 others exceeded our second anomaly threshold of a measured or calculated gold assay over 1000 ppb. Thus a total of 126 samples (20 percent of the samples collected) met or exceeded one or both of our anomaly thresholds. The 126 anomalies occur in 61 holes that encompass all the drill areas but are concentrated in the south and central portions of the Boyvinet drill area (Plan 3). The anomalies occur in all of the sampled mediums; 8 occur in Lower Till, 1 occurs in Missinaibi sediments, 96 occur in Chibougamau Till, and 21 occur in Ojibway II sediments.

In the Abitibi region, on average, 10 percent of samples that contain only background levels of gold yield anomalous assays or visible gold grain counts due to:

1. The chance occurrence of one or two coarse gold grains in the sample (nugget effect), or

2. The chance clustering of 10 or more fine gold grains in the sample (particle sparsity effect).

The 10 percent Abitibi background noise is entirely attributable to the sampling procedure (i.e. samples are too small to give representative gold grain counts and gold assays). It increases to 15 to 50 percent in the south due to the cumulative effect of glaciating a vast expanse of volcanic terrane that contains a plethora of minor gold occurrences. The fact that 20 percent of the Minnova samples are anomalous, even though the properties lie only 40 km from the northern margin of the Abitibi Belt, indicates that a significant proportion of the anomalies could be dispersal train anomalies related to significant bedrock mineralization. Moreover, most of the anomalies occur immediately over or directly down-ice from the major shear zones or along the inferred cross fault on Boyvinet. Still, a number of anomalies can be expected to be of the insignificant background type regardless of their location.

Heavy mineral arsenic, copper, zinc, and silver assays and minus 250 mesh gold assays all warrant consideration in the interpretation of heavy mineral gold anomalies. The heavy mineral pathfinder background is low in the Minnova drill area, and -- as will be discussed in detail later -- surprisingly few anomalies are present. The highest arsenic assay obtained from the Chibougamau Till samples of each hole (or Ojibway II sand and gravel where Chibougamau Till is absent) is contoured on Plan 3. The 400 ppm arsenic contour outlines several zones within the drill area -- Hole 03 on Wetjack, Holes 13 to 16 on Lesueur, and Hole 80 and Hole 110 on Boyvinet. These high-arsenic zones correspond closely to elevated bedrock arsenic (Plan 1) and overprint a general down-ice increase in the arsenic background from less than 10 ppm in the northeast to around 50 ppm in the southwest. These trends indicate firstly that the Chibougamau Till geochemistry is responsive to variations in the geochemistry of the underlying bedrock and secondly that the drill area bedrock is arsenic-rich in comparison to the up-ice area. Wherever heavy mineral gold anomalies occur in samples producing arsenic assays in excess of 400 ppm, the pathfinder association will be mentioned in the forthcoming discussion.

Heavy mineral copper, zinc, and silver assays are less variable on both the detailed and regional scales, but their association with heavy mineral gold anomalies will also be discussed wherever copper or zinc exceeds 400 ppm or silver exceeds 1.0 ppm.

Minus 250 mesh gold assays are far more variable than any of the heavy mineral pathfinder assays, and anomalies are both common and widespread. As will be discussed in detail later, a total of 191 samples produced minus 250 mesh gold anomalies. Consequently the association of a minus 250 mesh gold anomaly and a heavy mineral gold anomaly in the same sample is much more likely to occur by chance -- i.e. coincidentally -- than is the association of a heavy mineral gold anomaly and a heavy mineral pathfinder. Nonetheless, these associations will be mentioned in the forthcoming heavy mineral gold anomaly screening and description sections.

A systematic, three-stage screening process has been applied to each of the 126 heavy mineral gold anomalies (Table 11) with the objective of eliminating high background noise and isolating dispersal train anomalies.

Gold Anomalies				Grains V.G. (*Not Panned)	1st Stage Screening (Strat. Cont.)	2nd Stage Screening (Meas. Assay: Calc. Assay)	3rd Stage Screening (Nugget Effect)	Remarks	Anomaly Class
Hole No.	Sample No.	Au Assay (ppb) Meas.	Au Assay (ppb) Calc.						
PLS-88- 01	06	171	103	11	Vertical	Good	No	10 abraded and 1 delicate gold grains.	Potentially Significant
	07	176	108	12	Vertical	Good	No	6 abraded, 4 irregular and 2 delicate gold grains.	Potentially Significant
	08	11,390	5,538	13	Vertical, Basal	High (slightly)	Limited	Pulp and metallics assay; mostly coarse gold detected. 7 abraded, 3 irregular and 3 delicate gold grains. 81% of calc. assay contributed by one nugget. Slightly high assay due to either sighted nugget thickness factor or unsighted nugget.	Potentially Significant
02	01	300	2,156	7	No	Low	Observed	Pulp and metallics assay; little gold in either fraction. 5 abraded and 2 delicate gold grains. 96% of calc. assay contributed by one nugget.	Nugget
	04	1,624	N.A.	0*	Basal	High	Inferred	Check panned 1/4 conc.; found no V.G., 1% pyrite. INA 1/4 conc. check assay = 44 ppb Au.	Nugget
03	03	165	114	12	No	Good	No	10 abraded and 2 irregular gold grains.	Potentially Significant
	05	532	386	16	Vertical	Good	No	8 abraded, 3 irregular, and 5 delicate gold grains. Elevated arsenic (552 ppm). -250 Au anomaly (23 ppb).	Potentially Significant
	06	1,995	770	12	Vertical, Basal	High (slightly)	Limited	9 abraded, 1 irregular and 2 delicate gold grains. Slightly high assay probably due to unsighted nugget.	Potentially Significant
04	02	484	353	13	No	Good	No	All abraded gold. Coincident -250 Au anomaly (32 ppb)	Cluster
07	02	257	288	17	No (Ojibway II sand and gravel)	Good	No	11 abraded, 2 irregular and 4 delicate gold grains. -250 Au anomaly (100 ppb).	Potentially Significant
	03	177	88	15	No (Ojibway II sand and gravel)	High (slightly)	No	10 abraded, 2 irregular, 3 delicate gold grains.	Potentially Significant

Table 11 - Heavy Mineral Gold Anomaly Screening

Gold Anomalies				Grains V.G. (*Not Panned)	1st Stage Screening (Strat. Cont.)	2nd Stage Screening (Meas. Assay: Calc. Assay)	3rd Stage Screening (Nugget Effect)	Remarks	Anomaly Class
Hole No.	Sample No.	Au Assay (ppb) Meas.	Calc.						
PLS-88- 13	02	4,849	1	1	Basal	High	No	One abraded gold grain, 70% pyrite, 20% arsenopyrite observed initially. Elevated copper (474 ppm), anomalous arsenic (62,400 ppm). Check panned 1/4 conc.; found 1 abraded grain. 1/4 conc. calc. assay = 1 ppb. INA 1/4 conc. check assay 6,160 ppb Au. -250 Au anomaly (130 ppb). Underlying Bdk. Au = 614 ppb.	Potentially Significant
15	02	3,246	4	2	Basal	High	No	2 abraded gold grains, 70% pyrite, 10% arsenopyrite initially observed. Anomalous arsenic (29,200 ppm). Check panned 1/4 conc.; found 1 abraded gold grain. 1/4 conc. calc. assay = 24 ppb. INA 1/4 conc. check assay = 3,880 ppb Au. -250 Au anomaly (27 ppb). Underlying Bdk. Au = 35 ppb.	Potentially Significant
16	02	9,833	246	2	Basal	High	No	2 abraded gold grains, 50% pyrite, 200 grains arsenopyrite initially observed. Anomalous arsenic (816 ppm). Check panned 1/4 conc.; found no V.G. INA 1/4 check assay = 675 ppb Au. Underlying Bdk Au = 13 ppb.	Nugget
19	02	1,840	1,472	7	No	Good	Observed	Pulp and metallics assay; no coarse gold detected, +150 weight only 0.05 g. All abraded gold, 20% pyrite, 20 grains, arsenopyrite, 500 grains marcasite initially observed. 66% of calc. assay contributed by one nugget.	Nugget
20	01	1,200	1,220	8	No (Ojibway II sand)	Good	Observed	Pulp and metallics assay; mostly coarse gold detected. 5 abraded and 3 delicate gold grains. 85% of calc. assay contributed by one nugget. Coincident -250 Au anomaly (20 pp).	Nugget
	04	1,433	797	1*	No (Ojibway II gravel)	Good	Observed	Single abraded gold grain observed.	Nugget
22	05	1,150	1,273	6	Vertical	Good	Observed	Pulp and metallics assay; mostly coarse gold detected. 5 abraded and 1 delicate gold grains. 81% of calc. assay contributed by one nugget.	Nugget

Table 11 - Heavy Mineral Gold Anomaly Screening (cont'd)

Gold Anomalies				Grains V.G. (*Not Panned)	1st Stage Screening (Strat. Cont.)	2nd Stage Screening (Meas. Assay: Calc. Assay)	3rd Stage Screening (Nugget Effect)	Remarks	Anomaly Class
Hole No.	Sample No.	Au Assay (ppb) Meas.	Au Assay (ppb) Calc.						
PLS-88- 22-	06	2,254	893	3	Vertical	High	Observed/ Inferred	All abraded gold initially observed. Check panned 1/4 conc.; found no V.G., 7% pyrite. INA 1/4 conc. check assay = 22 ppb Au.	Nugget
24	03	2,095	296	3	No (Ojibway II sand and gravel)	High	Inferred	All abraded gold initially observed. Check panned 1/4 conc.; found no V.G., 5% pyrite. INA 1/4 conc. check assay = 19 ppb Au. Coincident -250 Au anomaly (460 ppb).	Nugget
	08	375	91	12	No (Ojibway II sand)	High (slightly)	No	1 abraded and 11 delicate gold grains.	Potentially Significant
	10	433	321	19	No (Ojibway II gravel)	Good	No	5 abraded, 1 irregular and 13 delicate gold grains.	Potentially Significant
24	11	1,422	50	6	No (Ojibway II gravel)	High	Inferred	1 abraded, 1 irregular and 4 delicate gold grains. Check panned 1/4 conc.; found no V.G., 4% pyrite. INA 1/4 conc. check assay = 59 ppb Au.	Nugget
26	02	1,628	139	3	Basal	High	Inferred	2 abraded and 1 irregular gold grains. Check panned 1/4 conc.; found no V.G., 5% pyrite. INA 1/4 conc. check assay = 40 ppb Au.	Nugget
27	05	12,338	118	6	Basal	High	Inferred	5 abraded and 1 irregular gold grain. Check panned 1/4 conc.; found 1 irregular gold grain, 6% pyrite. 1/4 conc. calc assay = 76 ppb. INA 1/4 conc. calc. assay = 200 ppb Au.	Nugget
	06	395	114	11	No (Missinaibi sand and gravel)	High (slightly)	No	5 abraded, 5 irregular and 1 delicate gold grains. Coincident -250 Au anomaly (46 ppb).	Cluster

Table 11 - Heavy Mineral Gold Anomaly Screening (cont'd)

Gold Anomalies				Grains V.G. (*Not Panned)	1st Stage Screening (Strat. Cont.)	2nd Stage Screening (Meas. Assay: Calc. Assay)	3rd Stage Screening (Nugget Effect)	Remarks	Anomaly Class
Hole No.	Sample No.	Au Assay (ppb) Meas.	Au Assay (ppb) Calc.						
PLS-88- 28	03	1,480	1,285	3	No (Ojibway II sand and gravel)	Good	Observed	Pulp and metallics assay; mostly coarse gold detected. 2 abraded and 1 irregular gold grains. 98% of calc. assay contributed by one nugget.	Nugget
30	06	310	7,978	4	Basal	Low	Observed	Pulp and metallics assay; little gold in either fraction. 3 abraded and 1 delicate gold grains. 99% of calc. assay contributed by one nugget. Coincident -250 Au anomaly (44 ppb).	Nugget
38	02	489	259	10	Basal	Good	No	9 abraded and 1 delicate gold grains. Coincident -250 Au anomaly (74 ppb).	Cluster
45	02	410	147	10	Basal	High (slightly)	No	All abraded gold. Coincident -250 Au anomaly (108 ppb).	Cluster
50	02	948	407	10	Vertical	High (slightly)	No	9 abraded and 1 irregular gold grain. Coincident -250 Au anomaly (43 ppb).	Cluster
50	03	1,524	440	9	Vertical Basal	High	Inferred	All abraded gold initially observed. Check panned 1/4 conc.; found 1 abraded gold grain, 5% pyrite. 1/4 conc. calc. assay = 70 ppb. INA 1/4 conc. check assay = 260 ppb Au.	Nugget
54	03	120	150	12	No	Good	No	10 abraded, 2 irregular gold grains	Cluster
55	04	1,470	211	5	No (Ojibway II sand and gravel)	High	Inferred	4 abraded, 1 delicate gold grains. Check panned 1/4 conc.; found 1 abraded and 1 delicate gold grain, 10%, 10% pyrite, 5 grains arsenopyrite 1/4 conc. calc. assay = 198 ppb. INA check assay = 698 ppb Au.	Nugget
58	01	1,056	391	10	No (Ojibway II sand and gravel)	High	Inferred	8 abraded, 2 delicate gold grains. Check panned 1/4 conc.; found 2 abraded and 1 delicate gold grain, 5% pyrite, 10 grains arsenopyrite. 1/4 conc. calc. assay = 198 ppb. INA check assay = 280 ppb Au.	Nugget

Table 11 - Heavy Mineral Gold Anomaly Screening (cont'd)

Gold Anomalies				Grains V.G. (*Not Panned)	1st Stage Screening (Strat. Cont.)	2nd Stage Screening (Meas. Assay: Calc. Assay)	3rd Stage Screening (Nugget Effect)	Remarks	Anomaly Class
Hole No.	Sample No.	Au Assay (ppb) Meas.	Au Assay (ppb) Calc.						
PLS-88- 59	02	85	106	14	No (Ojibway II sand and gravel)	Good	No	All abraded gold.	Cluster
	03	6,150	5	1*	No (Ojibway II sand and gravel)	High	Inferred	Single observed grain abraded. Check panned 1/4 conc.; found 1 abraded gold grain, 6% pyrite. 1/4 conc. calc. assay = 41 ppb. INA 1/4 conc. check assay = 67 ppb Au.	Nugget
66	04	1,280	2,437	1*	No (Ojibway II sand and gravel)	Good	Observed	Pulp and metallics assay; mostly coarse gold detected. Single observed goldgrain abraded. Coincident -250 Au anomaly (28 ppb).	Nugget
	08	1,621	NA	0*	Vertical	High	Inferred	Check panned 1/4 conc.; found no V.G., 2% pyrite. INA 1/4 conc. check assay = 27 ppb Au.	Nugget
	09	1,064	34	1*	Vertical	High	No	Single observed gold grain abraded. Check panned 1/4 conc.; found 2 delicate gold grains, 6% pyrite. 1/4 conc. calc. assay = 43 ppb. INA 1/4 conc. check assay = 320 ppb. -250 Au anomaly (21 ppb).	Potentially Significant
	10	2,237	NA	0*	Vertical, Basal	High	No	Check panned 1/4 conc.; found 5 delicate and 1 abraded gold grains, 7% pyrite. 1/4 conc. calc. assay = 546 ppb. INA 1/4 conc. check assay = 2770 ppb Au. -250 Au anomaly (86 ppb).	Potentially Significant
	11	1,394	NA	0*	Basal	High	Inferred	Check panned 1/4 conc.; found no V.G., 2% pyrite. INA 1/4 conc. check assay = 470 ppb Au.	Nugget

Table 11 - Heavy Mineral Gold Anomaly Screening (cont'd)

Gold Anomalies				Grains V.G. (*Not Panned)	1st Stage Screening (Strat. Cont.)	2nd Stage Screening (Meas. Assay: Calc. Assay)	3rd Stage Screening (Nugget Effect)	Remarks	Anomaly Class
Hole No.	Sample No.	Au Assay (ppb)							
		Meas.	Calc.						
PLS-88- 70	04	1,564	377	1*	Basal	High	Inferred	Single initially observed gold grain abraded. Check panned 1/4 conc.; found 1 delicate gold grain, 1% pyrite. 1/4 conc. calc. assay = 231 ppb. INA 1/4 conc. check assay = 150 ppb Au.	Nugget
73	03	499	97	11	No	High (slightly)	No	10 abraded and 1 delicate gold grains. Coincident -250 Au anomaly (36 ppb).	Cluster
74	05	1,973	NA	0*	Basal	High	Inferred	Check panned 1/4 conc.; found no V.G., 4% pyrite, 5,000 grains marcasite, 10 grains chalcopyrite. INA 1/4 conc. check assay = 45 ppb Au. Coincident -250 Au anomaly (45 ppb).	Nugget
75	08	1,013	241	8	No (Ojibway II sand and gravel)	High	No	All abraded gold. Check panned 1/4 conc.; found 2 abraded gold grains, 10% pyrite, 5 grains chalcopyrite, 2 grains molybdenite. 1/4 conc. calc. assay = 187 ppb. INA 1/4 conc. check assay = 300 ppb Au. Coincident -250 Au anomaly (30 ppb).	Cluster
78	04	2,481	NA	0*	No	High	No	Check panned 1/4 conc.; found 9 delicate gold grains; 1% pyrite. 1/4 conc. calc. assay = 459 ppb. INA check assay = 1120 ppb Au. -250 Au anomlay (420 ppb).	Potentially Significant
79	03	3,047	19	1*	No	High	Inferred	Single observed gold grain abraded. Check panned 1/4 conc.; found no V.G., 0.5% pyrite, 5 grains galena, 5 grains chalcopyrite. INA 1/4 conc. check assay = 71 ppb Au.	Nugget
	11	2,378	16	1*	Basal	High	Inferred	Single observed gold grain abraded. Check panned 1/3 conc.; found no V.G., 1% pyrite. INA 1/4 conc. check assay = 36 ppb Au. Underlying Bdk Au = 28 ppb. Coincident -250 Au anomaly (22 ppb).	Nugget

Table 11 - Heavy Mineral Gold Anomaly Screening (cont'd)

Gold Anomalies				Grains V.G. (*Not Panned)	1st Stage Screening (Strat. Cont.)	2nd Stage Screening (Meas. Assay: Calc. Assay)	3rd Stage Screening (Nugget Effect)	Remarks	Anomaly Class
Hole No.	Sample No.	Au Assay (ppb)							
		Meas.	Calc.						
PLS-88- 80	01	12,112	171	1*	No (Ojibway II gravel)	High	Inferred	Single observed gold grain abraded. Check panned 1/4 conc.; found 1 delicate gold grain, 0.5% pyrite. 1/4 conc. calc. assay = 56 ppb. INA 1/4 conc. check assay = 140 ppb Au.	Nugget
94	01	153	318	11	No	Low (slightly)	No	8 abraded and 3 irregular gold grains.	Cluster
95	03	700	1,455	4	No	Low (slightly)	Observed	Pulp and metallics assay; equal proportions of gold in each fraction. All abraded gold grains. 95% of calc. assay contributed by one nugget. Coincident -250 Au anomaly (48 ppb).	Nugget
96	04	230	70	11	No	High (slightly)	No	10 abraded and 1 irregular gold grains.	Cluster
	12	142	212	10	No	Good	No	6 abraded and 4 irregular gold grains.	Cluster
	17	2,208	NA	0*	Basal	High	Inferred	All abraded gold grains initially observed. Check panned 1/4 conc.; found no V.G., 1% pyrite. INA 1/4 conc. check assay = 120 ppb Au.	Nugget
97	05	743	124	11	Vertical	High	No	All abraded gold grains. -250 Au anomaly (38 ppb).	Potentially Significant
	06	402	295	20	Vertical	Good	No	All abraded gold grains.	Potentially Significant
	07	670	722	21	Vertical	Good	No	15 abraded, 5 irregular and 1 delicate gold grains.	Potentially Significant
	10	122	197	14	No	Good	No	12 abraded and 2 irregular gold grains. -250 Au anomaly (22 ppb).	Potentially Significant

Table 11 - Heavy Mineral Gold Anomaly Screening (cont'd)

Gold Anomalies				Grains V.G. (*Not Panned)	1st Stage Screening (Strat. Cont.)	2nd Stage Screening (Meas. Assay: Calc. Assay)	3rd Stage Screening (Nugget Effect)	Remarks	Anomaly Class
Hole No.	Sample No.	Au Assay (ppb) Meas.	Calc.						
PLS-88- 100	01	4,624	130	1*	No	High	No	Single abraded gold grain observed initially. Check panned 1/4 conc.; found 1 irregular and 3 delicate gold grains, 1% pyrite. 1/4 conc. calc. assay = 1474 ppb. INA 1/4 conc. check assay = 2650 ppb Au. Underlying Bdk. Au = 22 ppb.	Potentially Significant
101	01	1,360	300	31	Vertical	High	Limited	11 abraded, 7 irregular and 13 delicate gold grains. High assay probably due to unsighted nugget. -250 Au anomaly (80 ppb).	Potentially Significant
	02	308	922	52	Vertical	Low	No	12 abraded, 8 irregular and 32 delicate gold grains. -250 Au anomaly (523 ppb).	Potentially Significant
	03	7,740	4,186	106	Vertical, Basal	Good	Limited	Pulp and metallics assay; both fine and coarse gold detected. 30 abraded, 19 irregular and 57 delicate gold grains. 33% of calc. assay contributed by one nugget. -250 Au anomaly (124 ppb). Underlying BdK. Au = 16 ppb.	Potentially Significant
102	02	5,000	3,100	41	No (Ojibway II sand and gravel)	Good	No	Pulp and metallics assay; mostly fine gold detected. 4 irregular and 37 delicate gold grains. 39% of calc. assay contributed by 2 delicate gold grains. -250 Au anomaly (330 ppb).	Potentially Significant
104	01	1,120	NA	0*	Vertical	High	No	Check panned 1/4 conc.; found 4 irregular gold grains. 1.5% pyrite, 50 grains galena. 1/4 conc. calc. assay = 107 ppb. INA 1/4 conc. check assay = 1080 ppb Au. -250 Au anomaly (56 ppb).	Potentially Significant
	02	1,130	1,336	20	Vertical	Good	Limited	Pulp and metallics assay; mostly coarse gold detected. 19 abraded and 1 irregular gold grains. 73% of calc. assay contributed by one nugget. -250 Au anomaly (75 ppb).	Potentially Significant
	03	831	303	11	Vertical	High (slightly)	No	9 abraded and 2 irregular gold grains. -250 Au anomaly (25 ppb).	Potentially Significant

Table 11 - Heavy Mineral Gold Anomaly Screening (cont'd)

Gold Anomalies				Grains V.G. (*Not Panned)	1st Stage Screening (Strat. Cont.)	2nd Stage Screening (Meas. Assay: Calc. Assay)	3rd Stage Screening (Nugget Effect)	Remarks	Anomaly Class
Hole No.	Sample No.	Au Assay (ppb) Meas.	Calc.						
PLS-88- 104	04	655	224	20	Vertical, Basal	High (slightly)	No	17 abraded and 3 irregular gold grains. -250 Au anomaly (53 ppb). Underlying Bdk. Au = 25 ppb. (53 ppb).	Potentially Significant
105	01	1,287	346	18	Vertical	High	Limited	All abraded gold grains observed initially. Check panned 1/4 conc.; found 1 abraded grain, 2% pyrite. 1/4 conc. calc. assay = 45 ppb. INA 1/4 conc. check assay = 460 ppb Au.	Potentially Significant
	02	1,315	329	15	Vertical	High	Limited	All abraded gold grains observed initially. Check panned 1/4 conc.; found 6 delicate gold grains, 0.5% pyrite (gold grain morphology change due to operator variability). 1/4 conc. calc. assay = 170 ppb. INA 1/4 conc. check assay = 770 ppb Au. -250 Au anomaly (141 ppb).	Potentially Significant
	03	894	122	12	Vertical	High	No	All abraded gold grains. -250 Au anomaly (55 ppb).	Potentially Significant
	04	757	221	15	Vertical	High (slightly)	No	All abraded gold grains.	Potentially Significant
	05	1,258	708	16	Vertical	Good	No	All abraded gold grains. Subsequent whole conc. examination yielded 9 delicate and irregular gold grains. -250 Au anomaly (21 ppb).	Potentially Significant
110	01	3,139	690	11	Vertical	High	Inferred/ Limited	All abraded gold grains observed initially. Check panned 1/4 conc.; found 2 abraded and 3 delicate gold grains, 4% pyrite (gold grain morphology switch due to operator variability). 1/4 conc. calc. assay = 365 ppb. INA 1/4 conc. check assay = 1190 ppb Au. -250 Au anomaly (94 ppb).	Potentially Significant
	02	1,089	783	6	Vertical	Good	No	All abraded gold. Elevated Cu (437 ppm). -250 Au anomaly (23 ppb).	Potentially Significant

Table 11 - Heavy Mineral Gold Anomaly Screening (cont'd)

Gold Anomalies				Grains V.G. (*Not Panned)	1st Stage Screening (Strat. Cont.)	2nd Stage Screening (Meas. Assay: Calc. Assay)	3rd Stage Screening (Nugget Effect)	Remarks	Anomaly Class
Hole No.	Sample No.	Au Assay (ppb) Meas.	Calc.						
PLS-88- 110	03	628	367	17	Vertical	Good	No	All abraded gold.	Potentially Significant
	08	3,750	5,406	34	Basal	Good	Limited	Pulp and metallics assay; mostly fine gold detected. 26 abraded, 4 irregular and 4 delicate gold grains. 82% of calc. assay contributed by two nuggets. -250 Au anomaly (183 ppb). Underlying Bdk. Au = 13 ppb.	Potentially Significant
111	01	1,583	441	24	Vertical	High	Limited	19 abraded, 3 irregular, 2 delicate gold grains. High assay probably due to unsighted nugget. -250 Au anomaly (51 ppb).	Potentially Significant
	02	956	258	14	Vertical	High (slightly)	No	12 abraded, 1 irregular and 1 delicate gold grains. -250 Au anomaly (28 ppb).	Potentially Significant
	03	542	264	14	Vertical	High (slightly)	No	All abraded gold. -250 Au anomaly (50 ppb).	Potentially Significant
113	02	318	75	12	Basal	High	No	All abraded gold. -250 Au anomaly (38 ppb).	Cluster
114	01	7,230	4,618	143	Vertical	Good	Limited	Pulp and metallics assay; mostly coarse gold detected, but both fractions anomalous (-150 = 4,610 ppb Au). 112 abraded, 26 irregular, 5 delicate gold grains. 53% of calc. assay contributed by two nuggets. Significantly higher measured assay and high H.M.C. -150 mesh pulp assay indicate occluded gold. -250 Au anomaly (57 ppb).	Potentially Significant
	02	4,618	1,432	66	Vertical, Basal	High	No	56 abraded, 8 irregular and 2 delicate gold grains. High assay probably due to occluded gold. -250 Au anomaly (413 ppb).	Potentially Significant

Table 11 - Heavy Mineral Gold Anomaly Screening (cont'd)

Gold Anomalies				Grains V.G. (*Not Panned)	1st Stage Screening (Strat. Cont.)	2nd Stage Screening (Meas. Assay: Calc. Assay)	3rd Stage Screening (Nugget Effect)	Remarks	Anomaly Class
		Au Assay (ppb)							
Hole No.	Sample No.	Meas.	Calc.						
PLS-88- 115	01	2,983	427	32	Basal	High	Inferred	6 abraded, 11 irregular and 15 delicate gold grains. Only 0.2 m thick till horizon. Check panned 1/4 conc.; found 4 abraded, 2 irregular and 2 delicate gold grains, 3% pyrite, 10 grains chalcopyrite, 1 grain molybdenite. 1/4 conc. calc. assay = 737 ppb. INA 1/4 conc. check assay = 1870 ppb Au.	Potentially Significant
116	01	2,651	NA	0*	Vertical	High	No	Check panned 1/4 conc.; found 10 delicate gold grains, 1% pyrite. 1/4 conc. calc. assay = 629 ppb. INA 1/4 conc. check assay = 875 ppb Au. -250 Au anomaly (26 ppb).	Potentially Significant
	02	1,313	1,051	9	Vertical	Good	No	7 abraded, 1 irregular and 1 delicate gold grains. -250 Au anomaly (414 ppb).	Potentially Significant
	03	1,704	467	24	Vertical	High	No	18 abraded, 1 irregular and 5 delicate gold grains. Check panned 1/4 conc; found 1 irregular and 2 delicate gold grains, 2% pyrite. 1/4 conc. calc. assay = 245 ppb. INA 1/4 conc. check assay = 784 ppb Au.	Potentially Significant
	04	1,014	265	17	Vertical, Basal	High	No	15 abraded and 2 irregular gold grains. Check panned 1/4 conc.; found 1 irregular and 2 delicate gold grains, 2% pyrite. 1/4 conc. calc. assay = 3 ppb. INA 1/4 conc. check assay = 619 ppb Au.	Potentially Significant
117	01	307	110	15	Basal	High (slightly)	No	11 abraded, 3 irregular and 1 delicate gold grains. -250 Au anomaly (25 ppb).	Potentially Significant
	04	344	215	10	Vertical	Good	No	6 abraded, 2 irregular and 2 delicate gold grains.	Potentially Significant
	05	22,700	16,350	10	Vertical	Good	Observed	Pulp and metallics assay; mostly coarse gold detected, but both fractions anomalous. 9 abraded and 1 delicate gold grains. 99% of calc. assay contributed by one nugget. -250 Au anomaly (26 ppb).	Potentially Significant

Table 11 - Heavy Mineral Gold Anomaly Screening (cont'd)

Gold Anomalies				Grains V.G. (*Not Panned)	1st Stage Screening (Strat. Cont.)	2nd Stage Screening (Meas. Assay: Calc. Assay)	3rd Stage Screening (Nugget Effect)	Remarks	Anomaly Class
Hole No.	Sample No.	Au Assay (ppb) Meas.	Au Assay (ppb) Calc.						
PLS-88- 117	06	1,390	852	60	Vertical	Good	No	41 abraded, 8 irregular and 11 delicate gold grains. -250 Au anomaly (52 ppb).	Potentially Significant
	07	2,360	3,493	86	Vertical	Good	Limited	Pulp and metallics assay; both fractions anomalous. 26 abraded, 35 irregular and 25 delicate gold grains. 41% of calc. assay contributed by 2 abraded and 1 irregular gold grains. -250 Au anomaly (140 ppb).	Potentially Significant
	08	2,526	230	9	Vertical	High	No	5 abraded, 1 irregular and 3 delicate gold grains. Check panned 1/4 conc.; found 1 abraded and 3 delicate gold grains, 1% pyrite. 1/4 conc. calc. assay = 312 ppb. INA 1/4 conc. check assay = 645 ppb Au. -250 Au anomaly (195 ppb).	Potentially Significant
118	01	921	191	13	No (Ojibway II sand and gravel)	High	No	5 abraded, 5 irregular and 3 delicate gold grains. -250 Au anomaly (80 ppb).	Potentially Significant
	02	1,008	77	6	Vertical	High	No	3 abraded, 1 irregular, 2 delicate gold grains. Check panned 1/4 conc.; found 1 abraded and 3 delicate gold grains, 2% pyrite. 1/4 conc. calc. assay = 189 ppb. INA 1/4 conc. check assay = 517 ppb Au, indicating nugget may have contributed to initial high assay. -250 Au anomaly (41 ppb).	Potentially Significant
	03	5,732	1,423	90	Vertical	High	No	4 abraded, 15 irregular and 71 delicate gold grains. High assay probably due to occluded gold unlike No. 118-02.	Potentially Significant
	04	7,590	2,457	198	Vertical, Basal	High	No	Pulp and metallics assay; both fractions anomalous (-150 = 8,340 ppb Au). 55 abraded, 51 irregular and 92 delicate gold grains. 25% of calc. assay contributed by one nugget. High assay probably due to occluded gold unlike No. 118-02. Occluded gold is supported by high H.M.C. -150 mesh pulp assay. -250 Au anomaly (655 ppb).	Potentially Significant

Table 11 - Heavy Mineral Gold Anomaly Screening (cont'd)

Gold Anomalies				Grains V.G. (*Not Panned)	1st Stage Screening (Strat. Cont.)	2nd Stage Screening (Meas. Assay: Calc. Assay)	3rd Stage Screening (Nugget Effect)	Remarks	Anomaly Class
Hole No.	Sample No.	Au Assay (ppb) Meas.	Calc.						
PLS-88- 119	01	1,121	322	45	Vertical	High	No	13 abraded, 8 irregular and 24 delicate gold grains. High assay probably due to occluded gold as in No. 119-02.	Potentially Significant
	02	2,051	940	14	Vertical	High (slightly)	No	9 abraded, 4 irregular and 1 delicate gold grains. Check panned 1/4 conc.; found 3 abraded, 2 irregular and 1 delicate gold grain, 30% pyrite. 1/4 conc. calc. assay = 284 ppb. INA 1/4 conc. check assay = 556 ppb Au, indicating occluded gold component roughly equals visible gold component.	Potentially Significant
120	03	1,086	499	2	No	High (slightly)	Observed/ Inferred	Both originally sighted gold grains abraded. Check panned 1/4 conc.; found 1 abraded gold grain, 0.5% pyrite. 1/4 conc. calc. assay = 3 ppb. INA 1/4 conc. check assay = 47 ppb Au.	Nugget
	06	1,025	129	10	No	High	Inferred	3 abraded, 3 irregular and 4 delicate gold grains originally sighted. Check panned 1/4 conc.; found 2 irregular gold grains, 1% pyrite. 1/4 conc. calc. assay = 139 ppb. INA 1/4 conc. check assay = 668 ppb Au.	Nugget/ Cluster
122	05	1,019	555	5	No	Good	Inferred	All abraded gold grains.	Nugget
123	01	754	101	16	Vertical	High	No	6 abraded, 7 irregular and 3 delicate gold grains.	Potentially Significant
	02	946	163	11	Vertical	High	No	8 abraded, 1 irregular and 2 delicate gold grains.	Potentially Significant
	05	340	162	10	Vertical	High (slightly)	No	7 abraded, 1 irregular and 2 delicate gold grains.	Potentially Significant

Table 11 - Heavy Mineral Gold Anomaly Screening (cont'd)

Gold Anomalies				Grains V.G. (*Not Panned)	1st Stage Screening (Strat. Cont.)	2nd Stage Screening (Meas. Assay: Calc. Assay)	3rd Stage Screening (Nugget Effect)	Remarks	Anomaly Class
Hole No.	Sample No.	Au Assay (ppb) Meas.	Au Assay (ppb) Calc.						
PLS-88- 123	06	264	58	10	Vertical	High	No	5 abraded, 3 irregular and 2 delicate gold grains.	Potentially Significant
	09	1,832	127	6	No	High	No	4 abraded and 2 delicate gold grains. Check panned 1/4 conc.; found 1 delicate gold grain, 1% pyrite. 1/4 conc. calc. assay = 3 ppb. INA 1/4 conc. check assay = 1400 ppb Au.	Potentially Significant
	11	1,044	337	2	Basal	High	No	Both initially observed gold grains abraded. Check panned 1/4 conc.; found no V.G., 2% pyrite. INA 1/4 conc. check assay = 100 ppb Au.	Nugget
124	01	1,835	119	7	No	High	No	2 abraded and 5 delicate gold grains. Check panned 1/4 conc.; found 1 abraded gold grain, 2% pyrite. 1/4 conc. calc. assay = 12 ppb. INA 1/4 conc. check assay = 63 ppb.	Nugget
126	01	2,590	94	4	Basal	High	Inferred	All initially observed gold grains abraded. Check panned 1/4 conc.; found 1 abraded gold grain, 2.5% pyrite. 1/4 conc. calc. assay = 37 ppb. INA 1/4 conc. check assay = 628 ppb Au.	Nugget
127	01	2,203	26	5	No (Ojibway II sand and gravel)	High	Inferred	3 abraded and 2 irregular gold grains. Check panned 1/4 conc.; found 1 abraded gold grain, 2% pyrite, 5 grains chalcopyrite. 1/4 conc. calc. assay = 28 ppb. INA 1/4 conc. check assay = 200 ppb Au. Coincident -250 Au anomaly (90 ppb).	Nugget
	02	572	231	10	No (Ojibway II sand and gravel)	High (slightly)	No	5 abraded, 2 irregular and 1 delicate gold grains.	Cluster
	03	10,587	240	8	No	High	Inferred	3 abraded, 4 irregular and 1 delicate gold grains. Check panned 1/4 conc.; found 1 delicate gold grain, 3% pyrite. 1/4 conc. calc. assay = 119 ppb. INA 1/4 conc. check assay = 180 ppb Au.	Nugget

Table 11 - Heavy Mineral Gold Anomaly Screening (cont'd)

Gold Anomalies				Grains V.G. (*Not Panned)	1st Stage Screening (Strat. Cont.)	2nd Stage Screening (Meas. Assay: Calc. Assay)	3rd Stage Screening (Nugget Effect)	Remarks	Anomaly Class
Hole No.	Sample No.	Au Assay (ppb) Meas.	Au Assay (ppb) Calc.						
PLS-88- 135	08	2,600	341	23	Basal	High	No	1 abraded, 9 irregular and 13 delicate gold grains. Check panned 1/4 conc.; found 4 delicate gold grains, 3% pyrite. 1/4 conc. calc. assay = 582 ppb. INA 1/4 conc. check assay = 2240 ppb Au. -250 Au anomaly (32 ppb).	Potentially Significant
136	01	822	371	13	Basal	High (slightly)	No	4 abraded, 2 irregular and 7 delicate gold grains.	Potentially Significant
141	10	1,555	872	8	Basal	Good	Observed	6 abraded and 2 delicate gold grains. 75% of calc. assay contributed by one nugget. Coincident -250 Au anomaly (33 ppb).	Nugget
144	05	1,089	570	16	Vertical	Good	No	14 abraded, 1 irregular and 1 delicate gold grains.	Potentially Significant
	06	1,207	118	16	Vertical	High	No	15 abraded and 1 irregular gold grains. Check panned 1/4 conc.; found 4 abraded gold grains, 3% pyrite. High assay probably due to nugget. -250 Au anomaly (113 ppb).	Potentially Significant
	07	491	220	8	Vertical, Basal	High (slightly)	No	17 abraded and 1 irregular gold grains. -250 Au anomaly (21 ppb).	Potentially Significant
146	03	551	343	12	Vertical	Good	No	11 abraded and 1 irregular gold grains. Coincident -250 Au anomaly (35 ppb).	Cluster
	04	317	234	10	Vertical	Good	No	All abraded gold grains.	Cluster

Table 11 - Heavy Mineral Gold Anomaly Screening (cont'd)

Gold Anomalies				Grains V.G. (*Not Panned)	1st Stage Screening (Strat. Cont.)	2nd Stage Screening (Meas. Assay: Calc. Assay)	3rd Stage Screening (Nugget Effect)	Remarks	Anomaly Class
Hole No.	Sample No.	Au Assay (ppb) Meas.	Au Assay (ppb) Calc.						
PLS-88- 147	05	1,142	12	1*	No	High	Inferred	Single observed gold grain abraded. Check panned 1/4 conc.; found no V.G., 6% pyrite. INA 1/4 conc. check assay = 19 ppb Au.	Nugget
	08	1,002	N.A.	0*	No	High	Inferred	Check panned 1/4 conc.; found no V.G., 3% pyrite. INA 1/4 conc. check assay = 210 ppb Au.	Nugget
	10	870	7,248	1*	No	Low	Observed	Pulp and metallics assay; mostly coarse gold detected. Single observed gold grain abraded. Check panned 1/4 conc.; did not find missing nugget.	Nugget
	14	431	372	12	No	Good	No	All abraded gold grains.	Cluster

Table 11 - Heavy Mineral Gold Anomaly Screening (cont'd)

The simplest stage in the screening -- and therefore the first one applied -- is to downgrade anomalies which have no vertical stratigraphic continuity; however, no anomaly is completely eliminated until the cause of the anomaly is determined. An anomaly at the base of a till horizon or in a one-sample thick till horizon is automatically assumed to have vertical stratigraphic continuity even though it generally does not. A lack of vertical stratigraphic continuity is displayed by a single, isolated anomalous sample within or at the top of a multi-sample till horizon or at any level in a sand or gravel horizon. A gold anomaly with no vertical stratigraphic continuity is generally caused by either the nugget effect or the cluster (particle sparsity) effect. These nugget or cluster anomalies sometimes occur in consecutive samples in a drill hole and occasionally they are contiguous with a gold anomaly of another type; we refer to this as "chance" continuity and treat the anomalies as if they had no vertical continuity. To have true vertical continuity, contiguous anomalies must have in common at least one property of a dispersal train anomaly such as delicate gold grains, occluded gold or a pathfinder association. Of the 126 anomalies, 21 have no vertical stratigraphic continuity by definition because they occur in either Ojibway II or Missinaibi sediments and 24 till-hosted anomalies also have no vertical stratigraphic continuity. Of the remaining 81 till-hosted anomalies, 48 have vertical continuity and 33 have basal continuity. Whether the continuity of these anomalies occurs by chance or not will become apparent during the subsequent screening stages.

The second stage in the screening is used to evaluate anomalies occurring in samples where sufficient visible gold was observed to explain the measured (Bondar-Clegg) assays. In its simplest form, the calculated (predicted) visible gold assays are compared to the measured assays to eliminate those anomalies in which the 1,000 ppb threshold is no longer met after the contributions of one or two observed nuggets have been subtracted from the total assays. In a sample with observed nuggets and little or no fine visible gold, either a good correlation of the two assays or a low measured assay indicates that essentially all of the gold in the concentrate is in the nuggets and the anomaly is of no significance.

The correlation between a calculated and measured assay is "good" if the calculated assay is not more than twice as high as or 50 percent less than the measured assay; this allows for a doubling or halving of the normal thickness factor for flake gold particles used in the calculation. Of the 126 anomalous samples, 20 with measured and/or calculated assays over 1000 ppb show good assay correlation. Twelve of these anomalies -- listed below -- are potentially significant because

Sample No	Sample No.	Sample No.
PLS-88- 101-03	PLS-88- 110-02	PLS-88- 117-05
102-02	08	06
104-02	114-01	07
105-05	116-02	144-05

they are caused by high concentrations of fine visible gold of delicate to irregular morphology. These anomalies will be discussed in detail in section 6.2.3. The remaining eight anomalies are from samples that yielded between one and eight gold grains, of which no more than three are delicate and/or irregular in any one sample. All eight of these anomalies are in concentrates that would assay less than 1000 ppb if the contribution of one observed nugget was subtracted from each assay. None of the anomalies have a pathfinder association; two coincide with minus 250 mesh gold anomalies. Six of the anomalies -- four in Ojibway II sediments and two in Chibougamau Till -- have no vertical stratigraphic continuity and thus were downgraded by first-stage screening. The other two, both occurring in Chibougamau Till, have chance continuity -- one vertical and one basal. None of these eight anomalies are significant.

A low measured assay for a concentrate with observed gold nuggets and a calculated assay over 1000 ppb indicates either nugget loss in handling or nugget retention in any of three places: 1) the ODM 1/4 library split; 2) the Bondar-Clegg base metal analytical split of the pulped 3/4 concentrate (normally 1 to 3 grams); 3) the Bondar-Clegg library split of the pulped 3/4 concentrate (also 1 to 3 grams). If little or no other gold is present in the concentrate, the measured assay for the 3/4 concentrate will be below the 1000 ppb anomaly threshold. Only 4 of the 126 anomalies -- occurring in Samples 02-01, 30-06, 95-03 and 147-10 -- are of this type. One to seven gold grains were observed in each of the anomalous samples and in those samples with more than one gold grain, 95 to 99 percent of the calculated assay is caused by a single abraded gold grain (nugget) with a minimum intermediate dimension of 300 microns. The 1/4 concentates of the four samples were panned and none contained the nuggets observed in initial processing. The missing nuggets must have been lost in handling as all four 3/4 concentrates were submitted for pulp and metallics assays, during which all of the plus 150 mesh (100 microns) material is analyzed for gold. None of these four anomalies have a pathfinder association; two coincide with minus 250 mesh gold anomalies. All four of the anomalies occur in Chibougamau Till samples; three lack stratigraphic continuity and thus were downgraded by first stage screening, the other by chance has basal continuity. None of these four anomalies are significant.

A variation of the second stage of screening pertains to anomalies possessing ten or more gold grains but lacking a calculated or measured assay over 1,000 ppb. The objective here is to eliminate anomalies caused solely by the erratic clustering of fine background gold grains in the till. Unless the anomalies possess other properties of dispersal trains, they are generally not significant. This is especially true if the gold grains are abraded, as we have never succeeded in tracing abraded gold to a bedrock source. If, however, the gold grains are of delicate or irregular morphology and occur in stratigraphically contiguous samples, the sub-anomalous heavy mineral assays could simply indicate that the source has a low grade or narrow subcrop or that the samples were obtained from the margins of a dispersal train.

Of the 126 anomalies, 45 are of the above type and 29 of these -- listed below -- lack strong analytical gold values but do possess other properties of disperal train anomalies, particularly gold grain delicacy, and will be discussed in detail in section 6.2.3.

Sample No
PLS-88- 01- 06
07
03- 03
05
07- 02
03
24- 08
10
97- 05
06

Sample No.
PLS-88- 97- 07
10
101-02
104-03
04
105-03
04
110-03
111-02
03

Sample No.
PLS-88- 117-01
04
118-01
123-01
02
05
06
136-01
144-07

The other 16 anomalies from the subject group of 45 are caused by between ten and fourteen very fine gold grains. Typically no more than two of the gold grains in these samples are delicate and/or irregular, but three to six delicate/irregular gold grains occur in four samples. None of the 16 anomalies have a pathfinder association; eight coincide with minus 250 mesh gold anomalies. Ten of the sixteen anomalies --two in Ojibway II sediments, six in Chibougamau Till, one in Missinaibi sediments and one in Lower Till -- have no vertical stratigraphic continuity and thus were downgraded by first-stage screening. The four anomalies with more than two delicate/irregular gold grains fall into this category. The remaining six anomalies -- all in Chibougamau Till samples -- possess chance vertical (three) or basal (three) continuity. None of the sixteen anomalies are significant.

The second-stage screening is very reliable because it is based on direct observation of the gold grains. This screening has effectively eliminated 28 of the 126 gold anomalies at the 100 percent confidence level and identified 41 others as potentially significant. Nineteen of the eliminated anomalies also have no stratigraphic continuity and thus were downgraded by the first-stage screening.

The third stage in the screening is used to determine the cause of anomalies occurring in samples for which the measured assays are over 1000 ppb and are too high to be accounted for by the gold grains, if any, observed during processing. High measured assays can be caused by any one of the following:

1. A nugget that was recovered but not sighted during processing.

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 portion of 3/4 concentrate that is assayed (applies only to samples in which a nugget is present, as fine gold would be evenly distributed through the sample).

4. A large number of missed fine gold grains.

5. Gold chemically of physically held (occluded) in arsenopyrite or another heavy mineral.

Unsighted nuggets normally account for about 80 percent of unexpectedly high assays, the thickness and weight factors for 10-20 percent, and fine gold and occluded gold for less than 10 percent. Only the fine gold and occluded gold anomalies are significant.

The third-stage screening involves a mineralogical investigation of the retained 1/4 concentrate, principally by panning, to determine the probable cause of the high assay in the 3/4 concentrate. The 3/4 concentrate itself cannot be panned as it is pulped (ground in a shatter-box) and largely consumed (by acid digestion) during analysis unless the analysis is by the non-destructive instrumental neutron activation (INA) method.

An absence or minimal amount of fine visible gold in the 1/4 concentrate precludes the occurrence of fine 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 or by occluded gold. We have encountered occluded gold only in samples that contain arsenopyrite; however there is a significant potential for occluded gold in samples that contain other pathfinder minerals or more than 10 percent pyrite. To ensure that no significant amount of occluded gold is present the 1/4 concentrate is analyzed by the non-destructive INA method. Only if the 1/4 split assay duplicates the 3/4 split assay is the presence of occluded gold suggested. The third-stage screening is an indirect method as all checks are made on the 1/4 concentrate rather than on the 3/4 concentrate that was analyzed originally but is essentially 100 percent reliable.

The 57 anomalies that could not be eliminated or enhanced by the second stage screening all had measured assays greater than 1000 ppb and more than twice as high as the corresponding calculated assays. These anomalies are thus amenable to third stage screening.

Nineteen of these anomalies -- listed below -- were initially recognized as dispersal train type anomalies simply on the basis of their gold grain counts and/or stratigraphic continuity:

Sample No	Sample No.	Sample No.
PLS-88- 01- 08	PLS-88- 114-02	PLS-88- 118-03
03- 06	115-01	04
101-01	116-03	119-01
105-01	04	02
02	117-08	135-08
110-01	118-02	144-06
111-01		

Most of these nineteen were nonetheless subjected to third stage screening to determine the extent that occluded gold played in the high measured assays, and they will all be discussed in detail in section 6.2.3.

The remaining thirty-eight anomalies come from samples that yielded between zero and ten gold grains during initial processing (Table 12). Calculated whole concentrate gold assays for samples with observed gold grains range from 1 to 893 ppb and measured 3/4 concentrate gold assays range from 1,013 ppb to 12,338 ppb. Check panning of the 1/4 concentrates of six of the samples that produced these anomalies -- listed below -- yielded between two and ten grains of predominantly delicate gold (Appendix G) and these six anomalies will be discussed in detail in section 6.2.3.

Sample No	Sample No.	Sample No.
PLS-88- 66- 09	PLS-88- 78- 04	PLS-88- 104-01
10	100-01	116-01

The other thirty-two 1/4 concentrates yielded between zero and three predominantly abraded gold grains (Appendix G); thus the 3/4 concentrate anomalies were not caused by dispersal-train type visible gold anomalies. The INA assays (Appendix G) of twenty-nine of these thirty-two 1/4 concentrates are well

	Visible Gold		Gold Assay			
Sample No.	Whole Conc.	1/4 Conc.	Calc. Whole	Meas. 3/4	Calc. 1/4	Meas. 1/4
PLS-88- 02-04	0*	0	NA	1,624	NA	44
13-02	1	1	1	4,849	1	6,160
15-02	2	1	4	3,246	24	3,880
16-02	2	0	246	9,833	NA	675
22-06	3	0	893	2,254	NA	22
24-03	3	0	296	2,095	NA	19
11	6	0	50	1,422	NA	59
26-02	3	0	139	1,628	NA	40
27-05	6	1	118	12,338	76	200
50-03	9	1	440	1,524	70	260
55-04	5	2	211	1,470	297	698
58-01	10	3	391	1,056	198	280
59-03	1*	1	5	6,150	41	67
66-08	0*	0	NA	1,621	NA	27
09	1*	2	34	1,064	43	320
10	0*	6	NA	2,237	546	2,770
11	0*	0	NA	1,394	NA	470
70-04	1*	1	377	1,564	231	150
74-05	0*	0	NA	1,973	NA	45
75-08	8	2	241	1,013	187	300
78-04	0*	9	NA	2,481	459	1,120
79-03	1*	0	19	3,047	NA	71
79-11	1*	0	16	2,378	NA	36
80-01	1*	1	171	12,112	56	140
96-17	0*	0	NA	2,208	NA	120
100-01	1*	6	130	4,624	1,474	2,650
104-01	0*	4	NA	1,120	107	1,080
116-01	0*	10	NA	2,650	629	875
120-03	2	1	499	1,086	3	47
06	10	2	129	1,025	139	668
123-09	6	1	127	1,832	3	1,400
11	2	0	337	1,044	NA	100
124-01	7	1	119	1,835	12	63
126-01	4	1	94	2,590	37	628
127-01	5	1	26	2,203	28	200
03	8	1	240	10,587	119	180
147-05	1*	0	12	1,142	NA	19
08	0*	0	NA	1,002	NA	210

*Not panned

Table 12 - Gold Data for Gold Anomalies Subjected to Third Stage Screening To Evaluated Their Significance

below 1000 ppb and usually show good correlation with the 1/4 concentrate calculated visible gold assays. By inference, the twenty-nine high 3/4 concentrate measured assays must have been caused by unsighted nuggets or by analytical problems. Twenty-eight of these twenty-nine anomalies have no pathfinder association, the exception being an anomalous arsenic association (816 ppm) in Sample 16-02. Four of the twenty-nine coincide with minus 250 mesh gold anomalies. Fifteen of the twenty-nine -- eight occurring in Ojibway II sediments and seven in Chibougamau Till -- have no vertical stratigraphic continuity and thus were downgraded by first stage screening. Two occurring in Chibougamau Till have chance vertical continuity, and twelve -- two occurring in Lower Till and ten in Chibougamau Till -- by chance have basal continuity. None of these twenty-nine anomalies are significant. The 1/4 concentrate assay for the other three of the thirty-two samples -- listed below --duplicated the 3/4 concentrate assays, indicating that occluded gold is present. These three anomalies will be discussed in detail in section 6.2.3.

Sample No.	Sample No.	Sample No.
PLS-88-13-02	PLS-88-15-02	PLS-88-123-09

In summary the second and third stage screening, both of which are essentially 100 percent reliable, have eliminated 28 and 29 of the 126 heavy mineral gold anomalies, respectively. First-stage screening had previously downgraded 37 of the 57 eliminated anomalies.

All 57 of the eliminated gold anomalies -- representing 9 percent of samples collected -- are caused by background gold. The remaining 69 anomalies -- representing 11 percent of samples collected -- either survived the screening, or, as in the case of the six initially overlooked delicate gold anomalies and the three occluded gold anomalies, were identified and enhanced by the screening. These 69 anomalies are all potentially significant and will be discussed in detail in the following sections. They occur in 27 holes that are highlighted on Plan 3.

6.2.2 Minus 250 Mesh Gold Anomalies

The gold content of the minus 250 mesh fraction of the overburden is contoured on Plan 4 using the same method that was used to present the heavy mineral arsenic geochemistry (Plan 3). In general the minus 250 mesh gold contours enhance the areas of potentially significant heavy mineral gold anomalies, but a high also occurs along the Kruger Road Esker, especially in the Boyvinet drill area.

Of the 678 Lac Shortt samples collected, 307 (45 percent) yielded minus 250 mesh gold assays equal to or greater than the 5 ppb lower detection limit (based on 10 g assay split) and 191 (28 percent) of these yielded assays equal to or greater than the 20 ppb anomaly threshold. These 191 anomalies occur in 85 drill holes throughout the three drill areas (Plan 4).

Potentially significant (i.e. dispersal train type) minus 250 mesh gold anomalies can be caused by any one of the following:

1) A true abundance of free gold grains of 10 to 63 microns median diameter (i.e. visible gold; grains finer than 10 microns are normally occluded in other minerals and grains coarser than 63 microns will not pass through a 250 mesh sieve) and preferably of delicate to irregular morphology, a proportionate number of which are present in the analyzed fraction.

2) Gold occluded in mineral aggregates having a specific gravity of greater than 3.3 (primarily sulphides and especially arsenopyrite).

3) Gold occluded in mineral aggregates having a specific gravity of less than 3.3 (primarily limonite or clay minerals).

Only the third possibility would not be represented in the heavy mineral concentrates. The first type of dispersal train anomaly would be manifested by abundant visible gold in the concentrates. The second type would be manifested by high measured assays for the 3/4 concentrates and usually by an elevated heavy mineral arsenic association (greater than 200 ppm). The third type occurs exclusively in oxidized media (Averill, 1988). Since the Lac Shortt sampled media are capped by impermeable clay and are typically grey-beige (unoxidized), only the first and second types of dispersion would be expected to occur. If this dispersion is evident in the minus 250 mesh fraction it should also be evident in the heavy mineral fraction, although in certain cases the heavy mineral expression could be too weak to recognize in the absence of the minus 250 mesh gold assays.

Background gold can also cause minus 250 mesh gold anomalies as follows:

1) By the chance occurrence of a grain of visible gold in the analytical subsample (particle sparsity effect). As shown in Figure 32, a single gold flake of 63 microns (250 mesh) width and 125 microns length in a 10 gram assay subsample can produce a 104 ppb gold anomaly and an ellipsoidal gold grain of the same width and length can produce a 248 ppb gold anomaly. Figure 33 shows the relationship between the analytical test weights and gold assays for the 191 anomalous samples. It also shows that many of the test weights were very small and that most of the anomalies could have been caused by a single background gold grain of less than 250 mesh (63 microns) median diameter that strictly by chance was present in the sample.

2) Through analytical sensitivity or contamination problems, which appear to contribute many of the anomalous assays. Of the 38 minus 250 mesh assays exceeding 100 ppb, 31 were check assayed using the Bondar-Clegg library split; 20 did not exceed detectability on the check assay and only 6 exceeded 100 ppb (Table 13). The initial high assays are too high to be accounted for by the chance presence of a typically-shaped gold grain (i.e. flake); thus analytical problems must be at least partially responsible for assays over 100 ppb -- and probably also for anomalous assays of lesser magnitude.

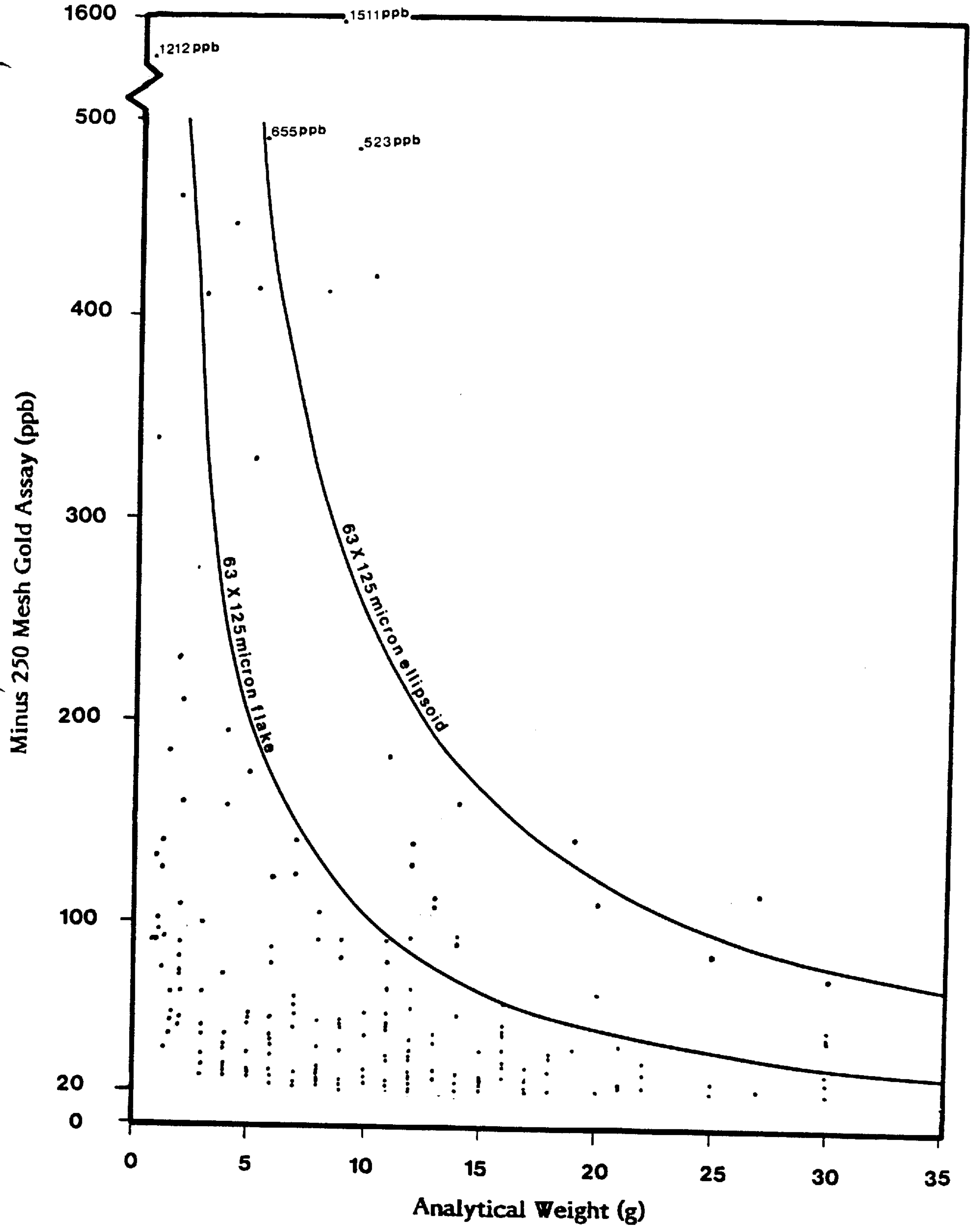


Figure 33 - Gold Assay Versus Analytical Weight for Minus 250 Mesh Anomalous Samples

			Gold Assay (ppb)	
Sample No.			Initial	Reweigh
PLS-88-	07-	02*	100	L 6
	13-	02*	130	75
	20-	09	174	56
	23-	14	410	IS
	24-	02	158	25
		03	460	IS
		07	1,212	IS
	31-	10	159	L 6
	45-	02	108	L 11
	61-	02	1,511	L 6
	63-	03	446	L 8
	64-	02	102	L 9
	66-	02	141	IS
		03	185	L 10
	67-	02	109	L 10
	69	01	122	L 6
	74-	01	231	IS
	75-	04	340	IS
		05	210	136
	78-	01	127	IS
		04*	420	108
		05	111	L 6
	87-	01	159	L 7
	89-	02	133	L 9
	98-	04	116	L 35
	101-	02	523	L 50
		03*	124	110
	102-	02*	330	260
	105-	02*	141	L 5
	110-	08*	183	34
	114-	02*	413	L 7
	116-	02*	414	L 9
	117-	07*	140	115
		08*	195	1,296
	118-	03*	142	L 8
		04*	655	53
	137-	06	105	L 31
	144-	06*	112	L 50

*Compliments potentially significant heavy mineral gold anomaly

Table 13 - Initial and Check Assays of Minus 250 Mesh Gold Assays Exceeding 100 ppb

The screening of minus 250 mesh gold anomalies involves classifying each anomaly by the number of positive dispersal train-type indicators that the anomaly possesses. Four indicators are considered:

1) Minus 250 mesh gold assay of 20 ppb or more (i.e. an anomaly);
2) Coincident heavy mineral gold anomaly;
3) Stratigraphic continuity;
4) Heavy mineral pathfinder association.

If an anomaly possesses all four indicators, we refer to it as a first order anomaly; if it is simply a high assay with no other positive indicators, we refer to it as a fourth order anomaly. The highest-ranking anomaly from each hole is represented on Plan 4 together with the contoured minus 250 mesh assays.

Fourth order anomalies comprise 94 of the 191 anomalies (Table 14) and are the highest ranking anomaly class in 32 of the 85 holes that produced minus 250 mesh gold anomalies. They do not coincide with heavy mineral gold anomalies, and thus do not represent significant amounts of free gold or sulphide-held gold. They do not possess stratigraphic continuity; seventy-four occur in Ojibway II sediments, two occur in Missinaibi sediments, one occurs in Lower Till and seventeen occur in Chibougamau Till. Moreover, they do not possess a heavy mineral pathfinder association. As a rule fourth order anomalies are spurious and insignificant. However, the anomalies do appear to be unusually prevalent in many samples collected from the Kruger Road Esker. For example in Holes 64, 65, 66, 74 and 75, 22 of the 24 esker sediment samples collected produced fourth order minus 250 mesh gold anomalies. These holes are all located along the segment of the esker in northern Boyvinet, and the possibility that the anomalies reflect gold mineralization in the underlying Lac Shortt Fault is attractive, but difficult to substantiate given the generally negative heavy mineral response in that area. To check whether the anomalies were produced by abundant visible gold that is so fine that it was not concentrated by the heavy mineral process, the library character subsamples of samples that produced 12 representative esker anomalies were carefully panned using a technique that routinely concentrates gold grains as fine as 10 microns average diameter. In 11 cases no visible gold was observed, and

Sample No.	-250 Au (ppb)	Sample No.	-250 Au (ppb)	Sample No.	250 Au (ppb)
PLS-88-		PLS-88-		PLS-88-	
01-02	82	66-05	39	89-04	27
11-04	53	07	37	07	46
15-01	60	67-01	27	11	23
20-09	174	02	109	90-01	27
23-14	410	03	50	03	88
24-02	158	69-01	122	04	29
07	1,212	70-03	52	91-01	55
27-01	93	72-04	74	02	35
29-02	24	74-01	231	03	43
31-05	40	02	78	04	57
10	5	03	50	95-05	92
35-04	23	04	56	96-07	33
36-02	38	75-01	24	98-03	54
05	38	02	97	04	116
37-01	24	04	340	106-01	68
39-01	90	05	210	03	22
53-01	33	06	24	110-04	27
54-02	50	07	66	121-08	39
59-04	56	76-01	92	122-10	23
60-01	45	78-01	127	123-03	26
63-02	41	07	21	134-02	24
64-01	45	79-01	61	135-02	35
02	102	82-01	20	06	45
03	93	83-01	50	137-06	105
04	92	84-01	67	141-01	45
05	40	87-01	159	05	49
65-01	76	02	24	143-05	36
02	83	88-01	53	144-03	30
03	20	02	91	146-07	37
66-01	66	03	30	11	21
02	141	89-01	35		
03	85	02	133		

Table 14 - Fourth Order Minus 250 Mesh Gold Anomalies

sulphide concentrations are normal (Appendix F). In the twelfth case one delicate gold grain and no sulphides were observed. Thus the fourth order anomalies along the esker were not caused by an abundance of visible gold. It is noted that all of the anomalies occur on one analytical report (No. 088-53040) and 52 percent of all assays on this report are anomalous, suggesting an analytical problem.

Third order anomalies comprise 50 of the 191 minus 250 mesh gold anomalies and are the highest ranking anomaly class in 26 holes. Five of these anomalies -- listed below -- complement potentially significant heavy mineral gold anomalies and will be discussed in detail in Section 6.2.3

Sample No.	Sample No.	Sample No.
PLS-88-07-02	PLS-88-97-05	PLS-88-102-02
	10	118-01

Ten other third order anomalies correspond with insignificant heavy mineral gold anomalies but lack any other properties of dispersal train-type gold anomalies (Table 15). Because the heavy mineral gold anomalies have all been eliminated with 100 percent confidence as nugget or cluster anomalies, the correspondence is strictly coincidental and the 10 minus 250 mesh gold anomalies are caused by the same factors that produced the fourth order anomalies. These ten anomalies are insignificant.

The remaining 35 third order minus 250 mesh anomalies are possess possible stratigraphic continuity -- 17 basal and 18 vertical (Table 16) -- and occur in Chibougamau Till (33) or Lower Till (2). The possibility that these anomalies represent dispersal-train type anomalies is diminished by the lack of a coincident heavy mineral gold anomaly. In fact, 25 of these anomalies correspond to heavy mineral concentrates that were either panned initially and/or produced 3/4 split gold assays under 200 ppb, precluding the possibility of significant undetected dispersion in the concentrates. The other 10 correspond to heavy mineral concentrates that were not panned initially and produced 3/4 split assays over 200 ppb gold (ranging from 205 to 848 ppb). The 1/4 concentrates of these 10 were panned and three -- listed below -- yielded delicate or irregular grains and will be

Sample No.	Sample No.	Sample No.
PLS-88-78-03	PLS-88-78-05	PLS-88-78-06

Sample No.	-250 Au (ppb	H.M. Au Anomaly Class
PLS-88- 11-06	47	Nugget
20-01	20	Nugget
24-03	460	Nugget
27-06	46	Cluster
50-02	43	Cluster
66-04	28	Nugget
73-03	36	Cluster
75-09	30	Nugget
127-01	90	Nugget
146-03	35	Cluster

Table 15 - Third Order Anomalies Coincident With Insignificant Heavy Mineral Gold Anomalies

Sample No.	-250 Au (ppb)	Strat. Cont.	H.M.C.	
			V.G.	Au (ppb)
PLS-88-04- 03	26	Vertical	8	555
04	24	Vertical	3	97
18- 02	23	Basal	7	131
22- 10	23	Basal	6	46
35- 07	35	Basal	1*	208
40- 02	45	Basal	0*	183
41- 02	50	Basal	4	143
42- 02	64	Basal	3	71
61- 02	1511	Basal	0*	88
63- 03	446	Basal	3	86
65- 04	20	Basal	4	336
69- 03	26	Basal	1*	112
71- 01	21	Basal	0*	112
75- 09	20	Basal	1*	168
78- 02	34	Vertical	1*	165
03	27	Vertical	0*	253
05	111	Vertical	0*	848
06	27	Basal	1*	552
79- 04	26	Vertical	0*	L 5
05	20	Vertical	1*	199
07	59	Vertical	1*	480
08	27	Vertical	0*	61
89- 20	50	Vertical	0*	45
21	35	Vertical	8	102
92- 03	51	Vertical	6	406
04	66	Basal	7	126
95- 04	83	Basal	9	185
105- 06	30	Vertical	9	408
110- 06	20	Vertical	3	90
07	21	Vertical	3	45
140- 05	26	Vertical	0*	297
06	40	Basal	1*	285
142- 04	68	Vertical	1*	266
05	60	Vertical	8	540
09	57	Basal	0*	205

*Not panned

Table 16 - Third Order Minus 250 Mesh Gold Anomalies Possessing Stratigraphic Continuity

discussed in Section 6.2.3. The other seven yielded no more than two abraded gold grains, confirming that dispersal train-type visible gold is not present. These seven anomalies, together with the 25 corresponding to concentrates that were either panned initially and/or assayed less than 200 ppb gold, possess chance stratigraphic continuity and are insignificant.

Second order anomalies comprise 42 of the 191 minus 250 mesh gold anomalies and are the highest ranking anomaly class in 23 holes. Of these anomalies, 33 complement potentially significant heavy mineral gold anomalies and also possess either stratigraphic continuity (32) or a heavy mineral pathfinder association (1). These 33 anomalies -- listed below -- will be discussed in detail in Section 6.2.3.

Sample No.	Sample No.	Sample No.
PLS-88-03- 05	PLS-88-105-02	PLS-88-117-01
66- 09	03	05
10	05	06
78- 04	110-01	07
101- 01	111-01	08
02	02	118-02
03	03	03
104- 01	114-01	04
02	02	135-08
03	116-01	144-06
04	02	07

Of the remaining nine second order anomalies, one -- in Sample 80-09 -- possesses a strong heavy mineral pathfinder association and basal continuity, and will be discussed in detail in section 6.2.3. The other eight anomalies all coincide with insignificant cluster and/or nugget heavy mineral gold anomalies and possess either basal (7) or vertical (1) continuity (Table 17). Panning was performed during initial heavy mineral processing on six of these anomalous samples, and 1/4 concentrate panning was performed on the other two for third-stage heavy mineral gold anomaly screening. In none of the eight cases was significant visible gold observed, and in all eight cases either the initial or 1/4 split calculated assays show good correlation with the corresponding measured assays. These eight second order anomalies are insignificant.

Sample No.		-250 Au (ppb)	H.M.C.			Stratigraphic Continuity	Pathfinder
				Au (ppb)			
			V.G.	Calc.	Meas.		
PLS-88-	24-02	32	13	353	484	Vertical	Nil
	30-06	44	4	7,948	310	Basal	Nil
	38-02	74	10	259	489	Basal	Nil
	45-02	108	10	147	410	Basal	Nil
	74-05	45	0*	NA	1,973	Basal	Nil
	79-11	22	1*	16	2,378	Basal	Nil
	113-02	38	12	75	318	Basal	Nil
	141-10	33	8	872	1,555	Basal	Nil

*Not panned

Table 17 - Second Order Minus 250 Mesh Gold Anomalies Possessing Stratigraphic Continuity

First order anomalies comprise five of the one hundred and ninety-one minus 250 mesh gold anomalies and occur in four holes. Four of these -- listed below -- complement potentially significant heavy mineral gold anomalies and will be discussed in detail in section 6.2.3.

Sample No.	Sample No.	Sample No.
PLS-88-13-02	PLS-88-15-02	PLS-88-110-02 08

The fourth anomaly -- in Sample 95-03 -- coincides with a nugget heavy mineral gold anomaly and a related silver spike (1.2 ppm), and has vertical continuity with one underlying third order anomaly. This first order anomaly is not significant.

In summary, minus 250 mesh gold anomaly screening has identified 45 anomalies as potentially significant and eliminated the other 146 anomalies. Forty-one of the retained anomalies complement forty-one of the sixty-nine potentially significant heavy mineral gold anomalies; however this correspondence is not very meaningful because: (1) 28 percent of all samples are anomalous in their minus 250 mesh fractions; (2) many of these anomalies are due to analytical problems; and (3) correspondence with a heavy mineral anomaly is one of the main criteria for ranking a minus 250 mesh anomaly as potentially significant. In fact, no minus 250 mesh anomalies were obtained for ten samples that yielded good dispersal train-type anomalies characterized by abundant fine, delicate gold grains and measured assays over 1000 ppb. Three of the remaining four minus 250 mesh anomalies (in Samples 78-03, 05 and 06) flank a potentially significant heavy mineral gold anomaly, and one (in Sample 80-09) complements a heavy mineral arsenic anomaly and an elevated but subanomalous gold response. All seventy-four of the potentially significant heavy mineral and/or minus 250 mesh gold anomalies will now be discussed together.

6.2.3 Potentially Significant Gold Anomalies

The number of potentially significant gold anomalies, especially heavy mineral anomalies, is astounding and highly encouraging. By far the most favourable area in terms of number of anomalous drill holes, number of visible gold grains per sample, and tenor of gold assays is the Boyvinet property. Anomalies on Lesueur are largely restricted to one zone. Anomalies on Wetjack in comparison to those on Lesueur and Boyvinet are weak and isolated.

6.2.3.1 Holes 01, 03, 144 Anomaly

Heavy mineral gold anomalies in Samples 01-06, 07 and 08 and Samples 03-03, 05 and 06 on the northern Wetjack boundary were recognized as potentially significant during initial sample processing, and this led to the drilling of follow-up Holes 137 to 144 immediately up-ice. Only Hole 144 drilled between Holes 01 and 03 produced similar anomalies (Nos. 144-05, 06 and 07). The Holes 01, 03 and 144 anomaly occurs in Chibougamau Till and extends through the bottom three samples collected from Holes 01 and 144 and three of the bottom four samples from Hole 03. Thus the anomalous zone is laterally and vertically contiguous over 150 m east-west and 3.4 to 5.8 m vertical and is represented in nine overburden samples. All nine of the samples were panned during initial processing, and yielded between eleven and eighteen gold grains, of which delicate and/or irregular comprised between one and eight gold grains per sample. Only two of the heavy mineral anomalies are complemented by minus 250 mesh gold anomalies (Nos. 144-06; 113 ppb and 144-07; 21 ppb).

Excluding Sample 01-08, which contained a nugget, the calculated visible gold assays for the concentrates range from 103 to 770 ppb suggesting either a low grade or distal source. Seven of the nine measured assays show good correlation, and high assays from the other two are assumed to have been caused by unsighted nuggets. Although sporadic, the occurrence of delicate gold was initially interpreted as indicative of a nearby source (see memo from T. Burns of ODM to F. Speidel of Minnova, dated August 9, 1988). The lack of similar anomalies in the follow-up holes further up-ice, despite the presence of Chibougamau Till in these holes, could indicate a proximal, low grade bedrock source. However, a number of the samples from the up-ice area were not panned and similar weak dispersion may remain undetected in this area. The anomaly is accompanied by a weak but persistent arsenic pathfinder association that occurs in five of the anomalous samples from Holes 03 and 144 -- Nos. 03-03 (280 ppm), 03-04 (552 ppm), 03-05 (322 ppm), 144-06 (140 ppm), and 144-07 (266 ppm). It is located immediately down-ice from the turbidites, which are weakly anomalous in arsenic, and from the shear axis that follows the southern contact of the turbidites. Hole 139 was drilled on the shear axis and yielded a weak bedrock gold anomaly (13 ppb). Similar weak gold mineralization along strike from Hole 139 probably produced the Holes 01, 03 and 144 overburden anomaly.

6.2.3.2 Hole 07 Anomaly

The Hole 07 anomaly on southern Wetjack comprises heavy mineral anomalies in the bottom two samples -- Nos. 07-02 and 03 -- of an Ojibway II sand and gravel section that directly overlies bedrock. Sample 07-02 also produced a third-order minus 250 mesh gold anomaly (100 ppb). Follow-up Holes 145 to 149 drilled immediately up-ice from Hole 07 failed to produce similar anomalies. Because the Hole 07 anomaly occurs in sediments it does not possess stratigraphic continuity as defined in Section 6.2. Sample 07-02 yielded 17 gold grains and Sample 07-03 yielded 15, of which 5 were delicate/irregular in each sample. Both calculated and measured assays from both samples are below 300 ppb. The anomaly was initially interpreted as dispersion from a low grade proximal source. However, the lack of dispersion in the follow-up holes, the hosting of the anomaly in secondary glacial debris, the less than predominant proportion of delicate/irregular gold, and the low tenor of the anomaly, coupled with the fact that the surrounding bedrock geology displays neither the structural preparation nor the hydrothermal alteration required for gold mineralization, suggests that the anomaly represents background gold. This anomaly reinforces the importance that stratigraphic continuity and sample medium-type play in the evaluation of anomalies.

6.2.3.3 Holes 13 and 15 Anomaly

Strong heavy mineral analytical gold anomalies and first order minus 250 mesh gold anomalies were obtained from Samples 13-02 and 15-02 over the strongly pyritized shear zone in the centre of the turbidite horizon on Lesueur. A similar anomaly obtained initially in Sample 16-02 was eliminated in third stage screening by a low 1/4 concentrate INA assay (675 ppb Au). Each sample constitutes the entire Chibougamau Till intersection of that hole, with sampled intervals of 0.6 m in Hole 13 and 1.7 m in Hole 15. The anomaly spans 250 m (800 feet) of east-west strike length. Although only minor amounts of background visible gold were observed during initial processing and panning (zero to two grains with calculated assays up to 246 ppb), up to 20 percent arsenopyrite and up to 70 percent pyrite were observed in the concentrates. The 3/4 concentrate measured assays are 4,849 and 3,246 ppb Au and 62,400 and 29,200 ppm As for Samples 13-02 and 15-02, respectively. The high measured gold assays were confirmed by 1/4 concentrate INA assays of 6160 and 3880 ppb, respectively. Minus 250 mesh gold assays are 130 ppb and 27 ppb, with the higher assay being duplicated (75 ppb) by the library subsample check assay. Both the persistent lack of visible gold and the duplicated minus 250 mesh assay indicate that this is a strictly occluded gold anomaly, and if a significant gold deposit is present in the underlying shear zone the possibility that the ore will require roasting of the sulphides is very high. The underlying turbidites in both holes are strongly anomalous in both gold and arsenic and the overburden gold and arsenic assays are roughly sympathetic to the bedrock assays. This raises the possibility that the overburden samples collected from the thin till horizon are contaminated by bedrock fines milled by the drill bit, and that the overburden anomalies overstate the grade of the mineralization in the shear zone.

6.2.3.4 Hole 24 Anomaly

Anomalous amounts of delicate gold were observed during heavy mineral processing of Samples 24-08 and 10 (11 and 13 grains, respectively), which were collected over the northern andesite belt on Lesueur. These are two samples of a series of six from that hole (Nos. 24-06 to 11) that all produced five or more delicate gold grains. In addition to the two potentially significant gold grain anomalies, an anomalous assay attributable to an unsighted nugget was obtained from Sample 24-11. The other three samples in this zone have subanomalous gold grain counts and gold assays. Calculated and measured assays for Samples 24-08 and 10 range from 91 to 433 ppb, and similar assays occur in the three adjacent subanomalous samples.

Hole 24 was drilled into the main channel of the Kruger Road Esker in the northwest corner of the Lesueur property and did not intersect any till. Because the anomaly is esker-hosted, it lacks true vertical continuity. The anomaly is an enigma because on the one hand the delicate gold is diagnostic of a proximal source, and on the other hand the thickness of the zone is diagnostic of a distal source. The most likely explanation is that the delicate gold was released by weathering or drill bit milling of mineralized clasts that are of distal provenance. Added to this are the other negative facts that; 1) the northern property boundary is nearby (600 m); 2) the host medium is second-cycle glacial debris; 3) no bedrock mineralization or significant alteration occurs in the vicinity of Hole 24; and 4) the tenor of the anomaly is weak. Thus it is very unlikely that the Hole 24 anomaly signifies a significant subcropping deposit on the Lesueur property and any follow-up of this anomaly would probably produce results similar to the disappointing Hole 07 follow-up.

6.2.3.5 Hole 66 Anomaly

Third stage heavy mineral gold anomaly screening of Samples 66-08 to 11, which were collected over the quartz diorite border phase of the Opawica Pluton on Boyvinet, eliminated two anomalies and identified two -- in Samples 66-09 and 10 -- as potentially significant. Both of these are complemented by second order minus 250 mesh gold anomalies (21 ppb in No. 66-09 and 86 ppb in No. 66-10).

Samples 66-09 and 10 were not panned initially; one gold grain was observed in Sample 66-09 producing a calculated assay of 34 ppb and no gold was observed in Sample 66-10. Following the receipt of measured gold assays of 1,064 and 2,237 ppb for Samples 66-09 and 10, respectively, the 1/4 concentrate pannings yielded two and five delicate gold grains producing calculated assays of 43 and 546 ppb, respectively. Corresponding INA gold assays of 320 and 2770 ppb, respectively indicate that the gold is partly visible, but that an anomalous concentration of occluded gold does occur in the lower sample -- No. 66-10.

Sample 66-10 is a basal Chibougamau Till sample overlying 1 m of Missinaibi clay and 0.5 m of Lower Till. Sample 66-09 is contiguous with Sample 66-10, giving the anomaly vertical continuity. The delicate morphology of the observed gold, the good tenor of the basal sample in the anomaly, and the confinement of the anomaly to basal Chibougamau Till all combine to suggest that this anomaly represents dispersion from a significant nearby bedrock source. As yet no proximal bedrock structure has been identified in the underlying quartz diorite but deformation of the quartz diorite is by brittle shearing such that any structures would be too narrow to be intersected in the widely spaced vertical reverse circulation drill holes.

6.2.3.6 Hole 78 Anomaly

Sample 78-04 was collected between the gabbro sills on northern Boyvinet and produced a heavy mineral gold anomaly that was identified as potentially significant during third-stage screening of a previously unpanned sample. It also produced a second order minus 250 mesh gold anomaly (420 ppb). No gold was observed initially, yet the 3/4 concentrate assayed 2481 ppb Au. The 1/4 concentrate yielded 9 delicate gold grains valued at 459 ppb, and assayed 1120 ppb Au by INA. Thus the high 3/4 concentrate assay was caused partly or wholly by dispersal train type visible gold and occluded gold, although a background nugget could also have been present.

Overlying and underlying Samples 78-03, 05 and 06 produced third order minus 250 mesh gold anomalies of 27 to 111 ppb that were investigated by 1/4 concentrate panning. Each 1/4 concentrate produced two or three gold grains, of which one or two are delicate/irregular. Thus the Hole 78 anomaly extends from

Samples 78-03 to 06 as a gold grain and minus 250 mesh anomaly, however the 3/4 concentrate assays are subanomalous at 253 to 858 ppb (excluding the Sample 78-04 assay). The anomaly is hosted entirely in Chibougamau Till and extends to the base of the till horizon. The possibility that underlying Lower Till Sample 78-08 displays similar dispersion was investigated by 1/4 concentrate panning, but only one abraded gold grain was observed.

The anomaly is similar to the Hole 66 anomaly in many respects, and reliably indicates that a mineralized subcrop occurs in close up-ice proximity to Hole 78. If the difference between the strength of the minus 250 mesh and heavy mineral gold anomalies is due to poor recovery of occluded gold in the heavy mineral fraction, the source mineralization could have a significant grade. Numerous shear zones related to the Lac Shortt Fault are present in the general area of the anomaly and the mineralization is probably hosted in one of these shear zones.

6.2.3.7 Sample 80-09 Anomaly

The Sample 80-09 gold anomaly occurs over the carbonate/sulphide facies iron formation along the Lac Shortt Fault. It is a second order minus 250 mesh gold anomaly (92 ppb), and is complemented by anomalous heavy mineral arsenic (992 ppm) and elevated heavy mineral gold (8 grains, 780 ppb measured assay) and copper (749 ppm). The anomaly is hosted in the single Chibougamau Till sample collected from the hole, which gives it basal continuity, and directly overlies bedrock.

The underlying iron formation is anomalous in gold (66 ppb) and arsenic (141 ppm) and also yielded elevated silver (0.5 ppm) and copper (162 ppm) assays. The 1/4 concentrate is comprised largely (60 percent) of mineralized rock chips similar to the iron formation. Thus bedrock contamination is the most likely cause of this anomaly. The disproportionate amount of gold in the minus 250 mesh fraction suggests that the gold in the bedrock does not occur as visible grains or in the pyrite that constitutes 50 percent of the sulphide facies portion of the iron formation.

6.2.3.8 Sample 102-02 Anomaly

The Sample 102-02 gold anomaly occurs over the western edge of the syenite core of the Opawica Pluton on Boyvinet. It is expressed in the heavy mineral fraction as a strong visible (41 delicate gold grains) and analytical (measured assay 5000 ppb) gold anomaly and in the minus 250 mesh fraction as a third order gold anomaly (330 ppb). The anomaly occurs in esker sediments 8 m above bedrock, and thus lacks stratigraphic continuity.

The strength of all of the gold values decreases sharply both upward and downward from the anomalous sample. This, coupled with the fact that the anomaly is hosted in second-cycle glacial debris suggests that the anomaly represents tricone milling of a mineralized cobble. The anomaly is probably related to but no longer directly connected to the major till-hosted dispersal train zone described in Section 6.2.3.10.

6.2.3.9 Hole 110 Anomaly

Four of the eight samples collected from Hole 110 (Nos. 110-01, 02, 03 and 08) over the eastern part of the syenite on Boyvinet produced potentially significant heavy mineral gold anomalies. Three of the four samples also produced first and second order minus 250 mesh gold anomalies. The anomalies are hosted in Chibougamau Till, and the strongest occurs in the basal sample, where the heavy mineral fraction yielded 34 gold grains (8 delicate/irregular) and measured assays of 3750 ppb gold and 672 ppm arsenic, and the minus 250 mesh fraction assayed 183 ppb gold.

The underlying bedrock is anomalous in gold (13 ppb) but not in arsenic (2 ppm); thus the anomaly does not appear to have been caused by bedrock contamination. The other three heavy mineral anomalies are separated from the basal sample by 4 samples (spanning 6 m) that yielded very low visible and analytical gold in the concentrates (3 gold grains in each of 2 panned samples; assays ranging from 45 to 195 ppb in all four samples), as well as low pathfinders. The upper three anomalies are in concentrates that yielded between 6 and 17 gold grains and assayed between 628 and 3139 ppb gold. The gold in Sample 110-02 is complemented by an elevated copper assay (437 ppm). All of the gold grains were classified as abraded but 1/4 concentrate panning of Sample 110-01 yielded three small, delicate gold grains of simple shape, indicating operator variability in morphology classifying. In a case like this the benefit of the doubt typically goes to the delicate classification because small, delicate grains of simple shape are easily mistaken for abraded grains.

In summary, the Hole 110 anomaly varies in character from a thin, strong basal portion that possesses an arsenic association to a thicker, weaker upper portion that may possess a copper association. The vertical zoning of the dispersion could be related to the ruggedness of the bedrock topography in this area (Plan 2) rather than to multiple sources. The anomaly is probably related to but not actually part of the major dispersal train zone described in Section 6.2.3.10.

6.2.3.10 South and Central Boyvinet Dispersal Train Zone

A large zone over the central and southern part of the syenite on Boyvinet yielded dispersal train-type heavy mineral gold anomalies. The zone roughly forms an upright "L" shape with the long segment extending 3 km north to south from Hole 97 to Hole 136 and the short segment extending 1 km west to east from Hole 111 to Hole 114. The zone encompasses 15 adjacent holes (Nos. 97, 100, 101, 104, 105, 111, 114 to 119, 123, 135 and 136) and includes all but one (No. 123-11) of the 47 heavy mineral gold anomalies obtained from these holes -- nineteen of which exceeded both anomaly thresholds (Table 18). These fifteen holes produced only 30 minus 250 mesh gold anomalies, 28 of which occur in the same samples as dispersal train type heavy mineral gold anomalies. Thus the anomalous zone is not very well represented in the minus 250 mesh geochemistry.

Sample No.	H.M.C. Au (ppb)		Grains V.G.		-250 Au (ppb)	Strat. Unit	Stratigraphy Continuity
	3/4	1/4	Whole	1/4			
PLS-88- 97- 05	743		11		38	4	Vertical
06	402		20		L 5	4	Vertical
07	670		21		L 5	4	Vertical
10	122		14		22	4	No
100-01	4,624	2,650	1	4	L 6	4	Basal
101-01	1,360		31		80	4	Vertical
02	308		52		523	4	Vertical
03	7,740		106		124	4	Vertical, Basal
104-01	1,120	1,080	0	4	56	4	Vertical
02	1,130		20		75	4	Vertical
03	831		11		25	4	Vertical
04	655		20		53	4	Vertical, Basal
105-01	1,287	460	18	1	9	4	Vertical
02	1,315	770	15	6	141	4	Vertical
03	894		12		55	4	Vertical
04	757		15		14	4	Vertical
05	1,258		16		21	4	Vertical
111-01	1,583		24		51	4	Vertical
02	956		14		28	4	Vertical
03	542		14		50	4	Vertical
114-01	7,230		143		57	4	Vertical
02	4,618		66		413	4	Vertical, Basal
115-01	2,983	1,870	32	8	8	4	Basal
116-01	2,651	875	0	10	26	4	Vertical
02	1,313		9		414	4	Vertical
03	1,704	784	24	3	18	4	Vertical
04	1,014	619	17	3	L 5	4	Vertical, Basal
117-01	307		15		25	4	Basal
04	344		10		L 5	2	Vertical
05	22,700		10		26	2	Vertical
06	1,390		60		52	2	Vertical
07	2,360		86		140	2	Vertical
08	2,526	645	9	4	195	2	Vertical, Basal
118-01	921		13		80	5	No
02	1,008	517	6	4	41	4	Vertical
03	5,732		90		142	4	Vertical
04	7,590		198		655	4	Vertical, Basal
119-01	1,121		45		L 5	4	Vertical
02	2,051	566	14	7	L10	4	Vertical
123-01	754		16		L 6	4	Vertical
02	946		11		18	4	Vertical
05	340		10		L10	4	Vertical
06	264		10		16	4	Vertical
09	1,832	1,400	6	1	L 5	4	No
135-08	2,600	2,240	23	4	32	4	Basal
136-01	822		13		10	4	Basal

Table 18 - Summary of Gold Data for South and Central Boyvinet Dispersal Train Zone

The zone not only displays good lateral continuity, but is vertically contiguous in many drill holes as well. Forty of the forty-six anomalies occur in Chibougamau Till samples, and thirty-eight of these possess true vertical or basal continuity. Five anomalies occur in one Lower Till intersection (Hole 117), spanning all but the top 2.5 m of a seven sample (13.1 m) thick horizon. The remaining anomaly occurs in Ojibway II sand and gravel.

Unlike the adjacent Hole 110 anomaly, the dispersal train zone has no pathfinder association. Contoured arsenic is very low, with the 100 ppm arsenic contour enclosing only two holes (Nos. 97 and 135). In ODM's experience, a lack of arsenic in a gold dispersal train indicates that the gold occurs mainly as visible gold rather than being occluded in sulphides.

Most of the observed gold grains are very fine (10 to 100 microns), and the gold concentration within the zone is generally favourable in terms of visible gold grain counts, heavy mineral gold assays, and minus 250 mesh gold assays. However, the concentration is variable, and specific holes are distinctly more or less favourable than others within the zone.

Figure 34 shows the calculated versus measured heavy mineral gold assays from the zone. The measured assays typically are slightly more than twice as high as the calculated assays. Sixteen samples produced measured assays over 1000 ppb and more than twice as high as the calculated assays, and thirteen of these were investigated by third-stage screening. The INA 1/4 concentrate assays for eight of the thirteen are less than 1000 ppb (ranging from 460 to 875 ppb). Normally, a low 1/4 concentrate assay indicates that unsighted nuggets contributed to the 3/4 concentrate assay, but in dispersal train anomalies from panned samples (all but three of the samples from the anomalous zone were panned during initial processing) a more likely explanation is gold loss from the 1/4 concentrate during panning. It would be difficult to lose sulphide-held gold; the gold lost in the 1/4 panning, and also that not sighted in the original panning, is probably native gold that is either very fine or is physically occluded in lithic grains. Thus the 3/4 concentrate assays are generally held to be reliable indicators of the grade of the 46 subject anomalies.

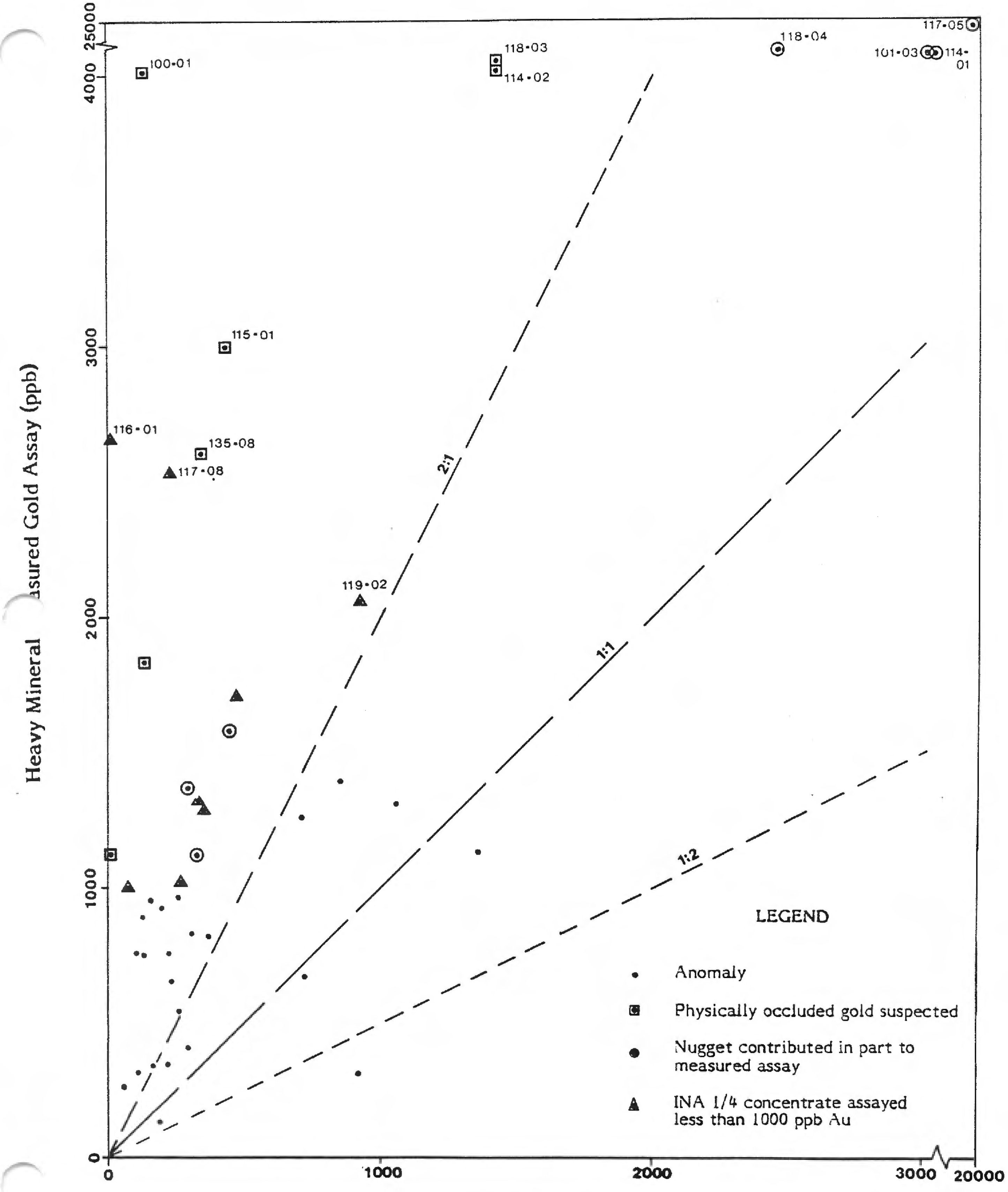


Figure 34 - Measured Versus Calculated Heavy Mineral Gold Assays for Anomalies in South and Central Boyvinet Dispersal Train Zone

Anomalies that are known or suspected to have high measured assays due in part to nuggets are distinguished from wholly fine gold (mostly 10 to 100 microns) dispersal train anomalies on Figure 34. Excluding these anomalies (Samples 101-03 -- 7,790 ppb; 114-01 -- 7,230 ppb; 117-05 -- 22,700 ppb; 118-04 -- 7,590 ppb) the measured heavy mineral gold assays from the zone range from 122 ppb (Sample 97-10) to 5,732 ppb (Sample 118-03) and average 1,327 ppb. Assays exceeding 1000 ppb occur in all of the holes except No. 97 in the north and Nos. 123 and 136 in the south, indicating that the bedrock source(s) should be generally of favourable grade, especially when one allows that the gold is probably derived from hard mylonite zones in the syenite that would tend to resist glacial scouring and therefore be understated in the till. The best grades occur in Holes 114 to 119 and Hole 135 where assays exceeding 2000 ppb occur fairly consistently.

The visible gold counts of the anomalous samples are also very encouraging, especially when allowance is made for the fact that not all of the the gold grains were observed. They range from 6 to 198 grains and average 32 grains in the 43 samples that were panned initially. Delicate and irregular gold grains are a significant component in most samples, averaging 16 grains per panned sample, and comprise at least five grains in at least one sample from each hole (Plan 3). Operator variability in classifying the grains is evident in Samples 105-02 and 105-05 where abraded gold grains were observed initially and delicate grains were observed subsequently (Table 11). As described in the discussion of the Hole 110 anomaly, small delicate grains of simple shape are probably responsible for the discrepancy. The presence of delicate gold grains throughout the zone indicates proximity to bedrock mineralization, and given the expanse of the zone, more than one bedrock source must be present. The zone's main axis is oriented parallel to Wisconsinan ice movement and also coincides with the inferred cross fault through the pluton. However, it is not known whether the source mineralization is hosted by the cross fault or by east-west trending shear zones. Pinpointing sources is further impeded by the fact that the underlying bedrock surface displays very little relief (Plan 2). In contrast, the secondary east-west axis near the south end of the zone, excluding the Hole 111 anomaly, is south of a prominent east-west trending bedrock ridge, and the dispersion in this section probably originates from an east-west shear zone along the south side of the ridge (i.e. immediately north of Holes

114, 115 and 117) as abundant delicate plus irregular gold grains occur in this part of the dispersal train. The presence of a shear zone here would also explain the southern re-entrant in the contact of the Opawica Pluton.

The assertion that the gold occurs primarily in its native state has been made based on the relationship between the calculated and measured heavy mineral assays and the extent of gold loss in 1/4 concentrate panning, and is supported by the general lack of an arsenic association in the dispersal zone. The assertion is further supported by the interrelationships of the gold grain counts with the heavy mineral gold assays (Fig. 35) and minus 250 mesh gold assays (Fig. 36).

Figure 35 relates panned sample gold grain counts to heavy mineral assays and shows reasonably good correspondence. The Holes 101 and 114 to 119 anomalies stand out as the strongest in terms of both visible and assayed gold. The Sample 100-01 anomaly also demonstrates good grade, but the sample was not panned before analysis. Anomalies from other holes are all confined within the 2000 ppb and 25 gold grain levels, which is still very attractive if their bedrock sources are narrow, siliceous (i.e. resistant to glacial scouring), and trend east-west.

Figure 36 relates panned sample gold grain counts to minus 250 mesh gold assays and highlights the vagaries of the minus 250 mesh data better than it shows the nature of the gold in the anomalous zone. Most of the nine minus 250 mesh assays over 100 ppb are spurious, as five of the check assays are less than detection (Samples 101-02, 105-02, 114-02, 116-02 and 118-03), two are widely different and only two are similar to the initial assays (Samples 101-03 and 117-07). This irreproducibility within the dispersal train indicates firstly that the anomalies are caused by visible gold or/and by analytical problems rather than by occluded gold and secondly that the analytical subsamples are of insufficient size to accurately measure the gold content of a visible gold dispersal train. As previously noted, only 28 of the 46 dispersal train heavy mineral gold anomalies from the zone are matched by minus 250 mesh gold anomalies. Furthermore 146 background samples from the project produced minus 250 mesh anomalies and only 57 background samples produced heavy mineral gold anomalies. This clearly shows that the heavy

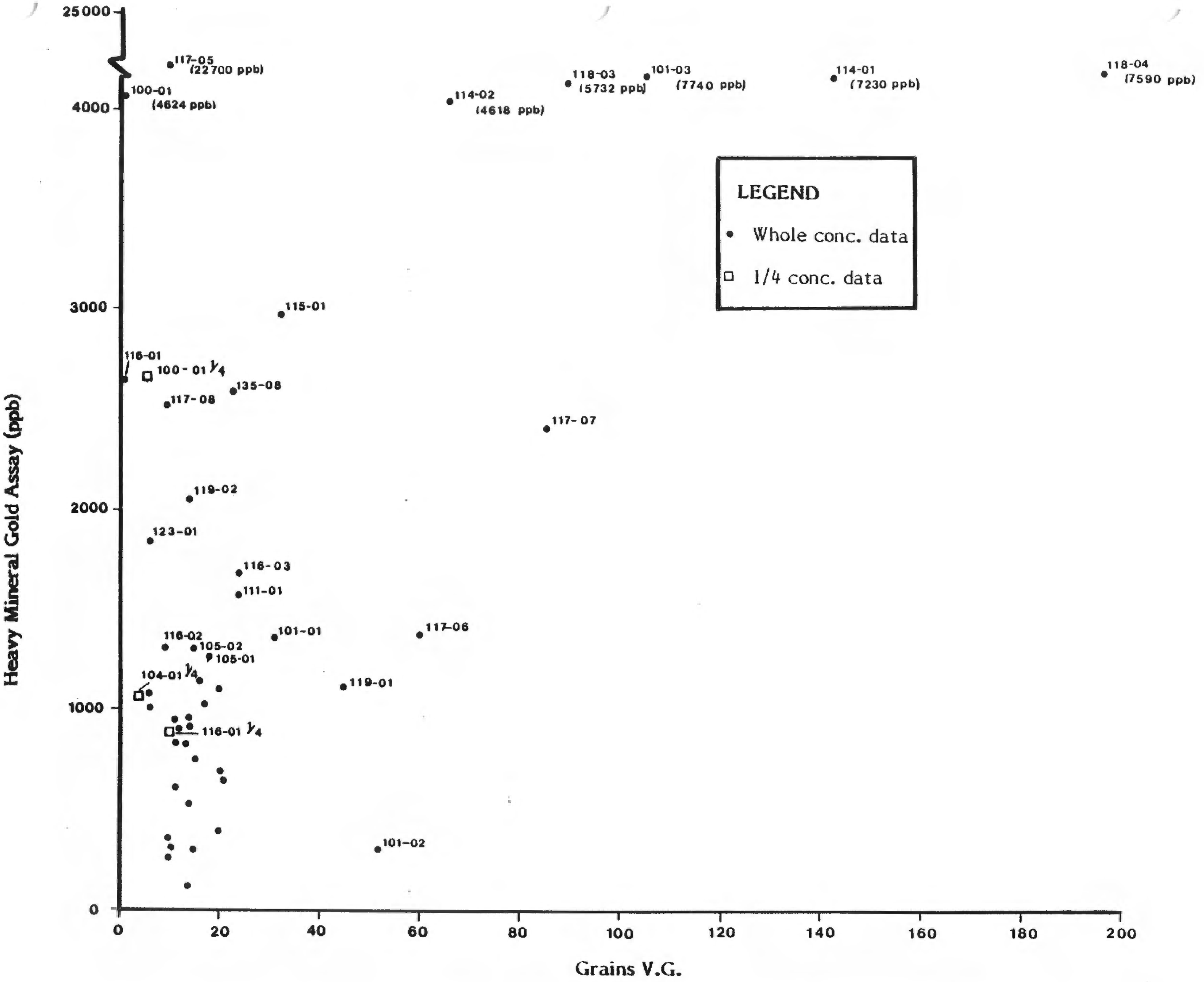


Figure 35 - Grains of Visible Gold Versus Heavy Mineral Gold Assay of the Forty-Three Panned Samples from the South and Central Boyvinet Dispersal Train Zone

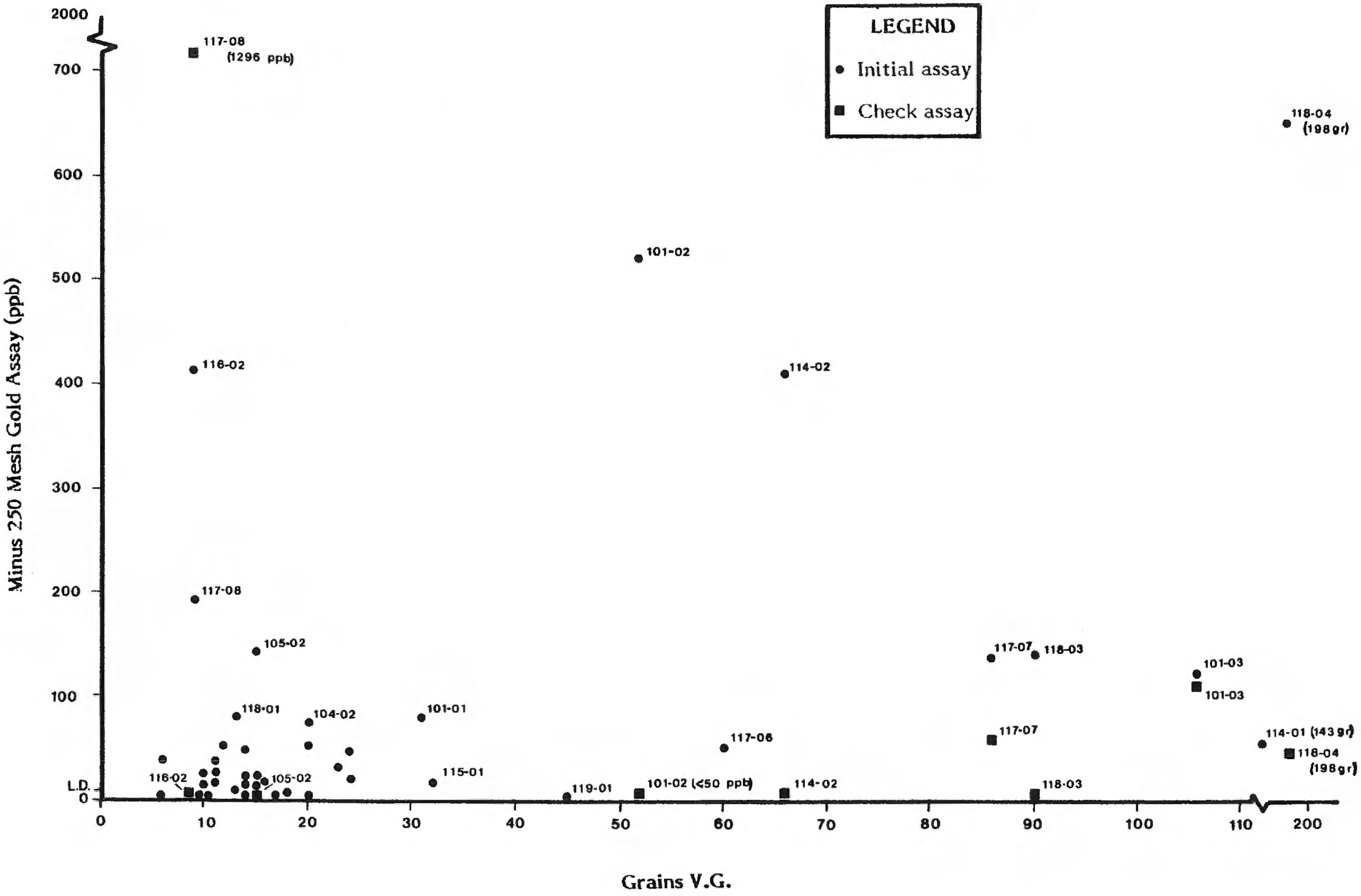


Figure 36 - Grains of Visible Gold Versus Minus 250 Mesh Gold Assay of the Forty-three Panned Samples from the South and Central Boyvinet Dispersal Train Zone

mineral method is both more responsive in dispersal train conditions and far more discriminating in both background and dispersal train conditions.

In summary, the Boyvinet dispersal train zone is characterized by abundant visible gold, a significant proportion of which is indicative of proximal bedrock sources, by generally favourable grades, and by an absence of occluded gold and pathfinder metals. Several good bedrock sources are probably present in the Opawica Pluton beneath this extensive dispersal train zone, with the best grades probably occurring up-ice from Holes 100, 101, and 114 to 119. An inferred east-west shear zone through the southern re-entrant of the Opawica Pluton and extending eastward along the south side of a prominent bedrock ridge is the probable source of the gold in the east-west trending southern section of the dispersal train zone. The gold in the north-south trending part of the dispersal train zone could be derived from other east-west trending shear zones or from the north-northeast trending cross fault that is inferred to cut the pluton. None of the predicted shear zones were intersected in the widely spaced vertical reverse circulation drill holes because deformation of the pluton is by brittle shearing which produces very narrow shear zones.

6.2.4 Heavy Mineral As, Cu, Zn and Ag Anomalies

The heavy mineral anomaly threshold for arsenic, copper and zinc is 800 ppm and for silver it is 2 ppm. Of the 675 Lac Shortt overburden samples, only eight produced anomalies in these elements -- four in arsenic and four others in silver. Background values are typically low for all four elements -- less than detection (2 ppm) to 50 ppm for arsenic, 50 to 150 ppm for copper, 20 to 50 ppm for zinc, and less than detection (0.1 ppm) to 0.4 ppm for silver.

Only one of the four arsenic anomalies has not been previously discussed in relation to potentially significant gold anomalies. This anomaly -- in Sample 16-02 (816 ppm) -- was produced by arsenopyrite, occurs 250 m eastward along strike from the Holes 13 and 15 gold-arsenic zone, and probably represents dispersion from a strike extension of this mineralized zone. The arsenic content of the underlying bedrock is also elevated (26 ppm).

Three of the four silver anomalies -- in Samples 06-01 (2.5 ppm), 29-04 (3.4 ppm) and 36-07 (4.5 ppm) -- are weak, occur directly overlying bedrock (two in Chibougamau Till and one is esker sediments), are associated with either very low heavy mineral gold assays (less than 100 ppb) or higher gold assays that are fully explained by observed background gold grains, and are accompanied by either very low pathfinder assays (No. 29-04) or sub-elevated assays that are unsympathetic to the silver assays and appear to be regional features. Examination of the concentrates did not yield any silver minerals. If these three silver anomalies relate to bedrock sources, the sources are probably very minor and mineralized only with silver. The fourth and strongest silver anomaly (15.0 ppm in Sample 80-06) lacks stratigraphic continuity, occurs in esker sediments, is unsympathetic to subelevated copper occurring throughout the hole, and is spurious. The 1/4 concentrate yielded no silver minerals, and the anomaly probably represents cobble contamination or analytical problems.

7. CONCLUSIONS

The objectives of the reverse circulation drilling were to test the bedrock for deformation, alteration, and geochemical trends indicative of a potential for gold mineralization, and to test the overburden for gold dispersion indicative of significant subcropping gold mineralization. In terms of both objectives, the tests were successfully completed and highly encouraging results were obtained from a number of areas.

The widespread deformation found in the three drill areas is due to their locations on the Lac Shortt Fault (Boyvinet) or between this fault and the Opawica Lake Fault (Lesueur and Wetjack). Since both of these structures are important regional gold controls, the area between them should be particularly attractive provided that a diversity of bedrock lithologies is present to supply the necessary physical/chemical traps for focusing gold mineralization. The reverse circulation drilling has demonstrated that this is the case of the Minnova properites, especially Lesueur and Boyvinet, and that gold mineralization representing several Abitibi Belt deposit models is present. On Boyvinet, the turbidite hosted gold-pyrite-arsenopyrite-Fe/Mg carbonate zone intersected in Holes 13, 15 and 16 fits the Golden Pond model at Casa-Berardi (Pattison et al., 1986). On northern Boyvinet, the anomalous carbonate-sulphide iron formation of Hole 80 along the Lac Shortt Fault resembles the Agnico-Eagle setting at Joutel (Wyman et al., 1986), and the anomalous mylonitized syenite with pyritized and hematitized magnetite in Holes 91 to 95 matches the Lac Shortt Mine model (Morasse et al., 1986). The anomalous syenite further to the south along the inferred north-northeast trending cross fault is suggestive of the Bachelor Lake model (Buro, 1984) but the main structural control could be east-west trending shear zones related to the Lac Shortt Fault.

Overburden conditions in the drill areas are ideally suited to heavy mineral exploration except where glaciofluvial sediments associated with the Kruger Road Esker and several DeGeer moraines supplant the Chibougamau Till. A positive overburden geochemical response was obtained proximal to most of the anomalous bedrock zones, and the magnitude and type of response is very helpful in qualifying the bedrock mineralization. The strong overburden anomalies obtained from Holes 13 and 15 at the turbidite-hosted shear zone on Lesueur combined with the lack of anomalies in drill holes down-ice suggests that the till was contaminated by bedrock mineralization during drilling and that the mineralized zone has a narrow or low-grade subcrop. The lack of visible gold in the till indicates that the bedrock gold mineralization is of the occluded type and may be metallurgically complex. The paucity of overburden anomalies along the Lac Shortt Fault on Boyvinet suggests, as does the great width of anomalous bedrock along the fault, that there may be no focus to the gold mineralization here. However the Kruger Road Esker covers much of the fault and most of the drill holes did not intersect till. Further south on the syenite, in the L-shaped dispersal train zone, the overburden response is very strong relative to the bedrock anomalies but is also widespread, indicating that the bedrock gold has been focused into several high-grade zones that are too narrow to have been intersected in the widely spaced drill holes. These zones could easily be of mineable widths and grades; they are narrow only in relation to the broad zones of more ductile shearing in the volcano-sedimentary rocks. The fact that all of the gold appears to occur in visible form suggests simple metallurgy. The main souce of the gold in the southern part of the dispersal train is probably an east-west trending shear zone immediately north of Holes 114, 115 and

117. The gold in the central and northern parts of the dispersal train is probably derived from several shear zones, and it is not clear whether these shear zones trend east-west or are parallel to the inferred north-northeast trending cross fault.

The true gold content of the overburden is much better represented in the heavy mineral fraction than in the minus 250 mesh fraction. Heavy mineral anomalies are less frequently caused by background noise and analytical problems, can be more reliably screened, and offer a broader database for dispersal train recognition and evaluation.

8. RECOMMENDATIONS

Follow-up reverse circulation and diamond core drilling are recommended (Plan 1) to further develop the favourable results of the present program. Diamond drilling should be performed to directly test the gold-arsenic zone at Hole 13 in southern Lesueur, the two gold zones along the Lac Shortt Fault in the northern Boyvinet drill area, and the inferred east-west trending shear zone on the southern edge of the syenite near Holes 114, 115 and 117. Extensions of the gold-arsenic zone and the Lac Shortt Fault onto nearby properties owned or optioned by Minnova should be tested for gold mineralization by reconnaissance reverse circulation drilling. Infill reverse circulation drilling should be performed on the central and northern parts of the dispersal train zone over the syenite to outline the highest grade parts of the train and establish whether the gold-bearing structures trend east-west or north-northeast. Reconnaissance reverse circulation drilling is also recommended on Opawica Lake east of the dispersal train zone. The recommended drill holes are;

1) <u>Hole 13 Area</u>

   a) One 200 m diamond core hole at -45 degrees south from L64W;35+00S to cross-section the turbidite hosted structure at Hole 13.

b) Ten reconnaissance reverse circulation drill holes at approximately 200 m centres on the four claims recently staked by Minnova to the west of the Lesueur property.

2) Lac Shortt Fault Area

a) Two 200 m diamond core holes at -45 degrees south-southwest (azimuth 172 degrees) from L12W; 47+00N to cross-section the Lac Shortt Fault at the carbonate-sulfide facies iron formation/quartz diorite contact in the area of the Holes 79, 80 and 82 bedrock gold anomalies.

b) Four 200 m diamond core holes at -45 degrees south starting from L28E;2+00N to cross-section the Lac Shortt Fault at the contact of the Sturgeon Falls Complex gabbro and Opawica Pluton syenite in the area of the Holes 88, 89 and 91 to 95 bedrock gold anomalies.

c) Eight reverse circulation drill holes at 130 m spacing along three northwest trending traverses on Opawica Lake and twenty reverse circulation drill holes at 200 m spacing along five northwest trending traverses on optioned property west of Boyvinet to test the east and west strike extensions of the Lac Shortt Fault.

3) South and Central Boyvinet Dispersal Train Zone

a) Thirty reverse circulation drill holes along seven west-northwest trending traverses to test the northern and central parts of the zone on a 100 x 200 m grid pattern for higher grade subzones and to establish the orientations of bedrock structures.

b) Two 300 m diamond core holes at -45 degrees north from L20E;5+00N and L4E;8+50N to probe the inferred east-west trending, gold-bearing shear zone immediately up-ice from both Holes 114 and 117.

c) Seven reverse circulation drill holes at 300 m centres along two east-west traverses on Opawica Lake to test for gold dispersion and determine whether the Opawica Pluton has a carbonatite core.

Based on all inclusive costs of $80/metre the eight proposed diamond drill holes would cost $160,000 and based on costs of $100.00/metre and an average hole depth of 20 metres the proposed 75 reverse circulation drill holes would cost $150,000.

If favourable results are obtained on the pluton and along the Lac Shortt Fault, consideration should be given to drilling a few reverse circulation holes immediately up-ice from Hole 66 on the quartz diorite phase of the pluton and Hole 78 north of the fault to evaluate the isolated overburden gold anomalies obtained from these drill holes.

A change in the overburden processing flow sheet is recommended based on observations contained in this report. Specifically minus 250 mesh analysis should be discontinued and all table concentrates from the reverse circulation drill holes on the Boyvinet dispersal train should be panned to allow identification of subzones related to different bedrock sources.

* * * * * * * * * *

9. CERTIFICATE - STUART A. AVERILL

I, Stuart A. Averill, residing at 192 Powell Avenue, Ottawa, Ontario hereby certify as follows:

That I attended the University of Manitoba at Winnipeg, Manitoba and graduated with a B.Sc. (Hons.) in Geology in 1969.

That I have worked continuously in the field of mining exploration geology since 1971.

That I am President and a principal owner of Overburden Drilling Management Limited, 107-15 Capella Court, Nepean, Ontario, an independent geological consulting company that I founded in 1974.

That I qualify for and have recently applied for fellowship in the Geological Association of Canada.

That this technical report is based on data gathered on the subject property by employees of Overburden Drilling Management Limited and interpreted by me.

That I have no direct or indirect interest in Minnova Inc.

Stuart A. Averill, B.Sc. (Hons.)

Dated at Ottawa, Ontario this 3rd day of January, 1989

10. REFERENCES

Allard, G.O.,
Gobeil, A.
1984: General Geology of the Chibougamau Region; Chibougamau: Stratigraphy and Mineralization, J. Guha and E.H. Chown (eds.), Canadian Institute of Mining and Metallurgy Special Volume 34, pp. 385-392.

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

1986: Advice for Juniors Following Dispersal Trains; The Northern Miner, Junior Mining Section, June 16, 1986, p.Ba12.

1988: Regional Variations in the Gold Content of Till in Canada; Prospecting in Areas of Glaciated Terrain - 1988; CIM proceedings 1988, Halifax, pp.271-284.

Bostock, H.S.
1968: Physiographic Regions; Geology and Economic Minerals of Canada, 5th Edition, edited by R.J.W. Douglas, Geological Survey of Canada, Economic Geology Report No. 1. 1 map @ scale 1: ,000,000.

Buro, Y.
1984: The Geology of the Bachelor Lake Gold Mine; Chibougamau: Stratigraphy and Mineralization, J. Guha and E.H. Chown (eds.), Canadian Institute of Mining and Metallurgy Special Volume 34, pp. 385-392.

Coker, W.B.,
DiLabio, R.N.W.
In prep: Geochemical Exploration in Glaciated Terrain: Geochemical Responses; Proceeding Volume of the AEG Exploration '87 Symposium.

Colvine, A.C.,
Fyon, J.A.,
Heather, K.B.,
Marmont, Soussan,
Smith, P.M.,
Troop, D.G.
1988: Archean Lode Gold Deposits in Ontario; Ontario Geological Survey, Miscellaneous Paper 139, 136 p.

Cormier, M., Gauthier, A., Muir, J.E. 1984:	Geology, Geochemistry and Mineralization at Falconbridge's Lac Shortt Gold Deposit, Gand Township, Quebec; in Chibougamau: Stratigraphy and Mineralization J. Guha and E.H. Chown (eds.), CIM Special Volume 34, p. 393-411.
DiLabio, R.N., Miller, R.F., Mott, R.J., Coker, W.B. 1988:	The Quaternary Stratigraphy of the Timmins Area, Ontario, as an Aid to Mineral Exploration by Drift Prospecting; Current Research, Part C, Geological Survey of Canada, Paper 88-1C, p. 61-65.
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, 32 p.
Dugas, J. 1951 and 1975:	Rapport Sur la Canton Lesueur (Moitie Est), Region du Lac Bachelor, Comte d'Abitibi-Est; MERQ, PR-612 initially published in 1951 as DP 3. Accompanied by maps, No. 1807 and 1808 at scale of 1:12,000.
Gagnon, J. 1984:	Gold Mineralization on the Gand I Property: Descriptive Geology and Preliminary Interpretation of Genesis; Chibougamau: Stratigraphy and Mineralization, Guha, J. and Chown, E.H. (eds.). Canadian Institute of Mining and Metallurgy Special Volume 34, p. 378-384.
Gariépy, C., Allègre, C.J. Lajoie, J. 1984:	U-Pb Systematics in Single Zircons from the Pontiac Sediments, Abitibi Greenstone Belt; Can. Journal of Earth Sciences, Vol. 21, No. 11, p. 1296-1304.
Giovenazzo, D. 1983:	Canton de Boyvinet; Ministére de l'Énergie et des Ressources, DP 83-33, scale 1:20,000.

G.S.C.
1957a: Opawica Lake - Lewis Lake, Abitibi County, Quebec; Geological Survey of Canada, Map No. 517G, scale one inch to one mile.

1957b: Waswanipi, Abitibi County, Quebec; Geological Survey of Canada, Map No. 530G, scale one inch to one mile.

Kurina, K.P.
1986: Modifications to the Two-Bucket System for Reverse Circulation Drill Hole Sampling: Effects on Fine Particle Retention; student work report prepared for Overburden Drilling Management Limited and Faculty of Science, University of Waterloo, 20 p.

Kuryliw, C.J.
1988: A Theory of Gold Zoning; The Northern Miner Magazine, Vol. 3, No. 9, pp. 61-66.

Longley, W.W.
1951: Bachelor Lake Area, Abitibi-East County; Quebec Department of Mines, G.R. 47.

MacKenzie, G.S.
1934: Pusticamica Lake Map Area, Abitibi District; Quebec Bureau of Mines, Annual Report 1934, Part C., pp. 45-64.

MERQ
1981: Levé Aéroporté INPUT dans la Région de Desmaraisville; Ministére de l'Énergie et des Ressources, DP-841, 3 maps of eight sheets each, scale 1:20,000.

1983a: Bibliographie Géoscientifique, 32F/9, Desmaraiseville; Ministére de l'Énergie et des Ressources, 12 p., 9 p. update, 3 maps of scale 1:50,000.

1983b: Bibliographie Géoscientifique, 32G/12, Lac Opawica; Ministére de l'Énergie et des Ressources, 18 p., 12 p. update, 4 maps of scale 1:50,000.

1983c: Compilation Geoscientifique, 32F/9-0104 and 0204, 32G/12-0101 and 0201; Ministére de l'Énergie et des Ressources, all updated to Jan. 10, 1983, scale of 1:10,000 or 1:20,000.

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

Morasse, D.,
Hodgson, C.J.,
Guha, J.,
Coulombe, A.
1986: Preliminary Report on the Geology of the Lac Shortt Gold Deposit, Demaraisville Area, Quegbec, Canada; Proceedings of Gold '86, an International Sumposium on the Geology of Gold: Toronto, 1986, Macdonald, A.J. (ed.), pp. 191-196.

Pattison, E.F.,
Sauerbrei, J.A.,
Hannila, J.J.,
Church, J.F.
1986: Gold Mineralization in the Casa-Berardi Area, Quebec, Canada; MacDonald, A.J. ed., Proceedings of Gold '86 an International Symposium on the Geology of Gold, Toronto, Ontario, 1986, pp.170-183.

Norman, G.W.H.
1936: Summary Report on Surveys in Waswanipi Map Area, Northern Quebec; Geological Survey of Canada, Paper 36-3, one map, scale 1 inch to 4 miles.

Potapoff, P.
1987: Report, Opawica Project, Lac Opawica Area - Quebec; unpublished report prepared for Campbell Resources Inc., April 30, 1987, 47 p., with various maps and sections.

Prest, V.K.
1983: Canada's Heritage of Glacial Features; Geological Survey of Canada, Miscellaneous Report 28, 119 p.

Sharma, K.N.M.
Lacoste, P.
1981: Gand (SW) et Lespérance (NW); Ministére de l'Énergie et des Ressources du Québec, DP-852, scale 1:20,000.

Sharma, K.N.M.,
Lauzière, K.
1983: Géologie de la Région de Demaraisville; MERQ, DP 84-10, 3 maps; 2 at scale 1:20,000, 1 of same area at scale of 1:50,000.

Shaw, G.
1937: Opawica Lake; Abitibi Territory, Quebec; Geological Survey of Canada, Map No. 556A, scale 1:63,360.

Skinner, R.G.
1973: Quaternary Stratigraphy of the Moose River Basin, Ontario; Geological Survey of Canada Bulletin, No. 225.

Sproule, J.C. 1937:	Preliminary Report, East Half Waswanipi Map - Area, Quebec; Geological Survey of Canada, Paper 37-5, One map of scale 1 inch to 2 miles.
Veillette, J.J. 1986:	Former Southwesterly Ice Flows in the Abitibi - Tamiskaming Region: Implications for the Configuration of the Late Wisconsinan Ice Sheet; Canadian Journal of Earth Sciences, Vol. 23, No. 11, pp. 1724-1741.
Vincent, J.S., Hardy, L. 1979:	The Evolution of Glacial Lakes Barlow and Ojibway, Quebec and Ontario; Geol. Surv. Can., Bulletin 316, 18 p.
Watkins, D.H., Riverin, G. 1982:	Geology of the Opemisca Copper - Gold Deposits at Chapais, Quebec; Precambrian Sulphide Deposits, H.S. Robinson Memorial Volume, R.W. Hutchinson, C.D. Spense and J.M. Franklin (eds.), Geological Association of Canada Special Paper 25, pp. 427-446.
Wyman, D.A., Kerrich, R., Fryer, B.J. 1986:	Gold Mineralization Overprinting Iron Formation at the Agnico-Eagle Deposit, Quebec, Canada; Proceedings of Gold '86, an International Symposium on the Geology of Gold, Toronto, A.J. MacDonald (ed.) 1986, p. 108-123.

APPENDIX A

REVERSE CIRCULATION DRILL HOLE LOGS

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 13 19 83

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-01 LOCATION L32E 3+00S (site 132) ELEVATION 311m

GEOLOGIST T. Bruns DRILLER H. Durett BIT NO. CB70046 BIT FOOTAGE 0->16.5

MOVE TO HOLE _____

DRILL 7.00 -> 8.45

MECHANICAL DOWN TIME _____

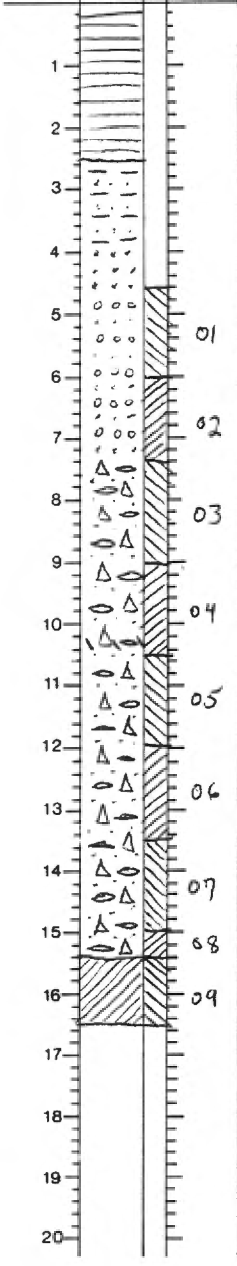
DRILLING PROBLEMS _____

OTHER 6.30 -> 7.00

MOVE TO NEXT HOLE _____

+ New bit
+ New sub.

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



0 -> 7.4 Ojibway II Sediments

clay 0 -> 2.5
beige, moderately compact, pure above 1.5, soft pure gray below 1.5

silt 2.5 -> 4.0
gray-beige, with very fine interbedded sand

sand 4.0 -> 4.6
gray-beige, very fine grained, pebbly beds at 4.3

pebbly sand 4.6 -> 7.4
gray-beige, with rounded pebbly clasts. (Note: has appearance of till due to mixing of overlying very fine sand)

7.4 -> 15.4 Chibougamau Till
gray-beige, fine sand matrix cobbly clasts 65% mafic volcanics and sediments 35% granitics
- gritty gray-green clay matrix 10.2 -> 10.4
- clasts 85% mafic volcanics and sediments 15% granitics below 12.5

15.4 -> 16.5 Bedrock Felsic pyroclastics
gray to gray-green, fine grained massive to poorly developed foliation, white quartz vein from 15.9 -> 16.0, dark green, well foliated below 16.1

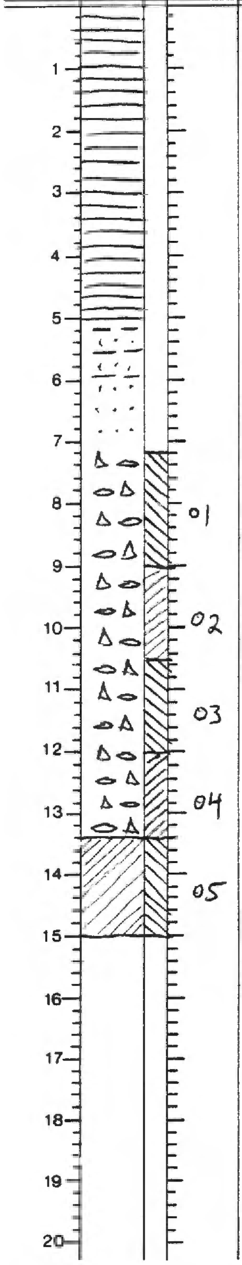
16.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 13 19 88
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO OLS-88-02 LOCATION L 31E 1+60S (site 131) ELEVATION 310 m
GEOLOGIST T. Burns DRILLER H. Durett BIT NO. CB70046 BIT FOOTAGE 16.5 → 31.5
MOVE TO HOLE 8.45 → 9.15
DRILL 9.15 → 10.15
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0 → 0.5 No Return (organics)

0.5 → 7.2 Ojibway II Sediments

clay 0.5 → 5.0
beige, moderately compact above 4.5 gray, soft, pure below 4.5

silt 5.0 → 6.0
gray-beige with very fine grained interbedded sand

sand 6.0 → 7.2
beige, fine grained, sharp contact with underlying unit

7.2 → 13.4 Chibougamau Till

gray-beige, fine sand matrix cobbly clasts 70% mafic volcanics and sediments 30% granitics
- very stoney below 11.5

13.4 → 15.0 Bedrock Felsic pyroclastic (Ash tuff)

gray-green, fine grained with very well developed foliation, bedded, ashy texture, crenulation cleavage (soft, easy to drill)

15.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 13 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-03 LOCATION L34E, 2+10S (site 133) ELEVATION 312 m

GEOLOGIST T. Burns DRILLER H. Durett BIT NO. CB70046 BIT FOOTAGE 31.5 -> 49.5

MOVE TO HOLE 10.15 -> 10.45

DRILL 10.45 -> 12.15

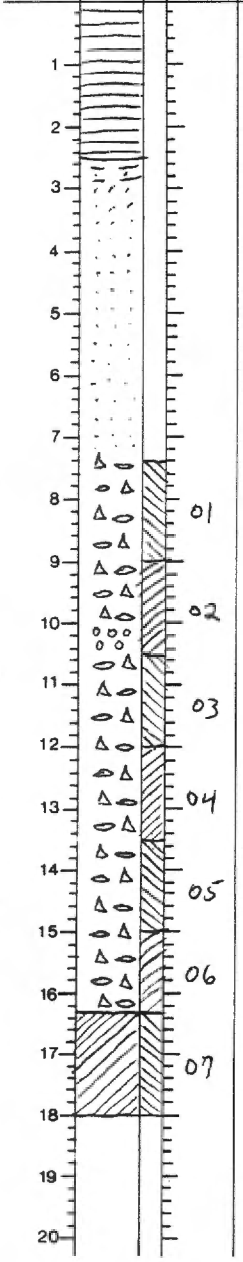
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

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



0 -> 7.3 Ojibway II Sediments

Clay 0 -> 2.5
beige, moderately compact, pure above 2.0, gray, soft, pure below 2.0

Silt 2.5 -> 3.0
gray-beige with very fine interbedded sand

Sand 3.0 -> 7.3
gray-beige, very fine grained sand

7.3 -> 16.3 Chibougamau Till

gray-beige, fine sand matrix, cobbly clasts 65% mafic volcanics and sediments 35% granitics

- gravel lens 10.1 -> 10.4

- stoney below 13.0, low percentage fine sand matrix

16.3 -> 18.0 Bedrock Felsic pyroclastic

gray-white, fine grained moderate to poorly developed foliation, fragmental texture locally well developed 0.5% disseminated calcite

18.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 13 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-04 LOCATION L 36E 1475S (sta 134) ELEVATION 312m

GEOLOGIST T. Burns DRILLER H. Durette BIT NO. CB70046 BIT FOOTAGE 49.5 -> 63.0

MOVE TO HOLE 12.15 -> 1.00

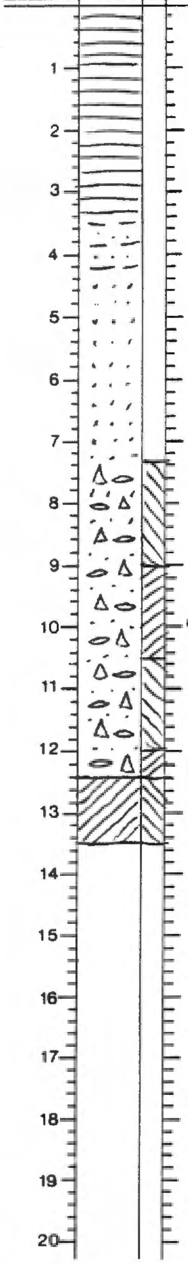
DRILL 1.00 -> 2.00

MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

DEPTH IN METRES / GRAPHIC LOG / INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
	01 02 03 04 05	0 -> 1.0 No Return (Organics) 1.0 -> 7.3 Ojibway II Sediments clay 1.0 -> 3.5 gray soft pure silt 3.5 -> 4.5 gray-beige with very fine grained interbedded sand sand 4.5 -> 7.3 gray-beige, fine grained 7.3 -> 12.4 Chibougamau Till gray-beige, fine sand matrix cobbly clasts 70% mafic volcanics and sediments 40% granitics - partially sorted above 10.5 12.4 -> 13.5 Bedrock Felsic Volcanics light gray-green, fine grained to aphanitic, massive to poorly developed foliation 1-2% colourless quartz phenocrysts up to 1.0 mm. 13.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 13 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-05 LOCATION L33E 1+00S (site 135) ELEVATION 311 m

GEOLOGIST T. Burns DRILLER H Durett BIT NO. SB70046 BIT FOOTAGE 63.0 -> 73.5

MOVE TO HOLE 2.00 -> 2.15

DRILL 2.15 -> 3.00

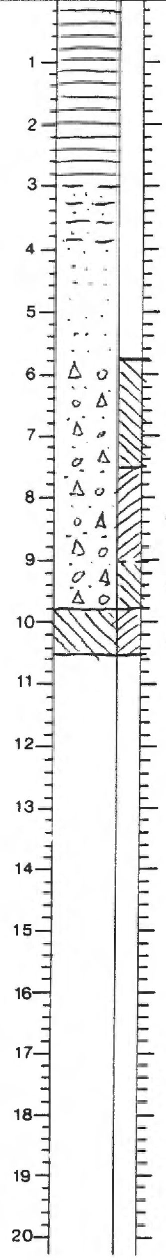
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

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



0 -> 5.8 Ojibway II Sediments

clay 0 -> 3.0

beige, moderately compact, pure

silt 3.0 -> 4.0

gray-beige with very fine grained interbedded sand

sand 4.0 -> 5.8

beige, fine grained

01

5.8 -> 9.8 Chibougamau Till

02

gray-beige, fine sand matrix pebbly clasts 65% mafic volcanics and sediments 35% granitics

03

04

9.8 -> 10.5 Bedrock Felsic Volcanic

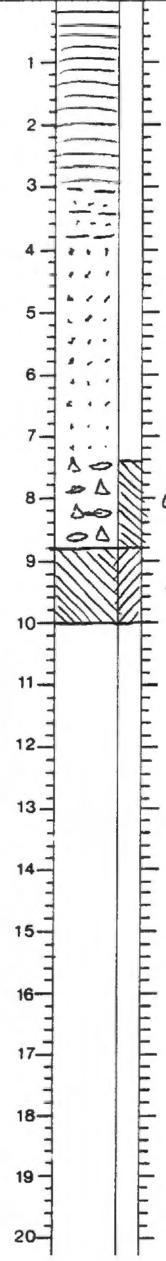
dark gray, fine grained to aphanitic, massive to poorly developed foliation, hard, siliceous

10.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 13 1988
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO PLS-88-06 LOCATION L40E, 0+75S (site 136) ELEVATION 310m
GEOLOGIST T. Burns DRILLER H. Durett BIT NO. CB70046 BIT FOOTAGE 73.5→83.5
MOVE TO HOLE 3.00 → 3.15
DRILL 3.15 → 4.00
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE 4.00 →



SAMPLE NO.	DESCRIPTIVE LOG
	0 → 7.4 Ojibway II Sediments
	clay 0 → 3.0
	beige, moderately compact, pure
	silt 3.0 → 4.0
	gray-beige with very fine grained interbedded sand
	sand 4.0 → 7.4
	gray-beige, fine grained
	7.4 → 8.8 Chibougamau Till
01	gray-beige, fine sand matrix cobbly clasts 65% mafic volcanics and sediments, 35% granitics
02	
	8.8 → 10.0 Bedrock Felsic pyroclastic (fragmental)
	gray-green, poor to moderate foliation, fragmental texture aphanitic fragments in ash matrix
	10.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 14 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-07 LOCATION L 31 E 10+50N (site 137) ELEVATION 318 m

GEOLOGIST T. Burns DRILLER H. Durett BIT NO. CB70046 / 47 BIT FOOTAGE 83.5 → 103.0 / 0 → 16.5

MOVE TO HOLE

DRILL 7.00 → 9.00

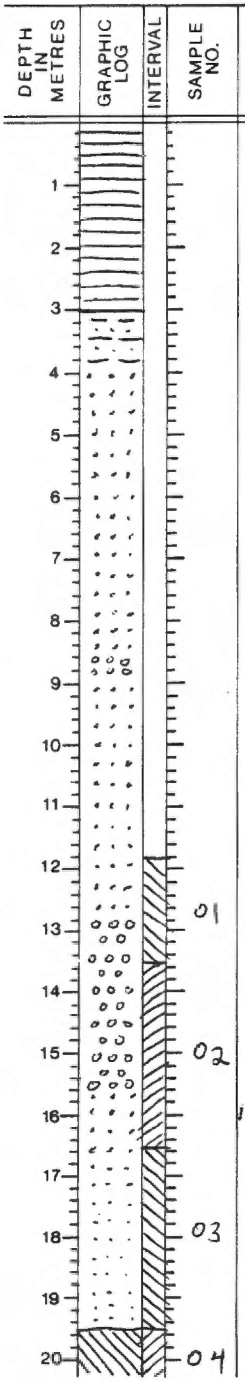
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER 6.30 → 7.00 travel to drill

MOVE TO NEXT HOLE

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



0 → 19.5 Ojibway II sediments

clay 0 → 3.0
beige, moderately compact, pure

silt 3.0 → 4.0
gray-beige with very fine grained
interbedded sand.

sand 4.0 → 12.8
gray-beige, fine grained
- pebbly bed at 8.6 → 8.8

gravel 12.8 → 15.7
pebbly, medium to coarse sand
matrix clasts 60% mafic
volcanics and sediments 40%
granitics

sand 15.7 → 19.5
gray-beige, fine grained
(Note: loss of return at 19.5
rods pulled, lost down-hole
1 rod, redrilled 2 m south
intersected bedrock at 15.0 → 16.5)

19.5 → 21.0 Bedrock Feldspar Porphyry
mottled green-white, massive
well developed porphyritic
texture, phenocrysts of feldspar
up to 2 mm. chloritic shears
16.3 → 16.5, feldspar phenos
stretched out

21.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 14 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-08 LOCATION L 33 E 10+00S (site 138) ELEVATION 316.5

GEOLOGIST T. Burns DRILLER H. Durett BIT NO. CB70047 BIT FOOTAGE 16.5 -> 32.0

MOVE TO HOLE 9.00 -> 9.15

DRILL 9.15 -> 10.15

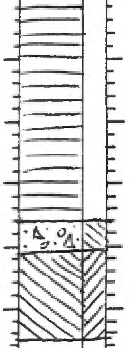
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0 -> 3.6				**Ojibway II Sediments** clay 0 -> 3.6 beige, moderately compact slightly gritty
3.6 -> 4.1			01	**Chibougamau Till** gray - beige, fine sand matrix pebbly clasts 70% mafic volcanics and sediments 30% granitics
4.1 -> 5.5			02	**Bedrock** Intermediate to mafic Volcanic mottled green - white, porphyritic texture, 10-15% phenocrysts of white plagioclase massive to poorly developed foliation
5.5				E. O. H.



OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 14 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-09 LOCATION L 35E 10+00S (stn. 139) ELEVATION 317 m

GEOLOGIST I. Bruce DRILLER H. Dewitt BIT NO. CB70047 BIT FOOTAGE 22 -> 25.5

MOVE TO HOLE 10.15 -> 10.30

DRILL 10.30 -> 11.15

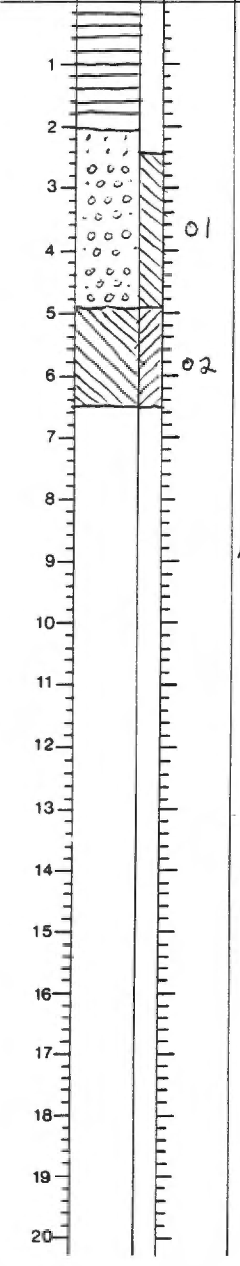
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

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



0 -> 4.9 Ojibway II Sediments

clay 0 -> 2.0

beige, moderately compact slightly gritty

sand 2.0 -> 2.4

gray-beige, fine grained

gravel 2.4 -> 4.9

pebbly clasts 60% mafic volcanics and sediments 40% granitics with medium to coarse sand matrix

4.9 -> 6.5 Bedrock Intermediate Volcanic

gray-green, fine grained to aphanitic, well developed porphyritic texture, moderate to well developed foliation

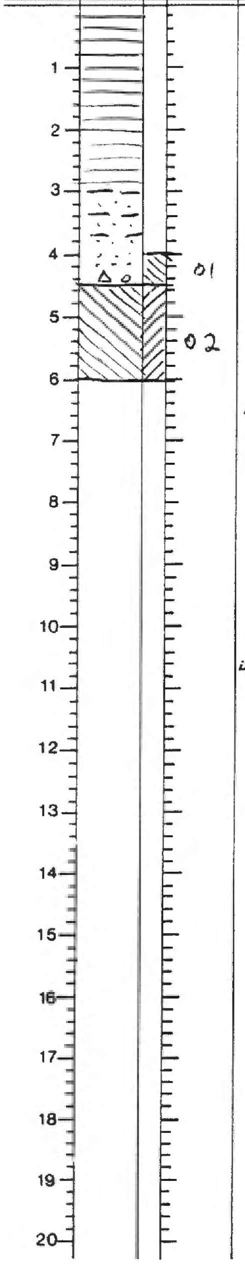
6.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 14 1988
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLS-88-10 LOCATION L 37 E 4+75 S (Stn 140) ELEVATION 318
GEOLOGIST T. Burns DRILLER H. Durett BIT NO. CB20047 BIT FOOTAGE 28.5 -> 34.5
MOVE TO HOLE 11.15 -> 11.30
DRILL 11.30 -> 12.30
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

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



0 -> 4.4 Ojibway II Sediments
clay 0 -> 3.0
beige, moderately compact, pure
silt 3.0 -> 4.0
gray-beige with very fine grained interbedded sand.
sand 4.0 -> 4.4
gray-beige, fine grained

4.4 -> 4.5 Chibougamau Till
gray-beige, fine sand matrix pebbly clasts 60% mafic volcanics and sediments 40% granitics

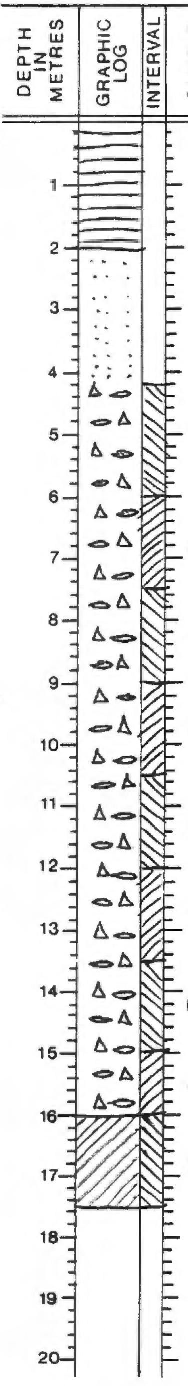
4.5 -> 6.0 Bedrock Intermediate Volcanics
light gray-green, fine grained to aphanitic, porphyritic
massive to poorly developed foliation, hard, siliceous
finely disseminated pyrite

6.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 14 1988
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLS-88-11 LOCATION L 72W, 46+25S (site 121) ELEVATION 320
GEOLOGIST T. Burns DRILLER H. Durett BIT NO. CB70047 BIT FOOTAGE 34.5 → 52.0
MOVE TO HOLE 12.30 → 2.15
DRILL 2.15 → 3.30
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER 3.45 → 6.00 travel to mine for parts 6.00 → 6.30 return to camp.
MOVE TO NEXT HOLE 3.30 → 3.45

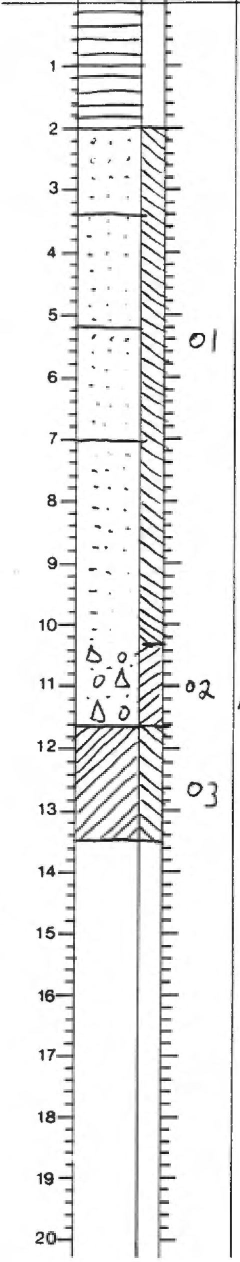
DEPTH IN METRES / GRAPHIC LOG / INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG	
	01 02 03 04 05 06 07 08 09	0 → 4.2 Ojibway II Sediments clay 0 → 2.0 beige, moderately compact pure sand 2.0 → 4.2 gray-beige, fine grained 4.2 → 16.0 Chibougamau Till gray-beige, fine sand matrix cobbly clasts 75 % mafic volcanics and sediments 25 % granitics - partially sorted above 8.0 16.0 → 17.5 Bedrock Felsic pyroclastic gray to gray-green, very well developed foliation, fine grained to aphanitic, 5-10 % white massive quartz vein very thin sericite ribbons throughout 17.5 E. O. H.	Note: Check logged character splits 01 to 08 November 1988 by P. Collins.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 15 19 88
SHIFT HOURS
______ TO ______
TOTAL HOURS
______
CONTRACT HOURS
______

HOLE NO PLS-88-12 LOCATION L72W, 36+50S (116) ELEVATION 314 m
GEOLOGIST T. Burns DRILLER H. Dewitt BIT NO. CB70047 BIT FOOTAGE 52→65.5
MOVE TO HOLE ______
DRILL 7.30→8.45
MECHANICAL DOWN TIME 7.00→7.30 repair G.T.
DRILLING PROBLEMS ______
OTHER 6.30→7.00 travel to drill 8.45→9.15 water test
MOVE TO NEXT HOLE ______

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



0→10.3 Ojibway II Sediments

clay 0→2.0
beige, moderately compact, pure

sand 2.0→10.3
gray-beige, fine grained
clay beds at 3.7, 5.2, 7.0

10.3→11.6 Chibougamau Till
gray-beige, fine sand matrix
pebbly clasts 75% mafic
volcanics and sediments 25%
granitics

11.6→13.5 Bedrock Metasediment
medium green, fine grained
very well developed foliation
to schistose, bedded.

13.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 15 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-13 LOCATION L64W, 30+50S (115) site ELEVATION 314 m

GEOLOGIST T. Burns DRILLER H. Ouellett BIT NO. CB70048 BIT FOOTAGE 0 -> 12.5

MOVE TO HOLE 9.15 -> 9.30

DRILL 9.30 -> 10.15

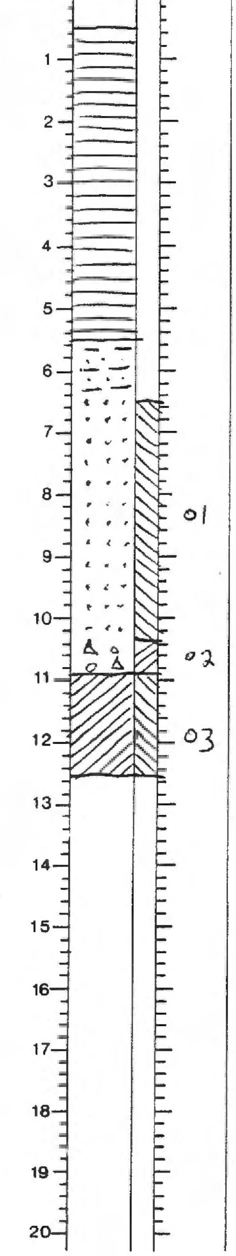
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER 10.15 -> 10.30 water test

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						



0 -> 0.5 No Return (organics)

clay 0.5 -> 5.5
gray, moderately compact pure

silt 5.5 -> 6.5
gray-beige with very fine grained interbedded sand

sand 6.5 -> 10.3
gray-beige, very fine grained above 7.0, fine grained below

10.3 -> 10.9 Chibougamau Till
gray-beige, fine sand matrix pebbly clasts 75% mafic volcanics and sediments 25% granitics

10.9 -> 12.5 Bedrock Felsic fragmental
gray-green, well developed foliation to schistose, fragmental texture, 5% calcite stingers, 2-3% finely disseminated pyrite throughout, coarse cubes associated with calcite stingers

12.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE *July 15* 19 *88*

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO *PLS-88-14* LOCATION *631W 31+00S (site 110)* ELEVATION *308 m*

GEOLOGIST *T. Burns* DRILLER *H. Durett* BIT NO. *CB70048* BIT FOOTAGE *12.5 -> 29.0*

MOVE TO HOLE *10.30 -> 10.45*

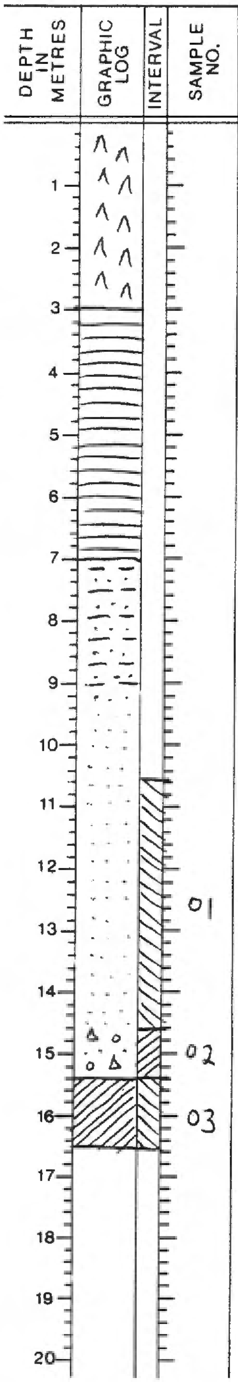
DRILL *10.45 -> 11.00*

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER *11.00 -> 11.15 water test*

MOVE TO NEXT HOLE



DESCRIPTIVE LOG

0 -> 1.5 <u>No Return</u> (organics)

1.5 -> 3.0 <u>Organics</u>

3.0 -> 14.6 <u>Ojibway II Sediments</u>

<u>clay</u> 3.0 -> 7.0
gray, soft, pure

<u>silt</u> 7.0 -> 9.0
gray-beige, with very fine grained interbedded sand

<u>sand</u> 9.0 -> 14.6
gray-beige, fine grained

14.6 -> 15.4 <u>Chibougamau Till</u>
gray-beige, fine sand matrix pebbly clasts 80% mafic volcanics and sediments, 20% granitics

15.4 -> 16.5 <u>Bedrock</u> Metasediments
dark gray to black, very well developed foliation to schistose, very fine grained, bedded

16.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 15 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-15 LOCATION L56W, 37+00S (site 114) ELEVATION 311 m

GEOLOGIST T. Burns DRILLER H. Ouette BIT NO. CB70043 BIT FOOTAGE 29 -> 42.5

MOVE TO HOLE 11.15 -> 11.30

DRILL 11.30 -> 12.15

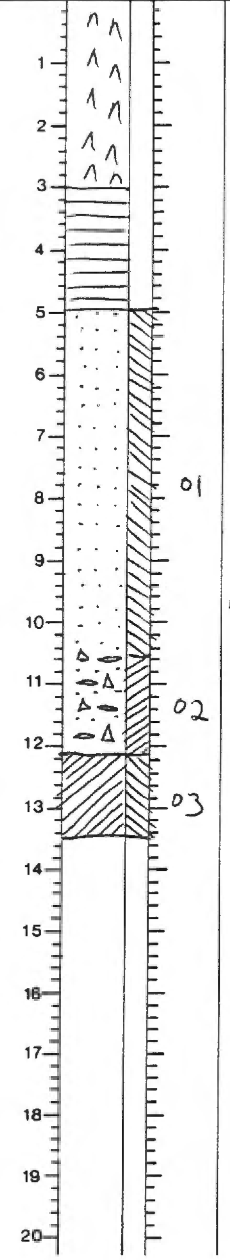
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER 12.15 -> 12.30 water test

MOVE TO NEXT HOLE

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



0 -> 3.0 No Return (organics)

3.0 -> 10.4 Ojibway II sediments

clay 3.0 -> 5.0
gray, soft, pure

sand 5.0 -> 10.4
gray-beige, fine grained

10.4 -> 12.1 Chibougamau Till
gray-beige, fine sand matrix
cobbly, clasts 75% mafic
volcanics and sediments
25% granitics

12.1 -> 13.5 Bedrock Intermediate fragmental
(sericite-chlorite schist)
yellow-green, fine grained
very well developed foliation
schistose, fragmental
texture locally well
developed 2-3% green mica

13.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 15 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

CONTRACT HOURS

HOLE NO OLS-88-16 LOCATION L48W 36+25S (site 113) ELEVATION 311 m

GEOLOGIST T. Burns DRILLER H. Dewitt BIT NO. CB 700 48 BIT FOOTAGE 42.5->55.5

MOVE TO HOLE 12.30 -> 12:45

DRILL 12.45 -> 1.00

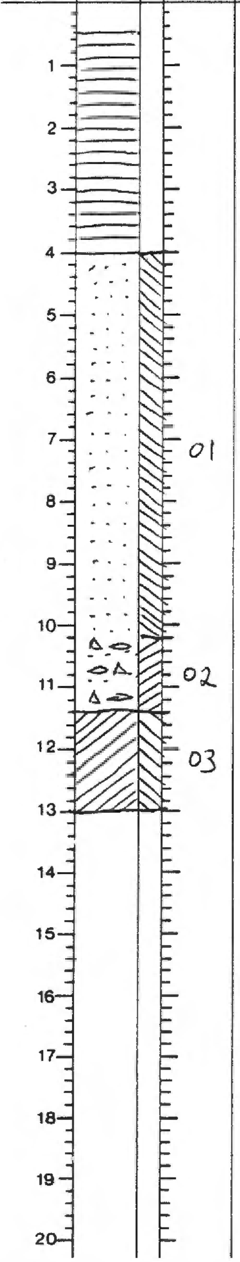
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER 1.00 -> 1.15 water test

MOVE TO NEXT HOLE

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



0 -> 0.5 No Return (organics)

0.5 -> 10.2 Ojibway II Sediments

clay 0.5 -> 4.0
gray, soft, pure,

sand 4.0 -> 10.2
gray-beige, fine grained

10.2 -> 11.4 Chibougamau Till
gray-beige, fine sand matrix
cobbly clasts 70% mafic volcanics
and sediments 30% granitics

11.4 -> 13.0 Bedrock Metasediment
dark gray-green, very fine
grained, very well developed
foliation to schistose

13.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 15 1988

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-17 LOCATION L 44W 30+00S (site 111) ELEVATION 308m

GEOLOGIST T. Burns DRILLER H. Durett BIT NO. CB 70048 BIT FOOTAGE 55.5 → 69.0

MOVE TO HOLE 1.15 → 1.30

DRILL 1.30 → 2.00

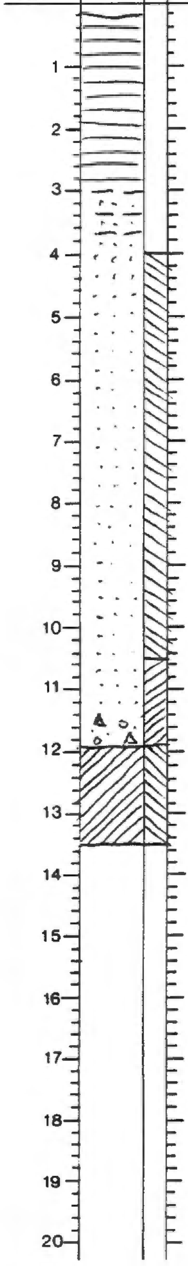
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER 2.00 → 2.15 water test

MOVE TO NEXT HOLE

DEPTH IN METRES | GRAPHIC LOG | INTERVAL



SAMPLE NO.	DESCRIPTIVE LOG
	0 → 11.6 <u>Ojibway II Sediments</u> clay 0 → 3.0 beige, moderately compact, sem silt 3.0 → 4.0 gray-beige with very fine grained interbedded sand. sand 4.0 → 11.6 gray-beige, fine grained
01	11.6 → 11.9 Chibougamau Till gray-beige, fine sand matrix pebbly clasts 80% mafic volcanics and sediments 20% granitics
02	11.9 → 13.5 Bedrock Intermediate Volcanic (sheared)
03	medium gray-green, well developed foliation to schistose, porphyritic texture locally preserved.
	13.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 15 19 88

SHIFT HOURS

_______ TO _______

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-18 LOCATION 440W 36+00S (site 112) ELEVATION 308 m

GEOLOGIST T. Burns DRILLER H. Durett BIT NO. CB 70048 BIT FOOTAGE 64 -> 81.5

MOVE TO HOLE 2.15 -> 2.30

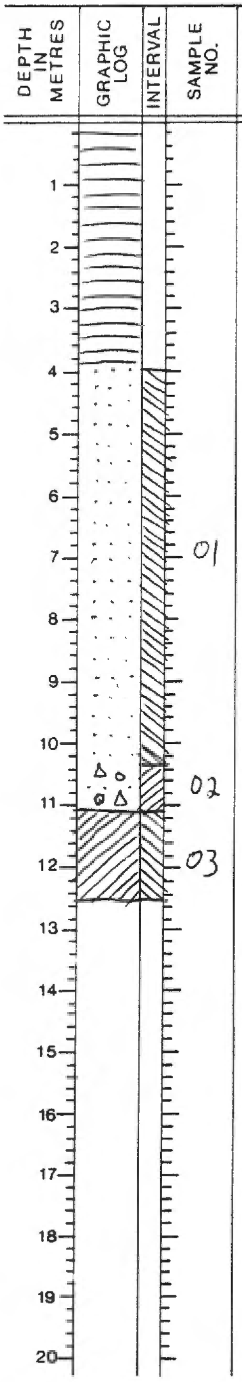
DRILL 2.30 -> 3.00

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE



DESCRIPTIVE LOG

0 -> 1.5 No Return (Organics)

Ojibway II Sediments

clay 1.5 -> 4.0

beige, moderately compact, pure

sand 4.0 -> 10.3

gray-beige, fine grained

10.3 -> 11.1 Chibougamau Till

gray-beige, fine sand matrix

pebbly clasts 75% mafic

volcanics and sediments

25% granitics

11.1 -> 12.5 Bedrock Metasediments

gray-green, very well developed

foliation to schistose, very fine

grained, bedded

12.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 15 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-19 LOCATION L 41 W, 42+75S (site 120) ELEVATION 305 m

GEOLOGIST T. Burns DRILLER H. Durett BIT NO. CB70048 BIT FOOTAGE 81.5 -> 93.5

MOVE TO HOLE 3.00 -> 3.15

DRILL 3.15 -> 3.45

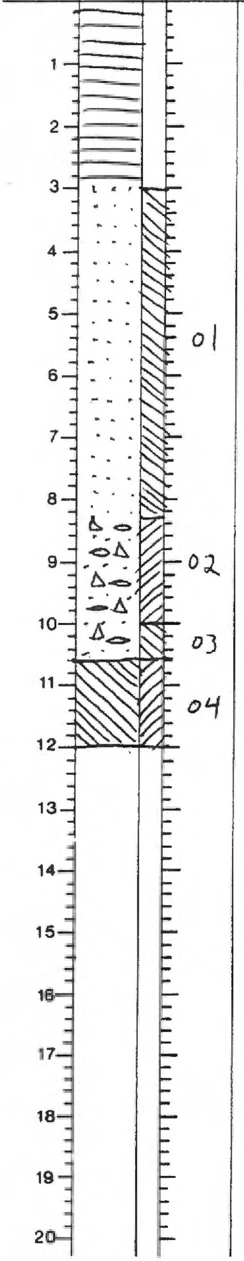
MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER 5.00 -> 5.30 travel to camp

MOVE TO NEXT HOLE 3.45 -> 5.00

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



DESCRIPTIVE LOG

0 -> 1.5 No Return (organics)

1.5 -> 8.3 Ojibway II Sediments

clay 1.5 -> 3.0
beige, moderately compact pure
above 2.0 gray soft pure
below 2.0

sand 3.0 -> 8.3

gray- beige, fine grained

8.3 -> 10.6 Chibougamau Till

gray- beige, fine sand
matrix cobbly. clasts 80%
mafic volcanics and sediments
20% granitics

10.6 -> 12.0 Bedrock Iron formation
dark gray to black, very
well developed foliation
to schistose, bedded, fine
grained to aphanitic
weakly. magnetic

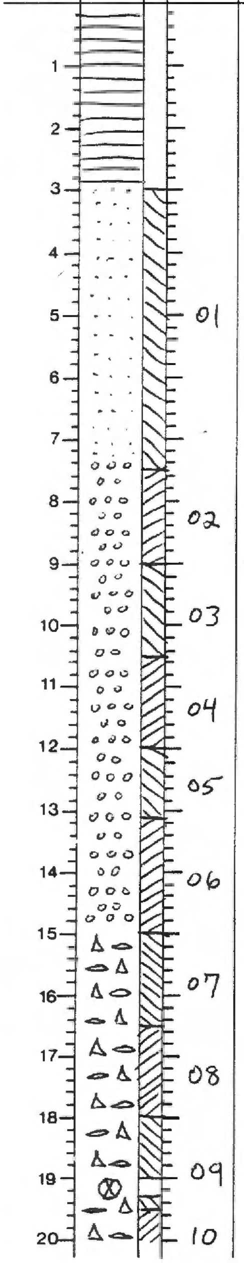
12.0 E-O-H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 16 1988
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO OLS-88-20 LOCATION L72W, 31+50S (Site 109) ELEVATION 304 m
GEOLOGIST T. Burns DRILLER H. Durett BIT NO. CB70048 BIT FOOTAGE 93.5 -> 113.5
MOVE TO HOLE _____ CB70049 0 -> 31.5
DRILL 7.00 -> 10.15
MECHANICAL DOWN TIME _____
DRILLING PROBLEMS _____
OTHER 6.30 -> 7.00
MOVE TO NEXT HOLE _____

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0 -> 14.8 Ojibway II Sediments

clay 0 -> 3.0
beige, moderately compact, pure

sand 3.0 -> 7.4
beige to gray-beige below 5.0
fine grained

gravel 7.4 -> 14.8
cobbly clasts 65% mafic
volcanics and sediments 35%
granitics, medium to coarse
sand matrix

14.8 -> 25.3 Chibougamau Till

gray-beige, fine sand matrix
cobbly clasts 75% mafic
volcanics and sediments
25% granitics

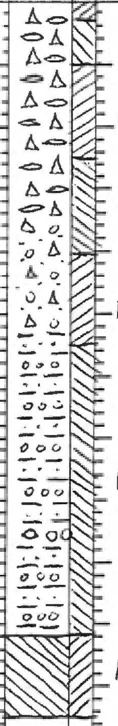
- boulder granodiorite 19.0 -> 19.3

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 16 19 88
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLS-88-20 LOCATION L72W 31+50 (site 101) ELEVATION ____
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	SAMPLE NO.	DESCRIPTIVE LOG
	10	- stoney till below 20.0
21	11	- pebbly below 23.5, clasts 75% mafic volcanics and sediments 25% granites
22	12	
23	13	
24		
25	14	25.3 → 30.2 <u>Missinaibi Sediments</u> silty sand with thin interbedded gray moderately compact clay and granular sand beds.
26		
27		
28	15	- pebbly sand 30.1 → 30.2
29		
30		30.2 → 31.5 <u>Bedrock</u> Metasediment (siltstone) dark gray to black (chlorite) very fine grained, very well developed foliation to schistose, bedded, 1% calcite veining
31	16	
32		
33		
34		31.5 E.O.H.
35		
36		
37		
38		
39		
40		

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 16 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PS-88-31 LOCATION L30W; 42+25S (site 113) ELEVATION 314 m

GEOLOGIST T. Burns DRILLER H. Durett BIT NO. CB7-D49 BIT FOOTAGE 31.5 -> 44.5

MOVE TO HOLE 10.15 -> 10.45

DRILL 10.45 -> 11.30

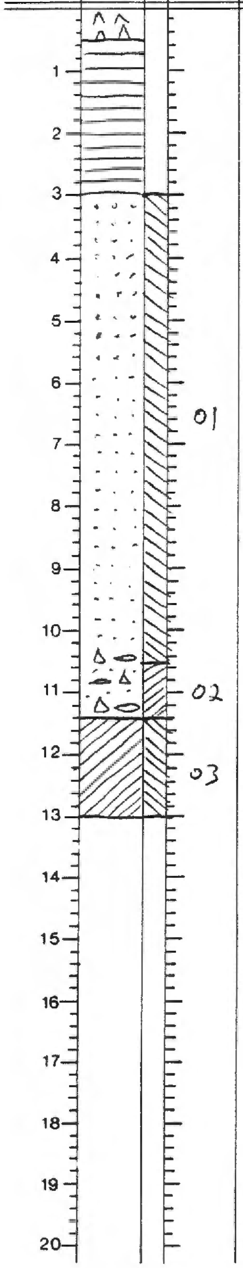
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

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



0 -> 0.5 No Return (organics)

0.5 -> 10.3 Ojibway II Sediments

clay 0.5 -> 3.0

beige, soft, pure above 2.0
gray, soft, pure below

sand 3.0 -> 10.3

beige, fine grained

10.3 -> 11.4 Chibougamau Till

gray-beige, fine sand matrix
low percentage of matrix, stoney
cobbly clasts 75% mafic
volcanics and sediments
25% granitics

11.4 -> 13.0 Bedrock Metasediment (siltstone)

dark gray to gray-green (chlorite)
very well developed foliation to
schistose

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 16 19 83

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-83-22 LOCATION L80W, 35+00S (site 117) ELEVATION 312 m

GEOLOGIST T. Burns DRILLER H. Durett BIT NO. GB70049 BIT FOOTAGE 44.5->70.0

MOVE TO HOLE 11.30 -> 11.45

DRILL 11.45 -> 2.00

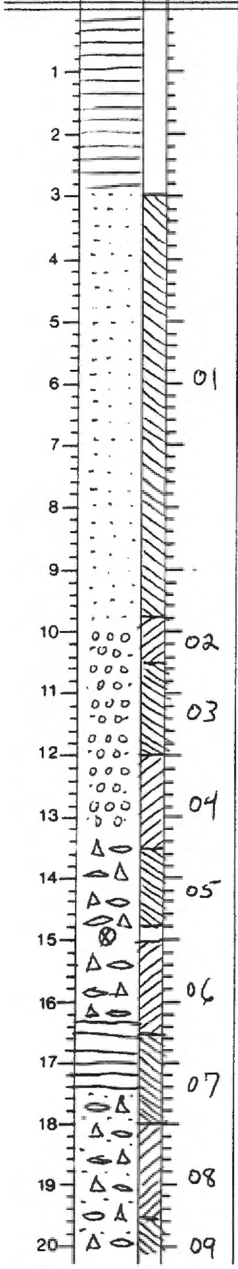
MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

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



0->13.1 Ojibway II Sediments

clay 0 -> 3.0

beige, soft, pure

sand 3.0 -> 9.8

gray-beige, fine grained

gravel 9.8 -> 13.1

pebbly, medium sand matrix
clasts 60% mafic volcanics
and sediments 40% granitics

13.1 -> 23.1 Chibougamau Till

gray-beige, fine sand matrix
cobbly clasts 65% mafic volcanics
and sediments 35% granitics

- gritty gray clay smeared pebbles at 14.2
- very stoney below 14.8 to 16.3, 17.4 to 19.1
- boulder granodiorite 14.8 -> 15.0
- compact gray green clay lense 16.3 -> 17.4

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 11 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-22 LOCATION L80W 55+00S (site 117) ELEVATION ____

GEOLOGIST ____ DRILLER ____ BIT NO. ____ BIT FOOTAGE ____

MOVE TO HOLE ____

DRILL ____

MECHANICAL DOWN TIME ____

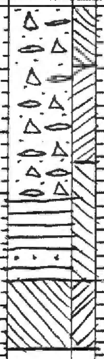
DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

Pg 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



Depth	Sample No.
	09
21	
22	10
23	
	11
24	
25	12
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	

23.1 → 24.4 Missinaibi Sediments

clay 23.1 → 24.0
gray-green, compact, fissile
sand 24.0 → 24.2
gray, fine grained
clay 24.2 → 24.4
(as above)

24.4 → 25.5 Bedrock Intermediate to Mafic Volcanic
medium to dark green, fine grained, well developed foliation (sheared), 1% calcite veining, trace amounts of pyrite on fracture surfaces

25.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 16 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-23 LOCATION L76W 27+00S (site 108) ELEVATION 307 m

GEOLOGIST T. Burns DRILLER H. Durett BIT NO. CB70050 BIT FOOTAGE 0 → 34.0

MOVE TO HOLE 2.00 → 2.15

DRILL 2.15 → 5.00

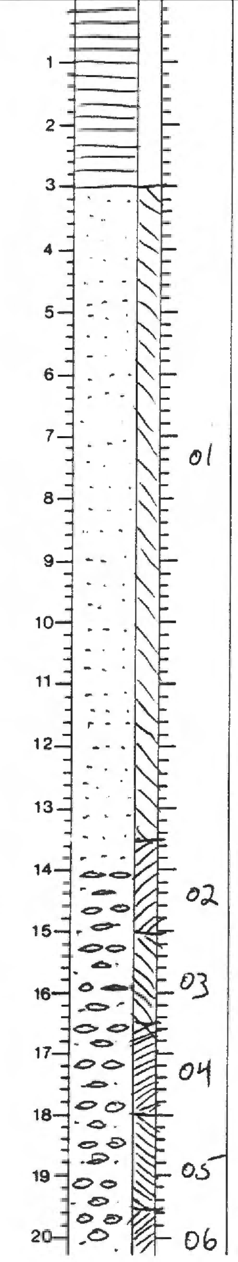
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER 5.00 → 5.30 travel to truck 5.30 → 6.00 travel to camp

MOVE TO NEXT HOLE

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



0 → 32.5 Ojibway II Sediments

clay 0 → 3.0

beige, moderately compact, pure

sand 3.0 → 13.8

gray-beige, fine grained

gravel 13.8 → 20.5

cobbly, medium to coarse sand matrix clasts 65% mafic volcanics and sediments 35% granitics

sand 20.5 → 21.6

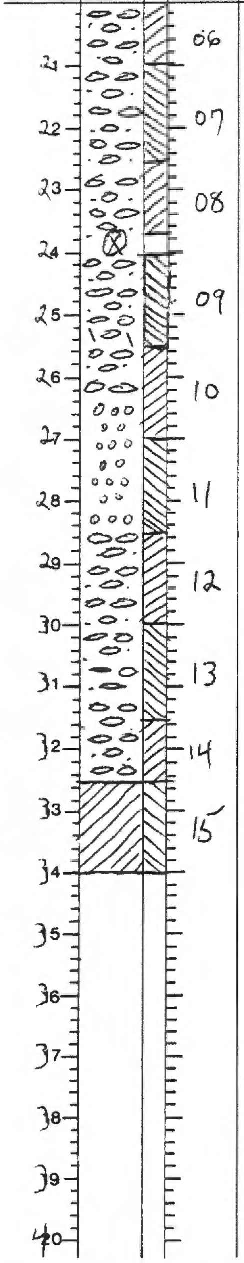
beige, medium to coarse grained

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 16 19 __
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLS-88-23 LOCATION L76W 29+00S (site 103) ELEVATION ____
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



- very stoney below 21.6
- boulder granodiorite 23.7 -> 24.0
- gritty gray clay from 25.2 -> 25.3
- coarse sand 26.5 -> 28.2
- gravel 28.2 -> 32.5
cobbly 60% mafic volcanics
and sediments 40% granitics
medium to coarse sand matrix

32.5 -> 34.0 Bedrock chlorite sericite schist
alternating yellow-green (sericite)
and gray-green (chlorite) bands
very fine grained, very well
developed foliation to schistose

34.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 17 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-24 LOCATION L76W 20+45S (moved 45 m south of Site 107) ELEVATION 306 m

GEOLOGIST T. Burns DRILLER H. Durett BIT NO. SB70050 BIT FOOTAGE 32.5 -> 66.0

MOVE TO HOLE 7.30 -> 7.45

DRILL 7.45 -> 11.30

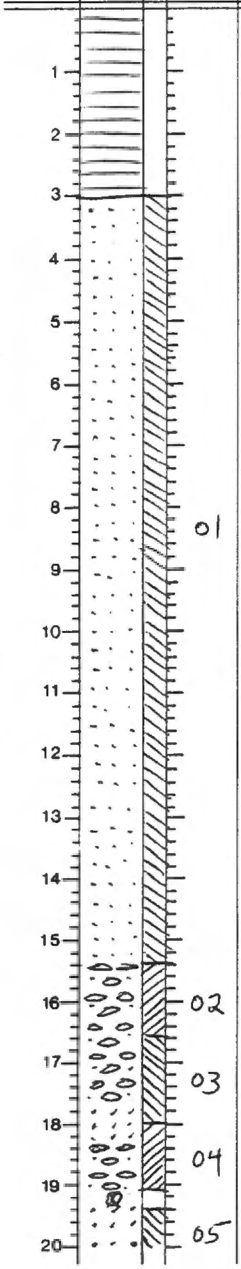
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER 11.30 -> 12.00 travel to truck 12.00 -> 12.30 travel to camp

MOVE TO NEXT HOLE

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



0 -> 1.5 No Return (organics)

1.5 -> 33.5 Ojibway II Sediments

clay 1.5 -> 3.0
gray, soft, pure,

sand 3.0 -> 15.4
gray-beige, fine grained
- pebbly bed at 8.8

gravel 15.4 -> 17.8
cobbly medium to coarse sand matrix clasts 65% mafic volcanics and sediments 35% granitics

sand 17.8 -> 18.4
gray-beige, fine grained

gravel 18.4 -> 19.4
- same as section 15.4 -> 17.8
- boulder mafic volcanics 19.1 -> 19.4

sand 19.4 -> 27.8

- medium grained above 22.0
- coarse grained below 22.0

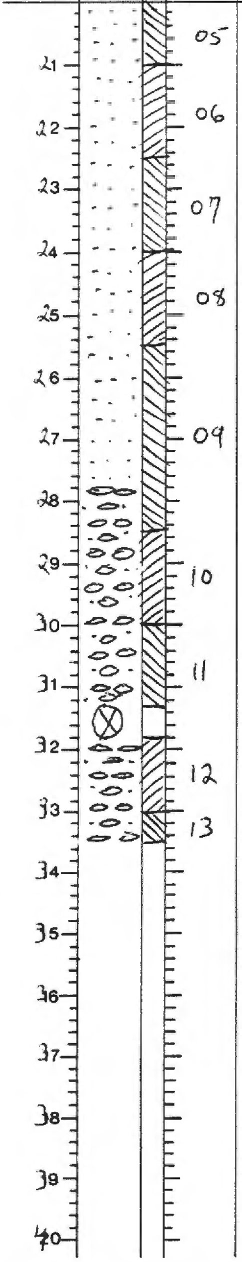
OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 17 19 88
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO PLS-88-24 LOCATION _____ ELEVATION _____
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



- gravel 27.8 → 33.5
cobbly, with medium to coarse sand matrix clasts 65% mafic volcanics and sediments 35% granitics

- wood chips at 28.3, 30.6

- boulder, granodiorite 31.3 → 31.8

- pressurized section below 32.5

33.5 E.O.H. hole abandoned due to high pressure sands plugging rods.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 19 1988

SHIFT HOURS

____ TO ____

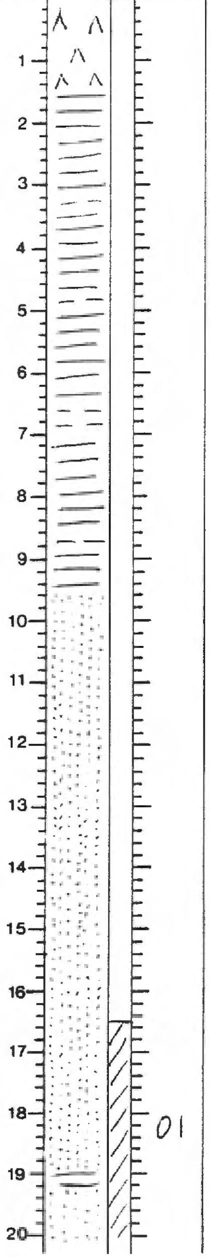
TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-25 LOCATION 68W 24+00S (site # 106) ELEVATION 306m
GEOLOGIST P. Collins DRILLER G. Hong BIT NO. CB7005 1 BIT FOOTAGE 0.0-43
MOVE TO HOLE July 17 (11:15-11:30 Am)
DRILL 11:30 - 2:45
MECHANICAL DOWN TIME 8:00 - 11:30 repair clutch on rockwell & various
DRILLING PROBLEMS
OTHER Travel to drill 6:30 - 8:00 Am
MOVE TO NEXT HOLE

Pg 1 of 3 New Bit

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



DESCRIPTIVE LOG

0.0 - 1.5 Organics

1.5 - 29.0 Ojibway II Sediments

(1.5 - 9.5) grey, pure, soft clay with silt interbeds

(9.5 - 12.0) beige grey fine grained sand

(12.0 - 19.0) grade to medium grained sand (well sorted) - glacio-fluvial sediments.

(19.0) grey, pure, soft clay bed.

Note : Rhodamine Test 1:15 - 2:25 (clear water return).

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 19 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-25 LOCATION 68W 24+00S ELEVATION _____

GEOLOGIST _____ DRILLER _____ BIT NO. _____ BIT FOOTAGE _____

MOVE TO HOLE _____

DRILL _____

MECHANICAL DOWN TIME _____

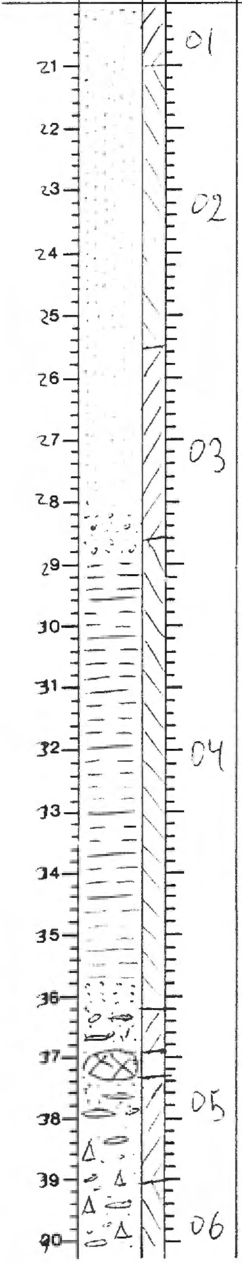
DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

Pg. 2 of 3

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



01

02

03

04

05

06

19.0 - 23.0 interbeds of medium and coarse sand

23.0 - 28.0 predominantly coarse sand and subrounded 10 mesh granule clasts.

28.0 - 28.8 granule/pebble gravel no visible matrix. Clast composition 60% volcanics and sediments; 40% Granitoids.

28.8 - 38.0 MISSINAIBI SEDIMENTS

(28.8 - 36.2) predominantly silt with occasional pure, compact clay partings (often hard) also very fine grained sand interbeds. at 33.4 woodchips observed.

(36.2 - 36.9) Gravel & beige grey sand interbeds. Cobble clasts of approximate composition: 70% Volcanics and sediments; 30% Granitoids.

* initially appeared to be till as matrix appeared unsorted; however, this is probably due to silt/very fine sand cave in from overlying unit. also difficult to determine due to colouration from chemical dye test.

(36.9 - 37.3) Boulder - Gabbro

(37.3 - 38.0) similar to 36.2-38.9

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 19 19 88
HOLE NO PLS-88-25 LOCATION 6+8w 24+00S ELEVATION
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.
			06
41			07
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
60			

DESCRIPTIVE LOG

38.0 - 40.2 Lower Till

grey beige fine sand / silt matrix (slightly sorted). Cobble clasts of approximate composition; 70% Volcanics and sediments; 30% Granitoids

40.2 - 42.0 Bedrock

- dark green
- fine grained
- well foliated (sheared)
- carbonatized ≈ 5%
- chloritic
- 1% disseminated sulphides

Mafic Volcanic

42.0 E.O.H.

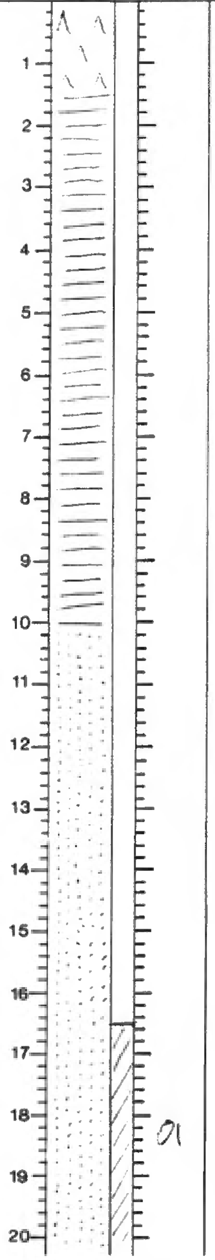
OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 19 1988
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLS-88-26 LOCATION 60w 20+50S (site # 104) ELEVATION 308 m
GEOLOGIST P Collins DRILLER G. Hoog BIT NO. CB70051 BIT FOOTAGE 42.0 - 67.
MOVE TO HOLE 1:45 - 2:10
DRILL 2:10 - 3:00 pm
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

Pg. 1 of 2

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



0.0 - 1.5 Organics

1.5 - 21.0 Ojibway II Sediments

(1.5 - 10.0) grey beige, pure, soft clay with silt interbeds.

(10.0 - 18.0) sorted beige, grey fine and medium grained sand (glaciofluvial)

(18.0 - 21.0) similar to 10.0 to 18.0 with coarse sand interbeds.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 19 1988

SHIFT HOURS

TO

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-26 LOCATION 6CW 20+50 S ELEVATION

GEOLOGIST DRILLER BIT NO. BIT FOOTAGE

MOVE TO HOLE

DRILL

MECHANICAL DOWN TIME

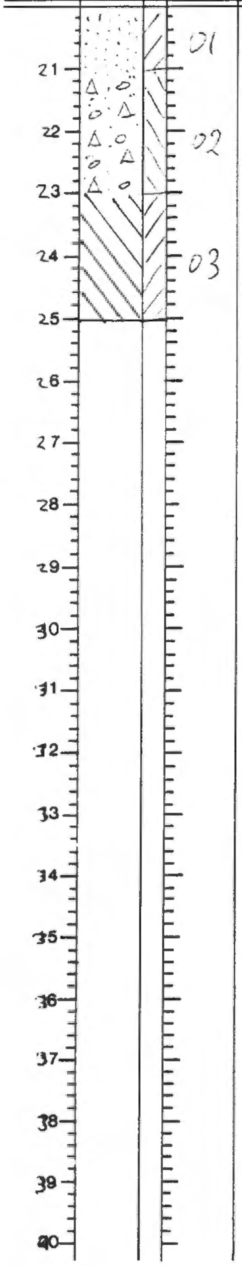
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg. 2 of 2

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



21.0 - 23.0 Chibougamau Till

grey beige fine sand / silt matrix. Pebble clasts with composition: 70% Volcanics and sediments; 30% Granitoids.

note: matrix slightly sorted initially which may be due to mixing with overlying sediments.

23.0 - 25.0 BEDROCK

- dark green
- fine grained
- well developed foliation
- 5-7% quartz / carbonate veinlets & increase in percentage downsection.
- brownish alteration - sericite?
- ≤1% disseminated sulphides.
- chloritic

MAFIC VOLCANIC.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 19 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PL-88-27 LOCATION 600 W 15+00 S (site #105) ELEVATION 309 m

GEOLOGIST P. Collins DRILLER G. Hoveg BIT NO. CB70051 BIT FOOTAGE 67.0-104.

MOVE TO HOLE 3:00 - 3:15

DRILL 3:15 - 5:30

MECHANICAL DOWN TIME

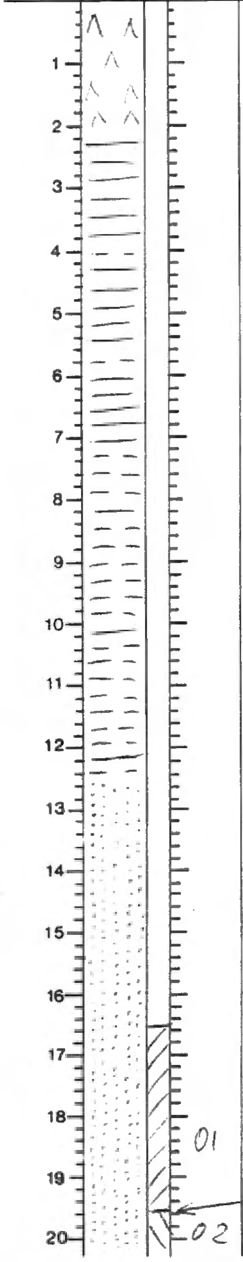
DRILLING PROBLEMS

OTHER Travel 5:30 - 6:45 (drill to camp)

MOVE TO NEXT HOLE

Pg 1 of

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 2.0 Organics

2.0 - 31.0 Ojibway II Sediments

(2.0-12.5) pure, grey, soft clay with silt interbeds.
- below 7.0 m predominantly grey silt c minor clay interbeds.

(12.5 - 15.0) grey, fine grained sand.

(15.0 - 25.5) mostly grey beige medium grained sand with coarse and fine sand interbeds downsection.
pebble gravel beds at 24.5 and 25.2 m

pull rods to check seals on rods and O rings

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 19 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-27 LOCATION 60W 15+00S ELEVATION ____

GEOLOGIST ____ DRILLER ____ BIT NO. ____ BIT FOOTAGE ____

MOVE TO HOLE ____

DRILL ____

MECHANICAL DOWN TIME ____

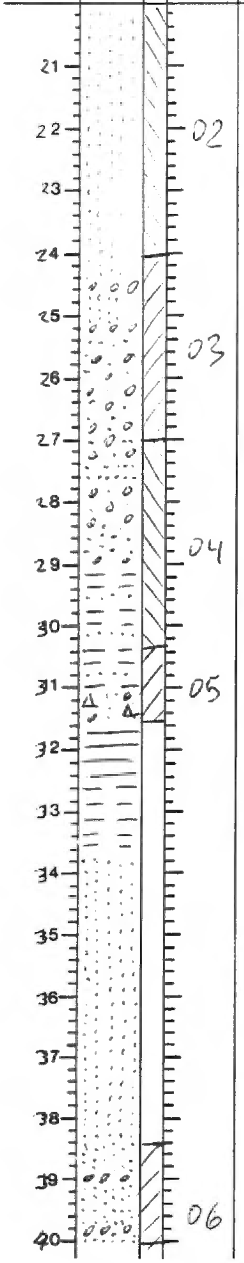
DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

Pg 2 of 3

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



25.5 - 26.5 Gravel: pebble clasts (rounded) of approximate composition: 60% Volcanics and sediments; 40% Granitoids

26.5 - 29.0 Gravel as above with interbeds of sorted fine and medium grained sand

29.0 - 31.0 very little return appears to be silt and fine sand interbeds.

31.0 - 31.5 Chibougamau Till grey beige fine sand/silt matrix Pebble and small cobble clasts of approximate composition; 70% Volcanics and sediments; 30% Granitoids.

31.5 - 40.0 MISSINAIBI SEDIMENTS

(31.5 - 32.5) grey, pure, hard, compact clay

(32.5 - 33.5) grey silt

(33.5 - 38.4) gradation to grey, very fine grained sand

(38.4 - 40.0) interbeds of beige sorted fine, medium grained sand also occasional pebble bed.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 19 19 88

SHIFT HOURS

_______ TO _______

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-27 LOCATION 60W 15+00S ELEVATION _______

GEOLOGIST _______ DRILLER _______ BIT NO. _______ BIT FOOTAGE _______

MOVE TO HOLE _______

DRILL _______

MECHANICAL DOWN TIME _______

DRILLING PROBLEMS _______

OTHER _______

MOVE TO NEXT HOLE _______

Pg 3 of 3

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
41	▨	▨	07	40.0 - 42.0 BEDROCK - initially abundant overburden contamination - light & medium green - fine grained - well developed foliation - chloritized - 30% quartz/carbonate veins/veinlets. - occasional fracture - <1% disseminated sulphides Intermediate Volcanic 42.0 E.O.H.
42				
43				
44				
45				
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48				
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58				
59				
60				

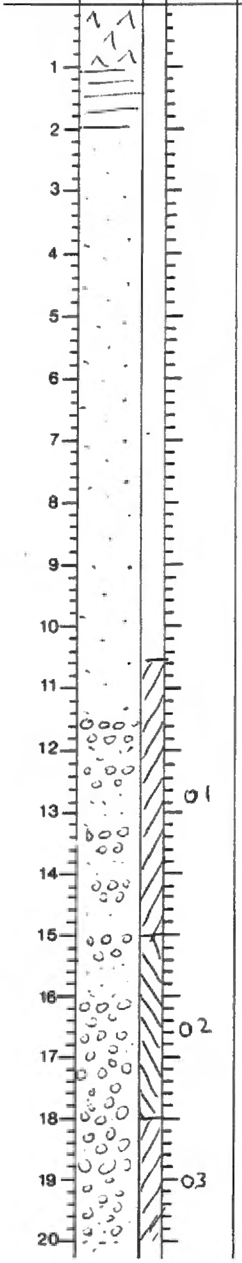
OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 20 19 88
SHIFT HOURS
TO
TOTAL HOURS
CONTRACT HOURS

HOLE NO PLS-88-28 LOCATION 600W 9+50S (site #88) ELEVATION 314m
GEOLOGIST P. Collins DRILLER S. Howg BIT NO. CB70051 CB70052 BIT FOOTAGE 104.0 - 137.5 0.0 - 13.0 m
MOVE TO HOLE 7:15 - 7:30
DRILL 7:30 - 12:00
MECHANICAL DOWN TIME 12:30 - 5:00 July 20
DRILLING PROBLEMS
OTHER Travel 6:30 - 7:15
MOVE TO NEXT HOLE 12:00 - 12:30

Pg 1 of 3

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



DESCRIPTIVE LOG

0.0 - 1.0 Organics

1.0 - 27.3 Ojibway II Sediments

(1.0 - 2.0) pure, grey, soft clay

(2.0 - 8.0) beige grey, sorted fine grading to medium sand

(8.0 - 11.5) medium grained sand with coarse sand interbeds

(11.5 - 16.0) pebble / granule gravel. Clasts are subrounded to rounded with composition. 60% volcanics and sediments; 40% Granitoids. Also fine and medium grained sand interbeds

(16.0 - 21.2) Gravel as in 11.5 to 16.0 with sorted medium sand matrix
- below 18.0 m occasional very fine to fine sand bed; gives till appearance momentarily in places

Fluorescein test # 1

0 min	16 l	sand in sample
5 min	16 l	" "
10 min	18 l	very sandy
15 min	0.9 l	" "

* progressively more sand and less water with each sample

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 20 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PCS-88-28 LOCATION 60W 9+50 S ELEVATION ____

GEOLOGIST ____ DRILLER ____ BIT NO. ____ BIT FOOTAGE ____

MOVE TO HOLE ____

DRILL ____

MECHANICAL DOWN TIME ____

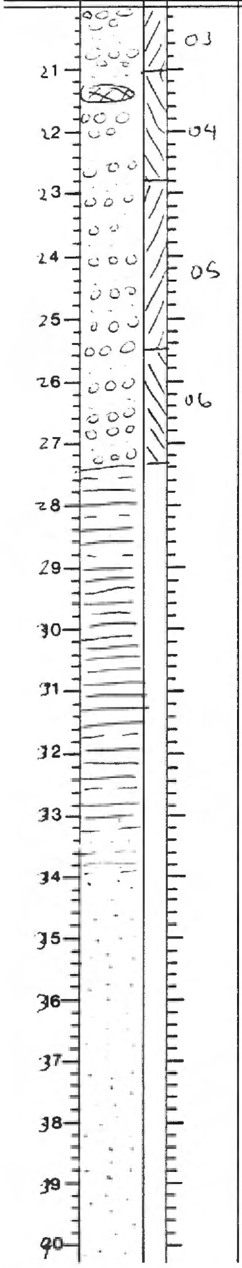
DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

Pg 2 of 3

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



(21.2 - 21.5) BOULDER - GRANITE

(21.5 - 27.3) matrix appears slightly unsorted mostly fine sand. Yet is course biased and there is occasional medium and course sand beds. Pebble and cobble clasts (well rounded) of composition : 60% Volcanics and sediments ; 40% Granitoids. matrix is more sorted downsection

27.3 - 41.0 <u>MISSINAIBI SEDIMENTS</u>

grey, pure, hard, tough, compact clay with occasional silt inter beds : grey very fine grained sand inter beds downsecti

* at 30.5 pull rods to change bit

33.0 - 34.0 predominantly silt and very fine grained sand

34.0 - 41.0 very fine grained sand (very little sample in buckets)

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 20 19 88

HOLE NO PLS-88-28 LOCATION 60W 9+50S ELEVATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

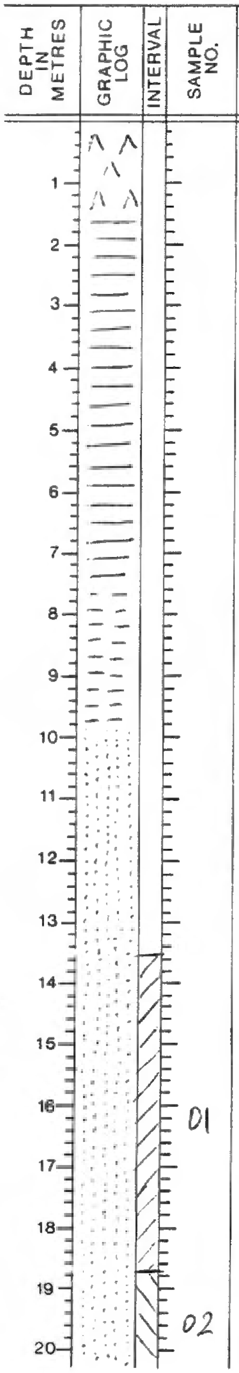
Pg. 3 of 3

DEPTH IN METRES	SAMPLE NO.	DESCRIPTIVE LOG
41	07	41.0 - 42.2 LOWER TILL grey beige fine sand / silt matrix
42		Both pebble and cobble clasts with composition: 80% volcanics
43	08	and sediments; 20% Granitoids
44		42.2 - 43.5 BEDROCK
45		- medium green
46		- very fine to fine grained - well developed foliation
47		- 5-7% quartz / carbonate veinlets
48		- chloritic; sericite alteration
49		- 3-5% disseminated sulphides
50		Intermediate to mafic volcanic
51		43.5 E.O.H.
52		
53		
54		
55		
56		
57		
58		
59		
60		

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 22 1988
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO PLS-88-29 LOCATION Site #103 52w 20+50s ELEVATION 311 m
GEOLOGIST P Collins DRILLER G Houg BIT NO. CB70052 BIT FOOTAGE 12.0-40.5
MOVE TO HOLE July 20 12:00-12:30 pm
DRILL 12:00 - 1:45
MECHANICAL DOWN TIME July 20 12:30 - 5:00, July 21 broken bolts on ocker head
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE



DESCRIPTIVE LOG

0.0 - 1.5 Organics

1.5 - 27.2 Ojibway II Sediments

(1.5 - 7.5) grey, pure, soft clay with silt inter beds.

(7.5 - 9.8) grey silt

(9.8 - 11.0) grey, sorted fine grained sand

(11.0 - 15.0) predominantly grey beige sorted medium grained sand

(15.0 - 20.0) as in 11.0 - 15.0 with coarse sand inter beds. also granules.

Fluoroscein test #2
1:09 to 1:27 pm
0 min 56 l
5 min 62 l
10 min 66 l ← (sandy at 4 min mark)
15 min 3.9 l

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 22 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-29 LOCATION ______ ELEVATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

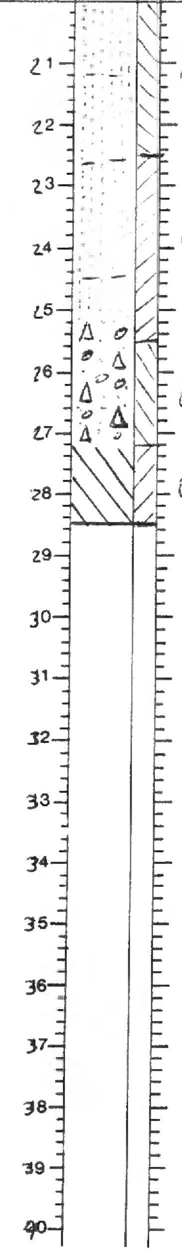
DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

Pg 2 of 2

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



02

03

04

05

(20.0 - 25.0) sorted beige fine grained sand minor silt interbeds.

(25.0 - 27.2 <u>Chibougaman Till</u>. ?

beige-grey fine sand minor silt / matrix. There are thin sorted medium sand interbed down section

(sorted beds within till)

also abundant +10 mesh pebble clasts of composition 60% Volcanics and sediments ; 40% Granitoids.

27.2 - 28.5 <u>BEDROCK</u>

- medium green
- fine grained
- foliated
- chloritic
- 2-3% disseminated sulphides
- 5% quartz/carbonate stringers

<u>MAFIC VOLCANIC</u>

28.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 22 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO RCS-88-30 LOCATION 48 W 13+50 S (site # 39) ELEVATION 320 m

GEOLOGIST P. Collins DRILLER G. Howg BIT NO. CB70052 BIT FOOTAGE 40.5 - 73.5

MOVE TO HOLE 1:45 - 2:00

DRILL 2:00 - 4:00

MECHANICAL DOWN TIME

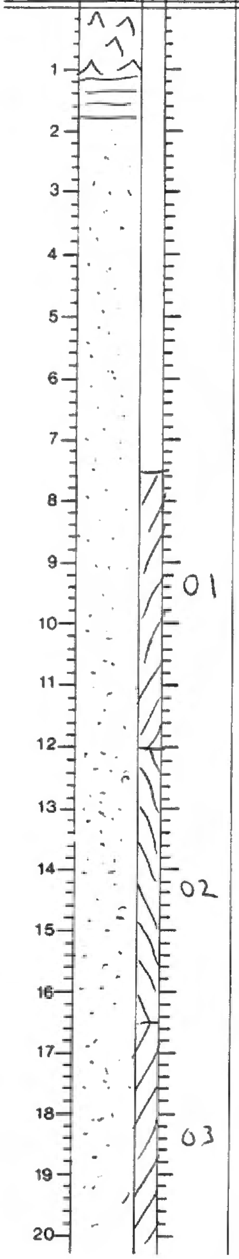
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 1 of 2

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



0.0 - 1.0 Organics

1.0 - 30.0 Ojibway II Sediments

(1.0 - 1.8) beige (oxidized), pure soft clay

(1.8 - 22.0) interbeds of sorted beige fine, medium and coarse sand (with occasional granule bed)
- more abundant coarse sand c granules below 6.0 m

at 18.2 m pure, soft, grey clay bed

Fluorescene test #3
3:29 to 3:50

0 min
5 min.
10 min
15 min

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 22 1988

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-30 LOCATION Site #89 48w 13+50s ELEVATION ____

GEOLOGIST ____ DRILLER ____ BIT NO. ____ BIT FOOTAGE ____

MOVE TO HOLE ____

DRILL ____

MECHANICAL DOWN TIME ____

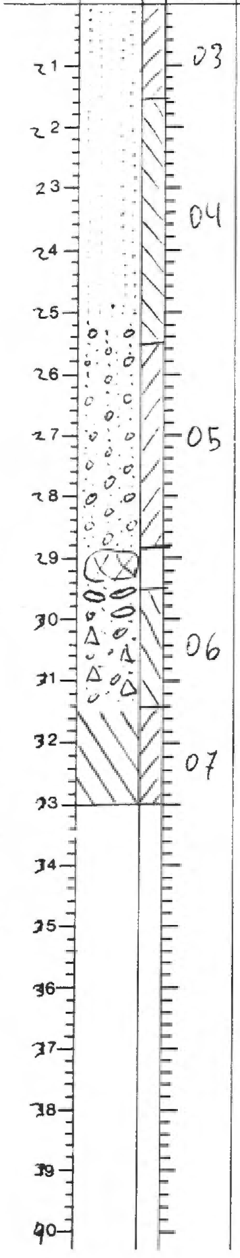
DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

pg 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



(22.0 - 25.0) predominantly sorted, beige, fine sand

(25.0 - 27.5) Gravel: subrounded & rounded granule & small pebble clasts of composition: 60% Volcanics and Sediments; 40% Granitoids Sorted medium and coarse sand matrix.

(27.5 - 28.8) matrix changes to beige fine grained sand in places appears unsorted; however there are medium grained sand interbeds. Abundant +10 mesh clasts as above.

(28.8 - 29.3) Boulder - Metasediment

(29.3 - 30.0) small boulders and cobbles little to no matrix.

30.0 - 31.4 Chibougamau Till

poor return on matrix; however, does appear to be unsorted - grey beige fine sand/silt. Pebble and cobble clasts of approximate composition: 60% Volcanics and Sediments; 40% Granitoids.

31.4 - 33.0 BEDROCK

- light green
- fine grained
- well foliated (sheared)
- chloritic
- 30% qtz/carbonate veinlets
- 1% diss sulphides

Int. to Mafic Volcanic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 22, 23 1988

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PCS-88-31 LOCATION Site #8748w 7+25s ELEVATION 322 m

GEOLOGIST P. Collins DRILLER G. Hawg BIT NO. 0725243 BIT FOOTAGE 0.0 - 43.

MOVE TO HOLE 4:00 - 4:15

DRILL 4:15 - 5:00 July 22 7:30 - 11:15 July 23

MECHANICAL DOWN TIME ____

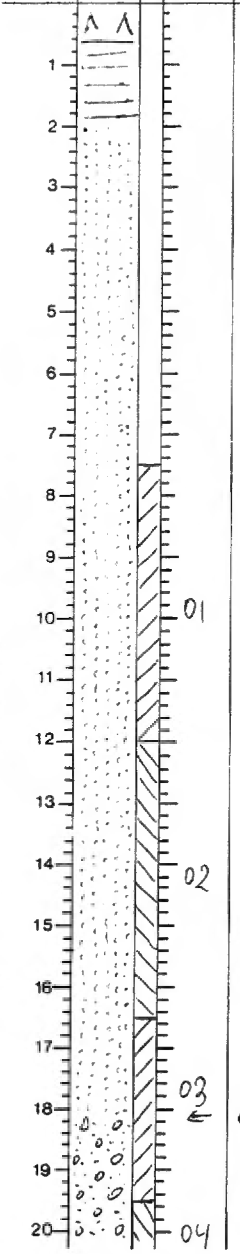
DRILLING PROBLEMS ____

OTHER Travel 5:00 - 6:00 July 22 6:30 - 7:30 July 23

MOVE TO NEXT HOLE ____

NEW BIT

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 0.5 <u>Organics</u>

0.5 - 41.4 Ojibway II Sediments

(0.5 - 2.0) beige (oxidized), pure, soft clay

(2.0 - 18.0) beige, sorted medium sand with coarse sand & granule interbeds
- below 10.0 predominatly coarse grained sand

(18.0 - 28.0) Gravel: granule and pebble clasts (subrounded) Sorted medium to coarse sand matrix. (very difficult to drill) bit gets plugged continually).

← END OF HOLE July 22

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 22, 23 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-31 LOCATION Site # 48w 7+25s ELEVATION _____

GEOLOGIST _____ DRILLER _____ BIT NO. _____ BIT FOOTAGE _____

MOVE TO HOLE _____

DRILL _____

MECHANICAL DOWN TIME _____

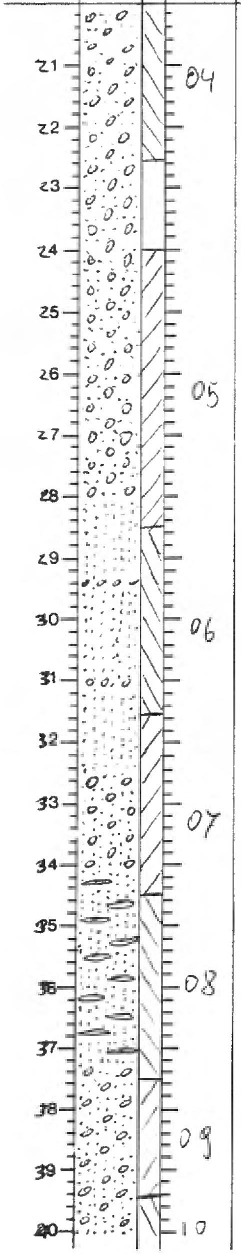
DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

Pg 2 of 3

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



28.0 – 32.3 bedded fine, medium and coarse grained sand with pebble / granule interbeds.

32.5 – 37.2 Gravel: initially abundant granule and small pebble clasts of approximate composition: 40% volcanics and sediments; 60% Granitoid. Very little to no matrix.

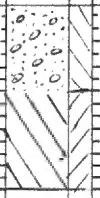
- gravel is cobbly below 34.0m
- increase in amount of matrix below 35.0m; predominantly medium & coarse sand with occasional fine sand interbeds.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 22,23 19 88
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLS-88-31 LOCATION ____ ELEVATION ____
GEOLOGIST ____ DRILLER ____ BIT NO. ____ BIT FOOTAGE ____
MOVE TO HOLE ____
DRILL ____
MECHANICAL DOWN TIME ____
DRILLING PROBLEMS ____
OTHER ____
MOVE TO NEXT HOLE ____

Pg. 3 of 3



DEPTH IN METRES	SAMPLE NO.
	10
41	
42	11
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

DESCRIPTIVE LOG

37.2 - 39.4 Appears to be fill in places. Beige slightly sorted fine sand matrix. Also about 40 % medium sand. Subrounded & subangular pebble clasts of similar composition to above.

39.4 - 41.4 matrix becomes much more sorted beige fine and medium sand (coarse biased)

41.4 - 43.0 BEDROCK

- very soft; initially white rock powder / clay lumps.
- very fine to fine grained
- well developed foliation (schistose)
- chloritic
- 10-15 % quartz/carbonate veinlets
- 2 % disseminated sulphides increase slightly in percentage downsection

Altered Int. Volcanic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 23 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-32 LOCATION Site #102 400W 23150S ELEVATION 315m

GEOLOGIST P Collins DRILLER G. Howg BIT NO. CB725243 BIT FOOTAGE 43.0 - 57.7

MOVE TO HOLE 11:15 - 12:00

DRILL 12:00 - 1:00

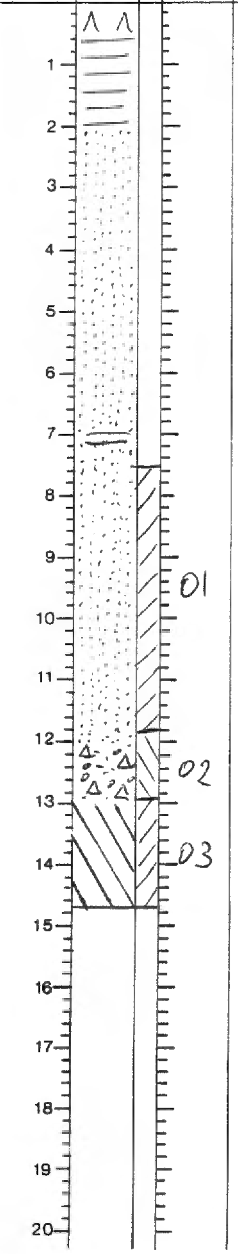
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

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



DESCRIPTIVE LOG

0.0 - 0.5 Organics

0.5 - 12.0 Ojibway II Sediments

(0.5 - 2.0) beige (oxidized) pure soft clay

(2.0 - 12.0) beige sorted fine and medium grained sand pure, grey beige, soft clay bed at 7.0m

(12.0 - 12.9) Chibougamau Till

beige to beige grey, fine sand minor silt matrix. Pebble clasts with composition: 60% Volcanics and Sediments; 40% Granitoids

12.9 - 14.7 BEDROCK

- greyish green
- fine grained; also phenocrysts of feldspar
- foliated
- carbonatized 3% (stringer & disseminated)
- chloritic; sericite
- minor FeO stain below 33.5
- 1-2% disseminated sulphides

felsic volcanic

14.7 E.O.H.

Test #5						
0 min.			l			
5 min.			l			
10 min			l			
15 min			l			

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 23 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-33 LOCATION Site #90 40W 15+75S ELEVATION 322 m

GEOLOGIST P. COLLINS DRILLER G. Howe BIT NO. W75243 BIT FOOTAGE 57.7 - 78.7

MOVE TO HOLE 1.00 - 1:15

DRILL 1:15 - 2:15

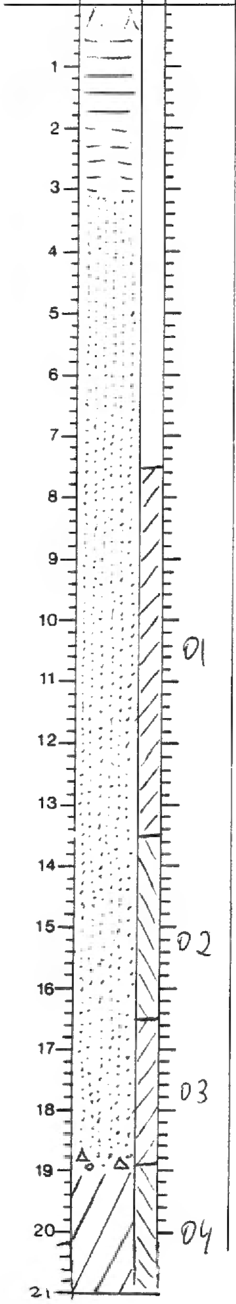
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 0.5 Organics

0.5 - 18.5 Ojibway II Sediments

(0.5 - 1.8) beige (oxidized) pure soft clay

(1.8 - 3.0) grey beige silt

(3.0 - 17.5) interbeds of beige fine, medium and coarse grained sand.

- more prevalent coarse sand & granule beds downsection

(17.5 - 18.5) beige finegrained sand

18.5 - 18.9 Chibougamau Till ?

Thin layer of apparent till; too small to sample seperately. Unsorted beige grey fine sand minor silt matrix. Pebble clasts of composition: 60% Volcanics and sediments; 40% Granitoids

18.9 - 21.0 m BEDROCK

- light green
- fine grained
- well foliated (sheared)
- soft to drill
- carbonatized 3-5% diss.
- 7-10% quartz/carbonate veins
- chloritic - sericite alteration
- 2-3% FeO stain

Altered intermediate Volcanic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 23,24 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO RCS-88-34 LOCATION Site # 86 40W 10+50S ELEVATION 328 m

GEOLOGIST P. Collins DRILLER G. Howg BIT NO M725243 BIT FOOTAGE 78.7-117.7

MOVE TO HOLE 2:15 -2:30

DRILL 2:30 - 5:15 July 23 7:15 - 8:30 July 24

MECHANICAL DOWN TIME _____

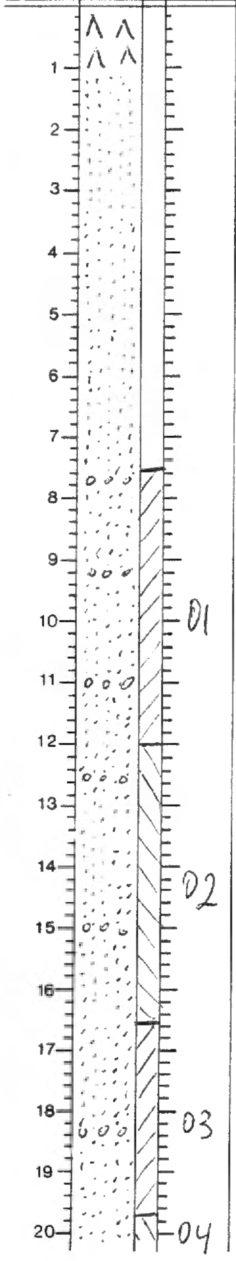
DRILLING PROBLEMS _____

OTHER Travel 6:30 - 7:15 July 24

MOVE TO NEXT HOLE _____

Pg 1 of 2

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



DESCRIPTIVE LOG

0.0 - 1.0 Organics

1.0 - 36.3 Ojibway II Sediments

(1.0 - 24.8) beige fine and medium grained sand c̄ coarse sand inter beds.

- below 6.0 metres there is occasional granule, small pebble inter beds.

8:57 to 9:17 July 24

Fluroscein test # 7

0 min

5 min

10 min

15 min

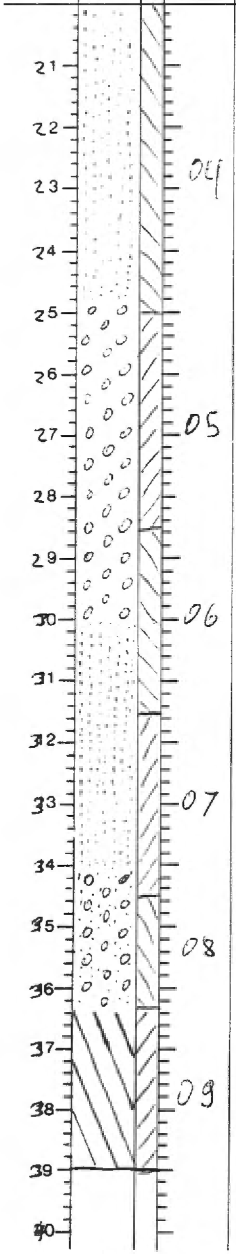
OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 23 1988
SHIFT HOURS
____ TO ____
TOTAL HOURS
CONTRACT HOURS

HOLE NO PLS-88-34 LOCATION Site # 86 40w 10+50 S ELEVATION
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



- at 21.0m bit plugged - pull rods.

- sample #04 is taken over a long interval due to poor return

(24.8 - 30.0) Gravel: sorted coarse grained sand matrix. Granule & Pebble Clasts (subrounded to rounded) of approximate composition: 60% Volcanics and sediments; 40% Granitoids

(30.0 - 32.0) beige very fine to fine grained sand

(32.0 - 34.0) sorted medium and coarse grained sand.

(34.0 - 36.3) similar to 24.8 to 30.0

36.3 - 39.0 BEDROCK

- light and medium green
- finegrained
- well developed foliation
- fracture at 36.5m
- chloritic
- 15-20% quartz/carbonate veinlets; increase in percentage downsection. 2-3cm thick veins ē associated apple green Fuschite and disseminated sulphides (2-3%)

Intermediate to Mafic Volcanic

39.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 24 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PCS-88-35 LOCATION Site#85 32w11f005 ELEVATION 318 m

GEOLOGIST P Collins DRILLER G. Houg BIT NO MF5243 BIT FOOTAGE 117.7 - 140.2

MOVE TO HOLE 8:30 - 8:50

DRILL 8:50 - 10:15 AM

MECHANICAL DOWN TIME

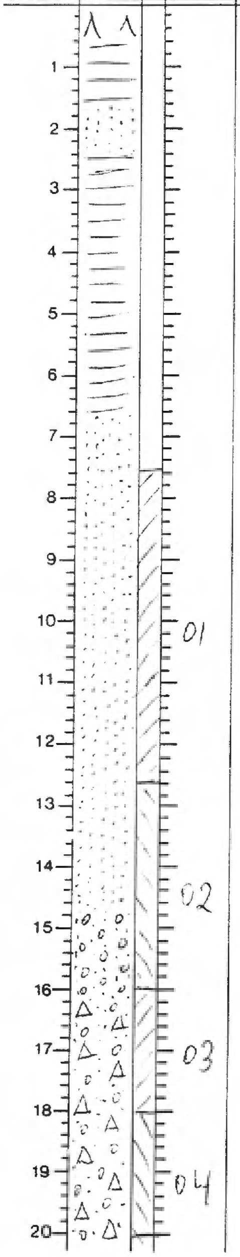
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg. 1 of 2

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



0.0 - 0.5 Organics

0.5 - 16.0 Ojibway II Sediments

(0.5 - 1.6) beige, pure, soft clay.

(1.6 - 2.4) beige, sorted medium grained sand

(2.4 - 6.6) grey, pure soft clay

(6.6 - 14.6) beige medium to coarse sand with occasional granule clast.

(14.6 - 16.0) Gravel : sorted medium to coarse sand matrix +10 mesh Pebble clasts of composition 60 % Volcanics and Sediments ; 40 % Granitoids

16.0 - 25.3 Chibougamau Till

slightly sorted (silt deficient) beige fine sand matrix. Pebble and cobble clasts of approximate composition: 60 % Volcanics and sediments ; 40 % Granitoids.

- minor grey gritty clay in matrix below 20.0 m.

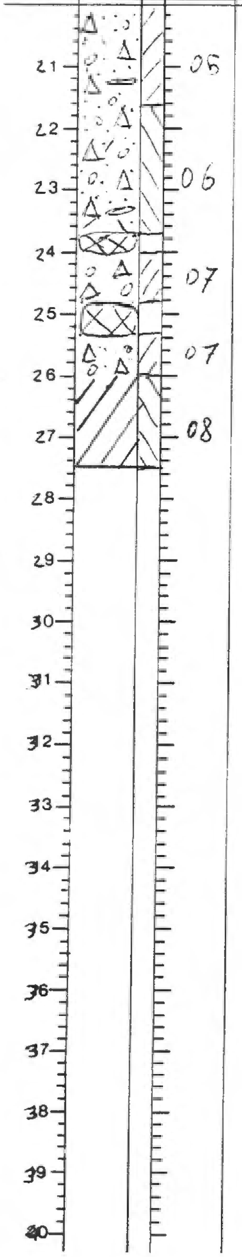
OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 24 19 88
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO PLS-88-35 LOCATION Site #85 32W 11+00S ELEVATION _____
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



at 23.6 grey slightly gritty clay lumps

23.7 - 24.0 BOULDER - METASEDIMENT

24.0 - 24.8 till as in 16.0 - 23.7

24.8 - 25.3 Boulder - Granodiorite

25.3 - 26.0 similar to 16.0 - 23.7

26.0 - 27.5 BEDROCK

- medium to dark green
- fine grained
- well foliated
- chloritic
- 5-10% qtz/carbonate veinlets
- 1-2% disseminated sulphides

Mafic Volcanic

27.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 24 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PCS-88-36 LOCATION Site 84 32w 2+25S ELEVATION 328 m

GEOLOGIST P. Collins DRILLER G. Hong BIT NO. M75243 BIT FOOTAGE 140.2 - 161.

MOVE TO HOLE 10:00 - 10:15

DRILL 10:15 - 11:45

MECHANICAL DOWN TIME

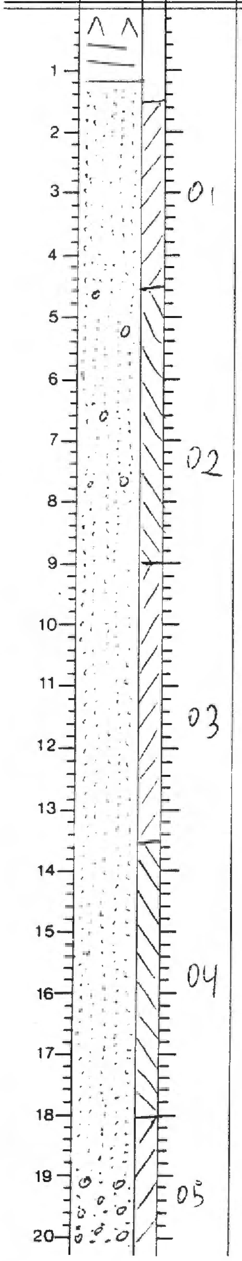
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 1 of 2

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



DESCRIPTIVE LOG

0.0 - 0.5 Organics

0.5 - Ojibway II Sediments

(0.5 - 1.2) beige, soft, slightly gritty clay

(1.2 - 8.0) beige, sorted medium and coarse grained sand: below 3.8 mostly coarse sand and granules and small pebble clasts.

(8.0 - 19.0) beige fine grained sand with occasional medium and coarse sand beds.

(19.0 - 23.0) Gravel: sorted coarse sand matrix. Granule and pebble clasts: 50% Volcanics and sediments; 50% Granitoids Cobble clasts downsection.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 24 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-36 LOCATION Site 84 32W 2+25S ELEVATION ____

GEOLOGIST ____ DRILLER ____ BIT NO. ____ BIT FOOTAGE ____

MOVE TO HOLE ____

DRILL ____

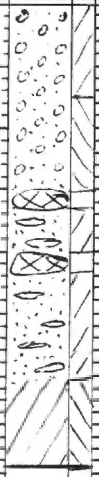
MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

Pg 2 of 2



DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21			05	(23.0 - 23.3) BOULDER GRANO-DIORITE (23.3 - 24.0) cobble gravel as in 19.0-23.0 with occasional beige fine sand bed.
22			06	
23				(24.0 - 24.3) BOULDER-TONALITE
24				(24.3 - 26.0) similar to 23.3-24.0
25			07	
26				26.0 - 27.5 BEDROCK - ochre weathered surface
27			08	- medium to dark green - fine grained
28				- well developed foliatin
29				- chloritic - 7-10% quartz/carbonate veinlets c̄ minor Fe O stain
30				
31				Intermediate to Mafic Volcanic
32				
33				27.5 E.O.H.
34				
35				
36				
37				
38				
39				
40				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 24 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PIS-88-37 LOCATION Site #91 34W, 20+50S ELEVATION 310m

GEOLOGIST P. Collins DRILLER G. Houg BIT NO. M75244 BIT FOOTAGE 0.0-12.0

MOVE TO HOLE 11:45 - 12:15

DRILL 12:15 - 1:00

MECHANICAL DOWN TIME

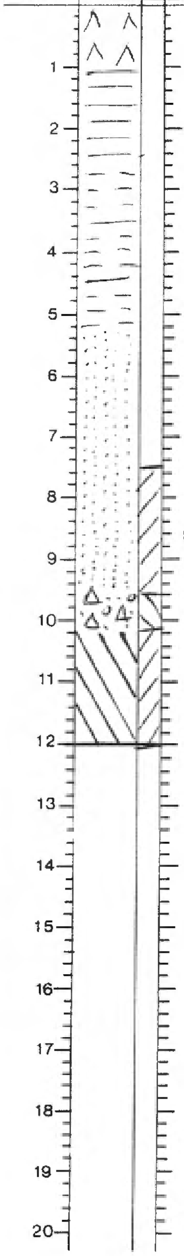
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

New Bit

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



SAMPLE NO.: 01, 02, 03

0.0 - 1.0 Organics

1.0 - 9.4 Ojibway II Sediments

(1.0 - 2.5) beige to grey, pure, soft clay

(2.5 - 5.2) predominantly grey silt with clay interbeds

(5.2 - 6.0) beige very fine to fine grained sand

(6.0 - 9.4) sorted beige fine and medium grained sand

9.4 - 10.1 Chibougamau Till

grey beige fine-sand/silt matrix Pebble clasts of approximate composition: 60% Volcanics and Sediments; 40% Granitoids

10.1 - 12.0 BEDROCK

- medium to dark green
- well foliated
- fine grained
- chloritic
- min sericite alteration
- 5-7% quartz/carbonate vein
- ≤1% dissem ated sulphides

Intermediate to mafic Volcanic

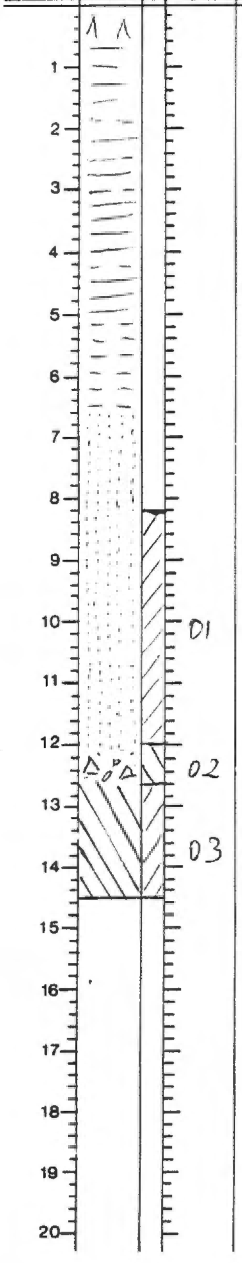
12.0 E.O.H

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 24 1988
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLS-88-38 LOCATION Site#92 30W 22+50S ELEVATION 309 m
GEOLOGIST P. Collins DRILLER G. Howg BIT NO. W73244 BIT FOOTAGE 12.0-26.5
MOVE TO HOLE 1:00 - 1:15
DRILL 1:15 - 2:50
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

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



0.0 - 0.5 Organics

0.5 - Ojibway II Sediments

(0.5 - 5.0) grey, pure soft clay with silt interbeds
(5.0 - 6.6) grey silt
(6.6 - 8.2) gradation to fine grey beige sand
(8.2 - 12.0) appears to be glaciofluvial beige fine and medium grained sand (beds)

12.0 - 12.6 Chibougamau Till
grey beige fine sand / silt matrix
Pebble clasts of composition:
60% Volcanics and Sediments;
40% Granitoids

12.6 - 14.5 BEDROCK

- greyish green
- fine grained
- well developed foliation
- 10-15% quartz / carbonate veins (increase in percentage downsection)
- 2% FeO stain
- chloritic
- 1% disseminated sulphides increase in %age downsection 2-3%

14.5 E.O.H. Intermediate Volcanic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 24 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-39 LOCATION Site#94 20W 18S ELEVATION 310 m

GEOLOGIST P. Collins DRILLER G. Hong BIT NO. M75244 BIT FOOTAGE 26.5-65.5

MOVE TO HOLE 1:50 - 2:00

DRILL 2:00 - 3:30

MECHANICAL DOWN TIME

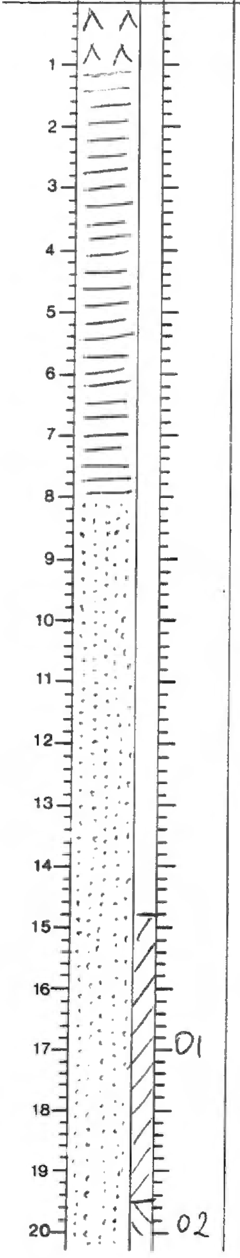
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						



0.0 - 1.0 Organics

1.0 - 21.5 Ojibway II Sediments

(1.0 - 8.0) grey, pure, soft clay

(8.0 - 11.0) very fine to fine grained sand (grey in colour).

(11.0 - 18.0) gradation to beige medium grained sand with fine and coarse sand interbeds downsection

(18.0 - 21.5) beige grey very fine to fine grained sand

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 24 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-39 LOCATION Site 94 20w 18+00S ELEVATION _____

GEOLOGIST _____ DRILLER _____ BIT NO. _____ BIT FOOTAGE _____

MOVE TO HOLE _____

DRILL _____

MECHANICAL DOWN TIME _____

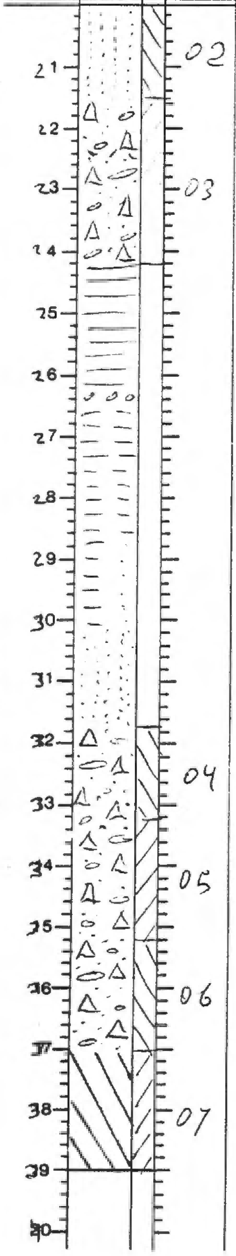
DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

Pg 2 of 2

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



21.5 - 24.2 <u>Chibougamau Till</u>

grey beige fine sand silt matrix
Pebble clasts of composition:
60% Volcanics and sediments;
40% Granitoids.

- sample #03 is long due to poor return
- at 22.4 m pure, hard clay partings.

24.2 - 31.7 Missinaibi Sediments

(24.2 - 26.2) grey, pure, hard, compact clay with silt interbeds

(26.2 - 26.4) pebble bed

(26.4 - 31.7) predominantly silt with very fine grained sand

31.7 - 37.0 LOWER TILL

grey beige fine sand silt matrix
Pebble and small cobble clasts
with composition: 70% Volcanics
and sediments; 30% Granitoids

37.0 - 39.0 BEDROCK

- abundant greenish white rock powder / clay lumps (initially ochre) v. few rock chips.
- very soft, micaceous - chloritic
- well foliated

Intermediate Volcanic.

39.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 24 19 8

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-40 LOCATION Site 100 32W, 27+50S ELEVATION 309 m

GEOLOGIST P Collins DRILLER G. Haug. BIT NO. M7S244 BIT FOOTAGE 63.5-75.0

MOVE TO HOLE 4:00 - 4:25

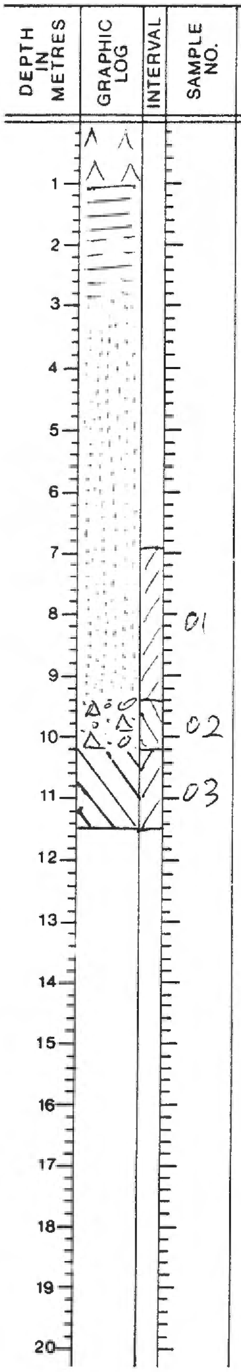
DRILL 4:25 - 5:00

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER Travel 5:15 - 6:00 Pm

MOVE TO NEXT HOLE 5:00 - 5:15



DESCRIPTIVE LOG

0.0 - 1.0 Organics

1.0 - 9.4 Ojibway II Sediments

(1.0 - 2.5) grey, pure, soft clay with silt interbeds.

(2.5 - 6.5) grey beige very fine sand / silt

(6.5 - 9.4) sorted beige fine and medium grained sand

9.4 - 10.2 Chibougamau Till

grey beige fine sand / silt matrix. Pebble clasts of approximate composition: 60 % Volcanics and Sediments; 40 % Granitoids.

10.2 - 11.5 BEDROCK

- light to medium green
- initially ochre (weathed surface)
- well develped foliation
- chloritic
- 10-15 % quartz/carbonate veinlets c̄ associated FeO stain
- ≤1 % dissemnated Sulphides

Int to Mafic Volcanic

11.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 25 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-41 LOCATION Site#101 36W 27+75S ELEVATION 309m

GEOLOGIST P.Collins DRILLER G. Howg BIT NO. M75244 BIT FOOTAGE 75.0-87.0

MOVE TO HOLE 5:00-5:15 July 24

DRILL 7:00 - 7:45

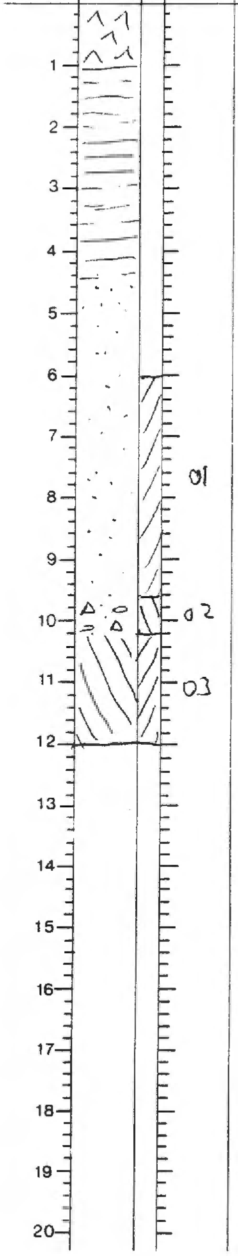
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER Travel 6:20 - 7:00 camp to drill

MOVE TO NEXT HOLE

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



0.0 - 1.0 Organics

1.0 - 9.6 Ojibway II Sediments

(1.0 - 4.5) grey, soft, pure clay with silt interbeds

(4.5 - 5.5) beige grey to beige fine grained sand

(5.5 - 9.6) beige, sorted fine grained sand with medium sand interbeds

9.6 - 10.2 Chibougamau Till

grey beige fine sand / silt matrix. Pebble clasts of composition: 60% Volcanics and sediments; 40% Granitoids

10.2 - 12.0 BEDROCK

- dark green
- fine grained
- well foliated
- chloritic
- 7-10% quartz/carbonate veinlets ≤ associated FeO stain
- ≤ 1% disseminated sulphides

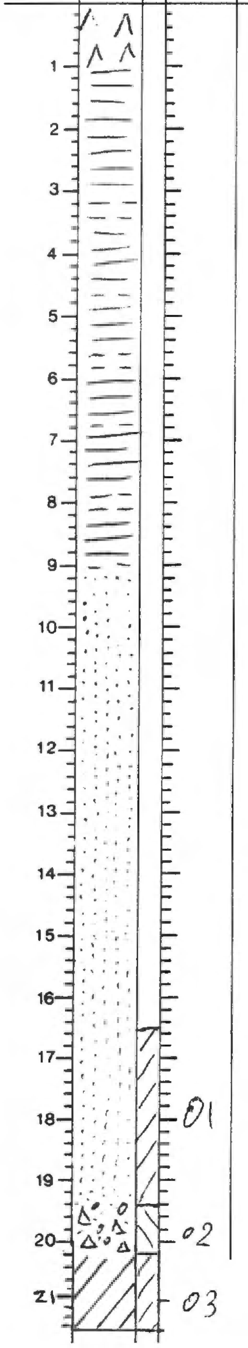
Altered Mafic Volcanic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 25 19 88
SHIFT HOURS
______ TO ______
TOTAL HOURS
______
CONTRACT HOURS
______

HOLE NO PCS-88-42 LOCATION Site#95 12w 18+00S ELEVATION 304 m
GEOLOGIST P Collins DRILLER G. Houg BIT NO. M75244 BIT FOOTAGE 87.0 - 108.5
MOVE TO HOLE 7:45 - 8:15
DRILL 8:15 - 9:00
MECHANICAL DOWN TIME 9:30 - 5:00 track off nodwell due to poor roads
DRILLING PROBLEMS Time charged to Minnova.
OTHER 9:00 - 9:20 clean mud tanks
MOVE TO NEXT HOLE ______

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



0.0 - 1.0 Organics

1.0 - 19.4 Ojibway II Sediments

(1.0 - 9.0) grey, pure, soft clay ≈ silt interbeds

(9.0 - 15.0) very fine to fine grey sand

(15.0 - 19.4) sorted beige, medium grained sand

19.4 - 20.2 Chibougamau Till

slightly sorted (coarse biased) grey beige fine sand matrix
Pebble clasts of composition:
60% volcanics and Sediments;
40% Granitoids

20.2 - 21.5 BEDROCK

- light grey
- fine & very fine grained
- schistose; lamination, sericite
- 2 - % disseminated sulphides
- non calcareous
- siliceous
- >10% quartz veinlets

Felsic Volcanic

21.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 26 19 88

SHIFT HOURS

_______ TO _______

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PCS-88-43 LOCATION Site 83 13W 6+50S

GEOLOGIST P Collins DRILLER G. Hong BIT NO. M75244 BIT FOOTAGE 108.5-120

MOVE TO HOLE 9:20-9:30 July 25 1:00-1:15 July 26

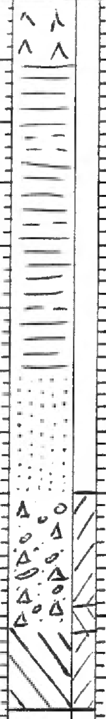
DRILL 1:15-2:15 July 26

MECHANICAL DOWN TIME 9:30-5:00 July 25 Track came off of Nodwell due

DRILLING PROBLEMS to poor roads ✓ (18 broken grouzer bars

OTHER July 26 7:00-1:00PM fixing tracks.

MOVE TO NEXT HOLE



DEPTH IN METRES	SAMPLE NO.
1	
2	
3	
4	
5	
6	
7	
8	
9	01
10	02
11	03
12	
13	
14	
15	
16	
17	
18	
19	
20	

DESCRIPTIVE LOG

0.0 - 1.0 Organics

1.0 - 8.0 Ojibway II Sediments

(1.0 - 6.0) grey, pure, soft clay with silt interbeds.

(6.0 - 8.0) grey beige very fine to fine grained sand

8.0 - 10.2 Chibougamau Till

there is a gradational contact into till. Grey beige fine sand & silt matrix. Pebble clasts are present of composition: 60% volcanics and sediments; 40% Granitoids.

* sample # 02 will have some bedrock contamination

10.2 - 11.5 Bedrock

* initially fractured bedrock surface

- medium green
- fine grained
- ashy texture
- weak foliation
- carbonatized >5% disseminated
- 5-10% qtz/carbonate veinlets
- ≤1% disseminated sulphides

Intermediate Pyroclastic.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 26 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-44 LOCATION Site #82 4W 11+00S

GEOLOGIST P Collins DRILLER G. Horvig BIT NO. M75244 BIT FOOTAGE 120 - 13[illegible]

MOVE TO HOLE 2:15 - 2:35

DRILL 2:35 - 3:10

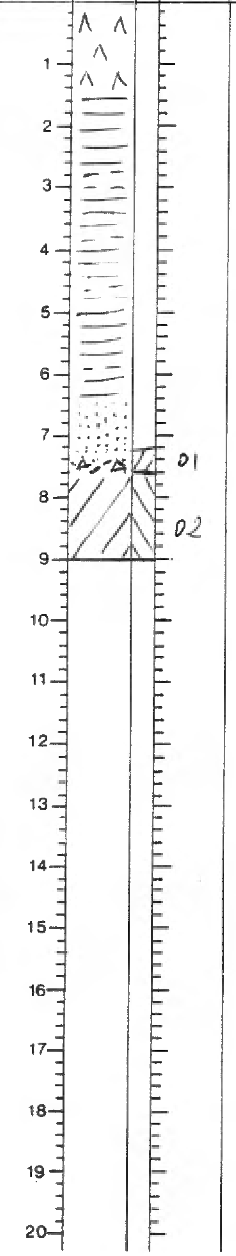
MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

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



0.0 - 1.5 Organics

1.5 - 7.3 Ojibway II Sediments

(1.5 - 6.5) grey, pure, soft clay with silt interbeds

(6.5 - 7.3) beige grey very fine to fine grained sand

7.3 - 7.6 Chibougamau Till

very thin veneer of till. Sample #01 will have some mixing of overlying sand.

beige grey fine sand / silt matrix

Pebble clasts of composition: 60% Volcanics and sediments; 40% Granitoids

7.6 - 9.0 Bedrock

- medium to dark green
- fine to medium grained
- foliated
- chloritic
- 2-3% disseminated carbonate
- minor yellowish sericite
- ≤1% disseminated sulphides

Mafic Volcanic

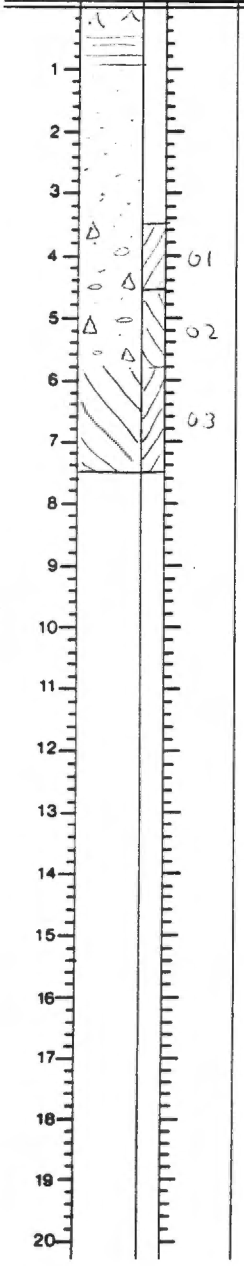
9.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 26 1988
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLS-88-45 LOCATION Site#93 llw 29+00S
GEOLOGIST P. Collins DRILLER S. Hovey BIT NO. 1175244 BIT FOOTAGE 129-136.5
MOVE TO HOLE 3:10 - 4:00
DRILL 4:00 - 4:45
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

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



0.0 - 0.3 Organics

0.3 - 3.4 Ojibway II Sediments
(0.3 - 1.0) beige pure, soft clay (oxidized)
(1.0 - 3.4) very fine to fine grained beige sand.

3.4 - 5.8 Chibougamau Till
grey beige fine sand / silt matrix. Pebble clasts of approximate composition:
60% volcanics and sediments
40% Granitoids.

5.8 - 7.5 Bedrock.
- dark grey to black
- very fine grained
- well foliated
- 5-7% quartz/carbonate veinlets
- trace sericite, FeOstain
- ≤1% disseminated sulphides
Meta sediment Siltstone

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 27 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO OLS-88-46 LOCATION Site #99 L8w 39+50S ELEVATION ____

GEOLOGIST P. Collins DRILLER G. Hwng BIT NO. M75244 BIT FOOTAGE 136.5-153.

MOVE TO HOLE 11:30 - 12:00

DRILL 12:00 - 2:15

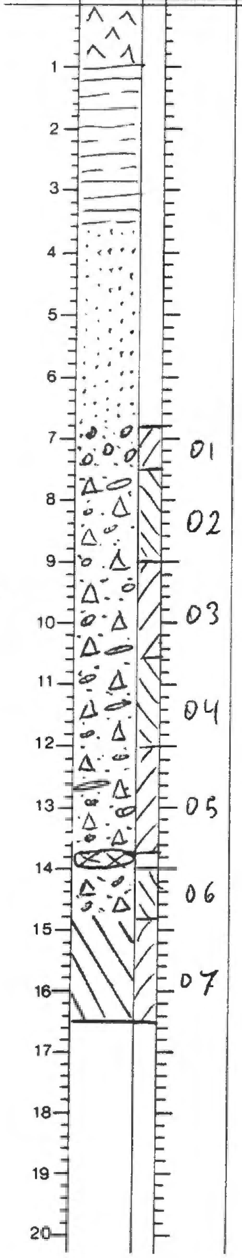
MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

OTHER LISSIMINE TEST 1:50 - 2:10

MOVE TO NEXT HOLE ____

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG	LISSIMINE TEST



0.0 - 1.0 Organics

1.0 - 7.5 Ojibway II Sediments

(1.0 - 3.5) beige (oxidized) to grey (downsect.), pure, soft clay with silt interbeds

(3.5 - 6.8) grey beige very fine to fine grained sand

(6.8 - 7.5) sorted beige grey fine & medium sand matrix. Abundant pebble clasts of composition: 60% Volcanics & sediments ; 40% Granitoids

7.5 - 14.8 Chibougamau Till

gradational contact with overlying sediments. grey ~~beige~~ fine sand / silt matrix. Pebble and small cobble clasts of composition: 60% Volcanics and sediments ; 40% Granitoids

- cobblier downsecti

(13.7 - 14.0) Boulder - Gabbro

(14.0 - 14.8) similar to 7.5 to 13.7.

14.8 - 16.5 BEDROCK

- beige white rock powder clumps
- very few chips in sample
- beige white, v. fine grained - aphanitic
- Foliated

Felsic volcanic ? Rhyolite

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 27 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-47 LOCATION Site#97 4W 35T00S ELEVATION _____

GEOLOGIST P. Collins DRILLER G. Howg BIT NO. M75244 BIT FOOTAGE 153.0-162.5

MOVE TO HOLE 2:15 - 2:30

DRILL 2:30 - 3:00

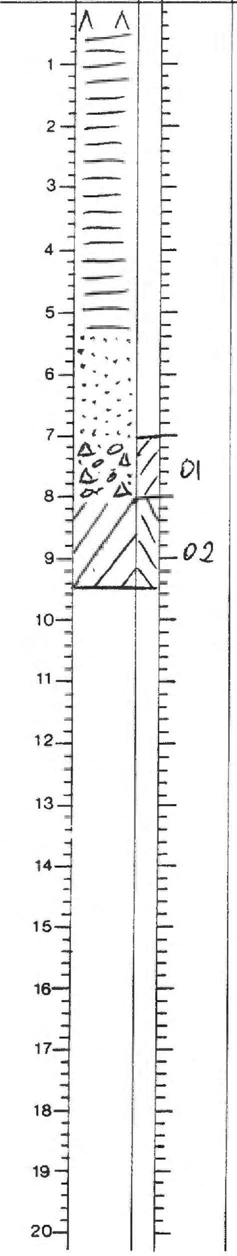
MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

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



0.0 - 0.5 Organics

0.5 - 7.0 Ojibway II Sediments

(0.5 - 5.3) beige (oxidized) to grey downsection, pure, soft clay

(5.3 - 7.0) beige very fine to fine grained sand

7.0 - 8.0 Chibougamau Till

initially sorted beige fine sand matrix grades to unsorted fine sand silt matrix ~ 7.4 m

Pebble clasts of composition: 60% Volcanics and sediments; 40% Granitoids

8.0 - 9.5 Bedrock

- dark grey; initially ochre
- fine grained
- well foliated
- 5% quartz veinlets
- 1-2% sulphides
- 1-2% FeO stain along minute fractures

Greywacke

9.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 27 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-48 LOCATION Site#96 3W 32+50S ELEVATION _____

GEOLOGIST P. Collins DRILLER G. [illegible] BIT NO. MFS244 BIT FOOTAGE 162.5-170.

MOVE TO HOLE 3:00 - 3:05

DRILL 3:05 - 3:40

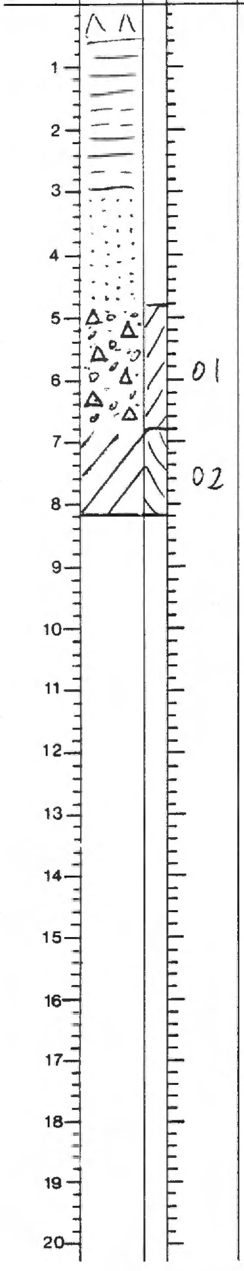
MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

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



DESCRIPTIVE LOG

0.0 - 0.5 Organics

0.5 - 4.8 Ojibway II Sediments

(0.5 - 3.0) beige (oxidized), pure, soft clay with silt interbeds.

(3.0 - 4.8) beige grey, very fine to fine grained sand.

4.8 - 6.8 Chibougamau Till

beige to beige grey, slightly sorted fine sand matrix. Also some medium grained sand in matrix Pebble clasts of composition: 60% Volcanics and sediments; 40% Granitoids.

6.8 - 8.2 BEDROCK

- dark grey (weath'd surface ochre) also ochre FeO stain along bedding planes
- very fine grained
- bedded
- soft; some O.B. contamination in sample
- sericite ochre-brown along bedding plane
- quartz / carbonate veinlets
- ≤ 1% sulphides

Meta Sediment - Siltstone

8.2 E.O.H.

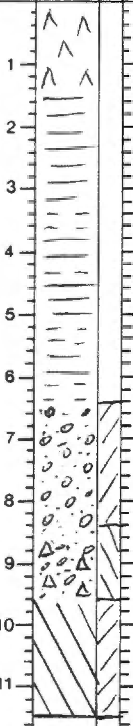
OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 27 19 88
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO PLS-88-49 LOCATION Site #98 2W 42+50S ELEVATION _____
GEOLOGIST P. Collins DRILLER G. Houg BIT NO. U75245 BIT FOOTAGE 0.0-11.5
MOVE TO HOLE 3:40 - 4:00
DRILL 4:00 - 4:40
MECHANICAL DOWN TIME _____
DRILLING PROBLEMS _____
OTHER Travel 5:00 - 5:30
MOVE TO NEXT HOLE 4:40 - 5:00

New Bit New Sub

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



01
02
03

0.0 - 1.5 Organics

1.5 - 8.4 Ojibway II Sediments

(1.5 - 6.4) grey, pure, soft clay with silt interbeds.

(6.4 - 8.4) Sand & Gravel: sorted beige to ochre medium & fine sand matrix. Pebble and small cobble clasts of approximate composition: 55% Volcanics and Sediments; 45% Granitoids.

8.4 - 9.6 Chibougamau Till

grey beige fine sand / silt matrix. Pebble clasts of composition: 70% volcanics and sediments; 30% Granitoids

9.6 - 11.5 Bedrock

- beige white
- very fine grained
- well foliated
- Felsic
- yellowish sericite alteration)

Felsic Volc. - Rhyolite ?

11.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 28 19 88

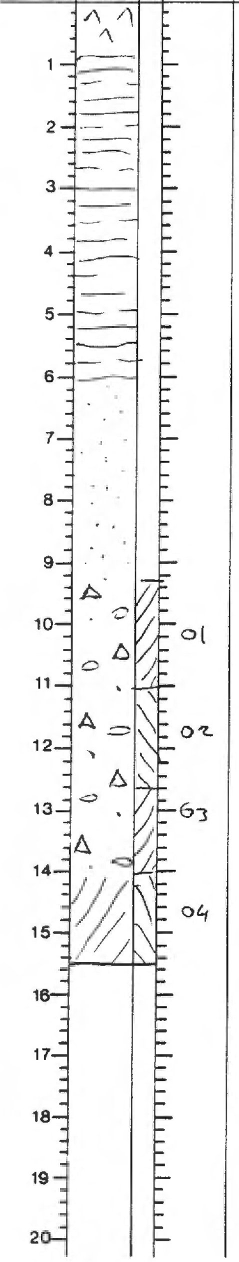
SHIFT HOURS
____ TO ____

TOTAL HOURS
____

CONTRACT HOURS
____

HOLE NO PLS-88-50 LOCATION Site #130 12W, 46+50S ELEVATION 309 m
GEOLOGIST P Collins DRILLER G. Hovey BIT NO. M75245 BIT FOOTAGE 115 - 27.0
MOVE TO HOLE 4:45 - 5:00 July 27
DRILL 7:00 AM - 7:50 July 28
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

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



0.0 - 0.5 Organics

0.5 - 9.3 Ojibway II Sediments

(0.5 - 6.0) grey, pure, soft clay with silt interbeds

(6.0 - 9.3) grey very fine to fine grained sand
- gradational contact into till

9.3 - 14.0 Chibougamau Till

grey beige fine sand / silt matrix, Pebble and small cobble clasts of composition: 70% Volcanics and Sediments; 30% Granitoids

14.0 - 15.5 Bedrock

- greenish grey
- fine grained
- very weak foliation
- 2-3% disseminated carbonate
- siliceous
- minor chlorite

Felsic Volcanic

15.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 28 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-51 LOCATION Site #129 20w 45+50S ELEVATION _____

GEOLOGIST B. Budwicki DRILLER G. Mowy BIT NO. M75245 BIT FOOTAGE 2.70 - 49.

MOVE TO HOLE 7:50 - 8:00

DRILL 8:00 - 8:40

MECHANICAL DOWN TIME _____

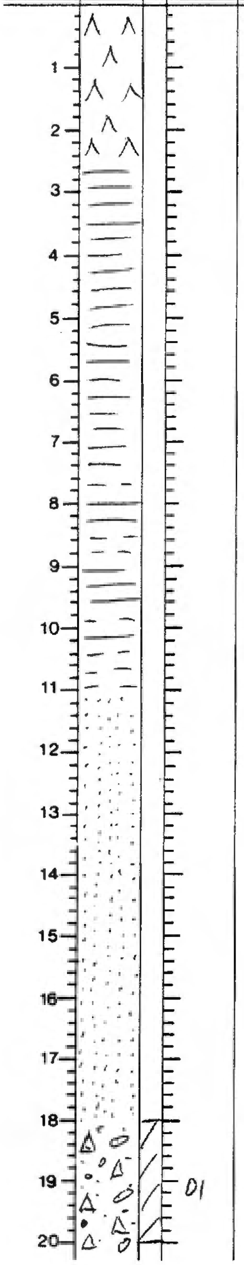
DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						



0.0 – 2.5 Organics

2.5 – 18.0 Ojibway sediments

2.5 – 11.0 pure, gray, soft clay with silt interbeds below 7.0m

11.0 – 18.0 gray, beige sand, from very fine to medium downsection

18.0 – 21.3 Chibougamau till

fine gray, beige sand/silt matrix. Pebble clasts of approximate composition 60% volc/sed – 40% granitoids

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-51 LOCATION ________ ELEVATION ________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ________

DRILL ________

MECHANICAL DOWN TIME ________

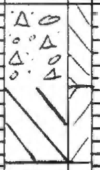
DRILLING PROBLEMS ________

OTHER ________

MOVE TO NEXT HOLE ________

2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						
			02							
1				21.3 - 22.5 Bedrock						
2			03	- light green						
3				- fine grained						
4				- massive						
5				- 5% disseminated carbonates						
6				- silicified						
7				- ≤1% disseminated sulphides						
8				Felsic volcanic						
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										



OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 28 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-52 LOCATION Site #119 32W, 42+00S ELEVATION 307 m

GEOLOGIST P. Collins DRILLER G. Houg BIT NO. M73245 BIT FOOTAGE 49.5 - 57.

MOVE TO HOLE 8:40 - 9:00

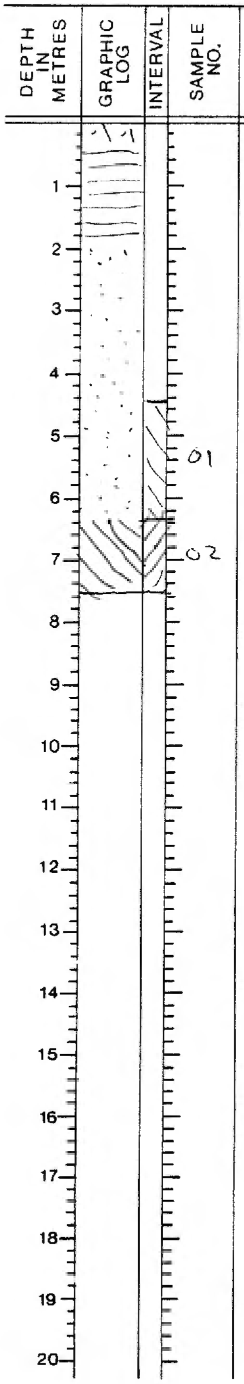
DRILL 9:00 - 9:30

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE



DESCRIPTIVE LOG

0.0 - 0.5 Organics

0.5 - 6.2 Ojibway II Sediments

(0.5 - 1.8) beige (oxidized), pure, soft clay

(1.8 - 5.5) beige grey fine to medium sand

(5.5 - 6.2) sorted medium and coarse sand ± very minor granule clasts

6.2 - 7.5 Bedrock

- dark grey
- very fine to fine grained
- foliated
- minor chlorite
- 5% quartz veinlets
- ≤ 1% disseminated sulphides
- 2 - 3% FeO stain dissemination

Metasediment - Greywacke

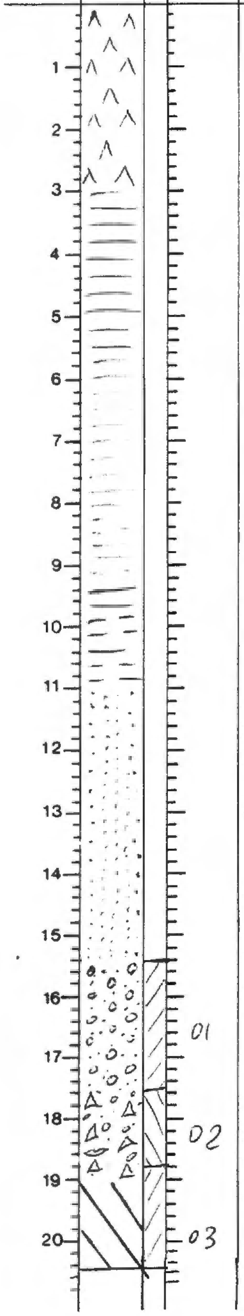
7.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 28 1988
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLC-88-53 LOCATION Site #128 32w 47+00s ELEVATION ____
GEOLOGIST B. Rudnicki DRILLER G. Mowg BIT NO. ____ BIT FOOTAGE 56.0 - 77.5
MOVE TO HOLE 9:30 - 9:40
DRILL 9:40 - 10:30
MECHANICAL DOWN TIME ____
DRILLING PROBLEMS ____
OTHER ____
MOVE TO NEXT HOLE ____

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						



0.0 - 3.0 Organics

3.0 - 17.5 Ojibway sediments

3.0 - 11.0 Gray, pure, soft clay with silt interbeds below 8.0m

11.0 - 15.4 Fine to medium gray, beige sand

15.4 - 17.5 Gravel: medium to coarse gray, beige sand matrix. Pebble clasts composition: 70% volc/sed - 30% granitoids.

17.5 - 19.0 Chibougamau till

Fine, gray, beige sand/silt matrix. Pebble and cobble clasts of composition 70% volc/sed - 30% granitoids

19.0 - 20.5 Bedrock

- green
- fine grained
- weak foliation
- 20% quartz/carbonate veins
- ≤1% disseminated sulphides

Felsic volcanic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 28 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-54 LOCATION Site #127 40w, 44+25S ELEVATION 306 m

GEOLOGIST P. Collins DRILLER G. Howg BIT NO. M75245 BIT FOOTAGE 77.5-102

MOVE TO HOLE 10:30 - 10:45

DRILL 10:45 - 12:50

MECHANICAL DOWN TIME

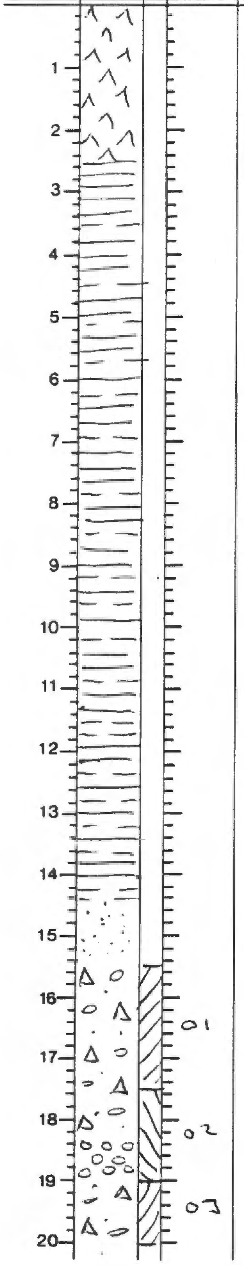
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 2.5 Organics

2.5 - 15.5 Ojibway II Sediments

(2.5 - 14.3) ~~beige~~ grey, pure, soft clay with silt interbeds

(14.3 - 15.3) very fine grey sand

15.5 - 23.3 Chibougamau Till

(15.5 - 18.4) grey beige, fine sand/silt matrix. Pebble and cobble clasts of approximate composition: 60% Volcanics and Sediments; 40% Granitoids.

(18.4 - 18.8) Gravel section in till very little to no matrix (abundant -10 mesh cuttings. +10 mesh cobble clasts: 60% volcanics & sediments

(18.8 - 23.3) till similar to 15.5 - 18.4 with occasional thin sorted matrix layer.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 28 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-54 LOCATION Site #127 ELEVATION _____

GEOLOGIST _____ DRILLER _____ BIT NO. _____ BIT FOOTAGE _____

MOVE TO HOLE _____

DRILL _____

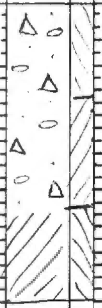
MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

Pg 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						
			04	23.3 - 24.8 BEDROCK - greyish white - very fine to fine grained - foliated - carbonatized 3-5% (disseminated) - siliceous - occasional dark green chloritic bands Felsic Volcanic 24.8 E.O.H.						
21										
22			05							
23										
24			06							
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 July 23 1988

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-55 LOCATION Site #126 48W 51S ELEVATION 310m

GEOLOGIST B. Rudnicki DRILLER G. Hoeg BIT NO. 175245 BIT FOOTAGE 102.3 - 123.

MOVE TO HOLE 12:50 - 1:00

DRILL 1:00 - 2:40

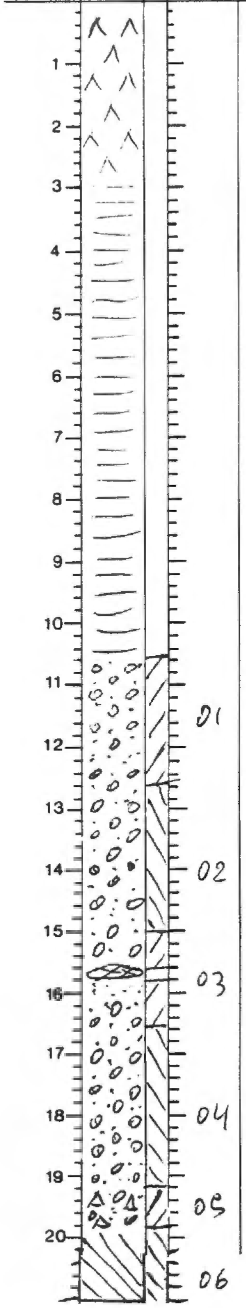
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 3.0 Organics

3.0 - 19.2 Ojibway sediments

3.0 - 10.5 pure, soft, gray clay

10.5 - 19.2 Gravel: medium and coarse sand matrix. Pebble and cobble clasts of composition 60% volc/sed - 40% granitoids. Due to few, very thin sand and silt sections, gravel appears as fill with slightly un-sorted matrix.

15.6 - 15.8 boulder - granitic

19.2 - 19.8 Chibougamau fill

Fine gray, beige sand/silt matrix. Pebble and cobble clasts of com. 60% volc/sed - 40% granitoids

19.8 - 21.0 Bedrock

- dark green
- fine grained
- well foliated
- 1% - 2% carbonate

Mafic volcanic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 28 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-56 LOCATION Site # 125 52w 47S ELEVATION 310 m

GEOLOGIST P. Collins DRILLER G. Houg BIT NO. M75245 BIT FOOTAGE 123.3-130

MOVE TO HOLE 2:40 - 3:00

DRILL 3 00 - 3:45

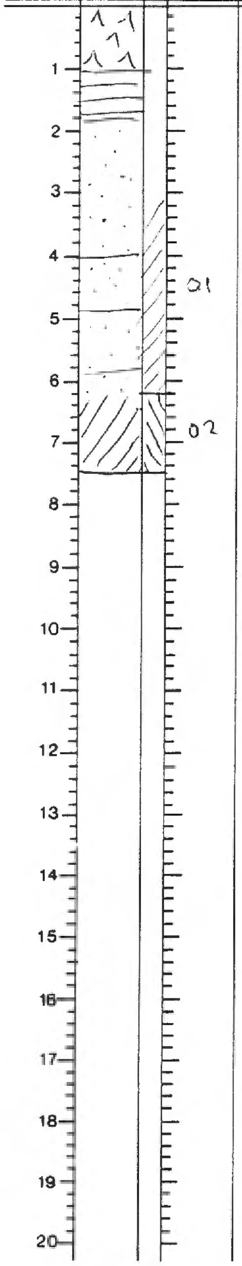
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

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



0.0 - 1.0 Organics

1.0 - 6.2 Ojibway II Sediments

(1.0 - 1.8) beige, pure, soft clay

(1.8 - 6.2) beige very fine to fine grained sand. Grades to medium sand below 4.0 with occasional grey pure clay bed.

6.2 - 7.5 BEDROCK

- medium grey
- very fine to fine grained
- strong foliation
- 3-5 % quartz/carb. veinlets
- trace FeO stain
- ≤ 1 % disseminated sulphides

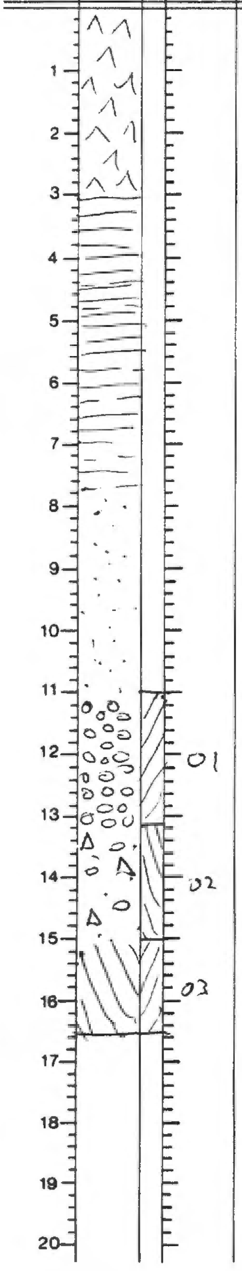
Meta Sediment - Siltstone/Greywacke

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 28 19 88
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO PLS-88-57 LOCATION Site #124 56w, 53+00S ELEVATION 308m
GEOLOGIST P. Collins DRILLER G. Houg BIT NO. M35245 BIT FOOTAGE 130.8 - 147.3
MOVE TO HOLE 3:45 - 4:00
DRILL 4:00 - 4:45
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE 4:45 - 5:00

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



0.0 - 3.0 Organics (peat)

3.0 - 13.2 Ojibway II Sediments

(3.0 - 7.8) grey, pure, soft clay with silt interbeds

(7.8 - 11.0) very fine to fine beige sand

(11.0 - 13.2) Gravel: very little matrix (predominantly -10 mesh cuttings). Pebble and cobble clasts of composition: 70% Volcanics and sediments; 30% Granitoids

13.2 - 15.0 Chibougamau Till

slightly sorted fine sand matrix Pebble and cobble clasts: 70% Volcanics and sediments; 30% Granitoids.

15.0 - 16.5 Bedrock

- dark green
- fine grained
- well developed foliation
- chloritic
- below 15.8 30% quartz c̄ minor carbonate veins up to 3 cm thick c̄ associated epidote and trace hematite.
- ≤ 1% diss sulphides

Mafic Volcanic
16.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 28 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

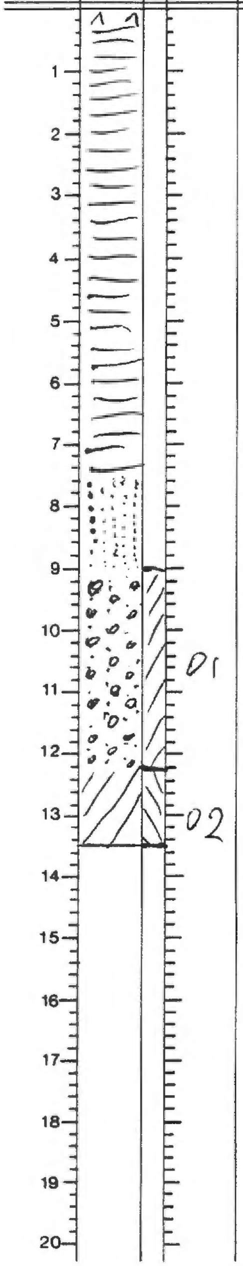
_____

CONTRACT HOURS

_____

HOLE NO PLS-88-58 LOCATION Site #123 64w,535 ELEVATION 308m
GEOLOGIST B. Budwick DRILLER G. Howg BIT NO. 117523 BIT FOOTAGE 483-161.[illegible]
MOVE TO HOLE 4:45-5:00 July 27
DRILL 7:00 - 7:40
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER Travel: 6:30-7:00
MOVE TO NEXT HOLE

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



DESCRIPTIVE LOG

0.0 - 0.2 Organics

0.2 - 12.2 Ojibway sediments

0.2 - 7.5 gray, pure, soft clay

7.5 - 9.0 fine to medium gray, beige sand.

9.0 - 12.2 Gravel: medium gray, beige sand matrix. Pebble clasts of composition 60% volc/sed - 40% granitoids

12.2 - 13.5 Bedrock
- dark gray to black
- fine grained
- foliated
- 5%-10% desseminated carbonates

Meta sediment

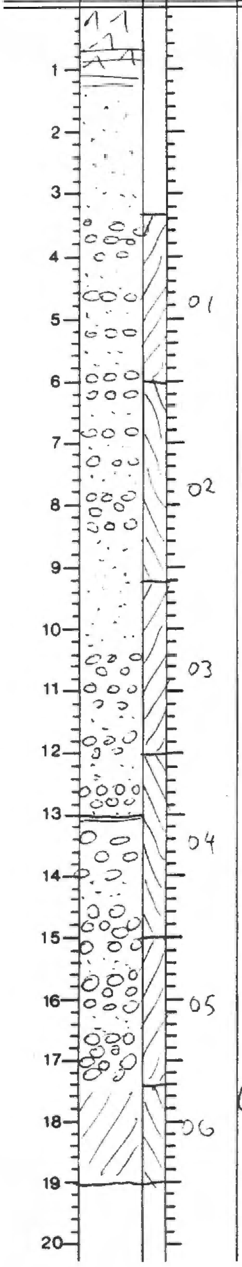
OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 28 19 88
SHIFT HOURS
TO
TOTAL HOURS
CONTRACT HOURS

HOLE NO PLS-88-59 LOCATION Site #122 74w 53S ELEVATION 312m
GEOLOGIST P Collins DRILLER G. Howg BIT NO. M75246 BIT FOOTAGE 0.0-19.0
MOVE TO HOLE 7:40 - 7:55
DRILL 7:55 - 9:00
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER 9:00 - 12:00 wait for Float to go to Boyvinet Property
MOVE TO NEXT HOLE

New Bit

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



0.0 - 0.5 Organics

0.5 - 17.3 Ojibway II Sediments

(0.5 - 1.2) beige, oxidized, slightly gritty clay

(1.2 - 3.3) beige very fine to fine grained sand

(3.3 - 8.7) interbedded sand and gravel. beige to ochre sorted fine grained sand: Cobble clasts of composition 60% Volcanics and sediments; 40% Granitoids

(8.7 - 10.2) predominantly sorted fine and medium sand beds.

(10.2 - 13.0) similar to 3.3 to 8.7 occasional very fine sand bed gives gravel a 'till' appearance in sections.

- 13.0 thin, pure, compact grey clay bed.

13.0 - 17.4 similar to 3.3 - 8.7 yet there is a prevailing oxidation of clasts & matrix; such that water from sample is ochre in sections.

17.4 - 19.0 BEDROCK

(17.4 - 17.7)
- initially weath'd surface (ochre)
- grey - white, very fine to fine grained.
Carbonatized > 5%

17.7 - 18.2 dark grey siltstone, well foliated

18.2 - 19.0 similar to 17.4 - 17.7

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 29 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-60 LOCATION Site #47 76w, 18+50N 318 m (elev.)

GEOLOGIST P. Collins DRILLER G. Hong BIT NO. M75243 BIT FOOTAGE 19.0 - 33.0

MOVE TO HOLE 12:00 - 1:15 float from Lesueur

DRILL 1:15 - 2:30

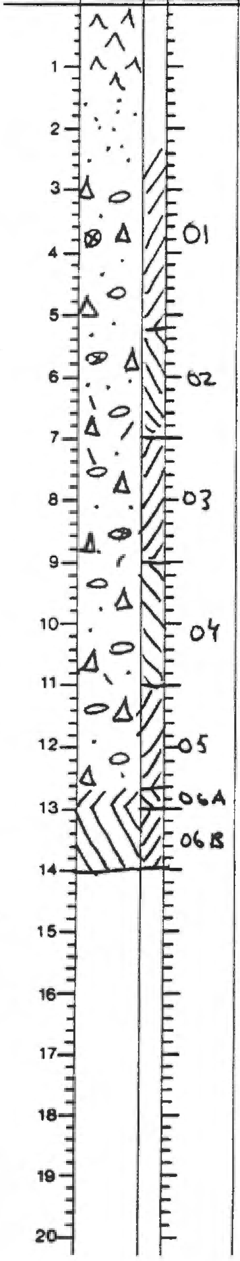
MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

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



0.0 - 1.5 Organics

1.5 - 2.6 Ojibway II Sediments

beige-oxidized very fine sand

2.6 - 12.6 Chibougamau Till

grey beige fine sand/silt matrix. Cobble Clasts of composition: 70% Volcanics and sediments; 30% Granitoids

- compact beige grey gritty clay matrix from 6.8 to 7.4 m

(7.4 - 12.6) occasional section in till whereby matrix is beige to ochre in colour (more frequent downsection)

- minor gritty clay in matrix.

12.6 - 14.0 Bedrock

06A 12.6 - 13.0 darkgrey to - black, fine grained, massive <1% diss sulphides

Graywacke or felsic volcanic

06B abrupt change in lithology/colour however difficult to find chips with both.

- grey, ashy texture initially, more fine grained downsection

5-7% chlorite (green);

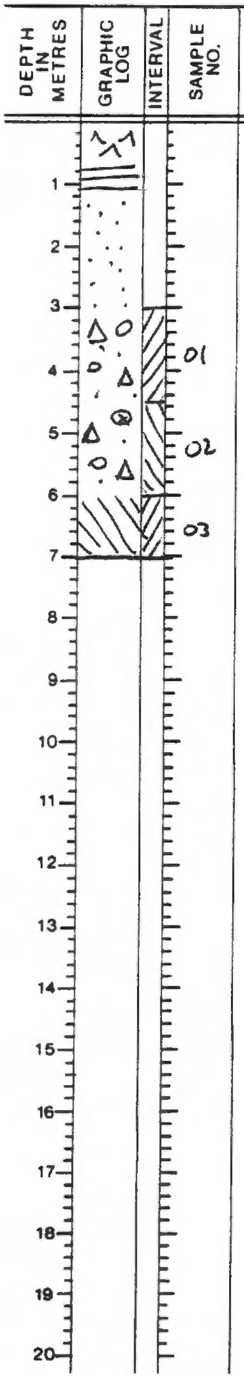
siliceous

Felsic Volcanic.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 27 19 88
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO PLS-88-61 LOCATION Site #40 76W 29+00N 322m (elev.
GEOLOGIST P. Collins DRILLER G. Howg BIT NO. M75246 BIT FOOTAGE 33.0 - 40.0
MOVE TO HOLE 2:30 - 2:45
DRILL 2:45 - 3:20
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE



DESCRIPTIVE LOG

0.0 - 0.5 <u>Organics</u>

0.5 - 3.0 <u>Ojibway II Sediments</u>

(0.5 - 1.0) beige-oxidized, pure, clay.

(1.0 - 3.0) beige very fine to fine sand.

3.0 - 6.0 <u>Chibougamau Till</u>

grey beige fine sand/silt matrix. Cobble clasts of composition: 60% Volcanics and sediments; 40% Granitoids

6.0 - 7.0 <u>Bedrock</u>

- medium grey
- coarse grained
- porphyritic texture
- quartz / feldspar phenocrysts
- 3% disseminated carbonate
- Silicified (very hard)

Qtz/Feldspar Porphyry.

7.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 29 1988

SHIFT HOURS

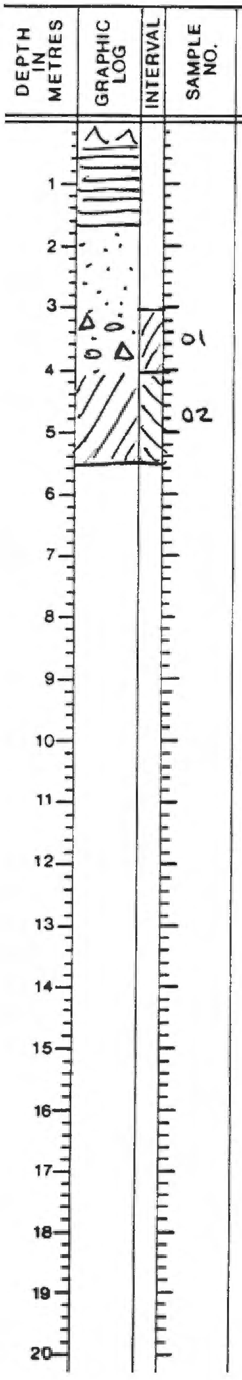
______ TO ______

TOTAL HOURS ______

CONTRACT HOURS ______

HOLE NO PLS-88-62 LOCATION site #41 72w & 24+00N 320m (elev.)
GEOLOGIST P. Collins DRILLER G. Howg BIT NO. M75247 BIT FOOTAGE 0.0-5.5
MOVE TO HOLE 3:20 - 3:30
DRILL 3:30 - 3:45
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

New Bit



DESCRIPTIVE LOG

0.0 - 0.5 Organics

0.5 - 3.0 Ojibway II Sediments
(0.5 - 1.7) beige - oxidized, pure soft clay
(1.7 - 3.0) beige to ochre very fine to fine sand.

3.0 - 4.0 Chibougamau Till
beige - grey fine sand silt matrix - Pebble & Cobble clasts of composition: 70% volcanics and sediments; 30% Granitoids

4.0 - 5.5 Bedrock
- light grey
- very fine grained
- ashy texture
- 2% dissaminated carbonate
- ≤1% dissaminated sulphides
- Siliceous
Felsic Volcanic - pyroclastic

5.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 27 1988

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-63 LOCATION Site 32 64W 37N 318m (elev.)

GEOLOGIST P. Gillis DRILLER G. Hong BIT NO. M15247 BIT FOOTAGE 5.5 – 15.5

MOVE TO HOLE 3:45 – 4:10

DRILL 4:10 – 4:45

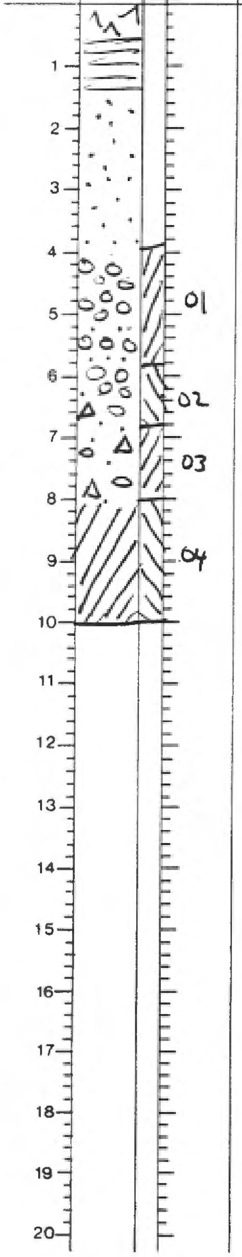
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER Travel 5:00 – 5:30

MOVE TO NEXT HOLE 4:45 – 5:00 (part way)

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



0.0 – 0.5 Organics

0.5 – 6.6 Ojibway II Sediments

(0.5 – 1.5) beige (oxidized), pure, soft clay

(1.5 – 3.8) ochre very fine to fine grained sand.

(3.8 – 6.6) Gravel: initially appears to be till (due to v. fine sand cave in). ~~Med~~. Medium to coarse sand matrix. Cobble clasts of composition: 55 Volcanics and sediments; 45 Granitoids.

6.6 – 8.0 Chibougamau Till

beige grey fine sand silt & beige gritty clay matrix. Pebble clasts of composition: 60% Volcanics and Sediments; 40% Granitoids.

8.0 – 10.0 Bedrock

- dark green to black
- medium grained
- foliated
- mafic minerals; pyroxene, amphibole
- quartz stringers 5-7%

Gabbro

10.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 30 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-64 LOCATION Site#34 32w, 30N ELEVATION 318m

GEOLOGIST P Collins DRILLER G. Hong BIT NO. M75247 BIT FOOTAGE 10.5 - 40.8

MOVE TO HOLE 7:00 - 7:20

DRILL 7:20 - 8:45

MECHANICAL DOWN TIME

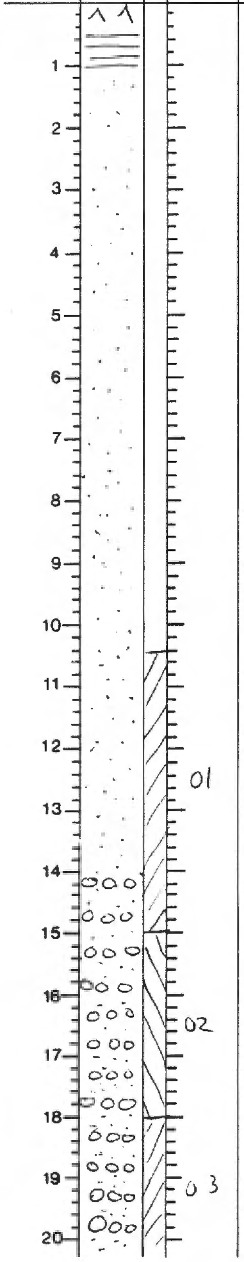
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 0.5 Organics

0.5 - 29.0 Ojibway II Sediments

(0.5 - 1.0) beige, soft slightly gritty clay

(1.0 - 9.0) beige sorted fine and medium grained sand

(9.0 - 14.0) Fine, medium and coarse grained sand interbeds.

(14.0 - 20.0) similar to 9.0 to 14.0 with pebble/granule clast interbeds.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 30 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-64 LOCATION Site #34 ELEVATION

GEOLOGIST DRILLER BIT NO. BIT FOOTAGE

MOVE TO HOLE

DRILL

MECHANICAL DOWN TIME

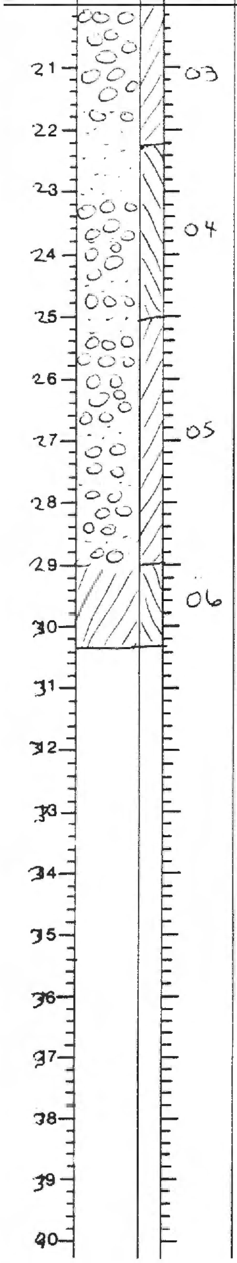
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 2 of 2

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



20.0 - 22.0 Gravel: sorted coarse sand matrix. Pebble clasts of approximate composition 50% volcanics & sediments; 50% Granitoids

(20.0 - 23.0) beige very fine and fine grained sand

(23.0 - 29.0) similar to 20.0 to 22.0; with fine, medium and coarse sand inter beds. Also cobble clasts of similar composition

29.0 - 30.3 Bedrock

- light & dark green & reddish orange
- medium and coarse grained
- massive
- K-spar, quartz, pyroxene main minerals
- ≤ 1% disseminated sulphides

Felsic intrusive

30.3 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 30 1988

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO RC-88-65 LOCATION Site #35 34W23N ELEVATION 321 m

GEOLOGIST P. Collins DRILLER G. Howe BIT NO. M35247 BIT FOOTAGE 40.8-69.

MOVE TO HOLE 8:45 - 9:00

DRILL 9:00 - 10:30

MECHANICAL DOWN TIME

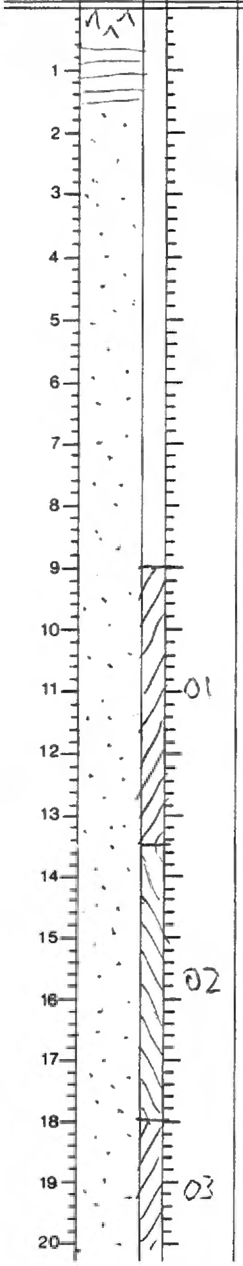
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 1 of 2

DEPTH IN METRES | GRAPHIC LOG | INTERVAL | SAMPLE NO. | DESCRIPTIVE LOG | LISSAMINE TEST #3 start 9:55 - 10:10



0.0 - 0.5 Organics

0.5 - 26.0 Ojibway II Sediments

(0.5 - 2.0) beige, pure, soft clay

(2.0 - 12.0) beige to ochre fine and medium grained sand

(12.0 - 19.0) interbeds of beige fine, medium and coarse grained sand.

(19.0 - 24.0) very similar to 2.0 - 12.0 also ochre in colour

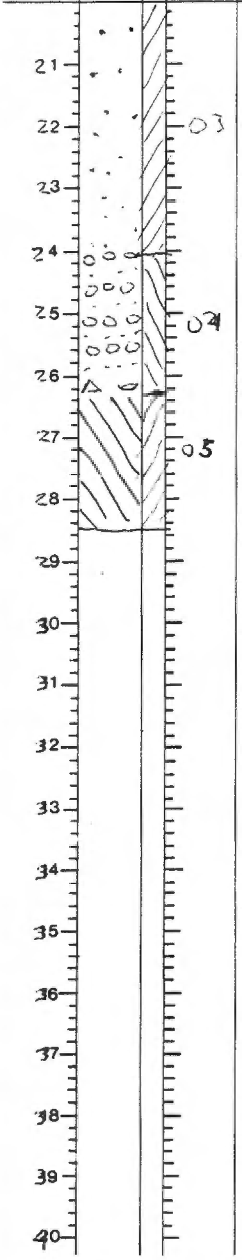
OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 30 19 88
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO PLS-88-65 LOCATION Site #35 ELEVATION _____
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						



24.0 - 26.0 fine and medium grained sand with pebbly interbeds.

26.0 - 26.3 Chibougamau Till?
very thin veneer of possible till too small to sample or log seperately.

26.3 - 28.5 Bedrock
- predominantly dark green
- medium to course grained (initially) fine grained downsection
- massive to weak foliation
- carbonatized >5% disseminated
- also qtz/carbonate veinlets with associated hematite and FeO stain (downsection) 2-3%
- ≤1% dis. sulphides

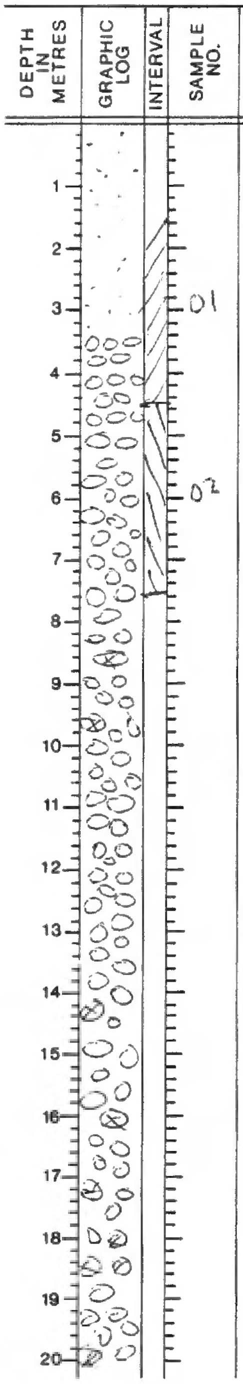
Mafic volc. - with gabbroic bands ?

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 30 19 88
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO PLS-88-66 LOCATION Site #44 44W, 19W ELEVATION 325m
GEOLOGIST P. Collins DRILLER G. Hong BIT NO. 0075247 BIT FOOTAGE 69.75/109.
MOVE TO HOLE 10:30 - 10:45
DRILL 10:45 - 3:00
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

Pg 1 of 2



DESCRIPTIVE LOG

sand at surface

0.0 - 28.0 Ojibway II Sediments

(0.0 - 3.6) ochre coloured fine grained sand

(3.6 - 7.5) Gravel: predominantly sorted coarse sand in matrix. Rounded pebble and cobble clasts of composition: 45% Volcanics and sediments; 55% Granitoids

very poor return to 7.5

from 7.5 to 21.0 There is no return; however, rods chug through cobbly gravel with little to no matrix. Poor seal around rods & sample washing away. at 21.0 hit some coarse sand.

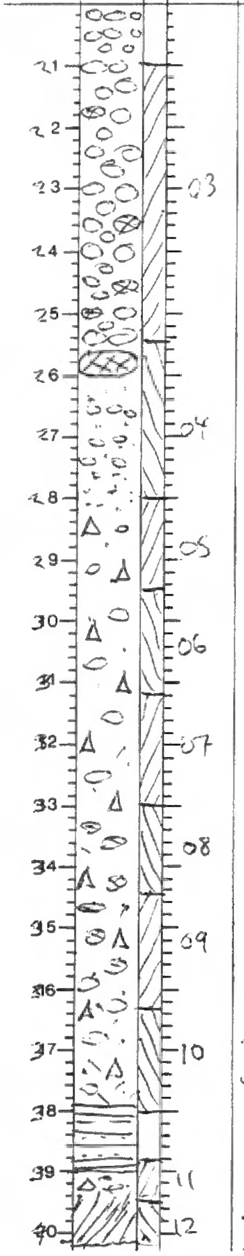
OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 30 19 __
SHIFT HOURS
______ TO ______
TOTAL HOURS
______
CONTRACT HOURS
______

HOLE NO PLS-88-66 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



21.0 - 25.6 Gravel. sorted medium and coarse sand matrix Cobble clasts of composition; 50% Volcanics and sediments; 50% Granitoids

25.6 - 26.0 Boulder - granodiorite

26.0 - 27.0 sorted medium and coarse sand with granule clasts

27.0 - 28.0 very fine to fine beige grey sand

28.0 - 38.0 Chibougamau Till

grey beige fine sand / silt matrix (28.0-29.0) matrix is slightly sorted Pebble and Cobble clasts of composition 65% volcanics and sediments; 35% Granitoids

- very cobbly below 31.0 m (abundant - 10 mesh cuttings samples #08, 09.
- minor grey gritty clay lumps below 32.0 m
- 37.0 to 38.0 increase in clay lumps - compact, slightly gritty

38.0 - 39.0 m Missinaibi Sediments

pure, compact, hard grey clay = silt & fine sand interbeds; also wood chips.

39.0 - 39.5 Lower Till

Thin section of grey-beige, fine sand silt grey gritty clay lumps. Minor Pebble/cobble clasts: 70% Volcanics & Sediments; 30% Granitoids

39.5 - 40.2 Bedrock

* bit wore out 40.2

- green & grey - massive
- coarse grained - qtz/feldspar/pyroxene

Intermediate intrusive

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 30 19 88

SHIFT HOURS

_______ TO _______

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-67 LOCATION Site #46 48w 12+50N ELEVATION 318m

GEOLOGIST P Collins DRILLER G. Herzog BIT NO. 475248 BIT FOOTAGE 0.0-26.3

MOVE TO HOLE 3:00 - 3:15

DRILL 3:15 - 5:00

MECHANICAL DOWN TIME

DRILLING PROBLEMS

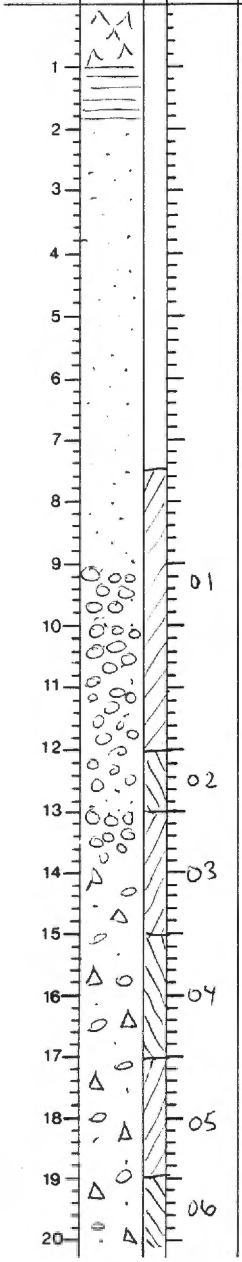
OTHER

MOVE TO NEXT HOLE

New Bit.

Pg 1 of 2

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



0.0 - 1.0 organics

1.0 - 14.0 Ojibway II Sediments

(1.0 - 1.8) beige (oxidized), pure, soft clay

(1.8 - 9.0) beige to ochre fine grained sand

(9.0 - 14.0) Gravel: coarse sand matrix. Granule and small pebble clasts of composition: 50% Volcanics and sediments; 50% Granitoids.

14.0 - 24.7 Chibougamau Till

gradational contact into till initially slightly sorted beige grey fine sand/silt matrix becomes more unsorted downsection Pebble and cobble clasts of composition: 65% Volcanics and sediments; 35% Granitoids

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 30 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-67 LOCATION ______ ELEVATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

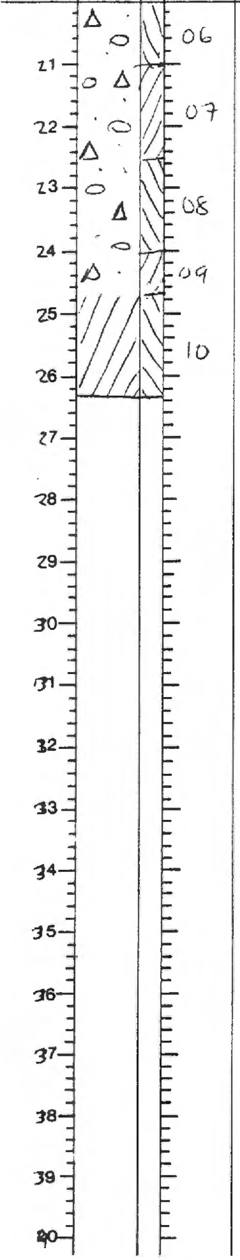
DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

Pg. 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



24.7 – 26.7 BEDROCK

- dark green
- med. to coarse grained
- massive
- silicified
- trace hematite
- porphyritic texture downsection feldspar/quartz phenocrysts
- below 25.4 quartz veins up to 4 cm thick c̄ trace carbonate & 1% sulphides.

Intermediate intrusive.

26.7 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 31 1988

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PCS-88-68 LOCATION Site #43 16+75S 92W ELEVATION 318m

GEOLOGIST P. Collin DRILLER G. Hovey BIT NO. M76248 BIT FOOTAGE 26.3 - 45.0

MOVE TO HOLE 7:15 - 7:30

DRILL 7:30 - 8:00

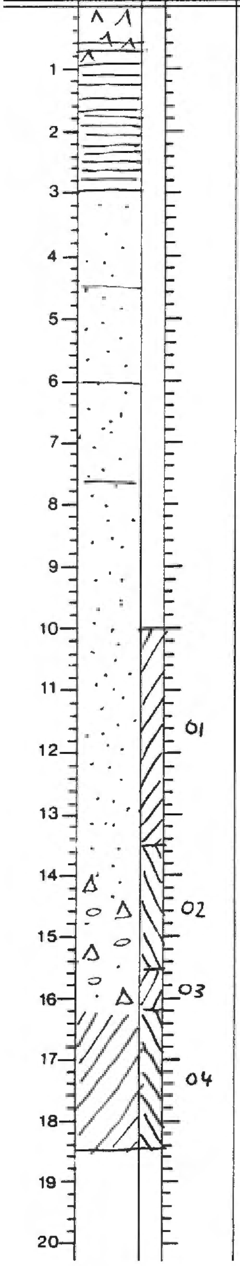
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER Travel 6:30 - 7:15

MOVE TO NEXT HOLE

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



0.0 - 0.5 Organics

0.5 - 14.0 Ojibway II Sediments

(0.5 - 3.0) beige (oxidized) fine, soft clay

(3.0 - 10.0) beige very fine to fine grained sand with occasional thin clay bed

(10.0 - 14.0) beds of fine medium and coarse grained sand

14.0 - 16.2 Chibougamau Till

slightly sorted gray beige fine sand / silt matrix. Pebble and cobble clasts of composition: 60% Volcanics and sediments; 40% Granitoids

16.2 - 18.7 Bedrock

- mottled dark green & white
- coarse grained
- massive
- porphyritic texture
- phenocrysts of Feldspar / quartz
- 5-7% quartz veinlets
- 3% reddish orange alteration
- light green very fine grained band below 18.0 m

Felsic intrusive - Syenite!

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 31 1988

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-69 LOCATION Site 42 600W 21N ELEVATION 318m

GEOLOGIST P. Collins DRILLER G. Howy BIT NO. M75248 BIT FOOTAGE 45.0 –

MOVE TO HOLE 8:00 - 8:15

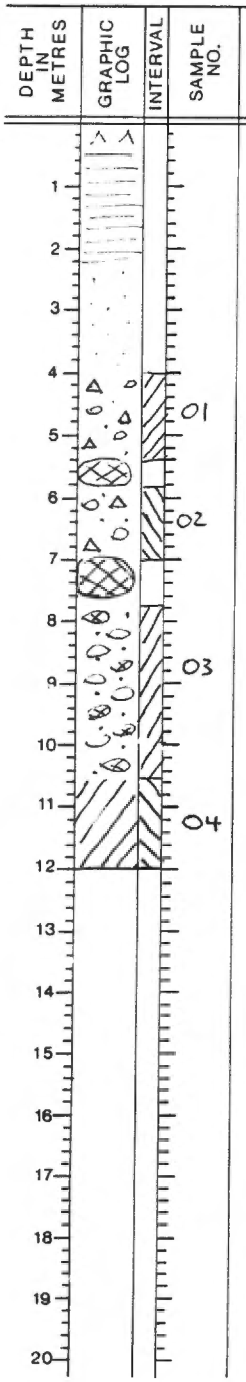
DRILL 8:15 – 9:15

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE



DESCRIPTIVE LOG

0.0 - 0.5 Organics

0.5 - 4.0 Ojibway II Sediments

(0.5 - 2.2) beige, pure, soft clay

(2.2 - 4.0) very fine to fine beige sand

4.0 - 7.8 <u>Chibougamau Till</u>

grey beige, fine sand/silt matrix
Pebble clasts of composition:
50% volcanics and sediments
50% Granitoids

(5.4 - 5.8) BOULDER - Granitoid

(5.8 - 7.0) Similar to 4.0 - 5.4 only cobblier

(7.0 - 7.8) BOULDER - GABBRO

7.8 - 10.5 MISSINAIBI SEDIMENTS? (SAND & GRAVEL)

matrix is sorted (medium grained) ochre in colour; pebble and cobble clasts are present 40% volcanics and sediments; 60% Granitoid most of which are highly oxidized.

10.5 - 12.0 BEDROCK

- light grey
- very fine grained
- ashy texture
- soft
- 2-3% FeO stain
- 2-3% disseminated carbonate
- ≤ 1% sulphides

Felsic pyroclastic.

12.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 31 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-70 LOCATION Site # 49 58w, 9+54 ELEVATION 315 m

GEOLOGIST P. Collins DRILLER G. Hong BIT NO. M75248 BIT FOOTAGE 57.4 - 75.4

MOVE TO HOLE 9:15 - 9:30

DRILL 9:30 - 10:30

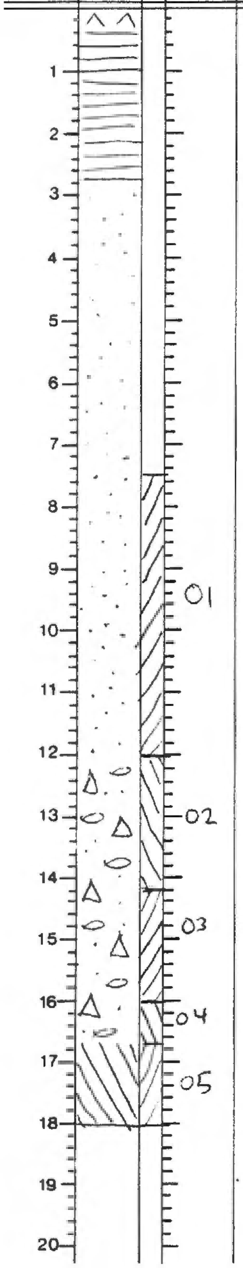
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

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



DESCRIPTIVE LOG

0.0 - 0.2 <u>Organics</u>

0.2 - 12.0 <u>Ojibway II Sediments</u>

(0.2 - 2.6) beige, pure, soft clay

(2.6 - 12.0) beige very fine to fine grained sand; medium & coarse sand dominating

(12.0 - 16.6) <u>Chibougamau Till</u>

g.b. fine sand silt matrix (slightly sorted - silt deficient) Pebble and Cobble clasts of composition: 60% volcanics and sediments; 40% Granitoids

at 15.4 sorted medium to coarse sand bed; till becomes more cobbly.

* matrix of sample # 04 looks sorted but this is due mainly to ~10 mesh rock cuttings; grinding on bedrock surface.

16.6 - 18.0 <u>Bedrock</u>

- mottled dark green and white
- coarse grained
- structure massive
- porphyritic texture, qtz/feldspar
- 2% hematite stain

Diabase

18.0 - E.O.H

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 31 19 88

SHIFT HOURS

_____ TO _____

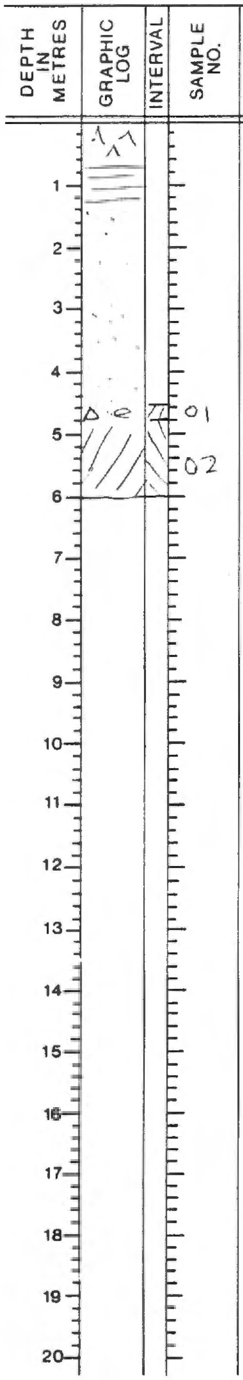
TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-71 LOCATION Site #48 66W, 13N ELEVATION 317m
GEOLOGIST P. Collins DRILLER G. Hawg BIT NO. M75248 BIT FOOTAGE 75.4 - 81.4
MOVE TO HOLE 10:30 - 10:45
DRILL 10:45 - 11:30
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE



DESCRIPTIVE LOG

0.0 - 0.5 Organics

0.5 - 4.6 Ojibway II Sediments

(0.5 - 1.3) pure, beige, soft clay

(1.3 - 4.6) beige, fine grained sand

4.6 - 4.8 Chibougamau Till

appears to be very thin layer of till. Grey beige fine sand silt matrix. Pebble Clasts 60% Volcanics and sediments; 40% Granitoids

4.8 - 6.0 Bedrock

- dark greyish green
- medium to coarse grained
- massive
- porphyritic texture in places Feldspar phenocrysts
- silicied
- <1% sulphides
- fine grained light green bands downsection.

Felsic - Feldspar porphyry

* sample # 01 very small < 4.0 kg

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 31 19 88

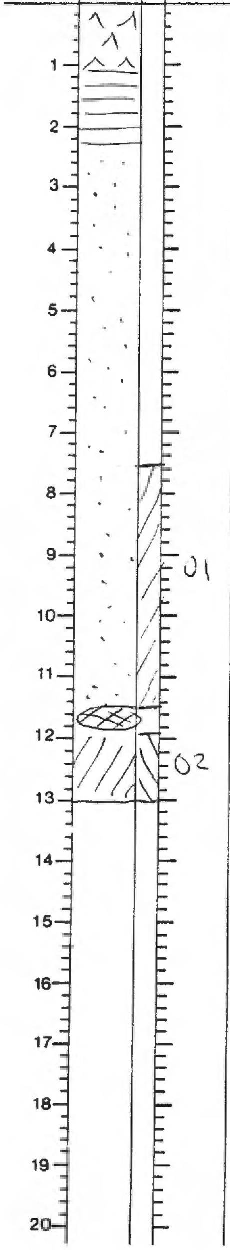
SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO PLS-88-72 LOCATION Site#38 48W 25N ELEVATION 328m
GEOLOGIST P. Collins DRILLER G. Hawg BIT NO CB70072 BIT FOOTAGE 0.0 – 13.0
MOVE TO HOLE 11:30 – 12:15
DRILL 12:15
MECHANICAL DOWN TIME ______
DRILLING PROBLEMS ______
OTHER ______
MOVE TO NEXT HOLE ______

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



0.0 – 1.0 Organics

1.0 – 11.9 Ojibway II Sediments

(1.0 – 2.0) beige, pure, soft clay

(2.0 – 8.0) very fine to fine grained beige sand

(8.0 – 11.5) beds of fine, medium and coarse grained sand

(11.5 – 11.9) Boulder – Granite

11.9 – 13.0 Bedrock

- medium greyish green
- fine and medium grained
- massive
- porphyritic texture in places
- trace hematite, FeO stain
- dark green very fine grained bands downsection.

Intermediate Intrusive

13.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 31 19 88

SHIFT HOURS

TO

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS 88-73 LOCATION Site #39 56W 29N elev. 326m

GEOLOGIST B Rudnicki DRILLER G. Hoeg BIT NO. CB70072 BIT FOOTAGE 3.0 - 31

MOVE TO HOLE 1:15 - 1:30

DRILL 1:30 - 2:30

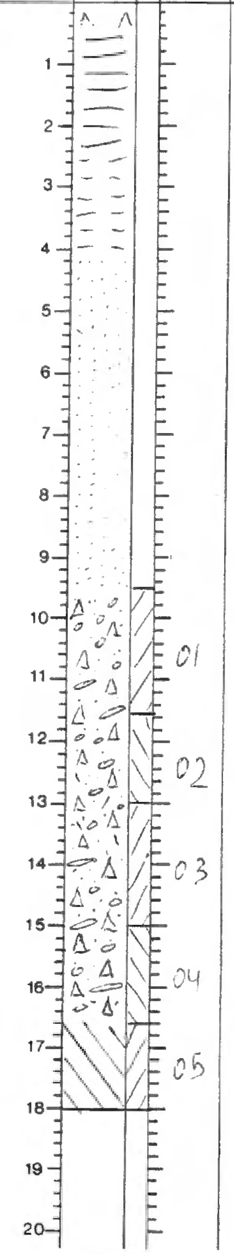
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

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



DESCRIPTIVE LOG

0.0 - 0.5 Organics

0.5 - 9.5 Ojibway I sediments

0.5 - 2.5 Pure, hard gray-beige clay

2.5 - 4.0 Gray silt

4.0 - 9.5 Fine to medium gray-beige sand

9.5 - 16.6 Chibougamau till

fine gray-beige sand/silt matrix. Cobble and pebble clasts of composition 70% volcs/seds - 30% granitoids

12.5 - 13.5 gritty clay lumps in matrix.

16.6 - 18.0 Bedrock

- gray-green
- coarse grained
- massive
- porphyritic texture
- phenocrysts of feldspar and quartz
- < 1% disseminated sulphides

Feldspar porphyry

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 31, Aug 1 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLC-88-74 LOCATION Site #16 0, 34+75N ELEVATION 315 m

GEOLOGIST P. Collins DRILLER G. Haug BIT NO. CB 70072 BIT FOOTAGE 31.0-58.5

MOVE TO HOLE 2:30 - 4:00 July 31

DRILL 4:00 - 5:00 July 31 ; 10:00 - 11:15 Aug 1

MECHANICAL DOWN TIME 7:15 - 10:00 replace air compressor

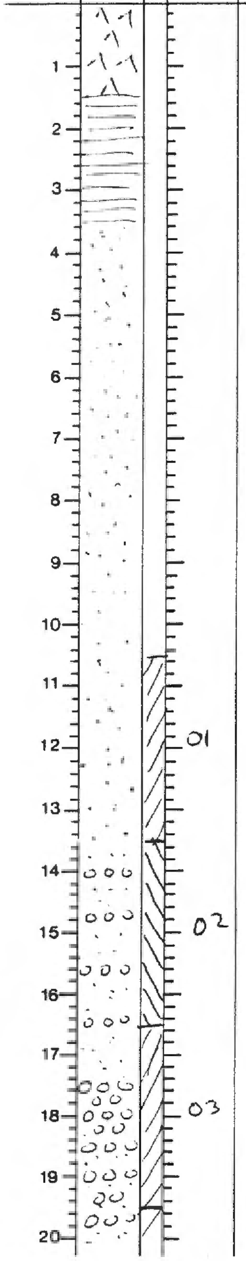
DRILLING PROBLEMS

OTHER move to gravel pit holes: however, access very poor (1/2 hr) July 31

MOVE TO NEXT HOLE

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 1.5 Organics

1.5 - Ojibway II Sediments

(1.5 - 3.5) beige, pure, soft clay

(3.5 - 10.0) beige very fine to fine grained sand

(10.0 - 14.0) sorted beige fine, medium and coarse grained sand beds with occasional thin Pebble bed.

(14.0 - 17.5) Predominantly sorted coarse grained sand with occasional granule / pebble interbeds

(17.5 - 20.0) Gravel : sorted coarse sand matrix : Granule and pebble clasts of composition: 50% Volcanics and sediments; 50% Granitoids

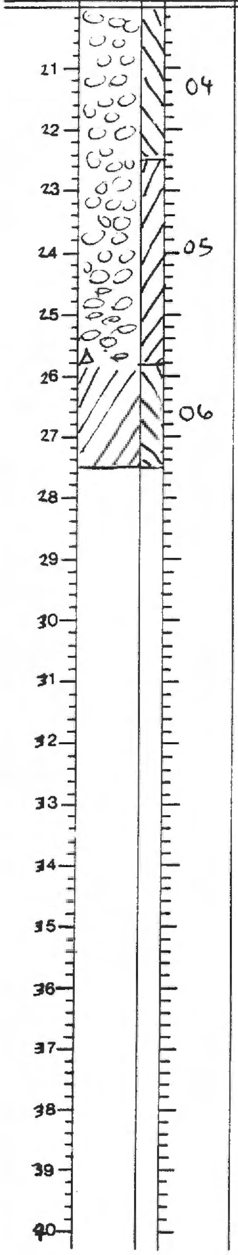
OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE July 31, Aug 1 19 88
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLS-88-74 LOCATION ____ ELEVATION ____
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



20.0 - 25.5 Gravel as before yet very little matrix. Rounded pebble and granule clasts of composition: 60% volcanics and sediments; 40% Granitoids.

25.5 - 25.8 Chibougamau Till ? very thin layer of 'till' too small to sample seperately. Grey beige fine sand / silt matrix. Pebble clasts of approximate composition: 60% volcanics and sediments; 40% Granitoids.

25.8 - 27.5 Bedrock

- medium green with pink grey bands
- fine & coarse grained
- foliated
- carbonatized 5-7% dissemiated and in veinlets
- pinkish felsic bands more or less throughout
- 1% dissemated sulphides
- porphyritic texture downsection
- (feldspar phenocrysts)

Feldspar Porphyry?

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE August 1 1988

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-75 LOCATION Site#5 4E, 40+75N elev. 315.m

GEOLOGIST B. Rudnicki DRILLER ______ BIT NO. CB70072 CB70073 BIT FOOTAGE 58.5 - 86.7 0.0 - 9.0

MOVE TO HOLE 11:00 - 11:15

DRILL 11:15 - 3:30

MECHANICAL DOWN TIME ______

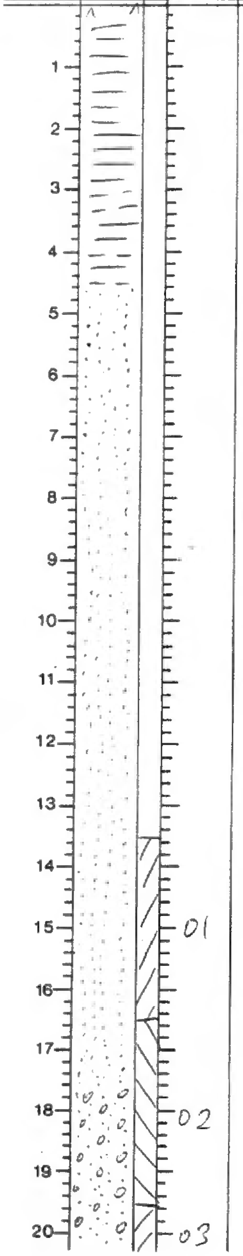
DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

Pg. 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 0.2 Organics

0.2 - 36.7 Ojibway II sediments

0.2 - 4.5 pure, soft, beige clay with silt interbeds

4.2 - 17.5 fine to medium downsection gray-beige sand

17.5 - 36.7 Gravel: coarse sand and granules matrix. Pebble clasts of composition 40% volc/seds - 60% granitoids.

Below 24.0m clasts composition changes to 60% volc/sed - 40% granitoids and becomes more cobbly.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS
________ TO ________

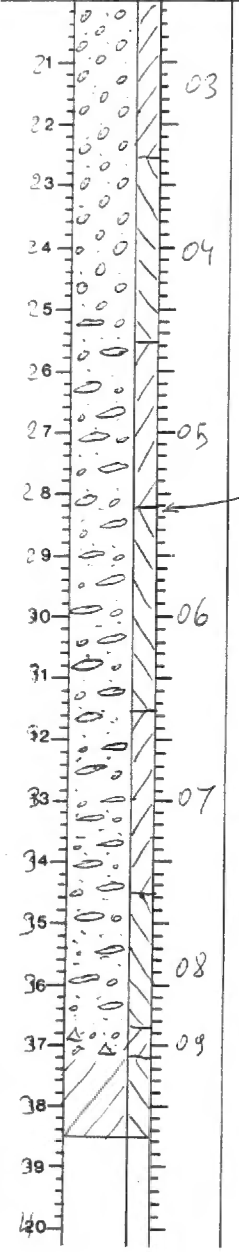
TOTAL HOURS
____

CONTRACT HOURS
____

HOLE NO PLS 88-75 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



36.7 - 37.2 <u>Chibougamau till</u>

fine gray, beige, sand/silt matrix. Pebble and cobble clasts of composition 60% volcs/seds - 40% granitoids. Matrix appears slightly sorted.

pull rods to change bit

37.2 - 38.5 Bedrock
- dark green
- coarse grained
- massive
- greater than 20% epidote

Gabbro

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 1 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-76 LOCATION Site #4 OW, 44+25N ELEVATION 313 m

GEOLOGIST P. Collins DRILLER G. Houg BIT NO. C870073 BIT FOOTAGE 940-32.5

MOVE TO HOLE 3:30 - 3:45

DRILL 3:45 - 4:45

MECHANICAL DOWN TIME

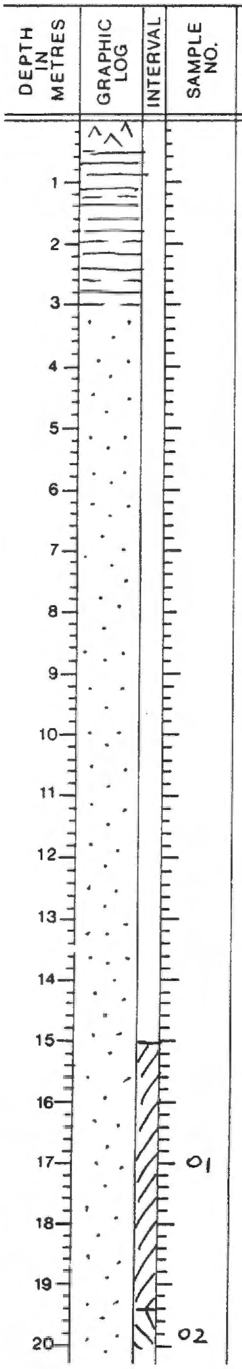
DRILLING PROBLEMS

OTHER Travel 5:00 - 5:45

MOVE TO NEXT HOLE 4:45 - 5:00

Pg. 1 of 2

LISSAMINE TEST # 5 4:16 to 4:31



DESCRIPTIVE LOG

0.0 - 0.5 Organics

0.5 - 22.0 Ojibway II Sediments

(0.5 - 3.0) beige, pure, soft clay with silt interbeds.

(3.0 - 4.0) beige fie grained sand

(4.0 - 12.0) sorted beds of fine, medium and coarse grained sand

(12.0 - 19.5) predominantly sorted coarse sand occasial granules

(19.5 - 22.0) beige fiegrained sand.

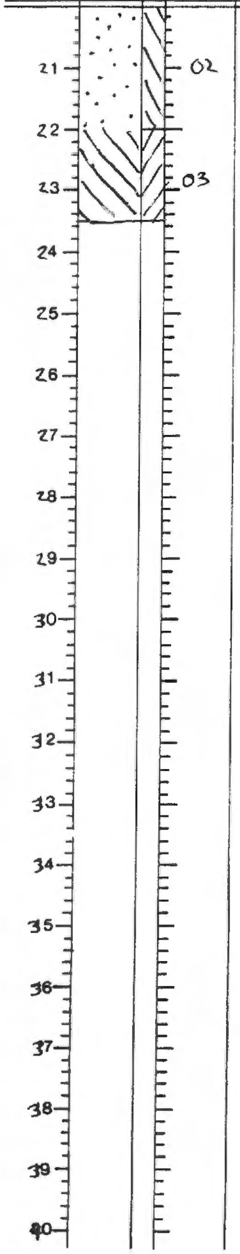
OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 1 19 88
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO PLS-88-76 LOCATION Site #4 ELEVATION 315m
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



22.0 – 23.5 BEDROCK

- dark green
- medium grained
- massive
- trace carbonate
- mafic minerals pyroxene, biotite, amphibole, epidote
- occasional quartz/carbonate veinlets c̄ associated epidote & hematite
- trace FeOxtn
- 1% diss. sulphides

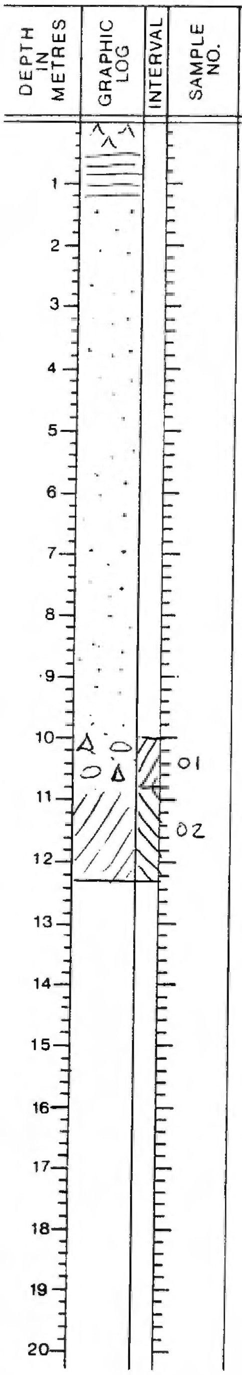
Mafic intrusive - Gabbro

23.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 2 19 88
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLS-88-77 LOCATION Site #3 4w 46+00N elev. 315m
GEOLOGIST P.Collins DRILLER G.Houg BIT NO. GS20073 BIT FOOTAGE 32.5-54.8
MOVE TO HOLE 4:45-5:00 Aug 1
DRILL 7:00-8:00 AM Aug 2
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER Travel 6:30-7:00 Am
MOVE TO NEXT HOLE



DESCRIPTIVE LOG

0.0 - 0.5 Organics

0.5 - 10.0 Ojibway II Sediments
(0.5 - 1.2) beige, pure, soft clay
(1.2 - 10.0) predominantly beige fine grained sand with medium sand beds.

10.0 - 10.8 Chibougaman Till
grey beige fine sand / silt matrix
Pebble clasts of approximate composition: 60% Volcanics and Sediments; 40% Granitoids.

10.8 - 12.3 <u>Bedrock</u>
- dark green
- medium to coarse grained
- massive
- 5-7% quartz/carbonate veinlets c̄ associated FeO & hematite
- porphyritic texture downsection
- main mafic mineral pyroxene

Gabbro

12.3 E.O.H.

LISSAMINE TEST #6
7:37 to 7:57

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 2 1982

SHIFT HOURS

TO

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-78 LOCATION Site #1 2W, 54+00N 31.9m

GEOLOGIST P. Collin DRILLER G. Hawg BIT NO. CB70072 CB70074 BIT FOOTAGE [illegible] 0.0 - 4.0

MOVE TO HOLE 8:00 - 8:15

DRILL 8:15 - 10:40

MECHANICAL DOWN TIME

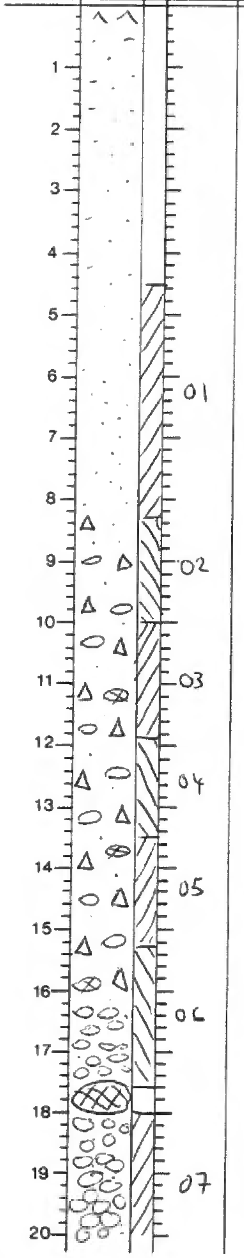
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 1 of 2
New Bit

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG	LISSAMINE TEST #7 10:10 - 10:30



0.0 - 0.3 Organics

0.3 - 8.3 Ojibway II Sediments

(0.3 - 5.0) beige sorted fine and medium grained sand

(5.0 - 8.3) similar to (0.3 - 5.0) with coarse sand interbeds.

8.3 - 16.5 Chibougamau Till

beige slightly sorted fine sand silt matrix. Pebble and small cobble clasts: 55% volcanics and sediments; 45% Granitoids

- till is cobblier downsection
- at 16.3 pure to slightly gritty, compact clay partings

16.5 Missinaibi Sediments

Gravel: beige to ochre sorted fine and medium sand matrix. (coarse sand downsection) abundant -10 mesh cutting. Very Cobbly: 60% Volcanics & Seds; 40% Granitoids

(17.6 - 18.0) boulder - quartz / feldspar porphyry

* at 19.5 pull rods to change bit.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 2 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-78 LOCATION Site #1 2W, 5+00 N ELEVATION 319m

GEOLOGIST ____ DRILLER ____ BIT NO. ____ BIT FOOTAGE ____

MOVE TO HOLE ____

DRILL ____

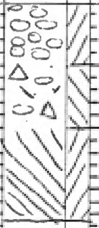
MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

Pg. 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
21 22 23			07 08 09	21.0 - 22.0 LOWER TILL ? unsorted grey beige fine sand/silt minor beige gritty clay matrix. Pebble / cobble clasts with approximate composition: 65% Volcanics and sediments; 35% Granitoids 22.0 - 23.5 BEDROCK - greenish grey - medium to coarse grained - massive - porphyritic texture qtz / feldspar phenocrysts - 5-7% quartz/carbonate veinlets ē associated light green mineral (pyroxene) Felsic intrusive 23.5 E.O.H.
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 Aug. 2 1988

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS·88·79 LOCATION Site #2 8W, 48+25N elev. 315m

GEOLOGIST B. Rudnicki DRILLER G. Houg BIT NO. CB76079 BIT FOOTAGE 402.34.0

MOVE TO HOLE 10:40 – 11:00

DRILL 11:00 – 1:45

MECHANICAL DOWN TIME

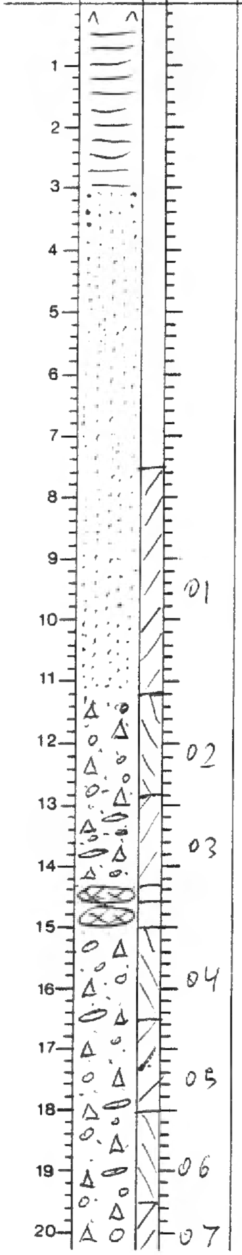
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 1 of 2

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



0.0 – 0.5 <u>Organics</u>

0.5 – 11.2 <u>Ojibway II sediments</u>

0.5 – 3.0 pure, beige, hard clay

3.0 – 11.2 fine to medium gray-beige sand

11.2 – 28.6 <u>Chibougamau till</u>

fine gray-beige sand/sand matrix. Pebble and cobble clasts of composition 70% volcs/seds – – 30% granitoids.

Very cobbly between 13.0 to 14.3.

Abundant -10 mesh rock cuttings

Matrix appears slightly sorted

14.3 – 14.6 Boulder – granitic

14.6 – 15.0 <u>Boulder</u> – gabbro

15.0 – 28.6 Chibougamau till as above.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug. 2 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-79 LOCATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

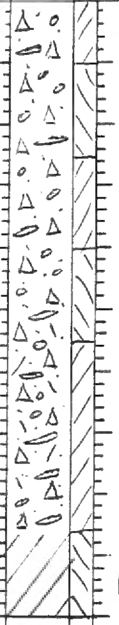
MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

Pg 2 of 2



DEPTH IN METRES	SAMPLE NO.
	07
21	
	08
22	
23	
	09
24	
25	10
26	
27	11
28	
29	
	12
30	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

DESCRIPTIVE LOG

Below 25.3 gritty clay lumps in matrix resulting in less return; therefore sample #11 is taken over longer interval.

28.6 - 30.0 Bedrock
- dark gray
- fine grained
- foliated
- 3 to 5% disseminated carbonates
- appears micaceous in sections biotite, chlorite
- trace FeO stains
- 3% quartz carbonate veinlets

Meta sediment greywacke

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

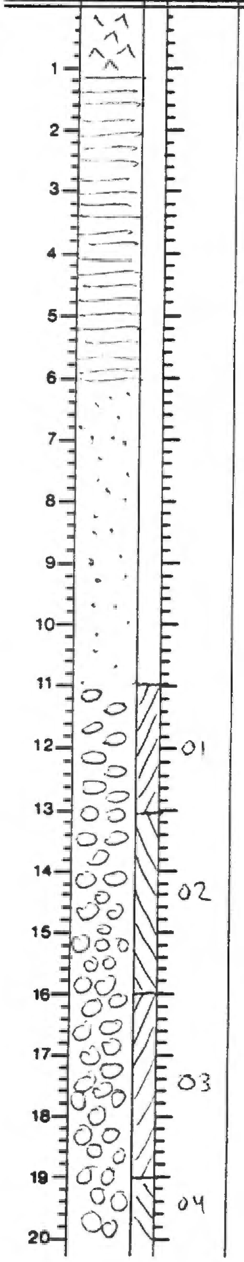
DATE Aug 2,3 19 88
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLS-88-80 LOCATION Site #19 12W, 45+50N elev. 315m
GEOLOGIST P. Collin DRILLER S. Haug BIT NO. CB70074 / CB70075 BIT FOOTAGE 34.0 - 61.5 / 0.0 - 8.0
MOVE TO HOLE 1:45 - 2:00
DRILL 2:00 - 5:00 Aug 2 7:15 - 9:30 Aug 3
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

New Bit

Pg 1 of 2

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



0.0 - 1.0 <u>Organics</u>

1.0 - 32.3 <u>Ojibway II Sediments</u>

(1.0 - 6.0) grey, pure, soft clay

(6.0 - 9.0) beige fine and medium grained sand

- thin pebble bed ~ 9.0 m

(9.0 - 11.0) similar to 6.0 - 9.0 with coarse sand interbeds

11.0 - 30.0 Gravel: sorted coarse sand matrix. Subrounded to rounded pebble clasts and cobble cuttings. Clast composit. 50% volcanics and sediments 50% Granitoids

below 16.0 m cobble & small boulder clasts composition changes to about 40% volcanics and sediments; 60% Granitoids

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 2,3 19 88

SHIFT HOURS

_______ TO _______

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-80 LOCATION Site #19

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ________

DRILL ________

MECHANICAL DOWN TIME ________

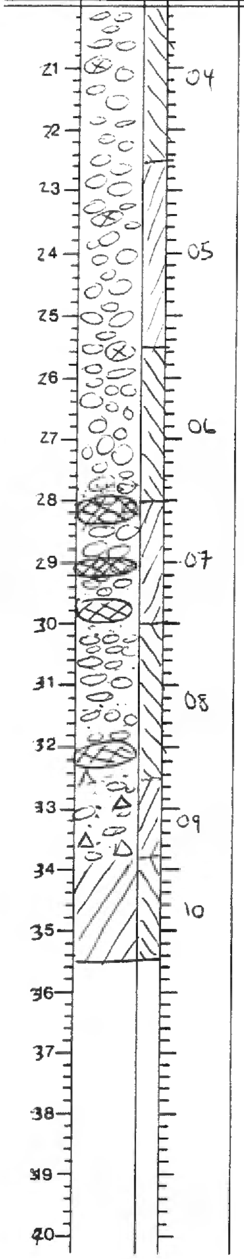
DRILLING PROBLEMS ________

OTHER ________

MOVE TO NEXT HOLE ________

Pg 2 of 2

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



at 27.5 m pull rods to change bit

- beige fine grained sand bed at 27.8 m
- Greywacke boulders at
  28.0 - 28.4
  29.0 - 29.2
  29.6 - 30.0

30.0 - 32.0 predominantly sorted course sand and granules with fine and medium grained sand beds.

32.0 - 32.3 Boulder - Gabbro

32.3 - 33.8 Chibougaman Till

slightly sorted fine sand minor silt matrix grey beige in colour. Cobble clasts of approximate composition: 70% Volcanics and sediments; 30% Granitoid

33.8 - 35.5 Bedrock

- dark grey to black
- very fine and fine grained
- granular in places
- weak foliation
- 34.2 to 35.5 graphitic zone; black rock clay lumps
- 1-2% sulphide
- 5% quartz ± minor carbonate veinlets

Meta sediment - Graywacke/siltstone

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 3 1983

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-83-31 LOCATION Site #17 4W, 35+75N elev. 316 m

GEOLOGIST R. Collins DRILLER G. Hwong BIT NO. CB 70075 BIT FOOTAGE 8.0-22.7

MOVE TO HOLE 9:30 - 10:00

DRILL 10:00 - 10:40

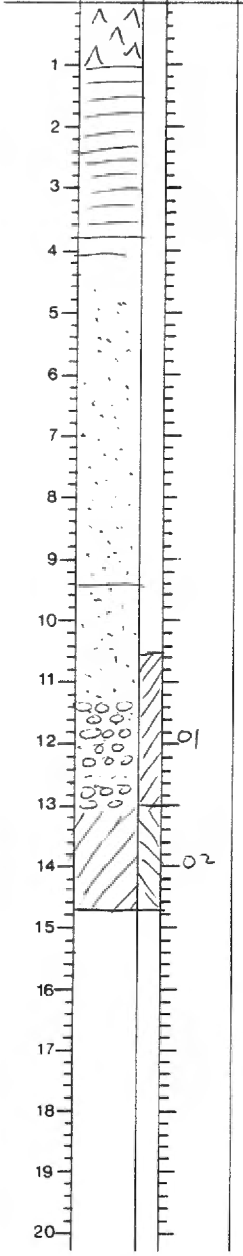
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 1.0 Organics

1.0 - 13.0 Ojibway II Sediments

(1.0 - 4.0) beige to grey, pure, soft clay

(4.0 - 11.4) beige very fine to fine grained sand

- ochre coloured sand bed at 6.2m
- grey clay bed at 9.4m

(11.4 - 13.0) Gravel: abundant sorted coarse sand matrix. Granule and pebble clasts of composition: 50% volcanics and sediments; 50% Granitoids

13.0 - 14.7 Bedrock

- grey & reddish brown
- massive
- porphyritic texture (feldspar phenocrysts)
- occasional thin dark green mafic band
- ≤1 % sulphides

Syenite

14.7 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 3 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO RS-88-82 LOCATION Site # 18 9w, 38+30N elev. 316

GEOLOGIST B. Rudnicki DRILLER G. Haug BIT NO. R70075 BIT FOOTAGE 227 - 34.7

MOVE TO HOLE 10:40 - 10:55

DRILL 10:55 - 11:20

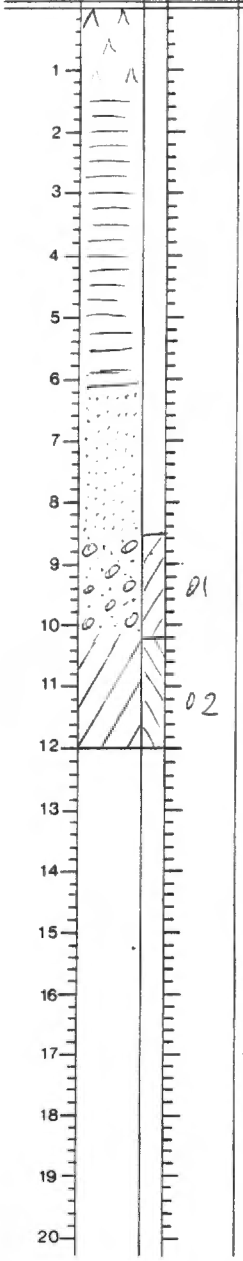
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 1.5 Organics

1.5 - 10.2 Ojibway II sediments

1.5 - 6.2 pure, gray, compact clay gradually becoming soft downsection.

6.2 - 8.5 fine to medium gray-beige sand

8.5 - 10.2 Gravel: medium to coarse sand matrix. Pebble clasts of composition 60% volc/seds - 40% granitoids. Very thin layer of till before bedrock to little to sample.

10.2 - 12.0 Bedrock

- grey reddish Brown
- massive
- porphyritic texture
- feldspar phenocryst
- occasional dark-green mafic bands
- ≤ 1% sulphides

Syenite

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 3 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-53 LOCATION Site #26 16 W, 36 N elev. 316m

GEOLOGIST P. Collins DRILLER G. Hwang BIT NO. CB70075 BIT FOOTAGE 34.7 - 45.0

MOVE TO HOLE 11:20 - 11:30

DRILL 11:30 - 11:50

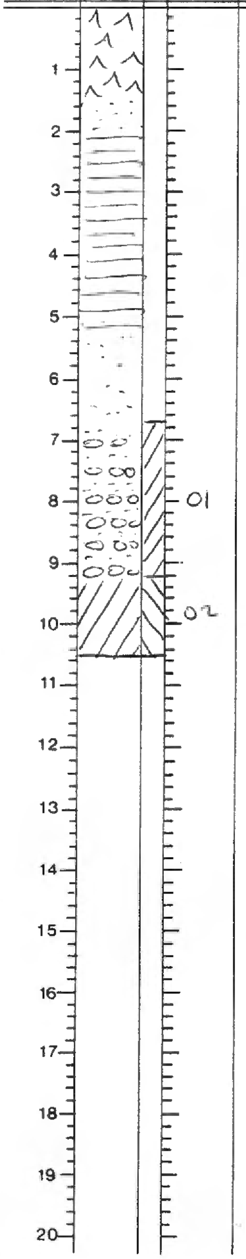
MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

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



0.0 - 1.5 Organics

1.5 - 9.2 Ojibway II Sediments

(1.5 - 2.0) beige (oxidized) fine grained sand

(2.0 - 5.0) beige to grey, pure, soft clay

(5.0 - 6.7) beige grey, fine grained sand.

(6.7 - 9.2) Gravel: abundant sorted medium and coarse grained sand matrix. Pebble and granule clasts of composition: 50% volcanics and sediments; 50% Granitoids

9.2 - 10.5 Bedrock

- medium grey
- coarse grained
- massive
- porphyritic texture (phenocrysts of feldspar) - pinkish
- >5% carbonate
- 1-2% disseminated sulphides
- 3% FeO stain dissemination

intermediate felsic - syenite

10.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug. 3 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLC-88-84 LOCATION Site #53 24W 33+50N elev. 316m

GEOLOGIST B. Budnik DRILLER G. Howey BIT NO. 2D7007L BIT FOOTAGE 452-55

MOVE TO HOLE 11:50 - 12:00

DRILL 12:00 - 1:00

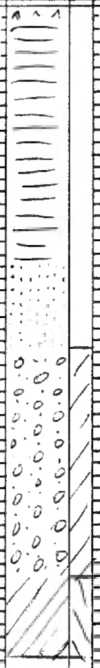
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
0–20			01 02	0.0 - 0.2 Organics 0.2 - 9.2 Ojibway II sediments 0.2 - 4.2 pure, beige, compact clay 4.2 - 5.5 medium, gray-beige sand 5.5 - 9.2 Gravel: medium to coarse sand matrix. Pebble clasts of composition 60% volc/sed - 40% gran. Matrix appeared unsorted before bedrock for very short interval. It was probably very thin layer of till to little to take separate sample 9.2 - 10.5 Bedrock - red to green - coarse grained - massive - porphyritic texture



OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 4 19 88

SHIFT HOURS

_______ TO _______

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-85 LOCATION Site #10 30E, 44+50N 332m

GEOLOGIST H. Gillies DRILLER G. Henry BIT NO. CB70075 BIT FOOTAGE 567-749

MOVE TO HOLE 5:00 - 5:15 Aug 3

DRILL 7:00 - 7.30 Aug 4

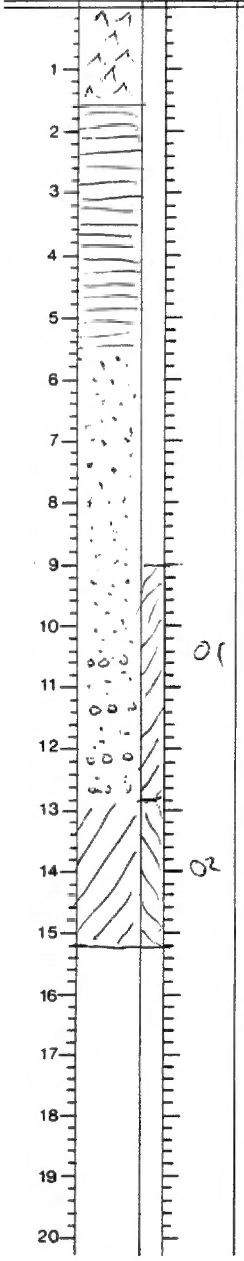
MECHANICAL DOWN TIME _______

DRILLING PROBLEMS _______

OTHER Travel 6:30 - 7:00 Am

MOVE TO NEXT HOLE _______

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



0.0 - 1.5 Organics

1.5 - 12.8 Ojibway II Sediment

(1.5 - 5.5) grey, pure, soft clay

(5.5 - 9.0) sorted fine grained beige sand

(9.0 - 12.8) as above with medium and coarse sand interbeds

12.8 - 15.2 Bedrock

- initially ochre (weathered bedrock surface)
- light & medium grey
- very fine to fine grained
- strong foliation
- non calcareous
- ≤ 1% sulphides

Meta Sediment

15.2 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 4 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

CONTRACT HOURS

HOLE NO HLS-88-86 LOCATION Site #11 34E, 44+50N elev. 335m

GEOLOGIST R. Collins DRILLER S. Hoang BIT NO. CB70075 BIT FOOTAGE 71.4-83.4

MOVE TO HOLE 7:30 - 7:45

DRILL 7:45 - 8:15

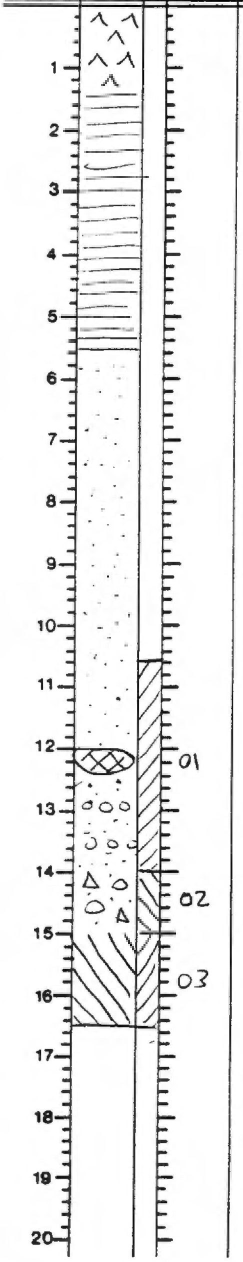
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

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



0.0 - 1.5 Organics

1.5 - 14.0 Ojibway II sediments
(1.5-5.5) grey, pure, soft clay
(5.5-9.5) beige very fine to fine grained sand
(9.5 - 12.0) as above with medium and coarse sand interbeds c̄ occasional granule, small pebble clast
(12.0 - 12.4) Boulder - Granite
(12.4 - 14.0) predominantly sorted coarse sand with occasional granule / pebble beds

14.0 - 15.0 Chibougamau Till
grey beige fine sand / silt matrix
Pebble clasts of composition: 65% volcanics and sediments; 35% Granitoids

15.0 - 16.5 Bedrock
- dark greyish green
- medium grained
- massive
- main mafic minerals pyroxene and amphibole
- 1% sulphides
- trace FeO stain

Mafic intrusive ~ Gabbro

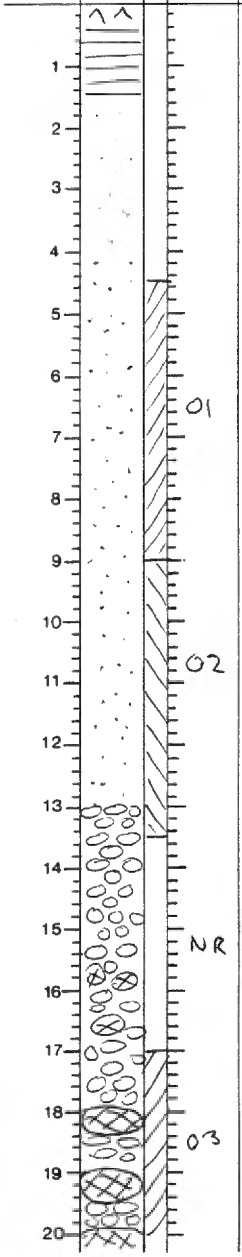
OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 4 19 88
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO PLS-88-37 LOCATION Site #6 12E, 38+75N 320 m
GEOLOGIST R. Collins DRILLER G. Howey BIT NO. CB70075 CB70076 BIT FOOTAGE 88.4-109.1 0.0 - 9.8
MOVE TO HOLE 8:15 - 8.40 Am
DRILL 8:40 - 1:30 pm
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

Pg 1 of 2
New bit & sub

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



0.0 - 0.5 Organics

0.5 - 28.5 Ojibway II Sediment

(0.5 - 1.5) beige to grey, pure, soft clay.

(1.5 - 3.8) very fine to fine grained beige sand

(3.8 - 7.0) medium grained sand interbeds

(7.0 - 13.0) sorted medium & coarse sand beds c occasional granule/small pebble bed

(13.0 - 28.5) Gravel: Cobble clast supported approximate composition 30% Volcanics and Sediments; 70% Granitoids

* very poor to no return between 13.5 - 18.0: Sample washing away very little matrix material: that observed is sorted coarse grained sand

Boulders occur at the following depths:

18.0 - 18.4 granodiorite
19.0 - 19.5 granite

* at 18.7 m pull rods to change bit.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 4 19 88

SHIFT HOURS
______ TO ______

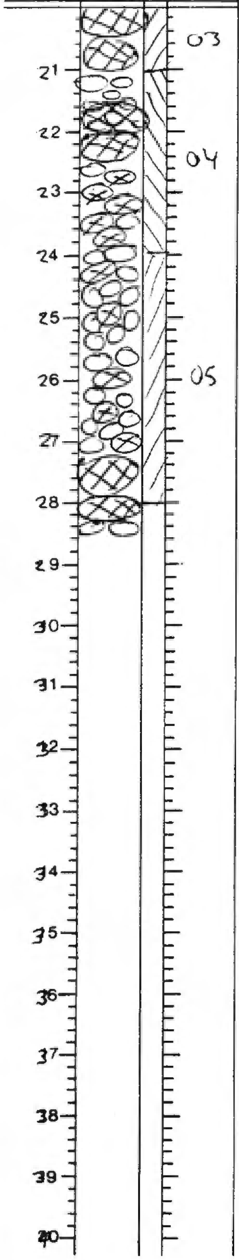
TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO PLS-88-87 LOCATION Site #6
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



Gravel is very difficult to penetrate continuous cobble and boulder sized clasts; again very little matrix ie, sorted coarse sand.

larger boulders occur at:

20.5 - 21.0	Granodiorite
21.6 - 22.1	granite
22.1 - 22.5	tonalite
27.5 - 28.0	Gabbro
28.0 - 28.3	Granite

End hole at 28.5m.
Too much torque on rods; 2nd 'new' bit worn out; move on to next hole.

E.O.H. 28.5m

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug. 4,5 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLC-88-88 LOCATION Site # 7 16E 37N elev. 323 m

GEOLOGIST B. Rudnicki DRILLER G. Howy BIT NO. CB70077 BIT FOOTAGE 20 - 34.5

MOVE TO HOLE 1:30 - 1:45

DRILL Aug. 4 1:45 - 5:00 Aug. 5 7:00 - 7:40

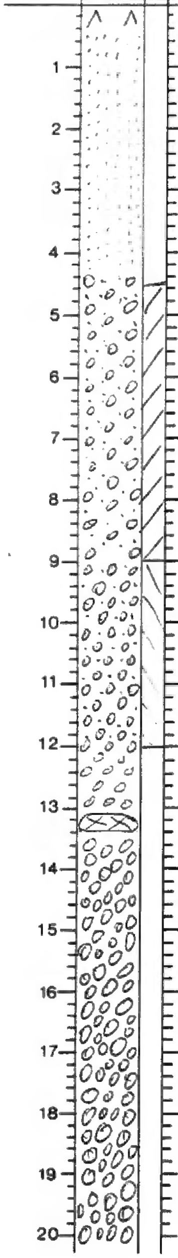
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 1 of 2



SAMPLE NO.	DESCRIPTIVE LOG
	0.0 - 0.5 Organics
	0.5 - 34.0 Ojibway II sediments
	0.5-4.2 Medium grained gray, beige sand
	4.2 - 34.0 Gravel
01	4.2 - 9.0 very coarse sand and granules matrix. Pebble clasts of composition 40% volcs/seds - - 60% granitoids.
02	9.0 - 12.0 No matrix. Granules and pebble clasts.
	13.1 - 13.4 Boulder granitic
	12.0 - 29.0 No return: pebbles, cobbles and small boulders. Clasts supported, no matrix, no seal around rods resulting in no return. Sample washing away.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 4,5 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS 88-88 LOCATION _____

GEOLOGIST _____ DRILLER _____ BIT NO. _____ BIT FOOTAGE _____

MOVE TO HOLE _____

DRILL _____

MECHANICAL DOWN TIME _____

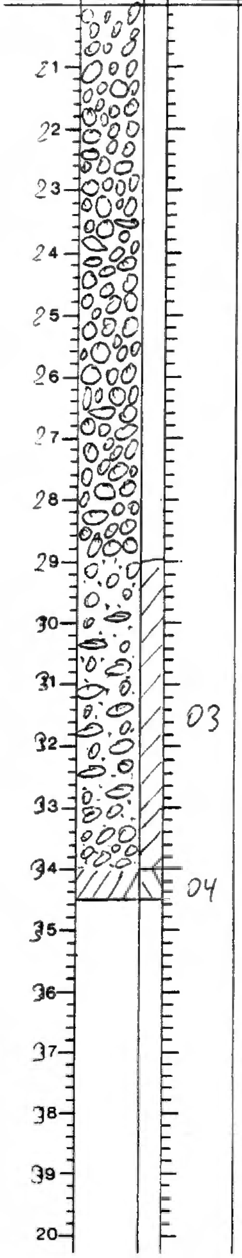
DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

Pg 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



29.0 - 34.0 Gravel: pebble and cobble clasts with medium to coarse grained sand matrix. Aproximately clasts comp. 40% volcs/seds - 60% granitoids

34.0 - 34.5 Bedrock ?
- greenish dark grey
- medium grained
- massive
- silicified (very hard to drill)

Mafic intrusive ? Possibly boulder, very few cheaps; cones Broke off in hole, move on to PLS-88-89

34.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE August 5 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-89 LOCATION Site #8 20E, 33+50N elev. 328 m

GEOLOGIST P. Collins DRILLER G. Houg. BIT NO. CB70078 BIT FOOTAGE 0.0-51.0

CB70079 0.0-4.5

MOVE TO HOLE 7:40 - 7:50

DRILL 7:50 - 5:00

MECHANICAL DOWN TIME _____

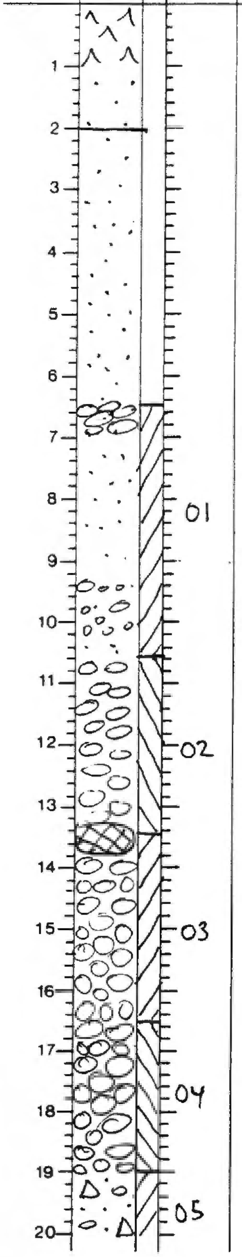
DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

2 New bits

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



0.0 - 1.0 Organics

1.0 - 19.0 Ojibway II Sediments

(1.0 - 4.0) beige to ochre, fine grained sand

- thin clay bed at 2.0m

(4.0 - 6.5) as above with medium grained sand beds.

(6.5 - 7.0) Gravel: sorted coarse sand matrix. Cobble clasts with composition: 30% Volcanics and sediments; 70% Granitoids

(7.0 - 7.8) beige fine grained sand

(7.8 - 9.3) predominantly sorted medium and coarse sand

(9.3 - 13.3) Gravel: coarse sand matrix: granule & pebble clasts: 40% Volcanics & sediments; 60% Granitoids: becomes very cobbley downsection.

(13.3 - 13.8) Boulder - Granite

(13.8 - 19.0) similar to 9.3-13.3

19.0 - 41.0 Chibougamau Till

beige slightly sorted fine sand and minor silt matrix. Pebble and Cobble clasts of approximate composition: 55% Volcanics and sediments; 45% Granitoids.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 5 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-89 LOCATION Site #08

GEOLOGIST _____ DRILLER _____ BIT NO. _____ BIT FOOTAGE _____

MOVE TO HOLE

DRILL

MECHANICAL DOWN TIME

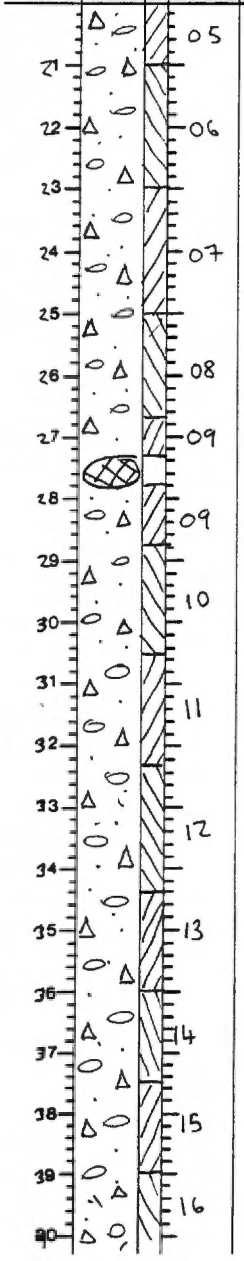
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 2 of 3

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



at 27.4 - 27.8 BOULDER - Granite

- downsection matrix becomes grey beige in colour and appears less sorted; increase in silt fraction.

- below 30.0m clast composition changes to 65% volcanics and sediments; 35% Granitoids

- below 39.0 minor grey gritty clay in matrix: increase in percentage of volcanics & sediments.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 5 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-89 LOCATION Site #08

GEOLOGIST _____ DRILLER _____ BIT NO. _____ BIT FOOTAGE _____

MOVE TO HOLE _____

DRILL _____

MECHANICAL DOWN TIME _____

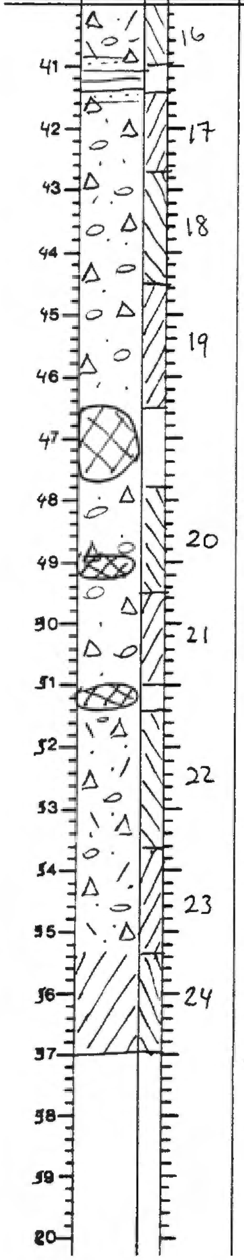
DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

Pg 3 of 3

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



40.5 - 41.0 clay rich till

abundant compact gritty clay in matrix otherwise similar to above till.

41.0 - 41.4 Missinaibi Sediments

grey, hard, compact, pure clay gradational contact into underlying Till.

41.4 - 55.7 Lower Till

grey beige fine sand / silt and minor grey gritty clay matrix. Pebble and Cobble clasts of approximate composition: 65% Volcanics and Sediments; 35% Granitoids

- sample 19. matrix is rather sorted looking; during this interval water pump turned up high to prevent~~ing~~ plugging; therefore fines may have been washing away.

46.5 - 47.8 Boulder - granodiorite
48.8 - 49.2 Boulder - gabbro
51.0 - 51.3 Boulder - Felsic intrusive

- below 51.3 more abundant grey gritty clay in matrix.

55.7 - 57.0 BEDROCK

- dark green
- fine grained
- massive
- 5-10% quartz / carbonate veinlets

- main mafic mineral appears to be pyroxene
- 1-2% disseminated sulphides

Mafic intrusive - Gabbro

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug. 6 1988

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO DLS-88-90 LOCATION Site#9 24E, 37N elev. 334m

GEOLOGIST B. Rudnick DRILLER G. Howg BIT NO. CB70079 BIT FOOTAGE 4.5 - 19.7

MOVE TO HOLE 4:45 - 5:00 Aug 5 CB70080 0.0 - 12.8

DRILL 7:00 - 11:15

MECHANICAL DOWN TIME

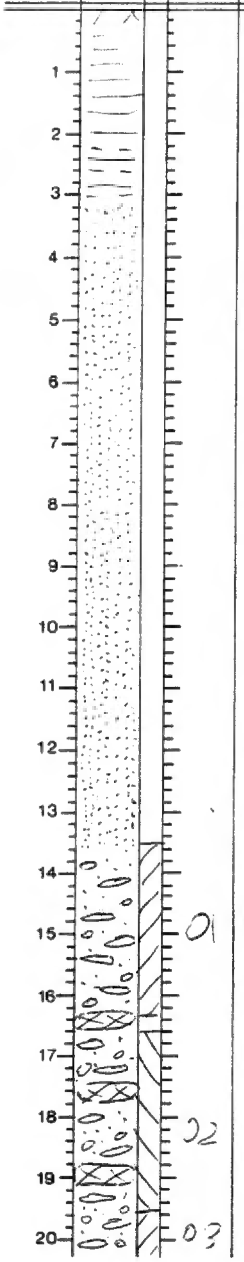
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 1 of 2

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



0.0 – 0.2 Organics

0.2 – 26.4 Gibney ~~i~~ sediments

0.2 – 3.2 Pure, beige soft clay with silt interbeds

3.2 – 13.5 Fine, grey, beige sand interbedded with medium grained below 6.0m

13.5 – 26.4 Gravel: cobbly, medium to coarse grained sand matrix. Clasts of composition 40% volc/sed – 60% granitoids

15.2 pull rods to change a bit

16.3 – 16.6 Boulder – syenite

17.4 – 17.8 Boulder – diorite

18.8 – 19.2 Boulder grano-diorite

Below 18.0 predominantly cobble and small boulder clasts.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 6 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-90 LOCATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

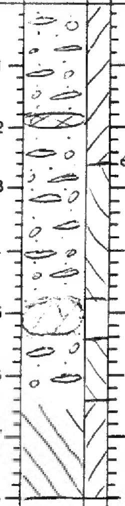
MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

Pg 2 of 2



DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
				21.8-22.0 Boulder granitic
1			03	
2				pull 2 rods out of hole.
3				Too much torque on rods,
4			04	clean hole, go back down
5				23.8-24.0 Boulder grano-diorite
6				24.8-25.4 Boulder diorite
7			05	26.4-28.0 Bedrock
8				- greenish grey
9				- medium grained
10				- massive
11				- Carbonatized, 10%-15%
12				disseminated and veinlets.
				- 1% disseminated sulphides
13				- coarse grained downsection
14				Intermediate intrusive - diorite
15				28.0m E.O.H.
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 6 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-91 LOCATION Site 15 16E, 28+00N ELEVATION 320m

GEOLOGIST P. Collins DRILLER G. Hovey BIT NO. CB70080 BIT FOOTAGE 55-23 C

MOVE TO HOLE 11:15-12:00

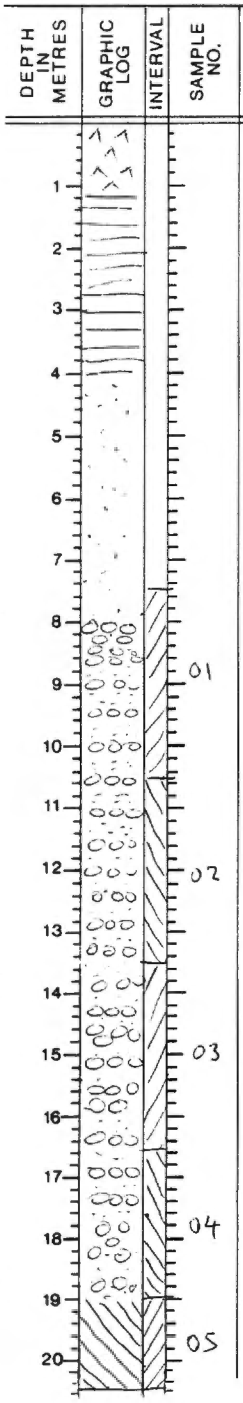
DRILL 12:00 - 1:45

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE



DESCRIPTIVE LOG

0.0 - 1.0 Organics

1.0 - 19.0 Ojibway II Sediments

(1.0 - 4.0) beige, pure, soft clay

(4.0 - 7.8) sorted medium and coarse grained sand c̄ occasional fine sand bed.

(7.8 - 8.5) Gravel: sorted coarse sand matrix: Pebble clasts of composition; 40% Volcanics and sediments; 60% Granitoids

(8.5 - 10.4) interbeds of medium and coarse sand and gravel as in 7.8 - 8.5

(10.4 - 19.0) Pebbly sand: matrix appears till like in places; however, very coarse biased 40% - 50% of matrix is medium sand. Occasional coarse sand bed. Abundant return on pebble / granule clasts similar in composition to gravel in 7.8 - 8.5

19.0 - 20.5 Bedrock

- pinkish orange
- coarse grained
- massive
- 19.3-19.4 band enriched in FeO & hematite
- below 20.0 >20% hematite & FeO stain
- 1-2% sulphides (visible pyrite cubes)

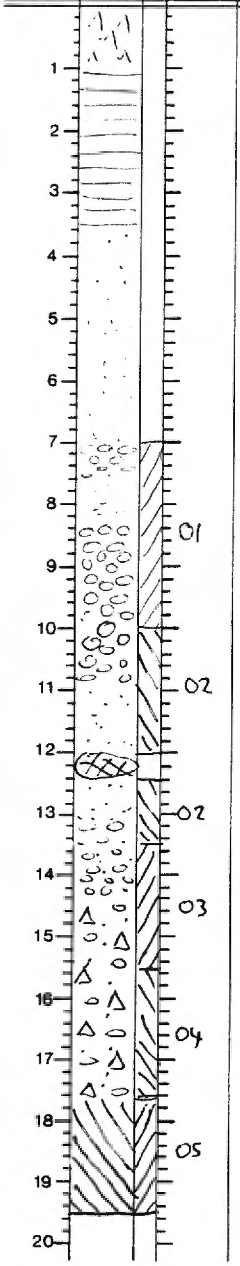
Syenite.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 6 19 88
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLS-88-92 LOCATION Site #24 16E 21N ELEVATION 310m
GEOLOGIST R. Collins DRILLER G. Houg BIT NO. C890080 BIT FOOTAGE 26.0 - 45.5
MOVE TO HOLE 1:45 - 2:00
DRILL 2:00 - 3:15
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

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



0.0 - 1.0 Organics

1.0 - 14.3 Ojibway II Sediments

(1.0 - 3.5) beige, pure, soft clay

(3.5 - 7.0) beige fine sand & medium sand inter beds.

(7.0 - 7.5) Pebble gravel bed

(7.5 - 8.5) very fine to fine grained beige sand

(8.5 - 11.0) Gravel: medium to course sand matrix. Rounded pebble clasts of approximate composition: 50% Volcanics and sediments; 50% Granitoids

(11.0 - 12.0) similar to 7.5 - 8.5

(12.0 - 12.4) Boulder - granodiorite

(12.4 - 13.0) similar to 7.5 - 8.5

(13.0 - 14.3) similar to 8.5 to 11.0m with fine sand matrix

14.3 - 17.8 Chibougamau Till

slightly sorted beige fine sand (minor silt) matrix. Pebble clasts of approximate composition: 50% Volcanics & sediments; 50% Granitoids

17.8 - 19.5 BEDROCK

- violet red & dark grey
- course & med. grained
- massive
- porphyritic texture in places
- >5% carbonate
- enriched in hematite especially between 18.5 & 19.0m

Fe formation

19.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 6 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-93 LOCATION Site # 25 20E 18+20N ELEVATION 311m

GEOLOGIST P. Cullin DRILLER G. Hong BIT NO. CB70080 BIT FOOTAGE 45.5-56.0

MOVE TO HOLE 3:15 - 3:30

DRILL 3:30 - 4:00

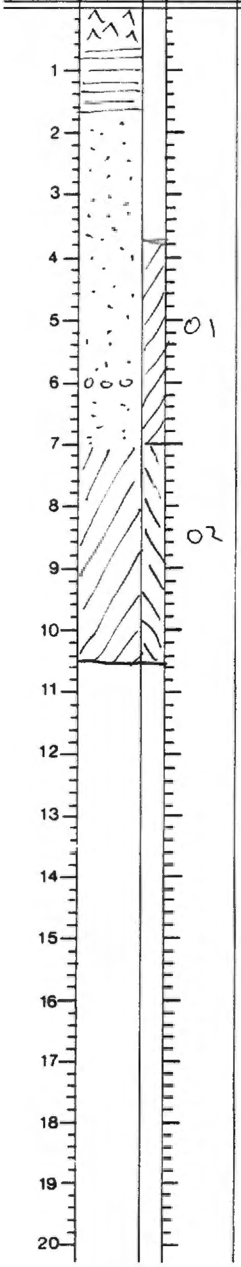
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 0.5 Organics

0.5 - 7.0 Ojibway II Sediments

(0.5 - 1.6) beige, pure, soft clay

(1.6 - 7.0) beige, fine grained sand

thin pebble bed at 6.0m.

7.0 - 10.5 Bedrock

- reddish violet
- coarse grained
- massive
- hematitic >30%
  (appears slightly magnetic)
- carbonatized >5% disseminated
- porphyritic texture; feldspar phenocrysts
- 1% disseminated sulphides

10.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 6 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-94 LOCATION Site#26 24E, 15+50N ELEVATION 311m

GEOLOGIST P. Collins DRILLER G. Houg BIT NO. CB70080 BIT FOOTAGE 56.0-68.5

MOVE TO HOLE 4:00-4:15

DRILL 4:15-4:35

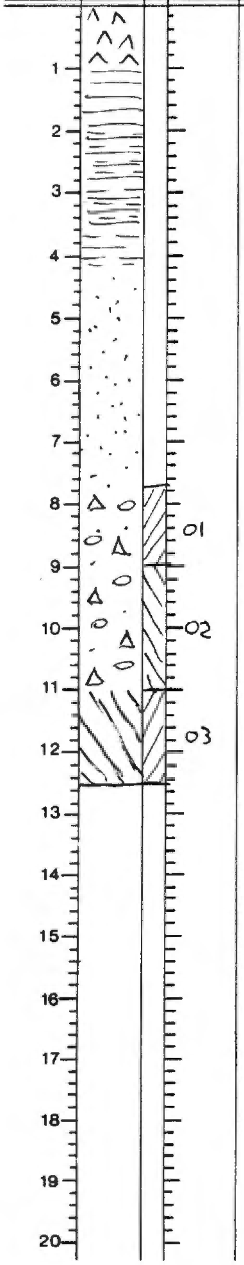
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

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



0.0-1.0 Organics

1.0-7.8 Ojibway II Sediments

(1.0-4.0) grey, pure, soft clay with silt interbeds

(4.0-7.8) very fine to fine grey beige sand

7.8-11.0 Chibougamau Till

beige grey fine sand/silt matrix Pebble clasts of composition: 60% Volcanics & sediments; 40% Granitoids.

11.0-12.5 Bedrock

- pinkish-violet
- coarse grained
- massive
- porphyritic texture
- 3-5% FeO stain
- 1% diss. sulphides

Feldspar porphyry

12.5 E.O.H

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 7 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-95 LOCATION Site # 27 27E, 16+75N elev. 311m

GEOLOGIST P. Collins DRILLER G. Houg BIT NO. CB70081 BIT FOOTAGE 0.0-17.0

MOVE TO HOLE 7:15 - 7:30

DRILL 7:30 - 8:30

MECHANICAL DOWN TIME

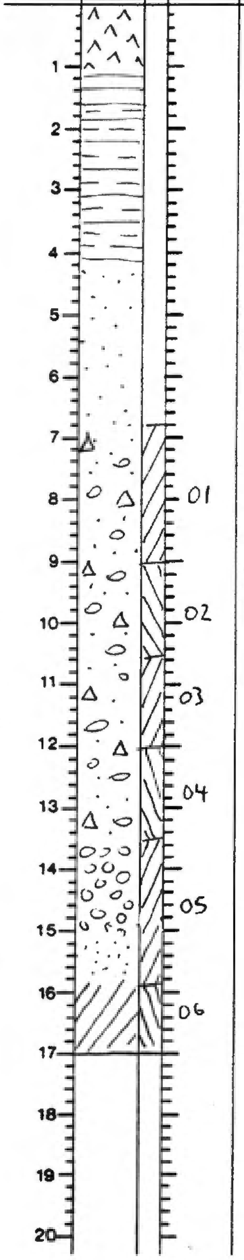
DRILLING PROBLEMS

OTHER Travel 6:30 - 7:15

MOVE TO NEXT HOLE

New Bit
New Sub

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



0.0 - 1.0 Organics

1.0 - 6.8 Ojibway II Sediments

(1.0 - 4.0) grey, pure, soft clay & silt

(4.0 - 5.0) grey very fine to fine grained sand

(5.0 - 6.8) beige fine to medium grained sand

6.8 - 13.8 Chibougamau Till

initially partially sorted beige grey fine sand / silt matrix. Pebble clasts of approximate composition: 55% Volcanics and sediments; 45% Granitoids.

* in sample # 04 occasional sorted fine sand interval.

13.8 - 15.8 Missinaibi Sediments

distinct change from overlying till. Gravel: ochre coloured sorted coarse sand matrix. Rounded pebble clasts of composition: 40% Volcanics & sediments; 60% Granitoids. many of clasts are oxidized

(15.0 - 15.8) predominantly beige sorted medium & fine grained sand.

15.8 - 17.0 Bedrock

- red.
- coarse grained
- massive
- porphyritic texture
- enriched in hematite
- < 1% sulphides
- below 16.5 3-5% FeO stain

Syenite

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 7 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PCS 88-76 LOCATION Site #23 4E, 16N elev. 308m

GEOLOGIST R. Callinan DRILLER G. Houry BIT NO. ____ BIT FOOTAGE ____

MOVE TO HOLE 8:30 - 10:00

DRILL 10:00 -

MECHANICAL DOWN TIME ____

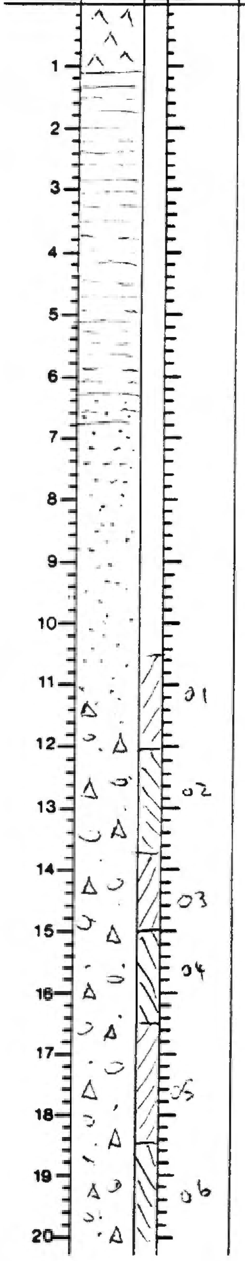
DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

Pg 1 of 3

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



0.0 - 1.0 Organics

1.0 - 11.6 Ojibway II Sediments

(1.0 - 6.6) grey, pure, soft clay ē silt interbeds

(6.6 - 7.6) very fine to fine grained grey beige sand

(7.6 - 11.6) predominantly fine and medium grained beige sand coarse sand interbeds downsection

11.6 - 30.3 Chibougamau Till

gradational contact into grey beige fine sand / silt matrix. Pebble & small cobble clasts; 55% volcanics and sediments; 45% Granitoids v. minor gritty clay in matrix below 18.0m

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 7 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-96 LOCATION _____

GEOLOGIST _____ DRILLER _____ BIT NO. _____ BIT FOOTAGE _____

MOVE TO HOLE _____

DRILL _____

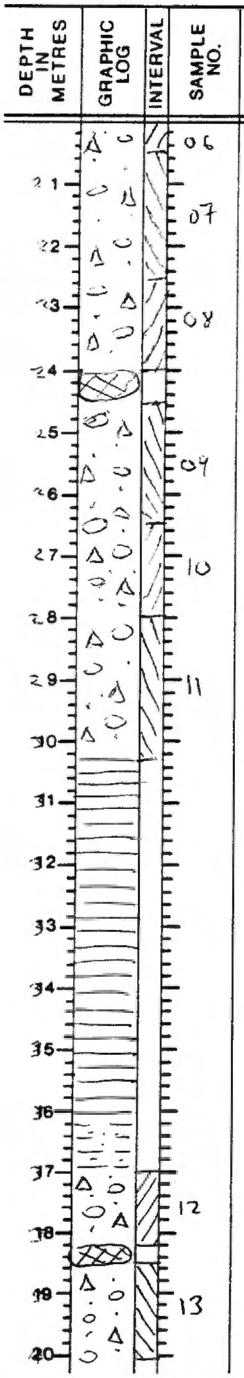
MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

Pg 2 of 3



DESCRIPTIVE LOG

24.0 - 24.6 boulder - granite

- till becomes cobblier below 23.0 m. Clast composition: 65% Volcanics and sediments; 35% Granitoids

30.3 - 37.0 <u>Missinaibi Sediment</u>

(30.3 - 36.0) pure, hard, tough, compact grey clay

- woodchips occur at 31.2, 33.4 and 34.0 m
- occasional small pebble clasts

(36.0 - 37.0) very fine sand / silt

37.0 - 47.0 <u>LOWER TILL</u>

grey beige fine sand / silt ; minor gritty clay matrix. Pebble and cobble clasts of approximate composition: 70% volcanics and Sediments ; 30% Granitoids

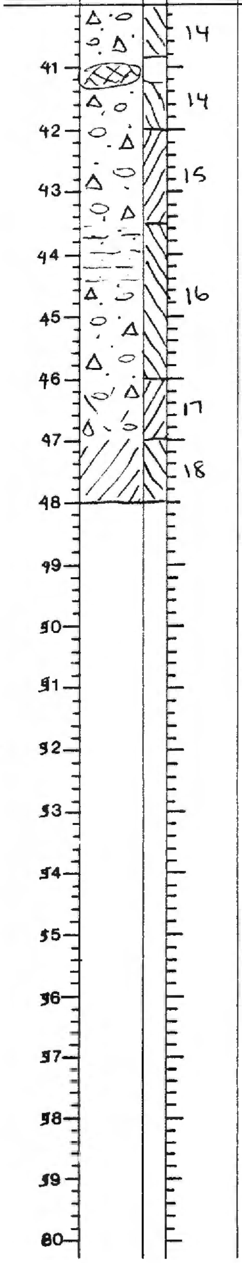
(38.2 - 38.5) Boulder - Granitoid

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug. 7 19 88
HOLE NO PLS-88-96 LOCATION ______ ELEVATION ______
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



(41.0 - 41.4) boulder - granodiorite
(41.4 - 43.2) till as before boulder
(43.2 - 44.5) grey very fine sand and silt.
(44.5 - 46.8) similar to 37.0 to 41.0
(46.8 - 47.0) very hard, grey, slightly gritty clay lumps.

47.0 - 48.0 <u>BEDROCK</u>

- pinkish violet
- coarse grained
- massive
- porphyritic texture
- >30% hematite
- occasional thin mafic bands
- felsic

Syenite

48.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 7 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-97 LOCATION Site # 22 4W, 14N ELEVATION 308m

GEOLOGIST B. Rudnicki DRILLER G. Howg BIT NO. CB70081 BIT FOOTAGE 650 - 99.5

CB70082 0.0 - 12.7

MOVE TO HOLE 2:40 - 3:00

DRILL 3:00 - 5:00

MECHANICAL DOWN TIME

DRILLING PROBLEMS

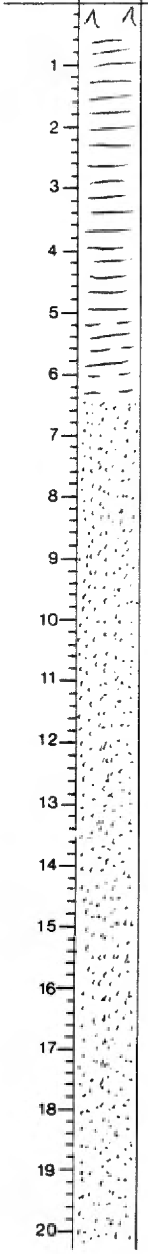
OTHER Travel 5:00 - 5:45 Pm To camp.

MOVE TO NEXT HOLE

Pg 1 of 3

New bit

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 0.5 Organics

0.5 - 24.0 Ojibway II sediments

0.5 - 6.3 grey, pure, soft clay with silt interbeds below 5.0m

6.3 - 24.0 fine, grey-beige sand, interbeded with medium grained below 8.0 m.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

HOLE NO FLS-88-97 LOCATION ________ ELEVATION ________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

SHIFT HOURS

____ TO ____

MOVE TO HOLE ________

DRILL ________

TOTAL HOURS

____

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

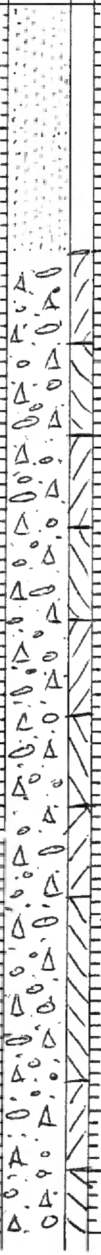
CONTRACT HOURS

____

OTHER ________

MOVE TO NEXT HOLE ________

Pg 2 of 3



DEPTH IN METRES	SAMPLE NO.
21	
22	
23	
24	
25	01
26	
27	02
28	03
29	04
30	
31	05
32	06
33	
34	07
35	
36	08
37	
38	
39	09
40	10

DESCRIPTIVE LOG

24.0 - 46.0 Chibougamau till

Fine, grey-beige sand and silt matrix. Pebble and small cobble clasts of composition 50% volcanics/sediments 50% granitoids

Below 34.2 matrix appears slightly sorted.

Samples 8 and 11 are taken over longer intervals due to poor return

34.8 pull rods to change bit

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO RLS-88-97 LOCATION ________ ELEVATION ________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ________

DRILL ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

OTHER ________

MOVE TO NEXT HOLE ________

Pg 3 of 3

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						
			10	41.0 - 43.4 gritty clay lumps in matrix.						
1										
2			11							
3										
4			12	46.0-47.5 Bedrock - violet - red						
5			13	- coarse grained						
6				- massive						
7			14	- 5% carbonatized						
8				Syenite						
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 8 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS 88 - 98 LOCATION Site # 21 12W, 20N ELEVATION 318m

GEOLOGIST P. Collins DRILLER G. Hong BIT NO. CB70082 BIT FOOTAGE 12.7 - 64.5

MOVE TO HOLE 7:00 - 7:15

DRILL 7:15 - 9:00

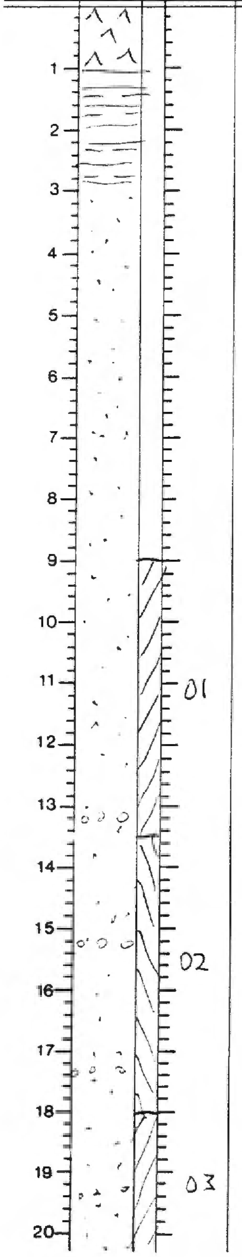
MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER Travel 6:30 - 7:00

MOVE TO NEXT HOLE ______

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



0.0 - 1.0 Organics

1.0 - 21.8 Ojibway II Sediments

(1.0 - 2.8) grey, pure, soft clay and silt

(2.8 - 10.0) grey to beige (downsection) fine grained sand. Medium and coarse sand beds below 7.0m

(10.0 - 12.0) ochre coloured coarse grained sand

(12.0 - 21.8) beige and ochre fine and medium grained sand with occasional thin pebble bed

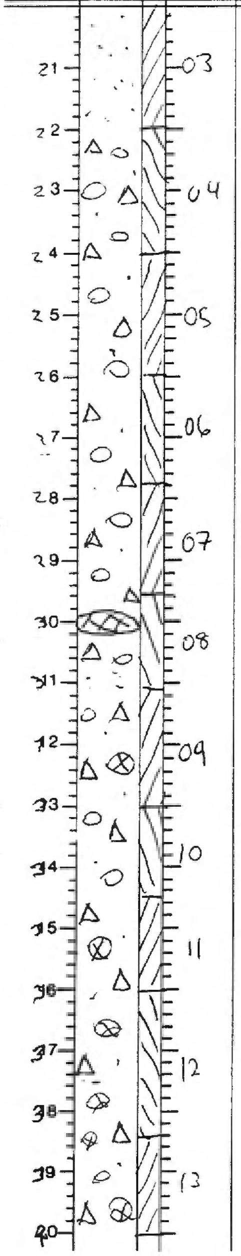
OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 8 19 88
SHIFT HOURS
______ TO ______
TOTAL HOURS
______
CONTRACT HOURS
______

HOLE NO PLS-88-98 LOCATION ______ ELEVATION ______
GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______
MOVE TO HOLE ______
DRILL ______
MECHANICAL DOWN TIME ______
DRILLING PROBLEMS ______
OTHER ______
MOVE TO NEXT HOLE ______

Pg. 2 of 3

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



21.8 - 40.0 Chibougamau Till

gradational contact into beige grey fine sand minor silt matrix. Pebble and small cobble clasts of composition: 50% Volcanics and sediments; 50% Granitoids

(29.9 - 30.2) Boulder - Granite

(31.8 - 31.2) sorted beige fine sand bed

(31.2 - 41.0) till similar to above yet predominantly cobble clasts. Matrix appears slightly more sorted in places

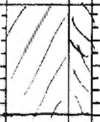
* sample 13 poor return - small sample

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 8 19 88
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLS-88-98 LOCATION ____ ELEVATION ____
GEOLOGIST ____ DRILLER ____ BIT NO. ____ BIT FOOTAGE ____
MOVE TO HOLE ____
DRILL ____
MECHANICAL DOWN TIME ____
DRILLING PROBLEMS ____
OTHER ____
MOVE TO NEXT HOLE ____

Pg 3 of 3

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG							
1			14	40.0 - 41.8 Bedrock							
2				- pinkish orange							
3				- coarse grained							
				- massive							
4				- 3-7% hematite							
5				- trace epidote							
6				- K spar, hornblend							
7											
8				41.8 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 Aug 8 1988

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-99 LOCATION Site #37 21+35W 18+50N ELEVATION 312 m

GEOLOGIST P. Collins DRILLER G. Hong BIT NO. CD70092 BIT FOOTAGE 69.5-71.7

MOVE TO HOLE 9:00 - 10:00

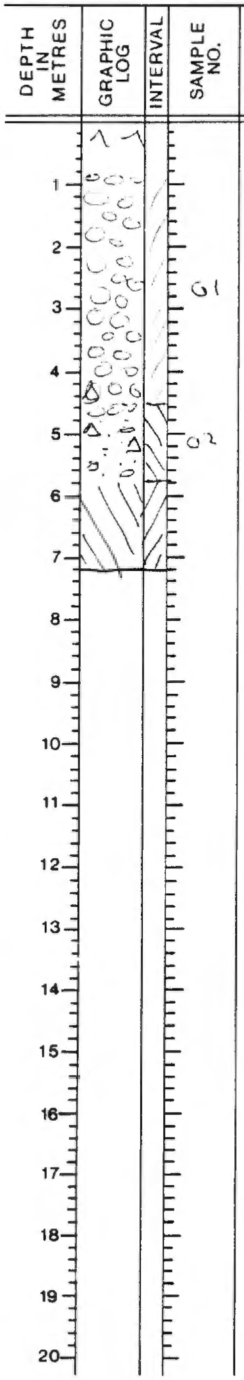
DRILL 10:00 - 11:15

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER spent 40 minutes clearing road

MOVE TO NEXT HOLE



DESCRIPTIVE LOG

0.0 - 0.5 Organics

0.5 - 4.8 Ojibway II Sediments

(0.5 - 4.8) Gravel: initially ochre fine and medium sand matrix coarse sand matrix below 2.0 m. Cobble clasts of composition: 40% Volcanics and sediments; 60% Granitoids

4.8 - 5.7 Chibougamau Till

gradational contact into beige fine sand / silt matrix: Pebble clasts of approximate composition: 55% volcanics and sediments; 45% Granitoids

5.7 - 7.3 Bedrock

- dark greyish green
- coarse grained
- massive
- porphyritic texture
- (qtz / feldspar phenocrysts)

Mafic intrusive

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 8 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-100 LOCATION Site #28 12W 6N elev. 308 m

GEOLOGIST P. Collins DRILLER G. Hong BIT NO. CB70683 BIT FOOTAGE 0.0 - 19.5

MOVE TO HOLE 11:15 - 11:40

DRILL 11:40 - 12:15

MECHANICAL DOWN TIME

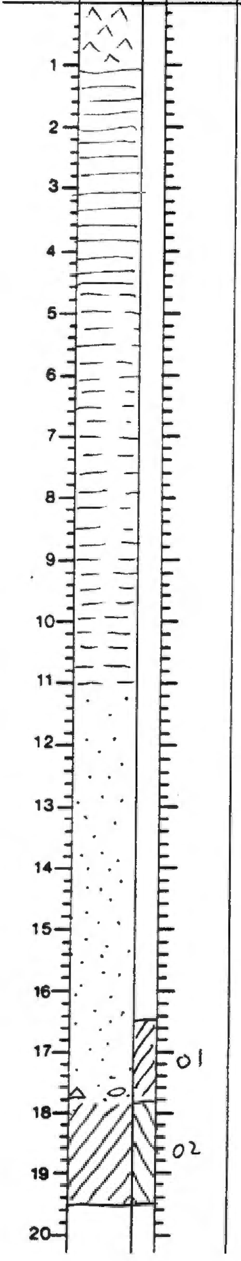
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

New Bit

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						



0.0 - 1.0 Organics

1.0 - 17.6 Ojibway II Sediments

(1.0 - 4.5) grey pure soft clay and silt

(4.5 - 11.0) grey silt

(11.0 - 17.6) beige fine grained sand

17.6 - 17.8 Chibougamau Till?

appeared to be thin veneer of till overlying bedrock. Too small an interval to sample or log separately

17.8 - 19.5 Bedrock

- reddish
- coarse grained
- massive
- abundant hematite stain >20%
- >5% carbonate
- <1% sulphides

Syenite

19.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 8 1988

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-101 LOCATION Site #51 24W, 2+50N ELEVATION 308 m

GEOLOGIST P Collin DRILLER G. Henry BIT NO. CB70083 BIT FOOTAGE 195 - 435

MOVE TO HOLE 12:15 - 12:45

DRILL 12:45 - 1:45

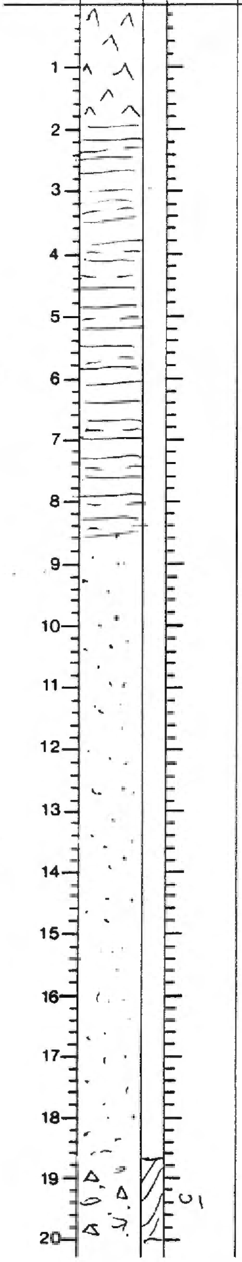
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 1.8 Organics

1.8 - 18.4 Ojibway II Sediments

(1.8 - 8.5) grey, pure soft clay silty downsection

(8.5 - 18.4) beige fine grained sand; medium to course sand beds below 17.0

18.4 - 22.8 Chibougamau Till

slightly sorted beige grey fine sand / silt matrix: Cobble clasts of composition: 50% Volcanics and sediments; 50% Granitoids

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 8 19 88

HOLE NO PLS-88-101 LOCATION ______ ELEVATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS

______ TO ______

MOVE TO HOLE ______

DRILL ______

TOTAL HOURS

______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

CONTRACT HOURS

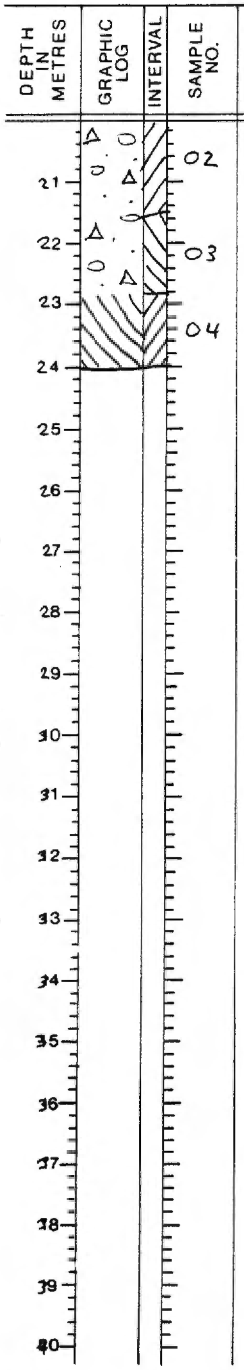
______

OTHER ______

MOVE TO NEXT HOLE ______

Pg 2 of 2

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



22.2 - 22.4 beige sorted medium grained sand bed.

22.4 - 22.8 till as before 22.2.

22.8 - 24.0 <u>BEDROCK</u>

- pink red
- coarse grained
- massive
- enriched in hematite >15%
- initial 0.5m 1-2% sulphides (decreases in percentage downsection)

Syenite

24.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug. 8 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-102 LOCATION Site #52 36W, 4+25N ELEVATION 308m

GEOLOGIST B. Rudnicki DRILLER G. Haug BIT NO. CR 70083 BIT FOOTAGE 43.5 - 66.5

MOVE TO HOLE 1:45 - 2:00

DRILL 2:00 - 4:45

MECHANICAL DOWN TIME _____

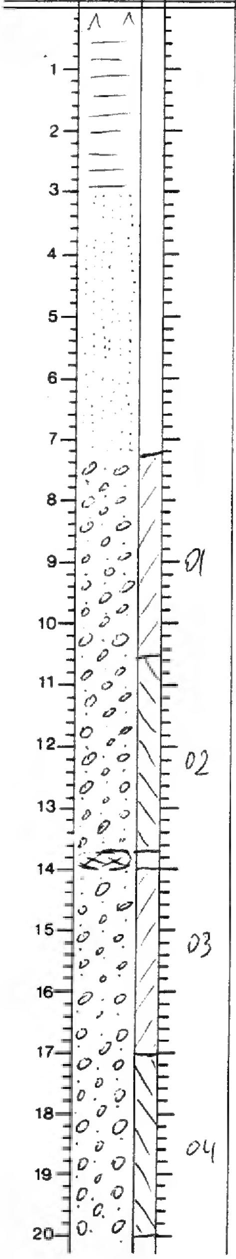
DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

Pg 1 of 2

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



0.0 - 0.5 Organics

0.5 - 21.5 Ojibway II sediments

0.5 - 3.0 beige, grey, pure, soft clay

3.0 - 7.2 fine to medium, grey beige sand

7.2 - 21.5 Gravel: medium to coarse grey beige sand matrix. Pebble and small cobble clasts of composition 60% volcs/seds - 40% granitoids.

10.5 No return. Pull rods to clean plugged bit

13.7 - 14.0 Boulder quartzite

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug. 8 19 88

SHIFT HOURS

_______ TO _______

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-102 LOCATION _______ ELEVATION _______

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						
			05							
1				215 - 23,0 Bedrock						
2				- pink - orange and white						
			06							
3				- coarse grained						
				- massive						
4				- 2-3% hematite stains						
5				- no visible sulphides						
6				Granitic intrusive						
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 9 1988

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-103 LOCATION Site #45 36W 13+50N ELEVATION 330 m

GEOLOGIST P. Collins DRILLER S. Hoving BIT NO. CB70083 BIT FOOTAGE 66.5 - 95.0

MOVE TO HOLE 4:45 - 5:00 (Aug 8)

DRILL 7:15 - 8:15

MECHANICAL DOWN TIME ____

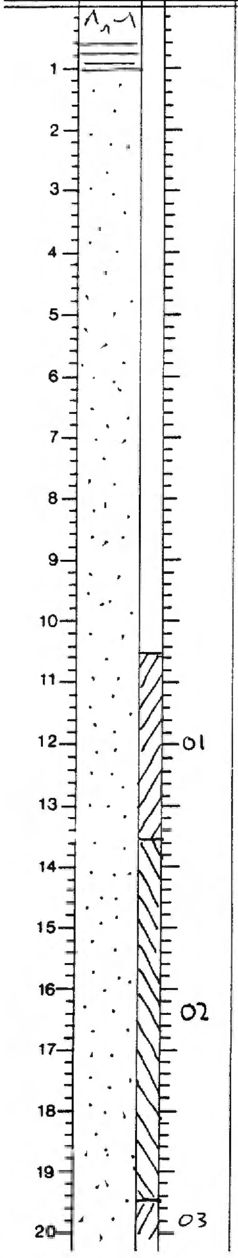
DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						



0.0 - 0.5 Organics

0.5 - 27.0 Ojibway II Sediments

(0.5 - 1.0) beige (oxidized), pure, soft clay

(1.0 - 13.0) beige sorted medium grained sand. below 4.0 m predominantly coarse sand beds

(13.0 - 21.0) beige, very fine and fine grained sand

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 9 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS _____

CONTRACT HOURS _____

HOLE NO PLS-88-103 LOCATION _____ ELEVATION _____

GEOLOGIST _____ DRILLER _____ BIT NO. _____ BIT FOOTAGE _____

MOVE TO HOLE _____

DRILL _____

MECHANICAL DOWN TIME _____

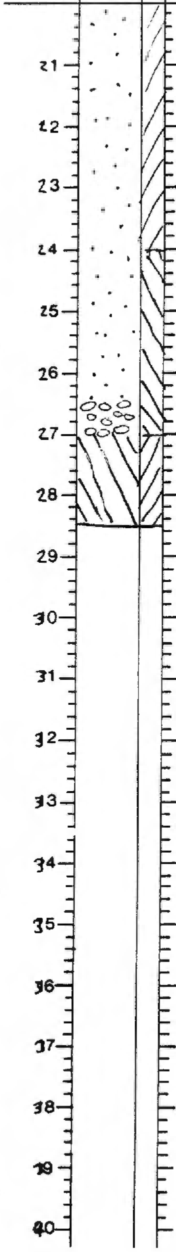
DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

Pg. 2 of 2

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



SAMPLE NO.:
03
04
05

(21.0 - 23.0) similar to 1.0 to 13.0

(23.0 - 26.5) similar to 13 -21.0 with occasional thin pebble bed

(26.5 - 27.0) Gravel : sorted medium sand matrix (beige in colour). Well rounded pebble clasts of approximate composition: 50% volcanics and sediments 50% Granitoids.

27.0 - 28.5 Bedrock

27.0 - 27.5 - dark grey to black fine & medium grained : massive, mafic intrusive at 27.5 there is a contact with Granitic rock evidenced in some rock chips

27.5 - 28.5 - greenish gray & pink ned to coarse grained, massive, no visible sulphides : Granitoid

28.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 9 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-104 LOCATION Site #52 32w, 35 ELEVATION 308m

GEOLOGIST P. Collin DRILLER G. Hoovey BIT NO. CB70683 BIT FOOTAGE 95.0-124.5m

MOVE TO HOLE 8:15 - 8:40

DRILL 8:40 - 9:30

MECHANICAL DOWN TIME

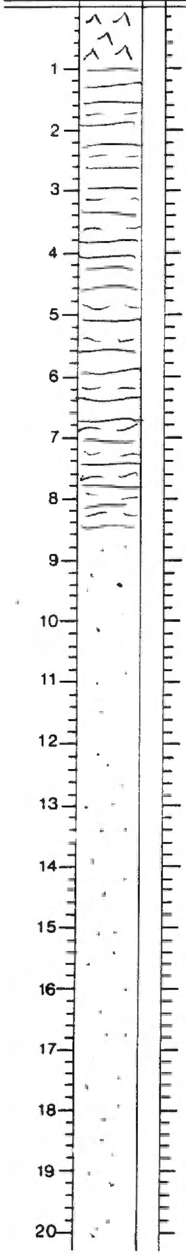
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg. 1 of 2

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



0.0 - 1.0 Organics

1.0 - 21.3 Ojibway II Sediment

(1.0 - 8.5) gray, pure, soft clay with silt interbeds

(8.5 - 13.0) grey, very fine sand silt

(13.0 - 21.3) beige, fine grained sand

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 9 1988

HOLE NO PLS-88-104 LOCATION ______ ELEVATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS ______ TO ______

MOVE TO HOLE ______

DRILL ______

TOTAL HOURS ______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

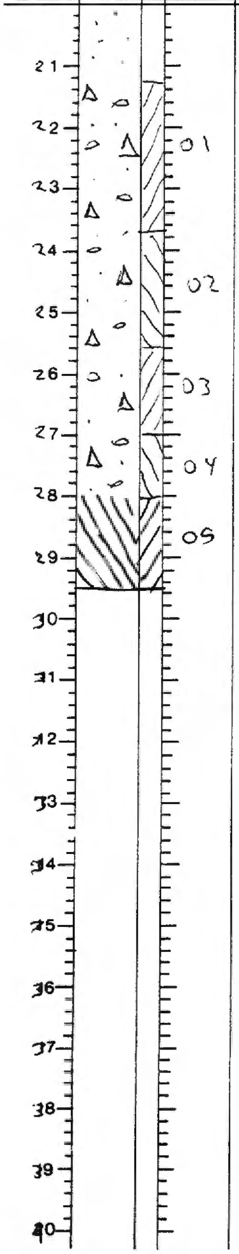
CONTRACT HOURS ______

OTHER ______

MOVE TO NEXT HOLE ______

Pg 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



21.3 - 28.0 <u>Chibougamau Till</u>

grey beige fie sand / silt matrix Pebble clasts of approximate composition: 40% volcanics and sediments ; 60% Granitoids

28.0 - 29.5 <u>Bedrock</u>

- pinkish orange & white
- coarse grained
- massive
- 3-5% light green epidote ?
- 1% disseminated sulphides
- granular texture
- dark mineral hornblend

Granitoid - (granodiorite)

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 9 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO RLS.88.105 LOCATION Site #54 36w.105 ELEVATION 305m

GEOLOGIST E. Rudnicki DRILLER G. Howg BIT NO. CB70005 BIT FOOTAGE 0.0 - 31.5

MOVE TO HOLE 9:30 - 9:45

DRILL 9:45 - 1:45

MECHANICAL DOWN TIME 1 hr replace hydraulique hoses

DRILLING PROBLEMS

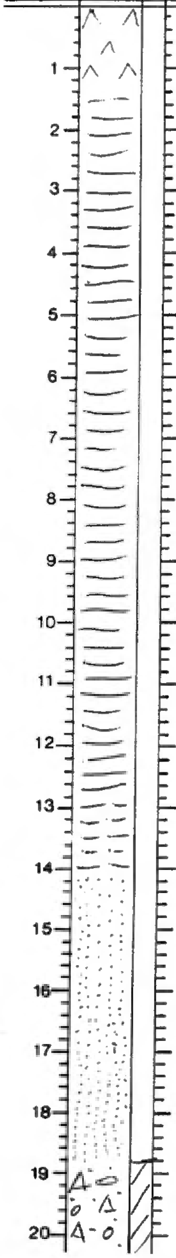
OTHER

MOVE TO NEXT HOLE

Pg 1 of 2

New bit

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



01

0.0 - 1.5 Organics

1.5 - 18.8 Ojibway II sediments

1.5 - 13.0 Gray, pure, soft, clay

13.0 - 14.0 Gray silt

14.0 - 18.8 Very fine to fine gray, beige sand

18.8 - 30.5 Chibougamau till fine, gray, beige, sand/silt matrix. Cobble and pebble clasts of composition 30% volc/sed - 70% granitoids

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 9 1988

SHIFT HOURS

_______ TO _______

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-105 LOCATION _______ ELEVATION _______

GEOLOGIST B. Rudnicki DRILLER G. Hong BIT NO. _______ BIT FOOTAGE _______

MOVE TO HOLE _______

DRILL _______

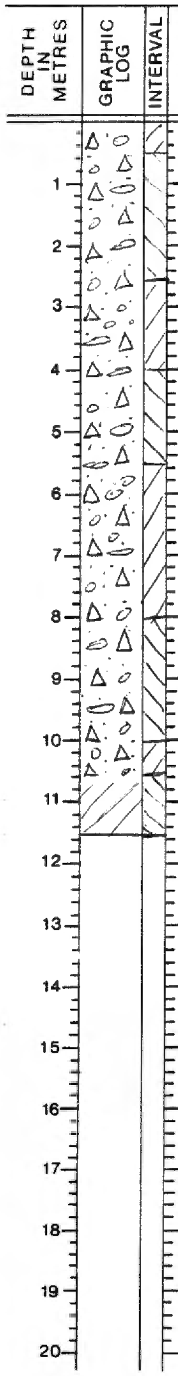
MECHANICAL DOWN TIME _______

DRILLING PROBLEMS _______

OTHER _______

MOVE TO NEXT HOLE _______

Pg 2 of 2



SAMPLE NO.	DESCRIPTIVE LOG
01	22.0 - 23.0 Sorted section; matrix in second and third sample appears slightly sorted
02	
03	clasts composition changes to aprox. 50/50 below 24.0m
04	
05	26.6 - 29.5 Gritty clay lumps in matrix. Poor return.
06	30.0 pull rods; bit plugged
07	
08	30.5 - 31.5 Bedrock - pink orange - coarse grained - massive - occasional quartz veins Granitic intrusive

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 9. 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-106 LOCATION Site #53 44w 5s ELEVATION 307 m

GEOLOGIST P. Collins DRILLER G. Howg BIT NO. CBS ~~7000S~~ BIT FOOTAGE 31.5-60.0

MOVE TO HOLE 1:45-2:00

DRILL 2:00 - 3:15

MECHANICAL DOWN TIME

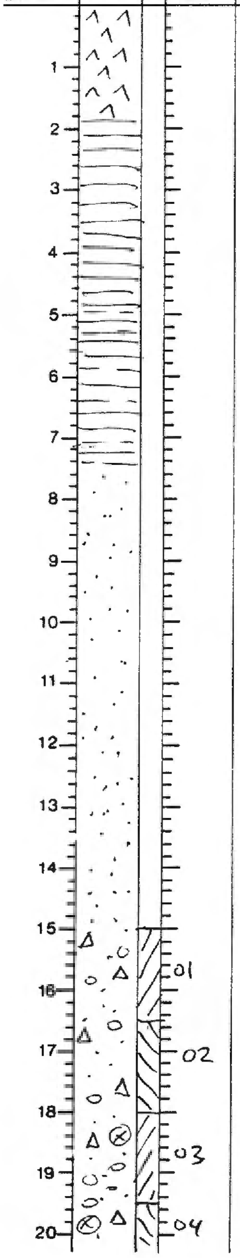
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						



0.0 - 1.8 Organics

1.8 - 15.0 Ojibway II Sediments

(1.8 - 7.5) grey, pure, soft clay with silt interbeds.

(7.5 - 11.0) grey beige very fine to fine grained sand

(11.0 - 15.0) as above with medium and coarse sand interbeds.

15.0 - 27.2 Chibougamau Till

- distinct contact with overlying seds. grey beige fine sand silt matrix Pebble clasts of approximate composition: 60% volcanics and sediments; 40% Granitoids.

- below 18.0 m there is minor grey gritty clay in matrix also cobble clasts of composition: 80% volcanics and sediments; 20% Granitoids.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 9 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PCS-88-106 LOCATION _____ ELEVATION _____

GEOLOGIST _____ DRILLER _____ BIT NO. _____ BIT FOOTAGE _____

MOVE TO HOLE _____

DRILL _____

MECHANICAL DOWN TIME _____

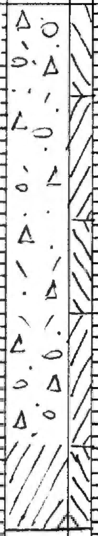
DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

Pg. 2 of 2

GRAPHIC LOG / INTERVAL



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

DESCRIPTIVE LOG

24.5 - 27.2 hard compact slightly gritty clay in matrix

27.2 - 28.5 Bedrock

- dark green
- fine to med. grained
- massive
- silicified ~20% qtz veins of disseminated
- 1% disseminated sulphides

mafic intrusive.

28.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 9,10 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-107 LOCATION Site #55 20w, 12+50S ELEVATION 308m

GEOLOGIST P.Collin DRILLER G.Hawg BIT NO. CB 70005 BIT FOOTAGE 60.0-83.8

MOVE TO HOLE 3:15 - 3:45 (Aug 9)

DRILL 3:45 - 5:00 (Aug 9) 7:15 - 8:45 (Aug 10)

MECHANICAL DOWN TIME _____

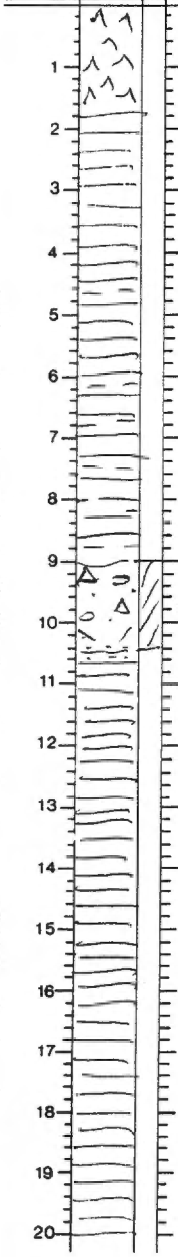
DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



01

0.0 - 1.5 Organics

1.5 - 9.0 Ojibway II Sediments

grey, pure, soft clay with silt interbeds

9.0 - 10.4 Chibougamau Till

grey beige fine sand/silt matrix
Pebble clasts of composition: 60% Volcanics and Sediments; 40% Granitoids.

10.0 - 10.4 gradational contact into Missinaibi Seds. Till becomes very clay rich; compact, hard slightly gritty clay lumps.

10.4 - 22.0 Missinaibi Sediments

grey, pure, compact, hard, tough clay. Very hard to drill

at 16.5 end of hole for Aug 9, 88

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 9, 10 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-107 LOCATION Site #55 20w, 12+50S ELEVATION _____

GEOLOGIST _____ DRILLER _____ BIT NO. _____ BIT FOOTAGE _____

MOVE TO HOLE _____

DRILL _____

MECHANICAL DOWN TIME _____

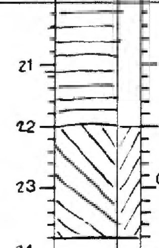
DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

Pg. 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



02

22.0 - 23.8 Bedrock
- pinkish red.
- coarse grained
- massive
- 5-7% hematite stain
- ≤ 1% sulphides

Granitoid - syenite.

23.8 E.O.H.

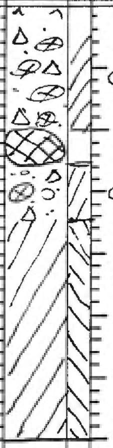
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 10 1988
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PCS.88-108 LOCATION Site#29 8W, 5S ELEVATION 322m
GEOLOGIST P. Collin DRILLER S. Hong BIT NO. SB70046 BIT FOOTAGE 0.0 - 7.0
MOVE TO HOLE 8:45 - 9:00
DRILL 9:00 - 10:15
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

New Bit.

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
1			01	
3			01	
5			02	
7				

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

0.0 - 0.2 Organics

0.2 - 3.5 Chibougamau Till?
slightly unsorted ochre fine sand matrix (very difficult to determine due to poor return) Very Cobbly : clast composition approximately 50% volcanics and sediments; 50% Granitoids
2.0 - 2.6 Boulder Gabbro
2.6 - 3.5 similar to 0.2 - 2.0

3.5 - 7.0 Bedrock
- pinkish red
- coarse grained
- massive structure
- granular
- 5% hematite stain
- no visible sulphides

Granitoid Syenite?

7.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

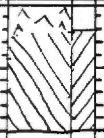
DATE Aug 10 1988

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO PLS-88-109 LOCATION Site #31 OW, 13+25S elev. 333m
GEOLOGIST P. Collins DRILLER G. Howg BIT NO. CB70006 BIT FOOTAGE 7.0 - 9.0
MOVE TO HOLE 10:15 - 10:36
DRILL 10:30 - 11:15
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
1			01	0.0 - 0.4 Organics - appeared to be thin layer of beige sand under organics
2				0.4 - 2.0 BEDROCK - pinkish white - coarse grained - massive - 5% hematite - no visible sulphides Granitoid - Syenite 2.0 E.O.H.
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 Aug. 17 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-110 LOCATION Site #30 4w, 17+50 ELEVATION 308 m

GEOLOGIST B. Rudnicki DRILLER G. Haug BIT NO. CB 70006 BIT FOOTAGE 55.7 - 77.7

MOVE TO HOLE 11:00 - 12:15

DRILL 12:15 - 2:00

MECHANICAL DOWN TIME

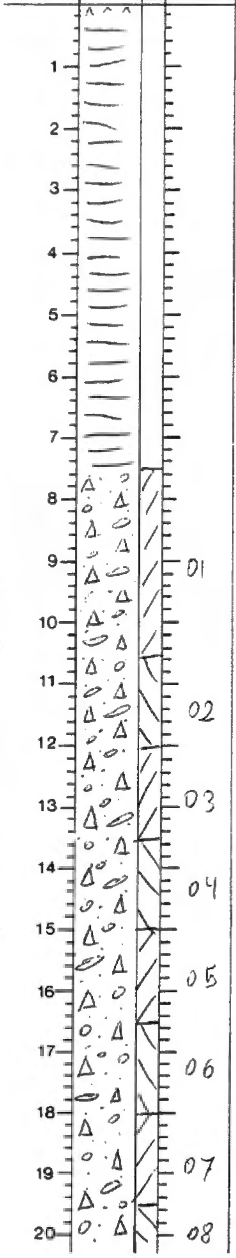
DRILLING PROBLEMS

OTHER Pull out GT

MOVE TO NEXT HOLE

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 0.2 Organics

0.2 - 7.5 Ojibway II sediments: grey, pure, soft clay

7.5 - 22.0 Chibougamau till: fine grey-beige sand/silt matrix cobble clasts of composition 70% volcs/seds - 30% granitoids

Samples 1 and 8 are taken over longer intervals due to poor return

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug. 10 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS 88-110 LOCATION _____ ELEVATION _____

GEOLOGIST _____ DRILLER _____ BIT NO. _____ BIT FOOTAGE _____

MOVE TO HOLE _____

DRILL _____

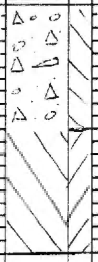
MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

Pg 2 of 2



DEPTH IN METRES	SAMPLE NO.	DESCRIPTIVE LOG
1	08	22.0 - 24.0 Bedrock
2		- violet, pink - coarse grained
3	09	- massive
4		- no visible sulphides
5		granitic intrusive
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 Aug 10 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-111 LOCATION Site #57 20E, 24+75N elev. 308m

GEOLOGIST P. Collins DRILLER G. Howg BIT NO. CB70006 BIT FOOTAGE 79.7-98.3

MOVE TO HOLE 2:00 - 2:45

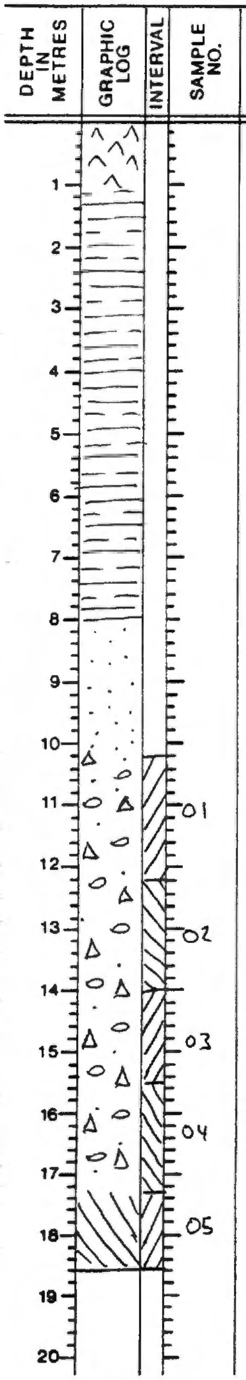
DRILL 2:45 - 3:30

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE



DESCRIPTIVE LOG

0.0 - 1.0 Organics

1.0 - 10.2 Ojibway Sediments

(1.0 - 8.0) grey, pure, soft clay and silt.

(8.0 - 10.2) very fine to fine grey sand.

10.2 - 17.3 Chibougaman Till

grey ~~beige~~ fine sand / silt matrix

Pebble clasts of approximate composition: 50% Volcanics & Sediments; 50% Granitoids.

17.3 - 18.6 Bedrock

- pinkish violet
- coarse grained
- massive
- 3-5% hematite stain
- pred. mineral K-spar
- no visible sulphides

Syenite.

18.6 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 10 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-112 LOCATION Site #5C 28E, 18+75N elev. 308m

GEOLOGIST P. Collins DRILLER G. Hong BIT NO. C070006 BIT FOOTAGE 9.8.3-115.8

MOVE TO HOLE 3:30 - 3:50

DRILL 3:50 - 4:45

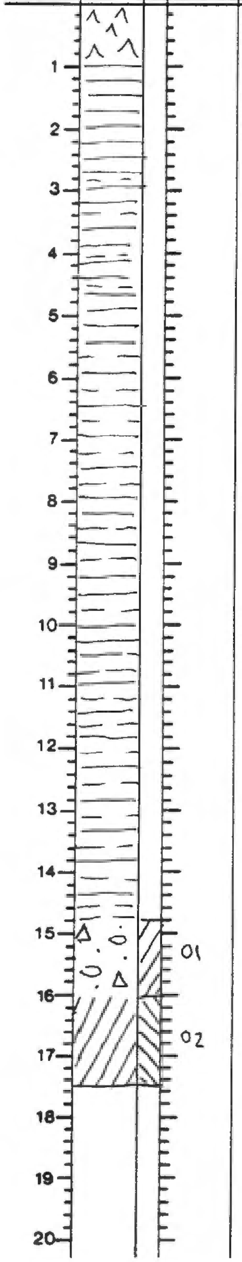
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

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



DESCRIPTIVE LOG

0.0 - 1.0 Organics

1.0 - 14.8 Ojibway II Sediments

grey beige, pure, soft clay with silt interbeds.

14.8 - 16.0 Chibougamau Till

grey beige fine sand silt matrix
Pebble clasts of approximate composition: 60% volcanics and sediments; 40% Granitoids

16.0 - 17.5 Bedrock

- pinkish orange
- coarse grained
- massive
- 20% hornblend
- 5-10% hematite stain
- granular texture
- no visible sulphides

Granitoid - syenite

17.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 11 1988

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-113 LOCATION Site # 58 28E, 7+25N ELEVATION 310 m

GEOLOGIST P. Collins DRILLER G. Hong BIT NO. CB 70006 BIT FOOTAGE 115.8 - 129.

MOVE TO HOLE 4:45 - 5:10 Aug 10

DRILL 7:15 - 8:15 Aug 11

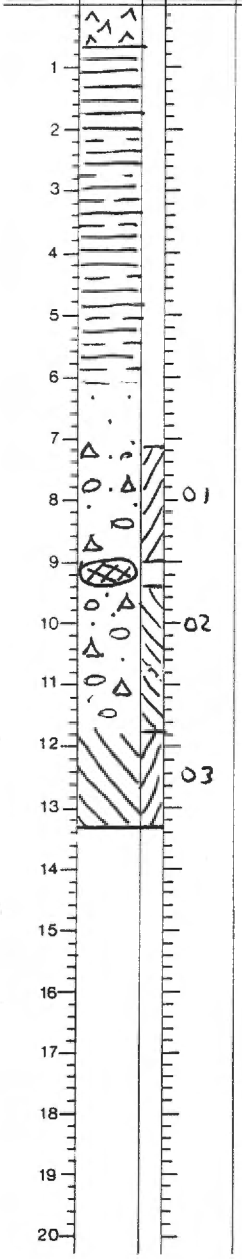
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER Travel 5:10 - 6:00 Aug 10 ; 6:30 - 7:15 Aug 11

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 0.5 Organics

0.5 - 7.2 Ojibway II Seds

(0.5 - 6.0) grey beige, pure, soft clay with silt interbeds

(6.0 - 7.2) grey very fine to fine grained sand

7.2 - 11.8 Chibougamau Till

beige grey fine sand/silt matrix. Pebble and small cobble clasts of composition: 50% volcanics and sediments; 50% Granitoids

(9.0 - 9.4) Boulder - granodiorite

11.8 - 13.2 Bedrock

- dark green
- medium grained
- massive
- thin 1-2 cm granitoid bands (minor hematite stain)
- 5-7% apple green epidote c̄ minor carbonate; occurs in laminae & veinlets
- silicified (hard to drill)
- no visible sulphides

Mafic intrusive

13.2 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 11 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

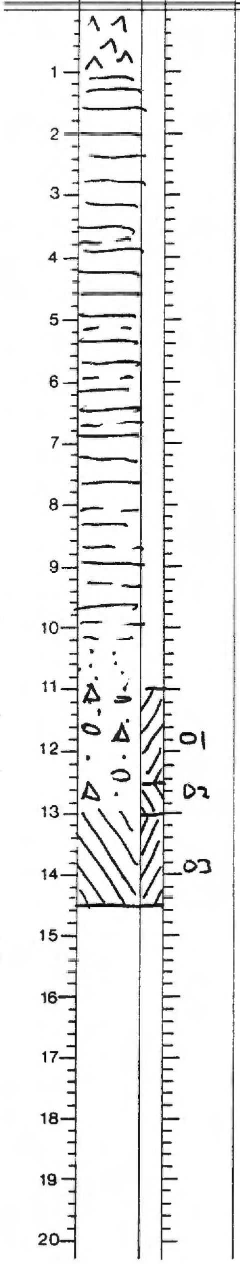
_____

CONTRACT HOURS

_____

HOLE NO PLS-88-114 LOCATION Site #59 20E 5+25N ELEVATION 308m
GEOLOGIST P. Collins DRILLER S. Howg BIT NO. CB79104 BIT FOOTAGE 0.0 - 14.5
MOVE TO HOLE 8:15 - 8:30
DRILL 8:30 - 9:15
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 1.0 Organics

1.0 - 11.0 Ojibway II Sediments

(1.0 - 10.0) grey beige, pure, soft clay with silt interbeds

(10.0 - 11.0) very fine to fine grained grey sand

11.0 - 13.0 Chibougamau Till

grey beige, fine sand / silt matrix. Pebble and small cobble clasts of composition:
30% Volcanics and sediments
70% Granitoids.

13.0 - 14.5 Bedrock

- light and dark green & pinkish white
- medium / coarse grained
- massive
- dark minerals pyroxene & magnetite (magnetic)
- trace hematite

Granitoid -

14.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 11 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-115 LOCATION Site # 60 12E 9+50S elev. 310m

GEOLOGIST P. Collin DRILLER G. Hoag BIT NO. CB79104 BIT FOOTAGE 14.5-17.5

MOVE TO HOLE 9:15-9:30

DRILL 9:30-10:00

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
1			01	
2			02	
3				
4				
5				
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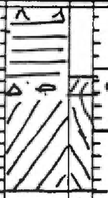
18				
19				
20				



0.0 - 0.2 Organics

0.2 - 1.2 Ojibway II Sediments

grey beige, pure, soft clay

1.2 - 1.5 Chibougamau Till ?

beige (oxidized) fine sand matrix. Pebble clasts of approximate composition: 50% volcanics & sediments; 50% Granitoids.

1.5 - 3.0 Bedrock

- dark green
- fine to medium grained
- massive
- silicified (very hard)
- quartz eyes below 2.0m
- no visible sulphides

Mafic intrusive - Gabbro.

3.0 E.O.H.

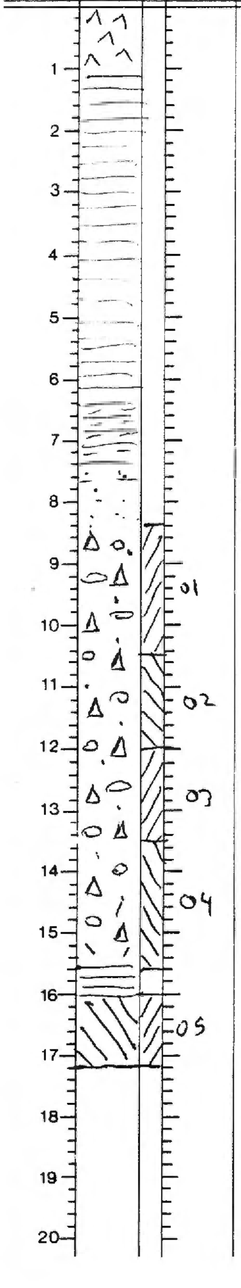
OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 11 1988
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLS-88-116 LOCATION Site #61 8E 4+50N ELEVATION 308 m
GEOLOGIST P. Collins DRILLER G. Hong BIT NO. CB79104 CB79105 BIT FOOTAGE 17.5 - 31.0 0.0 - 3.7
MOVE TO HOLE 10:00 - 10:15
DRILL 10:15 - 11:30
MECHANICAL DOWN TIME ____
DRILLING PROBLEMS ____
OTHER ____
MOVE TO NEXT HOLE ____

New bit
New sub

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 1.0 Organics

1.0 - 8.4 Ojibway II Sediments

(1.0 - 7.5) grey, pure, soft clay with silt interbeds below 6.0m

(7.5 - 8.4) grey very fine to fine grained sand

8.4 - 15.6 Chibougamau Till

initially slightly sorted beige grey fine sand / minor silt matrix
Pebble & cobble clasts of composite:
40% Volcanics and sediments;
60% Granitoids
(15.0 - 15.6) ~~slightly~~ gritty to pure hard compact clay lumps in matrix

15.6 - 16.0 MISSINAIBI SEDIMENTS

grey, very hard, compact pure clay

* note at 13.5 pull rods to change bit. lose two rods (threads broke) move ahead 1m & redrill.

16.0 - 17.3 BEDROCK

- dark green
- medium grained
- massive structure
- trace hematite stain
- trace epidote
- silicified
- Gabbro

17.3 E.O.H.

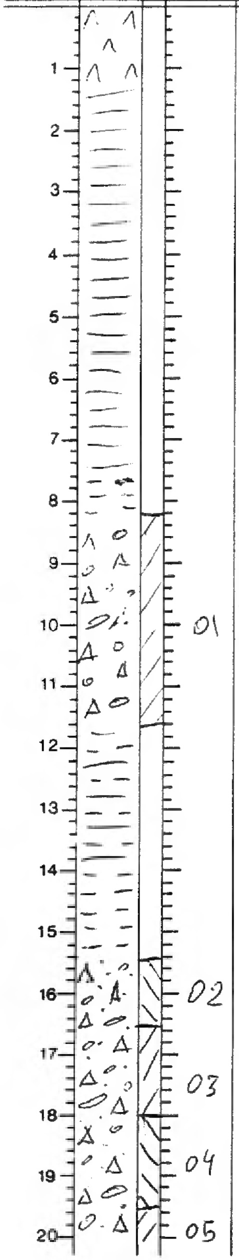
OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 11 1988
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLS-88-117 LOCATION Site #62 4E, 9N ELEVATION 309 m
GEOLOGIST B. Rudnicki DRILLER G. Hoing BIT NO. CB79105 BIT FOOTAGE 3.7-34.7
MOVE TO HOLE 11:30 - 11:40
DRILL 11:40 - 1:45
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

Pg 1 of 2

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



0.0 - 1.5 Organics

1.5 - 8.2 Ojibway II sediments

1.5 - 7.6 grey, pure, soft clay

7.6 - 8.2 grey silt

8.2 - 11.6 Chibougamau till: fine, grey-beige, sand/silt matrix. Pebble and small cobble clasts of composition 60% volcanics/sediments - 40% granitoids

Gritty clay lumps below 10.0 m

Missinaibi sediments

11.6 - 15.4 clay and silt. pure, hard, compact, grey clay with silt interbeds: Below 14.0 m, Predominantly silt to very fine sand downsection.

15.4 - 28.5 lower till fine grey-beige, sand/silt matrix. cobble and pebble clasts of composition 70% volcanics/sediments - - 30% granitoids

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO RLS-88-117 LOCATION ______ ELEVATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

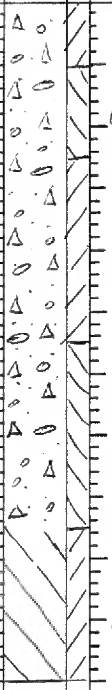
MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

Pg 2 of 2



DEPTH IN METRES	SAMPLE NO.	DESCRIPTIVE LOG
	05	Between 18.7 - 19.6 and
21		
22	06	20.8 - 21.2 gritty clay lumps
23		Due to poor return samples
24	07	1, 7 and 8 are taken over
25		longer interval
26		
27		28.5 - 31.0 Bedrock
28	08	- dark grey to black and reddish brown
29		- fine to medium grained
30	09	- weakly foliated - soft to drill
31		- > 20% hematite and FeO stain
12		- 3-5% magnetite
13		- 2-3% carbonate
14		- ≤ 1% sulphides
15		
16		
17		31.0 E.O.H.
18		
19		
20		

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 11 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-118 LOCATION Site #63 1w, 17N elev 307m

GEOLOGIST P Collin DRILLER G. Hong BIT NO. CB79105 BIT FOOTAGE 34.7 - 48.7

MOVE TO HOLE 1:45 - 2:15

DRILL 2:15 - 3:00

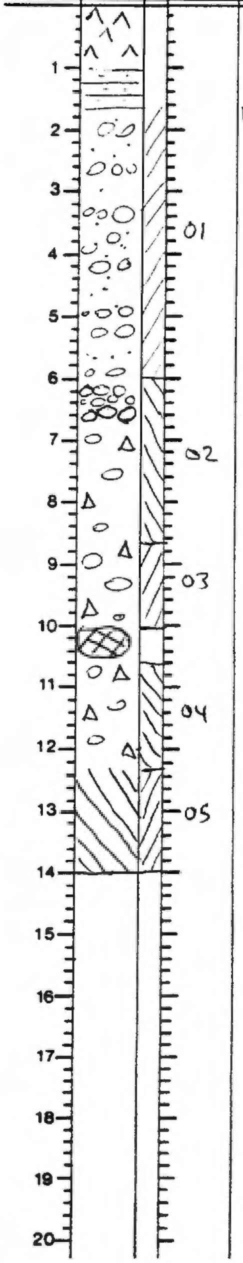
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

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



0.0 - 1.0 Organics

1.0 - 6.5 Ojibway II Sediments

to 1.5 grey soft, slightly gritty

1.5 - 6.0 Pebble sand: beige - oxidized fine sand matrix. Pebble clasts: 50% Volcanics and sediments 50% Granitoids

6.0 - 6.5 Gravel: beige ochre medium sand matrix. Abundant return on +10 Pebble/cobble clasts of similar composition to 1.5-6.0

6.5 - 12.4 Chibougamau Till

grey beige fine sand / silt matrix Pebble cobble clasts of approximate composition: 25% Volcanics & Sediments; 75% Granitoids

(10.0 - 10.5) boulder - granitoid

(10.5 - 12.4) clast composition changes to 90% Granitoids 10% volcanics & sediments. otherwise till similar to above

12.4 - 14.0 Bedrock

- dark green
- fine grained
- initially very soft
- pinkish alkalic bands below 13.0
- 2-3% hematite and FeO stain
- qtz rich downsection
- no visible sulphides

14.0 E.O.H. Intermediate to mafic intrusive

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 11 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-119 LOCATION Site#64 4W, 14.7SN ELEVATION 307 m

GEOLOGIST P. Collins DRILLER G. Howg BIT NO. CB79105 BIT FOOTAGE 48.7-67.7

MOVE TO HOLE 3:00 - 3:15

DRILL 3:15 -4:00

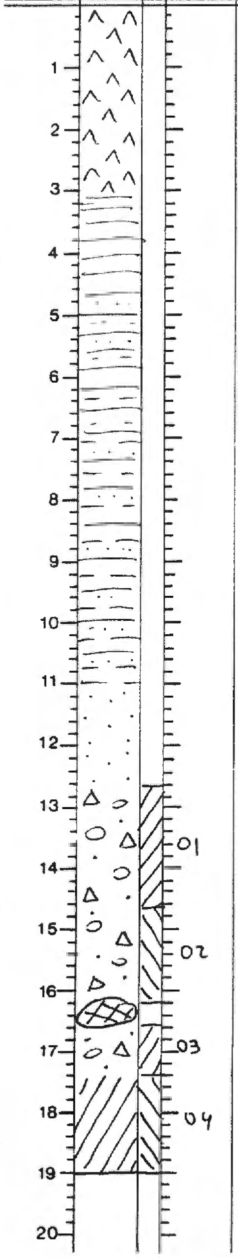
MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

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



0.0 - 3.0 Organics

3.0 - 12.6 Ojibway II Sediments

(3.0 - 11.0) grey, soft clay with very fine sand / silt interbeds.

(11.0 - 12.6) beige grey very fine to fine sand

12.6 - 17.4 Chibougamau Till

grey beige fine sand / silt matrix. Pebble clasts of approximate composition: 60% volcanics and sediments; 40% Granitoids.

- very cobbly below 15.5 m

(16.2 - 16.5) Boulder - granite

(16.5 - 17.4) similar to 12.6 to 16.2

* note sample #03 may appear somewhat sorted due to abundant -10 mesh cuttings

17.4 - 19.0 Bedrock

- light & med. green
  dark green below 18.5 m
- Fine & coarse grained
- massive structure
- silicified (hard to drill)
- porphyritic texture
- 1-2% hematite FeO stain
- OB. contamination in sample

Gabbroic

19.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 11 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-120 LOCATION Site #65 6W, 12N ELEVATION 307m

GEOLOGIST P Collins DRILLER G. Hong BIT NO. CB79106 BIT FOOTAGE 0.0 - 26.2

MOVE TO HOLE 4:00 - 4:10

DRILL 4:10 - 5:15

MECHANICAL DOWN TIME

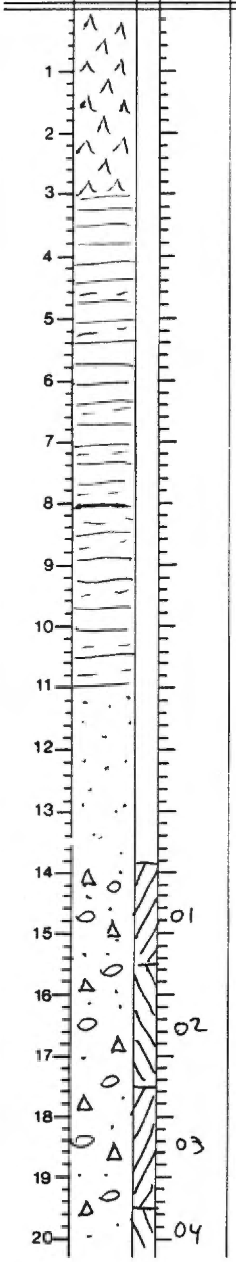
DRILLING PROBLEMS

OTHER Travel 5:15 to 6:00 to camp.

MOVE TO NEXT HOLE

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 3.0 Organics

3.0 - 13.8 Ojibway II Sediments

(3.0 - 11.5) grey, pure, soft clay with silt interbeds

(11.5 - 13.8) grey beige very fine to fine grained sand

13.8 - 25.0 Chibougamau Till

beige grey fine sand / silt matrix pebble and small cobble clasts of composition: 50% volcanics and sediments; 50% Granitoids

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 11 19 88

HOLE NO PLS-88-120 LOCATION ______ ELEVATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

SHIFT HOURS

______ TO ______

MOVE TO HOLE ______

DRILL ______

TOTAL HOURS

______

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

CONTRACT HOURS

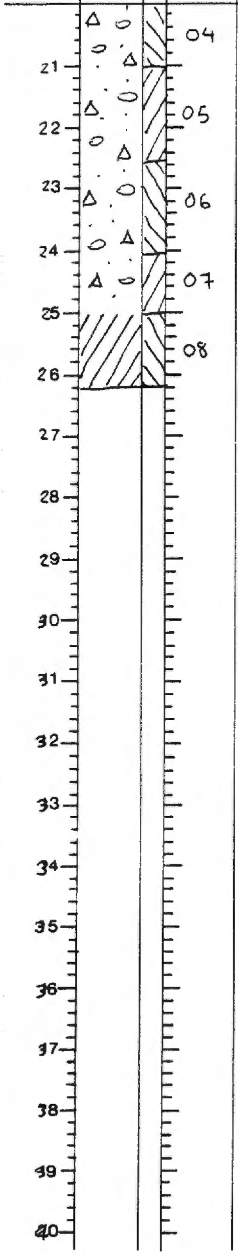
______

OTHER ______

MOVE TO NEXT HOLE ______

Pg. 2 of 2

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



DESCRIPTIVE LOG

25.0 - 26.2 Bedrock

- medium green
- fine grained
- weak foliatn & massive
- carbonatized ≃ 5%
- mafic bands below 25.6
dark green in colour
- also more quartz rich: veinlets
& disseminated - below 25.6
- no observed sulphides

* initial 0.3m appeared to be altered
mafic volcanic
below 25.0m Gabbroic.

26.2 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 12 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-121 LOCATION Site #81 16W, 15N ELEVATION 310 m

GEOLOGIST P. Colli DRILLER G. Hong BIT NO. CB79106 BIT FOOTAGE 26.2-63.6

MOVE TO HOLE 7:00 - 7:15

DRILL 7:15 - 9:40

MECHANICAL DOWN TIME _____

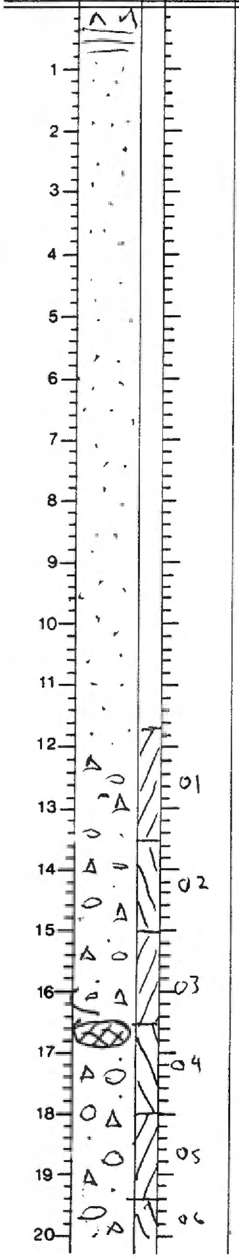
DRILLING PROBLEMS _____

OTHER Travel 6:30 - 7:00 camp to drill

MOVE TO NEXT HOLE _____

Pg 1 of 2

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



0.0 - 0.5 Organics

0.5 - 12.2 Ojibway II Sediments

(0.5 - 1.0) beige, pure, soft clay

(1.0 - 12.2) predominantly beige fine sand with medium sand below 5.0 and coarse sand beds below 8.0m

12.2 - 23.2 Chibougamau Till

grey beige fine sand/silt matrix pebble and cobble clasts of composition: 60% Volcanics & sediments; 40% Granitoids

* minor coarse sand mix in sample #01

16.5 - 16.9 Boulder - gabbro

- Cobbly below 15.5m

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 12 19 88

SHIFT HOURS
____ TO ____

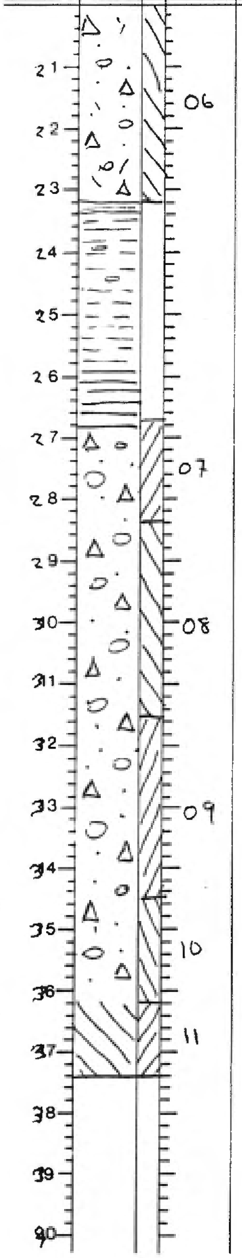
TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-121 LOCATION Site #81 ELEVATION ____
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



sample #06 taken over longer interval due to less return

- minor grey gritty clay in matrix below 21.8 (increases downsection).

23.2 - 26.8 Missinaibi Sediments

(23.2 - 23.4) pure, hard, compact grey clay

(23.4 - 25.8) mostly silt & very fine sand with occasional small pebble clast

(25.8 - 26.8) similar to 23.2 to 23.4.

26.8 - 36.2 Lower Till

grey beige fine sand silt and gritty grey clay matrix
Cobble clasts of composition:
80% Volcanics and sediments;
20% Granitoids

#08, 09 longer sample interval due to less return: matrix more clay rich

36.2 - 37.4 Bedrock
- dark greenish grey
- Fine grained
- massive
- silicified (disseminated qtz)
- ~1% disseminated sulphides

Mafic intrusive

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 12 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PCS-88-122 LOCATION Site #66 16W, 2N ELEVATION 307m

GEOLOGIST P. Collins DRILLER G. Henry BIT NO. C370108 BIT FOOTAGE 0.0-36.0

MOVE TO HOLE 9:40-10:00

DRILL 10:00 - 1:30

MECHANICAL DOWN TIME

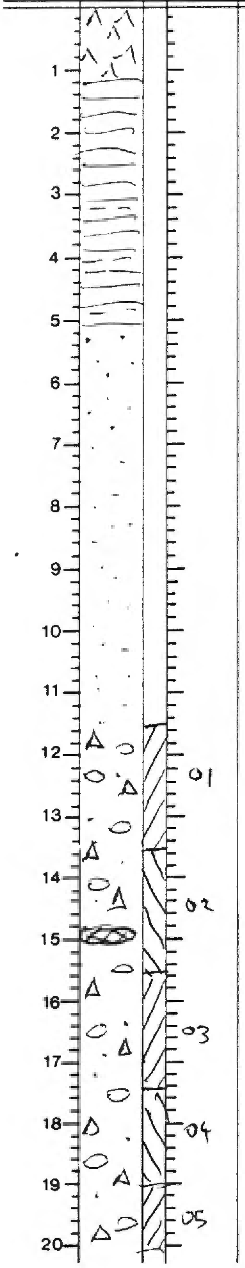
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

New Bit

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 1.2 Organics

1.2 - 11.5 Ojibway II Sediments

(1.2 - 5.0) grey, pure, soft, clay with silt interbeds

(5.0 - 11.5) very fine to fine grained beige grey sand

11.5 - 34.8 Chibougamau Till

grey beige fine sand / silt matrix (initially somewhat sorted). Cobble clasts of composition: 60% Volcanics and sediments; 40% Granitoids

(12.8 - 13.2) sorted medium grained sand bed

(14.8 - 15.1) Boulder Gabbro

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 12 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-122 LOCATION Site #66 ELEVATION _____

GEOLOGIST _____ DRILLER _____ BIT NO. _____ BIT FOOTAGE _____

MOVE TO HOLE _____

DRILL _____

MECHANICAL DOWN TIME _____

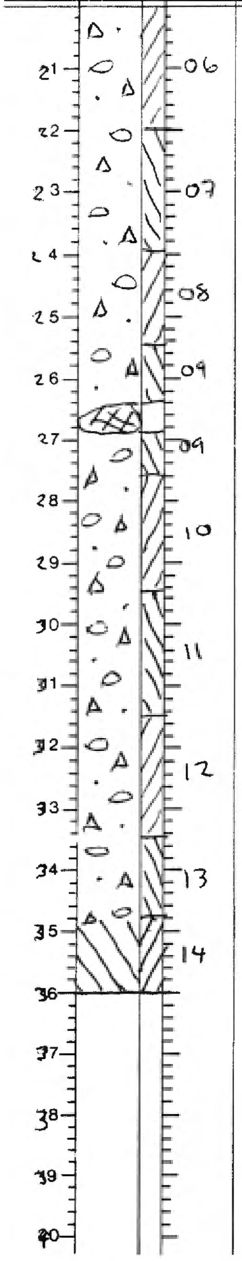
DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

Pg 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



20.0 - 20.4 Boulder - Gabbro

20.4 - 22.8 Till as previously

22.8 - 23.0 thin sorted medi
sand bed

23.0 - 26.7 till as above

26.7 - 26.7 Boulder - granodiorite

26.7 - 34.8 Till

34.8 - 36.0 <u>Bedrock</u>

- light to medium grained
- fine grained
- tuffaceous texture
- silicified (hard to drill)
- 3-5% quartz/carbonate stringers
- ≤1 % sulphides

Volcanic Tuff

36.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 12 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO BLS-88-123 LOCATION Site #67 8w, 45 ELEVATION 307 m

GEOLOGIST B. Ruduicki DRILLER G. Howy BIT NO. CRZ0108 BIT FOOTAGE 360 - 63.0

MOVE TO HOLE 1:30 - 1:45

DRILL 1:45 - 3:45

MECHANICAL DOWN TIME

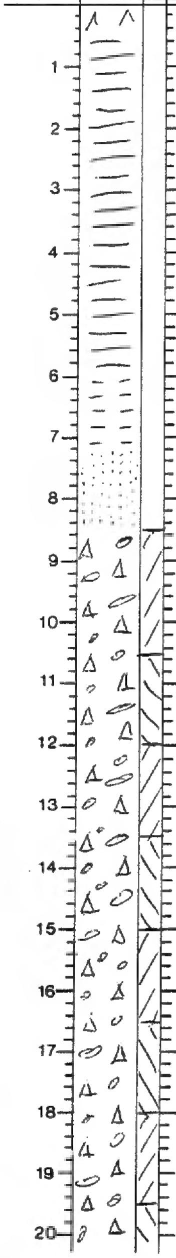
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



01
02
03
04
05
06
07
08

0.0 - 0.5 Organics

0.5 - 8.5 Ojibway II sediments

0.5 - 6.0 grey, pure, soft clay

6.0 - 7.2 grey silt

7.2 - 8.5 fine, grey sand

8.5 - 25.8 Chibougamau till

Fine, grey-beige, sand/silt matrix. Pebble and small cobble clasts of composition 60% volcanics/sediments - 40% gran.

Samples 3 and 4 matrix appears slightly sorted due to sorted sections between 11.8-14.0

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO P15-88-123 LOCATION ________ ELEVATION ________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ________

DRILL ________

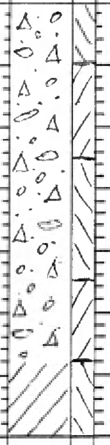
MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

OTHER ________

MOVE TO NEXT HOLE ________

Pg 2 of 2



DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			08	25.8 - 27.0 Bedrock
1				
			09	- green
2				
				- fine grained
3				- massive
			10	
4				- carbonatized 10% - 15%
5				- silicified
			11	- non visible sulphides
6				
			12	- Hard to drill
7				
8				Mafic volcanic
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 12 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO RLS-88-124 LOCATION Site #80 4w, 13s ELEVATION 307 m

GEOLOGIST B Rudnicki DRILLER G. Howy BIT NO. CB70108 BIT FOOTAGE 83.0-84.3

MOVE TO HOLE 3:45 - 4:00

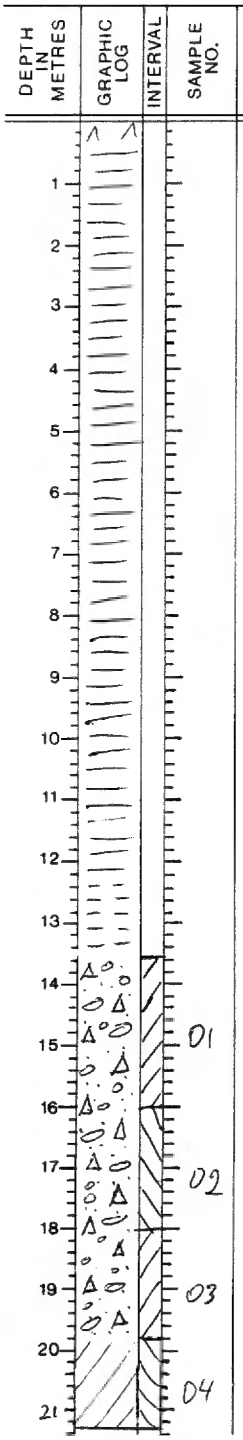
DRILL 4:00 - 5:15

MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____



DESCRIPTIVE LOG

0.0 - 0.5 Organics

0.5 - 13.5 Ojibway II sediments

0.5 - 12.4 grey, pure, soft clay

12.4 - 13.5 grey silt

13.5 - 19.8 Chibougamau till

Fine. grey-beige sand/silt matrix

Pebble and small cobble clasts

of composition 70% volcanics/

sediments - 30% granitoids

13.5 - 16.0 slightly sorted section

19.8 - 21.3 Bedrock

- dark grey-green
- very fine grained
- foliated
- silicified
- 10%-15% carbonatized

Volcanic

21.3 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 13 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PCS-88-125 LOCATION Site #76 4w 23S ELEVATION 307m

GEOLOGIST P. Collins DRILLER G. Houg BIT NO. CB70108 BIT FOOTAGE 20-6.5

MOVE TO HOLE 7:15-7:30

DRILL 7:30 -

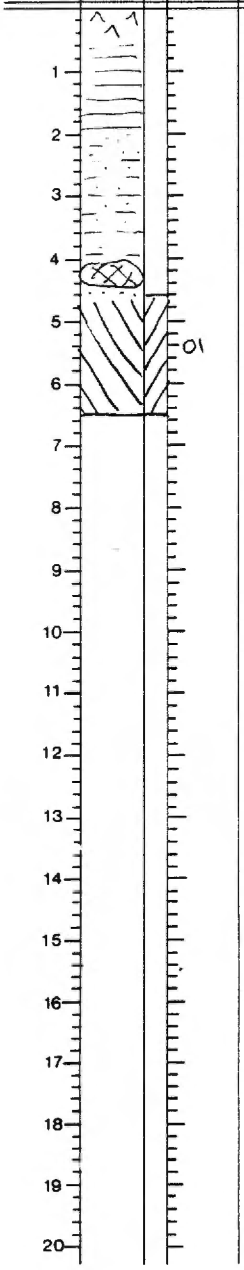
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER Travel: 6:30-7:15 from camp to drill

MOVE TO NEXT HOLE

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



0.0 - 0.5 Organics

0.5 - 4.6 Ojibway II Sediments

(0.5 - 2.0) beige grey, pure, soft clay.

(2.0 - 4.0) beige grey very fine sand silt.

(4.0 - 4.5) Boulder - intermediate intrusive

(4.5 - 4.6) fine sand & few pebbles

4.6 - 6.5 Bedrock

- dark grey & ochre
- fine grained
- well foliated
- enriched in hematite & FeO stain
- > 30% magnetite
- occasional dark green mafic bands below 5.3m
- carbonatized.

Fe Formation

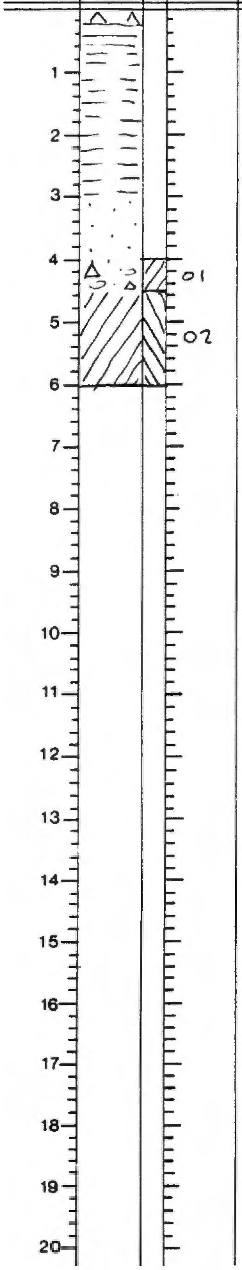
6.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 13 19 88
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO PLS-88-126 LOCATION Site #78 16W, 26S ELEVATION 307m
GEOLOGIST P. Collins DRILLER G. Hewg BIT NO. CB70108 BIT FOOTAGE 6.5 - 12.5
MOVE TO HOLE 8:00 - 8:15
DRILL 8:15 - 8:50
MECHANICAL DOWN TIME
DRILLING PROBLEMS
OTHER
MOVE TO NEXT HOLE

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



0.0 - 0.2 Organics

0.2 - 4.0 Ojibway II Sediments
(0.2 - 0.5) beige, pure, soft clay
(0.5 - 3.0) grey silt
(3.0 - 4.0) very fine beige grey sand

4.0 - 4.5 Chibougamau Till
grey beige fine sand / silt matrix
Pebble clasts of approximate composition: 60% Volcanics and sediments; 40% Granitoids

4.5 - 6.0 Bedrock
- initially grey-white
- fine grained
- massive
- silicified
- 5% carbonate
- occasional very thin greenish chloritic bands
- < 1% sulphides

Rhyolite-Felsic Volcanic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 13 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-127 LOCATION Site #79, 20W 22+50S ELEVATION ______

GEOLOGIST R. Rudnicki DRILLER G. Mowy BIT NO. CB70108 BIT FOOTAGE 12.5 - 24.7

MOVE TO HOLE 8:45 - 9:00

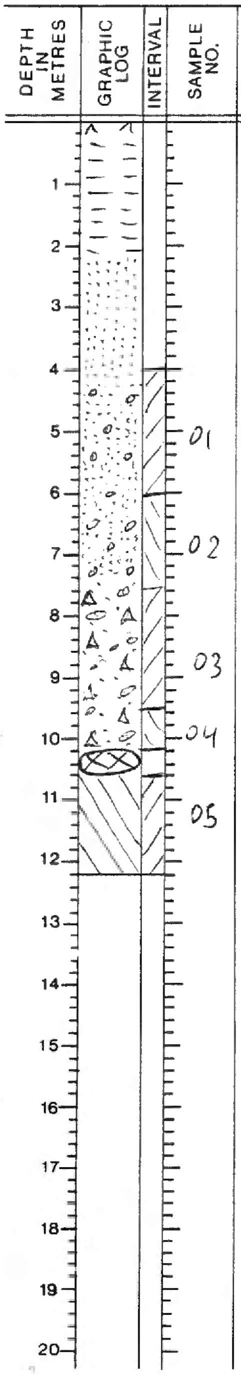
DRILL 9:00 - 9:45

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______



DESCRIPTIVE LOG

0.0 - 0.2 Organics

0.2 - 7.5 Gibiray II sediments

0.2 - 2.0 grey silt

2.0 - 4.0 fine grey sand

4.0 - 7.5 this section appears as pebbly, fine to medium grey sand. Clasts of composition 50% / 50%

7.5 - 10.2 Chibougamau till fine, grey-beige, sand/silt matrix. Pebble and small cobble clasts of composition

10.2 - 10.6 Boulder granitoid

10.6 - 12.2 Bedrock
- dark grey to black
- fine grained
- weakly foliated
- 2-3% disseminated quartz
- non visible sulphides

Meta sediment

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 13 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-128 LOCATION Site#77 9W 23+50S ELEVATION 307m

GEOLOGIST P. Collins DRILLER G. Howg BIT NO. CB70109 BIT FOOTAGE 0.0 - 6.0

MOVE TO HOLE 9:45 - 10:00

DRILL 10:00 - 10:30

MECHANICAL DOWN TIME ______

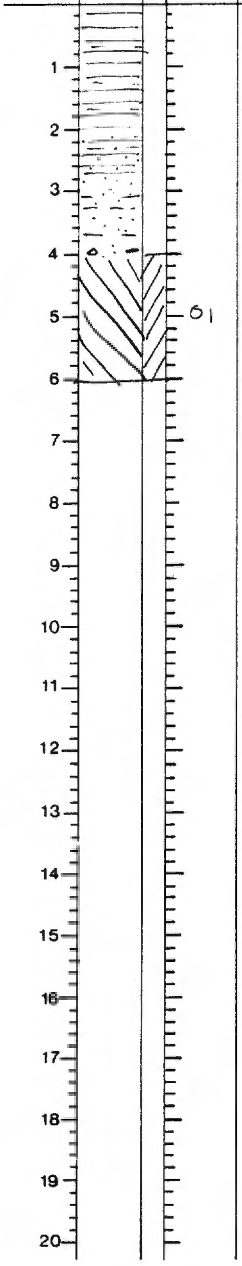
DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

New Bit

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 4.0 Ojibway II Sediments

(0.0 - 2.7) beige, pure, soft clay and silt (at surface)

(2.7 - 3.8) beige very fine grained sand and silt

(3.8 - 4.0) possible thin veneer of fill; too small to sample or log.

4.0 - 6.0 Bedrock

- dark grey to black; dark green; ochre
- very fine to fine grained
- foliated
- 15-20% qtz/carbonate veinlets
- 7-10% hematite & FeO stain
- > 30% magnetite in dark grey very fine grained bands
- dark green mafic bands are present (non magnetic)

Fe. formation

6.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 13 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-129 LOCATION Site #75 4E, 22S ELEVATION 307m

GEOLOGIST B. Rudnicki DRILLER G. Howy BIT NO. CB70109 BIT FOOTAGE 6.0 - 10.5

MOVE TO HOLE 10:30 - 10:45

DRILL 10:45 - 11:20

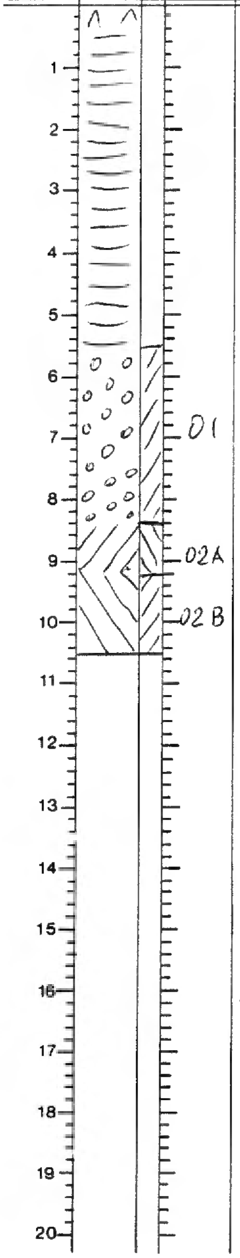
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

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



0.0 - 0.5 Organics

0.5 - 8.4 Ojibway II sediments

0.5 - 5.5 grey-beige, pure, soft clay

5.5 - 8.4 Gravel: pebble clasts of composition 60% volcanics/sediments - 40% granitoids

From 5.5 to 7.0 little, medium to coarse sand matrix.

Below 7.0m no matrix. Abundant pebble and small cobble clasts.

8.4 - 10.5 Bedrock

8.4 - 9.2 medium to dark green, fine grained, well developped foliation, chloritic.

Intermediate to mafic volcanic

9.2 - 10.5 greyish white, sericite schist

≤ 3-5% FeO

Felsic volcanic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 13 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-130 LOCATION Site #74 14E-21+50S ELEVATION 309m

GEOLOGIST P. Collins DRILLER G. Hoang BIT NO. CB70109 BIT FOOTAGE 16.5-23.0

MOVE TO HOLE 11:20 - 11:30

DRILL 11:30 - 12:00

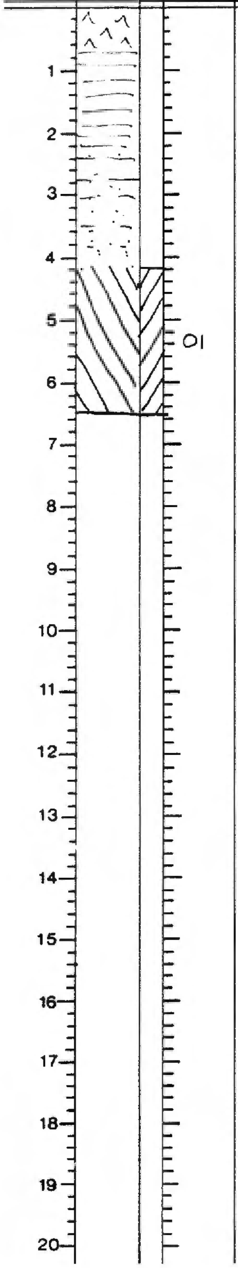
MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 0.5 Organics

0.5 - 4.2 Ojibway II Sediments

(0.5 - 2.5) beige grey, pure, soft, clay

(2.5 - 4.2) beige very fine sand/silt.

4.2 - 6.5 Bedrock

- light grey
- very fine to fine grained
- strong foliation schistose
- highly altered sericitic,
- carbonatized
- occasional qtz/carbonate veinlets
- <1% sulphide

Sericite schist.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 13 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-131 LOCATION Site #72 22E, 19+25S ELEVATION 329 m

GEOLOGIST P. Collin DRILLER G. Hong BIT NO. CB70109 BIT FOOTAGE 23.0 - 29.5

MOVE TO HOLE 12:30 - 12:45

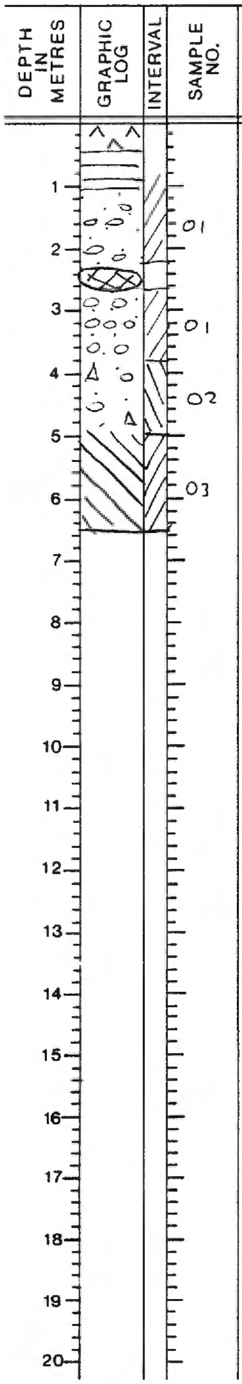
DRILL 12:45 - 1:40

MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE



DESCRIPTIVE LOG

0.0 - 0.3 Organics

0.3 - 3.8 Ojibway II Sediments

(0.3 - 1.0) beige, pure, soft clay

(1.0 - 3.8) Pebble sand : sorted beige to ochre coloured fine grained sand Pebble clasts of composition: 55% Volcanics and sediments; 45% Granitoids

(2.3 - 2.7) Boulder - diabase

3.8 - 5.0 Chibougamau Till

grey beige, fine sand silt matrix Pebble / cobble clasts of composition: 60% Volcanics and sediments; 40% Granitoids.

5.0 - 6.5 Bedrock

- medium green initially slightly ochre
- fine grained
- well developed foliation
- chloritized
- tuffaceous texture in places
- 3% sericite
- <1% sulphides

Intermediate to mafic Volcanic.

6.5 - E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 13 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-132 LOCATION Site #73 22E, 24+50S ELEVATION 309 m

GEOLOGIST B. Rudnicki DRILLER A. Hoog BIT NO. CB70109 BIT FOOTAGE 29.5 - 38.5

MOVE TO HOLE 1:40 - 1:50

DRILL 1:50 - 2:30

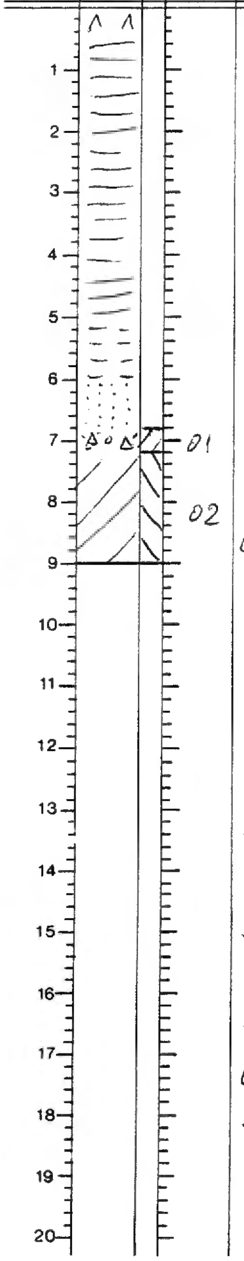
MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 0.5 Organics

0.5 - 6.8 Ojibway II sediments

0.5 - 5.0 grey, pure, soft clay

5.0 - 6.0 grey silt

6.0 - 6.8 fine grey sand

6.8 - 7.2 Chibougamau till

Fine, grey-beige sand and silt matrix. Pebble clasts of composition 50% volcanics/sediments - 50% granitoids

7.2 - 9.0 Bedrock

- light greenish - beige
- very fine grained
- well developped foliation
- silicified 5-10% quartz veinlets
- minor apple green fuschite ?, sericitic throughout
- ≥ 2% sulphides - visible cubic crystals of pyrite
- carbonatized ≥ 5%

Sericite schist

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 13 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-133 LOCATION site#71 28E, 19S ELEVATION 325 m

GEOLOGIST P. Gllins DRILLER G. Howg BIT NO. CB70109 BIT FOOTAGE 38.5-46.0

MOVE TO HOLE 2:30 - 3:00

DRILL 3:00 - 3:30

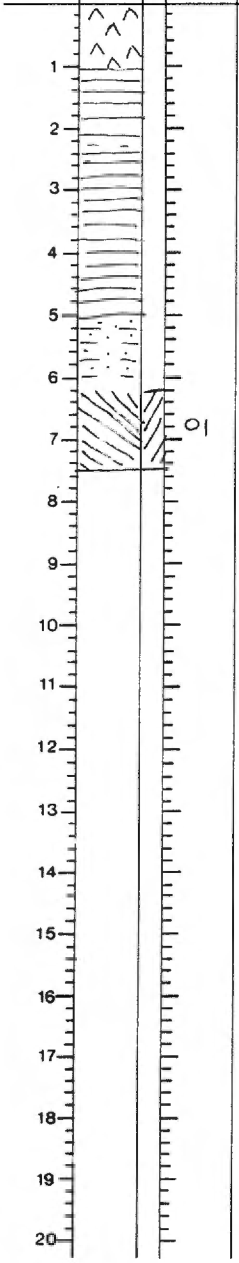
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

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



0.0 - 1.0 Organics

1.0 - 6.2 Ojibway II Sediments

(1.0 - 5.0) grey, pure, soft clay

(5.0 - 6.2) beige very fine sand/silt

6.2 - 7.5 Bedrock

- medium green
- fine grained
- weak foliation
- porphyritic texture (feldspar phenocrysts)
- chloritic
- carbonatized >5%
- trace FeO, hematite
- <1% sulphides

Intermediate to Felsic Volcanic

7.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 13 19 88

SHIFT HOURS

_______ TO _______

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-134 LOCATION Site# 70 26E 10+75S ELEVATION 330m

GEOLOGIST P. Collins DRILLER G. Houg BIT NO. CB70109 BIT FOOTAGE 46.0-59.0

MOVE TO HOLE 3:30-3:45

DRILL 3:45-4:45

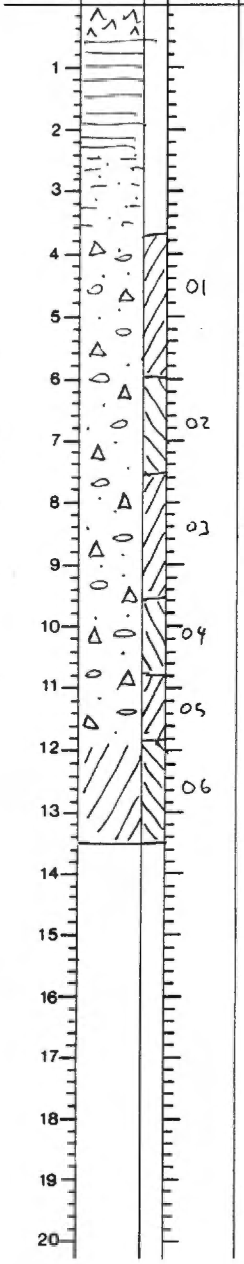
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER Travel 5:00-5:45 to camp.

MOVE TO NEXT HOLE 4:45-5:00 (partway)

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



DESCRIPTIVE LOG

0.0 - 0.5 Organics

0.5 - 3.7 Ojibway II Sediments

(0.5 - 2.3) beige (oxidized), pure, soft clay.

(2.3 - 3.7) very fine sand / silt

3.7 - 11.8 Chibougamau Till

slightly sorted (silt deficient) beige fine sand matrix. Pebble & small cobble clasts of composition: 60% Volcanics and sediments ; 40% Granitoids

11.8 - 13.5 Bedrock

- medium & dark green
- very fine and fine grained
- tuffaceous texture in places
- silicified
- 1-2% disseminated sulphides below 12.4m

Mafic Volcanic

13.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 15 1988

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-135 LOCATION Site #69 16E, 4+25S ELEVATION 307m

GEOLOGIST P. Collins DRILLER G. Houg BIT NO. CB70109 BIT FOOTAGE 59.0-82.6

MOVE TO HOLE 9:15-9:45

DRILL 9:45 -10:45

MECHANICAL DOWN TIME Aug 14 all day & Aug 15 7:00-9:15 (broken u joint - axle)

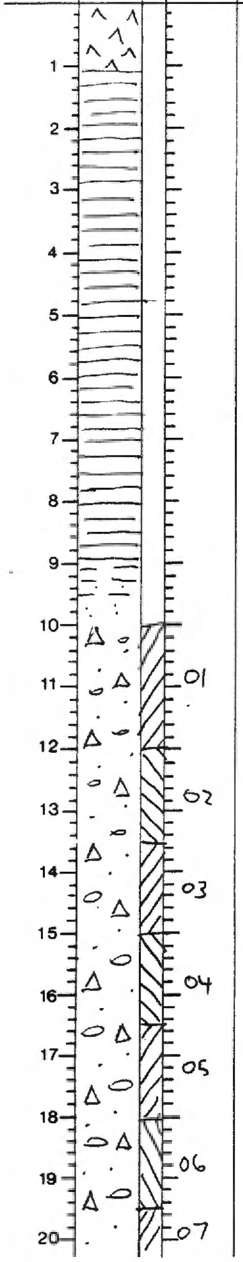
DRILLING PROBLEMS ______

OTHER Travel : 6:30 - 7:00 Am

MOVE TO NEXT HOLE ______

Pg 1 of 2

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



0.0 - 1.0 Organics

1.0 - 10.0 Ojibway II Sediments

(1.0-9.0) beige to grey, pure, soft clay & silt interbeds.

(9.0-10.0) grey beige, very fine sand and silt

10.0 - 22.2 Chibougamau Till

grey beige, fine sand / silt matrix
Pebble clasts of composition: 65% Volcanics and sediments ; 35% Granitoids

- below 14.0 m cobble clasts of similar composition.
- below 18.0 cobble clasts composition changes to 55% Volcanics and sediments ; 45% Granitoids.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 15 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-135 LOCATION _____ ELEVATION _____

GEOLOGIST _____ DRILLER _____ BIT NO. _____ BIT FOOTAGE _____

MOVE TO HOLE _____

DRILL _____

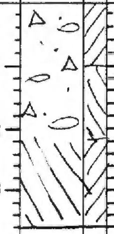
MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

Pg 2 of 2



DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG
			07	22.2 - 23.6 Bedrock
21				
			08	-med green
22				- very fine to fie grained
				- mild foliatin
23			09	
				- tuffaceous texture
24				- carbonatized
				- trace FeO stain
25				
				Intermediate Volcani
26				
				23.6 E.O.H.
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 15 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-136 LOCATION Site#68 4E,3+75S ELEVATION 307m

GEOLOGIST P.Collins DRILLER G. Hong BIT NO. CB70110 BIT FOOTAGE 0.0-6.7m

MOVE TO HOLE 10:45-11:00

DRILL 11:00 - 11:30

MECHANICAL DOWN TIME

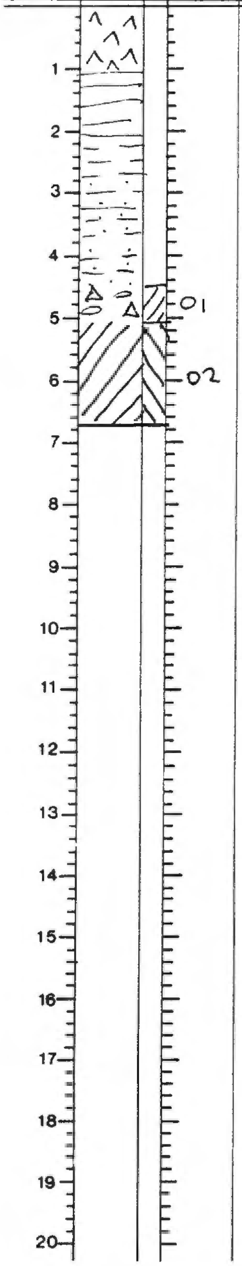
DRILLING PROBLEMS

OTHER move drill to gravel pit for Float 11:30 - 12:45

MOVE TO NEXT HOLE

New Bit.

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



0.0 - 1.0 Organics

1.0 - 4.5 Ojibway II Sediments

(1.0 - 2.6) grey, pure, soft clay

(2.6 - 4.5) grey silt and very fine grained sand

4.5 - 5.0 Chibougamau Till

thin layer of till (able to aquire small sample ~6kg)

grey beige, fine sand/silt matrix

Pebble clasts of composition: 65% Volcanics and sediments; 35% Granitoids.

5.0 - 6.7 Bedrock

- medium green
- very fine to fine grained
- 5-10% quartz/carbonate veinlets
- very weak foliation
- tuffaceous texture
- <1% sulphides

Intermediate Volcanic

6.7 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug. 16 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-137 LOCATION Site #148 32+95E 14+90N ELEVATION _____

GEOLOGIST P. Collins DRILLER G. Howg. BIT NO. CB70110 BIT FOOTAGE 7.0-27.0

MOVE TO HOLE 4:00 - 5:00 Aug 15 ; 7:00 - 7:15 Aug 16

DRILL 7:15 - 9:00

MECHANICAL DOWN TIME _____

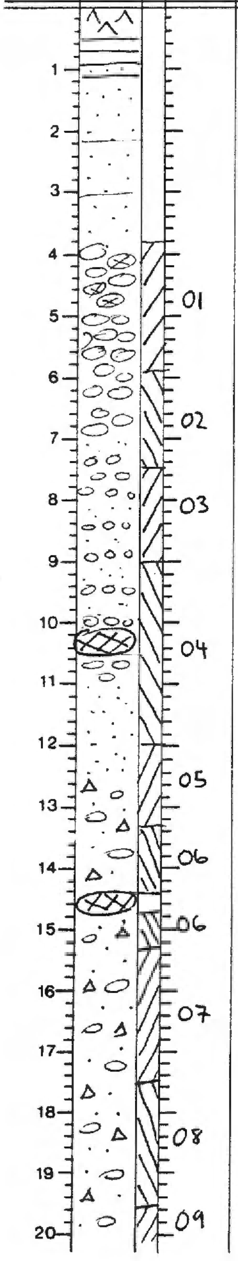
DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

Pg. 1 of 2

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



0.0 - 0.5 Organics

0.5 - 12.5 Ojibway II Sediments

(0.5 - 1.0) beige (oxidized) to grey, pure soft clay

(1.0 - 3.8) beige very fine to fine grained sand with occasional thin clay bed.

(3.8 - 6.8) Gravel : very little return on matrix. Initially appeared to be till due to cave in from overlying sand. Matrix is predominantly sorted medium sand c̄ abundant -10mesh cuttings. Cobble clasts of composition 60% Volcanics and sediments; 40% Granitoids

(6.8 - 10.1) Pebble sand : slightly unsorted beige grey fie sand matrix. Clasts (+10) similar to 3.8 - 6.8

(10.1 - 10.5) Boulder - Gabbro

(10.5 - 11.0) similar to 6.8 - 10.1

(11.0 - 12.0) sorted medium and coarse grained sand.

(12.0 - 12.5) sorted beige fie sand

12.5 - 20.6 Chibougamau Till

grey beige fie sand / silt matrix Pebble and cobble clasts of composition 60% volcanics and sediments; 40% Granitoids

14.4 - 14.7 Boulder - diorite

14.7 - 20.6 similar to 12.5 - 20.6 only minor grey gritty clay lumps in matrix.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 16 1988

SHIFT HOURS

____ TO ____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-137 LOCATION Site # 148 ELEVATION

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
	△ ○		09	20.6 - 22.0 Bedrock
21			10	- light to medium grey
				- fine grained
22				- strong foliation
23				- porphyritic texture
				- ≤ 1% disseminated sulphides
24				Felsic Volcanic.
25				22.0 E.O.H.
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 Aug 16 1988

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-138 LOCATION Site #149 33+95E 14+90N ELEVATION ______

GEOLOGIST P. Collins DRILLER G. Houg BIT NO. CB70110 BIT FOOTAGE 27.0 - 44.7

MOVE TO HOLE 9:00 - 9:15

DRILL 9:15 - 10:15

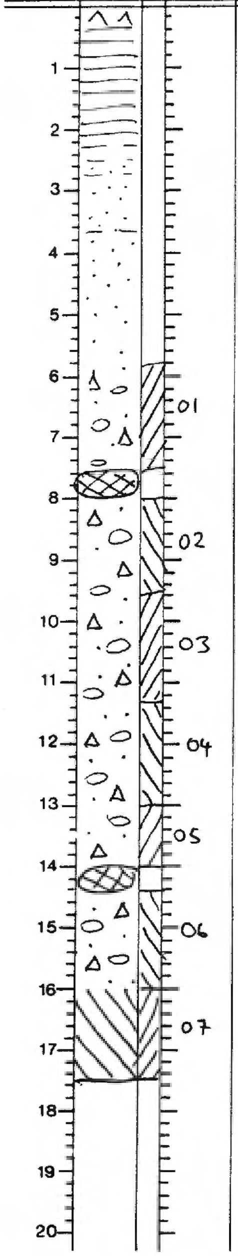
MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

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



0.0 - 0.5 Organics

0.5 - 6.0 Ojibway II Sediments

(0.5 - 1.8) beige (oxidized), pure, soft clay

(1.8 - 6.0) beige grey very fine sand silt to fine sand

6.0 - 16.0 Chibougaman Till

slightly sorted beige grey fine sand / silt matrix. Pebble and cobble clasts of composition: 60% volcanics and sediments ; 40% Granitoids.

(7.5 - 8.0) Boulder - granitoid

(8.0 - 14.0) similar to 6.0 - 7.5

(14.0 - 14.4) Boulder - gabbro.

(14.4 - 16.0) similar to 6.0 - 7.5

16.0 - 17.5 Bedrock

- light grey, weath'd surface ochre
- fine grained
- well developed foliation
- 5-7% qtz / carbonate veinlets
- ochre band FeO at 17.2 m
- ≤ 1% sulphides

Felsic Volcanic

17.5 Felsic Volc.

⇒ E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug. 16 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLC-88-139 LOCATION Site #150 34+95E 14+90N ELEVATION ______

GEOLOGIST B. Rudthick DRILLER G. Hovey BIT NO. CB 70110 BIT FOOTAGE 447 - 62.

MOVE TO HOLE 10:15 - 10:30

DRILL 10:30 - 11:15

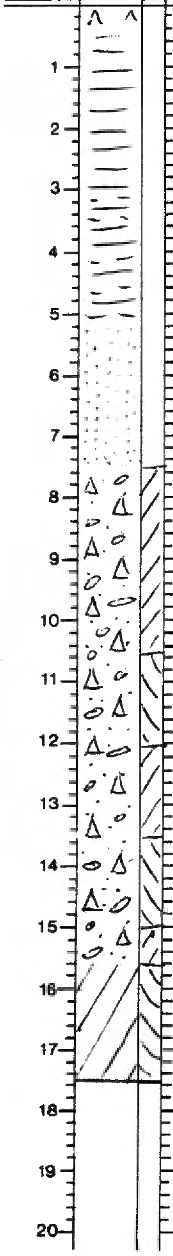
MECHANICAL DOWN TIME —

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

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



SAMPLE NO.:
- 01
- 02
- 03
- 04
- 05
- 06

0.0 - 0.4 Organics

0.4 - 7.5 Ojibway II sediments

0.4 - 5.0 grey, pure, soft clay with silt interbeds

5.0 - 7.5 fine grey-beige sand

7.5 - 15.6 Chibougamau till

Fine grey-beige sand and silt matrix. Pebble and occasional small cobble clasts of composition 60% volcanics/sediments - 40% granitoids. Sample 01 is taken over longer interval because the section between 8.0 - 10.0 appeared sorted, giving impression to be pebbly sand; however this is probably till.

15.6 - 17.5 Bedrock
- light grey to white
- very fine grained
- schistose
- initially sericitic
- soft
- ≤ 1% disseminated sulphides

Felsic volcanic

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 16 1988

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-140 LOCATION Site #151 36+00E 16+00N ELEVATION ____

GEOLOGIST P. Collins DRILLER G. Howg BIT NO. C870110 BIT FOOTAGE 62.2 - 81.2

MOVE TO HOLE 11:15 - 11:30

DRILL 11:30 - 12:30

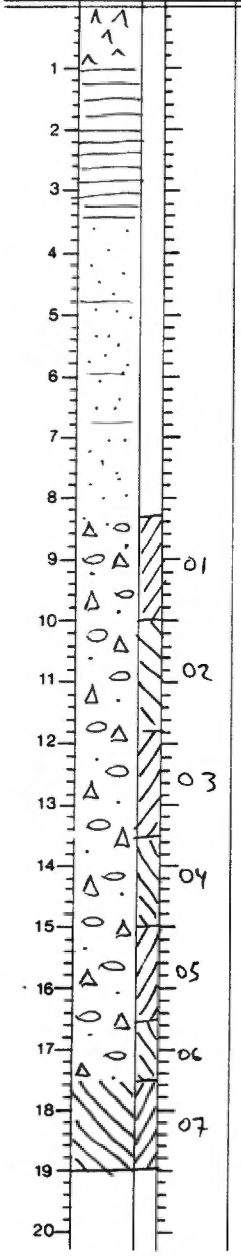
MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

OTHER ____

MOVE TO NEXT HOLE ____

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 1.0 Organics

1.0 - 8.4 Ojibway II Sediments

(1.0 - 3.8) grey to pure, soft clay

(3.8 - 8.4) beige very fine to fine sand with occasional thin clay bed.

8.4 - 17.3 Chibougamau Till

grey beige fine sand silt matrix Pebble and small cobble clasts of composition: 60% Volcanics and sediments; 40% Granitoids.

17.3 - 19.0 Bedrock

- light grey
- fine grained
- Schistose
- micaceous
- 3-5 % FeO
- 10-15 % qtz/carb. veinlets below 18.0m
- soft
- sericitic downsection
- ≤ 1% sulphides

Meta Sediment. ?

19.0 - E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 16 1988

SHIFT HOURS

_____ TO _____

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-141 LOCATION Site #152 35+00E 16+00N ELEVATION

GEOLOGIST B. Rudnicki DRILLER G. Howe BIT NO. CB70110 CB70111 BIT FOOTAGE 81.0 - 103.0 0.0 - 3.2

MOVE TO HOLE 12:30 - 12:45

DRILL 12:45 - 2:55

MECHANICAL DOWN TIME

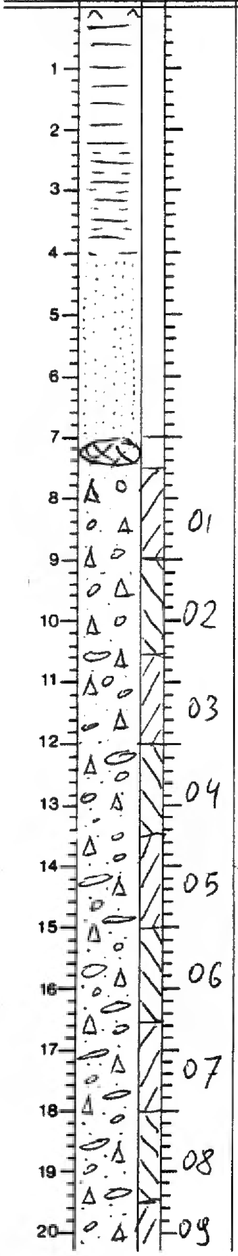
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG						



0.0 - 0.2 Organics

0.2 - 7.5 Ojibway II sediments

0.2 - 4.0 Beige, pure, soft clay with silt interbeds downsection

4.0 - 7.0 very fine to fine grey sand

7.0 - 7.5 Boulder gabro

7.5 - 23.0 Chibougamau till fine, grey-beige, sand and silt matrix. Pebble and small cobble clasts of composition 60% volcanics/sediments — 40% granitoids.

Increase in amount of cobble and small boulder clasts downsection. Matrix appears sorted mostly due to -10 mesh cuttings.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 16 19 88
SHIFT HOURS
_____ TO _____
TOTAL HOURS
_____
CONTRACT HOURS
_____

HOLE NO MS 88-141 LOCATION _____ ELEVATION _____
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	SAMPLE NO.	DESCRIPTIVE LOG
	09	
1		21.8 Pull rods to change bit
2	10	
3		23.0 - 25.0 Bedrock
4	11	- white, brownish
5		- very fine grained
6		- schistose
7		- at 24.5 calcite veine
8		- micaceous soft
9		- majority of sample is
10		white rock powder lumps
11		- Sericite schist
12		
13		
14		
15		
16		
17		
18		
19		
20		

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 16 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-142 LOCATION Site# 153 34+00E 15+45N ELEVATION ______

GEOLOGIST Peter Collins DRILLER Gyles Hougs BIT NO. CB70161 BIT FOOTAGE 3.3 - 25.3

MOVE TO HOLE 2:50 - 3:00

DRILL 3:00 - 4:30

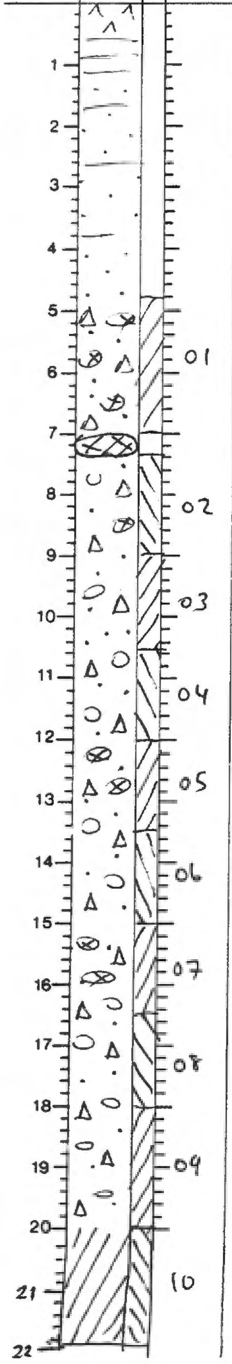
MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE 4:30 - 4:45

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 0.5 Organics

0.5 - 4.8 Ojibway II Sediments

(0.5 - 1.2) beige (oxidized), pure, soft clay.

(1.2 - 4.8) beige very fine to fine sand with occasional thin clay beds & pebble clasts.

4.8 - 20.0 Chibougamau Till

very cobbly; little return on matrix initially. Matrix consists of fine sand/silt also -10 mesh cuttings. Cobble clasts of composit. 65% volcanics and sediments; 35% Granitoids.

(7.0 - 7.3) Boulder - gabbro

(7.3 - 13.0) similar to 4.8 to 7.0 m with more return on matrix.

(13.0 - 18.0) minor grey gritty clay in matrix.

(18.0 - 20.0) very cobbly; matrix appears somewhat sorted due to abundance of -10 mesh rock cuttings. Also bedrock contamination in sample #09.

20.0 - 22.0 Bedrock

- grey
- fine grained
- well developed foliation
- 2-3% FeO stain
- 5% qtz/carb. veinlets
- < 1% sulphides

22.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 17 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-143 LOCATION Site# 154 33+00E 15+90N ELEVATION ____

GEOLOGIST P. Collins DRILLER G. Howg BIT NO. CB70111 / CB70112 BIT FOOTAGE 25.3 - 35.3 / 0.0 - 14.0

MOVE TO HOLE 4:30 - 4:45 Aug 16

DRILL 7:00 - 8:45 Aug 17

MECHANICAL DOWN TIME ____

DRILLING PROBLEMS ____

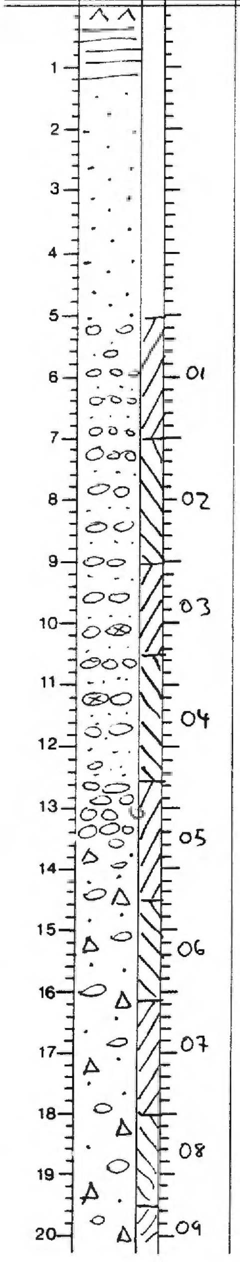
OTHER Travel 4:45 - 5:30 Aug 16 6:30 - 7:00 Aug 17.

MOVE TO NEXT HOLE ____

New Bit.

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



0.0 - 0.5 Organics

0.5 - 13.5 Ojibway II Sediments

(0.5 - 1.2) beige (oxidized), pure, soft clay

(1.2 - 5.0) beige very fine to fine grained sand; occasional small pebble clast.

(5.0 - 12.5) Pebble sand: sorted beige fine and medium sand matrix. Pebble and cobble clasts of composition: 60% Volcanics and Sediments; 40% Granitoids.

- matrix is coarse biased with 30-40% medium sand.

(12.5 - 13.5) similar to 5.0 - 12.5 only abundant +10 mesh clasts & -10 mesh cuttings in matrix

13.5 - 21.5 Chibougamau Till

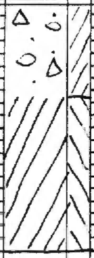
slightly sorted beige grey fine sand minor silt matrix. Pebble and cobble clasts of composition: 60% Volcanics and sediments; 40% Granitoids.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 17 19 88
SHIFT HOURS
____ TO ____
TOTAL HOURS
____
CONTRACT HOURS
____

HOLE NO PLS-88-143 LOCATION Site # 154 ELEVATION ____
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
			09	21.5 - 24.0 <u>Bedrock</u> - light greenish grey - fine grained - schistose - soft - micaceous ; sericitic - ≤ 1% sulphides O.B. contamination throughout sample Sericite Schist 24.0 E.O.H.
21				
22			10	
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 Aug 17 19 88

SHIFT HOURS

_______ TO _______

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO PLS-88-144 LOCATION Site #147 32+80E 13+25N ELEVATION _______

GEOLOGIST P. Collins DRILLER G. Houg BIT NO. 6870112 BIT FOOTAGE 14.0 - 33.0

MOVE TO HOLE 8:45 - 9:00

DRILL - 9:00 - 10:15

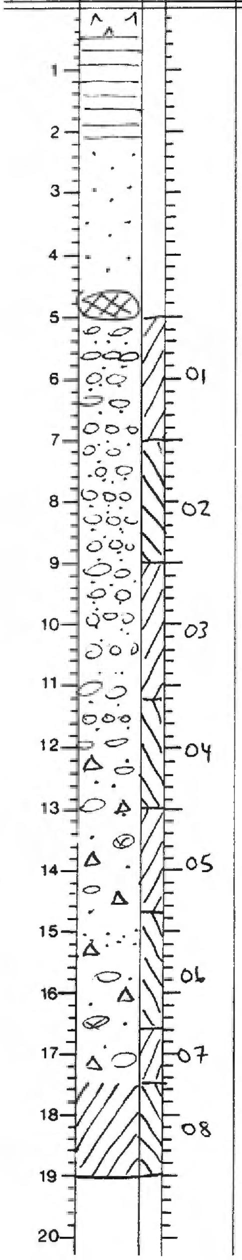
MECHANICAL DOWN TIME _______

DRILLING PROBLEMS _______

OTHER _______

MOVE TO NEXT HOLE _______

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



0.0 - 0.5 Organics

0.5 - 12.0 Ojibway II Sediments

(0.5 - 2.0) beige (oxidized), pure, slightly compacted clay

(2.0 - 4.6) beige very fine to fine grained sand

(4.6 - 5.0) Boulder - gabbro

(5.0 - 12.0) Pebble sand : sorted fine & medium sand matrix. Pebble clasts 60% Volcanics & sediments 40% Granitoids.

12.0 - 17.5 Chibougamau Till

gradational contact into a slightly sorted beige grey fine sand matrix. Pebble and cobble clasts of composition: 85% Volcanics and sediments; 15% Granitoids.

- sorted medium sand bed at 15.0m

17.5 - 19.0 Bedrock

- grey
- fine grained
- weak foliation
- 3-5% qtz/carb veinlets
- < 1% disseminated sulphides

Felsic Volcanic

19.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 17 1988

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-145 LOCATION Site #142 31E 6+50N ELEVATION ______

GEOLOGIST P. Collins DRILLER G. Hong. BIT NO. CB70111 BIT FOOTAGE 38.0-93.2

MOVE TO HOLE 10:15 - 10:45

DRILL 10:45 - 11:30

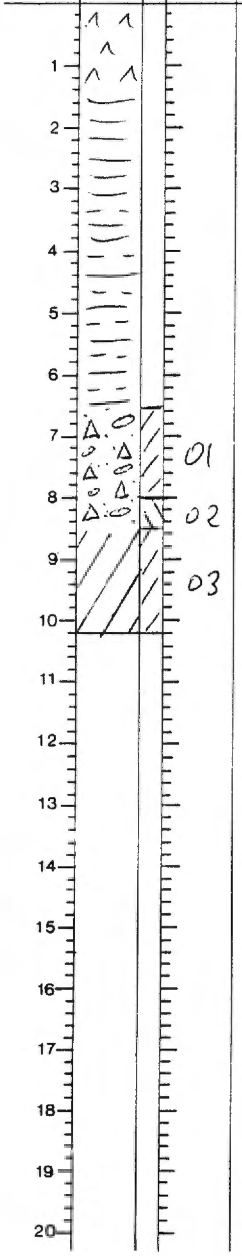
MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

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



0.0 - 1.5 organics

1.5 - 6.5 Ojibway II Sediments

grey, pure, soft clay ≥ silt inter beds.

6.5 - 8.5 Chibougamau Till

grey beige fine sand silt and minor gritty clay matrix. Pebble and small cobble clasts; 55% volcanics and sediments; 45% Granitoids

8.5 - 10.2 Bedrock

- light greenish grey
- fine grained
- moderate foliation
- silicified
- < 1% sulphides
- 2-3% sericite below 9.5

Felsic Volcanic

10.2 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 17 19 88

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-146 LOCATION Site #144 31E 7+50N ELEVATION ______

GEOLOGIST P. Collins DRILLER G. Hong BIT NO. CB70112 BIT FOOTAGE 43.2 - 75.7

MOVE TO HOLE 11:30 - 11:40

DRILL 11:40 - 1:45

MECHANICAL DOWN TIME ______

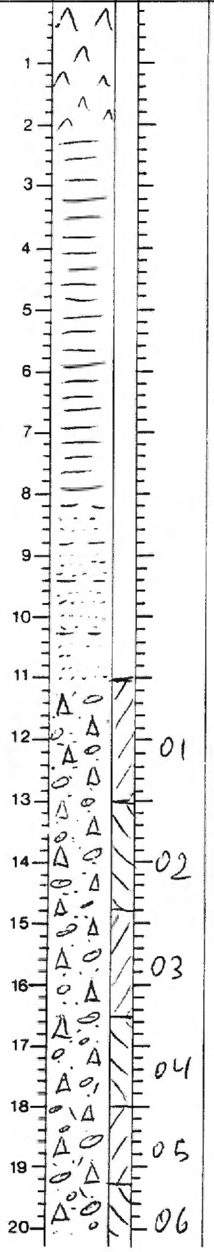
DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

Pg 1 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG							



0.0 - 2.0 Organics

2.0 - 11.0 Ojibway II Sediments

(2.0 - 8.0) grey, pure, soft clay

(8.0 - 11.0) grey, very fine sand silt.

11.0 - 31.2 Chibougamau Till

grey beige, fine sand / silt and minor grey gritty clay matrix. Pebble and cobble clasts of composition: 50% volcanics and sediments; 50% granitoids

- below 17.5 matrix is slightly more clay rich & clast composition changes to: 70% Volcanics and sediments; 30% Granitoids

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 17 1988

SHIFT HOURS

TO

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-146 LOCATION ELEVATION

GEOLOGIST DRILLER BIT NO. BIT FOOTAGE

MOVE TO HOLE

DRILL

MECHANICAL DOWN TIME

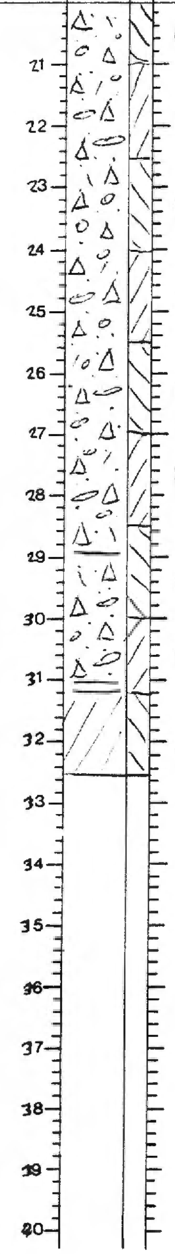
DRILLING PROBLEMS

OTHER

MOVE TO NEXT HOLE

Pg 2 of 2

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



SAMPLE NO.
06
07
08
09
10
11
12
13
14

at 28.8 - 29.0 hard, compact slightly gritty to pure grey clay partings

29.0 - 31.0 till similar to 17.5 - 28.8 only c̄ occasional compact pure clay partings

31.0 - 31.2 similar to 28.8 - 29.0

31.2 - 32.5 Bedrock

- light greenish grey
- fine & coarse grained
- massive
- porphyritic texture (qtz/feldspar phenocrysts)
- 5-7% qtz/carbonate veinlets
- 2-3% epidote
- ≤ 1% sulphides
- 1% hematite

Intermediate - Felsic Volcanic

32.5 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 17 19 88

SHIFT HOURS

_____ TO _____

TOTAL HOURS

_____

CONTRACT HOURS

_____

HOLE NO PLS-88-147 LOCATION Site #145 32E 7150N ELEVATION _____

GEOLOGIST P. Collin DRILLER G. Houg BIT NO. CB70113 BIT FOOTAGE 0.0-34.3

MOVE TO HOLE 1:45-1:50

DRILL 1:50 - 4:00

MECHANICAL DOWN TIME _____

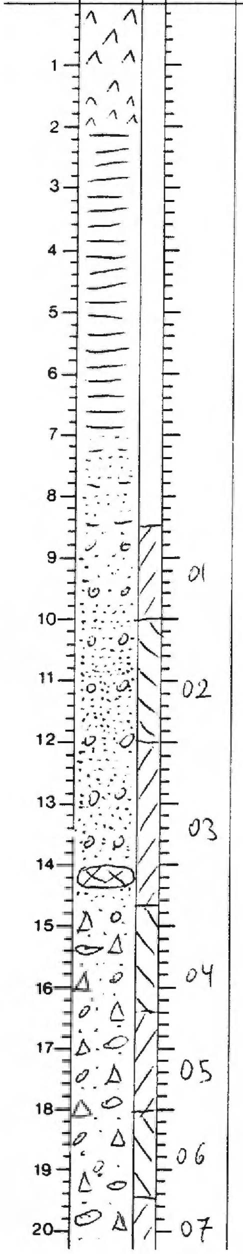
DRILLING PROBLEMS _____

OTHER _____

MOVE TO NEXT HOLE _____

New Bit

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



0.0 - 2.0 Organics

2.0 - 14.6 Ojibway II Sediments

(2.0 - 7.0) grey, pure, soft clay

(7.0 - 8.5) grey very fine sand / silt

(8.5 - 14.6) Pebble sand: initially appeared to be till, probably due to very fine sand / silt cave in. Fine to medium sand matrix. Cobble clasts of approximate composition: 70% volcanics & sediments; 30% Granitoids

14.0 - 14.4 Boulder - Gabbro

14.6 - 32.8 Chibougamau Till

grey beige fine sand / silt matrix gray gritty clay in matrix below 26.0m. Cobble clasts of approximate composition: 60% Volcanics and sediments; 40% Granitoids.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 17 1988

SHIFT HOURS

______ TO ______

TOTAL HOURS

CONTRACT HOURS

HOLE NO PLS-88-147 LOCATION Site #145 ELEVATION ______

GEOLOGIST ______ DRILLER ______ BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL ______

MECHANICAL DOWN TIME ______

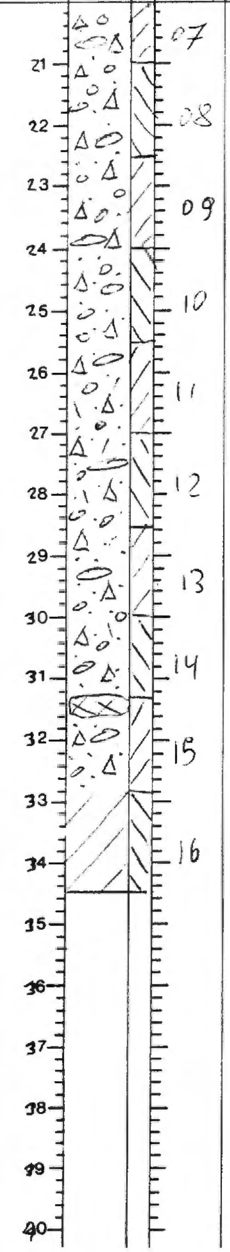
DRILLING PROBLEMS ______

OTHER ______

MOVE TO NEXT HOLE ______

Pg 2 of 2

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.	DESCRIPTIVE LOG



31.3 - 31.6 Boulder - gabbro

31.6 - 32.8 till as before

32.8 - 34.8 Bedrock

- light greenish grey
- Fine & coarse grained
- massive
- Porphyritic texture (feldspar phenocrysts)
- 15% qtz/carbonate veinlets
- trace FeO

Feldspar porphyry

34.8 E.o.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 17 1988

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO PLS-88-148 LOCATION Site #146 33E 7+50W ELEVATION ______

GEOLOGIST R. Collins DRILLER G. Houg BIT NO. CB70113 BIT FOOTAGE 34.5 - 45.5

MOVE TO HOLE 4:00 - 4:15

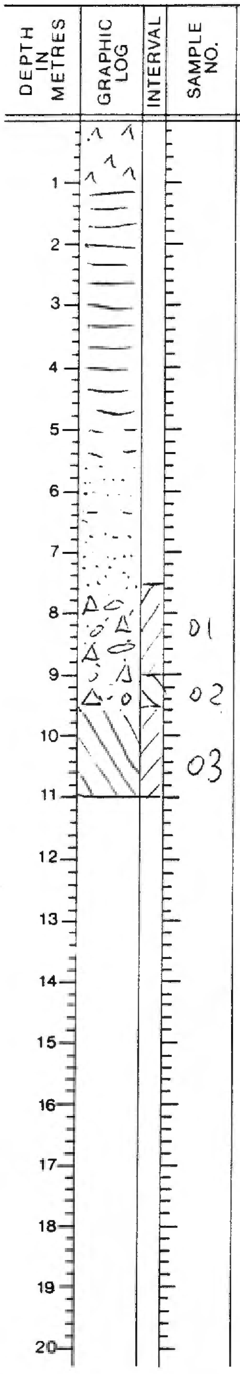
DRILL 4:15 - 5:00

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS ______

OTHER travel 5:15 - 6:45 Aug 17

MOVE TO NEXT HOLE 5:00 - 5:15



DESCRIPTIVE LOG

0.0 - 1.0 Organics

1.0 - 7.5 Ojibway II Sediments

(1.0-5.0) grey, pure, soft clay

(5.0-7.5) grey, very fine sand/silt

7.5 - 9.5 Chibougamau Till

grey beige fine sand/silt matrix - Pebble clasts of composition: 60% volcanics & sediments; 40% Granitoid

9.5 - 11.0 Bedrock

- light greyish green
- fine & coarse grained
- massive
- porphyritic texture (feldspar phenocrysts)
- silicified
- < 1% sulphides

Feldspar porphyry

11.0 E.O.H.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 18 19 88

SHIFT HOURS

____ TO ____

TOTAL HOURS

____

CONTRACT HOURS

____

HOLE NO RLS-88-149 LOCATION Site #143 326 6150N

GEOLOGIST [illegible] DRILLER S. Hong BIT NO. CB70113 BIT FOOTAGE 455-665

MOVE TO HOLE 5:00-5:15 (Aug 17)

DRILL 7:00 - 9:30

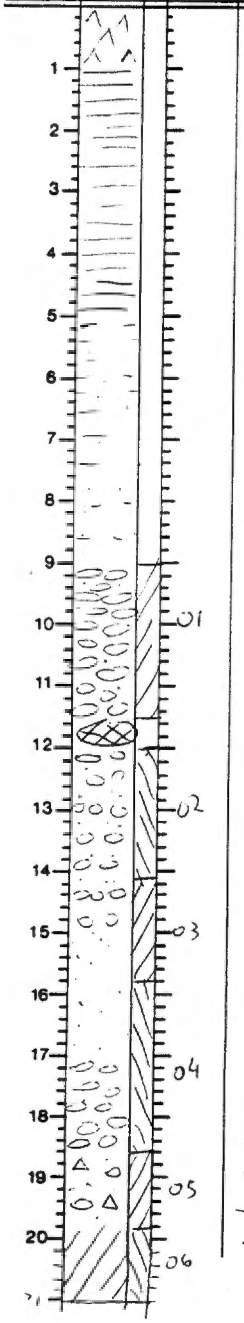
MECHANICAL DOWN TIME

DRILLING PROBLEMS

OTHER move drill to road clean mud tanks etc. fill 1230 PM

MOVE TO NEXT HOLE

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



0.0 - 1.0 Organics

1.0 - 18.8 Ojibway II Sediments

(1.0 - 5.0) grey, purse, soft clay with silt interbeds

(5.0 - 9.0) grey very fine sand / silt

(9.0 - 11.5) gravel: initially appeared to be till (due to cave in of very fine sand / silt)
- medium and coarse sand matrix occasional thin fine sand bed
- Cobble clasts of approximate composition: 60% Volcanics and sediments 40% Granitoids.

(11.5 - 12.0) boulder greywacke

(12.0 - 14.0) similar to 9.0-11.5

(14.0 - 15.0) Pebbly sand: slightly unsorted fine sand matrix; cobble clasts as above

(15.0 - 17.0) interbeds of beige fine medium, and coarse sand.

(17.0 - 18.8) similar to 14.0-15.0

18.8 - 19.8 Chibougamau Till

grey beige fine sand / silt matrix pebble clasts of composition: 65% Volcanics and sediments; 35% Granitoids

19.8 - 21.0 Bedrock

- medium to dark grey
- very fine grained
- well developed foliation
- 10-15% qtz/carb veinlets
- trace sericite
- ≤ 1% sulphides

Felsic Volc.

21.0 E.O.H.

* at 18.6 pull rods to change bit (replace with used bit)

APPENDIX B

SAMPLE WEIGHTS - HEAVY MINERAL CIRCUIT

OVERBURDEN DRILLING MANAGEMENT LIMITED - LABORATORY SAMPLE LOG

ABBREVIATIONS

DATA LOG

Clast:

Size of Clast:
G: Granules
P: Pebbles
C: Cobbles
BL: Boulder Chips
BK: Bedrock Chips

% Clast Composition:
V/S: Volcanics and Sediments
GR: Granitics
LS: Limestone
OT: Other Lithologies
(Refer to Footnotes Below)
TR: Only Trace Present
NA NOT APPLICABLE

Class:

BLD: Boulder Chips
BDK: Bedrock Chips

Matrix:

S/U: Sorted or Unsorted

SD: Sand	Y: Yes Fraction Present	F: Fine
ST: Silt	N: Fraction Not Present	M: Medium
CY: Clay		C: Coarse

Colour:

B: Beige
GY: Grey
GB: Grey Beige
GN: Green
GG: Grey Green
BN: Brown
BK: Black
OC: Ochre
PK: Pink
OE: Orange

GOLD LOG

Number of Grains:

T: Number Found on Shaking Table
P: Number Found After Panning

Thickness:

C: Calculated Thickness of Grain
M: Actual Measured Thickness of Grain

Footnotes:

A: Gritty Clay Lumps Present

B: Smooth Clay Lumps Present

C: Organics Present

D: Oxidized

MIPL1JUL.WR1

OVERBURDEN DRILLING MANAGEMENT LIMITED

TOTAL # OF SAMPLES IN THIS REPORT = 40

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	%				S/U	SD	ST	CY	COLOR		
												V/S	GR	LS	OT					SD	CY	
PLS-88																						
01-01	8.1	0.7	7.4	146.0	109.3	36.7	21.0	15.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
01-02	5.6	0.8	4.8	146.7	110.9	35.8	20.6	15.2	7	96	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
01-03	6.0	1.6	4.4	106.6	87.6	19.0	11.6	7.4	0	NA	P	70	30	NA	NA	S	C	Y	N	B	NA	GRAVEL
01-04	8.9	1.3	7.6	219.4	173.7	45.7	26.5	19.2	7	98	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
01-05	8.9	1.4	7.5	230.5	182.2	48.3	28.9	19.4	5	439	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
01-06	9.4	1.1	8.3	177.1	128.4	48.7	30.6	18.1	11	103	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
01-07	8.9	2.1	6.8	267.6	206.9	60.7	30.2	30.5	12	108	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
01-08	3.3	0.6	2.7	88.7	73.8	14.9	9.8	5.1	13	5538	P	85	15	NA	NA	U	Y	Y	Y	GG	GG	TILL
02-01	8.4	1.6	6.8	239.3	190.0	49.3	29.9	19.4	7	2156	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
02-02	8.0	0.8	7.2	237.6	181.2	56.4	35.6	20.8	6	128	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
02-03	9.6	1.8	7.8	297.7	241.0	56.7	32.6	24.1	1	11	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
02-04	8.8	1.0	7.8	145.0	105.1	39.9	24.8	15.1	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
03-01	7.6	0.5	7.1	193.5	145.0	48.5	30.1	18.4	4	366	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
03-02	9.2	1.4	7.8	290.3	223.4	66.9	43.7	23.2	6	231	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
03-03	9.5	1.4	8.1	164.0	116.7	47.3	28.1	19.2	12	114	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
03-04	9.2	1.1	8.1	171.9	118.3	53.6	32.7	20.9	7	248	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
03-05	9.5	2.4	7.1	164.3	114.8	49.5	29.8	19.7	16	386	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
03-06	9.1	2.0	7.1	180.2	131.5	48.7	27.5	21.2	12	770	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
04-01	9.2	1.4	7.8	186.2	141.6	44.6	26.5	18.1	3	46	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
04-02	9.1	1.0	8.1	167.5	111.9	55.6	34.5	21.1	13	353	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
04-03	8.4	0.9	7.5	173.4	124.2	49.2	30.9	18.3	8	239	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
04-04	4.2	0.4	3.8	119.0	85.3	33.7	21.0	12.7	3	17	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
05-01	9.4	1.6	7.8	321.0	254.0	67.0	43.3	23.7	9	100	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
05-02	9.4	1.3	8.1	298.5	235.4	63.1	39.4	23.7	6	240	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
05-03	6.9	1.0	5.9	209.9	164.8	45.1	29.3	15.8	1	213	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
06-01	5.9	0.8	5.1	164.3	126.0	38.3	26.6	11.7	6	350	P	75	25	NA	NA	U	Y	Y	Y	GB	GB	TILL
07-01	5.1	1.4	3.7	32.7	26.8	5.9	3.4	2.5	0	NA	P	70	30	NA	NA	S	C	Y	Y	B	B	GRAVEL
07-02	7.4	0.7	6.7	227.9	159.1	68.8	43.1	25.7	17	288	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
07-03	7.8	0.0	7.8	146.9	77.4	69.5	44.7	24.8	15	88	TR	NA	NA	NA	NA	U	Y	Y	Y	GB	GB	TILL
08-01	8.9	1.0	7.9	237.9	187.0	50.9	31.9	19.0	2	299	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
09-01	8.3	2.0	6.3	115.8	88.3	27.5	18.0	9.5	1	21	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
09-02	4.1	1.6	2.5	25.4	21.1	4.3	2.5	1.8	0	NA	P	75	25	NA	NA	S	C	Y	Y	GB	GB	GRAVEL
10-01	5.1	0.0	5.1	128.4	104.9	23.5	14.6	8.9	0	NA	TR	NA	NA	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
11-01	6.9	1.6	5.3	232.3	196.5	35.8	21.4	14.4	0	NA	P	50	50	NA	NA	U	Y	Y	Y	B	B	TILL
11-02	9.0	2.0	7.0	238.6	188.7	49.9	29.7	20.2	1	129	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
11-03	6.3	1.1	5.2	173.4	133.0	40.4	25.2	15.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
11-04	7.3	1.2	6.1	260.4	211.1	49.3	27.2	22.1	4	164	PC	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
11-05	8.9	1.8	7.1	236.0	175.7	60.3	32.2	28.1	6	68	PC	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
11-06	6.9	1.0	5.9	214.7	172.2	42.5	26.1	16.4	8	104	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
11-07	5.3	0.6	4.7	190.9	159.4	31.5	21.4	10.1	6	140	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	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	%				S/U	SD	ST	CY	COLOR		
												V/S	GR	LS	OT					SD	CY	
PLS-88																						
11-08	4.2	0.6	3.6	86.0	63.4	22.6	17.2	5.4	3	8	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
12-01	8.5	0.2	8.3	204.6	147.4	57.2	40.1	17.1	5	141	P	85	15	NA	NA	S	F	Y	Y	GY	PK	SAND
12-02	6.3	0.8	5.5	124.2	98.2	26.0	17.5	8.5	0	NA	C	95	5	NA	NA	U	Y	Y	Y	GY	GY	TILL
13-01	7.5	0.0	7.5	166.2	113.4	52.8	36.7	16.1	6	89	TR	NA	NA	NA	NA	S	F	Y	Y	GY	GY	SAND
13-02	3.7	0.5	3.2	240.7	168.7	72.0	65.8	6.2	1	1	P	80	20	NA	NA	U	Y	Y	Y	GY	PK	TILL
14-01	8.1	0.0	8.1	176.8	116.7	60.1	43.0	17.1	0	NA	TR	NA	NA	NA	NA	S	F	Y	Y	GY	GY	SAND
14-02	6.1	1.7	4.4	129.8	83.5	46.3	39.4	6.9	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GY	GY	TILL
15-01	8.2	0.0	8.2	174.8	103.1	71.7	54.9	16.8	1	7	TR	NA	NA	NA	NA	S	F	Y	Y	GY	GY	SAND
15-02	6.6	1.2	5.4	177.8	106.9	70.9	61.5	9.4	2	4	P	60	10	NA	30	U	Y	Y	Y	GY	GY	TILL
16-01	8.7	0.0	8.7	174.8	116.3	58.5	40.7	17.8	1	9	TR	NA	NA	NA	NA	S	M	Y	Y	GB	GB	SAND
16-02	8.6	1.2	7.4	298.5	242.6	55.9	41.1	14.8	2	246	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
17-01	6.4	0.0	6.4	179.5	132.5	47.0	34.8	12.2	3	19	TR	NA	NA	NA	NA	S	M	Y	Y	GB	GB	SAND
17-02	5.1	0.0	5.1	160.8	126.7	34.1	24.9	9.2	0	NA	TR	NA	NA	NA	NA	S	FM	Y	Y	GB	GB	SAND
18-01	8.2	0.0	8.2	160.3	100.3	60.0	42.8	17.2	0	NA	TR	NA	NA	NA	NA	S	FM	Y	Y	GB	GB	SAND
18-02	7.9	1.2	6.7	118.9	82.7	36.2	24.7	11.5	7	505	P	80	20	NA	NA	U	Y	Y	Y	GY	GY	TILL
19-01	7.8	0.0	7.8	155.9	89.1	66.8	49.4	17.4	7	167	TR	NA	NA	NA	NA	S	FM	Y	Y	GY	GY	SAND
19-02	8.5	1.8	6.7	150.4	104.0	46.4	29.1	17.3	7	1472	P	80	20	NA	NA	U	Y	Y	Y	GY	GY	TILL

MIPL6AUG.WR1
TOTAL # OF SAMPLES IN THIS REPORT = 54

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	
PLS-88																						
19-03	3.4	1.5	1.9	175.5	50.1	125.4	26.5	98.9	1	57	C	90	10	NA	NA	U	Y	Y	Y	GBK	GBK	TILL
20-01	9.0	0.0	9.0	172.9	116.6	56.3	39.4	16.9	8	1220	TR	NA	NA	NA	NA	S	FM	Y	N	GB	NA	SAND
20-02	7.7	0.9	6.8	175.6	134.6	41.0	28.0	13.0	1	7	C	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
20-03	9.8	1.4	8.4	221.8	178.8	43.0	27.0	16.0	2	179	C	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
20-04	7.8	2.0	5.8	229.3	196.0	33.3	20.1	13.2	1	797	C	85	15	NA	NA	S	C	Y	N	GY	NA	GRAVEL
20-05	9.5	1.6	7.9	347.1	255.6	91.5	49.8	41.7	5	733	C	70	30	NA	NA	S	C	Y	N	GY	NA	GRAVEL
20-06	9.5	1.6	7.9	201.9	152.1	49.8	30.1	19.7	2	15	C	70	30	NA	NA	S	C	Y	N	GY	NA	GRAVEL
20-07	9.1	1.0	8.1	251.0	208.0	43.0	27.0	16.0	1	3	C	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
20-08	9.1	1.0	8.1	364.1	318.4	45.7	28.3	17.4	0	NA	C	70	30	NA	NA	S	C	Y	N	GY	NA	GRAVEL
20-09	9.6	0.8	8.8	203.5	133.9	69.6	42.2	27.4	1	15	C	70	30	NA	NA	S	C	Y	N	GY	NA	GRAVEL
20-10	8.8	0.8	8.0	325.4	269.6	55.8	36.5	19.3	1	18	P	60	40	NA	NA	S	C	Y	N	GY	NA	GRAVEL
20-11	9.6	1.0	8.6	308.6	267.6	41.0	25.8	15.2	1	7	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
20-12	8.6	0.7	7.9	270.0	221.2	48.8	31.6	17.2	0	NA	P	75	25	NA	NA	U	Y	Y	Y	GY	GY	TILL
20-13	8.6	0.7	7.9	233.8	192.4	41.4	28.0	13.4	1	7	P	80	20	NA	NA	U	Y	Y	Y	GY	GY	TILL
20-14	7.3	0.8	6.5	256.0	217.6	38.4	26.9	11.5	0	NA	P	85	15	NA	NA	U	Y	Y	Y	GY	GY	TILL
20-15	8.4	0.3	8.1	347.6	324.8	22.8	15.2	7.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GY	GY	TILL
21-01	8.5	1.0	7.5	169.7	128.4	41.3	25.5	15.8	1	25	P	35	65	NA	NA	U	Y	Y	Y	GY	GY	TILL
21-02	8.8	1.1	7.7	202.4	164.1	38.3	22.5	15.8	4	135	P	80	20	NA	NA	U	Y	Y	Y	GY	GY	TILL
22-01	8.2	0.0	8.2	203.0	159.3	43.7	26.5	17.2	7	63	TR	NA	NA	NA	C	S	F	Y	N	GY	NA	SAND
22-02	9.1	1.0	8.1	161.1	119.9	41.2	25.2	16.0	1	8	C	75	25	NA	NA	U	Y	Y	Y	GY	GY	TILL
22-03	9.0	1.5	7.5	169.4	132.3	37.1	23.2	13.9	2	31	C	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
22-04	9.4	1.2	8.2	207.0	163.3	43.7	25.7	18.0	5	129	C	75	25	NA	NA	U	Y	Y	Y	GY	GY	TILL
22-05	9.4	1.4	8.0	332.2	277.7	54.5	27.5	27.0	6	1273	C	80	20	NA	NA	S	C	Y	N	GY	NA	GRAVEL
22-06	8.5	1.2	7.3	189.9	144.5	45.4	29.7	15.7	3	893	C	85	15	NA	A	S	C	Y	N	GY	NA	GRAVEL
22-07	4.4	0.6	3.8	88.6	64.9	23.7	16.4	7.3	1	129	P	55	45	NA	A	U	Y	Y	Y	GB	GY	TILL
22-08	9.1	0.8	8.3	282.7	218.3	64.4	41.2	23.2	3	19	P	65	35	NA	NA	U	Y	Y	Y	GB	GY	TILL
22-09	7.0	0.6	6.4	192.7	139.7	53.0	36.7	16.3	4	135	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
22-10	9.1	1.0	8.1	277.2	209.7	67.5	40.4	27.1	6	332	C	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
22-11	8.0	0.6	7.4	305.7	273.2	32.5	18.3	14.2	1	158	P	65	35	NA	A	U	Y	Y	Y	GY	GY	TILL
23-01	8.8	0.0	8.8	154.1	113.4	40.7	26.5	14.2	0	NA	TR	NA	NA	NA	NA	S	C	Y	N	GY	NA	GRAVEL
23-02	8.7	1.7	7.0	190.3	127.1	63.2	44.7	18.5	5	179	P	70	30	NA	NA	S	C	Y	N	GB	NA	GRAVEL
23-03	9.0	1.8	7.2	215.6	160.5	55.1	36.4	18.7	0	NA	P	70	30	NA	NA	S	C	Y	N	GY	NA	GRAVEL
23-04	8.9	1.4	7.5	65.2	23.4	41.8	28.1	13.7	1	13	P	75	25	NA	NA	S	MC	Y	N	GB	NA	GRAVEL
23-05	9.1	1.6	7.5	230.9	186.8	44.1	31.2	12.9	1	3	P	70	30	NA	NA	S	MC	Y	N	GY	NA	GRAVEL
23-06	7.8	0.2	7.6	133.0	99.7	33.3	24.8	8.5	0	NA	P	70	30	NA	NA	S	MC	Y	N	GB	NA	GRAVEL
23-07	9.1	1.8	7.3	254.6	209.8	44.8	29.6	15.2	6	485	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
23-08	8.4	0.5	7.9	239.2	196.8	42.4	29.4	13.0	0	NA	C	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
23-09	8.8	1.1	7.7	208.6	159.0	49.6	33.1	16.5	5	269	C	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
23-10	8.7	1.4	7.3	198.6	151.9	46.7	34.0	12.7	1	62	P	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
23-11	8.5	0.6	7.9	145.7	109.5	36.2	24.6	11.6	3	348	P	80	20	NA	NA	U	Y	Y	Y	GY	GY	TILL
23-12	8.8	1.8	7.0	137.3	104.1	33.2	18.1	15.1	0	NA	C	90	10	NA	NA	S	C	Y	N	GY	NA	GRAVEL
23-13	8.1	1.8	6.3	184.0	157.5	26.5	16.4	10.1	1	23	C	90	10	NA	NA	S	C	Y	N	GY	NA	GRAVEL
23-14	8.8	1.2	7.6	157.5	117.2	40.3	29.1	11.2	1	7	C	95	5	NA	NA	S	MC	Y	N	GY	NA	GRAVEL
24-01	8.2	40.1	-31.9	183.5	145.2	38.3	27.4	10.9	1	7	TR	NA	NA	NA	NA	U	Y	Y	Y	GB	GB	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	%				S/U	SD	ST	CY	COLOR		
												V/S	GR	LS	OT					SD	CY	
PLS-88																						
24-12	8.8	0.9	7.9	320.5	228.0	92.5	53.1	39.4	1	215	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
24-13	8.1	1.4	6.7	208.5	148.8	59.7	33.9	25.8	1	401	P	80	20	NA	NA	U	Y	Y	Y	GY	GY	TILL
25-01	7.9	0.0	7.9	134.1	74.5	59.6	42.2	17.4	0	NA	P	TR	NA	NA	NA	S	F	Y	Y	GY	GY	SAND

MIPL2AUG.WR1
TOTAL # OF SAMPLES IN THIS REPORT = 20

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	
PLS-88																						
25-02	8.0	0.0	8.0	123.0	92.9	30.1	22.7	7.4	0	NA	TR	NA	NA	NA	NA	S	M	Y	Y	GY	GY	SAND
25-03	7.0	0.2	6.8	189.2	141.8	47.4	33.6	13.8	3	52	P	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
25-04	7.8	0.6	7.2	115.1	95.1	20.0	13.4	6.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GY	GY	TILL
25-05	8.9	2.0	6.9	122.7	60.4	62.3	35.0	27.3	2	45	P	85	15	NA	NA	U	Y	Y	Y	GY	GY	TILL
25-06	8.1	2.2	5.9	222.4	173.0	49.4	28.8	20.6	1	35	C	95	5	NA	NA	U	Y	Y	Y	GG	GG	TILL
26-01	7.6	0.0	7.6	140.2	85.5	54.7	38.3	16.4	0	NA	TR	NA	NA	NA	NA	S	F	Y	Y	GY	GY	SAND
26-02	8.5	1.8	6.7	144.4	104.4	40.0	24.8	15.2	3	139	P	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
27-01	7.2	0.0	7.2	143.5	92.9	50.6	35.3	15.3	4	32	TR	NA	NA	NA	NA	S	F	Y	Y	GY	GY	SAND
27-02	7.2	0.0	7.2	111.0	67.6	43.4	29.4	14.0	4	104	TR	NA	NA	NA	NA	S	F	Y	Y	GY	GY	SAND
27-03	8.7	1.4	7.3	161.2	124.1	37.1	25.7	11.4	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
27-04	8.2	1.2	7.0	168.0	124.7	43.3	27.7	15.6	3	33	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
27-05	5.5	1.1	4.4	112.6	83.6	29.0	19.5	9.5	6	118	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
27-06	8.4	0.2	8.2	201.9	146.8	55.1	37.0	18.1	11	114	P	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
28-01	8.4	0.8	7.6	167.8	133.8	34.0	23.0	11.0	1	16	P	80	20	NA	NA	U	Y	Y	Y	GY	GY	TILL
28-02	8.1	1.2	6.9	174.8	143.1	31.7	19.7	12.0	1	317	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
28-06	8.2	1.6	6.6	241.0	201.2	39.8	26.0	13.8	3	104	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
28-07	8.7	1.8	6.9	228.8	154.9	73.9	50.7	23.2	6	176	PC	90	10	NA	NA	U	Y	Y	Y	GG	GG	TILL
29-01	7.6	0.1	7.5	216.4	172.6	43.8	32.4	11.4	1	6	P	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
29-02	7.7	0.0	7.7	163.4	108.6	54.8	38.7	16.1	0	NA	TR	NA	NA	NA	NA	S	M	Y	Y	GB	GB	SAND
29-03	7.8	0.1	7.7	158.2	102.6	55.6	38.8	16.8	4	71	P	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL

mip13aug.wr1

OVERBURDEN DRILLING MANAGEMENT LIMITED

JTAL # OF SAMPLES IN THIS REPORT = 40

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET)			WEIGHT (GRAMS DRY)					AU		DESCRIPTION											CLASS
						M. I. CONC					CLAST					MATRIX						
												%								COLOR		
	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	SD	CY	
PLS-88																						
28-03	8.6	1.6	7.0	203.0	169.2	33.8	22.6	11.2	3	1285	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
28-04	8.2	1.2	7.0	204.8	172.6	32.2	21.7	10.5	3	119	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
28-05	8.4	1.6	6.8	341.1	300.0	41.1	29.1	12.0	4	653	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
29-04	9.2	2.4	6.8	237.3	188.0	49.3	31.1	18.2	1	33	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
30-01	7.7	0.2	7.5	282.5	246.6	35.9	26.1	9.8	1	81	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
30-02	8.2	0.1	8.1	108.4	68.8	39.6	27.5	12.1	1	14	P	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
30-03	7.4	0.2	7.2	148.5	109.4	39.1	28.6	10.5	0	NA	P	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
30-04	8.2	0.1	8.1	189.2	141.6	47.6	34.5	13.1	0	NA	P	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
30-05	8.2	1.6	6.6	246.2	207.6	38.6	23.6	15.0	1	43	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
30-06	7.7	1.8	5.9	104.3	73.5	30.8	17.8	13.0	4	7978	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
31-01	7.3	0.0	7.3	133.6	100.9	32.7	23.0	9.7	0	NA	TR	NA	NA	NA	NA	S	M	Y	Y	B	B	SAND
31-02	7.9	0.4	7.5	70.1	54.9	15.2	10.7	4.5	0	NA	P	80	20	NA	NA	S	MC	Y	N	B	NA	GRAVEL
31-03	7.9	0.8	7.1	82.8	67.4	15.4	10.8	4.6	0	NA	P	70	30	NA	NA	S	MC	Y	N	B	NA	GRAVEL
31-04	8.0	1.2	6.8	105.8	91.6	14.2	9.7	4.5	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
31-05	8.2	0.5	7.7	141.9	114.1	27.8	19.7	8.1	0	NA	P	70	30	NA	NA	S	MC	Y	Y	B	B	GRAVEL
31-06	7.9	0.3	7.6	156.0	114.4	41.6	28.5	13.1	1	102	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
31-07	8.0	1.4	6.6	103.5	76.8	26.7	15.7	11.0	2	245	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
31-08	8.3	1.6	6.7	135.2	94.1	41.1	24.5	16.6	1	61	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
31-09	8.5	1.1	7.4	160.1	114.2	45.9	29.0	16.9	0	NA	C	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
31-10	8.9	2.0	6.9	181.1	111.7	69.4	38.7	30.7	5	538	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
32-01	8.6	1.6	7.0	151.4	104.5	46.9	31.7	15.2	4	70	TR	NA	NA	NA	NA	S	F	Y	Y	GB	GB	SAND
32-02	8.2	1.2	7.0	235.9	185.7	50.2	32.8	17.4	7	409	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
33-01	8.4	1.6	6.8	203.1	164.4	38.7	26.0	12.7	1	7	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
33-02	9.2	2.4	6.8	235.5	197.8	37.7	24.9	12.8	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
33-03	7.7	0.2	7.5	168.8	121.1	47.7	32.2	15.5	1	294	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
34-01	8.2	0.1	8.1	120.0	97.4	22.6	15.9	6.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
34-02	7.4	0.2	7.2	276.0	242.6	33.4	23.9	9.5	1	63	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
34-03	8.2	0.1	8.1	253.9	213.6	40.3	30.3	10.0	0	NA	P	70	30	NA	NA	S	M	Y	Y	B	B	SAND
34-04	8.2	1.6	6.6	329.7	307.1	22.6	16.6	6.0	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
34-05	7.7	1.8	5.9	300.8	262.3	38.5	26.5	12.0	1	24	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
34-06	7.3	0.0	7.3	178.0	141.4	36.6	25.5	11.1	2	118	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
34-07	7.9	0.4	7.5	263.5	246.0	17.5	12.8	4.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
34-08	7.9	0.8	7.1	198.3	158.4	39.9	33.1	6.8	4	54	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
35-01	8.0	1.2	6.8	188.2	158.9	29.3	21.3	8.0	0	NA	TR	NA	NA	NA	NA	S	M	Y	Y	B	B	SAND
35-02	8.2	0.5	7.7	122.8	85.2	37.6	25.3	12.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
35-03	7.9	0.3	7.6	211.0	170.8	40.2	28.8	11.4	1	7	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
35-04	8.0	1.4	6.6	198.1	157.5	40.6	29.7	10.9	4	34	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
35-05	8.3	1.6	6.7	184.2	141.7	42.5	31.3	11.2	1	12	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
35-06	8.5	1.1	7.4	185.0	145.8	39.2	28.8	10.4	0	NA	P	85	15	NA	NA	U	Y	Y	Y	GG	GG	TILL
35-07	8.9	2.0	6.9	165.5	127.3	38.2	29.6	8.6	1	22	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL

MIPL4AUG.WR1

OVERBURDEN DRILLING MANAGEMENT LIMITED

TOTAL # OF SAMPLES IN THIS REPORT = 40

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET)			WEIGHT (GRAMS DRY)					AU		DESCRIPTION											CLASS
						M. I. CONC					CLAST					MATRIX						
												%								COLOR		
	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	SD	CY	
PLS-88																						
36-01	8.3	0.8	7.5	325.1	291.6	33.5	23.8	9.7	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
36-02	8.2	1.6	6.6	221.4	202.0	19.4	12.8	6.6	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
36-03	8.1	0.2	7.9	166.8	112.3	54.5	37.6	16.9	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
36-04	7.8	0.0	7.8	156.0	110.0	46.0	31.1	14.9	8	113	TR	NA	NA	NA	NA	S	F	Y	Y	B	B	SAND
36-05	8.7	2.5	6.2	237.0	196.4	40.6	27.9	12.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
36-06	7.9	1.5	6.4	293.5	260.1	33.4	20.6	12.8	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
36-07	8.6	1.7	6.9	183.7	153.0	30.7	18.0	12.7	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
37-01	8.0	0.0	8.0	170.4	116.0	54.4	36.0	18.4	4	98	TR	NA	NA	NA	NA	S	F	Y	Y	B	B	SAND
37-02	8.0	0.9	7.1	188.2	136.4	51.8	38.3	13.5	4	16	P	85	15	NA	NA	U	Y	Y	Y	GG	GG	TILL
38-01	7.9	0.0	7.9	166.5	102.3	64.2	45.2	19.0	9	84	TR	NA	NA	NA	NA	S	M	Y	Y	B	B	SAND
38-02	8.1	1.0	7.1	169.2	123.0	46.2	32.2	14.0	10	259	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
39-01	8.9	0.0	8.9	226.1	158.0	68.1	47.9	20.2	7	378	TR	NA	NA	NA	NA	S	M	Y	Y	GG	GG	SAND
39-02	8.0	0.0	8.0	175.4	98.3	77.1	55.4	21.7	8	23	TR	NA	NA	NA	NA	S	F	Y	Y	B	B	SAND
39-03	8.7	2.1	6.6	251.2	213.4	37.8	24.2	13.6	1	158	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
39-04	9.0	1.4	7.6	139.1	100.0	39.1	25.0	14.1	0	NA	P	85	15	NA	NA	U	Y	Y	Y	GG	GG	TILL
39-05	9.5	1.6	7.9	213.6	166.5	47.1	27.5	19.6	1	7	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
39-06	9.2	0.8	8.4	199.6	144.5	55.1	35.7	19.4	5	122	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
40-01	5.2	0.0	5.2	125.6	80.3	45.3	31.5	13.8	4	56	TR	NA	NA	NA	NA	S	F	Y	Y	B	B	SAND
40-02	8.7	1.4	7.3	187.2	143.5	43.7	31.8	11.9	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
41-01	8.3	0.0	8.3	164.3	82.8	81.5	63.9	17.6	3	45	TR	NA	NA	NA	NA	S	M	Y	Y	B	B	SAND
42-01	8.3	0.0	8.3	175.1	117.9	57.2	42.9	14.3	0	NA	TR	NA	NA	NA	NA	S	F	Y	Y	B	B	SAND
42-02	8.1	2.1	6.0	162.0	92.4	69.6	53.3	16.3	3	56	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
43-01	8.6	1.1	7.5	112.5	74.6	37.9	23.6	14.3	0	NA	PC	85	15	NA	NA	U	Y	Y	Y	B	B	TILL
43-02	8.4	1.6	6.8	185.5	146.2	39.3	24.6	14.7	1	463	PC	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
44-01	8.0	0.4	7.6	126.6	76.3	50.3	35.1	15.2	0	NA	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
45-01	8.1	0.8	7.3	190.5	134.8	55.7	39.3	16.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
45-02	7.1	1.3	5.8	118.8	86.5	32.3	21.1	11.2	10	147	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
46-01	8.3	1.6	6.7	152.7	108.3	44.4	28.6	15.8	8	512	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
46-02	8.9	2.4	6.5	170.6	127.9	42.7	29.5	13.2	1	13	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
46-03	8.9	2.3	6.6	144.3	99.6	44.7	27.7	17.0	0	NA	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
46-04	7.9	1.4	6.5	176.4	129.9	46.5	30.6	15.9	1	33	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
46-05	9.4	1.8	7.6	239.3	188.1	51.2	28.7	22.5	1	329	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
46-06	6.6	1.2	5.4	162.1	119.7	42.4	25.7	16.7	0	NA	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
47-01	8.2	1.8	6.4	187.9	147.5	40.4	26.4	14.0	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
48-01	9.3	1.8	7.5	148.4	106.5	41.9	25.8	16.1	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
49-01	9.3	4.0	5.3	237.9	205.5	32.4	18.7	13.7	1	34	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
49-02	8.6	2.7	5.9	211.7	151.2	60.5	39.8	20.7	6	72	P	85	15	NA	NA	U	Y	Y	Y	GG	GG	TILL
50-01	8.9	1.4	7.5	176.9	125.3	51.6	32.4	19.2	9	345	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
50-02	9.0	1.8	7.2	157.9	108.4	49.5	30.8	18.7	10	407	P	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
41-02	9.1	1.4	7.7	175.1	116.9	58.2	39.8	18.4	4	10	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL

MIPL5AUG.WR1
TOTAL # OF SAMPLES IN THIS REPORT = 40

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET)			WEIGHT (GRAMS DRY)					AU		DESCRIPTION											CLASS
						M. I. CONC					CLAST					MATRIX						
												%								COLOR		
	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	SD	CY	
PLS-88																						
50-03	9.2	1.8	7.4	184.8	142.7	42.1	25.8	16.3	9	440	P	85	15	NA	NA	U	Y	Y	Y	GG	GG	TILL
51-01	9.6	2.4	7.2	155.3	107.8	47.5	30.3	17.2	1	33	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
51-02	7.6	2.0	5.6	181.4	134.3	47.1	29.0	18.1	1	13	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
52-01	8.0	0.2	7.8	194.3	155.5	38.8	24.6	14.2	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
53-01	8.7	2.2	6.5	179.5	145.5	34.0	20.6	13.4	1	31	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
53-02	9.1	0.9	8.2	148.1	105.8	42.3	26.7	15.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
54-01	8.9	1.4	7.5	203.9	152.4	51.5	32.9	18.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
54-02	9.0	2.1	6.9	262.1	229.5	32.6	19.7	12.9	1	251	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
54-03	9.2	2.1	7.1	163.0	116.9	46.1	29.7	16.4	12	150	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
54-04	9.7	3.0	6.7	147.5	104.7	42.8	25.0	17.8	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
54-05	9.1	2.6	6.5	189.7	158.5	31.2	18.5	12.7	0	NA	P	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
55-01	8.4	2.4	6.0	222.7	189.9	32.8	21.1	11.7	1	101	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
55-02	8.6	2.2	6.4	151.6	100.1	51.5	32.7	18.8	5	30	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
55-03	9.2	2.4	6.8	188.0	138.4	49.6	32.2	17.4	1	66	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
55-04	9.3	0.2	9.1	229.8	186.7	43.1	25.9	17.2	5	211	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
55-05	9.1	2.2	6.9	162.6	124.0	38.6	26.3	12.3	4	68	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
56-01	8.3	0.0	8.3	152.3	106.1	46.2	29.1	17.1	0	NA	TR	NA	NA	NA	NA	S	F	Y	Y	B	B	SAND
57-01	9.5	3.4	6.1	136.8	93.7	43.1	26.4	16.7	1	110	P	90	10	NA	NA	U	Y	Y	Y	GG	GG	TILL
57-02	9.6	2.6	7.0	165.7	116.0	49.7	30.9	18.8	9	288	P	90	10	NA	NA	U	Y	Y	Y	B	B	TILL
58-01	9.6	1.8	7.8	142.4	94.1	48.3	32.5	15.8	10	391	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
59-01	9.3	2.3	7.0	163.3	118.5	44.8	26.4	18.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
59-02	9.7	2.4	7.3	191.9	114.5	77.4	54.0	23.4	14	106	P	75	25	NA	NA	U	Y	Y	Y	GB	GB	TILL
59-03	9.6	1.1	8.5	233.3	178.2	55.1	39.4	15.7	1	5	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
59-04	9.2	2.4	6.8	192.9	141.1	51.8	36.3	15.5	1	5	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
59-05	9.1	3.3	5.8	226.9	163.6	63.3	26.6	36.7	1	80	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
60-01	9.1	1.2	7.9	221.0	145.9	75.1	53.6	21.5	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
60-02	8.1	1.2	6.9	173.4	132.9	40.5	25.1	15.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
60-03	9.2	1.2	8.0	162.3	120.5	41.8	29.5	12.3	1	460	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
60-04	8.8	2.0	6.8	159.6	122.6	37.0	25.9	11.1	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
60-05	9.7	2.1	7.6	168.9	133.3	35.6	24.7	10.9	1	8	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
61-01	8.6	1.6	7.0	165.0	124.9	40.1	25.7	14.4	1	149	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
61-02	9.1	1.7	7.4	158.1	110.8	47.3	32.6	14.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
62-01	7.5	2.2	5.3	129.3	97.1	32.2	19.9	12.3	1	4	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
63-01	9.2	2.4	6.8	122.7	88.7	34.0	19.4	14.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
63-02	8.5	2.0	6.5	159.6	113.7	45.9	32.4	13.5	1	12	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
63-03	8.0	1.2	6.8	139.5	104.6	34.9	22.9	12.0	3	23	P	90	10	NA	NA	U	Y	Y	Y	B	B	TILL
64-01	8.3	0.4	7.9	174.9	136.6	38.3	26.7	11.6	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
64-02	8.9	0.8	8.1	183.8	155.5	28.3	20.9	7.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
64-03	8.7	1.8	6.9	138.8	110.2	28.6	20.2	8.4	1	105	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
64-04	9.2	1.2	8.0	200.2	153.7	46.5	32.4	14.1	2	51	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL

MIPL6AUG.WR1

OVERBURDEN DRILLING MANAGEMENT LIMITED

TOTAL # OF SAMPLES IN THIS REPORT = 54

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	%				S/U	SD	ST	CY	COLOR		
												V/S	GR	LS	OT					SD	CY	
PLS-88																						
24-02	6.8	1.6	5.2	114.8	83.4	31.4	20.8	10.6	4	217	C	95	5	NA	NA	U	Y	Y	Y	GB	GB	TILL
24-03	9.1	2.6	6.5	135.4	101.0	34.4	22.4	12.0	3	296	C	95	5	NA	NA	U	Y	Y	Y	GB	GB	TILL
24-04	8.4	2.0	6.4	218.0	181.3	36.7	24.9	11.8	0	NA	C	95	5	NA	NA	U	Y	Y	Y	GY	GB	TILL
24-05	6.0	0.8	5.2	110.8	82.7	28.1	19.8	8.3	1	10	C	90	10	NA	NA	U	Y	Y	Y	GY	GB	TILL
24-06	8.3	0.8	7.5	211.5	151.3	60.2	42.9	17.3	9	76	C	90	10	NA	NA	S	M	Y	N	GY	NA	GRAVEL
24-07	7.9	0.2	7.7	143.1	121.0	22.1	17.2	4.9	6	103	C	95	5	NA	NA	S	M	Y	N	GY	NA	GRAVEL
24-08	8.2	0.4	7.8	267.0	244.8	22.2	16.5	5.7	12	91	P	40	60	NA	NA	S	M	Y	N	GY	NA	GRAVEL
24-09	7.9	0.5	7.4	205.8	183.9	21.9	15.8	6.1	8	339	P	70	30	NA	NA	S	FM	Y	N	GY	NA	GRAVEL
24-10	8.7	1.2	7.5	249.9	183.0	66.9	40.9	26.0	19	321	P	90	10	NA	NA	U	Y	Y	Y	GY	GY	TILL
24-11	9.2	0.8	8.4	376.0	318.7	57.3	37.3	20.0	6	50	P	70	30	NA	NA	S	FM	Y	N	GY	NA	GRAVEL

IPL7AUG.WR1
TOTAL # OF SAMPLES IN THIS REPORT = 40

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	
PLS-88																						
64-05	8.7	1.4	7.3	232.5	197.2	35.3	23.3	12.0	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
65-01	8.2	0.0	8.2	250.8	217.7	33.1	24.5	8.6	1	15	TR	NA	NA	NA	NA	U	Y	Y	Y	B	B	TILL
65-02	8.9	0.8	8.1	170.7	138.1	32.6	23.0	9.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
65-03	8.2	0.1	8.1	176.5	130.2	46.3	31.1	15.2	8	212	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
65-04	8.8	0.8	8.0	184.0	150.0	34.0	22.8	11.2	4	123	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
66-01	8.8	1.2	7.6	267.6	227.0	40.6	29.0	11.6	1	13	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
66-02	8.2	3.6	4.6	124.2	102.8	21.4	12.1	9.3	0	NA	P	90	10	NA	NA	U	Y	Y	Y	B	B	TILL
66-03	8.5	2.0	6.5	200.5	179.0	21.5	14.8	6.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
66-04	8.4	0.8	7.6	212.7	175.4	37.3	28.0	9.3	1	2437	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
66-05	8.8	1.2	7.6	155.8	107.9	47.9	31.5	16.4	2	204	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
66-06	8.9	1.2	7.7	181.9	134.9	47.0	31.4	15.6	4	119	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
66-07	9.2	1.5	7.7	194.4	146.0	48.4	31.9	16.5	7	169	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
66-08	8.9	1.7	7.2	145.3	101.5	43.8	28.6	15.2	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
66-09	8.9	1.4	7.5	222.8	185.1	37.7	19.0	18.7	1	34	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
66-10	8.9	1.9	7.0	221.0	185.3	35.7	23.9	11.8	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
66-11	4.4	0.8	3.6	111.8	95.0	16.8	11.3	5.5	0	NA	P	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
67-01	9.0	2.3	6.7	204.6	192.0	12.6	9.2	3.4	1	416	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
67-02	8.8	4.6	4.2	127.3	109.6	17.7	11.7	6.0	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
67-03	9.5	1.2	8.3	198.6	151.0	47.6	32.1	15.5	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
67-04	8.9	1.4	7.5	217.2	170.6	46.6	32.2	14.4	1	47	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
67-05	9.1	1.2	7.9	166.2	117.3	48.9	32.6	16.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
67-06	8.7	1.8	6.9	252.9	210.6	42.3	29.6	12.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
67-07	8.9	2.0	6.9	197.5	165.7	31.8	21.5	10.3	1	99	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
67-08	8.8	2.8	6.0	160.5	125.3	35.2	22.4	12.8	1	17	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
67-09	6.6	1.6	5.0	202.3	166.9	35.4	19.8	15.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
68-01	8.1	0.2	7.9	160.9	126.0	34.9	25.8	9.1	1	82	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
68-02	8.6	2.0	6.6	207.9	165.5	42.4	27.3	15.1	1	7	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
68-03	8.9	1.4	7.5	162.9	119.9	43.0	26.0	17.0	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
69-01	9.0	2.6	6.4	147.3	101.7	45.6	24.6	21.0	1	0	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
69-02	7.8	1.2	6.6	172.3	125.6	46.7	29.9	16.8	0	NA	P	85	15	NA	NA	U	Y	Y	Y	B	B	TILL
69-03	8.8	2.1	6.7	222.1	177.2	44.9	27.5	17.4	1	55	P	90	10	NA	NA	U	Y	Y	Y	B	B	TILL
70-01	8.0	0.1	7.9	173.2	140.7	32.5	22.8	9.7	0	NA	P	90	10	NA	NA	U	Y	Y	Y	B	B	TILL
70-02	8.5	2.0	6.5	165.5	119.3	46.2	28.4	17.8	8	339	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
70-03	9.2	2.2	7.0	148.6	111.0	37.6	23.6	14.0	6	225	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
70-04	8.5	1.8	6.7	174.1	131.2	42.9	25.1	17.8	1	377	P	90	10	NA	NA	U	Y	Y	Y	B	B	TILL
71-01	2.0	0.6	1.4	78.4	68.1	10.3	7.0	3.3	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
72-01	8.5	0.1	8.4	200.8	152.7	48.1	35.5	12.6	1	18	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
73-01	9.3	2.1	7.2	143.4	93.2	50.2	32.5	17.7	7	311	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
73-02	9.8	2.3	7.5	137.8	96.5	41.3	26.2	15.1	3	42	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
73-03	8.4	1.7	6.7	152.7	107.3	45.4	29.4	16.0	11	97	P	85	15	NA	NA	U	Y	Y	Y	B	B	TILL

MIPLSAUG.WR1

OVERBURDEN DRILLING MANAGEMENT LIMITED

TOTAL # OF SAMPLES IN THIS REPORT = 40

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	
PLS-88																						
73-04	9.1	1.4	7.7	201.3	135.7	65.6	41.5	24.1	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
74-01	8.2	0.0	8.2	196.4	115.2	81.2	64.3	16.9	1	16	TR	NA	NA	NA	NA	S	M	Y	Y	B	B	SAND
-02	8.4	0.8	7.6	172.5	122.9	49.6	37.3	12.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
-03	8.3	1.3	7.0	164.4	130.3	34.1	24.6	9.5	0	NA	P	80	20	NA	NA	S	C	Y	Y	GB	GB	GRAVEL
-04	8.4	2.3	6.1	73.9	63.9	10.0	6.9	3.1	0	NA	P	80	20	NA	NA	S	C	Y	Y	GB	GB	GRAVEL
-05	6.2	0.5	5.7	99.4	77.2	22.2	15.4	6.8	0	NA	P	80	20	NA	NA	S	C	Y	Y	GB	GB	GRAVEL
75-01	8.6	0.0	8.6	239.7	176.1	63.6	49.4	14.2	0	NA	TR	NA	NA	NA	NA	U	Y	Y	Y	B	B	TILL
-02	8.0	0.4	7.6	182.4	147.4	35.0	26.8	8.2	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-03	8.5	1.1	7.4	174.9	136.4	38.5	29.5	9.0	1	211	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-04	8.3	2.7	5.6	87.4	73.4	14.0	8.7	5.3	0	NA	P	70	30	NA	NA	S	C	Y	Y	B	B	GRAVEL
-05	8.5	2.3	6.2	104.5	56.0	48.5	20.5	28.0	0	NA	P	80	20	NA	NA	S	C	Y	Y	GB	GB	GRAVEL
-06	8.6	0.3	8.3	151.9	119.4	32.5	19.4	13.1	0	NA	P	80	20	NA	NA	S	C	Y	Y	GB	GB	GRAVEL
-07	9.8	3.8	6.0	135.7	86.5	49.2	30.6	18.6	0	NA	P	90	10	NA	NA	S	C	Y	Y	GB	GB	GRAVEL
-08	8.7	1.4	7.3	370.3	268.4	101.9	64.7	37.2	8	241	P	90	10	NA	NA	U	Y	Y	Y	GN	GN	TILL
-09	7.8	1.6	6.2	266.3	176.4	89.9	58.0	31.9	1	26	P	90	10	NA	NA	U	Y	Y	Y	GN	GN	TILL
76-01	8.8	0.1	8.7	226.2	180.9	45.3	34.0	11.3	0	NA	P	90	10	NA	NA	S	M	Y	Y	B	B	SAND
-02	8.7	0.0	8.7	180.2	141.6	38.6	25.3	13.3	0	NA	TR	NA	NA	NA	NA	S	M	Y	Y	B	B	SAND
77-01	9.5	2.1	7.4	274.6	224.3	50.3	31.0	19.3	9	255	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
78-01	8.8	0.2	8.6	296.8	249.3	47.5	34.7	12.8	0	NA	P	70	30	NA	NA	S	M	Y	Y	B	B	SAND
-02	8.8	2.1	6.7	220.8	169.1	51.7	35.2	16.5	1	109	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-03	9.0	1.4	7.6	162.0	118.1	43.9	21.3	22.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-04	9.3	2.6	6.7	202.7	140.8	61.9	33.7	28.2	0	NA	P	85	15	NA	NA	U	Y	Y	Y	B	B	TILL
-05	9.4	1.3	8.1	176.4	107.9	68.5	30.6	37.9	0	NA	P	90	10	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
-06	9.3	1.6	7.7	129.3	80.8	48.5	26.2	22.3	1	146	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
-07	9.5	2.6	6.9	201.5	160.6	40.9	19.3	21.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
-08	7.3	1.6	5.7	143.2	100.8	42.4	18.8	23.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
79-01	8.2	0.0	8.2	133.3	84.0	49.3	33.8	15.5	3	71	TR	NA	NA	NA	NA	S	F	Y	Y	B	B	SAND
-02	8.4	1.2	7.2	230.4	180.2	50.2	32.9	17.3	6	153	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
-03	7.7	0.8	6.9	208.2	149.5	58.7	32.9	25.8	1	19	P	90	10	NA	NA	U	Y	Y	Y	GG	GG	TILL
-04	8.7	1.5	7.2	168.3	118.8	49.5	32.2	17.3	0	NA	P	85	15	NA	NA	U	Y	Y	Y	GG	GG	TILL
-05	8.5	1.5	7.0	172.3	128.2	44.1	27.9	16.2	1	36	P	90	10	NA	NA	U	Y	Y	Y	GG	GG	TILL
-06	7.6	1.3	6.3	146.5	105.7	40.8	27.5	13.3	1	105	P	90	10	NA	NA	U	Y	Y	Y	GG	GG	TILL
-07	7.6	1.6	6.0	176.7	138.0	38.7	26.3	12.4	1	81	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
-08	9.5	2.2	7.3	219.8	173.5	46.3	32.5	13.8	0	NA	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
-09	9.2	2.0	7.2	172.6	130.8	41.8	27.7	14.1	0	NA	P	85	15	NA	NA	U	Y	Y	Y	B	B	TILL
-10	8.7	1.2	7.5	180.0	138.0	42.0	28.3	13.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
-11	9.8	1.8	8.0	166.6	128.8	37.8	23.8	14.0	1	16	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
80-01	8.1	2.8	5.3	197.7	143.8	53.9	28.9	25.0	1	171	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
-02	8.2	1.6	6.6	171.0	128.3	42.7	19.1	23.6	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
80-03	6.4	2.1	4.3	181.7	173.6	8.1	4.3	3.8	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL

MIPL9AUG.WR1

OVERBURDEN DRILLING MANAGEMENT LIMITED

TOTAL # OF SAMPLES IN THIS REPORT = 60

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	%				S/U	SD	ST	CY	COLOR		
												V/S	GR	LS	OT					SD	CY	
PLS-88																						
80-04	8.5	2.3	6.2	137.3	112.6	24.7	13.7	11.0	0	NA	P	80	20	NA	NA	S	C	Y	Y	GB	GB	GRAVEL
80-05	8.3	2.2	6.1	178.1	118.3	59.8	42.6	17.2	0	NA	P	80	20	NA	NA	S	C	Y	Y	GB	GB	GRAVEL
80-06	8.6	1.4	7.2	144.2	83.5	60.7	19.8	40.9	0	NA	P	80	20	NA	NA	S	C	Y	Y	GB	GG	GRAVEL
80-07	8.8	1.4	7.4	120.3	91.5	28.8	19.7	9.1	1	76	C	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
80-08	9.3	1.1	8.2	150.3	112.3	38.0	24.1	13.9	1	259	C	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
80-09	8.9	1.0	7.9	150.9	69.1	81.8	54.5	27.3	8	111	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
81-01	9.1	1.1	8.0	218.6	174.3	44.3	31.1	13.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
82-01	8.7	1.6	7.1	182.7	135.7	47.0	33.2	13.8	3	14	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
83-01	8.7	1.1	7.6	228.0	183.7	44.3	31.9	12.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
84-01	8.6	1.0	7.6	179.7	152.0	27.7	19.9	7.8	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
85-01	7.4	0.2	7.2	230.4	176.8	53.6	39.5	14.1	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
86-01	7.6	0.6	7.0	143.9	116.6	27.3	19.9	7.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
86-02	8.1	1.8	6.3	161.9	116.8	45.1	29.4	15.7	6	683	P	80	20	NA	NA	U	Y	Y	Y	GY	GG	TILL
87-01	8.6	0.2	8.4	229.6	177.6	52.0	40.4	11.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
87-02	8.5	0.4	8.1	211.7	174.5	37.2	26.9	10.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
87-03	8.0	1.1	6.9	120.8	85.2	35.6	20.3	15.3	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
87-04	8.6	1.6	7.0	128.4	103.5	24.9	14.0	10.9	1	107	P	70	30	NA	NA	S	C	Y	Y	GB	GB	GRAVEL
87-05	8.3	0.8	7.5	196.1	148.7	47.4	19.5	27.9	0	NA	P	70	30	NA	NA	S	C	Y	Y	GB	GB	GRAVEL
88-01	8.4	3.2	5.2	156.7	152.2	4.5	2.7	1.8	0	NA	P	80	20	NA	NA	S	C	Y	Y	B	B	GRAVEL
88-02	5.9	3.8	2.1	33.0	30.1	2.9	2.0	0.9	0	NA	P	80	20	NA	NA	S	C	Y	Y	B	B	GRAVEL
88-03	9.6	2.2	7.4	124.6	95.7	28.9	12.7	16.2	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
89-01	9.1	1.2	7.9	188.7	164.3	24.4	16.6	7.8	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
89-02	8.3	1.4	6.9	230.3	206.9	23.4	12.2	11.2	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
89-03	8.9	1.4	7.5	240.9	210.0	30.9	19.0	11.9	1	20	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
89-04	8.7	1.4	7.3	166.7	144.5	22.2	15.1	7.1	0	NA	P	75	25	NA	NA	U	Y	Y	Y	B	B	TILL
89-05	9.5	1.1	8.4	144.9	100.7	44.2	26.0	18.2	3	110	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
89-06	9.3	1.2	8.1	157.5	112.7	44.8	24.7	20.1	1	61	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
89-07	9.7	1.4	8.3	165.0	119.8	45.2	26.1	19.1	7	346	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
89-08	9.1	1.4	7.7	131.8	92.4	39.4	24.0	15.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
89-09	9.0	1.6	7.4	170.3	122.1	48.2	30.8	17.4	1	12	P	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
89-10	9.5	1.7	7.8	164.4	124.7	39.7	24.2	15.5	1	42	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
89-11	9.5	0.9	8.6	184.6	131.0	53.6	30.8	22.8	0	NA	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
89-12	9.1	1.4	7.7	196.0	145.7	50.3	30.4	19.9	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
89-13	9.4	2.0	7.4	221.6	168.5	53.1	35.5	17.6	4	78	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
89-14	9.8	1.2	8.6	249.1	182.1	67.0	50.4	16.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
89-15	9.4	1.6	7.8	155.7	104.1	51.6	33.8	17.8	6	58	P	90	10	NA	NA	U	Y	Y	Y	GG	GG	TILL
89-16	10.0	1.0	9.0	116.0	47.8	68.2	39.1	29.1	4	52	P	90	10	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
89-17	9.3	1.4	7.9	124.5	79.7	44.8	23.0	21.8	1	16	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
89-18	9.4	1.4	8.0	177.8	133.4	44.4	23.6	20.8	1	64	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
89-19	9.5	1.6	7.9	253.8	214.7	39.1	21.6	17.5	3	35	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
89-20	9.6	1.7	7.9	239.3	180.0	59.3	27.9	31.4	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
89-21	9.4	1.4	8.0	216.9	133.6	83.3	26.0	57.3	8	398	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
89-22	9.5	1.2	8.3	217.2	143.2	74.0	29.5	44.5	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
89-23	9.4	0.5	8.9	149.3	92.8	56.5	32.9	23.6	4	80	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL

MIPL9AUG.WR1 OVERBURDEN DRILLING MANAGEMENT LIMITED
TOTAL # OF SAMPLES IN THIS REPORT = 60

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	%				S/U	SD	ST	CY	COLOR		
												V/S	GR	LS	OT					SD	CY	
PLS-88																						
90-01	8.1	1.4	6.7	134.8	90.4	44.4	18.7	25.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
90-02	9.1	1.7	7.4	196.3	163.4	32.9	19.1	13.8	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
90-03	8.3	2.6	5.7	167.2	144.4	22.8	13.0	9.8	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
90-04	9.0	3.1	5.9	214.1	174.4	39.7	23.5	16.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
91-01	8.6	1.4	7.2	276.3	243.0	33.3	21.4	11.9	1	30	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
91-02	9.1	1.4	7.7	94.7	62.5	32.2	19.6	12.6	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
91-03	9.2	1.2	8.0	254.6	216.0	38.6	24.6	14.0	1	26	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
91-04	8.7	1.0	7.7	194.9	157.1	37.8	24.7	13.1	5	33	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
92-01	8.5	0.6	7.9	189.5	151.3	38.2	25.8	12.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
92-02	8.9	0.8	8.1	162.7	122.6	40.1	26.1	14.0	1	14	P	70	30	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
92-03	9.0	1.4	7.6	145.9	106.1	39.8	25.7	14.1	6	54	P	70	30	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
92-04	9.4	1.6	7.8	133.0	92.8	40.2	25.0	15.2	7	167	P	70	30	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
93-01	8.4	0.0	8.4	169.2	127.1	42.1	26.8	15.3	6	129	TR	NA	NA	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
94-01	9.0	1.2	7.8	164.6	110.7	53.9	33.2	20.7	11	318	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
94-02	8.9	1.8	7.1	148.7	103.8	44.9	26.9	18.0	5	163	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
95-01	9.3	1.4	7.9	179.6	130.6	49.0	30.3	18.7	6	505	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL

MIPLAAUG.WR1

OVERBURDEN DRILLING MANAGEMENT LIMITED

TOTAL # OF SAMPLES IN THIS REPORT = 40

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET)			WEIGHT (GRAMS DRY)					AU		DESCRIPTION											CLASS
						M. I. CONC					CLAST					MATRIX						
											SIZE	%								COLOR		
	TABLE SPLIT	+10 CHIPS	TABLE FEED	TABLE CONC	M.I. LIGHTS	CONC. TOTAL	NON MAG	MAG	NO. V.G.	CALC PPB		V/S	GR	LS	OT	S/U	SD	ST	CY	SD	CY	
PLS-88																						
95-02	8.9	1.2	7.7	174.2	117.9	56.3	35.5	20.8	6	105	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
95-03	8.6	0.8	7.8	209.8	149.7	60.1	40.6	19.5	4	1455	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
95-04	8.7	1.4	7.3	196.9	133.7	63.2	36.7	26.5	9	128	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
95-05	8.4	1.1	7.3	126.5	89.8	36.7	22.5	14.2	1	28	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
96-01	8.1	0.6	7.5	144.5	97.2	47.3	31.2	16.1	3	65	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
96-02	8.3	1.0	7.3	153.6	111.4	42.2	28.7	13.5	5	47	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
96-03	8.7	0.8	7.9	193.2	147.6	45.6	30.2	15.4	6	42	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
96-04	8.7	0.8	7.9	184.4	133.6	50.8	33.8	17.0	11	70	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
96-05	8.7	0.6	8.1	194.3	140.4	53.9	37.6	16.3	8	110	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
96-06	8.4	0.8	7.6	116.7	82.4	34.3	21.6	12.7	7	67	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
96-07	8.9	1.4	7.5	238.3	193.9	44.4	30.6	13.8	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
96-08	8.2	1.2	7.0	126.0	84.4	41.6	27.6	14.0	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
96-09	8.0	1.0	7.0	126.4	86.5	39.9	26.2	13.7	1	3	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
96-10	8.0	1.6	6.4	150.0	109.1	40.9	26.0	14.9	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
96-11	8.8	1.2	7.6	212.8	171.7	41.1	26.3	14.8	1	14	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
96-12	8.6	1.2	7.4	156.3	113.2	43.1	24.7	18.4	10	212	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
96-13	8.4	1.0	7.4	168.6	122.8	45.8	27.3	18.5	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
96-14	8.7	1.0	7.7	204.4	154.4	50.0	28.8	21.2	1	22	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
96-15	8.5	0.8	7.7	97.5	63.1	34.4	21.4	13.0	1	47	P	75	25	NA	NA	U	Y	Y	Y	GB	GB	TILL
96-16	9.0	1.0	8.0	178.6	144.5	34.1	21.0	13.1	4	93	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
96-17	9.4	1.2	8.2	139.3	104.5	34.8	25.4	9.4	0	NA	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
97-01	9.6	1.4	8.2	90.0	52.9	37.1	26.6	10.5	9	223	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
97-02	9.0	1.1	7.9	163.7	124.0	39.7	31.3	8.4	1	12	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
97-03	9.0	1.4	7.6	150.4	113.6	36.8	29.2	7.6	1	22	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
97-04	9.1	1.2	7.9	208.0	160.2	47.8	38.0	9.8	8	67	P	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
97-05	9.1	1.8	7.3	178.8	130.2	48.6	37.8	10.8	11	124	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
97-06	9.1	1.2	7.9	183.8	106.9	76.9	52.2	24.7	20	295	P	80	20	NA	NA	U	Y	Y	Y	GB	B	TILL
97-07	9.1	2.0	7.1	199.7	144.7	55.0	40.9	14.1	21	722	P	70	30	NA	NA	U	Y	Y	Y	GB	B	TILL
97-08	9.0	1.6	7.4	136.3	88.1	48.2	37.9	10.3	6	191	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
97-09	8.2	1.0	7.2	142.3	96.6	45.7	37.1	8.6	7	154	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
97-10	9.6	3.0	6.6	164.7	118.2	46.5	35.0	11.5	14	197	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
97-11	7.4	0.6	6.8	137.8	101.0	36.8	26.6	10.2	7	51	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
97-12	8.3	0.8	7.5	252.3	181.1	71.2	38.0	33.2	5	30	P	40	60	NA	NA	U	Y	Y	Y	GB	GB	TILL
97-13	8.4	0.8	7.6	145.2	92.5	52.7	31.1	21.6	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
98-01	8.6	0.0	8.6	186.9	154.2	32.7	27.8	4.9	0	NA	TR	NA	NA	NA	NA	S	M	Y	Y	B	B	SAND
98-02	8.6	0.2	8.4	188.3	144.4	43.9	35.8	8.1	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
98-03	8.4	0.2	8.2	154.3	114.3	40.0	29.7	10.3	3	172	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
98-04	9.0	1.4	7.6	195.6	154.5	41.1	28.6	12.5	5	87	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
98-05	8.6	0.6	8.0	116.1	73.5	42.6	30.0	12.6	8	55	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
98-06	9.0	1.4	7.6	144.4	100.8	43.6	31.5	12.1	0	NA	P	70	30	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						
												%								COLOR		
	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	SD	CY	
PLS-88																						
98-07	9.1	1.0	8.1	167.3	115.9	51.4	35.8	15.6	6	125	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
98-08	8.9	1.4	7.5	129.7	81.7	48.0	31.6	16.4	4	58	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
98-09	9.1	1.6	7.5	156.9	110.7	46.2	32.9	13.3	1	19	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
98-10	9.5	1.3	8.2	168.3	116.3	52.0	34.4	17.6	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
98-11	9.3	2.1	7.2	149.5	100.4	49.1	29.8	19.3	5	126	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
98-12	9.2	2.6	6.6	300.0	248.3	51.7	33.0	18.7	9	117	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
98-13	6.5	0.6	5.9	102.1	69.0	33.1	21.2	11.9	4	32	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
99-01	8.4	1.2	7.2	143.5	122.7	20.8	13.9	6.9	3	344	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
99-02	9.2	1.6	7.6	158.4	109.7	48.7	29.4	19.3	5	79	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
100-01	7.5	0.4	7.1	157.9	128.4	29.5	11.5	18.0	1	130	P	55	45	NA	NA	S	FC	Y	Y	GNB	GNB	SAND
101-01	8.8	2.2	6.6	167.4	111.8	55.6	34.9	20.7	31	300	P	70	30	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
101-02	8.5	2.6	5.9	105.6	64.7	40.9	25.9	15.0	52	922	P	60	40	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
101-03	8.4	1.8	6.6	182.4	150.6	31.8	15.5	16.3	106	4186	P	60	40	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
102-01	8.2	4.6	3.6	141.1	127.7	13.4	8.4	5.0	6	114	P	70	30	NA	NA	S	C	Y	Y	GNB	GNB	GRAVEL
02-02	8.7	3.4	5.3	95.6	77.1	18.5	10.9	7.6	41	3100	P	60	40	NA	NA	S	C	Y	Y	B	B	GRAVEL
102-03	8.6	3.4	5.2	203.5	185.7	17.8	11.1	6.7	6	366	P	60	40	NA	NA	S	C	Y	Y	B	B	GRAVEL
102-04	8.8	2.8	6.0	97.2	72.7	24.5	17.0	7.5	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
102-05	9.0	0.6	8.4	184.6	142.6	42.0	28.9	13.1	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
103-01	8.6	0.2	8.4	128.0	105.3	22.7	16.9	5.8	0	NA	P	70	30	NA	NA	S	C	Y	Y	B	B	SAND
103-02	8.6	0.0	8.6	177.5	139.7	37.8	25.2	12.6	0	NA	TR	NA	NA	NA	NA	S	F	Y	Y	B	B	SAND
103-03	8.5	0.0	9.0	117.4	76.2	41.2	27.4	13.8	0	NA	TR	NA	NA	NA	NA	S	F,M	Y	Y	B	B	SAND
103-04	8.8	0.6	7.9	117.2	77.0	40.2	27.0	13.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
104-01	8.2	1.0	7.8	159.0	111.9	47.1	29.6	17.5	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
104-02	9.7	1.8	7.9	146.7	94.8	51.9	32.7	19.2	20	1336	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
104-03	8.8	1.2	7.6	155.1	105.2	49.9	30.9	19.0	11	303	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
104-04	9.0	0.6	8.4	125.4	73.0	52.4	31.2	21.2	20	224	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
105-01	8.6	0.2	8.4	143.7	94.7	49.0	29.4	19.6	18	346	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
105-02	8.4	1.8	6.6	131.3	84.6	46.7	27.8	18.9	15	329	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
105-03	9.0	2.4	6.6	146.4	101.4	45.0	24.7	20.3	12	122	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
105-04	8.7	1.6	7.1	120.5	72.8	47.7	27.9	19.8	15	221	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
105-05	8.7	1.2	7.5	103.7	66.7	37.0	22.0	15.0	16	708	P	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
105-06	8.9	0.9	8.0	260.2	208.1	52.1	33.8	18.3	9	181	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
105-07	9.6	0.9	8.7	165.2	121.2	44.0	22.3	21.7	1	17	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
106-01	8.4	1.5	6.9	148.5	101.8	46.7	31.5	15.2	1	67	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
106-02	9.1	1.5	7.6	174.2	132.6	41.6	29.6	12.0	0	NA	P	85	15	NA	NA	U	Y	Y	Y	GB	GB	TILL
106-03	9.4	1.4	8.0	153.5	109.8	43.7	29.4	14.3	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
106-04	9.0	1.4	7.6	195.8	149.1	46.7	33.7	13.0	3	122	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
106-05	9.3	1.8	7.5	159.1	113.9	45.2	30.8	14.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
106-06	9.5	1.5	8.0	212.2	179.4	32.8	22.5	10.3	1	17	P	90	10	NA	NA	U	Y	Y	Y	B	B	TILL
6-07	9.4	1.6	7.8	163.7	130.6	33.1	20.2	12.9	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
07-01	9.0	1.6	7.4	124.2	91.5	32.7	21.6	11.1	3	216	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
108-01	7.0	1.4	5.6	128.7	77.4	51.3	38.7	12.6	1	55	P	80	20	NA	NA	U	Y	Y	Y	GN	GN	TILL

MIPL5SEP.WR1

TOTAL # OF SAMPLES IN THIS REPORT = 19

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET)			WEIGHT (GRAMS DRY)					AU		DESCRIPTION												CLASS
						M. I. CONC					CLAST					MATRIX							
												%								COLOR			
	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	SD	CY		
PLS-88																							
110-01	9.4	2.0	7.4	164.3	120.4	43.9	27.9	16.0	11	690	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL	
110-02	8.6	2.0	6.6	138.8	90.4	48.4	35.1	13.3	6	783	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL	
110-03	9.2	2.1	7.1	125.5	81.4	44.1	28.9	15.2	17	367	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL	
110-04	9.3	2.0	7.3	186.3	132.9	55.4	34.2	21.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL	
110-05	8.3	1.9	6.4	123.3	88.9	34.4	22.8	11.6	1	28	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL	
110-06	8.7	1.8	6.9	117.3	76.4	40.9	28.7	12.2	3	71	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL	
110-07	8.5	1.6	6.9	140.3	102.6	37.7	26.6	11.1	3	24	P	70	30	NA	NA	U	Y	Y	Y	GN	GN	TILL	
110-08	8.8	2.2	6.6	98.2	69.6	28.6	15.0	13.6	34	5406	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL	
111-01	9.3	1.0	8.3	184.7	128.1	56.6	38.1	18.5	24	441	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL	
111-02	9.0	1.4	7.6	138.5	90.0	48.5	32.0	16.5	14	258	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL	
111-03	9.6	1.6	8.0	318.6	255.4	63.2	42.4	20.8	14	264	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL	
111-04	9.6	1.8	7.8	113.1	67.0	46.1	31.2	14.9	6	28	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL	
112-01	5.8	1.0	4.8	123.2	90.8	32.4	21.2	11.2	1	180	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL	
113-01	8.4	1.8	6.6	179.4	138.5	40.9	27.2	13.7	6	120	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL	
113-02	9.4	1.8	7.6	193.3	140.7	52.6	35.7	16.9	12	75	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL	
114-01	9.0	1.6	7.4	201.5	151.3	50.2	29.8	20.4	143	4618	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL	
114-02	8.5	1.8	6.7	143.0	98.6	44.4	23.4	21.0	66	1432	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL	
115-01	2.5	1.9	0.6	143.1	95.9	47.2	29.5	17.7	32	427	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL	
116-01	9.3	1.4	7.9	136.7	91.7	45.0	29.8	15.2	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL	
116-02	7.9	0.2	7.7	81.5	75.2	6.3	4.0	2.3	9	1051	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL	

MIPL4SEP.WR1

OVERBURDEN DRILLING MANAGEMENT LIMITED

TOTAL # OF SAMPLES IN THIS REPORT = 60

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET)			WEIGHT (GRAMS DRY)					AU		DESCRIPTION											CLASS
						M. I. CONC					CLAST					MATRIX						
												%								COLOR		
	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	SD	CY	
PLS-88																						
116-03	9.3	1.4	7.9	196.9	148.8	48.1	29.4	18.7	24	467	P	50	50	NA	NA	U	Y	Y	Y	GB	GB	TILL
116-04	9.5	1.8	7.7	232.9	192.4	40.5	24.4	16.1	17	265	P	60	40	NA	NA	U	Y	Y	Y	G	G	TILL
117-01	9.3	1.9	7.4	266.8	227.5	39.3	26.9	12.4	15	110	P	70	30	NA	NA	U	Y	Y	Y	GB	G	TILL
117-02	9.2	2.0	7.2	145.8	102.2	43.6	20.3	23.3	6	508	P	70	30	NA	NA	U	Y	Y	Y	G	G	TILL
117-03	9.1	1.9	7.2	339.5	283.1	56.4	35.0	21.4	5	839	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
117-04	8.9	1.1	7.8	263.8	211.5	52.3	32.0	20.3	10	215	P	65	35	NA	NA	U	Y	Y	Y	GY	GB	TILL
117-05	9.2	1.2	8.0	236.7	192.7	44.0	26.4	17.6	10	16350	P	65	35	NA	NA	U	Y	Y	Y	GY	GB	TILL
117-06	8.8	1.5	7.3	281.7	234.6	47.1	16.4	30.7	60	852	C	40	60	NA	NA	U	Y	Y	Y	GB	GB	TILL
117-07	8.3	1.8	6.5	250.4	212.4	38.0	17.8	20.2	86	3493	C	30	70	NA	NA	U	Y	Y	Y	B	GB	TILL
117-08	8.6	1.9	6.7	288.4	257.7	30.7	16.2	14.5	9	230	C	50	50	NA	NA	U	Y	Y	Y	GY	GB	TILL
118-01	8.6	0.5	8.1	257.0	214.0	43.0	25.9	17.1	13	191	C	40	60	NA	NA	U	Y	Y	Y	GB	GB	TILL
118-02	8.2	2.5	5.7	165.6	125.8	39.8	21.2	18.6	6	77	C	40	60	NA	NA	U	Y	Y	Y	GB	GN	TILL
118-03	8.3	0.9	7.4	224.5	169.2	55.3	24.8	30.5	90	1423	C	35	65	NA	NA	U	Y	Y	Y	GB	GN	TILL
118-04	8.0	1.0	7.0	196.0	136.1	59.9	22.1	37.8	198	2457	C	30	70	NA	NA	U	Y	Y	Y	GB	GB	TILL
119-01	8.4	1.7	6.7	158.4	109.1	49.3	31.3	18.0	45	325	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
119-02	7.9	1.9	6.0	193.6	143.8	49.8	30.6	19.2	14	940	P	65	35	NA	NA	U	Y	Y	Y	GB	GB	TILL
119-03	8.4	1.8	6.6	175.0	120.1	54.9	36.9	18.0	1	58	P	70	30	NA	NA	U	Y	Y	Y	GN	GN	TILL
120-01	9.5	2.0	7.5	176.7	129.3	47.4	30.6	16.8	4	42	P	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
120-02	9.3	1.5	7.8	140.0	102.9	37.1	21.9	15.2	3	238	P	50	50	NA	NA	U	Y	Y	Y	GB	GB	TILL
120-03	9.3	1.6	7.7	177.8	126.8	51.0	30.2	20.8	2	499	P	50	50	NA	NA	U	Y	Y	Y	GB	GB	TILL
120-04	8.9	1.4	7.5	187.1	137.6	49.5	32.0	17.5	1	32	P	65	35	NA	NA	U	Y	Y	Y	GB	GB	TILL
120-05	8.8	1.4	7.4	177.5	143.0	34.5	20.9	13.6	1	138	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
120-06	9.3	1.5	7.8	181.2	133.4	47.8	26.6	21.2	10	129	C	60	40	NA	NA	U	Y	Y	Y	GB	GB	TILL
120-07	9.3	1.2	8.1	263.1	213.7	49.4	28.3	21.1	9	117	C	55	45	NA	NA	U	Y	Y	Y	GB	GB	TILL
121-01	9.2	1.6	7.6	199.5	151.6	47.9	31.5	16.4	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
121-02	8.6	1.4	7.2	245.0	197.2	47.8	32.9	14.9	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
121-03	9.6	1.6	7.8	166.2	115.1	51.1	31.2	19.9	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
121-04	7.6	0.7	6.9	169.3	137.6	31.7	18.9	12.8	0	NA	C	70	30	NA	NA	U	Y	Y	Y	GN	GY	TILL
121-05	8.7	1.2	7.5	156.6	113.2	43.4	27.9	15.5	1	23	C	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
121-06	9.3	0.9	8.4	165.6	122.7	42.9	25.9	17.0	1	3	C	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
121-07	9.4	1.5	7.9	234.3	184.2	50.1	27.4	22.7	1	7	C	55	45	NA	NA	U	Y	Y	Y	GY	GY	TILL
121-08	8.8	1.9	6.9	344.2	301.6	42.6	24.8	17.8	1	26	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
121-09	9.3	2.2	7.1	212.2	158.0	54.2	34.0	20.2	1	113	P	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
121-10	8.7	1.5	7.2	170.7	128.4	42.3	19.2	23.1	4	77	P	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
122-01	9.3	1.5	7.8	196.7	144.4	52.3	32.7	19.6	1	20	P	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
122-02	9.0	0.9	8.1	250.0	200.9	49.1	25.9	23.2	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GY	GY	TILL
122-03	8.9	1.5	7.4	240.0	195.9	44.1	28.1	16.0	7	77	P	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
122-04	9.2	1.5	7.7	182.2	137.1	45.1	26.6	18.5	1	56	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
122-05	9.2	1.2	8.0	227.7	170.6	57.1	33.1	24.0	5	555	P	65	35	NA	NA	U	Y	Y	Y	GY	GY	TILL
122-06	8.7	1.5	7.2	127.4	80.4	47.0	28.0	19.0	1	137	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
122-07	9.2	2.0	7.2	190.8	156.3	34.5	22.1	12.4	3	39	P	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
122-08	9.2	1.7	7.5	200.3	159.6	40.7	25.9	14.8	1	14	P	65	35	NA	NA	U	Y	Y	Y	GY	GY	TILL
122-09	9.3	1.4	7.9	178.4	135.5	42.9	24.6	18.3	4	52	P	65	35	NA	NA	U	Y	Y	Y	GY	GY	TILL
122-10	9.2	1.0	8.2	253.3	210.4	42.9	28.0	14.9	0	NA	P	65	35	NA	NA	U	Y	Y	Y	GY	GY	TILL

MIPL4SEP.WR1

OVERBURDEN DRILLING MANAGEMENT LIMITED

TOTAL # OF SAMPLES IN THIS REPORT = 60

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	
PLS-88																						
122-11	9.0	1.0	8.0	237.1	201.2	35.9	22.6	13.3	1	17	P	65	35	NA	NA	U	Y	Y	Y	GY	GY	TILL
122-12	9.1	1.4	7.7	190.7	150.7	40.0	24.6	15.4	0	NA	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
122-13	9.2	1.1	8.1	193.6	154.3	39.3	24.2	15.1	5	115	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
123-01	9.2	2.0	7.2	194.2	157.3	36.9	23.0	13.9	16	101	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
123-02	7.9	1.8	6.1	176.4	142.0	34.4	21.5	12.9	11	163	P	65	35	NA	NA	U	Y	Y	Y	GY	GY	TILL
123-03	8.5	2.8	5.7	211.6	161.0	50.6	31.4	19.2	9	339	P	55	45	NA	NA	U	Y	Y	Y	GY	GY	TILL
123-04	8.7	3.0	5.7	245.0	194.7	50.3	31.3	19.0	1	20	P	50	50	NA	NA	U	Y	Y	Y	GY	GY	TILL
123-05	9.2	2.0	7.2	326.1	259.4	66.7	43.3	23.4	10	162	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
123-06	8.9	1.2	7.7	266.6	190.2	76.4	53.4	23.0	10	58	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
123-07	8.8	1.0	7.8	236.0	184.5	51.5	33.5	18.0	1	11	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
123-08	7.8	0.8	7.0	187.4	142.9	44.5	28.8	15.7	4	28	C	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
123-09	9.1	1.2	7.9	184.5	138.2	46.3	28.7	17.6	6	127	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
123-10	9.4	1.3	8.1	202.1	152.6	49.5	30.2	19.3	7	78	P	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
123-11	9.2	1.9	7.3	345.8	307.4	38.4	22.7	15.7	2	337	P	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
124-01	8.8	1.2	7.6	136.5	93.7	42.8	26.3	16.5	7	119	C	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
124-02	8.4	1.2	7.2	131.1	93.0	38.1	25.8	12.3	9	304	C	80	20	NA	NA	U	Y	Y	Y	GY	GY	TILL

MIPL6SEP.WR1 OVE*BURDEN DRILLING MANAGEMENT LIMITED
TOTAL # OF SAMPLES IN THIS REPORT : 24

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	%				S/U	SD	ST	CY	COLOR		
												V/S	GR	LS	OT					SD	CY	
PLS-88																						
124-03	8.0	1.0	7.0	337.2	289.6	47.6	30.1	17.5	2	40	C	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
126-01	9.2	1.5	7.7	292.9	254.6	38.3	22.9	15.4	4	94	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
127-01	9.1	2.4	6.7	250.6	199.3	51.3	31.0	20.3	5	26	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
127-02	9.2	3.0	6.2	333.9	270.3	63.6	40.9	22.7	10	231	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
127-03	7.8	1.9	5.9	233.9	193.6	40.3	26.2	14.1	8	240	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
127-04	7.8	1.0	6.8	308.2	242.4	65.8	37.4	28.4	5	113	P	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL/BLD
129-01	8.9	3.6	5.3	309.1	245.5	63.6	37.8	25.8	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
131-01	9.3	1.1	8.2	233.0	181.9	51.1	30.4	20.7	5	133	C	50	50	NA	NA	U	Y	Y	Y	GY	GY	TILL
131-02	9.1	1.0	8.1	266.8	196.4	70.4	42.7	27.7	7	142	C	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
132-01	7.9	0.7	7.2	120.6	62.0	58.6	44.5	14.1	6	8	P/BK	70	30	NA	NA	U	Y	Y	Y	GN	GY	TILL/BDK
134-01	8.0	1.0	7.0	275.4	215.5	59.9	38.1	21.8	5	85	C	60	40	NA	NA	U	Y	Y	Y	B	B	TILL
134-02	9.3	1.0	8.3	265.9	193.0	72.9	47.5	25.4	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GY	GY	TILL
134-03	9.1	1.2	7.9	182.6	118.8	63.8	40.2	23.6	1	25	P	65	35	NA	NA	U	Y	Y	Y	B	B	TILL
134-04	8.5	1.2	7.3	177.9	126.9	51.0	32.2	18.8	1	20	P	65	35	NA	NA	U	Y	Y	Y	B	B	TILL
134-05	8.2	1.5	6.7	280.6	220.7	59.9	39.3	20.6	0	NA	P	65	35	NA	NA	U	Y	Y	Y	B	B	TILL
135-01	8.8	1.3	7.5	371.8	301.4	70.4	45.1	25.3	7	122	P	65	35	NA	NA	U	Y	Y	Y	GY	GY	TILL
135-02	9.2	2.0	7.2	275.7	217.9	57.8	36.2	21.6	3	229	P	65	35	NA	NA	U	Y	Y	Y	GY	GY	TILL
135-03	9.3	1.0	8.3	297.1	234.0	63.1	39.6	23.5	1	16	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL
135-04	8.9	2.0	6.9	250.4	192.2	58.2	34.9	23.3	0	NA	P	65	35	NA	NA	U	Y	Y	Y	GY	GY	TILL
135-05	8.9	1.5	7.4	266.7	220.8	45.9	30.8	15.1	1	12	P	55	45	NA	NA	U	Y	Y	Y	GY	GY	TILL
135-06	8.8	2.0	6.8	278.1	220.4	57.7	41.8	15.9	0	NA	C	65	35	NA	NA	U	Y	Y	Y	GY	GY	TILL
135-07	7.1	1.0	6.1	281.7	250.3	31.4	19.6	11.8	8	183	C	45	55	NA	NA	U	Y	Y	Y	GY	GY	TILL
135-08	8.8	1.8	7.0	259.0	211.1	47.9	30.0	17.9	23	341	C	45	55	NA	NA	U	Y	Y	Y	GY	GY	TILL
136-01	6.4	1.2	5.2	205.3	172.1	33.2	21.2	12.0	13	371	P	60	40	NA	NA	U	Y	Y	Y	GY	GY	TILL/BDK

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET)			WEIGHT (GRAMS DRY)					AU		DESCRIPTION											CLASS
						M. I. CONC					CLAST					MATRIX						
												%								COLOR		
	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	SD	CY	
PLS-88																						
137-01	6.1	1.9	4.2	152.4	125.3	27.1	15.9	11.2	1	64	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
137-02	8.8	2.8	6.0	159.1	125.5	33.6	17.8	15.8	1	163	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
137-03	7.8	1.8	6.0	109.3	72.1	37.2	22.8	14.4	1	16	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
137-04	9.1	1.8	7.3	153.5	114.5	39.0	22.8	16.2	6	457	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
137-05	9.2	1.0	8.2	204.0	158.2	45.8	30.4	15.4	6	120	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
137-06	9.4	2.2	7.2	177.3	118.2	59.1	31.9	27.2	5	98	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
137-07	8.8	1.6	7.2	158.2	108.7	49.5	31.5	18.0	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
137-08	9.5	3.4	6.1	131.1	76.8	54.3	30.7	23.6	1	6	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
137-09	6.2	1.0	5.2	156.2	114.5	41.7	27.2	14.5	8	335	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
138-01	9.1	1.9	7.2	233.3	183.6	49.7	29.7	20.0	1	22	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
138-02	9.5	2.8	6.7	128.7	84.5	44.2	25.7	18.5	0	NA	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
138-03	9.1	2.0	7.1	171.0	130.1	40.9	24.1	16.8	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
138-04	9.3	2.2	7.1	88.8	53.3	35.5	21.1	14.4	1	9	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
138-05	8.8	1.2	7.6	164.8	121.7	43.1	27.6	15.5	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
138-06	9.0	2.1	6.9	163.8	116.6	47.2	29.4	17.8	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GNB	GNB	TILL
139-01	9.9	2.4	7.5	196.1	150.4	45.7	28.2	17.5	1	23	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
139-02	8.8	1.6	7.2	147.3	104.8	42.5	27.9	14.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
139-03	9.4	1.8	7.6	115.6	70.6	45.0	27.7	17.3	5	70	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
139-04	9.6	1.7	7.9	124.8	82.9	41.9	25.8	16.1	1	7	P	85	15	NA	NA	U	Y	Y	Y	B	B	TILL
139-05	7.3	2.0	5.3	87.9	57.7	30.2	17.3	12.9	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL

MIPL1SEP.WR1

OVERBURDEN DRILLING MANAGEMENT LIMITED

TOTAL # OF SAMPLES IN THIS REPORT = 20

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	%				S/U	SD	ST	CY	COLOR		
												V/S	GR	LS	OT					SD	CY	
FLS-88																						
140-01	9.3	1.2	8.1	144.1	96.8	47.3	29.7	17.6	5	99	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
140-02	9.1	2.4	6.7	181.2	139.0	42.2	27.0	15.2	1	107	P	80	20	NA	NA	U	Y	Y	Y	GN	GN	TILL
140-03	8.8	1.8	7.0	140.0	100.6	39.4	26.1	13.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
140-04	8.7	1.4	7.3	185.5	128.3	57.2	36.4	20.8	1	41	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
140-05	9.3	2.6	6.7	158.5	116.4	42.1	24.8	17.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GN	GN	TILL
140-06	8.9	1.4	7.5	176.7	124.2	52.5	32.3	20.2	1	12	P	80	20	NA	NA	U	Y	Y	Y	GN	GN	TILL
141-01	8.7	1.4	7.3	166.0	116.8	49.2	30.9	18.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
141-02	8.7	1.8	6.9	175.2	127.6	47.6	31.1	16.5	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
141-03	9.1	1.6	7.5	188.4	127.6	60.8	40.7	20.1	6	259	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
141-04	9.1	1.0	8.1	200.7	151.6	49.1	30.1	19.0	1	34	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
141-05	8.2	2.2	6.0	230.7	182.1	48.6	31.5	17.1	7	241	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
141-06	9.5	2.0	7.5	203.0	159.3	43.7	26.5	17.2	6	245	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
141-07	9.2	2.4	6.8	158.1	118.8	39.3	23.8	15.5	1	63	P	80	20	NA	NA	U	Y	Y	Y	GN	GN	TILL
141-08	8.4	2.4	6.0	152.8	118.8	34.0	20.7	13.3	6	119	P	80	20	NA	NA	U	Y	Y	Y	GN	GN	TILL
141-09	8.3	2.8	5.5	170.9	132.5	38.4	24.1	14.3	7	74	P	80	20	NA	NA	U	Y	Y	Y	GN	GN	TILL
141-10	9.3	2.4	6.9	183.1	117.6	65.5	34.1	31.4	8	872	P	80	20	NA	NA	U	Y	Y	Y	GN	GN	TILL
142-01	9.3	1.9	7.4	128.3	81.2	47.1	25.8	21.3	1	14	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
142-02	7.2	1.4	5.8	106.4	73.6	32.8	19.3	13.5	3	49	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
142-03	8.5	2.0	6.5	137.9	93.5	44.4	27.1	17.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
142-04	8.5	1.2	7.3	175.0	134.1	40.9	21.3	19.6	1	9	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL

IPL2SEP.WR1

OVERBURDEN DRILLING MANAGEMENT LIMITED

TOTAL # OF SAMPLES IN THIS REPORT = 40

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	
PLS-88																						
142-05	8.9	1.8	7.1	162.3	115.2	47.1	29.8	17.3	8	106	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
142-06	9.1	1.4	7.7	131.2	85.2	46.0	26.2	19.8	5	106	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
142-07	8.7	1.8	6.9	129.3	81.8	47.5	27.5	20.0	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
142-08	8.9	2.2	6.7	161.0	118.1	42.9	27.3	15.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
142-09	8.6	3.0	5.6	139.9	105.3	34.6	20.7	13.9	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GN	GN	TILL
143-01	5.5	1.4	4.1	89.4	59.4	30.0	15.6	14.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
143-02	8.8	2.2	6.6	167.5	121.5	46.0	29.6	16.4	1	6	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
143-03	8.6	1.7	6.9	190.9	142.2	48.7	32.0	16.7	1	3	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
143-04	8.5	1.2	7.3	190.9	142.9	48.0	32.9	15.1	7	98	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
143-05	8.8	1.6	7.2	181.1	134.1	47.0	30.1	16.9	1	34	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
143-06	8.7	1.4	7.3	148.1	105.5	42.6	28.7	13.9	7	55	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
143-07	9.2	1.8	7.4	134.4	88.9	45.5	29.3	16.2	4	50	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
143-08	8.7	1.0	7.7	171.6	126.7	44.9	29.2	15.7	3	69	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
143-09	8.7	1.4	7.3	177.7	130.2	47.5	31.7	15.8	1	12	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
144-01	9.0	0.0	9.0	173.4	117.8	55.6	28.7	26.9	1	133	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
144-02	8.6	1.6	7.0	139.9	93.3	46.6	29.3	17.3	6	418	P	80	20	NA	NA	U	Y	Y	Y	B	B	TILL
144-03	8.8	1.8	7.0	137.8	89.7	48.1	29.4	18.7	8	193	P	90	10	NA	NA	U	Y	Y	Y	GB	GB	TILL
144-04	9.1	2.2	6.9	208.8	159.3	49.5	29.5	20.0	7	60	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
144-05	7.9	1.6	6.3	100.3	62.9	37.4	23.0	14.4	16	570	P	80	20	NA	NA	U	Y	Y	Y	GN	GN	TILL
144-06	8.8	2.4	6.4	173.7	127.5	46.2	30.4	15.8	16	118	P	80	20	NA	NA	U	Y	Y	Y	GN	GN	TILL
144-07	7.5	1.4	6.1	166.3	114.3	52.0	33.7	18.3	18	220	P	70	30	NA	NA	U	Y	Y	Y	GN	GN	TILL
145-01	9.0	2.4	6.6	124.7	89.4	35.3	23.3	12.0	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GN	GN	TILL
145-02	4.4	0.4	4.0	158.6	135.8	22.8	15.4	7.4	6	739	P	70	30	NA	NA	U	Y	Y	Y	GG	GG	TILL
146-01	8.9	1.8	7.1	121.2	81.9	39.3	25.5	13.8	0	NA	P	70	30	NA	NA	U	Y	Y	Y	GG	GG	TILL
146-02	8.5	6.0	ERR	147.6	101.7	45.9	30.0	15.9	6	54	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
146-03	9.2	1.8	7.4	175.1	123.0	52.1	33.5	18.6	12	343	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
146-04	8.8	1.4	7.4	220.7	175.1	45.6	30.2	15.4	10	234	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
146-05	9.0	2.0	7.0	111.2	71.7	39.5	24.8	14.7	1	26	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
146-06	8.8	1.8	7.0	176.5	130.0	46.5	31.2	15.3	7	78	P	70	30	NA	NA	U	Y	Y	Y	B	B	TILL
146-07	9.3	1.6	7.7	160.2	100.4	59.8	41.9	17.9	1	24	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
146-08	8.4	1.6	6.8	118.6	92.8	25.8	18.2	7.6	1	520	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
146-09	9.0	1.6	7.4	236.7	179.3	57.4	42.4	15.0	1	35	P	70	30	NA	NA	U	Y	Y	Y	GB	GB	TILL
146-10	8.9	1.2	7.7	206.0	171.9	34.1	29.8	4.3	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
146-11	9.5	2.7	6.8	163.3	119.4	43.9	30.5	13.4	5	71	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
146-12	8.6	1.4	7.2	130.6	91.2	39.4	29.3	10.1	1	13	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
146-13	8.8	1.3	7.5	135.4	91.5	43.6	32.8	10.8	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
147-01	9.2	2.8	6.4	149.0	112.2	36.8	24.8	12.0	7	495	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
147-02	8.6	1.9	6.7	158.3	108.0	50.3	34.1	16.2	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
147-03	9.1	2.2	6.9	155.7	113.9	41.8	26.1	15.7	1	57	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
147-04	8.6	1.0	7.6	147.4	94.5	52.9	37.3	15.6	1	27	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL

APPENDIX C

GOLD GRAIN COUNTS AND CALCULATED VISIBLE GOLD ASSAYS

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	%				S/U	SD	ST	CY	COLOR		
												V/S	GR	LS	OT					SD	CY	
PLS-88																						
147-05	8.5	1.2	7.3	210.4	162.6	47.8	29.9	17.9	1	12	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
147-06	8.1	1.2	0.0	272.1	219.7	52.4	34.2	18.2	5	62	P	80	20	NA	NA	U	Y	Y	Y	GN	GN	TILL
147-07	7.9	0.9	0.0	212.0	165.2	46.8	32.1	14.7	7	88	P	80	20	NA	NA	U	Y	Y	Y	GN	GN	TILL
147-08	8.2	1.0	0.0	147.8	103.1	44.7	29.0	15.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
147-09	8.6	1.2	7.0	152.6	108.2	44.4	27.7	16.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
147-10	8.5	1.4	7.2	166.0	119.5	46.5	30.0	16.5	1	7248	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
147-11	8.8	1.0	7.5	184.5	139.1	45.4	31.9	13.5	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
147-12	8.9	1.4	7.4	224.3	177.4	46.9	30.5	16.4	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
147-13	9.0	1.8	7.1	214.1	164.3	49.8	32.7	17.1	1	31	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
147-14	9.1	1.4	7.6	164.4	123.0	41.4	26.3	15.1	12	372	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
147-15	7.9	1.0	8.1	254.7	222.6	32.1	17.5	14.6	9	427	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
148-01	8.8	1.2	6.7	159.6	115.4	44.2	29.4	14.8	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
148-02	8.6	2.1	6.7	167.0	118.4	48.6	30.1	18.5	5	410	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
149-01	8.9	3.0	5.6	226.3	186.5	39.8	26.2	13.6	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
149-02	8.5	4.2	4.7	263.5	215.1	48.4	26.5	21.9	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GG	GG	TILL
149-03	9.3	2.6	5.9	105.7	57.8	47.9	30.0	17.9	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
149-04	9.1	1.2	8.1	115.2	89.1	26.1	18.4	7.7	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL
149-05	9.0	1.6	7.5	197.8	154.9	42.9	29.4	13.5	0	NA	P	80	20	NA	NA	U	Y	Y	Y	GB	GB	TILL

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

M[illegible]JUL.WR1
TOTAL # OF PANNINGS 28

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
PLS-88													
01-01	N	NO VISIBLE GOLD											
01-02	Y	25 X 25	5 C		1					1			EST. 1% PYRITE
		50 X 50	10 C	1	2					3			
		50 X 75	13 C	2						2			
		50 X 100	15 C		1					1			
										7	20.6	96	
01-03	N	NO VISIBLE GOLD											
01-04	Y	25 X 25	5 C	1						1			EST. 2% PYRITE
		25 X 50	8 C		2					2			
		50 X 75	13 C	1	1					2			
		50 X 100	15 C	1						1			
		75 X 100	18 C	1						1			
										7	26.5	98	
01-05	Y	25 X 50	8 C		1					1			EST. 5% PYRITE
		50 X 50	10 C		1					1			
		50 X 75	13 C	1						1			
		50 X 100	15 C		1					1			
		150 X 250	38 C	1						1			
										5	28.9	439	
01-06	Y	25 X 25	5 C		1					1			EST. 15% PYRITE
		25 X 50	8 C		2					2			
		25 X 75	10 C		1					1			
		50 X 50	10 C	2						2			
		50 X 75	13 C		2			1		3			
		50 X 100	15 C		1					1			
		75 X 75	15 C	1						1			
										11	30.6	103	
01-07	Y	25 X 25	5 C		1				1	2			EST. 15% PYRITE
		25 X 50	8 C		1		1		1	3			
		50 X 50	10 C		3					3			
		50 X 75	13 C				2			2			
		50 X 100	15 C	1						1			
		75 X 100	18 C			1				1			
										12	30.2	108	
01-08	Y	25 X 25	5 C		2				1	3			EST. 30% PYRITE

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

M.. ..JUL.WR1

TOTAL # OF PANNINGS 28

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
PLS-88													
		25 X 50	8 C				2		2	4			
		50 X 75	13 C	1	1		1			3			
		75 X 150	22 C		1					1			
		150 X 150	29 C	1						1			
		250 X 400	58 C	1						1			
										13	9.8	5538	
02-01	Y	25 X 25	5 C						1	1			EST. 10% PYRITE
		25 X 50	8 C		1					1			
		50 X 75	13 C		1					1			
		50 X 100	15 C	1				1		2			
		75 X 75	15 C		1					1			
		300 X 425	63 C	1						1			
										7	29.9	2156	
02-02	Y	25 X 50	8 C		1					1			EST. 10% PYRITE
		25 X 75	10 C	1						1			
		50 X 75	13 C		2					2			
		50 X 100	15 C	1						1			
		100 X 150	25 C	1						1			
										6	35.6	128	
02-03	N	50 X 75	13 C	1						1			
										1	32.6	11	
02-04	N	NO VISIBLE GOLD											
03-01	Y	50 X 50	10 C	1	1					2			EST. 10% PYRITE
		100 X 150	25 C	1						1			
		125 X 225	34 C	1						1			
										4	30.1	366	
03-02	Y	25 X 25	5 C		1					1			EST. 10% PYRITE
		25 X 75	10 C		1					1			
		50 X 75	13 C	1	1					2			
		100 X 150	25 C	1						1			
		150 X 175	31 C	1						1			
										6	43.7	231	
03-03	Y	25 X 25	5 C		2					2			EST. 5% PYRITE
		25 X 50	8 C		3		1			4			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

M. .UL.WR1
TOTAL # OF PANNINGS 28

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
PLS-88													
		25 X 75	10 C		1					1			
		50 X 50	10 C		1		1			2			
		50 X 75	13 C	2						2			
		100 X 100	20 C	1						1			
										12	28.1	114	
03-04	Y	25 X 50	8 C		1					1			EST. 50% PYRITE
		50 X 50	10 C	1			1			2			
		50 X 75	13 C				1			1			
		50 X 100	15 C		1					1			
		75 X 100	18 C	1						1			
		100 X 100	75 M				1			1			
										7	32.7	248	
03-05	Y	25 X 25	5 C				1			1			EST. 60% PYRITE
		25 X 50	8 C		2				1	3			50 COARSE GRAINS ARSENOPYRITE
		50 X 50	10 C		3		1		1	5			PHOTO MICROGRAPH AVAILABLE
		50 X 75	13 C	1					3	4			FILM REFERENCE #16
		50 X 100	15 C				1			1			
		75 X 100	75 M		1					1			
		125 X 150	27 C	1						1			
										16	29.8	386	
03-06	Y	25 X 25	5 C		1				1	2			EST. 50% PYRITE
		25 X 50	8 C						1	1			50 COARSE GRAINS ARSENOPYRITE
		50 X 75	13 C		3					3			
		75 X 100	18 C		1					1			
		75 X 150	22 C		1					1			
		100 X 150	25 C	1						1			
		100 X 175	27 C			1				1			
		125 X 150	27 C	1						1			
		150 X 175	31 C	1						1			
										12	27.5	770	
04-01	Y	25 X 25	5 C		1					1			EST. 1% PYRITE
		50 X 50	10 C	1						1			
		75 X 100	18 C	1						1			
										3	26.5	46	
.2	Y	25 X 25	5 C	1						1			EST. 1% PYRITE
		50 X 50	10 C	1	1					2			
		50 X 75	13 C	1	3					4			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

M.[illegible]JUL.WR1

TOTAL # OF PANNINGS 28

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
PLS-88													
		50 X 125	18 C		1					1			
		75 X 75	15 C	1						1			
		75 X 125	20 C	1						1			
		75 X 150	22 C	2						2			
		100 X 150	25 C	1						1			
										13	34.5	353	
04-03	Y	25 X 25	5 C		2					2			EST. 8% PYRITE
		25 X 50	8 C		2					2			
		50 X 75	13 C		1		1			2			
		100 X 100	20 C	1						1			
		125 X 175	29 C	1						1			
										8	30.9	239	
04-04	Y	25 X 50	8 C		2					2			EST. 10% PYRITE
		50 X 50	10 C	1						1			
										3	21.0	17	
05-01	Y	25 X 50	8 C		1				1	2			EST. 10% PYRITE
		50 X 50	10 C		1				1	2			10 GRAINS ARSENOPYRITE
		50 X 75	13 C		1					1			
		50 X 100	15 C		1					1			
		75 X 75	15 C	1	1					2			
		75 X 125	20 C	1						1			
										9	43.3	100	
05-02	Y	25 X 25	5 C		2					2			EST. 10% PYRITE
		25 X 50	8 C		1		1			2			10 GRAINS ARSENOPYRITE
		100 X 100	20 C	1						1			
		150 X 200	34 C	1						1			
										6	39.4	240	
05-03	N	150 X 175	31 C	1						1			
										1	29.3	213	
06-01	Y	25 X 25	5 C		1					1			EST. 70% PYRITE
		25 X 50	8 C		1		1			2			10 GRAINS ARSENOPYRITE
		50 X 75	13 C		1					1			
		75 X 100	18 C	1						1			
		150 X 200	34 C	1						1			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

M. .JUL.WR1
TOTAL # OF PANNINGS 28

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
PLS-88													
										6	26.6	350	
07-01	N	NO VISIBLE GOLD											
07-02	Y	25 X 25	5 C						1	1			EST. 2% PYRITE
		25 X 50	8 C		1					1			PHOTO MICROGRAPH AVAILABLE
		50 X 50	10 C		2					2			FILM REFERENCE #16
		50 X 75	13 C		3				1	4			
		50 X 100	15 C	2	1					3			
		75 X 75	15 C	1				1		2			
		75 X 125	20 C				1			1			
		75 X 150	22 C	1						1			
		100 X 100	20 C				1			1			
		100 X 125	22 C	1						1			
										17	43.1	288	
07-03	Y	25 X 25	5 C		2					2			EST. 10% PYRITE
		25 X 50	8 C		1		1		2	4			PHOTO MICROGRAPH AVAILABLE
		25 X 75	10 C		1					1			FILM REFERENCE #16
		50 X 50	10 C		3		1			4			
		50 X 75	13 C	1	1			1		3			
		100 X 100	20 C	1						1			
										15	44.7	88	
08-01	Y	25 X 50	8 C	1						1			EST. 1% PYRITE
		125 X 250	36 C	1						1			
										2	31.9	299	
09-01	N	50 X 75	13 C	1						1			
										1	18.0	21	
09-02	N	NO VISIBLE GOLD											
10-01	N	NO VISIBLE GOLD											
11-01	N	NO VISIBLE GOLD											
11-02	N	100 X 175	27 C	1						1			
										1	29.7	129	
11-03	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

M. JUL.WR1
TOTAL # OF PANNINGS 28

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
PLS-88													
11-04	Y	50 X 50	10 C		1					1			EST. 1% PYRITE
		50 X 100	15 C	1						1			
		75 X 125	20 C		1					1			
		75 X 150	22 C	1						1			
										4	27.2	164	
11-05	Y	25 X 25	5 C		1		1			2			EST. 1% PYRITE
		25 X 50	8 C		1					1			
		25 X 75	10 C		1					1			
		50 X 75	13 C	1						1			
		75 X 125	20 C	1						1			
										6	32.2	68	
11-06	Y	25 X 25	5 C		1		1			2			EST. 2% PYRITE
		25 X 50	8 C		1					1			
		50 X 50	10 C		1					1			
		50 X 75	13 C	1	1					2			
		75 X 75	15 C	1						1			
		75 X 100	18 C	1						1			
										8	26.1	104	
11-07	Y	25 X 75	10 C		1					1			EST. 2% PYRITE
		50 X 50	10 C		1					1			
		50 X 75	13 C	2	1					3			
		100 X 100	20 C	1						1			
										6	21.4	140	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
				T	P	T	P	T	P				
PLS-88													
11-08	Y	25 X 25	5 C				2			2			EST. 30% PYRITE
		25 X 50	8 C				1			1			10 GRAINS ARSENOPYRITE
										3	17.2	8	
12-01	Y	50 X 75	13 C	2						2			EST. 3% PYRITE
		75 X 100	18 C	1			1			2			
		125 X 125	25 C	1						1			
										5	40.1	141	
12-02	N	NO VISIBLE GOLD											
13-01	Y	25 X 25	5 C		1					1			EST. 10% PYRITE
		50 X 50	10 C	1	1					2			
		50 X 75	13 C		1	1				2			
		100 X 125	22 C	1						1			
										6	36.7	89	
13-02	Y	25 X 50	8 C		1					1			EST. 70% PYRITE 20% ARSENOPYRITE
										1	65.8	1	
14-01	N	NO VISIBLE GOLD											
14-02	Y	NO VISIBLE GOLD											EST. 60% PYRITE 300 GRAINS ARSENOPYRITE
15-01	N	50 X 75	13 C	1						1			
										1	54.9	7	
15-02	Y	25 X 25	5 C		1					1			EST. 70% PYRITE
		50 X 50	10 C		1					1			10% ARSENOPYRITE
										2	61.5	4	
16-01	N	50 X 75	13 C	1						1			
										1	40.7	9	
16-02	Y	75 X 75	15 C	1						1			EST. 50% PYRITE
		125 X 250	36 C	1						1			200 GRAINS ARSENOPYRITE
										2	41.1	246	

GOLD CLASSIFICATION
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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
PLS-88													
17-01	Y	25 X 50	8 C	1						1			EST. 10% PYRITE
		50 X 50	10 C	1						1			20 GRAINS ARSENOPYRITE
		50 X 75	13 C		1					1			300 MARCASITE PELLETS
										3	34.8	19	
17-02	N	NO VISIBLE GOLD											
18-01	N	NO VISIBLE GOLD											
18-02	Y	50 X 50	10 C		2					2			EST. 20% PYRITE
		75 X 75	15 C			1				1			
		75 X 125	20 C			1				1			
		75 X 150	22 C		1					1			
		100 X 150	25 C		1					1			
		125 X 175	29 C	1						1			
										7	24.7	505	
19-01	Y	50 X 50	10 C			1				1			EST. 1% PYRITE
		50 X 75	13 C	1						1			1% MARCASITE PELLETS
		75 X 75	15 C	1						1			
		75 X 100	18 C	2						2			
		100 X 125	22 C	1						1			
		100 X 150	25 C	1						1			
										7	49.4	167	
19-02	Y	25 X 50	8 C		1					1			EST. 20% PYRITE
		50 X 50	10 C	1						1			20 GRAINS ARSENOPYRITE
		75 X 100	18 C		1					1			500 MARCASITE PELLETS
		75 X 125	20 C	1						1			
		75 X 150	22 C		1					1			
		150 X 225	36 C	1						1			
		200 X 350	50 C	1						1			
										7	29.1	1472	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL6AUG.WR1

TOTAL # OF PANNINGS 24

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
PLS-88													
19-03	N	100 X 100	20 C	1						1			
										1	26.5	57	
20-01	Y	50 X 50	10 C		2					2			EST. 10% PYRITE
		50 X 50	50 M						1	1			
		50 X 75	13 C	1						1			
		75 X 75	15 C					1		1			
		75 X 100	18 C					1		1			
		100 X 175	27 C	1						1			
		300 X 325	56 C	1						1			
										8	39.4	1220	
20-02	N	50 X 50	10 C	1						1			
										1	28.0	7	
20-03	Y	75 X 100	18 C	1						1			EST. 20% PYRITE
		125 X 150	27 C	1						1			
										2	27.0	179	
20-04	N	175 X 275	42 C	1						1			
										1	20.1	797	
20-05	Y	25 X 75	10 C		1					1			EST. 7% PYRITE
		75 X 100	75 M		1					1			
		100 X 150	25 C	1						1			
		125 X 150	125 M		1					1			
		175 X 225	38 C	1						1			
										5	49.8	733	
20-06	Y	25 X 50	8 C					1		1			EST. 15% PYRITE
		50 X 75	13 C			1				1			
										2	30.1	15	
20-07	N	25 X 50	6 C	1						1			
										1	27.0	3	
20-08	N	NO VISIBLE GOLD											
20-09	N	50 X 100	15 C	1						1			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL6AUG.WR1
TOTAL # OF PANNINGS 24

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
PLS-88													
										1	42.2	15	
20-10	N	50 X 100	15 C	1						1			
										1	36.5	18	
20-11	N	25 X 75	10 C	1						1			
										1	25.8	7	
20-12	N	NO VISIBLE GOLD											
20-13	N	25 X 75	10 C	1						1			
										1	28.0	7	
20-14	N	NO VISIBLE GOLD											
20-15	N	NO VISIBLE GOLD											
21-01	N	75 X 75	15 C	1						1			
										1	25.5	25	
21-02	Y	50 X 75	13 C		1					1			EST. 15% PYRITE
		50 X 100	20 C		1					1			
		75 X 100	18 C	1				1		2			
										4	22.5	135	
22-01	Y	25 X 25	5 C		3					3			EST. 5% PYRITE
		25 X 75	10 C		1					1			
		50 X 50	10 C	1	1					2			
		75 X 100	18 C	1						1			
										7	26.5	63	
22-02	N	50 X 50	10 C	1						1			
										1	25.2	8	
22-03	Y	25 X 50	8 C					1		1			EST. 7% PYRITE
		50 X 100	15 C	1						1			
										2	23.2	31	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL6AUG.WR1
TOTAL # OF PANNINGS 24

				NUMBER OF GRAINS									
				ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG	CALC V.G. ASSAY	
SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	T	P	T	P	T	P		GMS	PPB	REMARKS
PLS-88													
22-04	Y	50 X 75	13 C				1			1			EST. 7% PYRITE
		50 X 100	15 C	2	1					3			
		75 X 100	18 C		1					1			
										5	25.7	129	
22-05	Y	25 X 25	5 C		1					1			EST. 15% PYRITE
		50 X 50	10 C	1						1			
		50 X 75	13 C					1		1			
		100 X 125	22 C	1						1			
		125 X 150	27 C	1						1			
		250 X 300	50 C	1						1			
										6	27.5	1273	
22-06	Y	25 X 50	8 C	1						1			EST. 20% PYRITE TRACE ARSENOPYRITE
		100 X 100	20 C		1					1			
		225 X 300	48 C	1						1			
										3	29.7	893	
22-07	N	75 X 150	22 C	1						1			
										1	16.4	129	
22-08	Y	25 X 25	5 C	1						1			EST. 20% PYRITE TRACE ARSENOPYRITE
		50 X 75	13 C		1			1		2			
										3	41.2	19	
22-09	Y	25 X 25	5 C		1					1			EST. 40% PYRITE
		25 X 50	8 C	1						1			
		75 X 100	18 C	1						1			
		125 X 150	27 C	1						1			
										4	36.7	135	
22-10	Y	25 X 25	5 C		3					3			EST. 10% PYRITE
		75 X 100	18 C		1					1			
		100 X 150	25 C	1						1			
		150 X 225	36 C	1						1			
										6	40.4	332	
22-11	N	50 X 200	25 C	1						1			
										1	18.3	158	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL6AUG.WR1
TOTAL # OF PANNINGS 24

				NUMBER OF GRAINS									
				ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG	CALC V.G. ASSAY	
SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	T	P	T	P	T	P		GMS	PPB	REMARKS
PLS-88													
23-01	N	NO VISIBLE GOLD											
23-02	Y	50 X 50	10 C						1	1			EST. 15% PYRITE
		50 X 75	13 C	1						1			
		50 X 125	18 C		1					1			
		100 X 100	20 C	1						1			
		125 X 175	29 C	1						1			
										5	44.7	179	
23-03	N	NO VISIBLE GOLD											
23-04	N	50 X 75	13 C	1						1			
										1	28.1	13	
23-05	N	25 X 50	8 C	1						1			
										1	31.2	3	
23-06	N	NO VISIBLE GOLD											
23-07	Y	25 X 25	5 C						1	1			EST. 4% PYRITE
		50 X 75	13 C	1						1			
		75 X 100	18 C				1			1			
		75 X 175	25 C	1						1			
		100 X 175	27 C					1		1			
		125 X 200	31 C	1						1			
										6	29.6	485	
23-08	N	NO VISIBLE GOLD											
23-09	~~N~~ Y	50 X 50	10 C						1	1			EST. 4% PYRITE
		75 X 75	15 C	1						1			
		75 X 100	18 C		1					1			
		75 X 150	22 C		1					1			
		150 X 150	29 C	1						1			
										5	33.1	269	
23-10	N	75 X 150	22 C	1						1			
										1	34.0	62	
23-11	Y	75 X 125	20 C	1						1			EST. 2% PYRITE

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GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL6AUG.WR1                                        NUMBER OF GRAINS
TOTAL # OF PANNINGS       24               -------------------------------------
                                           ABRADED   IRREGULAR  DELICATE TOTAL NON    CALC V.G.
SAMPLE #  PANNED                           ========  =========  ======== ===== MAG      ASSAY
          Y/N    DIAMETER   THICKNESS       T    P     T    P     T    P        GMS      PPB   REMARKS

  PLS-88
                  75 X  150      22 C       1                                1
                 150 X  150      29 C       1                                1
                                                                          ---------------------
                                                                             3   24.6      348

   23-12    N   NO VISIBLE GOLD

   23-13    N     50 X   75      13 C       1                                1
                                                                          ---------------------
                                                                             1   16.4       23

   23-14    N     50 X   50      10 C       1                                1
                                                                          ---------------------
                                                                             1   29.1        7

   24-01    N     25 X   75      10 C       1                                1
                                                                          ---------------------
                                                                             1   27.4        7

   24-02    Y     50 X   75      13 C       1                                1                EST. 5% PYRITE
                  75 X  100      18 C            2                           2                TRACE ARSENOPYRITE
                 100 X  125      22 C       1                                1
                                                                          ---------------------
                                                                             4   20.8      217

   24-03    Y     25 X   25       5 C       1                                1                EST. 7% PYRITE
                  50 X   75      13 C            1                           1
                 125 X  200      31 C       1                                1
                                                                          ---------------------
                                                                             3   22.4      296

   24-04    N   NO VISIBLE GOLD

   24-05    N     50 X   50      10 C       1                                1
                                                                          ---------------------
                                                                             1   19.8       10

   24-06    Y     25 X   25       5 C                           1    3       4                EST. 2% PYRITE
                  25 X   50       8 C                                1       1
                  50 X   50      10 C       1                                1
                  50 X   75      13 C            1                           1
                  50 X  125      18 C            1                           1
                  75 X  125      20 C                           1            1
                                                                          ---------------------
                                                                             9   42.9       76

   24-07    Y     25 X   25       5 C                                1       1                TRACE PYRITE
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GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL6AUG.WR1                                        NUMBER OF GRAINS
TOTAL # OF PANNINGS       24                -------------------------------------
                                            ABRADED   IRREGULAR  DELICATE TOTAL NON     CALC V.G.
SAMPLE #  PANNED                            ========  =========  ======== ===== MAG       ASSAY
          Y/N     DIAMETER     THICKNESS     T     P    T     P    T     P       GMS       PPB    REMARKS

 PLS-88
                  25 X   50        8 C                                   2     2
                  50 X   50       10 C                                   1     1
                  50 X   75       13 C                                   1     1
                  75 X  100       18 C             1                           1
                                                                         ---------------------
                                                                               6   17.2      103

 24-08     Y      25 X   25        5 C                             2     3     5                  TRACE PYRITE
                  25 X   50        8 C                                   3     3
                  50 X   50       10 C             1               1           2
                  50 X   75       13 C                                   2     2
                                                                         ---------------------
                                                                              12   16.5       91

 24-09     Y      25 X   25        5 C                             2           2                  EST. 3% PYRITE
                  50 X   50       10 C                             1     1     2
                  50 X   75       13 C                                   1     1
                  75 X   75       15 C             1                           1
                  75 X  100       18 C             1                           1
                 100 X  150       25 C       1                                 1
                                                                         ---------------------
                                                                               8   15.8      339

 24-10     Y      25 X   25        5 C                             7     1     8                  EST. 5% PYRITE
                  25 X   50        8 C                             2           2                  NOTE: 75 X 125 AND 100 X 100
                  50 X   50       10 C       1                     1           2                  GRAINS LOST DURING PHOTOGRAPHY
                  75 X  125       20 C                                   1     1                  PHOTOMICROGRAPH AVAILABLE
                  75 X  150       22 C       1     1                     1     3                  PHOTO REFERENCE #149, 150
                 100 X  100       20 C       2                1                3
                                                                         ---------------------
                                                                              19   40.9      321

 24-11     Y      25 X   25        5 C             1               2           3                  EST. 15% PYRITE
                  25 X   50        8 C                                   1     1
                  50 X   50       10 C                             1           1
                  75 X  125       20 C                        1                1
                                                                         ---------------------
                                                                               6   37.3       50
```

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

SAMPLE #	PANNED			NUMBER OF GRAINS									
				ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG	CALC V.G. ASSAY	
	Y/N	DIAMETER	THICKNESS	T	P	T	P	T	P		GMS	PPB	REMARKS
PLS-88													
24-12	N	150 X 250	38 C	1						1			
										1	53.1	215	
24-13	N	175 X 250	40 C	1						1			
										1	33.9	401	
25-01	N	NO VISIBLE GOLD											

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GOLD CLASSIFICATION
==================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL2AUG.WR1                                        NUMBER OF GRAINS
TOTAL # OF PANNINGS       13                ---------------------------------
                                            ABRADED   IRREGULAR  DELICATE TOTAL NON    CALC V.G.
SAMPLE #  PANNED                            ========  =========  ======== ===== MAG      ASSAY
          Y/N    DIAMETER   THICKNESS   T    P    T    P    T    P         GMS      PPB    REMARKS

  PLS-88
   25-02   N   NO VISIBLE GOLD

   25-03   Y      50 X   75      13 C        1    1                      2                  EST. 15% PYRITE
                  75 X  100      18 C   1                                1                       50 MARCASITE PELLETS
                                                                      ----------------
                                                                         3   33.6        52

   25-04   N   NO VISIBLE GOLD

   25-05   Y      25 X   50       8 C        1                           1                  EST. 50% PYRITE
                 100 X  100      20 C        1                           1
                                                                      ----------------
                                                                         2   35.0        45

   25-06   Y      75 X  100      18 C        1                           1                  EST. 50% PYRITE
                                                                      ----------------
                                                                         1   28.8        35

   26-01   Y   NO VISIBLE GOLD                                                              EST. 10% PYRITE

   26-02   Y      50 X   50      10 C        1                           1                  EST. 15% PYRITE
                  50 X   75      13 C   1                                1
                 125 X  125      25 C             1                      1
                                                                      ----------------
                                                                         3   24.8       139

   27-01   Y      50 X   50      10 C   1         1                      2                  EST. 5% PYRITE
                  50 X   75      13 C             2                      2
                                                                      ----------------
                                                                         4   35.3        32

   27-02   Y      50 X   50      10 C        1                           1                  EST. 5% PYRITE
                  50 X   75      13 C   2                                2
                  50 X  175      22 C                  1                 1
                                                                      ----------------
                                                                         4   29.4       104

   27-03   N   NO VISIBLE GOLD

   27-04   Y      25 X   50       8 C        1                           1                  EST. 10% PYRITE
                  50 X   50      10 C   1                                1
                  75 X   75      15 C   1                                1
                                                                      ----------------
                                                                         3   27.7        33

   27-05   Y      25 X   50       8 C        2                           2                  EST. 5% PYRITE
                  50 X   75      13 C        2    1                      3
```

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL2AUG.WR1

TOTAL # OF PANNINGS 13

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
PLS-88													
		75 X 100	18 C	1						1			
										6	19.5	118	
27-06	Y	25 X 50	8 C		2				1	3			EST. 10% PYRITE
		50 X 50	10 C				1			1			
		50 X 75	13 C	1	1	1	1			4			
		50 X 100	15 C		1		1			2			
		75 X 100	18 C			1				1			
										11	37.0	114	
28-01	N	50 X 75	13 C	1						1			
										1	23.0	16	
28-02	N	125 X 200	31 C	1						1			
										1	19.7	317	
28-06	Y	50 X 50	10 C		1					1			EST. 10% PYRITE
		75 X 100	18 C	1						1			
		75 X 125	20 C	1						1			
										3	26.0	104	
28-07	Y	25 X 25	5 C		2					2			EST. 70% PYRITE
		50 X 100	15 C		1					1			
		75 X 125	20 C	1						1			
		100 X 150	25 C	1						1			
		125 X 150	27 C		1					1			
										6	50.7	176	
29-01	N	50 X 50	10 C	1						1			
										1	32.4	6	
29-02	N	NO VISIBLE GOLD											
29-03	Y	25 X 50	8 C		1					1			EST. 10% PYRITE
		50 X 50	10 C		1					1			
		50 X 75	13 C	1						1			
		75 X 150	22 C	1						1			
										4	38.8	71	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

mip13aug.wr1

TOTAL # OF PANNINGS 12

				NUMBER OF GRAINS									
				ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG	CALC V.G. ASSAY	
SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	T	P	T	P	T	P		GMS	PPB	REMARKS
PLS-88													
28-03	Y	50 X 50	10 C	1						1			EST. 10% PYRITE
		50 X 75	13 C		1					1			
		250 X 300	50 C			1				1			
										3	22.6	1285	
28-04	Y	25 X 50	8 C		1					1			EST. 5% PYRITE
		75 X 100	18 C			1				1			
		75 X 125	20 C	1						1			
										3	21.7	119	
28-05	Y	25 X 25	5 C		1					1			EST. 5% PYRITE
		25 X 50	8 C	1						1			
		50 X 50	10 C	1						1			
		150 X 325	44 C				1			1			
										4	29.1	653	
29-04	N	75 X 100	18 C	1						1			
										1	31.1	33	
30-01	N	100 X 125	22 C	1						1			
										1	26.1	81	
30-02	N	50 X 75	13 C	1						1			
										1	27.5	14	
30-03	N	NO VISIBLE GOLD											
30-04	N	NO VISIBLE GOLD											
30-05	N	75 X 100	18 C	1						1			
										1	23.6	43	
30-06	Y	25 X 25	5 C						1	1			EST. 20% PYRITE
		50 X 75	13 C		1					1			
		75 X 125	20 C		1					1			
		325 X 650	79 C	1						1			
										4	17.8	7978	
31-01	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

mipl3aug.wr1
TOTAL # OF PANNINGS 12

SAMPLE #	PANNED	DIAMETER	THICKNESS	NUMBER OF GRAINS									
				ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG	CALC V.G. ASSAY	
	Y/N			T	P	T	P	T	P		GMS	PPB	REMARKS
PLS-88													
31-02	N	NO VISIBLE GOLD											
31-03	N	NO VISIBLE GOLD											
31-04	N	NO VISIBLE GOLD											
31-05	Y	NO VISIBLE GOLD											EST. 15% PYRITE
31-06	N	100 X 150	25 C	1						1			
										1	28.5	102	
31-07	Y	25 X 25	5 C						1	1			EST. 30% PYRITE
		125 X 150	27 C			1				1			100 GRAINS ARSENOPYRITE
										2	15.7	245	
31-08	N	75 X 125	20 C	1						1			
										1	24.5	61	
31-09	N	NO VISIBLE GOLD											
31-10	Y	50 X 75	13 C				2			2			EST. 60% PYRITE
		125 X 125	25 C		1					1			
		125 X 225	34 C		1					1			
		150 X 225	36 C	1						1			
										5	38.7	538	
32-01	Y	50 X 50	10 C		1					1			EST. 15% PYRITE
		50 X 75	13 C		1					1			
		50 X 100	15 C	1						1			
		75 X 100	18 C	1						1			
										4	31.7	70	
32-02	Y	25 X 25	5 C		1					1			EST. 20% PYRITE
		50 X 50	10 C		1					1			
		75 X 75	15 C		1					1			
		75 X 100	18 C	1						1			
		75 X 125	20 C	1						1			
		125 X 150	27 C	1						1			
		125 X 200	31 C	1						1			
										7	32.8	409	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

mip13aug.wr1
TOTAL # OF PANNINGS 12

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
PLS-88													
33-01	N	50 X 50	10 C	1						1			
										1	26.0	7	
33-02	N	NO VISIBLE GOLD											
33-03	N	125 X 250	36 C	1						1			
										1	32.2	294	
34-01	N	NO VISIBLE GOLD											
34-02	N	75 X 125	20 C	1						1			
										1	23.9	63	
34-03	N	NO VISIBLE GOLD											
34-04	N	NO VISIBLE GOLD											
34-05	N	75 X 75	15 C	1						1			
										1	26.5	24	
34-06	Y	75 X 125	20 C	2						2			EST. 15% PYRITE
										2	25.5	118	
34-07	N	NO VISIBLE GOLD											
34-08	Y	25 X 25	5 C		1					1			EST. 60% PYRITE
		50 X 75	13 C		1	1				2			
		75 X 100	18 C		1					1			
										4	33.1	54	
35-01	N	NO VISIBLE GOLD											
35-02	N	NO VISIBLE GOLD											
35-03	N	50 X 50	10 C	1						1			
										1	28.8	7	
35-04	Y	25 X 50	8 C		1					1			EST. 2% PYRITE
		50 X 50	10 C	1						1			1 GRAIN NATIVE COPPER (25X25)

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

mip13aug.wr1
TOTAL # OF PANNINGS 12

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
PLS-88													
		50 X 75	13 C	1	1					2			
										4	29.7	34	
35-05	N	50 X 75	13 C	1						1			
										1	31.3	12	
35-06	N	NO VISIBLE GOLD											
35-07	N	75 X 75	15 C	1						1			
										1	29.6	22	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL4AUG.WR1
TOTAL # OF PANNINGS 17

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
PLS-88													
36-01	N	NO VISIBLE GOLD											
36-02	N	NO VISIBLE GOLD											
36-03	N	NO VISIBLE GOLD											
36-04	Y	25 X 50	8 C		3					3			EST. 5 GRAINS PYRITE
		50 X 50	10 C		2					2			
		50 X 75	13 C	1						1			
		75 X 100	18 C	1						1			
		75 X 125	20 C	1						1			
										8	31.1	113	
36-05	N	NO VISIBLE GOLD											
36-06	N	NO VISIBLE GOLD											
36-07	N	NO VISIBLE GOLD											
37-01	Y	25 X 50	8 C		1					1			EST. 1% PYRITE
		50 X 50	10 C						1	1			
		50 X 75	13 C	1						1			
		100 X 150	25 C	1						1			
										4	36.0	98	
37-02	Y	25 X 50	8 C		3					3			EST. 50% PYRITE
		50 X 75	13 C		1					1			
										4	38.3	16	
38-01	Y	25 X 25	5 C						1	1			EST. 10% PYRITE
		25 X 50	8 C		2			1		3			
		25 X 75	10 C		1					1			
		50 X 50	10 C		1					1			
		75 X 75	15 C		1					1			
		75 X 100	18 C	1						1			
		75 X 125	20 C	1						1			
										9	45.2	84	
38-02	Y	25 X 25	5 C		2					2			EST. 60% PYRITE
		25 X 50	8 C						1	1			
		50 X 50	10 C		2					2			
		50 X 75	13 C		2					2			
		75 X 75	15 C		1					1			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL4AUG.WR1

TOTAL # OF PANNINGS 17

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
PLS-88													
		100 X 100	20 C		1					1			
		125 X 175	29 C		1					1			
										10	32.2	259	
39-01	Y	50 X 50	10 C		2		1			3			EST. 10% PYRITE
		75 X 100	18 C		1					1			
		75 X 150	22 C	1						1			
		125 X 175	29 C	1						1			
		175 X 200	36 C	1						1			
										7	47.9	378	
39-02	Y	25 X 25	5 C		4					4			EST. 3% PYRITE
		25 X 50	8 C		1					1			
		50 X 75	13 C	2	1					3			
										8	55.4	23	
39-03	N	125 X 150	27 C	1						1			
										1	24.2	158	
39-04	N	NO VISIBLE GOLD											
39-05	N	50 X 50	10 C	1						1			
										1	27.5	7	
39-06	Y	25 X 25	5 C		1					1			EST. 15% PYRITE 50 GRAINS ARSENOPYRITE
		50 X 50	10 C		1					1			
		75 X 100	18 C	2						2			
		100 X 125	22 C	1						1			
										5	35.7	122	
40-01	Y	25 X 25	5 C		1					1			EST. 5% PYRITE
		25 X 50	8 C		1					1			
		75 X 75	15 C	1						1			
		75 X 100	18 C	1						1			
										4	31.5	56	
40-02	N	NO VISIBLE GOLD											
41-01	Y	50 X 75	13 C	1	1					2			EST. 15% PYRITE
		100 X 125	22 C	1						1			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL4AUG.WR1
TOTAL # OF PANNINGS 17

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
PLS-88													
										3	63.9	45	
42-01	N	NO VISIBLE GOLD											
42-02	Y	25 X 25	5 C		1					1			EST. 80% PYRITE
		25 X 50	8 C		1					1			
		100 X 150	25 C		1					1			
										3	53.3	56	
43-01	N	NO VISIBLE GOLD											
43-02	N	150 X 250	38 C	1						1			
										1	24.6	463	
44-01	N	NO VISIBLE GOLD											
45-01	N	NO VISIBLE GOLD											
45-02	Y	25 X 25	5 C		2					2			EST. 10% PYRITE
		25 X 50	8 C		1					1			
		50 X 50	10 C		1					1			
		50 X 75	13 C	2	2					4			
		50 X 100	15 C		2					2			
										10	21.1	147	
46-01	Y	25 X 50	8 C		2					2			EST. 20% PYRITE
		50 X 50	10 C	1	2					3			
		50 X 75	13 C				1			1			
		75 X 150	22 C		1					1			
		175 X 225	38 C	1						1			
										8	28.6	512	
46-02	N	50 X 75	13 C	1						1			
										1	29.5	13	
46-03	N	NO VISIBLE GOLD											
46-04	N	75 X 100	18 C	1						1			
										1	30.6	33	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL4AUG.WR1
TOTAL # OF PANNINGS 17

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
PL3-88													
46-05	N	175 X 200	36 C	1						1			
										1	28.7	329	
46-06	N	NO VISIBLE GOLD											
47-01	N	NO VISIBLE GOLD											
48-01	N	NO VISIBLE GOLD											
49-01	N	50 X 100	15 C	1						1			
										1	18.7	34	
49-02	Y	25 X 25	5 C		1					1			EST. 15% PYRITE
		25 X 50	8 C	1	1					2			1% MARCASITE PELLETS
		25 X 75	10 C	1						1			
		50 X 75	13 C	1						1			
		100 X 125	22 C		1					1			
										6	39.8	72	
50-01	Y	25 X 25	5 C		1					1			EST. 30% PYRITE
		25 X 50	8 C		2					2			
		50 X 50	10 C						1	1			
		50 X 75	13 C		1					1			
		50 X 100	15 C		1					1			
		100 X 125	22 C	1						1			
		100 X 175	27 C	1	1					2			
										9	32.4	345	
50-02	Y	25 X 25	5 C		1					1			EST. 30% PYRITE
		25 X 50	8 C		2					2			
		25 X 75	10 C		1					1			
		50 X 75	13 C		1					1			
		50 X 100	15 C				1			1			
		75 X 100	18 C		2					2			
		125 X 125	25 C	1						1			
		150 X 175	31 C	1						1			
										10	30.8	407	
41-02	Y	25 X 25	5 C		1					1			EST. 40% PYRITE
		25 X 50	8 C		2					2			
		50 X 50	10 C		1					1			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL4AUG.WR1

TOTAL # OF PANNINGS 17

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
PL6-88										4	39.8	10	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL5AUG.WR1
TOTAL # OF PANNINGS 10

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS							NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
				ABRADED		IRREGULAR		DELICATE		TOTAL			
				T	P	T	P	T	P				
PLS-88													
50-03	Y	25 X 50	8 C		2					2			EST. 20% PYRITE
		25 X 125	15 C	1						1			
		50 X 50	10 C		1					1			
		50 X 75	13 C	2	1					3			
		100 X 100	20 C		1					1			
		175 X 175	34 C	1						1			
										9	25.8	440	
51-01	N	75 X 100	18 C	1						1			
										1	30.3	33	
51-02	N	50 X 75	13 C	1						1			
										1	29.0	13	
52-01	N	NO VISIBLE GOLD											
53-01	N	50 X 100	15 C	1						1			
										1	20.6	31	
53-02	N	NO VISIBLE GOLD											
54-01	N	NO VISIBLE GOLD											
54-02	N	125 X 175	29 C	1						1			
										1	19.7	251	
54-03	Y	25 X 25	5 C		3					3			EST. 15% PYRITE
		25 X 50	8 C				1			1			
		25 X 75	10 C		1		1			2			
		50 X 50	10 C		4					4			
		75 X 100	18 C	1						1			
		100 X 125	22 C	1						1			
										12	29.7	150	
54-04	N	NO VISIBLE GOLD											
54-05	N	NO VISIBLE GOLD											
55-01	N	100 X 125	22 C	1						1			
										1	21.1	101	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL5AUG.WR1
TOTAL # OF PANNINGS 10

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
				T	P	T	P	T	P				
PLS-88													
55-02	Y	25 X 25	5 C		2					2			EST. 50% PYRITE
		25 X 100	13 C		1					1			50 GRAINS ARSENOPYRITE
		50 X 50	10 C		1					1			
		50 X 75	13 C		1					1			
										5	32.7	30	
55-03	N	75 X 150	22 C	1						1			
										1	32.2	66	
55-04	Y	50 X 50	10 C		1					1			EST. 20% PYRITE
		75 X 75	15 C						1	1			
		75 X 100	18 C	1						1			
		75 X 125	20 C	1						1			
		100 X 125	22 C	1						1			
										5	25.9	211	
55-05	Y	25 X 25	5 C		1					1			EST. 15% PYRITE
		50 X 75	13 C	1			1			2			
		75 X 100	18 C	1						1			
										4	26.3	68	
56-01	N	NO VISIBLE GOLD											
57-01	N	125 X 125	25 C	1						1			
										1	26.4	110	
57-02	Y	25 X 25	5 C		1					1			EST. 10% PYRITE
		25 X 75	10 C	1						1			
		50 X 50	10 C		1					1			
		50 X 75	13 C	1	2					3			
		75 X 75	15 C				1			1			
		75 X 175	25 C						1	1			
		125 X 150	27 C	1						1			
										9	30.9	288	
58-01	Y	25 X 25	5 C		1					1			EST. 10% PYRITE
		25 X 50	8 C						2	2			
		50 X 50	10 C		1					1			
		50 X 100	15 C		1					1			
		50 X 125	18 C		1					1			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL5AUG.WR1
TOTAL # OF PANNINGS 10

				NUMBER OF GRAINS									
SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
				T	P	T	P	T	P				
PLS-88													
		75 X 125	20 C		1					1			
		75 X 150	22 C		1					1			
		100 X 125	22 C	1						1			
		150 X 150	29 C	1						1			
										10	32.5	391	
59-01	N	NO VISIBLE GOLD											
59-02	Y	25 X 25	5 C		3					3			EST. 20% PYRITE
		25 X 50	8 C		1					1			200 GRAINS FINE ARSENOPYRITE
		25 X 75	10 C		1					1			
		50 X 50	10 C		3					3			
		50 X 75	13 C	1	1					2			
		50 X 100	15 C		3					3			
		100 X 125	22 C	1						1			
										14	54.0	106	
59-03	N	50 X 50	10 C	1						1			
										1	39.4	5	
59-04	N	50 X 50	10 C	1						1			
										1	36.3	5	
59-05	N	100 X 125	22 C	1						1			
										1	26.6	80	
60-01	N	NO VISIBLE GOLD											
60-02	N	NO VISIBLE GOLD											
60-03	N	175 X 250	40 C	1						1			
										1	29.5	460	
60-04	N	NO VISIBLE GOLD											
60-05	N	50 X 50	10 C	1						1			
										1	24.7	5	
61-01	N	125 X 150	27 C	1						1			

GOLD CLASSIFICATION
===================

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL5AUG.WR1
TOTAL # OF PANNINGS 10

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
PLS-88													
										1	25.7	149	
61-02	N	NO VISIBLE GOLD											
62-01	N	25 X 50	8 C	1						1			
										1	19.9	4	
63-01	N	NO VISIBLE GOLD											
63-02	N	50 X 75	13 C	1						1			
										1	32.4	12	
63-03	Y	25 X 50	8 C	1	1					2			EST. 10 GRAINS PYRITE
		50 X 75	13 C			1				1			50 GRAINS FINE ARSENOPYRITE
										3	22.9	23	
64-01	N	NO VISIBLE GOLD											
64-02	N	NO VISIBLE GOLD											
64-03	N	75 X 150	22 C	1						1			
										1	20.2	105	
64-04	Y	50 X 100	15 C	1						1			EST. 2% PYRITE
		75 X 100	18 C	1						1			
										2	32.4	51	

```
GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL7AUG.WR1                                        NUMBER OF GRAINS
TOTAL # OF PANNINGS       10              ------------------------------------
                                          ABRADED   IRREGULAR  DELICATE TOTAL NON    CALC V.G.
SAMPLE #  PANNED                          ========  =========  ======== ===== MAG      ASSAY
          Y/N    DIAMETER   THICKNESS       T    P    T    P    T    P        GMS      PPB    REMARKS

  PLS-88
  64-05    N   NO VISIBLE GOLD

  65-01    N      50 X  75       13 C       1                               1

                                                                         ---------------------
                                                                            1   24.5       15

  65-02    N   NO VISIBLE GOLD

  65-03    Y      25 X  50        8 C            1                          1                 EST. 1% PYRITE
                  25 X  75       10 C            1                          1
                  50 X  50       10 C                                 1     1
                  50 X  75       13 C            1                          1
                  50 X 100       15 C       1    1                          2
                  75 X  75       15 C            1                          1
                 100 X 175       27 C       1                               1

                                                                         ---------------------
                                                                            8   31.1      212

  65-04    Y      25 X  25        5 C            1                          1                 EST. 0.25% PYRITE
                  50 X 100       15 C            1                          1                 1 GRAIN NATIVE COPPER
                  75 X  75       15 C       1                               1
                  75 X 125       20 C       1                               1

                                                                         ---------------------
                                                                            4   22.8      123

  66-01    N      50 X  75       13 C       1                               1

                                                                         ---------------------
                                                                            1   29.0       13

  66-02    N   NO VISIBLE GOLD

  66-03    N   NO VISIBLE GOLD

  66-04    N     250 X 300       65 C       1                               1

                                                                         ---------------------
                                                                            1   28.0     2437

  66-05    Y     100 X 100       20 C       1                               1                 EST. 30% PYRITE
                 150 X 150       29 C       1                               1

                                                                         ---------------------
                                                                            2   31.5      204

  66-06    Y      25 X  25        5 C            1                          1                 EST. 10% PYRITE
                  25 X  50        8 C                                 1     1
                 100 X 100       20 C       1                               1
                 100 X 125       22 C       1                               1
```

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GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL7AUG.WR1                                    NUMBER OF GRAINS
TOTAL # OF PANNINGS       10             -----------------------------------
                                       ABRADED   IRREGULAR  DELICATE TOTAL NON    CALC V.G.
SAMPLE #  PANNED                       ========  =========  ======== ===== MAG      ASSAY
           Y/N    DIAMETER   THICKNESS    T    P    T    P    T    P        GMS      PPB    REMARKS

  PLS-88
                                                                         4   31.4      119

   66-07    Y      25 X   25       5 C         1                         1                 EST. 15% PYRITE
                   25 X   50       8 C         1                         1
                   50 X   75      13 C         2                         2
                   50 X  100      15 C    1                              1
                   75 X  100      18 C    1                              1
                  125 X  125      25 C         1                         1
                                                                      --------------------
                                                                         7   31.9      169

   66-08    N   NO VISIBLE GOLD

   66-09    N      50 X  100      15 C    1                              1
                                                                      --------------------
                                                                         1   19.0       34

   66-10    N   NO VISIBLE GOLD

   66-11    N   NO VISIBLE GOLD

   67-01    N     125 X  150      27 C    1                              1
                                                                      --------------------
                                                                         1    9.2      416

   67-02    N   NO VISIBLE GOLD

   67-03    N   NO VISIBLE GOLD

   67-04    N      75 X  125      20 C    1                              1
                                                                      --------------------
                                                                         1   32.2       47

   67-05    N   NO VISIBLE GOLD

   67-06    N   NO VISIBLE GOLD

   67-07    N     100 X  125      22 C    1                              1
                                                                      --------------------
                                                                         1   21.5       99

   67-08    N      50 X   75      13 C    1                              1
                                                                      --------------------
                                                                         1   22.4       17

   67-09    N   NO VISIBLE GOLD
```

GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL7AUG.WR1
TOTAL # OF PANNINGS 10

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
PLS-88													
68-01	N	100 X 125	22 C	1						1			
										1	25.8	82	
68-02	N	50 X 50	10 C	1						1			
										1	27.3	7	
68-03	N	NO VISIBLE GOLD											
69-01	N	125 X 175	0 C	1						1			
										1	24.6	0	
69-02	N	NO VISIBLE GOLD											
69-03	N	75 X 125	20 C	1						1			
										1	27.5	55	
70-01	N	NO VISIBLE GOLD											
70-02	Y	25 X 25	5 C		1					1			NO SULPHIDES
		25 X 50	8 C				1			1			
		50 X 50	10 C		2					2			
		50 X 75	13 C		1		1			2			
		75 X 75	15 C	1						1			
		125 X 225	34 C	1						1			
										8	28.4	339	
70-03	Y	50 X 50	10 C		2					2			EST. 0.25% PYRITE
		50 X 75	13 C		1					1			
		50 X 100	15 C	1						1			
		75 X 100	18 C	1						1			
		125 X 125	25 C	1						1			
										6	23.6	225	
70-04	N	150 X 225	36 C	1						1			
										1	25.1	377	
71-01	N	NO VISIBLE GOLD											
72-01	N	75 X 75	15 C	1						1			

GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL7AUG.WR1
TOTAL # OF PANNINGS 10

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
PLS-88													
										1	35.5	18	
73-01	Y	25 X 25	5 C		1					1			EST. 5% PYRITE
		25 X 50	8 C		1					1			
		50 X 50	10 C	1	1					2			
		100 X 150	25 C	2						2			
		125 X 150	27 C		1					1			
										7	32.5	311	
73-02	Y	25 X 50	8 C		1					1			EST. 10% PYRITE
		50 X 75	13 C	1						1			
		75 X 75	15 C	1						1			
										3	26.2	42	
73-03	Y	25 X 25	5 C		3					3			EST. 15% PYRITE
		25 X 50	8 C		2					2			
		50 X 50	10 C		3					3			
		50 X 75	13 C	1						1			
		50 X 100	15 C						1	1			
		50 X 125	18 C	1						1			
										11	29.4	97	

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GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL5AUG.WR1                                    NUMBER OF GRAINS
TOTAL # OF PANNINGS         4           ------------------------------------
                                       ABRADED   IRREGULAR  DELICATE TOTAL NON    CALC V.G.
SAMPLE #  PANNED                       ========  =========  ======== ===== MAG      ASSAY
           Y/N    DIAMETER   THICKNESS   T    P     T    P     T    P      GMS      PPB     REMARKS

  PL5-88
   73-04    N   NO VISIBLE GOLD

   74-01    N      75 X  100      18 C   1                              1

                                                                      ---------------------
                                                                        1   64.3       16

     -02    N   NO VISIBLE GOLD

     -03    N   NO VISIBLE GOLD

     -04    N   NO VISIBLE GOLD

     -05    N   NO VISIBLE GOLD

   75-01    N   NO VISIBLE GOLD

     -02    N   NO VISIBLE GOLD

     -03    N      75 X  250      31 C   1                              1

                                                                      ---------------------
                                                                        1   29.5      211

     -04    N   NO VISIBLE GOLD

     -05    N   NO VISIBLE GOLD

     -06    N   NO VISIBLE GOLD

     -07    N   NO VISIBLE GOLD

     -08    Y      50 X   50      10 C        1                         1                EST. 30% PYRITE
                   75 X  100      18 C   1    2                         3
                   75 X  200      27 C   1                              1
                  100 X  100      20 C        1                         1
                  100 X  125      22 C   1                              1
                  125 X  175      29 C   1                              1

                                                                      ---------------------
                                                                        8   64.7      241

     -09    N     100 X  100      20 C   1                              1

                                                                      ---------------------
                                                                        1   53.0       26

   76-01    N   NO VISIBLE GOLD

     -02    N   NO VISIBLE GOLD
```

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL8AUG.WR1
TOTAL # OF PANNINGS 4

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
PLS-88													
77-01	Y	25 X 25	5 C		1					1			EST. 15% PYRITE
		50 X 50	10 C		1					1			
		50 X 75	13 C	1	1					2			
		50 X 100	15 C	1	1				1	3			
		75 X 150	22 C	1						1			
		75 X 175	25 C		1					1			
										9	31.0	255	
78-01	N	NO VISIBLE GOLD											
-02	N	125 X 150	27 C	1						1			
										1	35.2	109	
-03	N	NO VISIBLE GOLD											
-04	N	NO VISIBLE GOLD											
-05	N	NO VISIBLE GOLD											
-06	N	100 X 175	27 C	1						1			
										1	26.2	146	
-07	N	NO VISIBLE GOLD											
-08	N	NO VISIBLE GOLD											
79-01	Y	50 X 75	13 C	1						1			EST. 5% PYRITE
		50 X 125	18 C		1					1			
		75 X 100	18 C	1						1			
										3	33.8	71	
-02	Y	25 X 25	5 C		1					1			EST. 3% PYRITE
		25 X 50	8 C		1		1			2			
		50 X 75	13 C	1						1			
		75 X 75	15 C		1					1			
		125 X 150	27 C	1						1			
										6	32.9	153	
-03	N	50 X 100	15 C	1						1			
										1	32.9	19	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL8AUG.WR1
TOTAL # OF PANNINGS 4

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
PL5-88													
-04	N	NO VISIBLE GOLD											
-05	N	75 X 100	18 C	1						1			
										1	27.9	36	
-06	N	125 X 125	25 C	1						1			
										1	27.5	105	
-07	N	100 X 125	22 C	1						1			
										1	26.3	81	
-08	N	NO VISIBLE GOLD											
-09	N	NO VISIBLE GOLD											
-10	N	NO VISIBLE GOLD											
-11	N	50 X 75	13 C	1						1			
										1	23.8	16	
80-01	N	125 X 175	29 C	1						1			
										1	28.9	171	
-02	N	NO VISIBLE GOLD											
80-03	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL9AUG.WR1
TOTAL # OF PANNINGS 22

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
				T	P	T	P	T	P				
PLS-88													
80-04	Y	NO VISIBLE GOLD											EST. 5% PYRITE
-05	N	NO VISIBLE GOLD											
-06	N	NO VISIBLE GOLD											
-07	N	75 X 125	20 C	1						1			
										1	19.7	76	
-08	N	125 X 200	31 C	1						1			
										1	24.1	259	
-09	Y	25 X 50	8 C		1					1			EST. 60% PYRITE
		25 X 75	10 C						1	1			100 MARCASITE PELLETS
		50 X 75	13 C	1					1	2			
		75 X 75	15 C		1					1			
		75 X 10	9 C	1						1			
		75 X 150	22 C	1						1			
		100 X 125	22 C				1			1			
										8	54.5	111	
81-01	N	NO VISIBLE GOLD											
82-01	Y	25 X 25	5 C		1					1			EST. 10% PYRITE
		25 X 50	8 C						1	1			
		50 X 75	13 C					1		1			
										3	33.2	14	
83-01	N	NO VISIBLE GOLD											
84-01	N	NO VISIBLE GOLD											
85-01	N	NO VISIBLE GOLD											
86-01	N	NO VISIBLE GOLD											
-02	Y	50 X 50	10 C						1	1			EST. 5% PYRITE
		50 X 75	13 C		1					1			
		100 X 125	22 C	1						1			
		100 X 200	29 C	1						1			
		150 X 175	31 C	1	1					2			
										6	29.4	683	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL9AUG.WR1
TOTAL # OF PANNINGS 22

				NUMBER OF GRAINS									
SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
				T	P	T	P	T	P				
PLS-88													
87-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
-04	Y	100 X 100	20 C		1					1			EST. 5% PYRITE
										1	14.0	107	
-05	Y	NO VISIBLE GOLD											EST. 20% PYRITE
88-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	NO VISIBLE GOLD											
89-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	N	50 X 75	13 C	1						1			
										1	19.0	20	
-04	N	NO VISIBLE GOLD											
-05	Y	50 X 75	13 C	2						2			EST. 3% PYRITE
		75 X 150	22 C						1	1			
										3	26.0	110	
-06	N	75 X 125	20 C	1						1			
										1	24.7	61	
-07	Y	25 X 50	8 C		1					1			EST. 5% PYRITE
		50 X 75	13 C	1						1			
		75 X 75	15 C	1			1			2			
		75 X 125	20 C				1			1			
		100 X 150	25 C		1					1			
		125 X 125	25 C				1			1			
										7	26.1	346	

```
GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL9AUG.WR1                                       NUMBER OF GRAINS
TOTAL # OF PANNINGS      22                ----------------------------------
                                           ABRADED   IRREGULAR  DELICATE TOTAL NON     CALC V.G.
SAMPLE #  PANNED                           ========  =========  ======== ===== MAG      ASSAY
          Y/N    DIAMETER   THICKNESS      T    P    T     P     T    P        GMS       PPB    REMARKS

 PLS-88
    -08     N   NO VISIBLE GOLD

    -09     N      50 X   75      13 C     1                                1

                                                                         ------------------
                                                                            1   30.8        12

    -10     N      75 X  100      18 C     1                                1

                                                                         ------------------
                                                                            1   24.2        42

    -11     N   NO VISIBLE GOLD

    -12     N   NO VISIBLE GOLD

    -13     Y      25 X   50       8 C                   1                  1                  EST. 10% PYRITE
                   50 X   50      10 C     1                                1
                   75 X  100      18 C     1                                1
                   75 X  125      20 C                   1                  1
                                                                         ------------------
                                                                            4   35.5        78

    -14     N   NO VISIBLE GOLD

    -15     Y      25 X   25       5 C          1                           1                  EST. 15% PYRITE
                   25 X   50       8 C     1    1                           2
                   50 X   75      13 C     1    1                           2
                   75 X  100      18 C          1                           1
                                                                         ------------------
                                                                            6   33.8        58

    -16     Y      50 X   75      13 C     1    1                           2                  EST. 15% PYRITE
                   50 X  100      15 C                   1                  1
                   75 X   75      15 C     1                                1
                                                                         ------------------
                                                                            4   39.1        52

    -17     N      50 X   75      13 C     1                                1
                                                                         ------------------
                                                                            1   23.0        16

    -18     N      75 X  125      20 C     1                                1
                                                                         ------------------
                                                                            1   23.6        64

    -19     Y      25 X   75      10 C          1                           1                  EST. 2% PYRITE
                   50 X   50      10 C     1                                1
                   50 X   75      13 C     1                                1
```

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL9AUG.WR1
TOTAL # OF PANNINGS 22

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
				T	P	T	P	T	P				
PLS-88													
										3	21.6	35	
-20	N	NO VISIBLE GOLD											
-21	Y	25 X 25	5 C		1					1			EST. 2% PYRITE
		25 X 50	8 C				1			1			
		50 X 75	13 C		1		3			4			
		75 X 100	18 C	1						1			
		175 X 175	34 C	1						1			
										8	26.0	398	
-22	N	NO VISIBLE GOLD											
-23	Y	50 X 75	13 C		2		1			3			EST. 20% PYRITE
		75 X 125	20 C		1					1			
										4	32.9	80	
90-01	N	NO VISIBLE GOLD											
-02	N	NO VISIBLE GOLD											
-03	Y	NO VISIBLE GOLD											EST. 10% PYRITE
-04	N	NO VISIBLE GOLD											
91-01	N	50 X 100	15 C	1						1			
										1	21.4	30	
-02	N	NO VISIBLE GOLD											
-03	N	50 X 100	15 C	1						1			
										1	24.6	26	
-04	Y	25 X 50	8 C			1	1	1		3			EST. 1% PYRITE
		25 X 75	10 C	1						1			
		50 X 75	13 C				1			1			
										5	24.7	33	
92-01	N	NO VISIBLE GOLD											
-02	N	50 X 75	13 C	1						1			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL9AUG.WR1
TOTAL # OF PANNINGS 22

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
PL5-88													
										1	26.1	14	
-03	Y	25 X 25	5 C					1		1			EST. 0.5% PYRITE
		25 X 50	8 C		1		1			2			
		50 X 50	10 C				1			1			
		50 X 75	13 C	1						1			
		50 X 100	15 C	1						1			
										6	25.7	54	
-04	Y	25 X 50	8 C		1					1			EST. 0.5% PYRITE
		50 X 50	10 C		1					1			
		50 X 75	13 C	1			1			2			
		50 X 100	15 C	1						1			
		75 X 100	18 C	1						1			
		75 X 125	20 C	1						1			
										7	25.0	167	
93-01	Y	25 X 25	5 C		2					2			NO SULPHIDES
		50 X 75	13 C	1						1			
		50 X 125	18 C	1						1			
		75 X 100	18 C	1		1				2			
										6	26.8	129	
94-01	Y	25 X 50	8 C		2		1			3			EST. 0.5% PYRITE
		25 X 75	10 C		1					1			
		50 X 75	13 C		1					1			
		75 X 75	15 C	2						2			
		75 X 100	18 C	1						1			
		75 X 125	20 C			1				1			
		100 X 125	22 C			1				1			
		100 X 175	27 C	1						1			
										11	33.2	318	
-02	Y	25 X 25	5 C				1			1			TRACE PYRITE
		25 X 50	8 C		1	1				2			
		50 X 75	13 C	1						1			
		100 X 175	27 C		1					1			
										5	26.9	163	
95-01	Y	25 X 25	5 C		1					1			EST. 0.5% PYRITE
		25 X 50	8 C		1					1			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL9AUG.WR1
TOTAL # OF PANNINGS 22

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
PLS-88													
		75 X 125	20 C	1						1			
		75 X 150	22 C				1			1			
		100 X 125	22 C				1			1			
		175 X 200	36 C	1						1			
										6	30.3	505	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPLAAUG.WR1

TOTAL # OF PANNINGS 24

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
PLS-88													
95-02	Y	25 X 50	8 C		1					1			EST. 0.5% PYRITE
		50 X 75	13 C	1	2					3			
		75 X 100	18 C	1						1			
		75 X 125	20 C	1						1			
										6	35.5	105	
95-03	Y	75 X 75	15 C	2						2			EST. 1% PYRITE
		75 X 125	20 C	1						1			
		350 X 350	61 C	1						1			
										4	40.6	1455	
95-04	Y	25 X 50	8 C		1					1			EST. 1% PYRITE
		50 X 50	10 C	1	2		2			5			
		50 X 75	13 C	1	1					2			
		75 X 175	25 C		1					1			
										9	36.7	128	
95-05	N	75 X 75	15 C	1						1			
										1	22.5	28	
96-01	Y	50 X 75	13 C		1					1			EST. 5% PYRITE
		75 X 75	15 C	1						1			
		75 X 100	18 C	1						1			
										3	31.2	65	
96-02	Y	25 X 25	5 C		1					1			EST. 3% PYRITE
		50 X 50	10 C	1						1			
		50 X 75	13 C	1			2			3			
										5	28.7	47	
96-03	Y	25 X 50	8 C	2			1			3			EST. 5% PYRITE
		50 X 50	10 C	2						2			
		75 X 75	15 C	1						1			
										6	30.2	47	
96-04	Y	25 X 25	5 C		5					5			EST. 2% PYRITE
		50 X 50	10 C		3					3			
		50 X 75	13 C	1						1			
		50 X 100	15 C	1						1			
		75 X 75	15 C				1			1			

GOLD CLASSIFICATION
==================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPLAAUG.WR1
TOTAL # OF PANNINGS 24

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
PL5-88													
										11	33.8	70	
96-05	Y	25 X 25	5 C		2					2			EST. 2% PYRITE
		50 X 50	10 C				1			1			
		50 X 75	13 C	1	1		1			3			
		75 X 75	15 C				1			1			
		100 X 125	22 C	1						1			
										8	37.6	110	
96-06	Y	25 X 25	5 C	1	2					3			EST. 2% PYRITE
		25 X 50	8 C	1			1			2			
		50 X 50	10 C		1					1			
		75 X 100	18 C	1						1			
										7	21.6	67	
96-07	N	NO VISIBLE GOLD											
96-08	N	NO VISIBLE GOLD											
96-09	N	25 X 50	8 C	1						1			
										1	26.2	3	
96-10	N	NO VISIBLE GOLD											
96-11	N	50 X 75	13 C	1						1			
										1	26.3	14	
96-12	Y	25 X 50	8 C		1		1			2			EST. 5% PYRITE
		50 X 50	10 C	1	1					2			
		50 X 75	13 C				1			1			
		50 X 100	15 C	1			1			2			
		50 X 125	18 C				1			1			
		75 X 100	18 C	1	1					2			
										10	24.7	212	
96-13	N	NO VISIBLE GOLD											
96-14	N	75 X 75	15 C	1						1			
										1	26.8	22	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPLAAUG.WR1
TOTAL # OF PANNINGS 24

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
PLS-88													
96-15	N	75 X 100	18 C	1						1			
										1	21.4	47	
96-16	Y	50 X 50	10 C		1					1			EST. 3% PYRITE
		50 X 75	13 C	1	1					2			
		75 X 100	18 C	1						1			
										4	21.0	93	
96-17	N	NO VISIBLE GOLD											
97-01	Y	25 X 25	5 C		1					1			EST. 3% PYRITE
		25 X 50	8 C		2					2			
		50 X 50	10 C		1					1			
		50 X 75	13 C	1						1			
		50 X 100	15 C		1					1			
		75 X 75	15 C	1						1			
		75 X 100	18 C	1						1			
		125 X 125	25 C	1						1			
										9	26.6	223	
97-02	N	50 X 75	13 C	1						1			
										1	31.3	12	
97-03	N	75 X 75	15 C	1						1			
										1	29.2	22	
97-04	Y	25 X 25	5 C		2					2			EST. 3% PYRITE
		25 X 50	8 C	1						1			
		50 X 50	10 C		2					2			
		50 X 75	13 C	1						1			
		50 X 100	15 C	1						1			
		75 X 100	18 C	1						1			
										8	36.0	67	
97-05	Y	25 X 50	8 C		4					4			EST. 3% PYRITE
		25 X 75	10 C	1						1			
		50 X 50	10 C	1	1					2			
		50 X 100	15 C	1	1					2			
		75 X 100	18 C	1						1			
		100 X 100	20 C		1					1			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPLAAUG.WR1
TOTAL # OF PANNINGS 24

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
PLS-88													
										11	37.8	124	
97-06	Y	25 X 25	5 C		2					2			EST. 15% PYRITE
		25 X 50	8 C		3					3			PHOTO MICROGRAPH AVAILABLE
		25 X 75	10 C		2					2			FILM REFERENCE #17
		50 X 50	10 C		2					2			
		50 X 75	13 C		1					1			
		50 X 100	15 C		1					1			
		50 X 150	20 C	1						1			
		75 X 75	15 C	2						2			
		75 X 100	18 C		1					1			
		75 X 125	20 C		1					1			
		100 X 100	20 C	1	1					2			
		100 X 125	22 C	1						1			
		100 X 150	25 C	1						1			
										20	52.2	295	
97-07	Y	25 X 25	5 C		1					1			EST. 5% PYRITE
		25 X 50	8 C		1		4			5			PHOTO MICROGRAPH AVAILABLE
		50 X 50	10 C	2	1				1	4			FILM REFERENCE #18
		50 X 75	13 C	1	3					4			
		75 X 100	18 C	1						1			
		75 X 150	22 C	1						1			
		75 X 175	25 C	1						1			
		100 X 100	20 C	1						1			
		100 X 125	22 C				1			1			
		100 X 250	34 C	1						1			
		150 X 225	36 C	1						1			
										21	40.9	722	
97-08	Y	50 X 75	13 C	1	1					2			EST. 5% PYRITE
		50 X 100	15 C	1						1			
		75 X 100	18 C	1		1				2			
		125 X 150	27 C		1					1			
										6	37.9	191	
97-09	Y	25 X 25	5 C		1					1			EST. 5% PYRITE
		25 X 75	10 C		1					1			PHOTO MICROGRAPH AVAILABLE
		50 X 50	10 C	1						1			FILM REFERENCE #18
		50 X 75	13 C	1						1			
		75 X 100	18 C	2						2			
		125 X 125	25 C	1						1			
										7	37.1	154	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPLAAUG.WR1
TOTAL # OF PANNINGS 24

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
PLS-88													
97-10	Y	25 X 25	5 C	1						1			EST. 5% PYRITE
		25 X 50	8 C	3		1				4			PHOTOMICROGRAPH AVAILABLE
		50 X 50	10 C	3						3			PHOTO REFERENCE #18
		50 X 75	13 C	4						4			
		50 X 100	15 C				1			1			
		100 X 175	27 C	1						1			
										14	35.0	197	
97-11	Y	25 X 25	5 C				1			1			EST. 8% PYRITE
		25 X 50	8 C	1	3					4			
		50 X 75	13 C	1						1			
		75 X 75	15 C		1					1			
										7	26.6	51	
97-12	Y	25 X 25	5 C		2					2			EST. 8% PYRITE
		25 X 50	8 C	1						1			
		50 X 75	13 C	1						1			
		50 X 100	15 C			1				1			
										5	38.0	30	
97-13	N	NO VISIBLE GOLD											
98-01	N	NO VISIBLE GOLD											
98-02	N	NO VISIBLE GOLD											
98-03	Y	25 X 50	8 C		1					1			NO SULPHIDES
		100 X 125	22 C	1						1			
		125 X 125	25 C	1						1			
										3	29.7	172	
98-04	Y	25 X 50	8 C		1					1			NO SULPHIDES
		50 X 75	13 C	1			1			2			
		50 X 100	15 C	1						1			
		75 X 100	16 C		1					1			
										5	28.6	67	
98-05	Y	25 X 50	8 C		4					4			EST. 8% PYRITE
		50 X 50	10 C		1					1			
		50 X 75	13 C	2	1					3			

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GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPLAAUG.WR1                                    NUMBER OF GRAINS
TOTAL # OF PANNINGS       24           -----------------------------------
                                       ABRADED   IRREGULAR  DELICATE TOTAL NON    CALC V.G.
SAMPLE #  PANNED                       ========  =========  ======== ===== MAG      ASSAY
           Y/N    DIAMETER   THICKNESS    T    P    T    P    T    P       GMS      PPB    REMARKS

  PLS-88
                                                                         8   30.0       55

   98-06    N   NO VISIBLE GOLD
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GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

NUMBER OF GRAINS

SAMPLE #	PANNED			ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG	CALC V.G. ASSAY	
	Y/N	DIAMETER	THICKNESS	T	P	T	P	T	P		GMS	PPB	REMARKS
PLS-88													
98-07	Y	25 X 50	8 C		1					1			EST. 3% PYRITE
		50 X 75	13 C	1	3					4			1 GRAIN NATIVE COPPER
		75 X 175	25 C	1						1			
										6	35.8	125	
98-08	Y	50 X 50	10 C		1					1			EST. 10% PYRITE
		50 X 75	13 C	1						1			5 GRAINS ARSENOPYRITE
		75 X 75	15 C	1	1					2			
										4	31.6	58	
98-09	N	75 X 75	15 C	1						1			
										1	32.9	19	
98-10	Y	NO VISIBLE GOLD											
98-11	Y	25 X 25	5 C		1					1			EST. 8% PYRITE
		25 X 50	8 C		1					1			
		50 X 75	13 C	1	1					2			
		100 X 150	25 C	1						1			
										5	29.8	126	
98-12	Y	25 X 25	5 C						1	1			EST. 8% PYRITE
		25 X 75	10 C	1	1					2			
		25 X 100	13 C						1	1			
		50 X 50	10 C		2		1			3			
		75 X 100	18 C		1					1			
		75 X 125	20 C			1				1			
										9	33.0	117	
98-13	Y	25 X 25	5 C		1					1			EST. 5% PYRITE
		25 X 50	8 C				1			1			
		50 X 50	10 C	1						1			
		50 X 75	13 C	1						1			
										4	21.2	32	
99-01	Y	25 X 25	5 C						1	1			EST. 1% PYRITE
		75 X 100	18 C					1		1			
		75 X 125	50 M		1					1			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

				NUMBER OF GRAINS									
				ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG	CALC V.G. ASSAY	
SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	T	P	T	P	T	P		GMS	PPB	REMARKS
PLS-88													
										3	13.9	344	
99-02	Y	25 X 25	5 C		1					1			EST. 1% PYRITE
		50 X 75	13 C	1						1			
		50 X 100	15 C	1						1			
		75 X 75	15 C	2						2			
										5	29.4	79	
100-01	N	75 X 125	20 C	1						1			
										1	11.5	130	
101-01	Y	25 X 25	5 C		4				4	8			EST. 3% PYRITE
		25 X 50	8 C	3				1	4	8			
		25 X 75	10 C				1			1			
		50 X 50	10 C		1	1			1	3			
		50 X 75	13 C		1			1	1	3			
		50 X 100	15 C			2	1			3			
		75 X 75	15 C		1					1			
		75 X 100	18 C			2		1		3			
		75 X 150	22 C		1					1			
										31	34.9	300	

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
				T	P	T	P	T	P				
PLS-88													
101-02	Y	25 X 25	5 C		2		2		13	17			EST. 1% PYRITE
		25 X 50	8 C		2		1		3	6			100 GRAINS GALENA
		25 X 100	13 C		1				1	2			PHOTO MICROGRAPH AVAILABLE
		50 X 50	8 C		2		1		4	7			FILM REFERENCE #18
		50 X 75	13 C		1		2		6	9			
		50 X 100	15 C	1						1			
		75 X 75	15 C		2				1	3			
		75 X 100	18 C		1		1			2			
		75 X 125	20 C						1	1			
		100 X 100	20 C						1	1			
		100 X 125	22 C						1	1			
		100 X 150	25 C			1				1			
		125 X 175	29 C					1		1			
										52	25.9	922	
101-03	Y	25 X 25	5 C	2	5	1		1	16	25			EST. 10% PYRITE
		25 X 50	8 C	3	4	2	5	4	18	36			10 GRAINS GALENA
		25 X 75	10 C	1	1	1	1		1	5			PHOTOMICROGRAPH AVAILABLE
		25 X 100	13 C						1	1			FILM REFERENCE #18
		25 X 125	15 C					1		1			
		50 X 50	10 C	4	3	2	2		5	16			
		50 X 75	13 C	2	2	1	1	1	3	10			
		75 X 100	18 C				2			2			
		75 X 125	20 C			1			2	3			
		75 X 150	22 C	1						1			
		100 X 100	20 C					1	1	2			
		125 X 125	25 C		1					1			
		125 X 175	29 C						1	1			
		125 X 275	38 C					1		1			
		200 X 300	46 C	1						1			
										106	15.5	4186	
102-01	Y	25 X 25	5 C		1				1	2			EST. 3% PYRITE
		25 X 50	8 C		2					2			
		25 X 100	13 C		1					1			
		50 X 75	13 C		1					1			
										6	8.4	114	
102-02	Y	25 X 25	5 C						9	9			EST. 15% PYRITE
		25 X 50	8 C						5	5			PHOTOMICROGRAPH AVAILABLE
		25 X 75	10 C						5	5			FILM REFERENCE #18
		25 X 100	13 C						1	1			

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
PLS-88													
		50 X 50	10 C				1		4	5			
		50 X 75	13 C						2	2			
		50 X 100	15 C				1		1	2			
		75 X 75	15 C				1		1	2			
		75 X 100	18 C						2	2			
		75 X 175	25 C						1	1			
		100 X 100	20 C						2	2			
		100 X 125	22 C				1		2	3			
		125 X 150	27 C						1	1			
		125 X 250	36 C						1	1			
										41	10.9	3100	
102-03	Y	25 X 25	5 C		1				2	3			EST. 1% PYRITE
		25 X 50	8 C		1				1	2			
		100 X 175	27 C	1						1			
										6	11.1	366	
102-04	N	NO VISIBLE GOLD											
102-05	N	NO VISIBLE GOLD											
103-01	N	NO VISIBLE GOLD											
103-02	N	NO VISIBLE GOLD											
103-03	N	NO VISIBLE GOLD											
103-04	N	NO VISIBLE GOLD											
104-01	N	NO VISIBLE GOLD											
104-02	Y	25 X 50	8 C	1	4		1			6			EST.20% PYRITE
		50 X 50	10 C		2					2			PICTURE REF#18
		50 X 75	13 C	2	4					6			
		50 X 150	20 C		1					1			
		75 X 100	18 C	1						1			
		75 X 125	20 C		1					1			
		100 X 125	22 C	1						1			
		125 X 175	22 C	1						1			
		175 X 400	52 C	1						1			
										20	32.7	1336	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

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
PLS-88													
104-03	Y	25 X 50	8 C		1					1			EST.15% PYRITE
		50 X 50	10 C		2		1			3			
		50 X 75	13 C		2		1			3			
		75 X 75	15 C	1						1			
		75 X 100	18 C	1						1			
		75 X 150	22 C		1					1			
		125 X 150	27 C	1						1			
										11	30.9	303	
104-04	Y	25 X 25	5 C		1					1			EST.20% PYRITE
		25 X 75	10 C		1					1			PICTURE REF#18
		25 X 100	13 C				1			1			
		50 X 50	10 C	1	6					7			
		50 X 75	13 C	3	2					5			
		50 X 100	15 C		1		1			2			
		75 X 75	15 C	1	1		1			3			
										20	31.2	224	
105-01	Y	25 X 25	5 C		1					1			EST.20% PYRITE
		25 X 50	8 C		4					4			PICTURE REF#18
		25 X 100	13 C		1					1			
		50 X 75	13 C	2	2					4			
		50 X 100	15 C		2					2			
		75 X 75	15 C	1						1			
		75 X 100	18 C	2	1					3			
		75 X 125	20 C	1						1			
		100 X 100	20 C	1						1			
										18	29.4	346	
105-02	Y	25 X 25	5 C	1	3					4			NO PICTURE TOO SMALL GOLD GRAIN
		25 X 50	8 C	1	4					5			EST.30% PYRITE
		50 X 50	10 C		2					2			
		50 X 75	13 C		1					1			
		75 X 75	15 C		1					1			
		75 X 100	18 C	1						1			
		125 X 200	31 C	1						1			
										15	27.8	329	
105-03	Y	25 X 25	5 C	1	3					4			EST.35% PYRITE
		25 X 50	8 C	2	1					3			SOME OXIDISED

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

NUMBER OF GRAINS

SAMPLE #	PANNED	DIAMETER	THICKNESS	ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG	CALC V.G. ASSAY	REMARKS
	Y/N			T	P	T	P	T	P		GMS	PPB	
PLS-88													
		50 X 50	10 C		2					2			
		50 X 100	15 C		1					1			
		75 X 75	15 C		1					1			
		75 X 100	18 C		1					1			
										12	24.7	122	
105-04	Y	25 X 25	5 C	1	1					2			NO PICTURE TOO SMALL GOLD GRAINS
		25 X 50	8 C	1	2					3			EST.30% PYRITE
		50 X 50	10 C	3	2					5			
		50 X 75	13 C	1	1					2			
		75 X 75	15 C	1	1					2			
		100 X 150	25 C	1						1			
										15	27.9	221	
105-05	Y	25 X 25	5 C		5					5			NO PICTURE TOO SMALL GRAINS
		25 X 50	8 C		3					3			EST.20% PYRITE
		50 X 50	10 C		1					1			
		50 X 75	13 C	1	3					4			
		75 X 275	34 C	1						1			
		100 X 150	25 C		1					1			
		125 X 125	25 C	1						1			
										16	22.0	708	
105-06	Y	25 X 25	5 C	1	2					3			EST.5% PYRITE
		25 X 50	8 C		2					2			
		50 X 50	10 C		1					1			
		50 X 75	13 C		1					1			
		75 X 125	20 C				1			1			
		125 X 150	27 C	1						1			
										9	33.8	181	
105-07	N	50 X 75	13 C	1						1			
										1	22.3	17	
106-01	N	100 X 125	22 C	1						1			
										1	31.5	67	
106-02	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

				NUMBER OF GRAINS									
SAMPLE #	PANNED			ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG	CALC V.G. ASSAY	
	Y/N	DIAMETER	THICKNESS	T	P	T	P	T	P		GMS	PPB	REMARKS
PLS-88													
106-03	N	NO VISIBLE GOLD											
106-04	Y	25 X 50	8 C		1					1			EST.8% PYRITE
		50 X 50	10 C	1						1			TRACE MARCASITE
		125 X 150	27 C	1						1			
										3	33.7	122	
106-05	N	NO VISIBLE GOLD											
106-06	N	50 X 75	13 C	1						1			
										1	22.5	17	
106-07	N	NO VISIBLE GOLD											
107-01	Y	50 X 50	10 C		1					1			
		75 X 75	15 C	1						1			
		125 X 150	27 C	1						1			
										3	21.6	216	
108-01	N	100 X 125	22 C	1						1			
										1	38.7	55	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL5SEP.WR1
TOTAL # OF PANNINGS 15

NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
				T	P	T	P	T	P				
PLS-88													
110-01	Y	25 X 50	8 C		2					2			EST.30% PYRITE
		25 X 75	10 C		1					1			
		50 X 50	10 C		1					1			
		50 X 75	13 C		4					4			
		75 X 125	20 C	1						1			
		100 X 125	22 C	1						1			
		200 X 225	40 C		1					1			
										11	27.9	690	
110-02	Y	50 X 50	10 C		1					1			EST.60% PYRITE
		50 X 75	13 C	1						1			
		100 X 100	20 C	1						1			
		125 X 125	25 C		1					1			
		125 X 150	27 C	1						1			
		200 X 275	44 C	1						1			
										6	35.1	783	
110-03	Y	25 X 25	5 C		4					4			
		25 X 50	8 C		5					5			EST.40% PYRITE
		50 X 50	10 C		1					1			
		50 X 75	13 C		1					1			
		50 X 125	18 C		1					1			
		75 X 100	18 C	2						2			
		75 X 125	20 C		1					1			
		100 X 125	22 C		1					1			
		100 X 150	25 C	1						1			
										17	28.9	367	
110-04	N	NO VISIBLE GOLD											
110-05	N	75 X 75	15 C	1						1			
										1	22.8	28	
110-06	Y	50 X 75	13 C		1					1			EST.2% PYRITE
		75 X 75	15 C		1					1			
		75 X 100	18 C		1					1			
										3	26.7	71	
110-07	Y	25 X 50	8 C						1	1			EST.5% PYRITE
		50 X 50	10 C		1					1			
		50 X 75	13 C		1					1			

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPLSSEP.WR1
TOTAL # OF PANNINGS 15

				NUMBER OF GRAINS									
				ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG	CALC V.G. ASSAY	
SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	T	P	T	P	T	P		GMS	PPB	REMARKS
PLS-88													
										3	26.6	24	
110-06	Y	25 X 25	5 C		5					5			
		25 X 50	8 C		6		1		2	9			EST.5% PYRITE
		25 X 75	10 C		1					1			TRACE ARSENOPYRITE
		50 X 50	10 C		1		1		2	4			PHOTO MICROGRAPH AVAILABLE
		50 X 75	13 C		4		1			5			FILM REFERENCE #19
		50 X 100	15 C		1					1			
		50 X 150	20 C		1					1			
		75 X 100	18 C	2	2					4			
		75 X 125	20 C				1			1			
		100 X 150	25 C	1						1			
		200 X 250	42 C		1					1			
		275 X 400	59 C	1						1			
										34	15.0	5406	
111-01	Y	25 X 25	5 C		6				1	7			
		25 X 50	8 C		1		1		1	3			EST.20% PYRITE
		50 X 50	10 C		2					2			PHOTO MICROGRAPH AVAILABLE
		50 X 75	13 C	2	4					6			FILM REFERENCE #19
		50 X 125	18 C		1					1			
		75 X 100	18 C				2			2			
		75 X 125	20 C	1	1					2			
		150 X 200	34 C	1						1			
										24	38.1	441	
111-02	Y	25 X 50	8 C		3				1	4			EST.20% PYRITE
		50 X 50	10 C		1					1			
		50 X 50	10 C	1						1			
		50 X 75	13 C	1	1					2			
		75 X 75	15 C				1			1			
		75 X 100	18 C	2	2					4			
		75 X 150	18 C	1						1			
										14	32.0	258	
111-03	Y	25 X 25	5 C		4					4			
		25 X 50	8 C		5					5			EST.15% PYRITE
		50 X 75	13 C	1	1					2			
		100 X 125	22 C		1					1			
		100 X 150	25 C	1						1			
		125 X 175	29 C	1						1			
										14	42.4	264	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL5SEP.WR1
TOTAL # OF PANNINGS 15

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
PL5-88													
111-04	Y	25 X 35	6 C		1					1			EST.10% PYRITE
		25 X 50	8 C		1					1			
		50 X 50	10 C	1	1					2			
		50 X 75	13 C				1			1			
		75 X 100	0 C		1					1			
										6	31.2	28	
112-01	N	125 X 150	27 C	1						1			
										1	21.2	180	
113-01		25 X 25	5 C		1					1			
		25 X 75	10 C	1						1			
		50 X 50	10 C		1					1			
		50 X 75	13 C				1		1	2			
		75 X 150	22 C	1						1			
										6	27.2	120	
113-02	Y	25 X 25	5 C		2					2			EST.15% PYRITE
		25 X 50	8 C	1	4					5			
		25 X 75	10 C		1					1			
		25 X 100	13 C	1						1			
		50 X 75	13 C		1					1			
		75 X 75	15 C	1	1					2			
										12	35.7	75	
114-01	Y	25 X 25	5 C	1	27		2		3	33			
		25 X 50	8 C	2	25		6		1	34			EST.15% PYRITE
		25 X 75	10 C		1		1		1	3			PHOTO MICROGRAPH AVAILABLE
		25 X 100	13 C		1		1			2			FILM REFERENCE #19
		50 X 50	10 C		22		1			23			
		50 X 75	13 C	1	8		6			15			
		50 X 100	15 C		4					4			
		50 X 125	18 C		1		2			3			
		75 X 75	15 C	1						1			
		75 X 100	18 C	2	4		3			9			
		75 X 125	20 C		2		1			3			
		75 X 150	22 C		1		1			2			
		75 X 175	25 C		1					1			
		100 X 100	20 C		2					2			
		100 X 125	22 C				1			1			
		100 X 150	25 C				1			1			
		100 X 175	27 C				1			1			
		125 X 125	25 C		2					2			

GOLD CLASSIFICATION
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VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL5SEP.WR1

TOTAL # OF PANNINGS 15

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
PLS-88													
		125 X 175	29 C				1			1			
		150 X 150	29 C	1						1			
		250 X 500	65 C	1						1			
										143	29.8	4618	
114-02	Y	25 X 25	5 C		9		2		1	12			
		25 X 50	8 C		12		1			13			EST.20% PYRITE
		50 X 50	10 C		5		2			7			TRACE COPPER NATIVE
		50 X 75	13 C		16		1		1	18			PHOTO MICROGRAPH AVAILABLE
		50 X 100	15 C	1	2					3			FILM REFERENCE #19
		50 X 125	18 C		2		1			3			
		75 X 75	15 C		2					2			
		75 X 100	18 C	1	1					2			
		75 X 125	20 C				1			1			
		75 X 150	22 C		1					1			
		100 X 100	20 C		1					1			
		100 X 150	25 C	2						2			
		125 X 175	29 C		1					1			
										66	23.4	1432	
115-01	Y	25 X 25	0 C				1		3	4			EST.5% PYRITE
		25 X 50	8 C		1		1			2			
		25 X 75	10 C		1					1			
		50 X 50	10 C		2		1		3	6			
		50 X 75	13 C		1		3		6	10			
		50 X 100	15 C		1		1		2	4			
		50 X 125	18 C				1			1			
		75 X 75	15 C				2			2			
		75 X 100	18 C						1	1			
		75 X 125	20 C				1			1			
										32	29.5	427	
116-01	N	NO VISIBLE GOLD											
116-02	Y	25 X 25	5 C		2				1	3			
		25 X 50	8 C		2					2			
		50 X 50	10 C		1					1			
		50 X 100	15 C		1					1			
		75 X 100	18 C			1				1			
		75 X 150	22 C	1						1			
										9	4	1051	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL4SEP.WR1

TOTAL # OF PANNINGS 40

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
PLS-88													
116-03	Y	25 X 25	5 C	2	2			1		5			EST.6% PYRITE
		25 X 50	8 C	3					2	5			
		50 X 50	10 C	2	1					3			
		50 X 75	13 C	2	2	1			1	6			
		50 X 100	15 C	1						1			
		75 X 100	18 C	2						2			
		100 X 100	20 C	1						1			
		150 X 175	31 C					1		1			
										24	29.4	467	
116-04	Y	25 X 25	5 C		2					2			EST.20% PYRITE
		25 X 50	8 C	2	2					4			
		25 X 100	13 C				1			1			
		50 X 50	10 C	1	2					3			
		50 X 75	13 C	2	2					4			
		50 X 100	15 C			1				1			
		100 X 100	20 C	2						2			
										17	24.4	265	
117-01	Y	25 X 25	5 C	2	1		1			4			EST.20% PYRITE
		25 X 50	8 C	1	2		1		1	5			
		50 X 50	10 C	3	1	1				5			
		75 X 125	20 C	1						1			
										15	26.9	110	
117-02	Y	25 X 25	5 C		1					1			EST.10% PYRITE
		25 X 50	8 C	1						1			
		25 X 75	10 C	1						1			
		50 X 50	10 C		1					1			
		50 X 75	13 C			1				1			
		175 X 200	36 C	1						1			
										6	20.3	508	
117-03	Y	50 X 75	13 C						1	1			EST.1% PYRITE
		100 X 125	22 C	1						1			
		125 X 150	27 C	1						1			
		150 X 225	36 C	1						1			
		175 X 250	40 C	1						1			
										5	35.0	839	
117-04	Y	25 X 35	6 C		1					1			EST.1% PYRITE
		25 X 50	8 C			1			2	3			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL4SEP.WR1
TOTAL # OF PANNINGS 40

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
				T	P	T	P	T	P				
PL5-88													
		50 X 50	10 C			1				1			
		50 X 75	13 C		2					2			
		75 X 75	15 C		1					1			
		75 X 150	22 C		1					1			
		100 X 150	25 C		1					1			
										10	32.0	215	
117-05	Y	25 X 25	5 C		1					1			EST.1% PYRITE
		25 X 50	8 C		1				1	2			
		50 X 50	10 C		1					1			
		50 X 75	13 C		3					3			
		75 X 25	20 C		2					2			
		600 X 900	101 C		1					1			
										10	26.4	16350	
117-06	Y	25 X 25	5 C		8		1		3	12			EST.1% PYRITE
		25 X 50	8 C		8		3		1	12			
		25 X 75	10 C		2					2			
		50 X 50	10 C		14		2		5	21			
		50 X 75	13 C		5		2		1	8			
		50 X 100	15 C		1					1			
		75 X 75	15 C						1	1			
		75 X 100	18 C		1					1			
		75 X 125	20 C		1					1			
		100 X 100	13 C		1					1			
										60	16.4	852	
117-07	Y	25 X 25	5 C	2	5	2	6	1	12	28			EST.1% PYRITE
		25 X 50	8 C	3	1	2	1	3		10			BRASS CONTAMINATION
		25 X 75	10 C	2			2		1	5			COPPER CONTAMINATION
		25 X 100	13 C						1	1			
		50 X 50	10 C	1		2	1	1		5			
		50 X 75	13 C	1	1	1	7		3	13			
		50 X 100	15 C	1		1	2			4			
		50 X 125	18 C				1		1	2			
		50 X 150	20 C		1					1			
		75 X 75	15 C	1	1	1			2	5			
		75 X 100	18 C	1		1				2			
		75 X 125	20 C			1				1			
		75 X 175	25 C	1						1			
		75 X 250	31 C	1						1			
		75 X 275	34 C	1						1			
		100 X 100	20 C			1				1			
		100 X 125	22 C		1		1			2			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL4SEP.WR1

TOTAL # OF PANNINGS 40

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
PLS-88													
		100 X 150	25 C				1			1			
		125 X 150	27 C	1						1			
		125 X 275	38 C			1				1			
										86	17.8	3493	
117-08	Y	25 X 25	5 C		1					1			EST.1% PYRITE
		25 X 50	8 C		2				1	3			
		25 X 75	10 C	1						1			
		50 X 75	13 C		1				1	2			
		75 X 100	18 C						1	1			
		75 X 125	20 C			1				1			
										9	16.2	230	
118-01	Y	25 X 25	5 C				2		1	3			EST.2% PYRITE
		25 X 50	8 C				1		1	2			
		25 X 75	10 C		1					1			
		50 X 50	10 C					1		1			
		50 X 100	15 C		1		1			2			
		50 X 125	18 C	1	1		1			3			
		200 X 250	42 C	1						1			
										13	25.9	191	
118-02	Y	25 X 25	5 C	1					1	2			EST.0.5% PYRITE
		50 X 50	10 C				1			1			
		50 X 75	13 C	1					1	2			
		50 X 100	15 C	1						1			
										6	21.2	77	
118-03	Y	25 X 25	5 C				3	21	6	30			EST.1% PYRITE
		25 X 50	8 C				2		8	10			
		25 X 75	10 C				1	3	2	6			
		50 X 50	10 C				2	14	3	19			
		50 X 75	13 C		1		2		3	6			
		50 X 100	15 C						1	1			
		50 X 125	18 C						1	1			
		75 X 75	15 C					2	1	3			
		75 X 100	18 C				2		1	3			
		75 X 125	20 C				2	1		3			
		75 X 150	22 C	1				1		2			
		75 X 250	31 C					1		1			
		100 X 100	20 C		1				1	2			
		100 X 125	22 C				1			1			
		125 X 150	27 C	1				1		2			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL4SEP.WR1
TOTAL # OF PANNINGS 40

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
PLS-88													
										90	24.8	1423	
118-04	Y	25 X 25	5 C		12		12	3	41	68			EST.0.75% PYRITE
		25 X 50	8 C	1	8	1	15		25	50			
		25 X 75	10 C		2		2	4	1	9			
		50 X 50	10 C	4	7	2	4	1	3	21			
		50 X 75	13 C	1	10	1	7		7	26			
		50 X 100	15 C		3		3		3	9			
		50 X 150	20 C					1		1			
		75 X 75	15 C	1	1		1			3			
		75 X 100	18 C				2		1	3			
		75 X 150	22 C	3			1			4			
		100 X 100	20 C					1		1			
		100 X 125	22 C						1	1			
		100 X 175	27 C	1						1			
		100 X 200	29 C	1						1			
										198	22.1	2457	
119-01	Y	25 X 25	5 C	2	2	1	2	3	12	22			EST.5% PYRITE
		25 X 50	8 C				2		2	4			
		25 X 75	10 C						1	1			
		50 X 50	10 C		2		2	1	2	7			
		50 X 75	13 C	1	2		1	1	1	6			
		50 X 100	15 C		1				1	2			
		50 X 175	22 C	1						1			
		75 X 75	15 C		1					1			
		100 X 100	20 C	1						1			
										45	31.3	325	
119-02	Y	25 X 25	5 C		2		1			3			EST.7% PYRITE
		25 X 50	8 C		1		1			2			
		25 X 75	10 C			1				1			
		50 X 50	10 C	1	1					2			
		50 X 75	13 C	1	1		1	1		4			
		125 X 225	34 C	1						1			
		200 X 275	44 C	1						1			
										14	30.6	940	
119-03	Y	100 X 125	22 C				1			1			EST.6% PYRITE
										1	36.9	58	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL4SEF.WR1

TOTAL # OF PANNINGS 40

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
PLS-88													
120-01	Y	25 X 50	8 C				1			1			EST.6% PYRITE
		25 X 75	10 C			1				1			
		50 X 75	13 C			1				1			
		50 X 100	15 C			1				1			
										4	30.6	42	
120-02	Y	50 X 75	13 C	1						1			EST.0.5% PYRITE
		75 X 100	18 C	1						1			
		125 X 150	27 C	1						1			
										3	21.9	238	
120-03	Y	75 X 125	20 C	1						1			EST.0.5% PYRITE
		175 X 250	40 C	1						1			
										2	30.2	499	
120-04	N	75 X 100	18 C	1						1			
										1	32.0	32	
120-05	N	75 X 175	25 C	1						1			
										1	20.9	136	
120-06	Y	25 X 25	5 C						1	1			EST. 2% PYRITE
		25 X 50	8 C	1				1		2			
		50 X 50	10 C				1			1			
		50 X 75	13 C		1				2	3			
		50 X 100	15 C	1						1			
		75 X 75	15 C			1	1			2			
										10	26.6	129	
120-07	Y	25 X 25	5 C		1					1			EST. 1% PYRITE
		25 X 50	8 C	1	1		1			3			
		25 X 75	10 C				1			1			
		50 X 50	10 C		1					1			
		75 X 75	15 C			1				1			
		75 X 100	18 C	2						2			
										9	28.3	117	
121-01	N	NO VISIBLE GOLD											
121-02	N	NO VISIBLE GOLD											

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GOLD CLASSIFICATION
==================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL4SEP.WR1                                      NUMBER OF GRAINS
TOTAL # OF PANNINGS       40             ----------------------------------
                                         ABRADED  IRREGULAR DELICATE TOTAL NON    CALC V.G.
SAMPLE #  PANNED                         ======== ========= ======== ===== MAG     ASSAY
          Y/N    DIAMETER   THICKNESS     T    P    T    P    T    P       GMS      PPB    REMARKS

PLS-88

 121-03    N   NO VISIBLE GOLD

 121-04    N   NO VISIBLE GOLD

 121-05    N      75 X   75      15 C     1                              1
                                                                       ------------------
                                                                         1  27.9       23

 121-06    Y      25 X   50       8 C          1                         1                EST. 5% PYRITE
                                                                       ------------------
                                                                         1  25.9        3

 121-07    N      50 X   50      10 C     1                              1
                                                                       ------------------
                                                                         1  27.4        7

 121-08    N      75 X   75      15 C     1                              1
                                                                       ------------------
                                                                         1  24.8       26

 121-09    N     125 X  150      27 C     1                              1
                                                                       ------------------
                                                                         1  34.0      113

 121-10    Y      25 X   50       8 C     1                              1                EST. 5% PYRITE
                  50 X   50      10 C     1    1                         2
                  75 X  100      18 C          1                         1
                                                                       ------------------
                                                                         4  19.2       77

 122-01    N      50 X  100      15 C     1                              1
                                                                       ------------------
                                                                         1  32.7       20

 122-02    N   NO VISIBLE GOLD

 122-03    Y      25 X   75      10 C                                1   1                EST. 1% PYRITE
                  50 X   50      10 C     1    3                     1   5
                  75 X  100      18 C     1                              1
                                                                       ------------------
                                                                         7  28.1       77

 122-04    N      75 X  125      20 C     1                              1
                                                                       ------------------
                                                                         1  26.6       52
```

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL4SEP.WR1

TOTAL # OF PANNINGS 40

SAMPLE #	PANNED	DIAMETER	THICKNESS	NUMBER OF GRAINS							NON MAG	CALC V.G. ASSAY	REMARKS
				ABRADED		IRREGULAR		DELICATE		TOTAL			
	Y/N			T	P	T	P	T	P		GMS	PPB	
PLS-88													
122-05	Y	25 X 75	10 C		1					1			EST. 10% PYRITE
		50 X 50	10 C		1					1			
		75 X 125	20 C		1					1			
		125 X 125	25 C	1						1			
		150 X 275	40 C	1						1			
										5	33.1	555	
122-06	N	100 X 175	27 C	1						1			
										1	28.0	137	
122-07	Y	25 X 25	5 C		1					1			EST. 2% PYRITE
		25 X 75	10 C					1		1			
		75 X 75	15 C		1					1			
										3	22.1	39	
122-08	N	50 X 75	13 C	1						1			
										1	25.9	14	
122-09	Y	25 X 50	8 C		1					1			EST. 4% PYRITE
		25 X 100	13 C		1					1			
		50 X 50	10 C			1				1			
		50 X 100	15 C			1				1			
										4	24.6	52	
122-10	N	NO VISIBLE GOLD											
122-11	N	50 X 75	13 C	1						1			
										1	22.6	17	
122-12	N	NO VISIBLE GOLD											
122-13	Y	25 X 75	10 C		1					1			EST. 6% PYRITE
		50 X 50	10 C		1					1			
		50 X 75	13 C	1						1			
		75 X 100	18 C	1	1					2			
										5	24.2	115	
123-01	Y	25 X 25	5 C		4		3		1	8			EST. 6% PYRITE
		25 X 50	8 C				2			2			
		25 X 75	10 C			2			1	3			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL4SEP.WR1
TOTAL # OF PANNINGS 40

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
PLS-88													
		50 X 75	13 C	1					1	2			
		50 X 100	15 C	1						1			
										16	23.0	101	
123-02	Y	25 X 25	5 C	1	1					2			EST. 5% PYRITE
		25 X 50	8 C		1			1		2			10 GRAINS ARSENOPYRITE
		25 X 75	10 C	1			1			2			
		50 X 50	10 C	1	1					2			
		50 X 75	13 C						1	1			
		50 X 100	15 C	1						1			
		100 X 100	20 C	1						1			
										11	21.5	163	
123-03	Y	25 X 25	5 C						1	1			EST. 5% PYRITE
		25 X 50	8 C		1					1			300 MARCASITE PELLETS
		25 X 75	10 C		1					1			
		50 X 75	13 C		1		2			3			
		75 X 125	20 C	1						1			
		100 X 100	20 C	1						1			
		125 X 200	31 C	1						1			
										9	31.4	339	
123-04	N	50 X 100	15 C	1						1			
										1	31.3	20	
123-05	Y	25 X 25	5 C						1	1			EST. 10% PYRITE
		25 X 50	8 C						1	1			
		25 X 75	10 C		2					2			
		50 X 50	10 C		2					2			
		50 X 100	15 C		2					2			
		75 X 100	18 C			1				1			
		100 X 175	27 C	1						1			
										10	43.3	162	
123-06	Y	25 X 25	5 C				1			1			EST. 15% PYRITE
		25 X 50	8 C	1						1			
		50 X 50	10 C		2	1				3			
		50 X 75	13 C		2				1	3			
		50 X 100	15 C						1	1			
		75 X 75	15 C			1				1			
										10	53.4	58	

GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL4SEP.WR1
TOTAL # OF PANNINGS 40

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
PLS-88													
123-07	N	50 X 75	13 C	1						1			
										1	33.5	11	
123-08	Y	25 X 25	5 C	1				1		2			EST. 7% PYRITE
		50 X 75	13 C		2					2			
										4	28.8	28	
123-09	Y	25 X 25	5 C	1				1		2			EST. 7% PYRITE
		25 X 50	8 C					1		1			
		50 X 75	13 C	1						1			
		75 X 100	18 C		1					1			
		100 X 125	22 C		1					1			
										6	28.7	127	
123-10	Y	25 X 25	5 C		1					1			EST. 7% PYRITE
		50 X 50	10 C	1	1				1	3			
		50 X 75	13 C	2						2			
		50 X 175	22 C							0			
		75 X 100	18 C						1	1			
										7	30.2	78	
123-11	Y	125 X 150	27 C	2						2			EST. 5% PYRITE
										2	22.7	337	
124-01	Y	25 X 50	8 C		1					1			EST. 15% PYRITE
		50 X 50	10 C						2	2			
		50 X 75	13 C						1	1			
		50 X 100	15 C						1	1			
		75 X 75	15 C						1	1			
		75 X 100	18 C	1						1			
										7	26.3	119	
124-02	Y	25 X 25	5 C	1						1			EST. 15% PYRITE
		25 X 50	8 C		1					1			
		25 X 75	10 C	1						1			
		50 X 75	13 C	2	1					3			
		50 X 100	15 C						1	1			
		100 X 150	25 C	1						1			
		125 X 125	25 C	1						1			

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GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL45EP.WR1                                 NUMBER OF GRAINS
TOTAL # OF PANNINGS      40           -----------------------------------
                                      ABRADED   IRREGULAR  DELICATE TOTAL NON    CALC V.G.
SAMPLE #  PANNED                      ========  =========  ======== ===== MAG      ASSAY
          Y/N    DIAMETER   THICKNESS    T    P    T    P    T    P       GMS      PPB    REMARKS

PLS-88
                                                                         9   25.8      304
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GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL6SEP.WR1                                    NUMBER OF GRAINS
TOTAL # OF PANNINGS       15           -----------------------------------
                                       ABRADED   IRREGULAR  DELICATE TOTAL NON    CALC V.G.
SAMPLE #  PANNED                       ========  =========  ======== ===== MAG      ASSAY
           Y/N    DIAMETER   THICKNESS    T    P    T    P    T    P       GMS      PPB    REMARKS

 PL3-88
  124-03    Y      50 X  50      10 C     1                              1                 EST.12% PYRITE
                   75 X 100      18 C     1                              1                 <100 MARCASITE BALLS
                                                                      --------------------
                                                                         2   30.1       40

  126-01    Y      25 X  50       8 C          1                         1                 EST.5% PYRITE
                   50 X  50      10 C     1                              1                 <10 GRAINS ARESENOPYRITE
                   50 X  75      13 C     1                              1
                   75 X 125      20 C     1                              1
                                                                      --------------------
                                                                         4   22.9       94

  127-01    Y      25 X  25       5 C          1         1               2                 EST.6% PYRITE
                   25 X 100      13 C          1                         1                 EST.100 MARCASITE BALLS
                   50 X  50      10 C     1         1                    2
                                                                      --------------------
                                                                         5   31.0       26

  127-02    Y      25 X  50       8 C          1                         1                 EST.3% PYRITE
                   50 X  50      10 C                    2               2                 <10 GRAINS ARESENOPYRITE
                   50 X  75      13 C                    2               2
                   75 X 100      18 C     1                              1
                   75 X 125      20 C     1                   1          2
                   75 X 150      22 C     1                              1
                  100 X 125      22 C          1                         1
                                                                      --------------------
                                                                        10   40.9      231

  127-03    Y      25 X  25       5 C          1                         1                 EST.10% PYRITE
                   25 X  50       8 C               1    1         1     3                 <10 GRAINS ARSENOPYRITE
                   50 X  75      13 C                    1               1
                   50 X 100      15 C                    1               1
                   50 X 175      22 C          1                         1
                  100 X 150      25 C     1                              1
                                                                      --------------------
                                                                         8   26.2      240

  127-04    Y      25 X  50       8 C                    1               1                 EST.12% PYRITE
                   50 X  75      13 C     1                              1                 <10 GRAINS ARSENOPYRITE
                   50 X 100      15 C          1                         1
                   75 X 100      18 C          1                         1
                  100 X 125      22 C     1                              1
                                                                      --------------------
                                                                         5   37.4      113

  129-01    N   NO VISIBLE GOLD
```

GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL6SEP.WR1
TOTAL # OF PANNINGS 15

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
PLS-88													
131-01	Y	25 X 25	5 C	1						1			EST.0.5% PYRITE
		25 X 75	10 C	1						1			
		50 X 50	10 C					1		1			
		75 X 125	20 C		1					1			
		75 X 150	22 C	1						1			
										5	30.4	133	
131-02	Y	25 X 25	5 C						1	1			EST.2% PYRITE
		25 X 50	8 C		1		1			2			
		50 X 50	10 C	1						1			
		50 X 75	13 C				1	1		2			
		100 X 200	29 C	1						1			
										7	42.7	142	
132-01	Y	25 X 25	5 C	3					1	4			EST.7% PYRITE
		25 X 50	8 C	1						1			<10 GRAINS ARESENOPYRITE
		50 X 50	10 C	1						1			
										6	44.5	8	
134-01	Y	25 X 25	5 C	1						1			EST.0.2% PYRITE
		25 X 50	8 C	1						1			
		50 X 75	13 C					1		1			
		50 X 100	15 C	1						1			
		100 X 125	18 C	1						1			
										5	35.1	65	
134-02	N	NO VISIBLE GOLD											
134-03	N	75 X 100	18 C	1						1			
										1	40.2	25	
134-04	N	75 X 75	15 C	1						1			
										1	32.2	20	
134-05	N	NO VISIBLE GOLD											
135-01	Y	25 X 25	5 C						1	1			EST.10% PYRITE
		50 X 50	10 C				1			1			
		50 X 75	13 C	1			1			2			
		75 X 75	15 C				1			1			
		75 X 100	15 C	1						1			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL6SEP.WR1
TOTAL # OF PANNINGS 15

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
PLS-88													
		75 X 175	25 C	1						1			
										7	45.1	122	
135-02	Y	75 X 75	15 C				1			1			EST.15% PYRITE
		100 X 175	27 C	1						1			
		125 X 150	27 C	1						1			
										3	36.2	229	
135-03	N	50 X 100	15 C	1						1			
										1	39.6	16	
135-04	N	NO VISIBLE GOLD											
135-05	N	50 X 75	13 C			1				1			
										1	30.8	12	
135-06	N	NO VISIBLE GOLD											
135-07	Y	25 X 25	5 C			1			1	2			EST.10% PYRITE
		50 X 50	10 C						2	2			
		50 X 75	13 C				1			1			
		50 X 100	15 C	1						1			
		75 X 75	15 C			1				1			
		75 X 125	20 C				1			1			
										8	19.6	153	
135-08	Y	25 X 35	6 C				1		3	4			EST.10% PYRITE
		25 X 50	8 C	1		1	1	1	1	5			
		25 X 75	10 C						1	1			
		50 X 50	10 C				1		4	5			
		50 X 75	13 C				1		2	3			
		50 X 125	18 C					1		1			
		75 X 75	15 C				1			1			
		100 X 100	20 C				1			1			
		100 X 125	22 C			1	1			2			
										23	30.0	341	
136-01	Y	25 X 25	5 C						2	2			EST.7% PYRITE
		25 X 50	8 C						1	1			
		50 X 50	10 C	1					1	2			
		50 X 75	13 C	1		1			3	5			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL6SEP.WR1

TOTAL # OF PANNINGS 15

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
PL8-88													
		50 X 100	15 C	1						1			
		75 X 100	18 C	1						1			
		100 X 175	27 C				1			1			
										13	21.2	371	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

NUMBER OF GRAINS

SAMPLE #	PANNED	DIAMETER	THICKNESS	ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG	CALC V.G. ASSAY	REMARKS
	Y/N			T	P	T	P	T	P		GMS	PPB	
PLS-88													
137-01	N	75 X 100	18 C	1						1			
										1	15.9	64	
137-02	N	100 X 150	25 C	1						1			
										1	17.8	163	
137-03	N	50 X 75	13 C	1						1			
										1	22.8	16	
137-04	Y	50 X 50	10 C	1	4					5			EST. 2% PYRITE
		175 X 200	36 C	1						1			
										6	22.8	457	
137-05	Y	25 X 25	5 C		2					2			EST. 3% PYRITE
		25 X 50	8 C		1					1			
		50 X 75	13 C	1						1			
		75 X 100	18 C	1						1			
		75 X 150	22 C	1						1			
										6	30.4	120	
137-06	Y	25 X 25	5 C		1					1			EST. 10% PYRITE
		25 X 50	8 C		1					1			100 GRAINS ARSENOPYRITE
		75 X 100	18 C	2			1			3			
										5	31.9	98	
137-07	N	NO VISIBLE GOLD											
137-08	N	50 X 50	10 C	1						1			
										1	30.7	6	
137-09	Y	50 X 50	10 C	1	1					2			EST. 10% PYRITE
		50 X 75	13 C		2					2			
		75 X 100	18 C	1	1					2			
		100 X 125	22 C		1					1			
		100 X 175	27 C		1					1			
										8	27.2	335	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

				NUMBER OF GRAINS									
SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
				T	P	T	P	T	P				
PLS-88													
138-01	N	75 X 75	15 C	1						1			
										1	29.7	22	
138-02	N	NO VISIBLE GOLD											
138-03	N	NO VISIBLE GOLD											
138-04	N	50 X 50	10 C	1						1			
										1	21.1	9	
138-05	N	NO VISIBLE GOLD											
138-06	N	NO VISIBLE GOLD											
139-01	N	50 X 100	15 C	1						1			
										1	28.2	23	
139-02	N	NO VISIBLE GOLD											
139-03	Y	50 X 50	10 C		1					1			EST. 3% PYRITE
		50 X 75	13 C	2	1					3			
		75 X 75	15 C		1					1			
										5	27.7	70	
139-04	N	50 X 50	10 C	1						1			
										1	25.8	7	
139-05	N	NO VISIBLE GOLD											

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL1SEP.WR1

TOTAL # OF PANNINGS 8

SAMPLE #	FANNED 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
PLS-88													
140-01	Y	25 X 25	5 C		1					1			
		25 X 50	8 C		2					2			
		75 X 75	15 C	1						1			
		100 X 125	22 C	1						1			
										5	29.7	99	
140-02	N	100 X 150	25 C	1						1			
										1	27.0	107	
140-03	N	NO VISIBLE GOLD											
140-04	N	75 X 125	20 C	1						1			
										1	36.4	41	
140-05	N	NO VISIBLE GOLD											
140-06	N	50 X 75	13 C	1						1			
										1	32.3	12	
141-01	N	NO VISIBLE GOLD											EST. 3% PYRITE
141-02	N	NO VISIBLE GOLD											
141-03	Y	25 X 50	8 C		2					2			EST. 2% PYRITE
		50 X 50	10 C	1						1			
		50 X 75	13 C		2					2			
		125 X 250	36 C	1						1			
										6	40.7	259	
141-04	N	75 X 100	18 C	1						1			
										1	30.1	34	
141-05	Y	25 X 50	8 C	1	1					2			EST.2% PYRITE
		50 X 50	10 C				1			1			
		50 X 100	15 C			1				1			
		75 X 75	15 C	1						1			
		75 X 100	18 C	1						1			
		125 X 175	29 C	1						1			
										7	31.5	241	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL1SEP.WR1
TOTAL # OF PANNINGS 8

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
PLS-88													
141-06	Y	25 X 50	8 C		1	1				2			EST.5% PYRITE
		50 X 50	10 C		1				1	2			
		100 X 125	22 C	1						1			
		100 X 175	27 C	1						1			
										6	26.5	245	
141-07	N	75 X 125	20 C			1				1			
										1	23.8	63	
141-08	Y	25 X 25	5 C		3					3			EST.2% PYRITE
		50 X 75	13 C		1					1			
		75 X 100	18 C	1		1				2			
										6	20.7	119	
141-09	Y	25 X 50	8 C		5					5			EST.15% PYRITE
		50 X 75	13 C		1					1			
		75 X 100	18 C		1					1			
										7	24.1	74	
141-10	Y	25 X 25	5 C		2					2			EST.8% PYRITE
		50 X 50	10 C		1				2	3			
		50 X 75	13 C		1					1			
		125 X 150	18 C		1					1			
		175 X 350	48 C	1						1			
										8	34.1	572	
142-01	N	50 X 75	13 C	1						1			
										1	25.8	14	
142-02	Y	50 X 50	10 C	1						1			EST.5% PYRITE
		50 X 75	13 C	1	1					2			
										3	19.3	49	
142-03	N	NO VISIBLE GOLD											
142-04	N	50 X 50	10 C	1						1			
										1	21.3	9	

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GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL2SEP.WR1                                       NUMBER OF GRAINS
TOTAL # OF PANNINGS        19               -----------------------------------
                                            ABRADED   IRREGULAR  DELICATE TOTAL NON     CALC V.G.
SAMPLE #  PANNED                            ========  =========  ======== ===== MAG      ASSAY
           Y/N    DIAMETER   THICKNESS       T     P     T     P     T     P          GMS      PPB     REMARKS

PL2-88
  142-05    Y       25 X   25        5 C                                   1      1                    EST.15% PYRITE
                    50 X   75       13 C     1     4                              5
                    75 X   75       15 C     1     1                              2
                                                                              ------------------
                                                                                  8   29.8       106

  142-06    Y       25 X   25        5 C           1                              1                    EST.10% PYRITE
                    25 X   50        8 C           1                              1
                    75 X   75       15 C     1                                    1
                    75 X  100       18 C           1     1                        2
                                                                              ------------------
                                                                                  5   26.2       106

  142-07    N    NO VISIBLE GOLD

  142-08    N    NO VISIBLE GOLD

  142-09    N    NO VISIBLE GOLD

  143-01    N    NO VISIBLE GOLD

  143-02    N       50 X   50       10 C     1                                    1
                                                                              ------------------
                                                                                  1   29.6         6

  143-03    N       25 X   50        8 C     1                                    1
                                                                              ------------------
                                                                                  1   32.0         3

  143-04    Y       25 X   50        8 C     1                                    1                    EST.8% PYRITE
                    25 X   75       10 C     1                                    1
                    50 X   50       10 C           1                              1
                    50 X   75       13 C           2                              2
                    75 X  100       18 C     2                                    2
                                                                              ------------------
                                                                                  7   32.9        96

  143-05    N       75 X  100       18 C                 1                        1
                                                                              ------------------
                                                                                  1   30.1        34

  143-06    Y       25 X   25        5 C           1                              1                    EST.10% PYRITE
                    25 X   50        8 C           2                              2
                    50 X   50       10 C     1     1                              2
                    50 X   75       13 C           1                              1
                    75 X   75       15 C     1                                    1
                                                                              ------------------
```

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GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL2SEP.WR1                                         NUMBER OF GRAINS
TOTAL # OF PANNINGS       19              -----------------------------------
                                          ABRADED   IRREGULAR  DELICATE TOTAL NON    CALC V.G.
SAMPLE #  PANNED                          ========  =========  ======== ===== MAG      ASSAY
          Y/N    DIAMETER   THICKNESS      T    P     T    P     T    P        GMS      PPB    REMARKS

PL5-88
                                                                          7   28.7       55

  143-07    Y      25 X   50       8 C          1                         1                    EST.20% PYRITE
                   25 X  100      13 C     1                              1
                   50 X   75      13 C          1                         1
                   50 X  100      15 C     1                              1
                                                                       -------------------
                                                                          4   29.3       50

  143-08    Y      50 X   75      13 C     1                              1                    EST.20% PYRITE
                   50 X  100      15 C          1                         1
                   50 X  125      18 C     1                              1
                                                                       -------------------
                                                                          3   29.2       69

  143-09    N      50 X   75      13 C     1                              1
                                                                       -------------------
                                                                          1   31.7       12

  144-01    N     100 X  175      27 C     1                              1                    EST.15% PYRITE
                                                                       -------------------
                                                                          1   28.7      133

  144-02    Y      25 X   25   -   5 C     1    1                         2
                   50 X   50       8 C     1    1                         2
                   50 X  100      15 C     1                              1
                  175 X  225      38 C     1                              1
                                                                       -------------------
                                                                          6   29.3      418

  144-03    Y      25 X   25       5 C          1                         1                    EST.10% PYRITE
                   25 X   50       8 C          1                         1
                   50 X   50      10 C          1                         1
                   50 X   75      13 C     1    1                         2
                   50 X  125      18 C     1                              1
                   75 X  125      20 C     1                              1
                  100 X  125      22 C          1                         1
                                                                       -------------------
                                                                          8   29.4      193

  144-04    Y      25 X   25       5 C          1                         1                    EST.20% PYRITE
                   25 X   50       8 C          2                         2
                   50 X   50      10 C          1                         1
                   50 X   75      13 C     2                              2
                   50 X  100      15 C          1                         1
                                                                       -------------------
                                                                          7   29.5       60
```

GOLD CLASSIFICATION
===================

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL2SEF.WR1
TOTAL # OF PANNINGS 19

SAMPLE #	PANNED			NUMBER OF GRAINS							NON	CALC V.G.	
				ABRADED		IRREGULAR		DELICATE		TOTAL	MAG	ASSAY	
	Y/N	DIAMETER	THICKNESS	T	P	T	P	T	P		GMS	PPB	REMARKS
PL8-88													
144-05	Y	25 X 25	5 C	1	2					3			EST.10% PYRITE
		25 X 50	8 C		3		1	1		5			
		25 X 75	10 C		1					1			
		50 X 50	10 C		3					3			
		50 X 75	13 C	1						1			
		75 X 100	18 C	2						2			
		150 X 225	36 C	1						1			
										16	23.0	570	
144-06	Y	25 X 25	5 C		4					4			EST.15% PYRITE
		25 X 50	8 C	1	5					6			
		50 X 50	10 C		2					2			
		50 X 75	13 C		2	1				3			
		100 X 100	20 C	1						1			
										16	30.4	118	
144-07	Y	25 X 25	5 C		4					4			EST.40% PYRITE
		25 X 50	8 C		4					4			
		50 X 50	10 C		5					5			
		50 X 75	13 C		1					1			
		75 X 100	18 C		2					2			
		75 X 150	22 C			1				1			
		100 X 100	20 C	1						1			
										18	33.7	220	
145-01	N	NO VISIBLE GOLD											
145-02	Y	25 X 50	8 C		2					2			EST.20% PYRITE
		50 X 75	13 C	2						2			
		50 X 125	18 C	1						1			
		125 X 250	36 C		1					1			
										6	15.4	739	
146-01	N	NO VISIBLE GOLD											
146-02	Y	25 X 25	5 C		2					2			EST.15% PYRITE
		50 X 50	10 C		1					1			
		50 X 75	13 C	1	1					2			
		50 X 100	15 C	1						1			
										6	30.0	54	
										6	30.0	54	

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL2SEP.WR1
TOTAL # OF PANNINGS 19

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
PL5-88													
146-03	Y	25 X 50	8 C		2					2			EST.20% PYRITE
		25 X 75	10 C		1					1			
		50 X 50	10 C		1					1			
		50 X 75	13 C		1		1			2			
		75 X 75	15 C	2						2			
		75 X 100	18 C	1						1			
		75 X 175	25 C	1						1			
		100 X 125	22 C	1						1			
		125 X 125	25 C	1						1			
										12	33.5	343	
146-04	Y	25 X 25	5 C		1					1			EST.20% PYRITE
		25 X 50	8 C		3					3			
		50 X 100	15 C		1					1			
		75 X 100	18 C	1	3					4			
		100 X 125	22 C	1						1			
										10	30.2	234	
146-05	N	75 X 75	15 C	1						1			
										1	24.8	26	
146-06	Y	25 X 25	5 C		2					2			EST.25% PYRITE
		25 X 50	8 C		3					3			
		50 X 100	15 C	1						1			
		75 X 125	20 C	1						1			
										7	31.2	78	
146-07	N	75 X 100	18 C	1						1			
										1	41.9	24	
146-08	N	150 X 225	36 C	1						1			
										1	18.2	520	
146-09	N	75 X 125	20 C	1						1			
										1	42.4	35	
146-10	N	NO VISIBLE GOLD											
146-11	Y	25 X 25	5 C		2					2			EST.20% PYRITE
		25 X 50	8 C		2					2			

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GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MIPL2SEP.WR1                                          NUMBER OF GRAINS
TOTAL # OF PANNINGS       19                  ---------------------------------
                                              ABRADED   IRREGULAR  DELICATE TOTAL NON    CALC V.G.
SAMPLE #  PANNED                              ========  =========  ======== ===== MAG      ASSAY
          Y/N    DIAMETER   THICKNESS    T    P    T    P    T    P        GMS      PPB    REMARKS

PL8-25
                  50 X  50       10 C          1                      1
                  50 X  75       13 C    1     1                      2
                  75 X 100       18 C    1                            1
                                                                    ------------------
                                                                      8   30.5        71

  146-12  N       50 X  75       13 C    1                            1
                                                                    ------------------
                                                                      1   29.3        13

  146-13  N   NO VISIBLE GOLD

  147-01  Y       25 X  50        8 C    1     1                      2                  EST.15% PYRITE
                  25 X 100       13 C    1                            1
                  50 X  50       10 C    1                            1
                  50 X  75       13 C          1                      1
                 100 X 225       31 C          1                      1
                 125 X 175       29 C    1                            1
                                                                    ------------------
                                                                      7   24.8       495

  147-02  N   NO VISIBLE GOLD

  147-03  N      100 X 100       20 C    1                            1
                                                                    ------------------
                                                                      1   26.1        57

  147-04  N       75 X 100       18 C    1                            1
                                                                    ------------------
                                                                      1   37.3        27
```

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

				NUMBER OF GRAINS									
				ABRADED		IRREGULAR		DELICATE		TOTAL	NON	CALC V.G.	
SAMPLE #	PANNED										MAG	ASSAY	
	Y/N	DIAMETER	THICKNESS	T	P	T	P	T	P		GMS	PPB	REMARKS
PLS-88													
147-05	N	50 X 75	13 C	1						1			
										1	29.9	12	
147-06	Y	25 X 25	5 C		1					1			EST.15% PYRITE
		25 X 50	8 C	1						1			
		50 X 75	13 C			1				1			
		50 X 100	15 C		1					1			
		50 X 125	18 C		1					1			
										5	34.2	62	
147-07	Y	25 X 50	8 C		3					3			TRACE GLOBULAR MARCASITE
		25 X 75	10 C		1					1			EST.15% PYRITE
		50 X 75	13 C		1					1			TRACE ARSENO CRYSTAL
		75 X 100	18 C	2						2			
										7	32.1	88	
147-08	N	NO VISIBLE GOLD											
147-09	N	NO VISIBLE GOLD											
147-10	N	450 X 700	88 C			1				1			
										1	30.0	7248	
147-11	N	NO VISIBLE GOLD											
147-12	N	NO VISIBLE GOLD											
147-13	N	75 X 100	18 C	1						1			
										1	32.7	31	
147-14	Y	25 X 50	8 C		6					6			EST.30% PYRITE
		25 X 75	10 C		1					1			
		50 X 50	10 C		1					1			
		75 X 100	18 C	1						1			
		100 X 125	22 C	1						1			
		100 X 150	25 C	1	1					2			
										12	26.3	372	
147-15	Y	25 X 25	5 C		2					2			EST.20% PYRITE

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
PLS-88													
		25 X 50	8 C		1					1			
		50 X 50	10 C		2					2			
		50 X 75	13 C	1						1			
		75 X 75	15 C		1					1			
		75 X 100	18 C	1						1			
		150 X 150	29 C		1					1			
										9	17.5	427	
148-01	N	NO VISIBLE GOLD											
148-02	Y	25 X 25	5 C		1					1			EST.30% PYRITE
		25 X 50	8 C		1					1			
		50 X 50	10 C		1					1			
		75 X 75	15 C	1						1			
		125 X 275	38 C	1						1			
										5	30.1	410	
149-01	N	NO VISIBLE GOLD											
149-02	N	NO VISIBLE GOLD											
149-03	N	NO VISIBLE GOLD											
149-04	N	NO VISIBLE GOLD											
149-05	N	NO VISIBLE GOLD											

APPENDIX D

BONDAR-CLEGG HEAVY MINERAL ANALYSES

Bondar-Clegg & Company Ltd.
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Geochemical Lab Report

REPORT: 088-52020.0

PROJECT: PN-090 114 116 PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB	Testwt gms
PLS88-01-01-3/4H		42	15	0.4	9	175	12.00
PLS88-01-02-3/4H		21	13	0.2	4	129	13.00
PLS88-01-03-3/4H		66	13	0.1	14	<25	6.00
PLS88-01-04-3/4H		30	15	0.1	6	162	17.00
PLS88-01-05-3/4H		60	19	0.4	26	625	19.00
PLS88-01-06-3/4H		54	19	0.4	33	171	20.00
PLS88-01-07-3/4H		130	24	0.7	68	176	20.00
PLS88-02-02-3/4H		97	27	0.3	25	145	23.00
PLS88-02-03-3/4H		146	26	0.3	38	355	22.00
PLS88-02-04-3/4H		154	32	0.2	56	1624	15.00
PLS88-03-01-3/4H		55	57	0.1	42	291	20.00
PLS88-03-02-3/4H		96	26	0.2	21	123	
PLS88-03-03-3/4H		57	20	0.5	24	165	18.00
PLS88-03-04-3/4H		216	55	0.4	280	360	21.00
PLS88-03-05-3/4H		129	58	1.0	552	532	19.00
PLS88-03-06-3/4H		180	48	0.9	322	1995	18.00
PLS88-04-01-3/4H		46	16	0.5	9	159	17.00
PLS88-04-02-3/4H		44	15	0.4	12	484	22.00
PLS88-04-03-3/4H		60	20	0.4	260	555	20.00
PLS88-04-04-3/4H		55	17	0.4	60	97	13.00
PLS88-05-01-3/4H		55	21	0.4	119	217	29.00
PLS88-05-02-3/4H		108	24	0.6	95	718	27.00
PLS88-05-03-3/4H		51	24	0.7	57	227	19.00
PLS88-06-01-3/4H		153	76	2.5	378	411	17.00
PLS88-07-01-H		91	22	0.4	11	189	2.22
PLS88-07-02-3/4H		53	22	0.4	56	257	29.00
PLS88-07-03-3/4H		86	68	0.1	92	177	
PLS88-08-01-3/4H		23	15	<0.1	6	176	20.00
PLS88-09-01-3/4H		16	14	<0.1	5	131	11.00
PLS88-09-02-H		53	30	0.7	55	456	1.25
PLS88-10-01-3/4H		18	12	0.2	8	19	8.00
PLS88-11-01-3/4H		29	17	0.3	17	47	14.00
PLS88-11-02-3/4H		37	17	0.2	5	161	19.00
PLS88-11-03-3/4H		24	19	0.1	4	38	16.00
PLS88-11-04-3/4H		35	13	0.4	5	145	17.00
PLS88-11-05-3/4H		54	16	0.5	5	459	21.00
PLS88-11-06-3/4H		66	20	0.5	9	248	16.00
PLS88-11-07-3/4H		69	25	0.3	16	563	13.00

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BONDAR-CLEGG

Geochemical Lab Report

REPORT: 088-52021.0

PROJECT: PN-090 114 116 PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au-150 PPM	Au+150 PPM	Au Av PPM	TestWt gms	-150Wt gms	+150Wt gms
PLS88-01-08-3/4H		122	41	0.3	71	0.73	41.32	11.39	3.00	5.28	1.88
PLS88-02-01-3/4H		151	32	0.1	34	0.32	0.22	0.30	15.00	18.68	3.53

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BONDAR-CLEGG

Geochemical Lab Report

REPORT: 088-52164.0

PROJECT: PN-090 114 116 PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB	Testwt gms	
PLS88-11-08-3/4H		137	68	0.3	84	87	9.00	
PLS88-12-01-3/4H		122	38	<0.1	39	44	25.00	
PLS88-12-02-3/4H		141	28	<0.1	48	41	8.00	
PLS88-13-01-3/4H		106	33	0.1	60	113	24.00	
PLS88-13-02-3/4H		474	108	1.2	>2000	4849	22.00	As reweigh = 6.24 % (62,400 pp
PLS88-14-01-3/4H		116	34	<0.1	392	45	28.00	
PLS88-14-02-3/4H		222	233	1.3	584	54	25.00	
PLS88-15-01-3/4H		121	45	0.1	68	40		
PLS88-15-02-3/4H		289	101	1.2	>2000	3246		As reweigh = 2.92% (29,200
PLS88-16-01-3/4H		111	31	<0.1	107	87	26.00	
PLS88-16-02-3/4H		274	181	0.7	816	9833	27.00	
PLS88-17-01-3/4H		126	29	0.1	48	97	22.00	
PLS88-17-02-3/4H		94	36	0.1	125	96	14.00	
PLS88-18-01-3/4H		120	26	<0.1	48	150	29.00	
PLS88-18-02-3/4H		138	91	0.6	123	131	16.00	
PLS88-19-01-3/4H		101	34	0.2	47	253		
PLS88-24-12-3/4H		76	23	<0.1	32	378		
PLS88-24-13-3/4H		71	19	<0.1	38	241	22.00	
PLS88-25-01-3/4H		61	26	<0.1	34	17	28.00	
PLS88-25-02-3/4H		95	26	0.3	32	24	14.00	
PLS88-25-03-3/4H		119	29	0.3	33	83	22.00	
PLS88-25-04-3/4H		121	33	0.3	28	96	7.00	
PLS88-25-05-3/4H		250	36	0.4	73	187	23.00	
PLS88-25-06-3/4H		182	40	0.2	46	73	19.00	
PLS88-26-01-3/4H		90	33	0.3	34	12	26.00	
PLS88-26-02-3/4H		139	29	0.1	43	1628	16.00	
PLS88-27-01-3/4H		130	29	0.1	36	51	23.00	
PLS88-27-02-3/4H		112	27	<0.1	40	133	19.00	
PLS88-27-03-3/4H		120	24	0.2	36	107	16.00	
PLS88-27-04-3/4H		134	31	0.4	39	168	18.00	
PLS88-27-05-3/4H		166	48	0.2	48	12338	12.00	
PLS88-27-06-3/4H		154	39	0.1	65	395	24.00	
PLS88-28-01-3/4H		131	33	0.1	47	141	14.00	
PLS88-28-02-3/4H		165	55	0.6	71	620	12.00	
PLS88-28-06-3/4H		66	18	0.4	31	291	16.00	
PLS88-28-07-3/4H		448	32	0.4	50	367		
PLS88-29-01-3/4H		126	23	0.1	28	19	21.00	
PLS88-29-02-3/4H		117	27	0.2	26	35	26.00	
PLS88-29-03-3/4H		100	25	<0.1	38	97	26.00	

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au-150 PPM	Au+150 PPM	Au Av PPM	TestWt gms	-150Wt gms	+150Wt gms
PLS-88-19-02-3/4H		72	14	0.4	153	1.84	<0.01	1.84	18.00	20.23	0.05

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SAMPLE NUMBER	ELEMENT UNITS	As PCT
PLS88-13-02-3/4H		6.24
PLS88-15-02-3/4H		2.92

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB	Testwt gms
PLS88-28-04-3/4H		82	22	0.1	21	23	13.00
PLS88-28-05-3/4H		84	19	0.2	16	33	20.00
PLS88-29-04-3/4H		175	24	3.4	50	120	22.00
PLS88-30-01-3/4H		103	22	0.2	25	159	17.00
PLS88-30-02-3/4H		153	30	0.3	31	95	18.00
PLS88-30-03-3/4H		153	29	0.1	21	56	20.00
PLS88-30-04-3/4H		119	26	<0.1	21	16	23.00
PLS88-30-05-3/4H		203	27	0.2	50	609	16.00
PLS88-31-01-3/4H		18	13	<0.1	2	22	15.00
PLS88-31-02-3/4H		26	14	<0.1	2	<10	5.00
PLS88-31-03-3/4H		47	15	0.1	<2	25	6.00
PLS88-31-04-3/4H		71	18	0.2	11	43	5.00
PLS88-31-05-3/4H		124	24	<0.1	28	50	12.00
PLS88-31-06-3/4H		129	35	0.2	33	131	19.00
PLS88-31-07-3/4H		247	33	1.6	87	808	9.00
PLS88-31-08-3/4H		146	22	0.3	34	72	16.00
PLS88-31-09-3/4H		70	15	<0.1	17	28	20.00
PLS88-31-10-3/4H		161	21	0.3	53	615	27.00
PLS88-32-01-3/4H		111	29	0.4	55	34	21.00
PLS88-32-02-3/4H		174	29	0.4	33	380	22.00
PLS88-33-01-3/4H		22	13	<0.1	<2	43	17.00
PLS88-33-02-3/4H		147	29	0.1	19	115	16.00
PLS88-33-03-3/4H		145	28	0.2	31	389	22.00
PLS88-34-01-3/4H		24	15	<0.1	2	<6	9.00
PLS88-34-02-3/4H		27	14	<0.1	4	158	15.00
PLS88-34-03-3/4H		14	11	0.3	<2	12	20.00
PLS88-34-04-3/4H		46	15	0.1	3	72	10.00
PLS88-34-05-3/4H		122	27	0.2	22	42	17.00
PLS88-34-06-3/4H		139	52	0.2	33	113	17.00
PLS88-34-07-3/4H		154	29	0.3	31	30	7.00
PLS88-34-08-3/4H		236	21	0.4	27	344	23.00
PLS88-35-01-3/4H		27	13	<0.1	2	<5	13.00
PLS88-35-02-3/4H		20	11	<0.1	2	126	16.00
PLS88-35-03-3/4H		76	19	0.2	13	51	19.00
PLS88-35-04-3/4H		64	16	0.1	16	180	19.00
PLS88-35-05-3/4H		77	16	<0.1	14	106	21.00
PLS88-35-06-3/4H		94	18	<0.1	16	475	19.00
PLS88-35-07-3/4H		149	23	0.1	20	208	17.00

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au-150 PPM	Au+150 PPM	Au Av PPM	TestWt gms	-150Wt gms	+150Wt gms
PLS88-28-03-3/4H		154	26	<0.1	10	0.22	3.30	1.48	7.00	9.43	6.52
PLS88-30-06-3/4H		348	28	0.4	68	0.40	0.10	0.31	6.00	9.03	4.00

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB
PLS88-19-03-3/4H		126	35	0.1	27	33
PLS88-20-02-3/4H		139	65	0.1	332	62
PLS88-20-03-3/4H		120	33	0.2	62	161
PLS88-20-04-3/4H		190	49	0.3	90	1433
PLS88-20-05-3/4H		129	27	0.1	41	108
PLS88-20-06-3/4H		133	25	0.1	55	39
PLS88-20-07-3/4H		158	116	0.2	17	46
PLS88-20-08-3/4H		142	30	<0.1	19	41
PLS88-20-09-3/4H		129	30	<0.1	26	32
PLS88-20-10-3/4H		121	24	<0.1	13	30
PLS88-20-11-3/4H		115	20	<0.1	14	77
PLS88-20-12-3/4H		62	15	<0.1	6	83
PLS88-20-13-3/4H		89	20	<0.1	22	154
PLS88-20-14-3/4H		74	21	<0.1	22	36
PLS88-20-15-3/4H		157	44	0.1	42	49
PLS88-21-01-3/4H		138	31	<0.1	40	278
PLS88-21-02-3/4H		159	35	<0.1	59	373
PLS88-22-01-3/4H		145	36	0.3	84	90
PLS88-22-02-3/4H		170	32	0.1	51	51
PLS88-22-03-3/4H		168	38	0.4	39	184
PLS88-22-04-3/4H		145	30	0.4	36	971
PLS88-22-06-3/4H		171	34	0.2	49	2254
PLS88-22-07-3/4H		98	21	<0.1	20	30
PLS88-22-08-3/4H		134	50	0.2	32	75
PLS88-22-09-3/4H		245	28	0.3	23	54
PLS88-22-10-3/4H		256	33	0.3	29	46
PLS88-22-11-3/4H		391	44	0.3	38	322
PLS88-23-01-3/4H		86	26	0.2	17	300
PLS88-23-02-3/4H		174	32	<0.1	31	542
PLS88-23-03-3/4H		105	25	<0.1	41	105
PLS88-23-04-3/4H		77	23	0.1	30	88
PLS88-23-05-3/4H		76	24	<0.1	18	106
PLS88-23-06-3/4H		58	23	<0.1	10	20
PLS88-23-07-3/4H		80	22	0.1	27	506
PLS88-23-08-3/4H		86	37	0.1	28	24
PLS88-23-09-3/4H		76	25	<0.1	30	234
PLS88-23-10-3/4H		492	24	0.3	17	58
PLS88-23-11-3/4H		79	25	<0.1	31	469
PLS88-23-12-3/4H		148	41	0.5	103	286
PLS88-23-13-3/4H		205	39	0.6	40	260

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB
PLS88-23-14-3/4H		107	34	0.2	84	45
PLS88-24-01-3/4H		127	31	0.3	45	199
PLS88-24-02-3/4H		108	21	0.2	37	674
PLS88-24-03-3/4H		99	25	0.4	33	2095
PLS88-24-04-3/4H		173	31	0.2	90	30
PLS88-24-05-3/4H		76	22	0.2	11	13
PLS88-24-06-3/4H		57	18	<0.1	8	264
PLS88-24-07-3/4H		53	19	<0.1	7	288
PLS88-24-08-3/4H		48	20	<0.1	6	375
PLS88-24-09-3/4H		59	27	<0.1	17	663
PLS88-24-10-3/4H		96	24	0.2	45	433
PLS88-24-11-3/4H		81	18	0.1	29	1422

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au-150 PPM	Au+150 PPM	Au Av PPM	TestWt gms	-150Wt gms	+150Wt gms
PLS88-20-01-3/4H		83	17	0.1	66	0.48	3.15	1.20	14.00	15.27	5.59
PLS88-22-05-3/4H		131	17	0.1	90	0.64	1.75	1.15	9.00	10.81	9.16

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB	Testwt gms
PLS88-36-01-3/4H		28	17	0.1	2	59	15.00
PLS88-36-02-3/4H		43	21	0.1	2	<7	7.00
PLS88-36-03-3/4H		18	15	<0.1	2	27	26.00
PLS88-36-04-3/4H		13	14	<0.1	2	139	21.00
PLS88-36-05-3/4H		41	16	<0.1	2	55	18.00
PLS88-36-06-3/4H		263	21	0.1	4	120	13.00
PLS88-36-07-3/4H		317	20	4.5	3	19	11.00
PLS88-37-01-3/4H		40	15	0.2	6	143	23.00
PLS88-37-02-3/4H		144	45	0.4	45	67	26.00
PLS88-38-01-3/4H		95	24	0.1	25	136	
PLS88-38-02-3/4H		262	34	0.5	62	489	21.00
PLS88-39-01-3/4H		129	33	0.4	40	620	26.00
PLS88-39-02-3/4H		116	33	0.1	32	108	23.00
PLS88-39-03-3/4H		105	26	0.1	22	386	16.00
PLS88-39-04-3/4H		142	33	<0.1	46	210	16.00
PLS88-39-05-3/4H		127	36	0.1	39	98	18.00
PLS88-39-06-3/4H		106	31	0.1	106	176	24.00
PLS88-40-01-3/4H		65	19	0.2	16	95	20.00
PLS88-40-02-3/4H		123	28	0.2	25	183	21.00
PLS88-41-01-3/4H		89	28	0.1	19	105	18.00
PLS88-41-02-3/4H		143	37	0.3	43	143	17.00
PLS88-42-01-3/4H		121	37	<0.1	26	20	15.00
PLS88-42-02-3/4H		173	22	0.5	40	71	17.00
PLS88-43-01-3/4H		43	19	<0.1	9	34	14.00
PLS88-43-02-3/4H		43	19	<0.1	4	18	15.00
PLS88-44-01-3/4H		145	33	0.7	38	195	16.00
PLS88-45-01-3/4H		108	71	<0.1	29	103	16.00
PLS88-45-02-3/4H		78	25	<0.1	57	410	12.00
PLS88-46-01-3/4H		104	29	0.1	105	967	17.00
PLS88-46-02-3/4H		107	45	0.4	73	345	16.00
PLS88-46-03-3/4H		138	42	0.5	81	372	15.00
PLS88-46-04-3/4H		241	35	0.1	79	201	17.00
PLS88-46-05-3/4H		163	36	<0.1	66	311	17.00
PLS88-46-06-3/4H		152	37	0.1	61	96	15.00
PLS88-47-01-3/4H		58	23	0.1	17	317	14.00
PLS88-48-01-3/4H		69	20	<0.1	7	98	15.00
PLS88-49-01-3/4H		34	23	<0.1	4	187	9.00
PLS88-49-02-3/4H		116	35	0.2	76	542	16.00
PLS88-50-01-3/4H		130	81	0.1	352	528	17.00
PLS88-50-02-3/4H		149	46	0.3	284	948	13.00

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB	Testwt gms
PLS88-50-03-3/4H		133	35	<0.1	149	1524	16.00
PLS88-51-01-3/4H		106	35	0.2	67	427	17.00
PLS88-51-02-3/4H		139	39	0.4	100	621	16.00
PLS88-52-01-3/4H		110	33	0.2	36	92	15.00
PLS88-53-01-3/4H		149	36	0.3	107	245	12.00
PLS88-53-02-3/4H		352	57	0.3	116	282	17.00
PLS88-54-01-3/4H		174	62	0.3	280	482	17.00
PLS88-54-02-3/4H		123	32	0.1	35	470	12.00
PLS88-54-03-3/4H		126	24	0.2	47	120	16.00
PLS88-54-04-3/4H		265	23	<0.1	35	84	15.00
PLS88-54-05-3/4H		243	32	0.3	10	758	11.00
PLS88-55-01-3/4H		221	95	0.9	151	250	12.00
PLS88-55-02-3/4H		196	84	0.8	222	265	17.00
PLS88-55-03-3/4H		206	69	1.2	194	656	16.00
PLS88-55-04-3/4H		228	65	0.9	176	1470	15.00
PLS88-55-05-3/4H		223	74	0.7	23	638	15.00
PLS88-56-01-3/4H		45	18	<0.1	174	51	17.00
PLS88-57-01-3/4H		251	71	1.3	98	628	14.00
PLS88-57-02-3/4H		114	30	0.4	155	752	15.00
PLS88-58-01-3/4H		164	49	0.3	188	1056	16.00
PLS88-59-01-3/4H		57	22	<0.1	21	309	16.00
PLS88-59-02-3/4H		247	17	<0.1	48	85	19.00
PLS88-59-03-3/4H		89	23	<0.1	92	6150	19.00
PLS88-59-04-3/4H		75	25	<0.1	22	427	17.00
PLS88-59-05-3/4H		98	33	<0.1	7	550	12.00
PLS88-60-01-3/4H		31	21	<0.1	6	28	14.00
PLS88-60-02-3/4H		93	21	0.2	5	80	15.00
PLS88-60-03-3/4H		62	22	<0.1	14	666	16.00
PLS88-60-04-3/4H		77	24	0.1	18	96	16.00
PLS88-60-05-3/4H		190	19	0.1	14	24	15.00
PLS88-61-01-3/4H		20	19	<0.1	3	444	15.00
PLS88-61-02-3/4H		22	28	<0.1	4	88	14.00
PLS88-62-01-3/4H		55	31	0.1	4	243	12.00
PLS88-63-01-3/4H		45	19	<0.1	9	41	11.00
PLS88-63-02-3/4H		47	26	<0.1	6	251	17.00
PLS88-63-03-3/4H		23	17	0.4	21	86	14.00
PLS88-64-01-3/4H		14	16	<0.1	12	46	15.00
PLS88-64-02-3/4H		24	19	<0.1	2	368	12.00
PLS88-64-03-3/4H		28	19	0.1	3	153	12.00
PLS88-64-04-3/4H		59	22	0.2	12	218	15.00

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SAMPLE	ELEMENT	Cu	Zn	Ag	As	Au	Au Rew	Testwt
NUMBER	UNITS	PPM	PPM	PPM	PPM	PPB	PPB	gms
PLS88-64-05-3/4H		355	24	<0.1	20	39		12.00
PLS88-65-01-3/4H		20	16	<0.1	<2	39		14.00
PLS88-65-02-3/4H		31	24	<0.1	2	491		14.00
PLS88-65-03-3/4H		68	23	<0.1	10	313		20.00
PLS88-65-04-3/4H		26	22	<0.1	4	336		12.00
PLS88-66-01-3/4H		22	12	<0.1	3	186		18.00
PLS88-66-02-3/4H		101	27	0.1	10	46		6.00
PLS88-66-03-3/4H		172	35	0.1	24	127		8.00
PLS88-66-05-3/4H		113	32	<0.1	29	718		19.00
PLS88-66-06-3/4H		68	18	<0.1	29	134		20.00
PLS88-66-07-3/4H		114	19	<0.1	22	359		20.00
PLS88-66-08-3/4H		167	26	<0.1	26	1621	<50	18.00
PLS88-66-09-3/4H		175	61	0.4	89	1064	420	10.00
PLS88-66-10-3/4H		325	38	0.9	74	2237	3630	14.00
PLS88-66-11-3/4H		177	33	0.1	29	1394	210	5.00
PLS88-67-01-3/4H		37	15	<0.1	<2	71		4.00
PLS88-67-02-3/4H		50	18	<0.1	3	140		5.00
PLS88-67-03-3/4H		47	13	<0.1	26	26		20.00
PLS88-67-04-3/4H		50	12	<0.1	12	103		20.00
PLS88-67-05-3/4H		62	15	0.1	10	193		20.00
PLS88-67-06-3/4H		125	14	<0.1	15	113		19.00
PLS88-67-07-3/4H		64	15	<0.1	22	71		12.00
PLS88-67-08-3/4H		100	18	0.2	30	84		13.00
PLS88-67-09-3/4H		149	19	<0.1	<2	81		11.00
PLS88-68-01-3/4H		18	12	<0.1	<2	96		15.00
PLS88-68-02-3/4H		23	15	<0.1	4	92		16.00
PLS88-68-03-3/4H		31	12	<0.1	6	135		16.00
PLS88-69-01-3/4H		36	16	<0.1	24	157		14.00
PLS88-69-02-3/4H		72	13	<0.1	4	78		18.00
PLS88-69-03-3/4H		59	25	<0.1	11	112		16.00
PLS88-70-01-3/4H		18	13	<0.1	<2	312		13.00
PLS88-70-02-3/4H		20	11	<0.1	4	630		17.00
PLS88-70-03-3/4H		37	14	<0.1	8	789		14.00
PLS88-70-04-3/4H		71	16	<0.1	11	1564	300	15.00
PLS88-71-01-3/4H		28	18	<0.1	5	281		2.00
PLS88-72-01-3/4H		26	13	<0.1	2	10		22.00
PLS88-73-01-3/4H		109	22	0.1	13	539		20.00
PLS88-73-02-3/4H		153	19	<0.1	21	216		15.00
PLS88-73-03-3/4H		166	33	<0.1	38	499		18.00

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au-150 PPM	Au+150 PPM	Au Av PPM	TestWt gms	-150Wt gms	+150Wt gms
PL008-66-04-3/4H		186	35	0.3	26	0.24	2.66	1.28	9.00	11.63	8.80

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB
PLG88-73-04-3/4H		100	25	0.2	16	91
PLG88-74-01-3/4H		53	21	0.1	13	111
PLG88-74-02-3/4H		97	29	0.2	43	37
PLG88-74-03-3/4H		123	27	0.6	61	636
PLG88-74-04-3/4H		234	47	0.4	45	160
PLG88-74-05-3/4H		241	44	0.4	38	1973
PLG88-75-01-3/4H		15	15	<0.1	2	14
PLG88-75-02-3/4H		19	15	<0.1	2	<5
PLG88-75-03-3/4H		16	12	<0.1	<2	218
PLG88-75-04-3/4H		41	22	<0.1	2	140
PLG88-75-05-3/4H		119	27	0.3	14	302
PLG88-75-06-3/4H		340	41	0.1	14	20
PLG88-75-07-3/4H		283	44	0.2	42	60
PLG88-75-08-3/4H		326	45	0.1	86	1013
PLG88-75-09-3/4H		198	28	0.2	56	168
PLG88-76-01-3/4H		18	13	<0.1	2	42
PLG88-76-02-3/4H		35	13	<0.1	6	56
PLG88-77-01-3/4H		203	474	<0.1	38	403
PLG88-78-01-3/4H		27	15	<0.1	2	<5
PLG88-78-02-3/4H		30	16	<0.1	3	165
PLG88-78-03-3/4H		164	20	0.2	26	253
PLG88-78-04-3/4H		192	29	0.3	24	2481
PLG88-78-05-3/4H		191	50	0.2	72	848
PLG88-78-06-3/4H		213	37	0.2	20	552
PLG88-78-07-3/4H		144	20	0.2	8	28
PLG88-78-08-3/4H		91	23	0.3	17	238
PLG88-79-01-3/4H		139	32	0.2	38	267
PLG88-79-02-3/4H		142	44	0.2	32	305
PLG88-79-03-3/4H		158	39	0.2	35	3047
PLG88-79-04-3/4H		169	44	0.3	31	<5
PLG88-79-05-3/4H		167	42	0.3	39	199
PLG88-79-06-3/4H		170	43	0.1	27	77
PLG88-79-07-3/4H		151	44	0.1	29	480
PLG88-79-08-3/4H		159	94	<0.1	39	61
PLG88-79-09-3/4H		153	65	0.3	25	150
PLG88-79-10-3/4H		150	49	<0.1	24	54
PLG88-79-11-3/4H		144	41	<0.1	53	2378
PLG88-80-01-3/4H		90	20	<0.1	9	12112
PLG88-80-02-3/4H		82	28	<0.1	39	68
PLG88-80-03-H		302	43	0.7	31	70

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB
PLS88-80-04-3/4H		467	64	0.1	29	60
PLS88-80-05-3/4H		276	41	<0.1	15	17
PLS88-80-06-3/4H		386	45	15.0	102	36
PLS88-80-07-3/4H		447	101	0.6	96	491
PLS88-80-08-3/4H		135	31	<0.1	36	491
PLS88-80-09-3/4H		749	197	0.5	992	780
PLS88-81-01-3/4H		99	35	<0.1	16	80
PLS88-82-01-3/4H		297	47	0.2	78	159
PLS88-83-01-3/4H		19	16	<0.1	<2	47
PLS88-84-01-3/4H		22	21	<0.1	<2	387
PLS88-85-01-3/4H		21	15	<0.1	<2	191
PLS88-86-01-3/4H		40	19	<0.1	14	<5
PLS88-86-02-3/4H		172	41	<0.1	54	891
PLS88-87-01-3/4H		19	15	<0.1	2	23
PLS88-87-02-3/4H		28	15	<0.1	7	26
PLS88-87-03-3/4H		137	20	<0.1	<2	23
PLS88-87-04-3/4H		148	23	<0.1	7	<7
PLS88-87-05-3/4H		228	31	<0.1	7	38
PLS88-88-01-H		44	27	<0.1	3	<37
PLS88-88-02-H		103	26	<0.1	13	<58
PLS88-88-03-3/4H		87	23	<0.1	3	21
PLS88-89-01-3/4H		36	19	<0.1	<2	<6
PLS88-89-02-3/4H		184	44	0.1	11	30
PLS88-89-03-3/4H		118	26	<0.1	6	<5
PLS88-89-04-3/4H		70	21	<0.1	5	33
PLS88-89-05-3/4H		95	17	<0.1	7	263
PLS88-89-06-3/4H		50	14	<0.1	4	77
PLS88-89-07-3/4H		84	18	<0.1	14	895
PLS88-89-08-3/4H		121	23	<0.1	13	116
PLS88-89-09-3/4H		151	36	<0.1	24	178
PLS88-89-10-3/4H		138	27	<0.1	20	75
PLS88-89-11-3/4H		119	25	<0.1	19	434
PLS88-89-12-3/4H		138	33	<0.1	19	194
PLS88-89-13-3/4H		220	48	<0.1	27	173
PLS88-89-14-3/4H		130	28	<0.1	24	21
PLS88-89-15-3/4H		212	36	<0.1	60	106
PLS88-89-16-3/4H		198	34	<0.1	48	132
PLS88-89-17-3/4H		181	30	<0.1	42	96
PLS88-89-18-3/4H		126	18	<0.1	68	94
PLS88-89-19-3/4H		80	22	<0.1	5	49

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB
PLS88-89-20-3/4H		121	16	0.1	8	45
PLS88-89-21-3/4H		195	18	<0.1	10	102
PLS88-89-22-3/4H		160	32	0.1	33	47
PLS88-89-23-3/4H		225	26	0.5	56	176
PLS88-90-01-3/4H		102	22	<0.1	5	<5
PLS88-90-02-3/4H		89	18	0.1	5	18
PLS88-90-03-3/4H		172	32	0.2	11	43
PLS88-90-04-3/4H		114	30	<0.1	9	12
PLS88-91-01-3/4H		43	20	<0.1	2	28
PLS88-91-02-3/4H		52	13	<0.1	30	380
PLS88-91-03-3/4H		22	14	<0.1	9	180
PLS88-91-04-3/4H		20	13	<0.1	<2	276
PLS88-92-01-3/4H		25	13	<0.1	5	15
PLS88-92-02-3/4H		19	14	<0.1	<2	75
PLS88-92-03-3/4H		22	14	<0.1	<2	406
PLS88-92-04-3/4H		25	12	<0.1	<2	126
PLS88-93-01-3/4H		13	13	<0.1	<2	204
PLS88-94-01-3/4H		20	14	<0.1	<2	153
PLS88-94-02-3/4H		18	14	<0.1	<2	413
PLS88-95-01-3/4H		21	21	<0.1	2	807

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB
PLS88-95-02-3/4H		20	12	<0.1	<2	839
PLS88-95-04-3/4H		24	13	<0.1	<2	185
PLS88-95-05-3/4H		37	15	<0.1	5	37
PLS88-96-01-3/4H		117	27	<0.1	40	192
PLS88-96-02-3/4H		91	23	<0.1	15	159
PLS88-96-03-3/4H		89	19	<0.1	20	171
PLS88-96-04-3/4H		85	14	0.1	17	230
PLS88-96-05-3/4H		77	18	<0.1	12	63
PLS88-96-06-3/4H		79	21	0.3	25	202
PLS88-96-07-3/4H		64	17	<0.1	24	92
PLS88-96-08-3/4H		75	22	<0.1	32	88
PLS88-96-09-3/4H		72	19	<0.1	24	182
PLS88-96-10-3/4H		99	31	<0.1	43	92
PLS88-96-11-3/4H		136	34	0.1	32	298
PLS88-96-12-3/4H		169	39	0.2	76	142
PLS88-96-13-3/4H		136	32	0.1	67	79
PLS88-96-14-3/4H		147	30	<0.1	58	67
PLS88-96-15-3/4H		130	41	0.2	76	53
PLS88-96-16-3/4H		188	31	<0.1	48	280
PLS88-96-17-3/4H		136	42	0.1	46	2208
PLS88-97-01-3/4H		52	20	<0.1	23	261
PLS88-97-02-3/4H		62	17	<0.1	22	138
PLS88-97-03-3/4H		61	18	<0.1	22	147
PLS88-97-04-3/4H		55	17	0.8	24	126
PLS88-97-05-3/4H		46	16	<0.1	16	743
PLS88-97-06-3/4H		79	19	<0.1	28	402
PLS88-97-07-3/4H		48	15	<0.1	30	670
PLS88-97-08-3/4H		42	14	<0.1	17	407
PLS88-97-09-3/4H		39	17	<0.1	10	383
PLS88-97-10-3/4H		65	18	0.5	18	122
PLS88-97-11-3/4H		104	29	<0.1	30	221
PLS88-97-12-3/4H		97	36	<0.1	30	144
PLS88-97-13-3/4H		108	36	<0.1	130	273
PLS88-98-01-3/4H		20	15	<0.1	<2	11
PLS88-98-02-3/4H		17	13	<0.1	<2	<5
PLS88-98-03-3/4H		25	16	<0.1	<2	428
PLS88-98-04-3/4H		25	11	<0.1	6	281
PLS88-98-05-3/4H		60	15	<0.1	37	115
PLS88-98-06-3/4H		64	18	<0.1	31	268

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au-150 PPM	Au+150 PPM	Au Av PPM	TestWt grs	-150Wt grs	+150Wt grs
PLS88-95-03-3/4H		18	16	1.2	<2	0.71	0.62	0.70	20.00	26.41	3.63

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB
PLS-88-98-07-3/4H		53	29	0.2	21	200
PLS-88-98-08-3/4H		62	39	0.1	17	76
PLS-88-98-09-3/4H		51	28	<0.1	20	82
PLS-88-98-10-3/4H		90	32	0.2	29	110
PLS-88-98-11-3/4H		75	27	<0.1	27	367
PLS-88-98-12-3/4H		135	37	0.2	41	390
PLS-88-98-13-3/4H		103	43	<0.1	32	94
PLS-88-99-01-3/4H		64	30	<0.1	7	554
PLS-88-99-02-3/4H		40	19	<0.1	5	97
PLS-88-100-01-3/4H		67	40	0.6	11	4624
PLS-88-101-01-3/4H		62	29	<0.1	9	1360
PLS-88-101-02-3/4H		46	17	<0.1	3	308
PLS-88-102-01-3/4H		113	48	<0.1	8	119
PLS-88-102-03-3/4H		98	50	0.1	5	254
PLS-88-102-04-3/4H		40	32	<0.1	5	59
PLS-88-102-05-3/4H		172	38	0.5	24	98
PLS-88-103-01-3/4H		49	23	0.1	3	19
PLS-88-103-02-3/4H		24	19	<0.1	2	23
PLS-88-137-01-3/4H		116	35	0.2	13	302
PLS-88-137-02-3/4H		59	34	<0.1	15	304
PLS-88-137-03-3/4H		124	37	0.1	9	137
PLS-88-137-04-3/4H		66	24	<0.1	8	167
PLS-88-137-05-3/4H		84	31	0.1	26	233
PLS-88-137-06-3/4H		165	26	<0.1	67	121
PLS-88-137-07-3/4H		198	39	0.2	35	230
PLS-88-137-08-3/4H		150	37	0.2	338	213
PLS-88-137-09-3/4H		153	60	0.4	182	639
PLS-88-138-01-3/4H		40	25	<0.1	6	80
PLS-88-138-02-3/4H		37	29	<0.1	4	135
PLS-88-138-03-3/4H		51	20	<0.1	5	117
PLS-88-138-04-3/4H		92	29	<0.1	29	82
PLS-88-138-05-3/4H		155	39	0.2	35	54
PLS-88-138-06-3/4H		100	61	0.2	30	34
PLS-88-139-01-3/4H		39	24	<0.1	8	106
PLS-88-139-02-3/4H		63	28	0.2	18	111
PLS-88-139-03-3/4H		100	37	0.1	31	341
PLS-88-139-04-3/4H		113	42	<0.1	30	249
PLS-88-139-05-3/4H		129	55	<0.1	41	359
PLS-88-140-01-3/4H		85	25	<0.1	13	177
PLS-88-140-02-3/4H		92	26	0.1	29	151

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB
PLS-88-140-03-3/4H		126	31	<0.1	22	40
PLS-88-140-04-3/4H		135	20	<0.1	23	109
PLS-88-140-05-3/4H		96	30	<0.1	31	297
PLS-88-140-06-3/4H		92	35	0.1	42	285
PLS-88-141-01-3/4H		34	24	<0.1	3	226
PLS-88-141-02-3/4H		80	18	<0.1	16	70
PLS-88-141-03-3/4H		53	19	<0.1	13	165
PLS-88-141-04-3/4H		86	26	0.4	16	162
PLS-88-141-05-3/4H		98	29	0.1	14	271
PLS-88-141-06-3/4H		102	38	<0.1	16	254
PLS-88-141-07-3/4H		77	19	0.1	22	218
PLS-88-141-08-3/4H		67	19	<0.1	24	209
PLS-88-141-09-3/4H		177	29	<0.1	304	265
PLS-88-141-10-3/4H		151	28	0.2	39	1555
PLS-88-142-01-3/4H		71	33	<0.1	11	70
PLS-88-142-02-3/4H		68	15	<0.1	10	124
PLS-88-142-03-3/4H		31	14	<0.1	<2	48
PLS-88-142-04-3/4H		146	19	0.2	13	266

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au-150 PPM	Au+150 PPM	Au Av PPM	TestWt gms	-150Wt gms	+150Wt gms
PLS-88-101-03-3/4H		59	33	0.7	13	6.97	9.38	7.74	5.00	7.94	3.73
PLS-88-102-02-3/4H		169	26	0.3	10	6.60	0.39	5.00	4.00	5.93	2.05

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB	Testwt grs
PLS-88-142-05-3/4H		132	18	0.1	27	540	18.00
PLS-88-142-06-3/4H		141	25	<0.1	29	24	16.00
PLS-88-142-07-3/4H		133	20	0.4	22	191	16.00
PLS-88-142-08-3/4H		109	25	<0.1	13	234	16.00
PLS-88-142-09-3/4H		102	20	<0.1	13	205	12.00
PLS-88-143-01-3/4H		82	18	<0.1	<2	113	8.00
PLS-88-143-02-3/4H		48	20	<0.1	<2	283	18.00
PLS-88-143-03-3/4H		92	25	<0.1	15	84	20.00
PLS-88-143-04-3/4H		72	13	<0.1	9	111	20.00
PLS-88-143-05-3/4H		127	23	<0.1	23	88	18.00
PLS-88-143-06-3/4H		108	20	<0.1	17	76	17.00
PLS-88-143-07-3/4H		151	41	<0.1	11	175	18.00
PLS-88-143-08-3/4H		150	34	0.1	17	109	17.00
PLS-88-143-09-3/4H		139	32	<0.1	26	148	19.00
PLS-88-144-01-3/4H		94	20	<0.1	<2	94	17.00
PLS-88-144-02-3/4H		142	13	<0.1	17	58	18.00
PLS-88-144-03-3/4H		137	23	0.2	22	270	18.00
PLS-88-144-04-3/4H		178	32	<0.1	33	199	17.00
PLS-88-144-05-3/4H		285	46	<0.1	34	1089	13.00
PLS-88-144-06-3/4H		168	45	0.2	140	1207	18.00
PLS-88-144-07-3/4H		142	54	0.6	266	491	22.00
PLS-88-145-01-3/4H		170	39	0.1	140	171	14.00
PLS-88-145-02-3/4H		199	36	0.1	98	413	9.00
PLS-88-146-01-3/4H		150	27	0.1	51	75	16.00
PLS-88-146-02-3/4H		132	31	<0.1	8	107	20.00
PLS-88-146-03-3/4H		120	41	<0.1	25	551	22.00
PLS-88-146-04-3/4H		185	38	<0.1	43	317	20.00
PLS-88-146-05-3/4H		199	47	<0.1	53	306	15.00
PLS-88-146-06-3/4H		136	51	<0.1	49	284	21.00
PLS-88-146-07-3/4H		189	49	<0.1	61	464	29.00
PLS-88-146-08-3/4H		168	46	0.1	94	237	11.00
PLS-88-146-09-3/4H		141	46	<0.1	56	98	30.00
PLS-88-146-10-3/4H		166	43	0.1	71	158	20.00
PLS-88-146-11-3/4H		153	72	<0.1	84	162	20.00
PLS-88-146-12-3/4H		153	31	0.2	42	182	18.00
PLS-88-146-13-3/4H		157	46	<0.1	47	119	21.00
PLS-88-147-01-3/4H		159	30	0.1	168	152	15.00
PLS-88-147-02-3/4H		160	33	0.3	192	216	21.00
PLS-88-147-03-3/4H		210	33	0.4	112	98	16.00
PLS-88-147-04-3/4H		90	23	0.6	42	60	25.00

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB
PLS88-103-03-3/4H		15	15	<0.1	2	17
PLS88-103-04-3/4H		19	17	<0.1	2	58
PLS88-104-01-3/4H		109	45	<0.1	31	1120
PLS88-104-03-3/4H		81	43	<0.1	16	831
PLS88-104-04-3/4H		63	26	<0.1	77	655
PLS88-105-01-3/4H		91	36	<0.1	55	1287
PLS88-105-02-3/4H		82	39	<0.1	20	1315
PLS88-105-03-3/4H		93	36	<0.1	35	894
PLS88-105-04-3/4H		79	33	<0.1	57	757
PLS88-105-05-3/4H		102	29	<0.1	42	1258
PLS88-105-06-3/4H		59	24	<0.1	22	408
PLS88-105-07-3/4H		98	23	<0.1	9	434
PLS88-106-01-3/4H		125	44	0.1	30	622
PLS88-106-02-3/4H		111	32	<0.1	12	185
PLS88-106-03-3/4H		101	31	<0.1	11	101
PLS88-106-04-3/4H		98	30	<0.1	14	259
PLS88-106-05-3/4H		101	31	<0.1	25	48
PLS88-106-06-3/4H		98	37	<0.1	28	192
PLS88-106-07-3/4H		157	31	<0.1	41	258
PLS88-107-01-3/4H		126	35	0.2	35	429
PLS88-108-01-3/4H		65	13	<0.1	3	170
PLS88-147-05-3/4H		251	34	0.1	44	1142
PLS88-147-06-3/4H		172	47	<0.1	56	87
PLS88-147-07-3/4H		138	49	<0.1	70	99
PLS88-147-08-3/4H		152	52	0.2	128	1002
PLS88-147-09-3/4H		171	51	0.2	146	165
PLS88-147-11-3/4H		159	45	<0.1	78	189
PLS88-147-12-3/4H		141	45	<0.1	46	160
PLS88-147-13-3/4H		163	47	0.1	52	252
PLS88-147-14-3/4H		144	49	<0.1	49	431
PLS88-147-15-3/4H		132	46	0.1	40	114
PLS88-148-01-3/4H		145	41	<0.1	53	73
PLS88-148-02-3/4H		304	39	0.1	46	474
PLS88-149-01-3/4H		170	46	0.5	151	162
PLS88-149-02-3/4H		372	62	0.5	126	115
PLS88-149-03-3/4H		147	34	<0.1	96	81
PLS88-149-04-3/4H		106	25	<0.1	37	106
PLS88-149-05-3/4H		109	30	0.2	55	149

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au-150 PPM	Au+150 PPM	Au Av PPM	TestWt grs	-150Wt gns	+150Wt grs
PLS88-104-02-3/4H		87	24	0.3	52	0.13	4.57	1.13	15.00	18.26	5.30
PLS88-147-10-3/4H		267	43	<0.1	123	0.74	1.28	0.87	15.00	17.51	5.28

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB	Testwt gms
PL888-110-01-3/4H		186	48	0.3	75	3139	17.00
PL888-110-02-3/4H		437	48	0.5	135	1089	23.00
PL888-110-03-3/4H		228	46	0.1	77	628	18.00
PL888-110-04-3/4H		158	39	<0.1	53	195	22.00
PL888-110-05-3/4H		177	50	0.2	85	193	14.00
PL888-110-06-3/4H		151	47	0.1	48	90	18.00
PL888-110-07-3/4H		149	44	<0.1	46	45	16.00
PL888-111-01-3/4H		99	34	0.3	52	1583	25.00
PL888-111-02-3/4H		155	49	0.3	53	956	21.00
PL888-111-03-3/4H		136	35	<0.1	36	542	30.00
PL888-111-04-3/4H		178	49	<0.1	83	233	20.00
PL888-112-01-3/4H		167	44	<0.1	54	291	13.00
PL888-113-01-3/4H		44	17	<0.1	3	224	17.00
PL888-113-02-3/4H		104	39	0.1	41	318	22.00
PL888-114-02-3/4H		196	52	0.7	56	4618	15.00
PL888-115-01-3/4H		171	33	0.2	34	2983	19.00
PL888-116-01-3/4H		131	30	0.1	33	2651	19.00
PL888-116-02-3/4H		47	23	<0.1	7	1313	1.28
PL888-116-03-3/4H		109	31	0.2	33	1704	19.00
PL888-116-04-3/4H		152	38	<0.1	23	1014	15.00
PL888-117-01-3/4H		103	42	0.2	53	307	17.00
PL888-117-02-3/4H		181	44	0.1	101	408	12.00
PL888-117-03-3/4H		65	22	<0.1	76	754	23.00
PL888-117-04-3/4H		82	17	<0.1	8	344	20.00
PL888-117-06-3/4H		133	19	<0.1	14	1390	9.00
PL888-117-08-3/4H		138	20	0.4	16	2526	10.00
PL888-118-01-3/4H		57	21	<0.1	17	921	16.00
PL888-118-02-3/4H		55	19	<0.1	14	1008	13.00
PL888-118-03-3/4H		26	16	<0.1	3	5732	16.00
PL888-119-01-3/4H		233	44	0.2	50	1121	20.00
PL888-119-02-3/4H		128	37	<0.1	51	2051	20.00
PL888-119-03-3/4H		193	35	<0.1	30	204	25.00
PL888-120-01-3/4H		90	27	<0.1	12	382	19.00
PL888-120-02-3/4H		70	17	<0.1	5	632	13.00
PL888-120-03-3/4H		82	14	<0.1	2	1006	19.00
PL888-120-04-3/4H		69	16	<0.1	6	80	21.00
PL888-120-05-3/4H		90	16	<0.1	5	358	13.00
PL888-120-06-3/4H		87	19	0.2	22	1025	17.00
PL888-120-07-3/4H		376	15	0.2	17	377	13.00
PL888-121-01-3/4H		133	32	0.3	40	758	20.00

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au-150 PPM	Au+150 PPM	Au Av PPM	TestWt grs	-150Wt gms	+150Wt grs
PLS88-110-08-3/4H		95	30	<0.1	672	4.54	0.70	3.75	5.00	8.70	2.27
PLS88-114-01-3/4H		164	64	0.1	61	4.61	17.67	7.23	15.00	17.12	4.29
PLS88-117-05-3/4H		124	15	<0.1	5	1.23	90.83	22.70	12.00	14.47	4.56
PLS88-117-07-3/4H		54	19	0.1	13	2.08	3.12	2.36	7.00	9.35	3.51
PLS88-118-04-3/4H		13	19	<0.1	6	8.34	5.44	7.59	9.00	11.76	4.13

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB	Testwt gms
PL088-121-02-3/4H		149	31	<0.1	23	220	21.00
PL088-121-03-3/4H		140	36	0.1	17	451	21.00
PL088-121-04-3/4H		132	37	0.1	49	255	12.00
PL088-121-05-3/4H		148	32	0.1	38	383	18.00
PL088-121-06-3/4H		139	35	0.2	52	171	17.00
PL088-121-07-3/4H		165	36	0.1	43	232	18.00
PL088-121-08-3/4H		194	28	<0.1	35	171	16.00
PL088-121-09-3/4H		156	36	0.1	41	266	23.00
PL088-121-10-3/4H		277	26	<0.1	25	68	12.00
PL088-122-01-3/4H		145	38	0.3	42	318	22.00
PL088-122-02-3/4H		221	45	0.5	34	194	25.00
PL088-122-03-3/4H		155	39	0.1	37	300	18.00
PL088-122-04-3/4H		167	41	0.2	42	100	18.00
PL088-122-05-3/4H		277	38	0.3	25	1019	22.00
PL088-122-06-3/4H		294	31	0.1	36	192	18.00
PL088-122-07-3/4H		185	43	0.3	86	206	14.00
PL088-122-08-3/4H		167	47	0.2	73	199	17.00
PL088-122-09-3/4H		193	48	<0.1	66	234	16.00
PL088-122-10-3/4H		153	131	<0.1	54	80	18.00
PL088-122-11-3/4H		142	38	0.1	54	834	14.00
PL088-122-12-3/4H		156	43	0.1	54	126	16.00
PL088-122-13-3/4H		132	26	0.1	57	413	16.00
PL088-123-01-3/4H		185	59	0.1	53	754	14.00
PL088-123-02-3/4H		184	60	0.1	96	946	13.00
PL088-123-03-3/4H		146	50	<0.1	46	816	21.00
PL088-123-04-3/4H		156	30	<0.1	71	210	21.00
PL088-123-05-3/4H		151	39	0.3	89	340	30.00
PL088-123-06-3/4H		191	31	<0.1	71	264	30.00
PL088-123-07-3/4H		129	40	0.1	51	270	22.00
PL088-123-08-3/4H		142	34	0.2	47	112	19.00
PL088-123-09-3/4H		153	43	0.1	51	1832	19.00
PL088-123-10-3/4H		135	30	<0.1	24	468	24.00
PL088-123-11-3/4H		110	17	0.1	5	1044	15.00
PL088-124-01-3/4H		221	71	0.2	24	1835	17.00
PL088-124-02-3/4H		333	67	0.2	52	906	16.00

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB	Testwt grs
PLS88-124-03-3/4H		315	70	<0.1	48	150	12.00
PLS88-126-01-3/4H		215	70	0.8	76	2590	15.00
PLS88-127-01-3/4H		165	40	<0.1	27	2203	21.00
PLS88-127-02-3/4H		188	41	<0.1	70	572	28.00
PLS88-127-03-3/4H		188	43	0.1	28	10587	18.00
PLS88-127-04-3/4H		207	59	<0.1	40	286	26.00
PLS88-129-01-3/4H		263	78	0.2	49	397	25.00
PLS88-131-01-3/4H		43	22	<0.1	3	306	20.00
PLS88-131-02-3/4H		111	42	<0.1	10	436	26.00
PLS88-132-01-3/4H		237	127	0.4	93	83	25.00
PLS88-134-01-3/4H		60	118	<0.1	9	247	22.00
PLS88-134-02-3/4H		33	48	1.5	3	62	29.00
PLS88-134-03-3/4H		26	37	<0.1	5	146	24.00
PLS88-134-04-3/4H		28	31	<0.1	2	44	19.00
PLS88-134-05-3/4H		32	29	<0.1	<2	76	24.00
PLS88-135-01-3/4H		182	80	0.2	48	259	
PLS88-135-02-3/4H		165	71	0.2	78	36	24.00
PLS88-135-03-3/4H		213	50	0.3	60	100	26.00
PLS88-135-04-3/4H		183	41	<0.1	54	70	21.00
PLS88-135-05-3/4H		172	55	0.1	53	62	20.00
PLS88-135-06-3/4H		203	41	0.1	60	74	28.00
PLS88-135-07-3/4H		200	64	0.4	108	908	12.00
PLS88-135-08-3/4H		170	44	0.3	77	2600	20.00
PLS88-136-01-3/4H		251	72	0.1	57	822	13.00

APPENDIX E

HEAVY MINERAL ABSOLUTE METAL CONTENTS

MINNOVA

OVERBURDEN DRILLING MANAGEMENT

Absolute Metal Content for Heavy Mineral Concentrates

SAMPLE NUMBER	WEIGHT (g) NON-MAG	Au ASSAY PPB	ABSOLUTE METAL CONTENT Au (nanograms)	Cu ASSAY PPM	ABSOLUTE METAL CONTENT Cu (micrograms)	Zn ASSAY PPM	ABSOLUTE METAL CONTENT Zn (micrograms)	As ASSAY PPM	ABSOLUTE METAL CONTENT As (micrograms)	Ag ASSAY PPM	ABSOLUTE METAL CONTENT Ag (micrograms)
PLS88-01-01-3/4H	21.0	175.0	3675.0	42.0	882.0	15.0	315.0	9.0	189.0	0.4	8.4
PLS88-01-02-3/4H	20.6	129.0	2657.4	21.0	432.6	13.0	267.8	4.0	82.4	0.2	4.1
PLS88-01-03-3/4H	11.6	-25.0	-290.0	66.0	765.6	13.0	150.8	14.0	162.4	0.1	1.2
PLS88-01-04-3/4H	26.5	162.0	4293.0	30.0	795.0	15.0	397.5	6.0	159.0	0.1	2.7
PLS88-01-05-3/4H	28.9	625.0	18062.5	60.0	1734.0	19.0	549.1	26.0	751.4	0.4	11.6
PLS88-01-06-3/4H	30.6	171.0	5232.6	54.0	1652.4	19.0	581.4	33.0	1009.8	0.4	12.2
PLS88-01-07-3/4H	30.2	176.0	5315.2	130.0	3926.0	24.0	724.8	68.0	2053.6	0.7	21.1
PLS88-01-08-3/4H	9.8	0.7	7.2	122.0	1195.6	41.0	401.8	71.0	695.8	0.3	2.9
PLS88-02-01-3/4H	29.9	0.3	9.6	151.0	4514.9	32.0	956.8	34.0	1016.6	0.1	3.0
PLS88-02-02-3/4H	35.6	145.0	5162.0	97.0	3453.2	27.0	961.2	25.0	890.0	0.3	10.7
PLS88-02-03-3/4H	32.6	355.0	11573.0	146.0	4759.6	26.0	847.6	38.0	1238.8	0.3	9.8
PLS88-02-04-3/4H	24.8	1624.0	40275.2	154.0	3819.2	32.0	793.6	56.0	1388.8	0.2	5.0
PLS88-03-01-3/4H	30.1	291.0	8759.1	55.0	1655.5	57.0	1715.7	42.0	1264.2	0.1	3.0
PLS88-03-02-3/4H	43.7	123.0	5375.1	96.0	4195.2	26.0	1136.2	21.0	917.7	0.2	8.7
PLS88-03-03-3/4H	28.1	165.0	4636.5	57.0	1601.7	20.0	562.0	24.0	674.4	0.5	14.1
PLS88-03-04-3/4H	32.7	360.0	11772.0	216.0	7063.2	55.0	1798.5	280.0	9156.0	0.4	13.1
8-03-05-3/4H	29.8	532.0	15853.6	129.0	3844.2	58.0	1728.4	552.0	16449.6	1.0	29.8
PLS88-03-06-3/4H	27.5	1995.0	54862.5	180.0	4950.0	48.0	1320.0	322.0	8855.0	0.9	24.8
PLS88-04-01-3/4H	26.5	159.0	4213.5	46.0	1219.0	16.0	424.0	9.0	238.5	0.5	13.3
PLS88-04-02-3/4H	34.5	484.0	16698.0	44.0	1518.0	15.0	517.5	12.0	414.0	0.4	13.8
PLS88-04-03-3/4H	30.9	555.0	17149.5	60.0	1854.0	20.0	618.0	260.0	8034.0	0.4	12.4
PLS88-04-04-3/4H	21.0	97.0	2037.0	55.0	1155.0	17.0	357.0	60.0	1260.0	0.4	8.4
PLS88-05-01-3/4H	43.3	217.0	9396.1	55.0	2381.5	21.0	909.3	119.0	5152.7	0.4	17.3
PLS88-05-02-3/4H	39.4	718.0	28289.2	108.0	4255.2	24.0	945.6	95.0	3743.0	0.6	23.6
PLS88-05-03-3/4H	29.3	227.0	6651.1	51.0	1494.3	24.0	703.2	57.0	1670.1	0.7	20.5
PLS88-06-01-3/4H	26.6	411.0	10932.6	153.0	4069.8	76.0	2021.6	378.0	10054.8	2.5	66.5
PLS88-07-01-H	3.4	189.0	642.6	91.0	309.4	22.0	74.8	11.0	37.4	0.4	1.4
PLS88-07-02-3/4H	43.1	257.0	11076.7	53.0	2284.3	22.0	948.2	56.0	2413.6	0.4	17.2
PLS88-07-03-3/4H	44.7	177.0	7911.9	86.0	3844.2	68.0	3039.6	92.0	4112.4	0.1	4.5
PLS88-08-01-3/4H	31.9	176.0	5614.4	23.0	733.7	15.0	478.5	6.0	191.4	-0.1	-3.2
PLS88-09-01-3/4H	18.0	131.0	2358.0	16.0	288.0	14.0	252.0	5.0	90.0	-0.1	-1.8
PLS88-09-02-H	2.5	456.0	1140.0	53.0	132.5	30.0	75.0	55.0	137.5	0.7	1.8
PLS88-10-01-3/4H	14.6	19.0	277.4	18.0	262.8	12.0	175.2	8.0	116.8	0.2	2.9
PLS88-11-01-3/4H	21.4	47.0	1005.8	29.0	620.6	17.0	363.8	17.0	363.8	0.3	6.4
PLS88-11-02-3/4H	29.7	161.0	4781.7	37.0	1098.9	17.0	504.9	5.0	148.5	0.2	5.9
PLS88-11-03-3/4H	25.2	38.0	957.6	24.0	604.8	19.0	478.8	4.0	100.8	0.1	2.5
PLS88-11-04-3/4H	27.2	145.0	3944.0	35.0	952.0	13.0	353.6	5.0	136.0	0.4	10.9
PLS88-11-05-3/4H	32.2	459.0	14779.8	54.0	1738.8	16.0	515.2	5.0	161.0	0.5	16.1
PLS88-11-06-3/4H	26.1	248.0	6472.8	66.0	1722.6	20.0	522.0	9.0	234.9	0.5	13.1
PLS88-11-07-3/4H	21.4	563.0	12048.2	69.0	1476.6	25.0	535.0	16.0	342.4	0.3	6.4
PLS88-11-08-3/4H	17.2	87.0	1496.4	137.0	2356.4	68.0	1169.6	84.0	1444.8	0.3	5.2
-12-01-3/4H	40.1	44.0	1764.4	122.0	4892.2	38.0	1523.8	39.0	1563.9	-0.1	-4.0
8-12-02-3/4H	17.5	41.0	717.5	141.0	2467.5	28.0	490.0	48.0	840.0	-0.1	-1.8
PLS88-13-01-3/4H	36.7	113.0	4147.1	106.0	3890.2	33.0	1211.1	60.0	2202.0	0.1	3.7
PLS88-13-02-3/4H	65.8	4849.0	319064.2	474.0	31189.2	108.0	7106.4	62400.0	4105920.0	1.2	79.0
PLS88-14-01-3/4H	43.0	45.0	1935.0	116.0	4988.0	34.0	1462.0	392.0	16856.0	-0.1	-4.3
PLS88-14-02-3/4H	39.4	54.0	2127.6	222.0	8746.8	233.0	9180.2	584.0	23009.6	1.3	51.2

MINNOVA

OVERBURDEN DRILLING MANAGEMENT

Absolute Metal Content for Heavy Mineral Concentrates

SAMPLE NUMBER	WEIGHT (g) NON-MAG	Au ASSAY PPB	ABSOLUTE METAL CONTENT Au (nanograms)	Cu ASSAY PPM	ABSOLUTE METAL CONTENT Cu (micrograms)	Zn ASSAY PPM	ABSOLUTE METAL CONTENT Zn (micrograms)	As ASSAY PPM	ABSOLUTE METAL CONTENT As (micrograms)	Ag ASSAY PPM	ABSOLUTE METAL CONTENT Ag (micrograms)
PLS88-15-01-3/4H	54.9	40.0	2196.0	121.0	6642.9	45.0	2470.5	68.0	3733.2	0.1	5.5
PLS88-15-02-3/4H	61.5	3246.0	199629.0	289.0	17773.5	101.0	6211.5	29200.0	1795800.0	1.2	73.8
PLS88-16-01-3/4H	40.7	87.0	3540.9	111.0	4517.7	31.0	1261.7	107.0	4354.9	-0.1	-4.1
PLS88-16-02-3/4H	41.1	9833.0	404136.3	274.0	11261.4	181.0	7439.1	816.0	33537.6	0.7	28.8
PLS88-17-01-3/4H	34.8	97.0	3375.6	126.0	4384.8	29.0	1009.2	48.0	1670.4	0.1	3.5
PLS88-17-02-3/4H	24.9	96.0	2390.4	94.0	2340.6	36.0	896.4	125.0	3112.5	0.1	2.5
PLS88-18-01-3/4H	42.8	150.0	6420.0	120.0	5136.0	26.0	1112.8	48.0	2054.4	-0.1	-4.3
PLS88-18-02-3/4H	24.7	131.0	3235.7	138.0	3408.6	91.0	2247.7	123.0	3038.1	0.6	14.8
PLS88-19-01-3/4H	49.4	253.0	12498.2	101.0	4989.4	34.0	1679.6	47.0	2321.8	0.2	9.9
PLS-88-19-02-3/4	29.1	1.8	53.5	72.0	2095.2	14.0	407.4	153.0	4452.3	0.4	11.6
PLS88-19-03-3/4H	26.5	33.0	874.5	126.0	3339.0	35.0	927.5	27.0	715.5	0.1	2.7
PLS88-20-01-3/4H	39.4	0.5	18.9	83.0	3270.2	17.0	669.8	66.0	2600.4	0.1	3.9
PLS88-20-02-3/4H	29.0	62.0	1798.0	139.0	4031.0	65.0	1885.0	332.0	9628.0	0.1	2.9
PLS88-20-03-3/4H	27.0	161.0	4347.0	120.0	3240.0	33.0	891.0	62.0	1674.0	0.2	5.4
PLS88-20-04-3/4H	20.1	1433.0	28803.3	190.0	3819.0	49.0	984.9	90.0	1809.0	0.3	6.0
PLS88-20-05-3/4H	49.8	108.0	5378.4	129.0	6424.2	27.0	1344.6	41.0	2041.8	0.1	5.0
8-20-06-3/4H	30.1	39.0	1173.9	133.0	4003.3	25.0	752.5	55.0	1655.5	0.1	3.0
LS88-20-07-3/4H	27.0	46.0	1242.0	158.0	4266.0	116.0	3132.0	17.0	459.0	0.2	5.4
PLS88-20-08-3/4H	28.3	41.0	1160.3	142.0	4018.6	30.0	849.0	19.0	537.7	-0.1	-2.8
PLS88-20-09-3/4H	42.2	32.0	1350.4	129.0	5443.8	30.0	1266.0	26.0	1097.2	-0.1	-4.2
PLS88-20-10-3/4H	36.5	30.0	1095.0	121.0	4416.5	24.0	876.0	13.0	474.5	-0.1	-3.7
PLS88-20-11-3/4H	25.8	77.0	1986.6	115.0	2967.0	20.0	516.0	14.0	361.2	-0.1	-2.6
PLS88-20-12-3/4H	31.6	83.0	2622.8	62.0	1959.2	15.0	474.0	6.0	189.6	-0.1	-3.2
PLS88-20-13-3/4H	28.0	154.0	4312.0	89.0	2492.0	20.0	560.0	22.0	616.0	-0.1	-2.8
PLS88-20-14-3/4H	26.9	36.0	968.4	74.0	1990.6	21.0	564.9	22.0	591.8	-0.1	-2.7
PLS88-20-15-3/4H	15.2	49.0	744.8	157.0	2386.4	44.0	668.8	42.0	638.4	0.1	1.5
PLS88-21-01-3/4H	25.5	278.0	7089.0	138.0	3519.0	31.0	790.5	40.0	1020.0	-0.1	-2.6
PLS88-21-02-3/4H	22.5	373.0	8392.5	159.0	3577.5	35.0	787.5	59.0	1327.5	-0.1	-2.3
PLS88-22-01-3/4H	26.5	90.0	2385.0	145.0	3842.5	36.0	954.0	84.0	2226.0	0.3	8.0
PLS88-22-02-3/4H	25.2	51.0	1285.2	170.0	4284.0	32.0	806.4	51.0	1285.2	0.1	2.5
PLS88-22-03-3/4H	23.2	184.0	4268.8	168.0	3897.6	38.0	881.6	39.0	904.8	0.4	9.3
PLS88-22-04-3/4H	25.7	971.0	24954.7	145.0	3726.5	30.0	771.0	36.0	925.2	0.4	10.3
PLS88-22-05-3/4H	27.5	0.6	17.6	131.0	3602.5	17.0	467.5	90.0	2475.0	0.1	2.8
PLS88-22-06-3/4H	29.7	2254.0	66943.8	171.0	5078.7	34.0	1009.8	49.0	1455.3	0.2	5.9
PLS88-22-07-3/4H	16.4	30.0	492.0	98.0	1607.2	21.0	344.4	20.0	328.0	-0.1	-1.6
PLS88-22-08-3/4H	41.2	75.0	3090.0	134.0	5520.8	50.0	2060.0	32.0	1318.4	0.2	8.2
PLS88-22-09-3/4H	36.7	54.0	1981.8	245.0	8991.5	28.0	1027.6	23.0	844.1	0.3	11.0
PLS88-22-10-3/4H	40.4	46.0	1858.4	256.0	10342.4	33.0	1333.2	29.0	1171.6	0.3	12.1
PLS88-22-11-3/4H	18.3	322.0	5892.6	391.0	7155.3	44.0	805.2	38.0	695.4	0.3	5.5
PLS88-23-01-3/4H	26.5	300.0	7950.0	86.0	2279.0	26.0	689.0	17.0	450.5	0.2	5.3
PLS88-23-02-3/4H	44.7	542.0	24227.4	174.0	7777.8	32.0	1430.4	31.0	1385.7	-0.1	-4.5
8-23-03-3/4H	36.4	105.0	3822.0	105.0	3822.0	25.0	910.0	41.0	1492.4	-0.1	-3.6
8-23-04-3/4H	28.1	88.0	2472.8	77.0	2163.7	23.0	646.3	30.0	843.0	0.1	2.8
PLS88-23-05-3/4H	31.2	106.0	3307.2	76.0	2371.2	24.0	748.8	18.0	561.6	-0.1	-3.1
PLS88-23-06-3/4H	24.8	20.0	496.0	58.0	1438.4	23.0	570.4	10.0	248.0	-0.1	-2.5
PLS88-23-07-3/4H	29.6	506.0	14977.6	80.0	2368.0	22.0	651.2	27.0	799.2	0.1	3.0
PLS88-23-08-3/4H	29.4	24.0	705.6	86.0	2528.4	37.0	1087.8	28.0	823.2	0.1	2.9

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OVERBURDEN DRILLING MANAGEMENT

Absolute Metal Content for Heavy Mineral Concentrates

SAMPLE NUMBER	WEIGHT (g) NON-MAG	Au ASSAY PPB	ABSOLUTE METAL CONTENT Au (nanograms)	Cu ASSAY PPM	ABSOLUTE METAL CONTENT Cu (micrograms)	Zn ASSAY PPM	ABSOLUTE METAL CONTENT Zn (micrograms)	As ASSAY PPM	ABSOLUTE METAL CONTENT As (micrograms)	Ag ASSAY PPM	ABSOLUTE METAL CONTENT Ag (micrograms)
PLS88-23-09-3/4H	33.1	234.0	7745.4	76.0	2515.6	25.0	827.5	30.0	993.0	-0.1	-3.3
PLS88-23-10-3/4H	34.0	58.0	1972.0	492.0	16728.0	24.0	816.0	17.0	578.0	0.3	10.2
PLS88-23-11-3/4H	24.6	469.0	11537.4	79.0	1943.4	25.0	615.0	31.0	762.6	-0.1	-2.5
PLS88-23-12-3/4H	18.1	286.0	5176.6	148.0	2678.8	41.0	742.1	103.0	1864.3	0.5	9.1
PLS88-23-13-3/4H	16.4	260.0	4264.0	205.0	3362.0	39.0	639.6	40.0	656.0	0.6	9.8
PLS88-23-14-3/4H	29.1	45.0	1309.5	107.0	3113.7	34.0	989.4	84.0	2444.4	0.2	5.8
PLS88-24-01-3/4H	27.4	199.0	5452.6	127.0	3479.8	31.0	849.4	45.0	1233.0	0.3	8.2
PLS88-24-02-3/4H	20.8	674.0	14019.2	108.0	2246.4	21.0	436.8	37.0	769.6	0.2	4.2
PLS88-24-03-3/4H	22.4	2095.0	46928.0	99.0	2217.6	25.0	560.0	33.0	739.2	0.4	9.0
PLS88-24-04-3/4H	24.9	30.0	747.0	173.0	4307.7	31.0	771.9	90.0	2241.0	0.2	5.0
PLS88-24-05-3/4H	19.8	13.0	257.4	76.0	1504.8	22.0	435.6	11.0	217.8	0.2	4.0
PLS88-24-06-3/4H	42.9	264.0	11325.6	57.0	2445.3	18.0	772.2	8.0	343.2	-0.1	-4.3
PLS88-24-07-3/4H	17.2	288.0	4953.6	53.0	911.6	19.0	326.8	7.0	120.4	-0.1	-1.7
PLS88-24-08-3/4H	16.5	375.0	6187.5	48.0	792.0	20.0	330.0	6.0	99.0	-0.1	-1.7
PLS88-24-09-3/4H	15.8	663.0	10475.4	59.0	932.2	27.0	426.6	17.0	268.6	-0.1	-1.6
PLS88-24-10-3/4H	40.9	433.0	17709.7	96.0	3926.4	24.0	981.6	45.0	1840.5	0.2	8.2
3-24-11-3/4H	37.3	1422.0	53040.6	81.0	3021.3	18.0	671.4	29.0	1081.7	0.1	3.7
88-24-12-3/4H	53.1	378.0	20071.8	76.0	4035.6	23.0	1221.3	32.0	1699.2	-0.1	-5.3
PLS88-24-13-3/4H	33.9	241.0	8169.9	71.0	2406.9	19.0	644.1	38.0	1288.2	-0.1	-3.4
PLS88-25-01-3/4H	42.2	17.0	717.4	61.0	2574.2	26.0	1097.2	34.0	1434.8	-0.1	-4.2
PLS88-25-02-3/4H	22.7	24.0	544.8	95.0	2156.5	26.0	590.2	32.0	726.4	0.3	6.8
PLS88-25-03-3/4H	33.6	83.0	2788.8	119.0	3998.4	29.0	974.4	33.0	1108.8	0.3	10.1
PLS88-25-04-3/4H	13.4	96.0	1286.4	121.0	1621.4	33.0	442.2	28.0	375.2	0.3	4.0
PLS88-25-05-3/4H	35.0	187.0	6545.0	250.0	8750.0	36.0	1260.0	73.0	2555.0	0.4	14.0
PLS88-25-06-3/4H	28.8	73.0	2102.4	182.0	5241.6	40.0	1152.0	46.0	1324.8	0.2	5.8
PLS88-26-01-3/4H	38.3	12.0	459.6	90.0	3447.0	33.0	1263.9	34.0	1302.2	0.3	11.5
PLS88-26-02-3/4H	24.8	1628.0	40374.4	139.0	3447.2	29.0	719.2	43.0	1066.4	0.1	2.5
PLS88-27-01-3/4H	35.3	51.0	1800.3	130.0	4589.0	29.0	1023.7	36.0	1270.8	0.1	3.5
PLS88-27-02-3/4H	29.4	133.0	3910.2	112.0	3292.8	27.0	793.8	40.0	1176.0	-0.1	-2.9
PLS88-27-03-3/4H	25.7	107.0	2749.9	120.0	3084.0	24.0	616.8	36.0	925.2	0.2	5.1
PLS88-27-04-3/4H	27.7	168.0	4653.6	134.0	3711.8	31.0	858.7	39.0	1080.3	0.4	11.1
PLS88-27-05-3/4H	19.5	12338.0	240591.0	166.0	3237.0	48.0	936.0	48.0	936.0	0.2	3.9
PLS88-27-06-3/4H	37.0	395.0	14615.0	154.0	5698.0	39.0	1443.0	65.0	2405.0	0.1	3.7
PLS88-28-01-3/4H	23.0	141.0	3243.0	131.0	3013.0	33.0	759.0	47.0	1081.0	0.1	2.3
PLS88-28-02-3/4H	19.7	620.0	12214.0	165.0	3250.5	55.0	1083.5	71.0	1398.7	0.6	11.8
PLS88-28-03-3/4H	22.6	0.2	5.0	154.0	3480.4	26.0	587.6	10.0	226.0	-0.1	-2.3
PLS88-28-04-3/4H	21.7	23.0	499.1	82.0	1779.4	22.0	477.4	21.0	455.7	0.1	2.2
PLS88-28-05-3/4H	29.1	33.0	960.3	84.0	2444.4	19.0	552.9	16.0	465.6	0.2	5.8
PLS88-28-06-3/4H	26.0	291.0	7566.0	66.0	1716.0	18.0	468.0	31.0	806.0	0.4	10.4
PLS88-28-07-3/4H	50.7	367.0	18606.9	448.0	22713.6	32.0	1622.4	50.0	2535.0	0.4	20.3
PLS88-29-01-3/4H	32.4	19.0	615.6	126.0	4082.4	23.0	745.2	28.0	907.2	0.1	3.2
-29-02-3/4H	38.7	35.0	1354.5	117.0	4527.9	27.0	1044.9	26.0	1006.2	0.2	7.7
8-29-03-3/4H	38.8	97.0	3763.6	100.0	3880.0	25.0	970.0	38.0	1474.4	-0.1	-3.9
PLS88-29-04-3/4H	31.1	120.0	3732.0	175.0	5442.5	24.0	746.4	50.0	1555.0	3.4	105.7
PLS88-30-01-3/4H	26.1	159.0	4149.9	103.0	2688.3	22.0	574.2	25.0	652.5	0.2	5.2
PLS88-30-02-3/4H	27.5	95.0	2612.5	153.0	4207.5	30.0	825.0	31.0	852.5	0.3	8.3
PLS88-30-03-3/4H	28.6	56.0	1601.6	153.0	4375.8	29.0	829.4	21.0	600.6	0.1	2.9

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OVERBURDEN DRILLING MANAGEMENT

Absolute Metal Content for Heavy Mineral Concentrates

SAMPLE NUMBER	WEIGHT (g) NON-MAG	Au ASSAY PPB	ABSOLUTE METAL CONTENT Au (nanograms)	Cu ASSAY PPM	ABSOLUTE METAL CONTENT Cu (micrograms)	Zn ASSAY PPM	ABSOLUTE METAL CONTENT Zn (micrograms)	As ASSAY PPM	ABSOLUTE METAL CONTENT As (micrograms)	Ag ASSAY PPM	ABSOLUTE METAL CONTENT Ag (micrograms)
PLS88-30-04-3/4H	34.5	16.0	552.0	119.0	4105.5	26.0	897.0	21.0	724.5	-0.1	-3.5
PLS88-30-05-3/4H	23.6	609.0	14372.4	203.0	4790.8	27.0	637.2	50.0	1180.0	0.2	4.7
PLS88-30-06-3/4H	17.8	0.4	7.1	348.0	6194.4	28.0	498.4	68.0	1210.4	0.4	7.1
PLS88-31-01-3/4H	23.0	22.0	506.0	18.0	414.0	13.0	299.0	2.0	46.0	-0.1	-2.3
PLS88-31-02-3/4H	10.7	-10.0	-107.0	26.0	278.2	14.0	149.8	2.0	21.4	-0.1	-1.1
PLS88-31-03-3/4H	10.8	25.0	270.0	47.0	507.6	15.0	162.0	<2	<21.6	0.1	1.1
PLS88-31-04-3/4H	9.7	43.0	417.1	71.0	688.7	18.0	174.6	11.0	106.7	0.2	1.9
PLS88-31-05-3/4H	19.7	50.0	985.0	124.0	2442.8	24.0	472.8	28.0	551.6	-0.1	-2.0
PLS88-31-06-3/4H	28.5	131.0	3733.5	129.0	3676.5	35.0	997.5	33.0	940.5	0.2	5.7
PLS88-31-07-3/4H	15.7	808.0	12685.6	247.0	3877.9	33.0	518.1	87.0	1365.9	1.6	25.1
PLS88-31-08-3/4H	24.5	72.0	1764.0	146.0	3577.0	22.0	539.0	34.0	833.0	0.3	7.4
PLS88-31-09-3/4H	29.0	28.0	812.0	70.0	2030.0	15.0	435.0	17.0	493.0	-0.1	-2.9
PLS88-31-10-3/4H	38.7	615.0	23800.5	161.0	6230.7	21.0	812.7	53.0	2051.1	0.3	11.6
PLS88-32-01-3/4H	31.7	34.0	1077.8	111.0	3518.7	29.0	919.3	55.0	1743.5	0.4	12.7
PLS88-32-02-3/4H	32.8	380.0	12464.0	174.0	5707.2	29.0	951.2	33.0	1082.4	0.4	13.1
PLS88-33-01-3/4H	26.0	43.0	1118.0	22.0	572.0	13.0	338.0	<2	<52.0	-0.1	-2.6
3-33-02-3/4H	24.9	115.0	2863.5	147.0	3660.3	29.0	722.1	19.0	473.1	0.1	2.5
PLS88-33-03-3/4H	32.2	389.0	12525.8	145.0	4669.0	28.0	901.6	31.0	998.2	0.2	6.4
PLS88-34-01-3/4H	15.9	-6.0	-95.4	24.0	381.6	15.0	238.5	2.0	31.8	-0.1	-1.6
PLS88-34-02-3/4H	23.9	158.0	3776.2	27.0	645.3	14.0	334.6	4.0	95.6	-0.1	-2.4
PLS88-34-03-3/4H	30.3	12.0	363.6	14.0	424.2	11.0	333.3	<2	<60.6	0.3	9.1
PLS88-34-04-3/4H	16.6	72.0	1195.2	46.0	763.6	15.0	249.0	3.0	49.8	0.1	1.7
PLS88-34-05-3/4H	26.5	42.0	1113.0	122.0	3233.0	27.0	715.5	22.0	583.0	0.2	5.3
PLS88-34-06-3/4H	25.5	113.0	2881.5	139.0	3544.5	52.0	1326.0	33.0	841.5	0.2	5.1
PLS88-34-07-3/4H	12.8	30.0	384.0	154.0	1971.2	29.0	371.2	31.0	396.8	0.3	3.8
PLS88-34-08-3/4H	33.1	344.0	11386.4	236.0	7811.6	21.0	695.1	27.0	893.7	0.4	13.2
PLS88-35-01-3/4H	21.3	-5.0	-106.5	27.0	575.1	13.0	276.9	2.0	42.6	-0.1	-2.1
PLS88-35-02-3/4H	25.3	126.0	3187.8	20.0	506.0	11.0	278.3	2.0	50.6	-0.1	-2.5
PLS88-35-03-3/4H	28.8	51.0	1468.8	76.0	2188.8	19.0	547.2	13.0	374.4	0.2	5.8
PLS88-35-04-3/4H	29.7	180.0	5346.0	64.0	1900.8	16.0	475.2	16.0	475.2	0.1	3.0
PLS88-35-05-3/4H	31.3	106.0	3317.8	77.0	2410.1	16.0	500.8	14.0	438.2	-0.1	-3.1
PLS88-35-06-3/4H	28.8	475.0	13680.0	94.0	2707.2	18.0	518.4	16.0	460.8	-0.1	-2.9
PLS88-35-07-3/4H	29.6	208.0	6156.8	149.0	4410.4	23.0	680.8	20.0	592.0	0.1	3.0
PLS88-36-01-3/4H	23.8	59.0	1404.2	28.0	666.4	17.0	404.6	2.0	47.6	0.1	2.4
PLS88-36-02-3/4H	12.8	-7.0	-89.6	43.0	550.4	21.0	268.8	2.0	25.6	0.1	1.3
PLS88-36-03-3/4H	37.6	27.0	1015.2	18.0	676.8	15.0	564.0	2.0	75.2	-0.1	-3.8
PLS88-36-04-3/4H	31.1	139.0	4322.9	13.0	404.3	14.0	435.4	2.0	62.2	-0.1	-3.1
PLS88-36-05-3/4H	27.9	55.0	1534.5	41.0	1143.9	16.0	446.4	2.0	55.8	-0.1	-2.9
PLS88-36-06-3/4H	20.6	120.0	2472.0	263.0	5417.8	21.0	432.6	4.0	82.4	0.1	2.1
PLS88-36-07-3/4H	18.0	19.0	342.0	317.0	5706.0	20.0	360.0	3.0	54.0	4.5	81.0
PLS88-37-01-3/4H	36.0	143.0	5148.0	40.0	1440.0	15.0	540.0	6.0	216.0	0.2	7.2
-37-02-3/4H	38.3	67.0	2566.1	144.0	5515.2	45.0	1723.5	45.0	1723.5	0.4	15.3
8-38-01-3/4H	45.2	136.0	6147.2	95.0	4294.0	24.0	1084.8	25.0	1130.0	0.1	4.5
PLS88-38-02-3/4H	32.2	489.0	15745.8	262.0	8436.4	34.0	1094.8	62.0	1996.4	0.5	16.1
PLS88-39-01-3/4H	47.9	620.0	29698.0	129.0	6179.1	33.0	1580.7	40.0	1916.0	0.4	19.2
PLS88-39-02-3/4H	55.4	108.0	5983.2	116.0	6426.4	33.0	1828.2	32.0	1772.8	0.1	5.5
PLS88-39-03-3/4H	24.2	386.0	9341.2	105.0	2541.0	26.0	629.2	22.0	532.4	0.1	2.4

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Absolute Metal Content for Heavy Mineral Concentrates

SAMPLE NUMBER	WEIGHT (g) NON-MAG	Au ASSAY PPB	ABSOLUTE METAL CONTENT Au (nanograms)	Cu ASSAY PPM	ABSOLUTE METAL CONTENT Cu (micrograms)	Zn ASSAY PPM	ABSOLUTE METAL CONTENT Zn (micrograms)	As ASSAY PPM	ABSOLUTE METAL CONTENT As (micrograms)	Ag ASSAY PPM	ABSOLUTE METAL CONTENT Ag (micrograms)
PLS88-39-04-3/4H	25.0	210.0	5250.0	142.0	3550.0	33.0	825.0	46.0	1150.0	-0.1	-2.5
PLS88-39-05-3/4H	27.5	98.0	2695.0	127.0	3492.5	36.0	990.0	39.0	1072.5	0.1	2.8
PLS88-39-06-3/4H	35.7	176.0	6283.2	106.0	3784.2	31.0	1106.7	106.0	3784.2	0.1	3.6
PLS88-40-01-3/4H	31.5	95.0	2992.5	65.0	2047.5	19.0	598.5	16.0	504.0	0.2	6.3
PLS88-40-02-3/4H	31.8	183.0	5819.4	123.0	3911.4	28.0	890.4	25.0	795.0	0.2	6.4
PLS88-41-01-3/4H	63.9	105.0	6709.5	89.0	5687.1	28.0	1789.2	19.0	1214.1	0.1	6.4
PLS88-41-02-3/4H	39.8	143.0	5691.4	143.0	5691.4	37.0	1472.6	43.0	1711.4	0.3	11.9
PLS88-42-01-3/4H	42.9	20.0	858.0	121.0	5190.9	37.0	1587.3	26.0	1115.4	-0.1	-4.3
PLS88-42-02-3/4H	53.3	71.0	3784.3	173.0	9220.9	22.0	1172.6	40.0	2132.0	0.5	26.7
PLS88-43-01-3/4H	23.6	34.0	802.4	43.0	1014.8	19.0	448.4	9.0	212.4	-0.1	-2.4
PLS88-43-02-3/4H	24.6	18.0	442.8	43.0	1057.8	19.0	467.4	4.0	98.4	-0.1	-2.5
PLS88-44-01-3/4H	35.1	195.0	6844.5	145.0	5089.5	33.0	1158.3	38.0	1333.8	0.7	24.6
PLS88-45-01-3/4H	39.3	103.0	4047.9	108.0	4244.4	71.0	2790.3	29.0	1139.7	-0.1	-3.9
PLS88-45-02-3/4H	21.1	410.0	8651.0	78.0	1645.8	25.0	527.5	57.0	1202.7	-0.1	-2.1
PLS88-46-01-3/4H	28.6	967.0	27656.2	104.0	2974.4	29.0	829.4	105.0	3003.0	0.1	2.9
PLS88-46-02-3/4H	29.5	345.0	10177.5	107.0	3156.5	45.0	1327.5	73.0	2153.5	0.4	11.8
8-46-03-3/4H	27.7	372.0	10304.4	138.0	3822.6	42.0	1163.4	81.0	2243.7	0.5	13.9
PLS88-46-04-3/4H	30.6	201.0	6150.6	241.0	7374.6	35.0	1071.0	79.0	2417.4	0.1	3.1
PLS88-46-05-3/4H	28.7	311.0	8925.7	163.0	4678.1	36.0	1033.2	66.0	1894.2	-0.1	-2.9
PLS88-46-06-3/4H	25.7	96.0	2467.2	152.0	3906.4	37.0	950.9	61.0	1567.7	0.1	2.6
PLS88-47-01-3/4H	26.4	317.0	8368.8	58.0	1531.2	23.0	607.2	17.0	448.8	0.1	2.6
PLS88-48-01-3/4H	25.8	98.0	2528.4	69.0	1780.2	20.0	516.0	7.0	180.6	-0.1	-2.6
PLS88-49-01-3/4H	18.7	187.0	3496.9	34.0	635.8	23.0	430.1	4.0	74.8	-0.1	-1.9
PLS88-49-02-3/4H	39.8	542.0	21571.6	116.0	4616.8	35.0	1393.0	76.0	3024.8	0.2	8.0
PLS88-50-01-3/4H	32.4	528.0	17107.2	130.0	4212.0	81.0	2624.4	352.0	11404.8	0.1	3.2
PLS88-50-02-3/4H	30.8	948.0	29198.4	149.0	4589.2	46.0	1416.8	284.0	8747.2	0.3	9.2
PLS88-50-03-3/4H	25.8	1524.0	39319.2	133.0	3431.4	35.0	903.0	149.0	3844.2	-0.1	-2.6
PLS88-51-01-3/4H	30.3	427.0	12938.1	106.0	3211.8	35.0	1060.5	67.0	2030.1	0.2	6.1
PLS88-51-02-3/4H	29.0	621.0	18009.0	139.0	4031.0	39.0	1131.0	100.0	2900.0	0.4	11.6
PLS88-52-01-3/4H	24.6	92.0	2263.2	110.0	2706.0	33.0	811.8	36.0	885.6	0.2	4.9
PLS88-53-01-3/4H	20.6	245.0	5047.0	149.0	3069.4	36.0	741.6	107.0	2204.2	0.3	6.2
PLS88-53-02-3/4H	26.7	282.0	7529.4	352.0	9398.4	57.0	1521.9	116.0	3097.2	0.3	8.0
PLS88-54-01-3/4H	32.9	482.0	15857.8	174.0	5724.6	62.0	2039.8	280.0	9212.0	0.3	9.9
PLS88-54-02-3/4H	19.7	470.0	9259.0	123.0	2423.1	32.0	630.4	35.0	689.5	0.1	2.0
PLS88-54-03-3/4H	29.7	120.0	3564.0	126.0	3742.2	24.0	712.8	47.0	1395.9	0.2	5.9
PLS88-54-04-3/4H	25.0	84.0	2100.0	265.0	6625.0	23.0	575.0	35.0	875.0	-0.1	-2.5
PLS88-54-05-3/4H	18.5	758.0	14023.0	243.0	4495.5	32.0	592.0	10.0	185.0	0.3	5.6
PLS88-55-01-3/4H	21.1	250.0	5275.0	221.0	4663.1	95.0	2004.5	151.0	3186.1	0.9	19.0
PLS88-55-02-3/4H	32.7	265.0	8665.5	196.0	6409.2	84.0	2746.8	222.0	7259.4	0.8	26.2
PLS88-55-03-3/4H	32.2	656.0	21123.2	206.0	6633.2	69.0	2221.8	194.0	6246.8	1.2	38.6
PLS88-55-04-3/4H	25.9	1470.0	38073.0	228.0	5905.2	65.0	1683.5	176.0	4558.4	0.9	23.3
8-55-05-3/4H	26.3	638.0	16779.4	223.0	5864.9	74.0	1946.2	23.0	604.9	0.7	18.4
8-56-01-3/4H	29.1	51.0	1484.1	45.0	1309.5	18.0	523.8	174.0	5063.4	-0.1	-2.9
PLS88-57-01-3/4H	26.4	628.0	16579.2	251.0	6626.4	71.0	1874.4	98.0	2587.2	1.3	34.3
PLS88-57-02-3/4H	30.9	752.0	23236.8	114.0	3522.6	30.0	927.0	155.0	4789.5	0.4	12.4
PLS88-58-01-3/4H	32.5	1056.0	34320.0	164.0	5330.0	49.0	1592.5	188.0	6110.0	0.3	9.8
PLS88-59-01-3/4H	26.4	309.0	8157.6	57.0	1504.8	22.0	580.8	21.0	554.4	-0.1	-2.6

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Absolute Metal Content for Heavy Mineral Concentrates

SAMPLE NUMBER	WEIGHT (g) NON-MAG	Au ASSAY PPB	ABSOLUTE METAL CONTENT Au (nanograms)	Cu ASSAY PPM	ABSOLUTE METAL CONTENT Cu (micrograms)	Zn ASSAY PPM	ABSOLUTE METAL CONTENT Zn (micrograms)	As ASSAY PPM	ABSOLUTE METAL CONTENT As (micrograms)	Ag ASSAY PPM	ABSOLUTE METAL CONTENT Ag (micrograms)
PLS88-59-02-3/4H	54.0	85.0	4590.0	247.0	13338.0	17.0	918.0	48.0	2592.0	-0.1	-5.4
PLS88-59-03-3/4H	39.4	6150.0	242310.0	89.0	3506.6	23.0	906.2	92.0	3624.8	-0.1	-3.9
PLS88-59-04-3/4H	36.3	427.0	15500.1	75.0	2722.5	25.0	907.5	22.0	798.6	-0.1	-3.6
PLS88-59-05-3/4H	26.6	550.0	14630.0	98.0	2606.8	33.0	877.8	7.0	186.2	-0.1	-2.7
PLS88-60-01-3/4H	53.6	28.0	1500.8	31.0	1661.6	21.0	1125.6	6.0	321.6	-0.1	-5.4
PLS88-60-02-3/4H	25.1	80.0	2008.0	93.0	2334.3	21.0	527.1	5.0	125.5	0.2	5.0
PLS88-60-03-3/4H	29.5	666.0	19647.0	62.0	1829.0	22.0	649.0	14.0	413.0	-0.1	-3.0
PLS88-60-04-3/4H	25.9	96.0	2486.4	77.0	1994.3	24.0	621.6	18.0	466.2	0.1	2.6
PLS88-60-05-3/4H	24.7	24.0	592.8	190.0	4693.0	19.0	469.3	14.0	345.8	0.1	2.5
PLS88-61-01-3/4H	25.7	444.0	11410.8	20.0	514.0	19.0	488.3	3.0	77.1	-0.1	-2.6
PLS88-61-02-3/4H	32.6	88.0	2868.8	22.0	717.2	28.0	912.8	4.0	130.4	-0.1	-3.3
PLS88-62-01-3/4H	19.9	243.0	4835.7	55.0	1094.5	31.0	616.9	4.0	79.6	0.1	2.0
PLS88-63-01-3/4H	19.4	41.0	795.4	45.0	873.0	19.0	368.6	9.0	174.6	-0.1	-1.9
PLS88-63-02-3/4H	32.4	251.0	8132.4	47.0	1522.8	26.0	842.4	6.0	194.4	-0.1	-3.2
PLS88-63-03-3/4H	22.9	86.0	1969.4	23.0	526.7	17.0	389.3	21.0	480.9	0.4	9.2
PLS88-64-01-3/4H	26.7	46.0	1228.2	14.0	373.8	16.0	427.2	12.0	320.4	-0.1	-2.7
8-64-02-3/4H	20.9	368.0	7691.2	24.0	501.6	19.0	397.1	2.0	41.8	-0.1	-2.1
PLS88-64-03-3/4H	20.2	153.0	3090.6	28.0	565.6	19.0	383.8	3.0	60.6	0.1	2.0
PLS88-64-04-3/4H	32.4	218.0	7063.2	59.0	1911.6	22.0	712.8	12.0	388.8	0.2	6.5

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Absolute Metal Content for Heavy Mineral Concentrates

SAMPLE NUMBER	WEIGHT (g) NON-MAG	Au ASSAY PPB	ABSOLUTE METAL CONTENT Au (nanograms)	Cu ASSAY PPM	ABSOLUTE METAL CONTENT Cu (micrograms)	Zn ASSAY PPM	ABSOLUTE METAL CONTENT Zn (micrograms)	As ASSAY PPM	ABSOLUTE METAL CONTENT As (micrograms)	Ag ASSAY PPM	ABSOLUTE METAL CONTENT Ag (micrograms)
PLS88-64-05-3/4H	23.3	39	908.7	355	8271.5	24	559.2	20	466.0	-0.1	-2.3
PLS88-65-01-3/4H	23.3	39	908.7	20	466.0	16	372.8	-2	-46.6	-0.1	-2.3
PLS88-65-02-3/4H	23.3	491	11440.3	31	722.3	24	559.2	2	46.6	-0.1	-2.3
PLS88-65-03-3/4H	23.3	313	7292.9	68	1584.4	23	535.9	10	233.0	-0.1	-2.3
PLS88-65-04-3/4H	23.3	336	7828.8	26	605.8	22	512.6	4	93.2	-0.1	-2.3
PLS88-66-01-3/4H	23.3	186	4333.8	22	512.6	12	279.6	3	69.9	-0.1	-2.3
PLS88-66-02-3/4H	23.3	46	1071.8	101	2353.3	27	629.1	10	233.0	0.1	2.3
PLS88-66-03-3/4H	23.3	127	2959.1	172	4007.6	35	815.5	24	559.2	0.1	2.3
PLS88-66-04-3/4H	23.3	0.24	5.6	186	4333.8	35	815.5	26	605.8	0.3	7.0
PLS88-66-05-3/4H	23.3	718	16729.4	113	2632.9	32	745.6	29	675.7	-0.1	-2.3
PLS88-66-06-3/4H	23.3	134	3122.2	68	1584.4	18	419.4	29	675.7	-0.1	-2.3
PLS88-66-07-3/4H	23.3	359	8364.7	114	2656.2	19	442.7	22	512.6	-0.1	-2.3
PLS88-66-08-3/4H	23.3	1621	37769.3	167	3891.1	26	605.8	26	605.8	-0.1	-2.3
PLS88-66-09-3/4H	23.3	1064	24791.2	175	4077.5	61	1421.3	89	2073.7	0.4	9.3
PLS88-66-10-3/4H	23.3	2237	52122.1	325	7572.5	38	885.4	74	1724.2	0.9	21.0
PLS88-66-11-3/4H	23.3	1394	32480.2	177	4124.1	33	768.9	29	675.7	0.1	2.3
8-67-01-3/4H	23.3	71	1654.3	37	862.1	15	349.5	-2	-46.6	-0.1	-2.3
88-67-02-3/4H	23.3	140	3262.0	50	1165.0	18	419.4	3	69.9	-0.1	-2.3
PLS88-67-03-3/4H	23.3	26	605.8	47	1095.1	13	302.9	26	605.8	-0.1	-2.3
PLS88-67-04-3/4H	23.3	103	2399.9	50	1165.0	12	279.6	12	279.6	-0.1	-2.3
PLS88-67-05-3/4H	23.3	193	4496.9	62	1444.6	15	349.5	10	233.0	0.1	2.3
PLS88-67-06-3/4H	23.3	113	2632.9	125	2912.5	14	326.2	15	349.5	-0.1	-2.3
PLS88-67-07-3/4H	23.3	71	1654.3	64	1491.2	15	349.5	22	512.6	-0.1	-2.3
PLS88-67-08-3/4H	23.3	84	1957.2	100	2330.0	18	419.4	30	699.0	0.2	4.7
PLS88-67-09-3/4H	23.3	81	1887.3	149	3471.7	19	442.7	-2	-46.6	-0.1	-2.3
PLS88-68-01-3/4H	23.3	96	2236.8	18	419.4	12	279.6	-2	-46.6	-0.1	-2.3
PLS88-68-02-3/4H	23.3	92	2143.6	23	535.9	15	349.5	4	93.2	-0.1	-2.3
PLS88-68-03-3/4H	23.3	135	3145.5	31	722.3	12	279.6	6	139.8	-0.1	-2.3
PLS88-69-01-3/4H	23.3	157	3658.1	36	838.8	16	372.8	24	559.2	-0.1	-2.3
PLS88-69-02-3/4H	23.3	78	1817.4	72	1677.6	13	302.9	4	93.2	-0.1	-2.3
PLS88-69-03-3/4H	23.3	112	2609.6	59	1374.7	25	582.5	11	256.3	-0.1	-2.3
PLS88-70-01-3/4H	23.3	312	7269.6	18	419.4	13	302.9	-2	-46.6	-0.1	-2.3
PLS88-70-02-3/4H	23.3	630	14679.0	20	466.0	11	256.3	4	93.2	-0.1	-2.3
PLS88-70-03-3/4H	23.3	789	18383.7	37	862.1	14	326.2	8	186.4	-0.1	-2.3
PLS88-70-04-3/4H	23.3	1564	36441.2	71	1654.3	16	372.8	11	256.3	-0.1	-2.3
PLS88-71-01-3/4H	23.3	281	6547.3	28	652.4	18	419.4	5	116.5	-0.1	-2.3
PLS88-72-01-3/4H	23.3	10	233.0	26	605.8	13	302.9	2	46.6	-0.1	-2.3
PLS88-73-01-3/4H	23.3	539	12558.7	109	2539.7	22	512.6	13	302.9	0.1	2.3
PLS88-73-02-3/4H	23.3	216	5032.8	153	3564.9	19	442.7	21	489.3	-0.1	-2.3
PLS88-73-03-3/4H	23.3	499	11626.7	166	3867.8	33	768.9	38	885.4	-0.1	-2.3
PLS88-73-04-3/4H	23.3	91	2120.3	100	2330.0	25	582.5	16	372.8	0.2	4.7
8-74-01-3/4H	23.3	111	2586.3	53	1234.9	21	489.3	13	302.9	0.1	2.3
8-74-02-3/4H	23.3	37	862.1	97	2260.1	29	675.7	43	1001.9	0.2	4.7
PLS88-74-03-3/4H	23.3	636	14818.8	123	2865.9	27	629.1	61	1421.3	0.6	14.0
PLS88-74-04-3/4H	23.3	160	3728.0	234	5452.2	47	1095.1	45	1048.5	0.4	9.3
PLS88-74-05-3/4H	23.3	1973	45970.9	241	5615.3	44	1025.2	38	885.4	0.4	9.3
PLS88-75-01-3/4H	23.3	14	326.2	15	349.5	15	349.5	2	46.6	-0.1	-2.3

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OVERBURDEN DRILLING MANAGEMENT

Absolute Metal Content for Heavy Mineral Concentrates

SAMPLE NUMBER	WEIGHT (g) NON-MAG	Au ASSAY PPB	ABSOLUTE METAL CONTENT Au (nanograms)	Cu ASSAY PPM	ABSOLUTE METAL CONTENT Cu (micrograms)	Zn ASSAY PPM	ABSOLUTE METAL CONTENT Zn (micrograms)	As ASSAY PPM	ABSOLUTE METAL CONTENT As (micrograms)	Ag ASSAY PPM	ABSOLUTE METAL CONTENT Ag (micrograms)
PLS88-75-02-3/4H	23.3	-5	-116.5	19	442.7	15	349.5	2	46.6	-0.1	-2.3
PLS88-75-03-3/4H	23.3	218	5079.4	16	372.8	12	279.6	-2	-46.6	-0.1	-2.3
PLS88-75-04-3/4H	23.3	140	3262.0	41	955.3	22	512.6	2	46.6	-0.1	-2.3
PLS88-75-05-3/4H	23.3	302	7036.6	119	2772.7	27	629.1	14	326.2	0.3	7.0
PLS88-75-06-3/4H	23.3	20	466.0	340	7922.0	41	955.3	14	326.2	0.1	2.3
PLS88-75-07-3/4H	23.3	60	1398.0	283	6593.9	44	1025.2	42	978.6	0.2	4.7
PLS88-75-08-3/4H	23.3	1013	23602.9	326	7595.8	45	1048.5	86	2003.8	0.1	2.3
PLS88-75-09-3/4H	23.3	168	3914.4	198	4613.4	28	652.4	56	1304.8	0.2	4.7
PLS88-76-01-3/4H	23.3	42	978.6	18	419.4	13	302.9	2	46.6	-0.1	-2.3
PLS88-76-02-3/4H	23.3	56	1304.8	35	815.5	13	302.9	6	139.8	-0.1	-2.3
PLS88-77-01-3/4H	23.3	403	9389.9	203	4729.9	474	11044.2	38	885.4	-0.1	-2.3
PLS88-78-01-3/4H	23.3	-5	-116.5	27	629.1	15	349.5	2	46.6	-0.1	-2.3
PLS88-78-02-3/4H	23.3	165	3844.5	30	699.0	16	372.8	3	69.9	-0.1	-2.3
PLS88-78-03-3/4H	23.3	253	5894.9	164	3821.2	20	466.0	26	605.8	0.2	4.7
PLS88-78-04-3/4H	23.3	2481	57807.3	192	4473.6	29	675.7	24	559.2	0.3	7.0
PLS88-78-05-3/4H	23.3	848	19758.4	191	4450.3	50	1165.0	72	1677.6	0.2	4.7
8-78-06-3/4H	23.3	552	12861.6	213	4962.9	37	862.1	20	466.0	0.2	4.7
88-78-07-3/4H	23.3	28	652.4	144	3355.2	20	466.0	8	186.4	0.2	4.7
PLS88-78-08-3/4H	23.3	238	5545.4	91	2120.3	23	535.9	17	396.1	0.3	7.0
PLS88-79-01-3/4H	23.3	267	6221.1	139	3238.7	32	745.6	38	885.4	0.2	4.7
PLS88-79-02-3/4H	23.3	305	7106.5	148	3448.4	44	1025.2	32	745.6	0.2	4.7
PLS88-79-03-3/4H	23.3	3047	70995.1	158	3681.4	39	908.7	35	815.5	0.2	4.7
PLS88-79-04-3/4H	23.3	-5	-116.5	189	4403.7	44	1025.2	31	722.3	0.3	7.0
PLS88-79-05-3/4H	23.3	199	4636.7	167	3891.1	42	978.6	39	908.7	0.3	7.0
PLS88-79-06-3/4H	23.3	77	1794.1	170	3961.0	43	1001.9	27	629.1	0.1	2.3
PLS88-79-07-3/4H	23.3	480	11184.0	151	3518.3	44	1025.2	29	675.7	0.1	2.3
PLS88-79-08-3/4H	23.3	61	1421.3	159	3704.7	94	2190.2	39	908.7	-0.1	-2.3
PLS88-79-09-3/4H	23.3	150	3495.0	153	3564.9	65	1514.5	25	582.5	0.3	7.0
PLS88-79-10-3/4H	23.3	54	1258.2	150	3495.0	49	1141.7	24	559.2	-0.1	-2.3
PLS88-79-11-3/4H	23.3	2378	55407.4	144	3355.2	41	955.3	53	1234.9	-0.1	-2.3
PLS88-80-01-3/4H	23.3	12112	282209.6	90	2097.0	20	466.0	9	209.7	-0.1	-2.3
PLS88-80-02-3/4H	23.3	63	1467.9	82	1910.6	28	652.4	39	908.7	-0.1	-2.3
PLS88-80-03-H	23.3	70	1631.0	302	7036.6	43	1001.9	31	722.3	0.7	16.3
PLS88-80-04-3/4H	23.3	60	1398.0	467	10881.1	64	1491.2	29	675.7	0.1	2.3
PLS88-80-05-3/4H	23.3	17	396.1	276	6430.8	41	955.3	15	349.5	-0.1	-2.3
PLS88-80-06-3/4H	23.3	36	838.8	386	8993.8	45	1048.5	102	2376.6	15	349.5
PLS88-80-07-3/4H	23.3	491	11440.3	447	10415.1	101	2353.3	96	2236.8	0.6	14.0
PLS88-80-08-3/4H	23.3	491	11440.3	135	3145.5	31	722.3	36	838.8	-0.1	-2.3
PLS88-80-09-3/4H	23.3	780	18174.0	749	17451.7	197	4590.1	992	23113.6	0.5	11.7
PLS88-81-01-3/4H	23.3	80	1864.0	99	2306.7	35	815.5	16	372.8	-0.1	-2.3
PLS88-82-01-3/4H	23.3	159	3704.7	297	6920.1	47	1095.1	78	1817.4	0.2	4.7
8-83-01-3/4H	23.3	47	1095.1	19	442.7	16	372.8	-2	-46.6	-0.1	-2.3
8-84-01-3/4H	23.3	387	9017.1	22	512.6	21	489.3	-2	-46.6	-0.1	-2.3
PLS88-85-01-3/4H	23.3	191	4450.3	21	489.3	15	349.5	-2	-46.6	-0.1	-2.3
PLS88-86-01-3/4H	23.3	-5	-116.5	40	932.0	19	442.7	14	326.2	-0.1	-2.3
PLS88-86-02-3/4H	23.3	891	20760.3	172	4007.6	41	955.3	54	1258.2	-0.1	-2.3
PLS88-87-01-3/4H	23.3	23	535.9	19	442.7	15	349.5	2	46.6	-0.1	-2.3

OVERBURDEN DRILLING MANAGEMENT

Absolute Metal Content for Heavy Mineral Concentrates

SAMPLE NUMBER	WEIGHT (g) NON-MAG	Au ASSAY PPB	ABSOLUTE METAL CONTENT Au (nanograms)	Cu ASSAY PPM	ABSOLUTE METAL CONTENT Cu (micrograms)	Zn ASSAY PPM	ABSOLUTE METAL CONTENT Zn (micrograms)	As ASSAY PPM	ABSOLUTE METAL CONTENT As (micrograms)	Ag ASSAY PPM	ABSOLUTE METAL CONTENT Ag (micrograms)
PLS88-87-02-3/4H	23.3	26	605.8	28	652.4	15	349.5	7	163.1	-0.1	-2.3
PLS88-87-03-3/4H	23.3	23	535.9	137	3192.1	20	466.0	-2	-46.6	-0.1	-2.3
PLS88-87-04-3/4H	23.3	-7	-163.1	148	3448.4	23	535.9	7	163.1	-0.1	-2.3
PLS88-87-05-3/4H	23.3	38	885.4	228	5312.4	31	722.3	7	163.1	-0.1	-2.3
PLS88-88-01-H	23.3	-37	-862.1	44	1025.2	27	629.1	3	69.9	-0.1	-2.3
PLS88-88-02-H	23.3	-58	-1351.4	103	2399.9	26	605.8	13	302.9	-0.1	-2.3
PLS88-88-03-3/4H	23.3	21	489.3	87	2027.1	23	535.9	3	69.9	-0.1	-2.3
PLS88-89-01-3/4H	23.3	-6	-139.8	36	838.8	19	442.7	-2	-46.6	-0.1	-2.3
PLS88-89-02-3/4H	23.3	30	699.0	184	4287.2	44	1025.2	11	256.3	0.1	2.3
PLS88-89-03-3/4H	23.3	-5	-116.5	118	2749.4	26	605.8	6	139.8	-0.1	-2.3
PLS88-89-04-3/4H	23.3	33	768.9	70	1631.0	21	489.3	5	116.5	-0.1	-2.3
PLS88-89-05-3/4H	23.3	263	6127.9	95	2213.5	17	396.1	7	163.1	-0.1	-2.3
PLS88-89-06-3/4H	23.3	77	1794.1	50	1165.0	14	326.2	4	93.2	-0.1	-2.3
PLS88-89-07-3/4H	23.3	896	20876.8	84	1957.2	18	419.4	14	326.2	-0.1	-2.3
PLS88-89-08-3/4H	23.3	116	2702.8	121	2819.3	23	535.9	13	302.9	-0.1	-2.3
PLS88-89-09-3/4H	23.3	178	4147.4	151	3518.3	36	838.8	24	559.2	-0.1	-2.3
8-89-10-3/4H	23.3	75	1747.5	138	3215.4	27	629.1	20	466.0	-0.1	-2.3
8-89-11-3/4H	23.3	434	10112.2	119	2772.7	25	582.5	19	442.7	-0.1	-2.3
PLS88-89-12-3/4H	23.3	194	4520.2	138	3215.4	33	768.9	19	442.7	-0.1	-2.3
PLS88-89-13-3/4H	23.3	173	4030.9	220	5126.0	48	1118.4	27	629.1	-0.1	-2.3
PLS88-89-14-3/4H	23.3	21	489.3	130	3029.0	28	652.4	24	559.2	-0.1	-2.3
PLS88-89-15-3/4H	23.3	106	2469.8	212	4939.6	36	838.8	60	1398.0	-0.1	-2.3
PLS88-89-16-3/4H	23.3	132	3075.6	198	4613.4	34	792.2	48	1118.4	-0.1	-2.3
PLS88-89-17-3/4H	23.3	96	2236.8	181	4217.3	30	699.0	42	978.6	-0.1	-2.3
PLS88-89-18-3/4H	23.3	94	2190.2	126	2935.8	18	419.4	68	1584.4	-0.1	-2.3
PLS88-89-19-3/4H	23.3	49	1141.7	80	1864.0	22	512.6	5	116.5	-0.1	-2.3
PLS88-89-20-3/4H	23.3	45	1048.5	121	2819.3	16	372.8	8	186.4	0.1	2.3
PLS88-89-21-3/4H	23.3	102	2376.6	195	4543.5	18	419.4	10	233.0	-0.1	-2.3
PLS88-89-22-3/4H	23.3	47	1095.1	160	3728.0	32	745.6	33	768.9	0.1	2.3
PLS88-89-23-3/4H	23.3	176	4100.8	225	5242.5	26	605.8	56	1304.8	0.5	11.7
PLS88-90-01-3/4H	23.3	-5	-116.5	102	2376.6	22	512.6	5	116.5	-0.1	-2.3
PLS88-90-02-3/4H	23.3	18	419.4	89	2073.7	18	419.4	5	116.5	0.1	2.3
PLS88-90-03-3/4H	23.3	43	1001.9	172	4007.6	32	745.6	11	256.3	0.2	4.7
PLS88-90-04-3/4H	23.3	12	279.6	114	2656.2	30	699.0	9	209.7	-0.1	-2.3
PLS88-91-01-3/4H	23.3	28	652.4	43	1001.9	20	466.0	2	46.6	-0.1	-2.3
PLS88-91-02-3/4H	23.3	380	8854.0	52	1211.6	13	302.9	30	699.0	-0.1	-2.3
PLS88-91-03-3/4H	23.3	180	4194.0	22	512.6	14	326.2	9	209.7	-0.1	-2.3
PLS88-91-04-3/4H	23.3	276	6430.8	20	466.0	13	302.9	-2	-46.6	-0.1	-2.3
PLS88-92-01-3/4H	23.3	15	349.5	25	582.5	13	302.9	5	116.5	-0.1	-2.3
PLS88-92-02-3/4H	23.3	75	1747.5	19	442.7	14	326.2	-2	-46.6	-0.1	-2.3
PLS88-92-03-3/4H	23.3	406	9459.8	22	512.6	14	326.2	-2	-46.6	-0.1	-2.3
8-92-04-3/4H	23.3	126	2935.8	25	582.5	12	279.6	-2	-46.6	-0.1	-2.3
-93-01-3/4H	23.3	204	4753.2	13	302.9	13	302.9	-2	-46.6	-0.1	-2.3
PLS88-94-01-3/4H	23.3	153	3564.9	20	466.0	14	326.2	-2	-46.6	-0.1	-2.3
PLS88-94-02-3/4H	23.3	413	9622.9	18	419.4	14	326.2	-2	-46.6	-0.1	-2.3
PLS88-95-01-3/4H	23.3	807	18803.1	21	489.3	21	489.3	2	46.6	-0.1	-2.3
PLS88-95-02-3/4H	23.3	839	19548.7	20	466.0	12	279.6	-2	-46.6	-0.1	-2.3

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OVERBURDEN DRILLING MANAGEMENT

Absolute Metal Content for Heavy Mineral Concentrates

SAMPLE NUMBER	WEIGHT (g) NON-MAG	Au ASSAY PPB	ABSOLUTE METAL CONTENT Au (nanograms)	Cu ASSAY PPM	ABSOLUTE METAL CONTENT Cu (micrograms)	Zn ASSAY PPM	ABSOLUTE METAL CONTENT Zn (micrograms)	As ASSAY PPM	ABSOLUTE METAL CONTENT As (micrograms)	Ag ASSAY PPM	ABSOLUTE METAL CONTENT Ag (micrograms)
PLS88-95-03-3/4H	23.3	0.71	16.5	18	419.4	16	372.8	-2	-46.6	1.2	28.0
PLS88-95-04-3/4H	23.3	185	4310.5	24	559.2	13	302.9	-2	-46.6	-0.1	-2.3
PLS88-95-05-3/4H	23.3	37	862.1	37	862.1	15	349.5	5	116.5	-0.1	-2.3
PLS88-96-01-3/4H	23.3	192	4473.6	117	2726.1	27	629.1	40	932.0	-0.1	-2.3
PLS88-96-02-3/4H	23.3	159	3704.7	91	2120.3	23	535.9	15	349.5	-0.1	-2.3
PLS88-96-03-3/4H	23.3	171	3984.3	89	2073.7	19	442.7	20	466.0	-0.1	-2.3
PLS88-96-04-3/4H	23.3	230	5359.0	85	1980.5	14	326.2	17	396.1	0.1	2.3
PLS88-96-05-3/4H	23.3	63	1467.9	77	1794.1	18	419.4	12	279.6	-0.1	-2.3
PLS88-96-06-3/4H	23.3	202	4706.6	79	1840.7	21	489.3	25	582.5	0.3	7.0
PLS88-96-07-3/4H	23.3	92	2143.6	64	1491.2	17	396.1	24	559.2	-0.1	-2.3
PLS88-96-08-3/4H	23.3	88	2050.4	75	1747.5	22	512.6	32	745.6	-0.1	-2.3
PLS88-96-09-3/4H	23.3	182	4240.6	72	1677.6	19	442.7	24	559.2	-0.1	-2.3
PLS88-96-10-3/4H	23.3	92	2143.6	99	2306.7	31	722.3	43	1001.9	-0.1	-2.3
PLS88-96-11-3/4H	23.3	298	6943.4	136	3168.8	34	792.2	32	745.6	0.1	2.3
PLS88-96-12-3/4H	23.3	142	3308.6	169	3937.7	39	908.7	76	1770.8	0.2	4.7
PLS88-96-13-3/4H	23.3	79	1840.7	136	3168.8	32	745.6	67	1561.1	0.1	2.3
8-96-14-3/4H	23.3	67	1561.1	147	3425.1	30	699.0	58	1351.4	-0.1	-2.3
38-96-15-3/4H	23.3	53	1234.9	130	3029.0	41	955.3	76	1770.8	0.2	4.7
PLS88-96-16-3/4H	23.3	280	6524.0	188	4380.4	31	722.3	48	1118.4	-0.1	-2.3
PLS88-96-17-3/4H	23.3	2208	51446.4	136	3168.8	42	978.6	46	1071.8	0.1	2.3
PLS88-97-01-3/4H	23.3	261	6081.3	52	1211.6	20	466.0	23	535.9	-0.1	-2.3
PLS88-97-02-3/4H	23.3	138	3215.4	62	1444.6	17	396.1	22	512.6	-0.1	-2.3
PLS88-97-03-3/4H	23.3	147	3425.1	61	1421.3	18	419.4	22	512.6	-0.1	-2.3
PLS88-97-04-3/4H	23.3	126	2935.8	55	1281.5	17	396.1	24	559.2	0.8	18.6
PLS88-97-05-3/4H	23.3	743	17311.9	46	1071.8	16	372.8	16	372.8	-0.1	-2.3
PLS88-97-06-3/4H	23.3	402	9366.6	79	1840.7	19	442.7	28	652.4	-0.1	-2.3
PLS88-97-07-3/4H	23.3	670	15611.0	48	1118.4	15	349.5	30	699.0	-0.1	-2.3
PLS88-97-08-3/4H	23.3	407	9483.1	42	978.6	14	326.2	17	396.1	-0.1	-2.3
PLS88-97-09-3/4H	23.3	383	8923.9	39	908.7	17	396.1	10	233.0	-0.1	-2.3
PLS88-97-10-3/4H	23.3	122	2842.6	65	1514.5	18	419.4	18	419.4	0.5	11.7
PLS88-97-11-3/4H	23.3	221	5149.3	104	2423.2	29	675.7	30	699.0	-0.1	-2.3
PLS88-97-12-3/4H	23.3	144	3355.2	97	2260.1	36	838.8	30	699.0	-0.1	-2.3
PLS88-97-13-3/4H	23.3	273	6360.9	108	2516.4	36	838.8	130	3029.0	-0.1	-2.3
PLS88-98-01-3/4H	23.3	11	256.3	20	466.0	15	349.5	-2	-46.6	-0.1	-2.3
PLS88-98-02-3/4H	23.3	-5	-116.5	17	396.1	13	302.9	-2	-46.6	-0.1	-2.3
PLS88-98-03-3/4H	23.3	428	9972.4	25	582.5	16	372.8	-2	-46.6	-0.1	-2.3
PLS88-98-04-3/4H	23.3	281	6547.3	25	582.5	11	256.3	6	139.8	-0.1	-2.3
PLS88-98-05-3/4H	23.3	115	2679.5	60	1398.0	15	349.5	37	862.1	-0.1	-2.3
PLS88-98-06-3/4H	23.3	268	6244.4	64	1491.2	18	419.4	31	722.3	-0.1	-2.3
PLS-88-98-07-3/4H	23.3	200	4660.0	53	1234.9	29	675.7	21	489.3	0.2	4.7
PLS-88-98-08-3/4H	23.3	76	1770.8	62	1444.6	39	908.7	17	396.1	0.1	2.3
88-98-09-3/4H	23.3	82	1910.6	51	1188.3	28	652.4	20	466.0	-0.1	-2.3
38-98-10-3/4H	23.3	110	2563.0	90	2097.0	32	745.6	29	675.7	0.2	4.7
PLS-88-98-11-3/4H	23.3	367	8551.1	75	1747.5	27	629.1	27	629.1	-0.1	-2.3
PLS-88-98-12-3/4H	23.3	390	9087.0	135	3145.5	37	862.1	41	955.3	0.2	4.7
PLS-88-98-13-3/4H	23.3	94	2190.2	103	2399.9	43	1001.9	32	745.6	-0.1	-2.3
PLS-88-99-01-3/4H	23.3	554	12908.2	64	1491.2	30	699.0	7	163.1	-0.1	-2.3

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OVERBURDEN DRILLING MANAGEMENT

Absolute Metal Content for Heavy Mineral Concentrates

SAMPLE NUMBER	WEIGHT (g) NON-MAG	Au ASSAY PPB	ABSOLUTE METAL CONTENT Au (nanograms)	Cu ASSAY PPM	ABSOLUTE METAL CONTENT Cu (micrograms)	Zn ASSAY PPM	ABSOLUTE METAL CONTENT Zn (micrograms)	As ASSAY PPM	ABSOLUTE METAL CONTENT As (micrograms)	Ag ASSAY PPM	ABSOLUTE METAL CONTENT Ag (micrograms)
PLS-88-99-02-3/4H	23.3	97	2260.1	40	932.0	19	442.7	5	116.5	-0.1	-2.3
PLS-88-100-01-3/4H	23.3	4624	107739.2	67	1561.1	40	932.0	11	256.3	0.6	14.0
PLS-88-101-01-3/4H	23.3	1360	31688.0	62	1444.6	29	675.7	9	209.7	-0.1	-2.3
PLS-88-101-02-3/4H	23.3	308	7176.4	46	1071.8	17	396.1	3	69.9	-0.1	-2.3
PLS-88-101-03-3/4H	23.3	7740	180342.0	59	1374.7	33	768.9	13	302.9	0.7	16.3
PLS-88-102-01-3/4H	23.3	119	2772.7	113	2632.9	48	1118.4	8	186.4	-0.1	-2.3
PLS-88-102-02-3/4H	23.3	5000	116500.0	169	3937.7	26	605.8	10	233.0	0.3	7.0
PLS-88-102-03-3/4H	23.3	254	5918.2	98	2283.4	50	1165.0	5	116.5	0.1	2.3
PLS-88-102-04-3/4H	23.3	59	1374.7	40	932.0	32	745.6	5	116.5	-0.1	-2.3
PLS-88-102-05-3/4H	23.3	98	2283.4	172	4007.6	38	885.4	24	559.2	0.5	11.7
PLS-88-103-01-3/4H	23.3	19	442.7	49	1141.7	23	535.9	3	69.9	0.1	2.3
PLS-88-103-02-3/4H	23.3	23	535.9	24	559.2	19	442.7	2	46.6	-0.1	-2.3
PLS88-103-03-3/4H	23.3	17	396.1	15	349.5	15	349.5	2	46.6	-0.1	-2.3

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OVERBURDEN DRILLING MANAGEMENT

Absolute Metal Content for Heavy Mineral Concentrates

SAMPLE NUMBER	WEIGHT (g) NON-MAG	Au ASSAY PPB	ABSOLUTE METAL CONTENT Au (nanograms)	Cu ASSAY PPM	ABSOLUTE METAL CONTENT Cu (micrograms)	Zn ASSAY PPM	ABSOLUTE METAL CONTENT Zn (micrograms)	As ASSAY PPM	ABSOLUTE METAL CONTENT As (micrograms)	Ag ASSAY PPM	ABSOLUTE METAL CONTENT Ag (micrograms)
PLS88-103-04-3/4H	27.0	58	1566.0	19	513.0	17	459.0	2	54.0	-0.1	-2.7
PLS88-104-01-3/4H	29.6	1120	33152.0	109	3226.4	45	1332.0	31	917.6	-0.1	-3.0
PLS88-104-02-3/4H	32.7	1130	36951.0	87	2844.9	24	784.8	52	1700.4	0.3	9.8
PLS88-104-03-3/4H	30.9	831	25677.9	81	2502.9	43	1328.7	16	494.4	-0.1	-3.1
PLS88-104-04-3/4H	31.2	655	20436.0	63	1965.6	26	811.2	77	2402.4	-0.1	-3.1
PLS88-105-01-3/4H	29.4	1287	37837.8	91	2675.4	36	1058.4	55	1617.0	-0.1	-2.9
PLS88-105-02-3/4H	27.8	1315	36557.0	82	2279.6	39	1084.2	20	556.0	-0.1	-2.8
PLS88-105-03-3/4H	24.7	894	22081.8	93	2297.1	36	889.2	35	864.5	-0.1	-2.5
PLS88-105-04-3/4H	27.9	757	21120.3	79	2204.1	33	920.7	57	1590.3	-0.1	-2.8
PLS88-105-05-3/4H	22.0	1258	27676.0	102	2244.0	29	638.0	42	924.0	-0.1	-2.2
PLS88-105-06-3/4H	33.8	408	13790.4	59	1994.2	24	811.2	22	743.6	-0.1	-3.4
PLS88-105-07-3/4H	22.3	434	9678.2	98	2185.4	23	512.9	9	200.7	-0.1	-2.2
PLS88-106-01-3/1H	31.5	622	19593.0	125	3937.5	44	1386.0	30	945.0	0.1	3.2
PLS88-106-02-3/4H	29.6	185	5476.0	111	3285.6	32	947.2	12	355.2	-0.1	-3.0
PLS88-106-03-3/4H	29.4	101	2969.4	101	2969.4	31	911.4	11	323.4	-0.1	-2.9
PLS88-106-04-3/4H	33.7	259	8728.3	98	3302.6	30	1011.0	14	471.8	-0.1	-3.4
8-106-05-3/4H	30.8	48	1478.4	101	3110.8	31	954.8	25	770.0	-0.1	-3.1
8-106-06-3/4H	22.5	192	4320.0	98	2205.0	37	832.5	28	630.0	-0.1	-2.3
PLS88-106-07-3/4H	20.2	258	5211.6	157	3171.4	31	626.2	41	828.2	-0.1	-2.0
PLS88-107-01-3/4H	21.6	429	9266.4	126	2721.6	35	756.0	35	756.0	0.2	4.3
PLS88-108-01-3/1H	38.7	170	6582.4	65	2516.8	13	503.4	3	116.2	-0.1	-3.9
PLS88-110-01-3/4H	27.9	3139	87578.1	186	5189.4	48	1339.2	75	2092.5	0.3	8.4
PLS88-110-02-3/4H	35.1	1089	38223.9	437	15338.7	48	1684.8	135	4738.5	0.5	17.6
PLS88-110-03-3/4H	28.9	628	18149.2	228	6589.2	46	1329.4	77	2225.3	0.1	2.9
PLS88-110-04-3/4H	34.2	195	6669.0	158	5403.6	39	1333.8	53	1812.6	-0.1	-3.4
PLS88-110-05-3/4H	22.8	193	4400.4	177	4035.6	50	1140.0	85	1938.0	0.2	4.6
PLS88-110-06-3/4H	28.7	90	2583.0	151	4333.7	47	1348.9	48	1377.6	0.1	2.9
PLS88-110-07-3/4H	26.6	45	1197.0	149	3963.4	44	1170.4	46	1223.6	-0.1	-2.7
PLS88-110-08-3/4H	15.0	3750	56250.0	95	1425.0	30	450.0	672	10080.0	-0.1	-1.5
PLS88-111-01-3/4H	38.1	1583	60312.3	99	3771.9	34	1295.4	52	1981.2	0.3	11.4
PLS88-111-02-3/4H	32.0	956	30592.0	155	4960.0	49	1568.0	53	1696.0	0.3	9.6
PLS88-111-03-3/4H	42.4	542	22980.8	136	5766.4	35	1484.0	36	1526.4	-0.1	-4.2
PLS88-111-04-3/4H	31.2	233	7269.6	178	5553.6	49	1528.8	83	2589.6	-0.1	-3.1
PLS88-112-01-3/4H	21.2	291	6169.2	167	3540.4	44	932.8	54	1144.8	-0.1	-2.1
PLS88-113-01-3/4H	27.2	224	6092.8	44	1196.8	17	462.4	3	81.6	-0.1	-2.7
PLS88-113-02-3/4H	35.7	318	11359.0	104	3714.9	39	1393.1	41	1464.5	0.1	3.6
PLS88-114-01-3/4H	29.8	7230	215454.0	164	4887.2	64	1907.2	61	1817.8	0.1	3.0
PLS88-114-02-3/4H	23.4	4618	108061.2	196	4586.4	52	1216.8	56	1310.4	0.7	16.4
PLS88-115-01-3/4H	29.5	2983	87998.5	171	5044.5	33	973.5	34	1003.0	0.2	5.9
PLS88-116-01-3/4H	29.8	2651	78999.8	131	3903.8	30	894.0	33	983.4	0.1	3.0
PLS88-116-02-3/4H	4.0	1313	5252.0	47	188.0	23	92.0	7	28.0	-0.1	-0.4
8-116-03-3/4H	29.4	1704	50097.6	109	3204.6	31	911.4	33	970.2	0.2	5.9
8-116-04-3/4H	24.0	1014	24336.0	152	3648.0	38	912.0	23	552.0	-0.1	-2.4
PLS88-117-01-3/4H	26.9	307	8258.3	103	2770.7	42	1129.8	53	1425.7	0.2	5.4
PLS88-117-02-3/4H	20.3	408	8282.4	181	3674.3	44	893.2	101	2050.3	0.1	2.0
PLS88-117-03-3/4H	35.0	754	26390.0	65	2275.0	22	770.0	76	2660.0	-0.1	-3.5
PLS88-117-04-3/4H	32.0	344	11008.0	82	2624.0	17	544.0	8	256.0	-0.1	-3.2

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PLS88-117-05-3/4H	26.4	22700	599280.0	124	3273.6	15	396.0	5	132.0	-0.1	-2.6
PLS88-117-06-3/4H	16.4	1390	22796.0	133	2181.2	19	311.6	14	229.6	-0.1	-1.6
PLS88-117-07-3/4H	17.8	2360	42008.0	54	961.2	19	338.2	13	231.4	0.1	1.8
PLS88-117-08-3/4H	16.2	2526	40921.2	138	2235.6	20	324.0	16	259.2	0.4	6.5
PLS88-118-01-3/4H	25.9	921	23853.9	57	1476.3	21	543.9	17	440.3	-0.1	-2.6
PLS88-118-02-3/4H	21.2	1008	21369.6	55	1166.0	19	402.8	14	296.8	-0.1	-2.1
PLS88-118-03-3/4H	24.8	5732	142153.6	28	694.4	16	396.8	3	74.4	-0.1	-2.5
PLS88-118-04-3/4H	22.1	7590	167739.0	13	287.3	19	419.9	6	132.6	-0.1	-2.2
PLS88-119-01-3/4H	31.3	1121	35087.3	233	7292.9	44	1377.2	50	1565.0	0.2	6.3
PLS88-119-02-3/4H	30.6	2051	62760.6	128	3916.8	37	1132.2	51	1560.6	-0.1	-3.1
PLS88-119-03-3/4H	36.9	204	7527.6	193	7121.7	35	1291.5	30	1107.0	-0.1	-3.7
PLS88-120-01-3/4H	30.6	382	11689.2	90	2754.0	27	826.2	12	367.2	-0.1	-3.1
PLS88-120-02-3/4H	21.9	632	13840.8	70	1533.0	17	372.3	5	109.5	-0.1	-2.2
PLS88-120-03-3/4H	30.2	1086	32797.2	82	2476.4	14	422.8	2	60.4	-0.1	-3.0
PLS88-120-04-3/4H	32.0	80	2560.0	89	2848.0	16	512.0	6	192.0	-0.1	-3.2
PLS88-120-05-3/4H	20.9	358	7482.2	90	1881.0	16	334.4	5	104.5	-0.1	-2.1
8-120-06-3/4H	26.6	1025	27265.0	87	2314.2	19	505.4	22	585.2	0.2	5.3
8-120-07-3/4H	28.3	377	10669.1	376	10640.8	15	424.5	17	481.1	0.2	5.7
PLS88-121-01-3/4H	31.5	753	23719.5	133	4189.5	32	1008.0	40	1260.0	0.3	9.5
PLS88-121-02-3/4H	32.9	220	7238.0	149	4902.1	31	1019.9	23	756.7	-0.1	-3.3
PLS88-121-03-3/4H	31.2	451	14071.2	140	4368.0	36	1123.2	17	530.4	0.1	3.1
PLS88-121-04-3/4H	18.9	255	4819.5	132	2494.8	37	699.3	49	926.1	0.1	1.9
PLS88-121-05-3/4H	27.9	383	10685.7	148	4129.2	32	892.8	38	1060.2	0.1	2.8
PLS88-121-06-3/4H	25.9	171	4428.9	139	3600.1	35	906.5	52	1346.8	0.2	5.2
PLS88-121-07-3/4H	27.4	232	6356.8	165	4521.0	36	986.4	43	1178.2	0.1	2.7
PLS88-121-08-3/4H	24.8	171	4240.8	194	4811.2	28	694.4	35	868.0	-0.1	-2.5
PLS88-121-09-3/4H	34.0	266	9044.0	156	5304.0	36	1224.0	41	1394.0	0.1	3.4
PLS88-121-10-3/4H	19.2	68	1305.6	277	5318.4	26	499.2	25	480.0	-0.1	-1.9
PLS88-122-01-3/4H	32.7	318	10398.6	145	4741.5	38	1242.6	42	1373.4	0.3	9.8
PLS88-122-02-3/4H	35.9	194	6964.6	221	7933.9	45	1615.5	34	1220.6	0.5	18.0
PLS88-122-03-3/4H	28.1	300	8430.0	155	4355.5	39	1095.9	37	1039.7	0.1	2.8
PLS88-122-04-3/4H	26.6	100	2660.0	167	4442.2	41	1090.6	42	1117.2	0.2	5.3
PLS88-122-05-3/4H	33.1	1019	33728.9	277	9168.7	38	1257.8	25	827.5	0.3	9.9
PLS88-122-06-3/4H	28.0	192	5376.0	294	8232.0	31	868.0	36	1008.0	0.1	2.8
PLS88-122-07-3/4H	22.1	206	4552.6	185	4088.5	43	950.3	86	1900.6	0.3	6.6
PLS88-122-08-3/4H	25.9	199	5154.1	167	4325.3	47	1217.3	73	1890.7	0.2	5.2
PLS88-122-09-3/4H	24.6	234	5756.4	193	4747.8	48	1180.8	66	1623.6	-0.1	-2.5
PLS88-122-10-3/4H	28.0	80	2240.0	153	4284.0	131	3668.0	54	1512.0	-0.1	-2.8
PLS88-122-11-3/4H	22.6	834	18848.4	142	3209.2	38	858.8	54	1220.4	0.1	2.3
PLS88-122-12-3/4H	24.6	126	3099.6	156	3837.6	43	1057.8	54	1328.4	0.1	2.5
PLS88-122-13-3/4H	24.2	413	9994.6	132	3194.4	26	629.2	57	1379.4	0.1	2.4
8-123-01-3/4H	23.0	754	17342.0	185	4255.0	59	1357.0	53	1219.0	0.1	2.3
-123-02-3/4H	21.5	946	20339.0	184	3956.0	60	1290.0	96	2064.0	0.1	2.2
PLS88-123-03-3/4H	31.4	816	25622.4	146	4584.4	50	1570.0	46	1444.4	-0.1	-3.1
PLS88-123-04-3/4H	31.3	210	6573.0	156	4882.8	30	939.0	71	2222.3	-0.1	-3.1
PLS88-123-05-3/4H	43.3	340	14722.0	151	6538.3	39	1688.7	89	3853.7	0.3	13.0
PLS88-123-06-3/4H	53.4	264	14097.6	191	10199.4	31	1655.4	71	3791.4	-0.1	-5.3

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Absolute Metal Content for Heavy Mineral Concentrates

SAMPLE NUMBER	WEIGHT (g) NON-MAG	Au ASSAY PPB	ABSOLUTE METAL CONTENT Au (nanograms)	Cu ASSAY PPM	ABSOLUTE METAL CONTENT Cu (micrograms)	Zn ASSAY PPM	ABSOLUTE METAL CONTENT Zn (micrograms)	As ASSAY PPM	ABSOLUTE METAL CONTENT As (micrograms)	Ag ASSAY PPM	ABSOLUTE METAL CONTENT Ag (micrograms)
PLS88-123-07-3/4H	33.5	270	9045.0	129	4321.5	40	1340.0	51	1708.5	0.1	3.4
PLS88-123-08-3/4H	28.8	112	3225.6	142	4089.6	34	979.2	47	1353.6	0.2	5.8
PLS88-123-09-3/4H	28.7	1832	52578.4	153	4391.1	43	1234.1	51	1463.7	0.1	2.9
PLS88-123-10-3/4H	30.2	468	14133.6	135	4077.0	30	906.0	24	724.8	-0.1	-3.0
PLS88-123-11-3/4H	22.7	1044	23698.8	110	2497.0	17	385.9	5	113.5	0.1	2.3
PLS88-124-01-3/4H	26.3	1835	48260.5	221	5812.3	71	1867.3	24	631.2	0.2	5.3
PLS88-124-02-3/4H	25.8	906	23374.8	333	8591.4	67	1728.6	52	1341.6	0.2	5.2
PLS88-124-03-3/4H	30.1	150	4515.0	315	9481.5	70	2107.0	48	1444.8	-0.1	-3.0
PLS88-126-01-3/4H	22.9	2590	59311.0	215	4923.5	70	1603.0	76	1740.4	0.8	18.3
PLS88-127-01-3/4H	31.0	2203	68293.0	165	5115.0	40	1240.0	27	837.0	-0.1	-3.1
PLS88-127-02-3/4H	40.9	572	23394.8	188	7689.2	41	1676.9	70	2863.0	-0.1	-4.1
PLS88-127-03-3/4H	26.2	10587	277379.4	188	4925.6	43	1126.6	28	733.6	0.1	2.6
PLS88-127-04-3/4H	37.4	286	10696.4	207	7741.8	59	2206.6	40	1496.0	-0.1	-3.7
PLS88-129-01-3/4H	37.8	397	15006.6	263	9941.4	78	2948.4	49	1852.2	0.2	7.6
PLS88-131-01-3/4H	30.4	306	9302.4	43	1307.2	22	668.8	3	91.2	-0.1	-3.0
PLS88-131-02-3/4H	42.7	436	18625.9	111	4741.9	42	1794.2	10	427.2	-0.1	-4.3
8-132-01-3/4H	44.5	83	3693.5	237	10546.5	127	5651.5	93	4138.5	0.4	17.8
8-134-01-3/4H	38.1	247	9410.7	60	2286.0	118	4495.8	9	342.9	-0.1	-3.8
PLS88-134-02-3/4H	47.5	62	2945.0	33	1567.5	48	2280.0	3	142.5	1.5	71.3
PLS88-134-03-3/4H	40.2	146	5869.2	26	1045.2	37	1487.4	5	201.0	-0.1	-4.0
PLS88-134-04-3/4H	32.2	44	1416.8	28	901.6	31	998.2	2	64.4	-0.1	-3.2
PLS88-134-05-3/4H	39.3	76	2986.8	32	1257.6	29	1139.7	-2	-78.6	-0.1	-3.9
PLS88-135-01-3/4H	45.1	259	11680.9	182	8208.2	80	3608.0	48	2164.8	0.2	9.0
PLS88-135-02-3/4H	36.2	36	1303.2	165	5973.0	71	2570.2	78	2823.6	0.2	7.2
PLS88-135-03-3/4H	39.6	100	3962.0	213	8439.1	50	1981.0	60	2377.2	0.3	11.9
PLS88-135-04-3/4H	34.9	70	2443.0	183	6386.7	41	1430.9	54	1884.6	-0.1	-3.5
PLS88-135-05-3/4H	30.8	62	1909.6	172	5297.6	55	1694.0	53	1632.4	0.1	3.1
PLS88-135-06-3/4H	41.8	74	3093.2	203	8485.4	41	1713.8	60	2508.0	0.1	4.2
PLS88-135-07-3/4H	19.6	908	17796.8	200	3920.0	64	1254.4	108	2116.8	0.4	7.8
PLS88-135-08-3/4H	30.0	2600	78000.0	170	5100.0	44	1320.0	77	2310.0	0.3	9.0
PLS88-136-01-3/4H	21.2	822	17426.4	251	5321.2	72	1526.4	57	1208.4	0.1	2.1
PLS-88-137-01-3/4H	15.9	302	4801.8	116	1844.4	35	556.5	13	206.7	0.2	3.2
PLS-88-137-02-3/4H	17.8	304	5411.2	59	1050.2	34	605.2	15	267.0	-0.1	-1.8
PLS-88-137-03-3/4H	22.8	137	3123.6	124	2827.2	37	843.6	9	205.2	0.1	2.3
PLS-88-137-04-3/4H	22.8	167	3807.6	66	1504.8	24	547.2	8	182.4	-0.1	-2.3
PLS-88-137-05-3/4H	30.4	233	7083.2	84	2553.6	31	942.4	26	790.4	0.1	3.0
PLS-88-137-06-3/4H	31.9	121	3859.9	165	5263.5	26	829.4	67	2137.3	-0.1	-3.2
PLS-88-137-07-3/4H	31.5	230	7245.0	198	6237.0	39	1228.5	35	1102.5	0.2	6.3
PLS-88-137-08-3/4H	30.7	213	6539.1	150	4605.0	37	1135.9	338	10376.6	0.2	6.1
PLS-88-137-09-3/4H	27.2	639	17380.8	153	4161.6	60	1632.0	182	4950.4	0.4	10.9
PLS-88-138-01-3/4H	29.7	80	2376.0	40	1188.0	25	742.5	6	178.2	-0.1	-3.0
88-138-02-3/4H	25.7	135	3469.5	37	950.9	29	745.3	4	102.8	-0.1	-2.6
8-138-03-3/4H	24.1	117	2819.7	51	1229.1	20	482.0	5	120.5	-0.1	-2.4
PLS-88-138-04-3/4H	21.1	82	1730.2	92	1941.2	29	611.9	29	611.9	-0.1	-2.1
PLS-88-138-05-3/4H	27.6	54	1490.4	155	4278.0	39	1076.4	35	966.0	0.2	5.5
PLS-88-138-06-3/4H	29.4	34	999.6	100	2940.0	61	1793.4	30	882.0	0.2	5.9
PLS-88-139-01-3/4H	28.2	106	2989.2	39	1099.8	24	676.8	8	225.6	-0.1	-2.8

MINNOVA

OVERBURDEN DRILLING MANAGEMENT

Absolute Metal Content for Heavy Mineral Concentrates

SAMPLE NUMBER	WEIGHT (g) NON-MAG	Au ASSAY PPB	ABSOLUTE METAL CONTENT Au (nanograms)	Cu ASSAY PPM	ABSOLUTE METAL CONTENT Cu (micrograms)	Zn ASSAY PPM	ABSOLUTE METAL CONTENT Zn (micrograms)	As ASSAY PPM	ABSOLUTE METAL CONTENT As (micrograms)	Ag ASSAY PPM	ABSOLUTE METAL CONTENT Ag (micrograms)
PLS-88-139-02-3/4H	27.9	111	3096.9	63	1757.7	28	781.2	18	502.2	0.2	5.6
PLS-88-139-03-3/4H	27.7	341	9445.7	100	2770.0	37	1024.9	31	858.7	0.1	2.8
PLS-88-139-04-3/4H	25.8	249	6424.2	113	2915.4	42	1083.6	30	774.0	-0.1	-2.6
PLS-88-139-05-3/4H	17.3	359	6210.7	129	2231.7	55	951.5	41	709.3	-0.1	-1.7
PLS-88-140-01-3/4H	29.7	177	5256.9	85	2524.5	25	742.5	13	386.1	-0.1	-3.0
PLS-88-140-02-3/4H	27.0	151	4077.0	92	2484.0	26	702.0	29	783.0	0.1	2.7
PLS-88-140-03-3/4H	26.1	40	1044.0	126	3288.6	31	809.1	22	574.2	-0.1	-2.6
PLS-88-140-04-3/4H	36.4	109	3967.6	135	4914.0	20	728.0	23	837.2	-0.1	-3.6
PLS-88-140-05-3/4H	24.8	297	7365.6	96	2380.8	30	744.0	31	768.8	-0.1	-2.5
PLS-88-140-06-3/4H	32.3	285	9205.5	92	2971.6	35	1130.5	42	1356.6	0.1	3.2
PLS-88-141-01-3/4H	30.9	226	6983.4	34	1050.6	24	741.6	3	92.7	-0.1	-3.1
PLS-88-141-02-3/4H	31.1	70	2177.0	80	2488.0	18	559.8	16	497.6	-0.1	-3.1
PLS-88-141-03-3/4H	40.7	165	6715.5	53	2157.1	19	773.3	13	529.1	-0.1	-4.1
PLS-88-141-04-3/4H	30.1	162	4876.2	86	2588.6	26	782.6	16	481.6	0.4	12.0
PLS-88-141-05-3/4H	31.5	271	8536.5	98	3087.0	29	913.5	14	441.0	0.1	3.2
PLS-88-141-06-3/4H	26.5	254	6731.0	102	2703.0	38	1007.0	16	424.0	-0.1	-2.7
88-141-07-3/4H	23.8	218	5188.4	77	1832.6	19	452.2	22	523.6	0.1	2.4
-88-141-08-3/4H	20.7	209	4326.3	67	1386.9	19	393.3	24	496.8	-0.1	-2.1
PLS-88-141-09-3/4H	24.1	265	6386.5	177	4265.7	29	698.9	304	7326.4	-0.1	-2.4
PLS-88-141-10-3/4H	34.1	1555	53025.5	151	5149.1	28	954.8	39	1329.9	0.2	6.8
PLS-88-142-01-3/4H	25.8	70	1806.0	71	1831.8	33	851.4	11	283.8	-0.1	-2.6
PLS-88-142-02-3/4H	19.3	124	2393.2	68	1312.4	15	289.5	10	193.0	-0.1	-1.9
PLS-88-142-03-3/4H	27.1	48	1300.8	31	840.1	14	379.4	-2	-54.2	-0.1	-2.7
PLS-88-142-04-3/4H	21.3	266	5665.8	146	3109.8	19	404.7	13	276.9	0.2	4.3
PLS-88-142-05-3/4H	29.8	540	16092.0	132	3933.6	18	536.4	27	804.6	0.1	3.0
PLS-88-142-06-3/4H	26.2	24	628.8	141	3694.2	25	655.0	29	759.8	-0.1	-2.6
PLS-88-142-07-3/4H	27.5	191	5252.5	133	3657.5	20	550.0	22	605.0	0.4	11.0
PLS-88-142-08-3/4H	27.3	234	6388.2	109	2975.7	25	682.5	13	354.9	-0.1	-2.7
PLS-88-142-09-3/4H	20.7	205	4243.5	102	2111.4	20	414.0	13	269.1	-0.1	-2.1
PLS-88-143-01-3/4H	15.6	113	1762.8	82	1279.2	18	280.8	-2	-31.2	-0.1	-1.6
PLS-88-143-02-3/4H	29.6	283	8376.8	48	1420.8	20	592.0	-2	-59.2	-0.1	-3.0
PLS-88-143-03-3/4H	32.0	84	2688.0	92	2944.0	25	800.0	15	480.0	-0.1	-3.2
PLS-88-143-04-3/4H	32.9	111	3651.9	72	2368.8	13	427.7	9	296.1	-0.1	-3.3
PLS-88-143-05-3/4H	30.1	88	2648.8	127	3822.7	23	692.3	23	692.3	-0.1	-3.0
PLS-88-143-06-3/4H	28.7	76	2181.2	108	3099.6	20	574.0	17	487.9	-0.1	-2.9
PLS-88-143-07-3/4H	29.3	175	5127.5	151	4424.3	41	1201.3	11	322.3	-0.1	-2.9
PLS-88-143-08-3/4H	29.2	109	3182.8	150	4380.0	34	992.8	17	496.4	0.1	2.9
PLS-88-143-09-3/4H	31.7	148	4691.6	139	4406.3	32	1014.4	26	824.2	-0.1	-3.2
PLS-88-144-01-3/4H	28.7	94	2697.8	94	2697.8	20	574.0	-2	-57.4	-0.1	-2.9
PLS-88-144-02-3/4H	29.3	58	1699.4	142	4160.6	13	380.9	17	498.1	-0.1	-2.9
PLS-88-144-03-3/4H	29.4	270	7938.0	137	4027.8	23	676.2	22	646.8	0.2	5.9
88-144-04-3/4H	29.5	199	5870.5	178	5251.0	32	944.0	33	973.5	-0.1	-3.0
8-144-05-3/4H	23.0	1089	25047.0	285	6555.0	46	1058.0	34	782.0	-0.1	-2.3
PLS-88-144-06-3/4H	30.4	1207	36692.8	168	5107.2	45	1368.0	140	4256.0	0.2	6.1
PLS-88-144-07-3/4H	33.7	491	16546.7	142	4785.4	54	1819.8	266	8964.2	0.6	20.2
PLS-88-145-01-3/4H	23.3	171	3984.3	170	3961.0	39	908.7	140	3262.0	0.1	2.3
PLS-88-145-02-3/4H	15.4	413	6360.2	199	3064.6	36	554.4	98	1509.2	0.1	1.5

MINNOVA

OVERBURDEN DRILLING MANAGEMENT

Absolute Metal Content for Heavy Mineral Concentrates

SAMPLE NUMBER	WEIGHT (g) NON-MAG	Au ASSAY PPB	ABSOLUTE METAL CONTENT Au (nanograms)	Cu ASSAY PPM	ABSOLUTE METAL CONTENT Cu (micrograms)	Zn ASSAY PPM	ABSOLUTE METAL CONTENT Zn (micrograms)	As ASSAY PPM	ABSOLUTE METAL CONTENT As (micrograms)	Ag ASSAY PPM	ABSOLUTE METAL CONTENT Ag (micrograms)
PLS-88-146-01-3/4H	25.5	75	1912.5	150	3825.0	27	688.5	51	1300.5	0.1	2.6
PLS-88-146-02-3/4H	30.0	107	3210.0	132	3960.0	31	930.0	8	240.0	-0.1	-3.0
PLS-88-146-03-3/4H	33.5	551	18458.5	120	4020.0	41	1373.5	25	837.5	-0.1	-3.4
PLS-88-146-04-3/4H	30.2	317	9573.4	185	5587.0	38	1147.6	43	1298.6	-0.1	-3.0
PLS-88-146-05-3/4H	24.8	306	7588.8	199	4935.2	47	1165.6	53	1314.4	-0.1	-2.5
PLS-88-146-06-3/4H	31.2	284	8860.8	136	4243.2	51	1591.2	49	1528.8	-0.1	-3.1
PLS-88-146-07-3/4H	41.9	464	19441.6	189	7919.1	49	2053.1	61	2555.9	-0.1	-4.2
PLS-88-146-08-3/4H	18.2	237	4313.4	168	3057.6	46	837.2	94	1710.8	0.1	1.8
PLS-88-146-09-3/4H	42.4	98	4155.2	141	5978.4	46	1950.4	56	2374.4	-0.1	-4.2
PLS-88-146-10-3/4H	29.8	158	4708.4	166	4946.8	43	1281.4	71	2115.8	0.1	3.0
PLS-88-146-11-3/4H	30.5	162	4941.0	153	4666.5	72	2196.0	84	2562.0	-0.1	-3.1
PLS-88-146-12-3/4H	29.3	182	5332.6	153	4482.9	31	908.3	42	1230.6	0.2	5.9
PLS-88-146-13-3/4H	32.8	119	3903.2	157	5149.6	46	1508.8	47	1541.6	-0.1	-3.3
PLS-88-147-01-3/4H	24.8	152	3772.6	159	3946.4	30	744.6	168	4169.8	0.1	2.5
PLS-88-147-02-3/4H	34.1	216	7365.6	160	5456.0	33	1125.3	192	6547.2	0.3	10.2
PLS-88-147-03-3/4H	26.1	98	2557.8	210	5481.0	33	861.3	112	2923.2	0.4	10.4
-88-147-04-3/4H	37.3	60	2238.0	90	3357.0	23	857.9	42	1566.6	0.6	22.4
38-147-05-3/4H	29.9	1142	34145.8	251	7504.9	34	1016.6	44	1315.6	0.1	3.0
PLS88-147-06-3/4H	34.2	87	2975.4	172	5882.4	47	1607.4	56	1915.2	-0.1	-3.4
PLS88-147-07-3/4H	32.1	99	3177.9	138	4429.8	49	1572.9	70	2247.0	-0.1	-3.2
PLS88-147-08-3/4H	29.0	1002	29058.0	152	4408.0	52	1508.0	128	3712.0	0.2	5.8
PLS88-147-09-3/4H	27.7	165	4570.5	171	4736.7	51	1412.7	146	4044.2	0.2	5.5
PLS88-147-10-3/4H	30.0	870	26100.0	267	8010.0	43	1290.0	123	3690.0	-0.1	-3.0
PLS88-147-11-3/4H	31.9	189	6029.1	159	5072.1	45	1435.5	78	2488.2	-0.1	-3.2
PLS88-147-12-3/4H	30.5	160	4880.0	141	4300.5	45	1372.5	46	1403.0	-0.1	-3.1
PLS88-147-13-3/4H	32.7	252	8240.4	163	5330.1	47	1536.9	52	1700.4	0.1	3.3
PLS88-147-14-3/4H	26.3	431	11335.3	144	3787.2	49	1288.7	49	1288.7	-0.1	-2.6
PLS88-147-15-3/4H	17.5	114	1995.0	132	2310.0	46	805.0	40	700.0	0.1	1.8
PLS88-148-01-3/4H	29.4	73	2146.2	145	4263.0	41	1205.4	53	1558.2	-0.1	-2.9
PLS88-148-02-3/4H	30.1	474	14267.4	304	9150.4	39	1173.9	46	1384.6	0.1	3.0
PLS88-149-01-3/4H	26.2	162	4244.4	170	4454.0	46	1205.2	151	3956.2	0.5	13.1
PLS88-149-02-3/4H	26.5	115	3047.5	372	9858.0	62	1643.0	126	3339.0	0.5	13.3
PLS88-149-03-3/4H	30.0	81	2430.0	147	4410.0	34	1020.0	96	2880.0	-0.1	-3.0
PLS88-149-04-3/4H	18.4	106	1950.4	106	1950.4	25	460.0	37	680.8	-0.1	-1.8
PLS88-149-05-3/4H	29.4	149	4380.6	109	3204.6	30	882.0	55	1617.0	0.2	5.9

APPENDIX F

ONE-QUARTER CONCENTRATE EXAMINATIONS, PANNINGS AND INA ANALYSES

MINNOVA - 1/4 Concentrate Panning For High 3/4 Concentrate Measured Assays

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MINTAN.WK1
TOTAL # OF PANNINGS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS							NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
				ABRADED		IRREGULAR		DELICATE		TOTAL			
				T	P	T	P	T	P				
PLS-88													
02-04	Y	NO VISIBLE GOLD											EST. 1% PYRITE
13-02	Y	25 X 25	5 C		1					1			EST. 75% PYRITE
													10% ARSENOPYRITE (LARGE CRYSTALS)
										1	16.4	1	BOTH PYRITE AND ARSENOPYRITE
													ATTACHED TO QUARTZ
15-02	Y	50 X 75	13 C		1					1			EST. 75% PYRITE
													10% ARSENOPYRITE (LARGE CRYSTALS)
										1	15.4	24	BOTH PYRITE AND ARSENOPYRITE
													ATTACHED TO QUARTZ
16-02	Y	NO VISIBLE GOLD											EST. 40% PYRITE
													1% ARSENOPYRITE (LARGE CRYSTALS)
22-06	Y	NO VISIBLE GOLD											EST. 7% PYRITE
24-03	Y	NO VISIBLE GOLD											EST. 5% PYRITE
24-11	Y	NO VISIBLE GOLD											EST. 4% PYRITE
26-02	Y	NO VISIBLE GOLD											EST. 5% PYRITE
27-05	Y	50 X 75	13 C				1			1			EST. 6% PYRITE
										1	4.9	76	
50-03	Y	50 X 75	13 C		1					1			EST. 5% PYRITE
										1	5.3	70	
55-04	Y	25 X 75	10 C		1					1			EST. 10% PYRITE
		100 X 100	20 C						1	1			5 GRAINS ARSENOPYRITE
										2	5.7	297	
58-01	Y	25 X 50	8 C						1	1			EST. 5% PYRITE
		50 X 75	13 C		1					1			10 GRAINS ARSENOPYRITE
		50 X 125	18 C		1					1			
										3	7.4	198	
59-03	Y	50 X 75	13 C		1					1			EST. 3% PYRITE
										1	9.2	41	
66-08	Y	NO VISIBLE GOLD											EST. 2% PYRITE
66-09	Y	25 X 25	5 C						1	1			EST. 6% PYRITE
		50 X 50	10 C						1	1			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MINTAN.WR1
TOTAL # OF PANNINGS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS							NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
				ABRADED		IRREGULAR		DELICATE		TOTAL			
				T	P	T	P	T	P				
PLS-88													
										2	5.0	43	
66-10	Y	25 X 25	5 C						1	1			EST. 7% PYRITE
		25 X 75	10 C						1	1			
		50 X 50	10 C						1	1			
		50 X 75	13 C						2	2			
		100 X 125	22 C		1					1			
										6	6.0	546	
66-11	Y	NO VISIBLE GOLD											EST. 2% PYRITE
70-04	Y	75 X 125	20 C						1	1			EST. 1% PYRITE
										1	6.5	231	
74-05	Y	NO VISIBLE GOLD											EST.4% PYRITE, 5000 MARCASITE BALLS 10 GRAINS CHALCOPYRITE
75-08	Y	75 X 75	15 C		1					1			EST. 10% PYRITE
		100 X 125	22 C		1					1			5 GRAINS CHALCOPYRITE 2 GRAINS MOLYBENITE
										2	14.8	187	
78-04	Y	25 X 25	5 C						3	3			EST. 1 % PYRITE
		25 X 50	8 C						1	1			
		50 X 50	8 C						2	2			
		50 X 75	13 C						1	1			
		50 X 100	15 C						1	1			
		100 X 125	22 C						1	1			
										9	8.0	459	
79-03	Y	NO VISIBLE GOLD											EST. 0.5% PYRITE, 5 GRAINS GALENA 5 GRAINS CHALCOPYRITE
79-11	Y	NO VISIBLE GOLD											EST. 1% PYRITE
80-01	Y	50 X 75	13 C						1	1			EST. 0.5% PYRITE
										1	6.7	56	
96-17	Y	NO VISIBLE GOLD											EST. 3% PYRITE
100-01	Y	50 X 50	10 C						1	1			EST. 1% PYRITE
		75 X 75	15 C				1			1			
		75 X 125	20 C						1	1			
		100 X 100	20 C						1	1			

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MINTAN.WR1
TOTAL # OF PANNINGS

				NUMBER OF GRAINS									
				ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG	CALC V.G. ASSAY	
SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	T	P	T	P	T	P		GMS	PPB	REMARKS
PLS-88													
										4	2.6	1474	
104-01	Y	25 X 25	5 C				1			1			EST. 1.5% PYRITE
		25 X 50	8 C				1			1			50 GRAINS GALENA
		50 X 75	13 C				2			2			
										4	8.0	107	
105-01	Y	50 X 75	13 C		1					1			EST. 2% PYRITE
										1	8.2	45	
105-02	Y	25 X 25	5 C						2	2			EST. 0.5% PYRITE
		25 X 50	8 C						2	2			
		50 X 75	13 C						1	1			
		50 X 100	15 C						1	1			
										6	7.2	170	
110-01	Y	25 X 25	5 C						2	2			EST. 4% PYRITE
		25 X 75	10 C						1	1			
		50 X 50	10 C		1					1			
		100 X 125	22 C		1					1			
										5	7.0	365	
115-01	Y	25 X 25	5 C		1					1			EST. 3% PYRITE
		25 X 75	10 C		1					1			1 GRAIN MOLYBDENITE
		50 X 50	10 C						1	1			10 GRAINS CHALCOPYRITE
		50 X 75	13 C				1			1			
		50 X 100	15 C				1			1			
		75 X 75	15 C		1					1			
		75 X 100	18 C		1					1			
		75 X 175	25 C						1	1			
										8	8.1	737	
116-01	Y	25 X 50	8 C						3	3			EST. 1% PYRITE
		50 X 50	10 C						2	2			
		50 X 75	13 C						2	2			
		50 X 175	22 C						1	1			
		75 X 75	15 C						2	2			
										10	7.6	629	
116-03	Y	25 X 75	10 C						2	2			EST. 2% PYRITE

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MINTAN.WR1
TOTAL # OF PANNINGS

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
PLS-88													
		75 X 125	20 C				1			1			
										3	7.7	245	
116-04	Y	25 X 50	8 C						1	1			EST. 2% PYRITE
		100 X 150	25 C				1			1			
		125 X 200	31 C						1	1			
										3	6.7	1375	
117-08	Y	25 X 75	10 C						1	1			EST. 1% PYRITE
		50 X 50	10 C						2	2			
		50 X 100	15 C		1					1			
										4	3.9	312	
118-02	Y	25 X 25	5 C						1	1			EST. 2% PYRITE
		50 X 50	10 C						1	1			
		50 X 75	13 C		1				1	2			
										4	5.1	189	
119-02	Y	25 X 25	5 C				1			1			EST. 30% PYRITE
		25 X 75	10 C		1					1			
		50 X 50	10 C		2		1			3			
		75 X 75	15 C		1					1			
		75 X 100	18 C						1	1			
										7	8.6	284	
120-03	Y	25 X 25	5 C		1					1			EST. 0.5% PYRITE
										1	8.0	3	
120-06	Y	50 X 75	13 C				1			1			EST. 1% PYRITE
		50 X 100	15 C				1			1			
										2	7.3	139	
123-09	Y	25 X 25	5 C						1	1			EST. 1% PYRITE
										1	7.2	3	
123-11	Y	NO VISIBLE GOLD											EST. 0.5% PYRITE
124-01	Y	25 X 50	8 C		1					1			EST. 2% PYRITE

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MINTAN.WR1
TOTAL # OF PANNINGS

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
PLS-88													
										1	6.9	12	
126-01	Y	50 X 50	10 C		1					1			EST. 2.5% PYRITE
										1	5.2	37	
127-01	Y	50 X 50	10 C		1					1			EST. 2% PYRITE 5 GRAINS CHALCOPYRITE
										1	6.8	28	
127-03	Y	50 X 100	15 C						1	1			EST. 3% PYRITE
										1	5.4	119	
135-08	Y	25 X 50	8 C						2	2			EST. 3% PYRITE
		50 X 75	13 C						1	1			
		125 X 150	27 C						1	1			
										4	7.5	582	
144-06	Y	50 X 75	13 C		3					3			EST. 3% PYRITE
		75 X 125	20 C		1					1			
										4	8.1	323	
147-05	Y	NO VISIBLE GOLD											EST. 6% PYRITE
147-08	Y	NO VISIBLE GOLD											EST. 3% PYRITE

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Geochemical Lab Report

REPORT: 088-53702.0

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS Au PPB
PLS88-02-04-1/4	44
PLS88-13-02-1/4	6160
PLS88-15-02-1/4	3880
PLS88-16-02-1/4	675
PLS88-22-06-1/4	22
PLS88-24-03-1/4	19
PLS88-24-11-1/4	59
PLS88-26-02-1/4	40
PLS88-27-05-1/4	200
PLS88-50-03-1/4	260
PLS88-55-04-1/4	698
PLS88-58-01-1/4	280
PLS88-59-03-1/4	67
PLS88-66-08-1/4	27
PLS88-66-09-1/4	320
PLS88-66-10-1/4	2770
PLS88-66-11-1/4	470
PLS88-70-04-1/4	150
PLS88-74-05-1/4	45
PLS88-75-08-1/4	300
PLS88-78-04-1/4	1120
PLS88-79-03-1/4	71
PLS88-79-11-1/4	36
PLS88-80-01-1/4	140
PLS88-96-17-1/4	120
PLS88-100-01-1/4	2650
PLS88-104-01-1/4	1080
PLS88-105-01-1/4	460
PLS88-105-02-1/4	770
PLS88-110-01-1/4	1190
PLS88-115-01-1/4	1870
PLS88-116-01-1/4	875
PLS88-116-03-1/4	784
PLS88-116-04-1/4	619
PLS88-117-08-1/4	645
PLS88-118-02-1/4	517
PLS88-119-02-1/4	566
PLS88-120-03-1/4	47
PLS88-120-06-1/4	668
PLS88-123-091/4	1400
PLS88-123-111/4	100
PLS88-124-01-1/4	63
PLS88-126-01-1/4	628
PLS88-127-01-1/4	200
PLS88-127-03-1/4	180
PLS88-135-08-1/4	2240
PLS88-147-05-1/4	19
PLS88-147-08-1/4	210
PLS88-147-09-1/4	200

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

KEVIN.WR1
TOTAL # OF PANNINGS

NUMBER OF GRAINS

SAMPLE #	PANNED	DIAMETER	THICKNESS	ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
	Y/N			T	P	T	P	T	P				
PLS-88													
35-07	Y	25 X 50	8 C						1	1			EST. 4% PYRITE
													5 GRAINS GALENA
										1			5 GRAINS ARSENOPYRITE
71-01	Y	NO VISIBLE GOLD											EST. 0.1% PYRITE
78-03	Y	25 X 25	5 C				1			1			EST. 0.1% PYRITE
		50 X 75	13 C		1				1	2			
										3			
78-05	Y	50 X 75	13 C				1			1			EST. 3% PYRITE
		50 X 125	18 C		1					1			
										2			
78-06	Y	25 X 25	5 C						1	1			EST. 3% PYRITE
		25 X 100	13 C		1					1			
										2			
78-08	Y	50 X 100	15 C		1					1			EST. 3% PYRITE
										1			
79-07	Y	50 X 75	13 C		1					1			EST. 0.5% PYRITE
										1			
140-05	Y	50 X 75	13 C		1					1			EST. 2% PYRITE
										1			
140-06	Y	50 X 50	10 C		1					1			EST. 0.4% PYRITE
		50 X 100	15 C		1					1			
										2			
142-04	Y	NO VISIBLE GOLD											EST. 0.3% PYRITE
142-09	Y	NO VISIBLE GOLD											EST. 0.2% PYRITE

GOLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

kevin2.wr1
TOTAL # OF PANNINGS

				NUMBER OF GRAINS									
				ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG	CALC V.G. ASSAY	
SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	T	P	T	P	T	P		GMS	PPB	REMARKS
PLS-88													
61-02	Y	NO VISIBLE GOLD											TRACE PYRITE
74-01	Y	NO VISIBLE GOLD											TRACE PYRITE
74-02	Y	NO VISIBLE GOLD											EST. 2% PYRITE. TRACE ARSENOPYRITE
74-03	Y	NO VISIBLE GOLD											EST. 5% PYRITE 100 GRAINS MRACASITE
74-04	Y	NO VISIBLE GOLD											EST. 3% PYRITE 100 GRAINS MARCASITE
74-05	Y	NO VISIBLE GOLD											EST. 3% PYRITE
75-05	Y	NO VISIBLE GOLD											EST. 0.5% PYRITE
83-01	Y	NO VISIBLE GOLD											EST. 0.5% PYRITE
84-01	Y	50 X 75	13 C						1	1			NO SULPHIDES
										1			
90-03	Y	NO VISIBLE GOLD											EST. 1% PYRITE
91-01	Y	NO VISIBLE GOLD											EST. 0.1% PYRITE

1/4 Concentrate Examinations For Non-Auriferous Anomalies

PLS-88

29-04	Check Ag 3.4	Est. 10% pyrite; Ag unexplained
36-07	Check Ag 4.5	Sample pyroxene and sphene rich (Est. 50% of sample). Only 2% pyrite. Ag unexplained
80-06	Check Ag 15.0	Est. 15% pyrite and marcasite; Ag unexplained
80-08	Check As 992. Cu 749	Est. 45% pyrite and marcasite mostly present as disem. in rock chips (Est. approx. 60% of sample is ground rock chips)

APPENDIX G

MINUS 250 MESH OVERBURDEN ANALYSES

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Geochemical Lab Report

REPORT: 088-52739.0

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt grs	SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt gns
PLS-88-01-01		<5		PLS-88-11-08		5	
PLS-88-01-02		82	11.00	PLS-88-12-01		<5	10.00
PLS-88-01-03		<10	5.00	PLS-88-12-02		<5	18.00
PLS-88-01-04		<35	1.40	PLS-88-13-01		<6	9.00
PLS-88-01-05		18	17.00	PLS-88-13-02		130	12.00
PLS-88-01-06		<5	14.00	PLS-88-14-01		<13	4.00
PLS-88-01-07		17	9.00	PLS-88-14-02		<5	27.00
PLS-88-01-08		8	27.00	PLS-88-15-01		60	7.00
PLS-88-02-01		<6	9.00	PLS-88-15-02		27	
PLS-88-02-02		<7	7.00	PLS-88-16-01		<5	16.00
PLS-88-02-03		<5	18.00	PLS-88-16-02		<5	16.00
PLS-88-02-04		<5	27.00	PLS-88-17-01		<17	3.00
PLS-88-03-01		<5	10.00	PLS-88-17-02		<5	
PLS-88-03-02		<5	11.00	PLS-88-18-01		<5	12.00
PLS-88-03-03		<5	21.00	PLS-88-18-02		23	25.00
PLS-88-03-04		<5		PLS-88-19-01		<5	17.00
PLS-88-03-05		23	17.00	PLS-88-19-02		<5	24.00
PLS-88-03-06		<13	4.00	PLS-88-24-12		<5	13.00
PLS-88-04-01		<5	10.00	PLS-88-24-13		<5	10.00
PLS-88-04-02		32	16.00	PLS-88-25-01		<5	22.00
PLS-88-04-03		26	7.00	PLS-88-25-02		<50	1.00
PLS-88-04-04		24	10.00	PLS-88-25-03		<10	5.00
PLS-88-05-01		<7	7.00	PLS-88-25-04		<5	
PLS-88-05-02		<17	3.00	PLS-88-25-05		<5	
PLS-88-05-03		<5	1.00	PLS-88-25-06		<5	17.00
PLS-88-06-01		<5	20.00	PLS-88-26-01		<5	14.00
PLS-88-07-01		<50	1.01	PLS-88-26-02		5	
PLS-88-07-02		100	3.00	PLS-88-27-01		93	12.00
PLS-88-07-03		5		PLS-88-27-02		15	14.00
PLS-88-08-01		<5	23.00	PLS-88-27-03		<5	10.00
PLS-88-09-01		<5	23.00	PLS-88-27-04		<5	27.00
PLS-88-09-02		<25	2.00	PLS-88-27-05		5	
PLS-88-10-01		7		PLS-88-27-06		46	13.00
PLS-88-11-01		<5	15.00	PLS-88-28-01		<8	6.00
PLS-88-11-02		<5	19.00	PLS-88-28-02		<7	7.00
PLS-88-11-03		<7	7.00	PLS-88-28-03		<10	5.00
PLS-88-11-04		53	9.00	PLS-88-28-04		<5	10.00
PLS-88-11-05		<5	11.00	PLS-88-28-05		<6	9.00
PLS-88-11-06		47	16.00	PLS-88-28-06		<5	13.00
PLS-88-11-07		<6	9.00	PLS-88-28-07		12	

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REPORT: 088-52739.0

PROJECT: NONE PAGE 2

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt gms	SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt gms
PLS-88-29-01		<33	1.50				
PLS-88-29-02		24	16.00				
PLS-88-29-03		<5					
PLS-88-29-04		<8	6.00				
PLS-88-30-01		<28	1.77				
PLS-88-30-02		<7	7.00				
PLS-88-30-03		9	20.00				
PLS-88-30-04		<38	1.30				
PLS-88-30-05		12	17.00				
PLS-88-30-06		44					
PLS-88-31-01		<6	8.00				
PLS-88-31-02		<34	1.45				
PLS-88-31-03		<13	4.00				
PLS-88-31-04		<8	6.00				

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REPORT: 088-53619.0

PROJECT: NONE

PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt gms
PLS-88-19-03		<5	11.00
PLS-88-20-01		20	9.00
PLS-88-20-02		<5	16.00
PLS-88-20-03		<5	15.00
PLS-88-20-04		<6	9.00
PLS-88-20-05		<28	1.81
PLS-88-20-06		<14	3.54
PLS-88-20-07		<5	
PLS-88-20-08		<10	5.09
PLS-88-20-09		174	5.00
PLS-88-20-10		<10	5.00
PLS-88-20-11		<14	3.47
PLS-88-20-12		<8	6.00
PLS-88-20-13		<11	4.67
PLS-88-20-14		<5	14.00
PLS-88-20-15		8	
PLS-88-21-01		<6	9.00
PLS-88-21-02		<5	18.00
PLS-88-22-01		<5	15.00
PLS-88-22-02		<5	15.00
PLS-88-22-03		<5	23.00
PLS-88-22-04		<6	8.00
PLS-88-22-05		<7	7.00
PLS-88-22-06		<14	3.60
PLS-88-22-07		<9	5.50
PLS-88-22-08		<5	12.00
PLS-88-22-09		19	8.00
PLS-88-22-10		23	9.00
PLS-88-22-11		<6	8.00
PLS-88-23-01		<9	5.45
PLS-88-23-02		<14	3.50
PLS-88-23-03		<15	3.33
PLS-88-23-04		<10	5.00
PLS-88-23-05		<7	7.00
PLS-88-23-06		<11	4.75
PLS-88-23-07		<8	6.00
PLS-88-23-08		<20	2.45
PLS-88-23-09		<6	9.00
PLS-88-23-10		<11	4.56
PLS-88-23-11		<10	5.00

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt gms
PLS-88-23-12		<12	4.10
PLS-88-23-13		<12	4.30
PLS-88-23-14		410	2.78
PLS-88-24-01		<10	5.00
PLS-88-24-02		158	4.00
PLS-88-24-03		460	1.63
PLS-88-24-04		<25	2.00
PLS-88-24-05		<25	2.00
PLS-88-24-06		<25	2.00
PLS-88-24-07		1212	0.52
PLS-88-24-08		<31	1.62
PLS-88-24-09		<98	0.51
PLS-88-24-10		<28	1.80
PLS-88-24-11		<25	2.00

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PROJECT: CONTINUE PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt gms	SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt gms
PLS88-31-05		40	6.00	PLS88-39-04		<5	24.00
PLS88-31-06		<5	11.00	PLS88-39-05		14	19.00
PLS88-31-07		<7	7.00	PLS88-39-06		<5	23.00
PLS88-31-08		<6	8.00	PLS88-40-01		8	19.00
PLS88-31-09		<5	15.00	PLS88-40-02		45	4.00
PLS88-31-10		159	14.00	PLS88-41-01		<6	9.00
PLS88-32-01		13	18.00	PLS88-41-02		50	
PLS88-32-02		<5	30.00	PLS88-42-01		<8	6.00
PLS88-33-01		<10	5.00	PLS88-42-02		64	7.00
PLS88-33-02		<5	16.00	PLS88-43-01		<5	25.00
PLS88-33-03		<8	6.00	PLS88-43-02		19	8.00
PLS88-34-01		<25	2.00	PLS88-44-01		<5	18.00
PLS88-34-02		<6	8.00	PLS88-45-01		8	
PLS88-34-03		<25	2.00	PLS88-45-02		108	13.00
PLS88-34-04		<8	6.00	PLS88-46-01		<10	5.00
PLS88-34-05		<25	2.00	PLS88-46-02		<6	8.00
PLS88-34-06		17	9.00	PLS88-46-03		<5	11.00
PLS88-34-07		<5	11.00	PLS88-46-04		<5	23.00
PLS88-34-08		<17	3.00	PLS88-46-05		16	11.00
PLS88-35-01		<17	3.00	PLS88-46-06		<5	15.00
PLS88-35-02		<10	5.00	PLS88-47-01		<5	28.00
PLS88-35-03		<5	10.00	PLS88-48-01		12	15.00
PLS88-35-04		23	13.00	PLS88-49-01		<13	4.00
PLS88-35-05		<25	2.00	PLS88-49-02		<5	16.00
PLS88-35-06		<25	2.00	PLS88-50-01		<5	18.00
PLS88-35-07		35	6.00	PLS88-50-02		43	12.00
PLS88-36-01		<25	2.00	PLS88-50-03		<16	3.12
PLS88-36-02		38	1.32	PLS88-51-01		14	13.00
PLS88-36-03		<25	2.00	PLS88-51-02		<5	14.00
PLS88-36-04		<6	8.00	PLS88-52-01		<17	3.00
PLS88-36-05		38	4.00	PLS88-53-01		33	11.00
PLS88-36-06		<10	5.00	PLS88-53-02		<5	26.00
PLS88-36-07		<8	6.00	PLS88-54-01		<5	15.00
PLS88-37-01		24	16.00	PLS88-54-02		50	3.00
PLS88-37-02		<5	22.00	PLS88-54-03		<5	13.00
PLS88-38-01		<17	3.00	PLS88-54-04		<6	8.00
PLS88-38-02		74		PLS88-54-05		<10	5.00
PLS88-39-01		90	2.00	PLS88-55-01		19	8.00
PLS88-39-02		<5	15.00	PLS88-55-02		<5	14.00
PLS88-39-03		<5	26.00	PLS88-55-03		<6	9.00

REPORT: 088-52914.0

PROJECT: CONTINUE

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt gms	SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt gms
PLS88-55-04		<7	7.00				
PLS88-55-05		<5	25.00				
PLS88-56-01		<5	18.00				
PLS88-57-01		<5	11.00				
PLS88-57-02		<8	6.00				
PLS88-58-01		<6	8.00				
PLS88-59-01		<5	15.00				
PLS88-59-02		<50	1.00				
PLS88-59-03		<17	4.00				
PLS88-59-04		56	7.00				
PLS88-59-05		<7	7.00				
PLS88-60-01		45					
PLS88-60-02		11	25.00				
PLS88-60-03		<5	18.00				
PLS88-60-04		<6	8.00				
PLS88-60-05		<5	16.00				

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REPORT: 088-53040.0

PROJECT: PN-090 114 116 PAGE 1

SAMPLE	ELEMENT	Au	Testwt
NUMBER	UNITS	PPB	gms
PLS88-61-01		10	16.00
PLS88-61-02		1511	8.00
PLS88-62-01		<5	23.00
PLS88-63-01		8	13.00
PLS88-63-02		41	13.00
PLS88-63-03		446	4.00
PLS88-64-01		45	3.00
PLS88-64-02		102	1.05
PLS88-64-03		93	1.30
PLS88-64-04		92	9.00
PLS88-64-05		40	4.00
PLS88-65-01		76	2.00
PLS88-65-02		83	2.00
PLS88-65-03		20	22.00
PLS88-65-04		20	9.00
PLS88-66-01		66	1.64
PLS88-66-02		141	1.32
PLS88-66-03		185	1.50
PLS88-66-04		28	4.00
PLS88-66-05		39	8.00
PLS88-66-06		14	26.00
PLS88-66-07		37	12.00
PLS88-66-08		8	12.00
PLS88-66-09		21	12.00
PLS88-66-10		86	25.00
PLS88-66-11		10	22.00
PLS88-67-01		27	5.00
PLS88-67-02		109	2.00
PLS88-67-03		50	7.00
PLS88-67-04		6	21.00
PLS88-67-05		19	7.00
PLS88-67-06		8	12.00
PLS88-67-07		12	7.00
PLS88-67-08		7	17.00
PLS88-67-09		8	9.00
PLS88-68-01		14	5.00
PLS88-68-02		10	9.00
PLS88-68-03		13	13.00
PLS88-69-01		122	6.00
PLS88-69-02		8	11.00

SAMPLE	ELEMENT	Au	Testwt
NUMBER	UNITS	PPB	gms
PLS88-69-03		26	5.00
PLS88-70-01		<5	20.00
PLS88-70-02		9	11.00
PLS88-70-03		52	5.00
PLS88-70-04		14	9.00
PLS88-71-01		21	8.00
PLS88-71-02		NS	
PLS88-72-01		74	2.00
PLS88-73-01		14	15.00
PLS88-73-02		9	13.00
PLS88-73-03		36	18.00
PLS88-73-04		9	22.00
PLS88-74-01		231	1.83
PLS88-74-02		78	1.27
PLS88-74-03		50	1.96
PLS88-74-04		56	1.68
PLS88-74-05		45	1.55
PLS88-75-01		24	5.00
PLS88-75-02		97	1.13
PLS88-75-03		15	6.00
PLS88-75-04		340	0.85
PLS88-75-05		210	2.00
PLS88-75-06		24	4.00
PLS88-75-07		66	3.00
PLS88-75-08		30	3.00
PLS88-75-09		20	6.00
PLS88-76-01		92	0.94
PLS88-76-02		<5	9.00
PLS88-77-01		16	7.00
PLS88-78-01		127	1.29
PLS88-78-02		34	12.00
PLS88-78-03		27	8.00
PLS88-78-04		420	10.00
PLS88-78-05		111	20.00
PLS88-78-06		27	18.00
PLS88-78-07		21	7.00
PLS88-78-08		8	12.00
PLS88-79-01		61	16.00
PLS88-79-02		11	28.00
PLS88-79-03		10	23.00

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt grs
PLS88-61-02		<6	1.77

FA-AA test of Bondar-Clegg library split of -250 [initial assay - 1511 ppb. on 8.00g.]

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt gms	SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt gms
PLS88-79-04		26	22.00	PLS88-89-09		10	16.00
PLS88-79-05		20	11.00	PLS88-89-10		<5	24.00
PLS88-79-06		10	30.00	PLS88-89-11		23	15.00
PLS88-79-07		59	12.00	PLS88-89-12		<5	21.00
PLS88-79-08		27	12.00	PLS88-89-13		<5	24.00
PLS88-79-09		<5	13.00	PLS88-89-14		5	19.00
PLS88-79-10		6	11.00	PLS88-89-15		8	15.00
PLS88-79-11		22	30.00	PLS88-89-16		7	14.00
PLS88-80-01		<17	3.00	PLS88-89-17		15	6.00
PLS88-80-02		8	8.00	PLS88-89-18		<8	6.00
PLS88-80-03		7	11.00	PLS88-89-19		11	6.00
PLS88-80-04		12	8.00	PLS88-89-20		50	11.00
PLS88-80-05		10	9.00	PLS88-89-21		35	18.00
PLS88-80-06		6	10.00	PLS88-89-22		7	16.00
PLS88-80-07		16	12.00	PLS88-89-23		18	14.00
PLS88-80-08		17	12.00	PLS88-90-01		27	4.00
PLS88-80-09		92	11.00	PLS88-90-02		8	10.00
PLS88-81-01		13	10.00	PLS88-90-03		88	6.00
PLS88-82-01		20	15.00	PLS88-90-04		29	8.00
PLS88-83-01		50	2.00	PLS88-91-01		55	2.00
PLS88-84-01		67	2.00	PLS88-91-02		35	6.00
PLS88-85-01		15	7.00	PLS88-91-03		43	6.00
PLS88-86-01		8	9.00	PLS88-91-04		56	5.00
PLS88-86-02		<5	17.00	PLS88-92-01		14	7.00
PLS88-87-01		159	2.00	PLS88-92-02		9	14.00
PLS88-87-02		24	3.00	PLS88-92-03		51	9.00
PLS88-87-03		<5	18.00	PLS88-92-04		66	20.00
PLS88-87-04		8	10.00	PLS88-93-01		<5	11.00
PLS88-87-05		6	19.00	PLS88-94-01		11	14.00
PLS88-88-01		53	1.67	PLS88-94-02		<5	13.00
PLS88-88-02		91	1.00	PLS88-95-01		13	7.00
PLS88-88-03		30	4.00	PLS88-95-02		10	13.00
PLS88-89-01		35	3.00	PLS88-95-03		48	11.00
PLS88-89-02		133	1.00	PLS88-95-04		83	9.00
PLS88-89-03		13	9.00	PLS88-95-05		92	8.00
PLS88-89-04		27	6.00	PLS88-96-01		18	9.00
PLS88-89-05		<5	22.00	PLS88-96-02		19	27.00
PLS88-89-06		<5	25.00	PLS88-96-03		9	23.00
PLS88-89-07		46	16.00	PLS88-96-04		<5	30.00
PLS88-89-08		11	17.00	PLS88-96-05		<5	14.00

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt gms	SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt gms
PL588-96-06		<5	30.00				

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Au Rew PPB	Testwt gms	SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Au Rew PPB	Testwt gms
PLS88-96-07		33		22.00	PLS88-101-01		80		6.00
PLS88-96-08		<5		15.00	PLS88-101-02		523	<50	9.00
PLS88-96-09		<5		29.00	PLS88-101-03		124	110	7.00
PLS88-96-10		<5			PLS88-102-01		<17		3.00
PLS88-96-11		<5		23.00	PLS88-102-02		330	260	5.00
PLS88-96-12		6			PLS88-102-03		<25		2.00
PLS88-96-13		<5		29.00	PLS88-102-04		<33		1.50
PLS88-96-14		<5		27.00	PLS88-102-05		<17		3.00
PLS88-96-15		<5			PLS88-103-01		IS		IS
PLS88-96-16		<5			PLS88-103-02		<10		5.00
PLS88-96-17		<5		23.00	PLS88-103-03		<13		4.00
PLS88-97-01		<5		12.00	PLS88-103-04		<5		15.00
PLS88-97-02		<17		3.00	PLS88-137-01		<5		11.00
PLS88-97-03		<7		7.00	PLS88-137-02		<13		4.00
PLS88-97-04		<5		10.00	PLS88-137-03		<8		6.00
PLS88-97-05		38		16.00	PLS88-137-04		<5		12.00
PLS88-97-06		<5		14.00	PLS88-137-05		<5		13.00
PLS88-97-07		<5		21.00	PLS88-137-06		105	<31	8.00
PLS88-97-08		<5		28.00	PLS88-137-07		<6		8.00
PLS88-97-09		<5		10.00	PLS88-137-08		<13		4.00
PLS88-97-10		22		15.00	PLS88-137-09		<7		7.00
PLS88-97-11		13			PLS88-138-01		<10		5.00
PLS88-97-12		<5		23.00	PLS88-138-02		<10		5.00
PLS88-97-13		<5		20.00	PLS88-138-03		<25		2.00
PLS88-98-01		<13		4.00	PLS88-138-04		<7		7.00
PLS88-98-02		<6		9.00	PLS88-138-05		<5		14.00
PLS88-98-03		54		5.00	PLS88-138-06		<8		6.00
PLS88-98-04		116	<35	27.00	PLS88-139-01		<5		15.00
PLS88-98-05		<5		24.00	PLS88-139-02		<5		13.00
PLS88-98-06		17		20.00	PLS88-139-03		<5		17.00
PLS88-98-07		17		25.00	PLS88-139-04		<5		11.00
PLS88-98-08		<5		15.00	PLS88-139-05		10		15.00
PLS88-98-09		<5		17.00	PLS88-140-01		<5		15.00
PLS88-98-10		<7		7.00	PLS88-140-02		<6		9.00
PLS88-98-11		<5		14.00	PLS88-140-03		<5		10.00
PLS88-98-12		<10		5.00	PLS88-140-04		<6		8.00
PLS88-98-13		<5			PLS88-140-05		26		7.00
PLS88-99-01		<5		17.00	PLS88-140-06		40		6.00
PLS88-99-02		<7		7.00	PLS88-141-01		45		6.00
PLS88-100-01		<6		8.00	PLS88-141-02		<5		11.00

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SAMPLE	ELEMENT	Au	Au Rew	Testwt
NUMBER	UNITS	PPB	PPB	gms
PLS88-141-03		<6		8.00
PLS88-141-04		<5		20.00
PLS88-141-05		49		11.00
PLS88-141-06		<6		8.00
PLS88-141-07		<7		7.00
PLS88-141-08		12		13.00
PLS88-141-09		18		18.00
PLS88-141-10		33		12.00
PLS88-142-01		<5		13.00
PLS88-142-02		<5		11.00
PLS88-142-03		<5		12.00
PLS88-142-04		68		11.00
PLS88-142-05		60		7.00
PLS88-142-06		<5		11.00
PLS88-142-07		<5		12.00
PLS88-142-08		<5		11.00
PLS88-142-09		57		10.00
PLS88-143-01		<6		9.00
PLS88-143-02		8		19.00
PLS88-143-03		<5		10.00
PLS88-143-04		<5		10.00
PLS88-143-05		36		5.00
PLS88-143-06		<5		11.00
PLS88-143-07		<5		11.00
PLS88-143-08		<6		9.00
PLS88-143-09		<5		13.00
PLS88-144-01		<5		13.00
PLS88-144-02		<5		11.00
PLS88-144-03		30		16.00
PLS88-144-04		<5		12.00
PLS88-144-05		<5		11.00
PLS88-144-06		113	<50	13.00
PLS88-144-07		21		7.00
PLS88-145-01		<5		11.00
PLS88-145-02		<5		11.00
PLS88-146-01		<5		26.00
PLS88-146-02		<7		7.00
PLS88-146-03		35		11.00
PLS88-146-04		<5		13.00
PLS88-146-05		15		16.00

SAMPLE	ELEMENT	Au	Au Rew	Testwt
NUMBER	UNITS	PPB	PPB	gms
PLS88-146-06		<6		9.00
PLS88-146-07		37		9.00
PLS88-146-08		<13		4.00
PLS88-146-09		<5		17.00
PLS88-146-10		12		13.00
PLS88-146-11		21		10.00
PLS88-146-12		<5		18.00
PLS88-146-13		<5		14.00

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt gms
PLS88-104-01		56	14.00
PLS88-104-02		75	4.00
PLS88-104-03		25	6.00
PLS88-104-04		53	8.00
PLS88-105-01		9	16.00
PLS88-105-02		141	7.00
PLS88-105-03		55	6.00
PLS88-105-04		14	19.00
PLS88-105-05		21	14.00
PLS88-105-06		30	17.00
PLS88-105-07		15	14.00
PLS88-106-01		68	12.00
PLS88-106-02		<6	8.00
PLS88-106-03		22	11.00
PLS88-106-04		8	19.00
PLS88-106-05		<5	14.00
PLS88-106-06		<5	10.00
PLS88-106-07		<5	17.00
PLS88-107-01		<6	9.00
PLS88-108-01		11	22.00
PLS88-110-01		94	14.00
PLS88-110-02		23	12.00
PLS88-110-03		<10	5.00
PLS88-110-04		27	10.00
PLS88-110-05		<6	9.00
PLS88-110-06		20	21.00
PLS88-110-07		21	21.00
PLS88-110-08		103	11.00
PLS88-111-01		51	16.00
PLS88-111-02		28	13.00
PLS88-111-03		50	9.00
PLS88-111-04		<5	16.00
PLS88-112-01		<5	10.00
PLS88-113-01		<5	18.00
PLS88-113-02		38	15.00
PLS88-114-01		57	11.00
PLS88-114-02		413	8.00
PLS88-115-01		8	
PLS88-116-01		26	7.00
PLS88-116-02		414	5.00

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt gms
PLS88-116-03		18	12.00
PLS88-116-04		<5	11.00
PLS88-117-01		25	12.00
PLS88-117-02		<5	12.00
PLS88-117-03		<8	6.00
PLS88-117-04		<5	12.00
PLS88-117-05		26	8.00
PLS88-117-06		52	11.00
PLS88-117-07		140	12.00
PLS88-117-08		195	4.00
PLS88-118-01		80	6.00
PLS88-118-02		41	21.00
PLS88-118-03		142	19.00
PLS88-118-04		655	6.00
PLS88-119-01		<5	16.00
PLS88-119-02		<10	5.00
PLS88-119-03		<7	7.00
PLS88-120-01		17	
PLS88-120-02		<5	18.00
PLS88-120-03		<5	10.00
PLS88-120-04		<5	25.00
PLS88-120-05		<5	10.00
PLS88-120-06		12	17.00
PLS88-120-07		<5	18.00
PLS88-121-01		14	11.00
PLS88-121-02		<6	8.00
PLS88-121-03		<7	7.00
PLS88-121-04		15	14.00
PLS88-121-05		<5	13.00
PLS88-121-06		10	15.00
PLS88-121-07		<5	17.00
PLS88-121-08		39	19.00
PLS88-121-09		<5	11.00
PLS88-121-10		<5	16.00
PLS88-122-01		<7	7.00
PLS88-122-02		19	17.00
PLS88-122-03		<5	11.00
PLS88-122-04		<5	11.00
PLS88-122-05		<5	20.00
PLS88-122-06		<5	10.00

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt gms
PLS88-122-07		<8	6.00
PLS88-122-08		<5	12.00
PLS88-122-09		<5	14.00
PLS88-122-10		23	8.00
PLS88-122-11		<5	10.00
PLS88-122-12		<5	14.00
PLS88-122-13		<5	
PLS88-123-01		<6	9.00
PLS88-123-02		18	12.00
PLS88-123-03		26	14.00
PLS88-123-04		<7	7.00
PLS88-123-05		<10	5.00
PLS88-123-06		16	11.00
PLS88-123-07		<5	16.00
PLS88-123-08		18	15.00
PLS88-123-09		<5	15.00
PLS88-123-10		11	16.00
PLS88-123-11		<5	21.00
PLS88-124-01		<5	22.00
PLS88-124-02		<5	
PLS88-124-03		<5	18.00
PLS88-126-01		<5	17.00
PLS88-127-01		90	14.00
PLS88-127-02		<13	4.00
PLS88-127-03		<8	6.00
PLS88-127-04		13	18.00
PLS88-129-01		<17	3.00
PLS88-131-01		<6	9.00
PLS88-131-02		12	15.00
PLS88-132-01		<5	25.00
PLS88-134-01		<5	20.00
PLS88-134-02		<8	6.00
PLS88-134-03		24	15.00
PLS88-134-04		<6	8.00
PLS88-134-05		<6	8.00
PLS88-135-01		<10	5.00
PLS88-135-02		35	6.00
PLS88-135-03		<5	11.00
PLS88-135-04		<6	8.00
PLS88-135-05		<5	10.00
PLS88-135-06		45	10.00
PLS88-135-07		<10	5.00
PLS88-135-08		32	16.00
PLS88-136-01		10	22.00
PLS88-147-01		19	8.00
PLS88-147-02		<5	10.00
PLS88-147-03		<5	10.00
PLS88-147-04		<5	10.00
PLS88-147-05		<10	5.00
PLS88-147-06		<5	10.00
PLS88-147-07		<6	8.00
PLS88-147-08		<5	12.00
PLS88-147-09		<6	9.00
PLS88-147-10		<5	10.00
PLS88-147-11		<5	10.00
PLS88-147-12		<5	10.00
PLS88-147-13		<8	6.00
PLS88-147-14		<5	24.00
PLS88-147-15		<5	20.00
PLS88-148-01		11	20.00
PLS88-148-02		<8	6.00
PLS88-149-01		<5	14.00
PLS88-149-02		<13	4.00
PLS88-149-03		<13	4.00
PLS88-149-04		<6	8.00
PLS88-149-05		<6	8.00

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB
PLS-88-07-02		<6
PLS-88-13-02		75

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Testwt grs
PLS-88-20-09		56	0.82
PLS-88-23-14		IS	
PLS-88-24-02		25	1.56

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REPORT: 088-52914.1

PROJECT: CONTINUE PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Au PPB
PLS-88-31-10		<6
PLS-88-45-02		<11

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Geochemical Lab Report

REPORT: 088-53040.2

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB
PLS-88-63-03		<8
PLS-88-64-02		<9
PLS-88-66-02		IS
PLS-88-66-03		<10
PLS-88-67-02		<10
PLS-88-69-01		<6
PLS-88-74-01		IS
PLS-88-75-04		IS
PLS-88-75-05		136
PLS-88-78-01		IS
PLS-88-78-04		108
PLS-88-78-05		<6
PLS-88-87-01		<7
PLS-88-89-02		<9

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Geochemical Lab Report

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB
PLS-88-105-02		<5
PLS-88-110-08		34
PLS-88-114-02		<7
PLS-88-116-02		<9
PLS-88-117-07		115
PLS-88-117-08		1296
PLS-88-118-03		<8
PLS-88-118-04		53

Sample ID	Au PPB	Au Rew PPB	Testwt grms	Sample ID	Au PPB	Au Rew PPB	Testwt grms
PLS-88-01-01	-5			PLS-88-16-01	-5		16
PLS-88-01-02	82		11	PLS-88-16-02	-5		16
PLS-88-01-03	-10		5	PLS-88-17-01	-17		3
PLS-88-01-04	-36		1.4	PLS-88-17-02	-5		
PLS-88-01-05	18		17	PLS-88-18-01	-5		12
PLS-88-01-06	-5		14	PLS-88-18-02	23		25
PLS-88-01-07	17		9	PLS-88-19-01	-5		17
PLS-88-01-08	8		27	PLS-88-19-02	-5		24
PLS-88-02-01	-6		9	PLS-88-19-03	-5		11
PLS-88-02-02	-7		7	PLS-88-20-01	20		9
PLS-88-02-03	-5		18	PLS-88-20-02	-5		16
PLS-88-02-04	-5		27	PLS-88-20-03	-5		15
PLS-88-03-01	-5		10	PLS-88-20-04	-6		9
PLS-88-03-02	-5		11	PLS-88-20-05	-28		1.81
PLS-88-03-03	-5		21	PLS-88-20-06	-14		3.54
PLS-88-03-04	-5			PLS-88-20-07	-5		
PLS-88-03-05	23		17	PLS-88-20-08	-10		5.09
PLS-88-03-06	-13		4	PLS-88-20-09	174	56	5
PLS-88-04-01	-5		10	PLS-88-20-10	-10		5
PLS-88-04-02	32		16	PLS-88-20-11	-14		3.47
PLS-88-04-03	26		7	PLS-88-20-12	-8		6
PLS-88-04-04	24		10	PLS-88-20-13	-11		4.67
PLS-88-05-01	-7		7	PLS-88-20-14	-5		14
PLS-88-05-02	-17		3	PLS-88-20-15	8		
PLS-88-05-03	-5		1	PLS-88-21-01	-6		9
PLS-88-06-01	-5		20	PLS-88-21-02	-5		18
PLS-88-07-01	-50		1.01	PLS-88-22-01	-5		15
PLS-88-07-02	100	-6	3	PLS-88-22-02	-5		15
PLS-88-07-03	5			PLS-88-22-03	-5		23
PLS-88-08-01	-5		23	PLS-88-22-04	-6		8
PLS-88-09-01	-5		23	PLS-88-22-05	-7		7
PLS-88-09-02	-25		2	PLS-88-22-06	-14		3.6
PLS-88-10-01	7			PLS-88-22-07	-9		5.5
PLS-88-11-01	-5		15	PLS-88-22-08	-5		12
PLS-88-11-02	-5		19	PLS-88-22-09	19		8
PLS-88-11-03	-7		7	PLS-88-22-10	23		9
PLS-88-11-04	53		9	PLS-88-22-11	-6		8
PLS-88-11-05	-5		11	PLS-88-23-01	-9		5.45
PLS-88-11-06	47		16	PLS-88-23-02	-14		3.5
PLS-88-11-07	-6		9	PLS-88-23-03	-15		3.33
PLS-88-11-08	5			PLS-88-23-04	-10		5
PLS-88-12-01	-5		10	PLS-88-23-05	-7		7
PLS-88-12-02	-5		18	PLS-88-23-06	-11		4.75
PLS-88-13-01	-6		9	PLS-88-23-07	-8		6
PLS-88-13-02	130	75	12	PLS-88-23-08	-20		2.45
PLS-88-14-01	-13		4	PLS-88-23-09	-6		9
PLS-88-14-02	-5		27	PLS-88-23-10	-11		4.56
PLS-88-15-01	60		7	PLS-88-23-11	-10		5
PLS-88-15-02	27			PLS-88-23-12	-12		4.1

Sample ID	Au PPB	Au Rew PPB	Testwt grms	Sample ID	Au PPB	Au Rew PPB	Testwt grms
PLS-88-23-13	-12		4.3	PLS88-31-08	-6		8
PLS-88-23-14	410	IS	2.78	PLS88-31-09	-5		15
PLS-88-24-01	-10		5	PLS88-31-10	159	-6	14
PLS-88-24-02	158	25	4	PLS88-32-01	13		18
PLS-88-24-03	460		1.63	PLS88-32-02	-5		30
PLS-88-24-04	-25		2	PLS88-33-01	-10		5
PLS-88-24-05	-25		2	PLS88-33-02	-5		16
PLS-88-24-06	-25		2	PLS88-33-03	-8		6
PLS-88-24-07	1212	IS	0.52	PLS88-34-01	-25		2
PLS-88-24-08	-31		1.62	PLS88-34-02	-6		8
PLS-88-24-09	-98		0.51	PLS88-34-03	-25		2
PLS-88-24-10	-28		1.8	PLS88-34-04	-8		6
PLS-88-24-11	-25		2	PLS88-34-05	-25		2
PLS-88-24-12	-5		13	PLS88-34-06	17		9
PLS-88-24-13	-5		10	PLS88-34-07	-5		11
PLS-88-25-01	-5		22	PLS88-34-08	-17		3
PLS-88-25-02	-50		1	PLS88-35-01	-17		3
PLS-88-25-03	-10		5	PLS88-35-02	-10		5
PLS-88-25-04	-5			PLS88-35-03	-5		10
PLS-88-25-05	-5			PLS88-35-04	23		13
PLS-88-25-06	-5		17	PLS88-35-05	-25		2
PLS-88-26-01	-5		14	PLS88-35-06	-25		2
PLS-88-26-02	5			PLS88-35-07	35		6
PLS-88-27-01	93		12	PLS88-36-01	-25		2
PLS-88-27-02	15		14	PLS88-36-02	38		1.32
PLS-88-27-03	-5		10	PLS88-36-03	-25		2
PLS-88-27-04	-5		27	PLS88-36-04	-6		8
PLS-88-27-05	5			PLS88-36-05	38		4
PLS-88-27-06	46		13	PLS88-36-06	-10		5
PLS-88-28-01	-8		6	PLS88-36-07	-8		6
PLS-88-28-02	-7		7	PLS88-37-01	24		16
PLS-88-28-03	-10		5	PLS88-37-02	-5		22
PLS-88-28-04	-5		10	PLS88-38-01	-17		3
PLS-88-28-05	-6		9	PLS88-38-02	74		
PLS-88-28-06	-5		13	PLS88-39-01	90		2
PLS-88-28-07	12			PLS88-39-02	-5		15
PLS-88-29-01	-33		1.5	PLS88-39-03	-5		26
PLS-88-29-02	24		16	PLS88-39-04	-5		24
PLS-88-29-03	-5			PLS88-39-05	14		19
PLS-88-29-04	-8		6	PLS88-39-06	-5		23
PLS-88-30-01	-28		1.77	PLS88-40-01	8		19
PLS-88-30-02	-7		7	PLS88-40-02	45		4
PLS-88-30-03	9		20	PLS88-41-01	-6		9
PLS-88-30-04	-38		1.3	PLS88-41-02	50		
PLS-88-30-05	12		17	PLS88-42-01	-8		6
PLS-88-30-06	44			PLS88-42-02	64		7
PLS-88-31-01	-6		8	PLS88-43-01	-5		25
PLS-88-31-02	-34		1.45	PLS88-43-02	19		8
PLS-88-31-03	-13		4	PLS88-44-01	-5		18
PLS-88-31-04	-8		6	PLS88-45-01	8		
PLS88-31-05	40		6	PLS88-45-02	108	-11	13
PLS88-31-06	-5		11	PLS88-46-01	-10		5
PLS88-31-07	-7		7	PLS88-46-02	-6		8

Sample ID	Au PPB	Au Rew PPB	Testwt grms	Sample ID	Au PPB	Au Rew PPB	Testwt grms
PLS88-46-03	-5		11	PLS88-65-02	83		2
PLS88-46-04	-5		23	PLS88-65-03	20		22
PLS88-46-05	16		11	PLS88-65-04	20		9
PLS88-46-06	-5		15	PLS88-66-01	66		1.64
PLS88-47-01	-5		28	PLS88-66-02	141	IS	1.32
PLS88-48-01	12		15	PLS88-66-03	185	-10	1.5
PLS88-49-01	-13		4	PLS88-66-04	28		4
PLS88-49-02	-5		16	PLS88-66-05	39		8
PLS88-50-01	-5		18	PLS88-66-06	14		26
PLS88-50-02	43		12	PLS88-66-07	37		12
PLS88-50-03	-16		3.12	PLS88-66-08	8		12
PLS88-51-01	14		13	PLS88-66-09	21		12
PLS88-51-02	-5		14	PLS88-66-10	86		25
PLS88-52-01	-17		3	PLS88-66-11	10		22
PLS88-53-01	33		11	PLS88-67-01	27		5
PLS88-53-02	-5		26	PLS88-67-02	109	-10	2
PLS88-54-01	-5		15	PLS88-67-03	50		7
PLS88-54-02	50		3	PLS88-67-04	6		21
PLS88-54-03	-5		13	PLS88-67-05	19		7
PLS88-54-04	-6		8	PLS88-67-06	8		12
PLS88-54-05	-10		5	PLS88-67-07	12		7
PLS88-55-01	19		8	PLS88-67-08	7		17
PLS88-55-02	-5		14	PLS88-67-09	8		9
PLS88-55-03	-6		9	PLS88-68-01	14		5
PLS88-55-04	-7		7	PLS88-68-02	10		9
PLS88-55-05	-5		25	PLS88-68-03	13		13
PLS88-56-01	-5		18	PLS88-69-01	122	IS	6
PLS88-57-01	-5		11	PLS88-69-02	8		11
PLS88-57-02	-8		6	PLS88-69-03	26		5
PLS88-58-01	-6		8	PLS88-70-01	-5		20
PLS88-59-01	-5		15	PLS88-70-02	9		11
PLS88-59-02	-50		1	PLS88-70-03	52		5
PLS88-59-03	-17		4	PLS88-70-04	14		9
PLS88-59-04	56		7	PLS88-71-01	21		8
PLS88-59-05	-7		7	PLS88-72-01	74		2
PLS88-60-01	45			PLS88-73-01	14		15
PLS88-60-02	11		25	PLS88-73-02	9		13
PLS88-60-03	-5		18	PLS88-73-03	36		18
PLS88-60-04	-6		8	PLS88-73-04	9		22
PLS88-60-05	-5		16	PLS88-74-01	231	IS	1.83
PLS88-61-01	10		16	PLS88-74-02	78		1.27
PLS88-61-02	1511	-6	8	PLS88-74-03	50		1.96
PLS88-62-01	-5		23	PLS88-74-04	56		1.68
PLS88-63-01	8		13	PLS88-74-05	45		1.55
PLS88-63-02	41		13	PLS88-75-01	24		5
PLS88-63-03	446	-8	4	PLS88-75-02	97		1.13
PLS88-64-01	45		3	PLS88-75-03	15		6
PLS88-64-02	102	-9	1.05	PLS88-75-04	340	IS	0.85
PLS88-64-03	93		1.3	PLS88-75-05	210	136	2
PLS88-64-04	92		9	PLS88-75-06	24		4
PLS88-64-05	40		4	PLS88-75-07	66		3
PLS88-65-01	76		2				

Sample ID	Au PPB	Au Rew PPB	Testwt grms
PLS88-75-08	30		3
PLS88-75-09	20		6
PLS88-76-01	92		0.94
PLS88-76-02	-8		9
PLS88-77-01	16		7
PLS88-78-01	127	IS	1.29
PLS88-78-02	34		12
PLS88-78-03	27		8
PLS88-78-04	420	108	10
PLS88-78-05	111	-6	20
PLS88-78-06	27		18
PLS88-78-07	21		7
PLS88-78-08	8		12
PLS88-79-01	61		16
PLS88-79-02	11		28
PLS88-79-03	10		23
PLS88-79-04	26		22
PLS88-79-05	20.		11
PLS88-79-06	10		30
PLS88-79-07	59		12
PLS88-79-08	27		12
PLS88-79-09	-5		13
PLS88-79-10	6		11
PLS88-79-11	22		30
PLS88-80-01	-17		3
PLS88-80-02	8		8
PLS88-80-03	7		11
PLS88-80-04	12		8
PLS88-80-05	10		9
PLS88-80-06	6		10
PLS88-80-07	16		12
PLS88-80-08	17		12
PLS88-80-09	92		11
PLS88-81-01	13		10
PLS88-82-01	20		15
PLS88-83-01	50		2
PLS88-84-01	67		2
PLS88-85-01	15		7
PLS88-86-01	8		9
PLS88-86-02	-5		17
PLS88-87-01	159	-7	2
PLS88-87-02	24		3
PLS88-87-03	-5		18
PLS88-87-04	8		10
PLS88-87-05	6		19
PLS88-88-01	53		1.67
PLS88-88-02	91		1
PLS88-88-03	30		4
PLS88-89-01	35		3
PLS88-89-02	133	-9	1
PLS88-89-03	13		9
PLS88-89-04	27		6
PLS88-89-05	-5		22
PLS88-89-06	-5		25
PLS88-89-07	46		16
PLS88-89-08	11		17
PLS88-89-09	10		16
PLS88-89-10	-5		24
PLS88-89-11	23		15
PLS88-89-12	-5		21
PLS88-89-13	-5		24
PLS88-89-14	5		19
PLS88-89-15	8		15
PLS88-89-16	7		14
PLS88-89-17	15		6
PLS88-89-18	-8		6
PLS88-89-19	11		6
PLS88-89-20	50		11
PLS88-89-21	35		18
PLS88-89-22	7		16
PLS88-89-23	18		14
PLS88-90-01	27		4
PLS88-90-02	8		10
PLS88-90-03	88		6
PLS88-90-04	29		8
PLS88-91-01	55		2
PLS88-91-02	35		6
PLS88-91-03	43		6
PLS88-91-04	56		5
PLS88-92-01	14		7
PLS88-92-02	9		14
PLS88-92-03	51		9
PLS88-92-04	66		20
PLS88-93-01	-5		11
PLS88-94-01	11		14
PLS88-94-02	-5		13
PLS88-95-01	13		7
PLS88-95-02	10		13
PLS88-95-03	48		11
PLS88-95-04	83		9
PLS88-95-05	92		8
PLS88-96-01	18		9
PLS88-96-02	19		27
PLS88-96-03	9		23
PLS88-96-04	-5		30
PLS88-96-05	-5		14
PLS88-96-06	-5		30
PLS88-96-07	33		22
PLS88-96-08	-5		15
PLS88-96-09	-5		29
PLS88-96-10	-5		
PLS88-96-11	-5		23

Sample ID	Au PPB	Au Rew PPB	Testwt grms	Sample ID	Au PPB	Au Rew PPB	Testwt grms
PLS88-96-12	6			PLS88-105-01	9		16
PLS88-96-13	-5		29	PLS88-105-02	141	-5	7
PLS88-96-14	-5		27	PLS88-105-03	55		6
PLS88-96-15	-5			PLS88-105-04	14		19
PLS88-96-16	-5			PLS88-105-05	21		14
PLS88-96-17	-5		23	PLS88-105-06	30		17
PLS88-97-01	-5		12	PLS88-105-07	15		14
PLS88-97-02	-17		3	PLS88-106-01	68		12
PLS88-97-03	-7		7	PLS88-106-02	-6		8
PLS88-97-04	-5		10	PLS88-106-03	22		11
PLS88-97-05	38		16	PLS88-106-04	8		19
PLS88-97-06	-5		14	PLS88-106-05	-5		14
PLS88-97-07	-5		21	PLS88-106-06	-5		10
PLS88-97-08	-5		28	PLS88-106-07	-5		17
PLS88-97-09	-5		10	PLS88-107-01	-6		9
PLS88-97-10	22		15	PLS88-108-01	11		22
PLS88-97-11	13			PLS88-110-01	94		14
PLS88-97-12	-5		23	PLS88-110-02	23		12
PLS88-97-13	-5		20	PLS88-110-03	-10		5
PLS88-98-01	-13		4	PLS88-110-04	27		10
PLS88-98-02	-6		9	PLS88-110-05	-6		9
PLS88-98-03	54		5	PLS88-110-06	20		21
PLS88-98-04	116	-35	27	PLS88-110-07	21		21
PLS88-98-05	-5		24	PLS88-110-08	183	34	11
PLS88-98-06	17		20	PLS88-111-01	51		16
PLS88-98-07	17		25	PLS88-111-02	28		13
PLS88-98-08	-5		15	PLS88-111-03	50		9
PLS88-98-09	-5		17	PLS88-111-04	-5		16
PLS88-98-10	-7		7	PLS88-112-01	-5		10
PLS88-98-11	-5		14	PLS88-113-01	-5		18
PLS88-98-12	-10		5	PLS88-113-02	38		15
PLS88-98-13	-5			PLS88-114-01	57		11
PLS88-99-01	-5		17	PLS88-114-02	413	-7	8
PLS88-99-02	-7		7	PLS88-115-01	8		
PLS88-100-01	-6		8	PLS88-116-01	26		7
PLS88-101-01	80		6	PLS88-116-02	414	-9	5
PLS88-101-02	523	-50	9	PLS88-116-03	18		12
PLS88-101-03	124	110	7	PLS88-116-04	-5		11
PLS88-102-01	-17		3	PLS88-117-01	25		12
PLS88-102-02	330	260	5	PLS88-117-02	-5		12
PLS88-102-03	-25		2	PLS88-117-03	-8		6
PLS88-102-04	-33		1.5	PLS88-117-04	-5		12
PLS88-102-05	-17		3	PLS88-117-05	26		8
PLS88-103-01	IS		IS	PLS88-117-06	52		11
PLS88-103-02	-10		5	PLS88-117-07	140	115	12
PLS88-103-03	-13		4	PLS88-117-08	195	1296	4
PLS88-103-04	-5		15	PLS88-118-01	80		6
PLS88-104-01	56		14	PLS88-118-02	41		21
PLS88-104-02	75		4	PLS88-118-03	142	-8	19
PLS88-104-03	25		6	PLS88-118-04	655	53	6
PLS88-104-04	53		8	PLS88-119-01	-5		16

Sample ID	Au PPB	Au Rew PPB	Testwt grms	Sample ID	Au PPB	Au Rew PPB	Testwt grms
PLS88-119-02	-10		5	PLS88-129-01	-17		3
PLS88-119-03	-7		7	PLS88-131-01	-6		9
PLS88-120-01	17			PLS88-131-02	12		15
PLS88-120-02	-5		18	PLS88-132-01	-5		25
PLS88-120-03	-5		10	PLS88-134-01	-5		20
PLS88-120-04	-5		25	PLS88-134-02	-8		6
PLS88-120-05	-5		10	PLS88-134-03	24		15
PLS88-120-06	12		17	PLS88-134-04	-6		8
PLS88-120-07	-5		18	PLS88-134-05	-6		8
PLS88-121-01	14		11	PLS88-135-01	-10		5
PLS88-121-02	-6		8	PLS88-135-02	35		6
PLS88-121-03	-7		7	PLS88-135-03	-5		11
PLS88-121-04	15		14	PLS88-135-04	-6		8
PLS88-121-05	-5		13	PLS88-135-05	-5		10
PLS88-121-06	10		15	PLS88-135-06	45		10
PLS88-121-07	-5		17	PLS88-135-07	-10		5
PLS88-121-08	39		19	PLS88-135-08	32		16
PLS88-121-09	-5		11	PLS88-136-01	10		22
PLS88-121-10	-5		16	PLS88-137-01	-5		11
PLS88-122-01	-7		7	PLS88-137-02	-13		4
PLS88-122-02	19		17	PLS88-137-03	-8		6
PLS88-122-03	-5		11	PLS88-137-04	-5		12
PLS88-122-04	-5		11	PLS88-137-05	-5		13
PLS88-122-05	-5		20	PLS88-137-06	105	-31	8
PLS88-122-06	-5		18	PLS88-137-07	-6		8
PLS88-122-07	-8		6	PLS88-137-08	-13		4
PLS88-122-08	-5		12	PLS88-137-09	-7		7
PLS88-122-09	-5		14	PLS88-138-01	-10		5
PLS88-122-10	23		8	PLS88-138-02	-10		5
PLS88-122-11	-5		10	PLS88-138-03	-25		2
PLS88-122-12	-5		14	PLS88-138-04	-7		7
PLS88-122-13	-5			PLS88-138-05	-5		14
PLS88-123-01	-6		9	PLS88-138-06	-8		6
PLS88-123-02	18		12	PLS88-139-01	-5		15
PLS88-123-03	26		14	PLS88-139-02	-5		13
PLS88-123-04	-7		7	PLS88-139-03	-5		17
PLS88-123-05	-10		5	PLS88-139-04	-5		11
PLS88-123-06	16		11	PLS88-139-05	10		15
PLS88-123-07	-5		16	PLS88-140-01	-5		15
PLS88-123-08	18		15	PLS88-140-02	-6		9
PLS88-123-09	-5		15	PLS88-140-03	-5		10
PLS88-123-10	11		16	PLS88-140-04	-6		8
PLS88-123-11	-5		21	PLS88-140-05	26		7
PLS88-124-01	-5		22	PLS88-140-06	40		6
PLS88-124-02	-5			PLS88-141-01	45		6
PLS88-124-03	-5		18	PLS88-141-02	-5		11
PLS88-126-01	-5		17	PLS88-141-03	-6		8
PLS88-127-01	90		14	PLS88-141-04	-5		20
PLS88-127-02	-13		4	PLS88-141-05	49		11
PLS88-127-03	-8		6	PLS88-141-06	-6		8
PLS88-127-04	13		18	PLS88-141-07	-7		7

Sample ID	Au PPB	Au Rew PPB	Testwt grms
PLS88-141-08	12		13
PLS88-141-09	18		18
PLS88-141-10	33		12
PLS88-142-01	-5		13
PLS88-142-02	-5		11
PLS88-142-03	-5		12
PLS88-142-04	68		11
PLS88-142-05	60		7
PLS88-142-06	-5		11
PLS88-142-07	-5		12
PLS88-142-08	-5		11
PLS88-142-09	57		10
PLS88-143-01	-6		9
PLS88-143-02	8		19
PLS88-143-03	-5		10
PLS88-143-04	-5		10
PLS88-143-05	36		5
PLS88-143-06	-5		11
PLS88-143-07	-5		11
PLS88-143-08	-6		9
PLS88-143-09	-5		13
PLS88-144-01	-5		13
PLS88-144-02	-5		11
PLS88-144-03	30		16
PLS88-144-04	-5		12
PLS88-144-05	-5		11
PLS88-144-06	113	-50	13
PLS88-144-07	21		7
PLS88-145-01	-5		11
PLS88-145-02	-5		11
PLS88-146-01	-5		26
PLS88-146-02	-7		7
PLS88-146-03	35		11
PLS88-146-04	-5		13
PLS88-146-05	15		16
PLS88-146-06	-6		9
PLS88-146-07	37		9
PLS88-146-08	-13		4
PLS88-146-09	-5		17
PLS88-146-10	12		13
PLS88-146-11	21		10
PLS88-146-12	-5		18
PLS88-146-13	-5		14
PLS88-147-01	19		8
PLS88-147-02	-5		10
PLS88-147-03	-5		10
PLS88-147-04	-5		10
PLS88-147-05	-10		5
PLS88-147-06	-5		10
PLS88-147-07	-6		8
PLS88-147-08	-5		12
PLS88-147-09	-6		9
PLS88-147-10	-5		10
PLS88-147-11	-5		10
PLS88-147-12	-5		10
PLS88-147-13	-8		6
PLS88-147-14	-5		24
PLS88-147-15	-5		20
PLS88-148-01	11		20
PLS88-148-02	-8		6
PLS88-149-01	-5		14
PLS88-149-02	-13		4
PLS88-149-03	-13		4
PLS88-149-04	-6		8
PLS88-149-05	-6		8

APPENDIX H

BINOCULAR LOGS - BEDROCK CHIP SAMPLES

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 01-09	Medium gray green with 2% rusty weathered chips 5% white vein	weakly Foliated with 1-2% shear 5% cal. veins	Gmass 0.1 to 0.2 Qtz + plag phenos: 0.3 to 1.0	Porphyrytic with equigranular interlocking groundmass	3-5% qtz. phenos. 3-5% plag. phenos. Groundmass = 70% plag 25% qtz 5% chlorite.	5% calcite vein	0.5% dissem py.	Nil	DACITE
02-05	Medium gray w. bleached buff chloritic microlaminations and wk. rusty weath. chips	Finely shear (bedded) microlaminated. - fine grain size may be all due to shearing 20% cranulated "crush zones"	Aphanitic to 0.05	Aphanitic. Where shear lamination (bed) separation is < 0.1 mm, 60° cross crenulations are present giving these "crush zones" a secondary grain size of 0.1 mm	20% buff-bleached chlorite confined to shear / surfaces 80% of rock is between shoals, is mod. hard -- mainly plag. No relict qtz. phenos (not dacite)	3% dissem. Fe/Mg carb	Crush zones (20% of sample) have 2% finely dissem cubic py.	Nil	SILTSTONE
03-07	Pale gray	Very well foliated for a felsic rock, with a few sericitic shear slips (ie weakly sheared) Unschisted.	Gmass: 0.1-0.2 Qtz + plag phenos: 0.3 to 1.0 (gradational from gmass)	Porphyrytic with equigranular interlocking gmass.	3-5% qtz. phenos Est. 20% plag. phenos (faint outlines) Groundmass = 60-70% plag. 20% qtz. 10-20% ser., 1-2% chl.	3% dissem cal. 5% fracture cal.	Tr. dissem. cubic py.	0.5% leucoxene	RHYOLITE
04-05	Pale gray-green	Well Foliated For a Felsic rock, with a Few local shears ie sericitic shear slips.	G mass: .1 to .15 Qtz and plag phenocrysts: 0.3 to 1.0 mm	Porphyrytic with equigranular interlocking g.mass	5% qtz. phenos. est. 20% plag. phenos. Groundmass: 60% plag 20% qtz 10-20% sericite trace chlorite	2-3% dissem. calcite 2% Fracture calcite	tr. dissem. cubic py .05 to .1 mm	Nil	RHYOLITE
05-04	Medium green and mottled white	weakly Foliated. 10% sericity shears	G. mass: 0.1 to 0.2 Qtz. and plag. phenos. 0.3 to 0.5	Porphyrytic with equigranular interlocking g. mass.	2% qtz phenos 2% plag phenos. Groundmass: 70% plag 25% qtz. 5% chlorite	1% Fe/Mg carb. (dissem)	0.5% dissem. py.	1% leucoxene.	DACITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 06-02	Medium gray to green 1% of chips rusty weathered colour 1% of chips white	well sheared, 20% cericitic shear slips.	G. mass: aphanitic to 0.1 mm qtz & plag. phenos: 0.3 to 1 mm	porphyritic with aphanitic to equigranular interlocking groundmass but mostly obscured by intense shearing disrupting sample integrity	3-5% qtz phenos 10% plag phenos (est) G. Mass: 60% (hard) qtz, plag 5-10% buff and dk. gn chlorite mostly along shear surfaces 20% sericite	3-5% Fe/Mg dissem. carb. 1% calcite vein	0.5% dissem PY.	Nil	DACITE
07-04	Medium green white mottled	Weakly sheared 1% shear partings	G. mass 0.05 to 0.3 plag phenos. up to 3 mm	Porphyritic with inequigranular interlocking groundmass.	50% plag. phenos. Groundmass: 20% chlorite 10-20% qtz 70% plag 0.1% sphene	0.5% dissem calcite.	0.1% dissem PY in g. mass and is in dissem. clusters.	Nil	ANDESITE
08-02	(a) Dk gn spotted white (b) Pale gn. (50% of each)	Mod. fol. unsheared to very minor shear partings (b) is probably bedded but no beds seen. Contact relationships (intrusive or flow) between (a) + (b) not apparent	(a) 1-3 mm plag. phenos, 0.1-0.15 mm g.mass (b) 0.2-1.2 mm ash	(a) Strongly porphyritic w. equigran. interlocking groundmass. (b) Medium to coarse crystal/lithic ash	(a) 40% plag. phenos. 70% g.mass = 30% chl., 60% plag., 5-10% qtz, 0.1% sphene. (b) 5% colourless qtz + 5% plag. crystals, 10-15% chl., 50% aphanitic leucocratic fels.-int. volc. lithics, 30% undifferentiable lithic/plag. ash.	(a) Tr. dissem cal. (b) 3% dissem cal Also 1% vein calcite	(a) Nil (b) Nil	(a) Nil (b) Nil	(a) ANDESITE (b) INT (DACITIC) ASH TUFF
09-02	Pale to medium gn	moderate foliation, no bedding observed	ash matrix 0.1 crystals + lithics 0.2 - 2.0	Medium to coarse crystal/lithic ash	30% plag crystals 15% lithics 1% colourless qtz crystals ash matrix: 15-20% chlorite 80% undiff. lithics and plag. ash 0.1% sphene	2% dissem. and fracture calcite	Nil	Nil	INTERMEDIATE ASH TUFF
10-02	Medium green	weakly foliated <u>not</u> sheared	ash matrix 0.1 crystals and lithics 0.2 to 4 mm	Medium to coarse crystal/lithic ash	10% plag crystals 40% leucocratic, aphanitic porphyritic often pyritic lithics ash matrix: 15-20% chl 80% undiff. plag-lithic ash	trace dissem. Fe/Mg carb.	0.5% dissem. fine cubic PY conc. in beds also pyrite in porphyritic lithics	Nil	INTERMEDIATE LAPILLI ASH TUFF

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 11-09	Bleached buff	Schistose. Shear laminated No remaining evidence of bedding 10% brecciated grey q.c.v.	Qtz sand + faint lithics 0.1-0.3	Faintly sandy overprinted by schistosity	10% qtz sand 5% vestiges of aphanitic felsic volc. lithics similar #22 10% sericite No relict chlorite but 2% new black chl. 60% crushed aphanitic matrix	40% Fe/Mg carb in veins 2% in schist	0.5% finely dissem. py. in schist, more in veins	Nil	GRAYWACKE
12-03	Pale to Medium green	Bedded, schistose (well sheared) soft 3% microfractures	<0.05 mm	Silty	30% gn chlorite and buff-bleached chlorite 70% plag and qtz. (Feldspar partially altered)	< 1% dissem calcite 3% Fe/Mg carb in fractures and along schistosity	tr. dissem. py.	Nil	SILTSTONE
13-03	Pale gy. with 25% white to gray veins	Shear losanged (not laminated to coarseness of original wacke) No remaining evidence of bedding 25% q.c.v.	Qtz sand to 0.5 Py. metacrysts 0.1-0.5 Balance <0.05	10% relict medium qtz. sand in secondary, near-aphanitic matrix Py. metacrysts + saussurite lineation spots	10% relict qtz sand Mod. hard carbonatized groundmass with no remaining chlorite, 10% sericite, 5% saussurite spots, 0.5% leucoxene	Veins average 30% Fe/Mg carb. + wacke averages 5%.	10% cubic to dodecahedral py. conc. on shear losanges 0.5-1% acicular arsenopy. conc. in q.c.v.	0.5% hydrothermal leucoxene metacrysts, locally assoc. w. aspy.	GRAYWACKE
14-03	Black with 20% pale gray microlaminations	Primary lamination from 0.1 mm to 1 cm+. Local slump breccia structure with chert py. infill. A few [illegible]-like structures. Unsheared. Slightly fissile on muddy partings	Aphanitic	Aphanitic to slightly sugary in gray bands and breccia infill	Very hard. Mostly chert	1% calcite as nodules + breccia infill (syngenetic)	3% amorphous py. as fine dissem., nodules + beds (is all syngenetic)	Nil	CHERT
15-03	Bleached buff	Schistose, shear laminated. No evidence of original bedding due strong shearing 10% brecciated gray q.c.v.	<0.05	Presumed silty but no longer visible	Hard, silicified, no relict chlorite, 10% sericite, 2% fuchsite 2% saussurite lineations	Veins contain 50% Fe/Mg carb, schist contains 20% Fe/Mg carb	3% coarse dodecahedral py. dissem. but conc. in veins	Veins contain tr. graphite	SILTSTONE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 16-03	Bleached pale gray w. buff saussurite on shears	Schistose, shear laminated. Any evidence of bedding destroyed.	Relict qtz. sand 0.1 Other aphanitic due shearing + silicification	10% relict fine qtz sand in secondary aphanitic crushed & silicified matrix	10% relict qtz sand 80% hard siliceous matrix 10% sericite 1% black hydrothermal chlorite (original chlorite bleached out)	5% dissem. + fracture Fe/Mg carb.	0.5-1%. dissem. cubic py.	Nil	GRAYWACKE
17-03	Medium green mottled white	strong shearing – shear lozenging around phenos.	G. mass: 0.1 to 0.2 plag phenos 0.5 to 4mm	Porphyritic with equigranular interlocking groundmass	30% plag. phenos. Groundmass: (v. hard) 70% plag. 10% qtz. 15% gn. chlorite	3.5% dissem and Fracture calcite	Nil	Nil	ANDESITE
18-03	Medium gray	Schistose Graded bedding (not possible to subdivide wacke + siltstone due high silt content of wacke)	Mostly 0.05 to 0.1 mm locally grading down to < 0.05	Fine sandy grading to silty	50% gray chlorite (ie. very silty) 5% qtz. 40-50% soft alt. plag.	5% dissem + fracture Fe/Mg carb.	0.1%. very finely dissem py.	Nil	GRAYWACKE
19-04	Dark gray and black with dark reddish bands 2-3% white vein	Bedded magnetite and chert 0.5 to 2mm magnetite: variable weak to strong Foliation 2-3% cross cutting carb. veins and veinlets	Magnetite: < 0.1mm Chert: recrystallized to .1mm	crystalline to sugary	30% chert bands (80-90% recrystalized chert and 10% mag)	<1% calcite veins and veinlets	Nil	70% magnetite (90% mag and 10% chert in mag. beds)	IRON FORMATION - CHERT AND MAGNETITE
20-16	Dark gray	Well Foliated, finely laminated on scale of 0.05 to 0.1mm	aphanitic to 0.05	Silty	65% plag 10% qtz 20-25% gray chlorite	3% vein calcite 1% dissem. and fracture calcite	tr. dissem. PY.	Nil	SILTSTONE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 21-03	Gray	Unfoliated, bedded on 0.2 to 2 mm scale, rock unsheared 1% fractures, calcite and quartz infilled.	0.01 to 0.05 mm (coarsest beds)	- crystalline, silty (bedded) - hard	75% plagioclase 15% graychlorite 10% quartz	0.5% dissem. and Fracture calcite	0.1% cubic py. upto 0.5mm	Nil	SILTSTONE
22-12	Medium gy-green 10% white vein	Schistose. Shear laminated + lineated. Bedded coarser than chip scale. 10% q.c.v.	Relict Sand 0.2 to 1.0 mm in beds Crushed matrix 0.05	Medium to coarse sandy with secondary crushed f.g. matrix	10% relict qtz sand. 20% relict aphanitic felsic volc! lithics 1% chert lithics (locally pyritic) 70% crushed matrix containing 30% chl. (green to buff-bleached)	1% dissem cal in wacke. 20% calcite in veins	0.5% coarse cubic py. conc. in vein walls + vein fractures	Nil	GRAYWACKE
23-15	chert: med. gray siltstone: pale green	50% chert (occasionally brecciated) bedded with well sheared siltstone >30% of chert replaced by carbonate 5% brecciated carbonate veins	Both chert and siltstone aphanitic shear partings .5 to 5mm	Aphanitic to slightly sugary in chert, siltstone aphanitic	Chert very hard except where replaced. Siltstone bleached chloritic sericite predominante, also upto 25% plagioclase.	30% carbonate replacement in chert (mostly Fe/Mg) 5% gray brecciated Fe/Mg carbonate 3% dissem. Fe/Mg carb in siltstone	0.5% dissem. py in both chert and siltstone.	Nil	Chert 50% siltstone 50% (shear zone)
HOLE 24				No BEDROCK	SAMPLE				
25-07	Dark green	Strongly sheared having 30% dark chlorite shears 1% qtz/calcite vein	0.05 to 0.1 in groundmass Phenos: up to 0.3	Porphyritic Hard equigranular Interlocking groundmass with 5% plagioclase phenocrysts	Groundmass: 60-65% plagioclase 10% quartz 5% saussurite 20% green chlorite Shears: Dark green patchy secondary chlorite making up 30% of sample	0.5% vein calcite 2% fracture filling calcite 5% dissem. calcite	tr dissem. PY.	1-2% leucoxene	ANDESITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 26-03	Med. gn.	Unchilled. Shear deformation mainly by brecciation rather than fol'n., also 10% chloritic microshears, 10% shear parallel q.c./v.	Gmass 0.1-0.15 Plag. Phenos to 0.7	Porphyritic with equigranular inter-locking groundmass	10% plag. phenos 90% gmass = 70% plag (hard) 5-10% qtz 15-20% chl. mostly remob. to shears + frac.	3% fracture cal. 5% vein cal.	Tr. finely dissem. py.	Nil	ANDESITE
27-07	Medium green 10% white vein	unchilled variably moderate to well foliated, locally strong shearing also brecciated due to shearing 2% aphanitic chilled andesite xenoliths 10% carbonate vein	G mass 0.1 to 0.2 plag. phenos 0.3 to 0.8 xenoliths aphanitic	Porphyritic with equigranular interlocking groundmass	10-15% plag. phenos (est) Groundmass: 70% plag and qtz 20% gn chlorite 5% buff chlorite 1-2% sericite	2-3% Fe/Mg dissem & vein carbonate 1% dissem calcite calcite vein 5% Fe/Mg vein	Tr Finely dissem py.	0.5% gn fuchsite along shear surfaces	ANDESITE
28-08	Medium green	Moderate to strong foliation, chlorite mostly along foliation planes.	< 0.05 to 0.05	Aphanitic; Equigranular interlocking where coarser.	60% plagioclase partly saussuritized 25% gn. chlorite 10% qtz	3% fracture filling calcite 3% dissem. Fe/Mg carb.	1% dissem. cubic py. upto 0.5 mm 0.5% fracture py.	2% leucoxene	ANDESITE
29-05	Medium green	Weak to moderate foliation 1-2% white vein quartz/calcite	G. mass 0.1 to 0.2 plag phenos 0.3-0.7	Porphyritic with equigranular interlocking groundmass	2% plag. phenos (est) G. mass 20-25% gn. chl. 60% plagioclase 15% quartz	2-3% calcite vein and fractures 0.5% dissem. and fracture Fe/Mg carb.	0.5% finely dissem and fracture py.	<1% leucoxene	ANDESITE
30-07	Medium green	Unchilled; moderately sheared, locally with sericitic/chloritic partings (discontinuous) locally fractured with veinlets.	0.1 where not disrupted by structure	Equigranular, interlocking where not disrupted by shears	50-55% plag (hard) 25% dk. gn. chlorite mostly as splotches and along shears & fractures. 10% sericite along shears (pale gn. colour) 10% quartz	5-10% Fe/Mg carb. dissem and along fractures	Nil	Nil	ANDESITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 31-11	Medium green	Moderate to well foliated with several % sericitic/chloritic shears 5-10% white vein (calcite) chilled.	<0.05	Equigranular interlocking where visible	approx 35% gn. chl 60% plag 5% sericite 2-3% qtz	10-15% calcite vein and fracture filling.	0.5% dissem and fracture PY.	1% leucoxene.	ANDESITE
32-03	Medium green 1% white vein	Well foliated, locally sheared 5% sericitic shears locally crenulated 1% vein	0.1 to 0.2mm	Equigranular, interlocking	15-20% gn. chl 65% plag 10% qtz 5% sericite	1-2% vein calcite 1-2% dissem. fracture calcite tr. Fe/Mg carb dissem.	<0.5% dissem PY.	1-2% leucoxene	ANDESITE
33-04	Medium green (partially bleached) 1% of chips are rusty weathered	Strongly deformed, only partly bleached 5% calcite vein 5% hairline sericitic shears throughout	<0.05mm	Aphanitic to Equigranular interlocking	65% plagioclase 10% quartz 20-25% green chlorite 5% sericite	5% calcite vein	0.5% dissem PY.	<0.5% fuchsite	ANDESITE
34-09	Medium green approx. 60% of sample bleached pale yellow colour	Variable moderate to well foliated -strong shearing locally -10% qtz/calcite vein	aphanitic to 0.2	Aphanitic to Equigranular interlocking	10% gn chl. 15% buff sericite 65% plag 10% qtz.	5% vein calcite	3% coarse dissem and fracture py. 0.2% dissem. chalcopyrite associated with the pyrite.	<0.5% fuchsite along sericitic shears.	ANDESITE
35-08	Medium green	Chilled, well foliated discontinuous shears throughout. (chlorite mostly along microshears) 5% calcite vein	Aphanitic to 0.1	Aphanitic (not porphyritic) Equigranular interlocking in coarser chips	70% plagioclase (hazed) 10-15% gn to buff-bleached chlorite. 5% sericite 10% quartz	5% vein calcite	0.3% py metacrysts upto 0.5mm	Nil	ANDESITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 36-08	Medium green, 20% of chips are bleached pale yellow-gn. 20% of chips are rusty, weathered	Variable moderate to well foliated - local strong shearing - bleached 0.5% to 2% q.c. and py vein	Aphanitic to 0.2	Aphanitic to Equigranular interlocking strong fabric caused by shearing.	15-20% gn. chl. 70% plag 10% qtz.	2% calcite vein 3% dissem. Fe/Mg carb.	0.5% dissem, vein and fracture py. (mostly along shearing and along q.c. vein	Nil	ANDESITE
37-03	Medium green	Well Foliated, laminated. 10% qtz/calcite vein	G. mass aphanitic to 0.1 plag. phenos 0.5 - 0.8	Porphyrytic with aphanitic to equigranular interlocking groundmass	2% plag. phenos. Groundmass: 15-20% gn. chlorite 70% plag 16% qtz.	5% vein calcite 2% dissem. calcite	0.5% dissem py.	1% leucoxene	ANDESITE
38-03	Medium green	Moderate to well foliated local shearing (laminations) some are crenulated Partly bleached -- chilled.	G. mass aphanitic to 0.1 plag. phenos 0.3 to 2mm	Porphyrytic with aphanitic to equigranular interlocking groundmass	20% plag. phenos (est) Groundmass: 5 % gn chlorite 5-10 % sericite 65% plagioclase 15% qtz	5% dissem. and fracture lining calcite	4% dissem py concentrated along phenocryst losarages.	Nil	ANDESITE
39-07	Medium green 10% of chips are rusty, weathered	Well foliated, schistose with laminations on scale of <0.1mm, occasionally crenulated Strongly sheared 10% rusty weathered chips along shears	aphanitic to 0.1	Aphanitic to Equigranular interlocking but mostly disrupted by strong shearing	15% gn chlorite 10% sericite 70% plagioclase soft, altered, saussuritized 5% quartz	Nil	Nil	Nil	ANDESITE
40-03	Medium green	Well Foliated. Sheared unchilled. 3-5% white vein	G. mass 0.05 to 0.1 plag. phenos 0.4 to 1.5	Porphyrytic with equigranular, interlocking groundmass Locally (30% chips) disrupted by strong shearing	5-10 % plag phenos (est) Groundmass: 60% plagioclase mostly altered to saussurite 10% pale green chlorite 5-10% sericite 10-15% dark green secondary chlorite in sheared chips only. 5% quartz.	5% dissem. calcite 3% vein calcite	Nil	Nil	ANDESITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 41-03	Medium gn	Moderate to well foliated. Strongly sheared unchilled. 3% qtz/calcite vein.	G. mass ~0.05 local patches up to 0.1	Anastomosing sericitic shears breaking up sample integrity giving strong fabric	55-60% plagioclase 5-10% pale green chlorite 10% dark green chlorite along shears (secondary) 10% sericite shears 15% qtz.	2% calcite vein 2% fracture lining calcite	Nil	30% Faint spotty pinkish hematite staining throughout.	ANDESITE
42-03	Pale gn (bleached and partially silicified)	Variably weakly to well foliated, locally shear laminated - occasionally crenulated laminations on scale of 0.05 mm., often sericitic	0.1 aphanitic where strongly silicified	Anastomosing sericitic shears breaking up sample integrity giving strong fabric and allowing silicification and bleaching.	All original chlorite bleached out. 55-60% plagioclase 15% qtz; much higher in silicified aphanitic patches. 10% shear sericite 5% dark green patchy secondary chlorite	3% Fe/Mg dissem and fracture carb.	5% dissem. dodecahedra. py. concentrated along laminations and phenocryst losanges.	trace fuchsite	ANDESITE
43-03	Medium green	Chilled, amygdaloidal 3-5% both chlorite and py. infilled amygdules	Aphanitic to 0.05 amygdules 0.3 to 2mm	Aphanitic, amygdaloidal hand	Difficult to discern due to aphanitic grain size but estimate 25-30% gn chl. 50-60% plag.	3% calcite amygdules, 3% fracture filling calcite	trace py both dissem and occasionally as amygdule infilling	2% leucoxene	BASALT
44-02	Dark green	moderate foliation unchilled. amygdaloidal 2-3% mostly qtz and qtz-py infilled.	G. Mass 0.05 to 0.15 chlorite/plag phenos 0.3 to 0.8 amygdules 0.5 to 1.5mm	Porphyritic, plag and chlorite (laths) phenos in aphanitic to equigranular interlocking groundmass. - Amygdaloidal.	10% plag phenos (est) 1-2% chl phenos (est.) groundmass: 40-50% gn chl 50-60% plag 1-2% qtz	2-3% dissem calcite 1% calcite amygdules	0.5% py both dissem. and as amygdule infilling	1%-2% leucoxene.	BASALT
45-03	Dark gray	Bedded - schistose, crenulated 2% calcite vein	<0.05	Silty	rock is very soft: ~50% dk. gray chl.	2% vein calcite 1% fracture calcite	<0.5% dissem. py.	Nil	SILTSTONE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 46-07	99% of sample gray-white clay 1% of sample pale yellow chips	99% of sample is totally disrupted by shearing - chips are schistose sericitic	chips are aphanitic	Aphanitic, no phenocrysts. Mostly sheared to clay.	completely sericitized 90% sericite	10% Fe/mg Carbonate throughout.	Nil	Nil	SILTSTONE (shear zone) (by chemistry + geography)
47-02	Med. gray. (not green)	Pervasive anastomosing microshears give overall schistosity. Lineated.	Matrix: 0.1 max. Sand grains up to 0.8 Lithics up to 3.0	Anastomosing microshears obscures matrix texture. 5% qtz sand grains (relict) 10% carbonatized plag. grains and lithics. Boundary very faint; more distinct after HCL acid leach.	(15%) Quartz and (75%) plagioclase sand with 10% gray chlorite 15% sericite restricted to shears	15% dissem Fe/Mg carb. conc. in plag. and lithics	1-2% py. metacrysts	Nil	GRAYWACKE
48-02	Wacke: Med. gray Siltstone: dk. gy.	Not sheared. Bedded coarser than chip scale -- 20% wacke, 60% siltstone. Siltstone is schistose and crenulated. Wacke well fol. 2% carb. veinlets	Wacke: 0.1 Siltstone <0.05	Wacke: Fine sandy Siltstone: silty	Wacke: 75% plag. 10% qtz. 15% gray chl. Siltstone: >50% gray chl. (very soft)	Wacke: 3%. dissem calcite Siltstone: nil Other: 3% veinlet calcite	Wacke 3% finely dissem cubic py Siltstone 0.5%. finely dissem cubic py.	Nil	GRAYWACKE 20%. SILTSTONE 60%.
49-03	Pale yellow	sericitic anastomosing microshears give overall schistosity. completely bleached carbonatized,	aphanitic due to replacement and shearing	aphanitic with 1% preserved quartz phenocrysts	mafics completely bleached out. 50% plag. 40% sericite (shears)	10% Fe/mg carbonate mostly dissem. but also along shears.	Nil	Nil	BASALT or ANDESITE (shear zone)
50-04	Pale gray-green-yellow - bleached 5% white veins (qtz/calcite)	Shistose, 3-5% sericitic shear partings - micro fractured and micro-brecciated. (lined by calcite)	aphanitic	Sample integrity broken by microbrecciation. locally microbreccia give appearance of false 0.1-0.2 grain size.	Hard albitic groundmass (or silicified) 3-5% green chlorite patchy. 3-5% sericite	10% dissem. calcite 5% microfractures calcite lining. 2% calcite (vein)	trace py. dissem. cubic.	Nil	ANDESITE or BASALT (shear zone)

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 51-03	Pale gray-green (bleached)	Sheared, 1-2% sericitic/chloritic shear partings microbrecciated. unchilled	0.1-0.2 locally aphanitic	Equigranular interlocking Locally obscured by microbrecciation and carbonatization	Hard albitic groundmass 3-5% green chlorite patchy 2-3% sericite	10% dissem. calcite also lining microbrecciation fractures	Tr. py.	Nil	ANDESITE
52-02	Dark gray	Well foliated weakly brecciated by shearing. 5% chert bands 2% thin magnetite bands	0.1 max.	Silty	65-70% qtz and plagioclase silt 10% gray-green chlorite	5% diss Fe/Mg. carb in chert bands 3% dissem. Fe/Mg carb. in siltstone.	tr. py	20% pervasive magnetite 2% thin magnetite bands	SILTSTONE + Chert bands (IRON FORMATION)
53-03	Dk. gn. w. 20% white q.c. veins and 30% related buff replacement zones	Well foliated with some shear microlaminations and 20% shear-controlled qtz-carb veins. Unchilled.	0.2	Equigranular interlocking	40% chlorite 50% plag. 2% qtz (chl. diminished + silica added -- hard -- in replacement zones)	Veins contain 50% cal., Replacement zones 10% cal.; basalt 5% cal (both dissem)	Nil	Basalt portion contains 5% leucoxene	BASALT
54-06	Pale yellow with 20% white veins Bleached.	Schistose due to shearing, almost completely replaced but once unchilled. 20% q.c.v.	0.2 where least replaced; mostly aphanitic	Equigranular interlocking where least replaced, mostly aphanitic	Where least replaced 3% relict gn. chl. 2% qtz. 80-90% plag. Mostly hard, silicified with 10-20% sericitic shear partings	Replaced rock 10% cal (dissem) Veins 70% cal , rare tr. fuchsite	Nil	Nil	BASALT or ANDESITE (shear zone)
55-06	Dark green	Shear microlaminated anastomosing, sericitic Bedded - Siltstone with good sorted wacke beds.	Siltstone: 0.05 max. Wacke: 0.2-0.3 Sand grains up to 0.5	Anastomosing sericitic shear breaking up sample integrity. Siltstone: silty to aphanitic Wacke: few thin relatively well sorted sandy beds.	Siltstone + wacke: 10-15% green chlorite 75-85% plag.+qtz silt (siltstone); sand (wacke) 10% qtz relict sand grains and 5% plag relict sand grains	2% fracture lining calcite 2% dissem. calcite	0.5% dissem. cubic pyrite	Nil	SILTSTONE + GRAYWACKE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 56-02	Medium gray-green	Well Foliated 10% hairline sericitic anastomosing shears locally crenulated.	0.05 to 0.1 (max)	Mostly silty locally effect of coarser sandy texture caused by anastomosing shears breaking up sample integrity.	70-75% plagioclase and quartz silt. 20% gray green chlorite 5% sericite	3% fracture filling Fe/mg carb. also along shears	0.5% finely dissem. pyrite	Nil	SILTSTONE
57-03	Dark green, 10% white chips (vein)	Well sheared, 5% of rock microlaminated crenulated crush zones 15% hairline sericitic anastomosing shears locally crenulated 10% qtz/calcite vein.	0.05 to 0.1 (max)	Mostly silty but texture obscured by sericity anastomosing shears breaking up sample integrity. 15% dark green secondary chlorite patches along shears	70% plagioclase and quartz silt 10% gray green chlorite 15% dark green chlorite 5% sericite	5% calcite all in vein 2% dissem. Fe/mg carb.	1-2% pyrite dissem., esp. along shears	Nil	SILTSTONE
58-02	Dark green to black 5% white to pink vein	Well Foliated Locally laminated 0.2-0.5 mm hard cherty laminae and magnetite rich laminae 2% thin wacke beds. 5% quartz/calcite vein locally stained pink.	where coarser 0.05 to 0.1 max. up to 0.5 in wacke.	Silty where coarser elsewhere aphanitic Sandy in wacke bed. Stained pinkish by iron stainning.	in thin wacke bed: 15% relict plag sand 10% relict qtz sand 60-65% qtz/plag sand 10% green chlorite in silty beds: 65% qtz/plag silt. 15% dark gray green chlorite	3% fracture filling calcite and 2% calcite in vein.	Trace finely dissem. pyrite	15-20% pervasive magnetite only 2-3% dissem magnetite in wacke bed.	SILTSTONE + IRON FORMATION
59-06	Pale to medium gray 60% white vein	schistose, crenulated; Sericitic shears throughout; bleached 60% qtz/calcite vein (fractured)	mostly aphanitic locally 0.05 max.	Completely altered by sericitic shears locally silty where coarser grain	Completely altered, sericitized. In thin silty beds 50% plag + qtz silt 50% sericite ± bleached grayish chlorite (minor) (max. 10%)	5% vein/fracture calcite 5% dissem. calcite	0.1% dissem. cubic pyrite in silty beds	Nil	SILTSTONE
60-06A	Med. gray to gray-gn.	Massive to weakly foliated. Unsheared but fractured Chilled	Gmass: <0.05 Phenos: 0.3-1.0	Porphyritic with equigranular interlocking gmass & typical patchy mafic clustering.	Hard, albitic gmass with 10% patchy chlorite. 20% plag. phenos	1% fracture calcite	Tr. py.	2-3%. ilmenite (?) dust	ANDESITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 60-06 B	Similar to #06A but more aphanitic and less porphyritic giving paler gray colour. Also contains 20% brittle crush zones and all chips are fractured.					5% fracture calcite.	0.1% dissem py.	No oxides	ANDESITE
61-03	Med. gy-gn. spotted white (phenos)	Chilled. Massive with 5% cross-fractures.	Gmass: 0.2-0.7 Plag. phenos 0.5-3	Porphyritic with inequigranular interlocking gmass.	30% plag. phenos 70% gmass. = 30% partly chloritized hb. 70% plg. no qtz. tr. sphene	1% fracture calcite	0.1% dissem py	No oxides	DIORITE
62-02	Very pale gray due to aphanitic grain size.	Chilled with mixed aphanitic to 0.1 mm grain size. Locally flow foliated. 5% cross-fractures also probably flow-related rather than shear controlled	Aphanitic to 0.1 with incipient plg. phenos to 0.3	Faintly porphyritic with inequigranular, mostly aphanitic gmass.	Hard, albitic with no free qtz. or chlorite	1% fracture calcite	0.2% dissem. py.	0.5-1% dissem. ilmenite	ANDESITE
63-04	Dk. gn. with interwoven deep pink stain on feld.	Schistose due to shear (losenging) (strongly sheared)	Minimum 0.1-0.2 (from relict qtz.)	Shredded by shear losenging but probably equigranular as no phenos. preserved.	50% red-stained feld. 40% dk. gn. chlorite (no relict hb). 10% qtz. no sphene	5-10% dissem. Fe/Mg carb 5% veinlet calcite	Nil	0.5% specular hematite	QTZ. DIORITE
64-06	Med. gray-green w. Heavy pink Stain	(a) 40% of sample: Rounded, resorbed glass xenoliths in (b) 60% weakly fol. matrix, chilled. Both extensively micro-fractured but not crushed	(a) aphanitic (b) 0.1-0.3	(a) aphanitic, glassy (b) equigranular interlocking Hybridized	(a) hard with no free chlorite but assumed similar to (b) 60-70% plag. 20% chlorite 10% quartz 1% sphene/leucoxene	2% fracture calcite	<0.1% fracture related py.	Nil	QTZ. DIORITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 65-05	(a) Med. gray green with (b) 10% pink aplite dikelets	Chilled Weakly foliated (metamorphism) Weak shear effects – 5% hairline breccia fractures 10% aplite dikelets (1-2 mm wide)	(a) phenos = 0.2-0.5 gmass = 0.05-0.1 (b) 0.2-0.5	(a) Porphyritic with sugary groundmass (b) Granulose	(a) 40% plag. phenos 60% gmass. = 25% chlorite 60% plag. 15% qtz., no sphene (b) 60% gray to pink-stained feld. 40% chlorite	3% fracture calcite	0.2% dissem cubic py. in both (a) and (b)	<0.1% finely dissem. mt.	QTZ. DIORITE (90%) APLITE (10%)
66-12	(a) Pale gray-pink with (b) 10% dark gn. xenoliths	Chilled hybrid. Weak metamorphic foliation. Only fractures appear to be jointing, not shear effects	(a) 0.1-0.2 (b) 0.2 Xenolith size is 0.5 to 15 mm	(a) granulose, sub-aplitic (b) equigranular interlocking	(a) 30% qtz 50-60% gray to pale pink feld. 10% chlorite tr. sphene (b) 60% chloritized hb/px. 40% plag.	2% fracture calcite	3% finely dissem cubic py. (appears to be primary, not shear controlled)	Nil	QTZ. DIORITE (90%) with GABBRO XENOLITHS (10%)
67-10	(a) Dk. gn. (50%) w. slight red stain (b) white (50%)	Hybrid magmatic w. 10% xenoliths. Chilled. 50% qtz veins w. local chloritic partings suggesting shear control. No visible fracturing or crushing.	(a) Matrix 0.1-0.3; phenos to 1.0; xenoliths to 3 mm w. 0.2 mm internal grains	(a) Porphyritic with equigranular interlocking gmass + 10% coarser equigranular interlocking xenoliths. (b) Coarse	(a) 10% plag phenos. 80% gmass = 30% chlorite 60-70% plag. 10% xenoliths = 60% chloritized hb./px. 40% plag (b) White qtz	3% fracture calcite in both veins + host	nil	Diorite contains 2% finely dissem mt. but no hem.	QTZ. DIORITE with GABBRO XENOLITHS (10%)
68-04	Speckled black + white	Massive. Unfoliated. Unsheared No visible fractures	0.5-2.0	Equigranular interlocking, not diabasic	60% dk gn-black px. (may include some hb) 40% gray to pink-stained plag. 2% epidote (patchy) no sphene	3% fracture calcite	Nil	0.5% finely dissem. mt.	GABBRO
69-04	Pale buff-green (bleached)	Mostly unchilled grading to chilled glass. Mod. foliated. Local shear lamination + 15% shear breccia qtz. carb. veins	0.1-0.2 grading to aphanitic	Equigranular interlocking + sub-diabasic grading to aphanitic.	60% soft. alt. plag. 40% soft bleached chlorite no quartz	Veins contain 30% calcite Host contains 10% dissem. to mostly fracture calcite.	0.1% pyrite assoc. w. q.c.v.	Nil	BASALT

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 70-05	Speckled dk. gn. and gray-white	Massive to very weakly foliated. Unsheared. Unchilled	0.2 to 1.5	Anequigranular interlocking to sub-porphyritic (plag.)	30-35% partly chloritized hb. (prob. includes some px.) 65-70% gray to pink-stained plag. 2% epidote no qtz or sphene	2% fracture calcite	tr. py.	0.3% finely dissem mt.	DIORITE
71-02	Pale gy-gn. to dark brown with 10% dk. green-black spots.	Flow-foliated but not metamorphically foliated. Unsheared. 10% hornfels spots ranging 0.5 mm to >10 mm	Phenos 0.2-0.7; Gmass. aphanitic Hornfels spots 0.1-0.2	Porphyritic w. aphanitic groundmass and equigranular interlocking hornfels spots	30% flow-oriented plag. phenos 70% hard aphanitic gmass. w. no free chlorite. Hornfels spots = 40% hb 60% gray plag	Nil	Nil	Nil	ANDESITE
72-02	Dk gn. grading to pale gn. w. decreasing grain size	Very weakly foliated No shear effects. Chilled.	Mixed 0.05-0.5 grading to <0.05	Anequigranular interlocking/sub-porphyritic (plag. preferentially coarse) grading to near-aphanitic	Similar mineralogy regardless grain size 60-70% plag. 25% hb. (mostly chloritized 10% qtz	<1% fracture Fe/Mg carb	Rare tr. py.	0.5% finely dissem. ilmenite	QTZ. DIORITE
73-05	(a) 70-80% of sample is pale gray to gray brown (b) 20-30% is dk. gn.	(a) Chilled, glassy, locally occurs as resorbed xenoliths in: (b) Less chilled, weakly foliated. Both unsheared	(a) Glass is aphanitic Plag. phenos: 0.5-5.0 Hb. phenos: 0.2-0.5 Ilm phenos: 0.1-0.2 [illegible]	(a) Porphyritic with glass groundmass. Plag. phenos euhedral. (b) anequigranular interlocking	(a) 60-70% glass assumed same comp. as (b) 20-30% euhedral plag phenos. 10% ptly. chloritized hb. phenos (b) 40-50% ptly chltzd hb 40-50% plag. 10% qtz.	<1% fracture calcite	Tr. py.	(a) 0.5% ilmenite microphenocrysts (b) tr. ilmenite	QTZ. DIORITE
74-06	Med. gn.	Mod. fol. but not sheared. Contains 20% rounded resorbed glass fragments of 0.5 to 5+ mm. Chilled.	Gmass: 0.1-0.2 Plag. phenos: 0.5-2.0 Xenoliths aphanitic	Porphyritic with equigranular interlocking gmass. and 20% rounded glass xenoliths	10% plag. phenos. 70% gmass = 60-70% plag 3-5% chl (no hb.) 5-10% qtz. 20% glass xenoliths; assumed same comp.	2% fracture calcite.	Tr. py.	Gmass. contains 2% dissem. leucoxene from ilmenite	QTZ. DIORITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 75-10	Speckled dk. gn. and white with apple gn. epidote mottling	Massive. Unchilled. Unsheared	0.5-2	Diabasic	50-60% plag (half alt. to epidote) 40% chloritized px. 3% quartz	2% dissem. and fracture calcite	Nil	5-10% intersertal magnetite	GABBRO
76-03	Dark green	Shear-shredded with surviving leucoxene and some px. Unchilled.	Mostly shredded to 0.2-0.5 Leucoxene + some px. 0.5-2	Probably diabasic but destroyed by shredding	40-50% epidote-impregnated plag. 40-50% chloritized px. (dk. gn.) 1% qtz	1% dissem. to mostly fracture cal.	0.2% dissem. py.	5% coarse leucoxene	GABBRO
77-02	Dark green	Weakly fol. Unchilled. Unsheared	Mostly 0.5-1.0, max. 1.5	Diabasic	60% plag. 40% med. gn. px. to dk. gn. chlorite 1% qtz.	2% fracture calcite	0.1% dissem. py.	2% leucoxene	GABBRO
78-09	Med. gray	Schistose due to mod. shear lamination Chilled.	Gmass: <0.05 Plag. phenos. 0.3-1.5	Strongly porphyritic with aphanitic groundmass.	40% plag. phenos. 60% gmass. = 70% feld ± qtz (hard) 30% gray chl. mostly remob. to shear partings	5% dissem. + shear plane calcite	Nil	Nil	ANDESITE
79-12	Dark gn.	Very schistose due to shearing, even leucoxene is extensively shredded. 15% boudinaged (early) qtz. veins	Mostly shredded <0.05 mm Leucoxene reconstructed 1-2 mm. Rare relict qtz. 0.5	No vestiges of original text. except shredded leucoxene clusters	Est. 40% dk. gn chl. (locally serpentin 30% soft alt. plag. <1% relict qtz grains	Both veins + host contain 25% Fe/Mg carb. Also 2% fracture calcite	0.1% py. (primary; shredded like leucoxene)	2% leucoxene in host 1% ilmenite in qtz. veins (assoc. w. walls)	GABBRO

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 80-10	Dark gray	Bedded, beds unfoliated. (a) 80% carbonate beds of unknown thickness (b) 15% chert beds 0.5-2mm Also 5% graphite slips to massive graphite (sheared) 10% carbonate breccia infill	(a) 0.1 (b) <0.05	(a) crystalline (b) sugary, locally w. colloform py.	(a) 30% chert (b) 50% chert	(a) 60% siderite (reacts hot acid) (b) nil dissem. Also 10% breccia infill Fe/Mg carb (reacts cold acid)	(a) 5% finely dissem. syngenetic py. (b) average 50% dissem. to mass. syngenetic py.	Nil	IRON FORMATION (CARBONATE + SULPHIDE FACIES)
81-02	Med. gray-gn. stained pink.	Weakly fol. Chilled. 50% rounded, resorbed glass breccia fragments of 0.5-1mm diam. 3% mylonitic shears -- may be primary magmatic.	Glass is aphanitic Gmass 0.1	Equigranular interlocking gmass with 50% glass fragments but no phenos.	Gmass/matrix: 10-20% qtz 20-30% chl. (no hb) 60% plag. No sphene	2% microfracture calcite	Tr. py.	Nil. No mt. or spec. hem.	QTZ. DIORITE
82-02	Medium green matrix / pale-pink stained glass fragments, brick red mylonite zones	Chilled primary structure (70% resorbed, rounded glass fragments of <0.5 mm to >10mm in 30% coarser matrix). 20% mylonite banded zones, all chips strongly cross fractured	Gmass/matrix ≈0.1-0.2 Glass frag. ≈<0.05 Mylonite ≈ aphanitic	Equigranular interlocking gmass. with 70% glass fragments and no phenos. Mylonite zones are aphanitic, banded.	Groundmass contains 60% plag., 30% dk. gn chlorite, 10% qtz. Glass probably similar (hard, aphanitic) but has only 5% free chlorite	5% fracture calcite	Mylonite zones contain 5% dissem/stringer py; host contains 2% dissem. py.	5% fine grained spec. hem. in mylonite zones only.	QTZ. DIORITE
83-02	Med. gy-green w. white pink stain. 10% purple to gray mylonite zones	Moderately foliated Gradationally chilled -- 80-90% fine grained and 10-20% glassy as #81/82 but glass does not occur as fragments. 10% fairly banded mylonite zones but little fracturing between zones.	Gmass: Gradational aphanitic to 0.2-0.3 Phenos: 0.5-1.0	Porphyritic with equigranular interlocking to glassy gmass.	20% partly chloritized hornblende 20% qtz. 60% gray feld. ↑ Groundmass ↑ 10% gray to pinky stained plag. phenos	Mylonite only averages 10% dissem. + frac. calcite. Host has <1% calcite.	Host averages 0.2% dissem. py. Mylonite is sulphide-free	Host averages 0.5% dissem magnetite. Mylonite averages 3-5% f.g. specular hem. (gives purple colour	QTZ. DIORITE
84-02	Mottled med. to dk. gn (both glass and matrix) to pale pink (glass) to white (plag phenos)	Chilled. 40% resorbed glass breccia fragments of 1-5 mm diam. in coarser grained gmass. Unfoliated. No shear effects	Glass: aphanitic Groundmass 0.1-0.5 Phenos 1-2	Porphyritic matrix with inequigranular interlocking gmass and 40% rounded resorbed glass breccia fragments.	Matrix: 20% plag phenos 80% gmass. = 40% partly chloritized hb, 50% plag, 5% qtz Glass frag. Assumed same -- hard with no free chlorite	<1% fracture calcite	Rare tr. py.	Gmass. contains 1% ilmenite/leucoxene	QTZ. DIORITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 85-02	Pale buff-gray (bleached)	Schistose due to shearing. 20% shear parallel q.c.v., strongly microbrecciated. Host originally chilled	0.05-0.1	Equigranular interlocking	60% soft alt. plag. 40% bleached pale gray chlorite	Veins contain 80-90% Fe/Mg carb. Host contains 3% Fe/Mg carb.	Tr. py. 0.2% cpy. streaks assoc. w. veins + wallrock	Nil	BASALT
86-03	Very dark green	Shear-shredded (very well fol.) but original grain size can be reconstructed from py-rich, leucoxene-rich & chl.-rich patches	1-2 (approx).	Probably diabasic but completely destroyed by shredding	60% dk. gn. chl. 40% plag. (mostly soft) <1% serpentine surfaces	Only 1% fracture cal.	0.1% primary py.	5% leucoxene	GABBRO
HOLE 87				No BEDROCK	SAMPLE				
88-04	Med. gy-gn. w. slight pink overprint	Mod. foliated with no shear effects. Chilled.	Gmass. 0.2-0.4 Phenos 0.5-1.5	Porphyritic with relatively coarse equigranular inter-locking gmass.	5% gray-white euhedral plag. phenos 95% gmass. = 20% qtz. 20% ptly. chloritized hornblende 60% plag. Tr. sphene	<1% dissem. calcite	<0.1% dissem py.	No oxides	QTZ. DIORITE
89-24	Dk. gn. w. 10-20% pink to brick red silicified patches	Strong shear effects --crushed rather than shredded; 10-20% mafic-free silicified patches cut by 1% hematitic shears	Relict leucoxene 0.5-2 mm	Probably diabasic; destroyed by crushing.	Removed from silicified patches: 60% plag 40% dk. gn. chl.	Gabbro containing 5% dissem. + frac. calcite. Silicified zones host 20% frac. calcite	Silicified patches host 0.5% dissem. py.	5% leucoxene	GABBRO

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 90-05 A	Bleached pale gray	Shear foliated and bleached but primary grain size still recorded by light (plag.) + darker (mafic) gray patches + relict leucoxene; 5% q.c.v.	Formerly 0.5-1.5 5% brecciated gray q.c.v.	Sub-diabasic (visible when HCl etched)	40% calcified plag. 60% completely bleached mafics	20% dissem. cal. strongly conc. in plag. sites Veins contain 30% calcite	Veins contain 1% py. and host contains tr. py.	1% leucoxene	GABBRO
90-05 B		— ONLY ONE SAMPLE —							
91-05	Various shades of pink, Mafics all bleached out	20% breccia microfractures, locally with visible crushing No flow or met. fol'n.	Phenos 1-4 Intersertal qtz. 0.5-1 Gmass: 0.1-0.3	Porphyritic with intersertal qtz. and equigran.-interlocking gmass.	90% feld. phenos (mostly stained pink) 1% intersertal qtz. 10% gmass = 60% gray to pink-stained feld 25% buff-bleached hb 10% qtz, 1% sphene	5% fracture calcite tr. fuchsite	Groundmass contains 5% fine to coarse cubic py. (ie 0.5% of whole sample)	Groundmass contains 1% spec. hem. + 1% mt.	SYENITE
92-05	dark grey-green and deep pink (hematite stain)	No flow or metamphic foliation. Cross Fractured 15% localized visible crushing	Fld phenos 0.5 to 1.5mm Int. qtz 0.3mm G.mass: .05 to 0.5mm	Porphyritic with inequigranular interlocking ground mass	30% pink Feldspar phenocrysts (anhedral) 70% Gmass: = 65% colorless to pink Feldspar 10% quartz 20-25% chlorite (primary)	1% calcite veinlets 3% calcite-lined microFractures 5% in Gmass	Trace	1% gmass is magnetite	SYENITE
93-02	white to deep pink-violet (hematite stain)	Moderate flow alignment of feldspar phenocrysts. Superimposed on this are 30% sugary to beccia crush zones (limonitic). 40-50% of chips display fracturing.	Feld. phenos 0.5 to 3mm Intersertal Qtz: 0.5mm Gmass: 0.1 to 0.5mm	Strongly porphyritic with intersertal quartz and inequigranular interlocking groundmass.	75% white to pink (stained) feldspar phenocrysts 1-2% intersertal qtz 25% Gmass = 50% pink stained feld 20% chlorite 10% qtz	5-7% Fracture calcite & disseminated in G. mass.	1% of groundmass finely disseminated pyrite. (ie 0.25% of whole sample)	pronounced hematization 7-10% of G. mass Magnetite 2-3% of G. mass	SYENITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 94-03	gray-pink to deep pink (hematite stain)	primary flow foliation still visible, though weak due to mylonitization Sheared effects: shears/crushed zones surround all feld phenos & pass through many Cross fractures often infilled with xlline pyrite Protomylonite	Feld. phenos: 1 to 3mm intersertal quartz 0.5mm Gmass. 0.1 to 0.3mm	Porphyritic with intersertal quartz and equigranular interlocking groundmass. (original gmass contained little to no mafics).	70% Feld. phenos (pink stained) 1% intersertal quartz 30% G.mass = 60% colourless to pink Fld ~10% quartz	10-15% of Gmass = disseminated calcite 5% general frac. cal.	5% of Gmass cubic pyrite xstals also tr. chalcopyrite (pyritization of mt.) in original Gmass	7-10% Gmass is magnetite ~5% Gmass is hematite	SYENITE
95-06	various shades of pink (hematite stain) mafics have been removed	moderate primary flow foliation 40% sugary to brecciated crushing around feld phenos Cross fractures often hematized.	feld phenos: 1 to 3mm Int quartz: 0.5mm Gmass: 0.1 to .3mm	Porphyritic with intersertal quartz and equigranular interlocking groundmass (original g.mass contained few mafic minerals)	70-75% Feld phenos (stained) 5% intersertal quartz 2-3% qtz veinlets Gmass 20% = 50% colourless to pink Feldspar; 5% chlorite 5-10% quartz; 2-3% sphene	7-10% disseminated calcite in g.mass and lining fracture	Tr.	15-20% hematite in gmass and coating fractures 1% mt. in gmass	SYENITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 -96-18	Deep pink (hematite stained)	Dominant flow alignment of feld. phenos, little mef. foliation. 1% cross-cutting chloritic shear-seams	Feld. phenos 1-5 mm Groundmass 0.1-0.5	Strongly porphyritic with inequigranular interlocking gmass.	60% white to pink-stained (but locally perthitic) feld. phenos. 40% g.mass = 50-60% colourless to pink feld. 10% qtz. 15% chl. Tr sphene	Groundmass contains 5% dissem. calcite	0.1% dissem py. in gmass.	Groundmass = 15% dissem. hematite, 1% magnetite	SYENITE
-97-14	Mottled white + brick red (hem. stained)	Massive with weak flow foliation + 1% cross-cutting chloritic shear seams	Feld. phen. 1-3 mm Gmass. 0.1-0.5	Strongly porphyritic with inequigranular interlocking gmass.	80% white to pink-stained feld. phenos 20% gmass = 20% qtz. 30% colourless to pink stained feld 30% chl 1% sphene	Gmass. contains 5% dissem. cal.	Gmass. contains 0.5% dissem. py.	Gmass. contains 10% dissem. magnetite variably alt. to spec. hem.	SYENITE
-98-14	Mottled white to pink (hem. stained)	Unsheared, massive with no flow foliation	Feld/hb. = 0.5-3 Qtz = 0.5 Sphene Xls. = 0.5-1 Mt. = 0.05-0.1	Inequigranular interlocking. Subhedral feld. & hb. with intersertal qtz, Xls of sphene, finely dissem. mt.	80% white to pink-stained feld 10% hornblende 1% chlorite 2% epidote 5% qtz. 2% sphene	1% patchily dissem. cal.	Nil	1% dissem. magnetite	SYENITE
99-03	Dark grn. flecked white	Mod. foliated (allowing for physically resistant gmass). Unsheared	Feld/Hb phenos = 0.5-1.5 G.mass variable aphanitic to 0.2	Porphyritic with gmass. text. extremely variable in patches from cherty through sugary to equigran. interlocking (0.1-0.2 mm) Plag. phenos fuzzy due resorbing by gmass	25% plag. phenos 10% hb. phenos (disaggregated by chloritization) Gmass comp. variable from undiff. qtz-plag (cherty/sugary zones) to 50% hb-chl/50% plag (E/I zones). No sphene	Nil	Tr. dissem. py.	3% dissem. magnetite	QTZ. DIORITE
100-02	Deep pink to brick red (hem. stained)	Massive (neither flow nor tectonically foliated) but contains 5% microfractures (breccia) plated w. calcite indicating shearing	Feld. Phen. 1-3 Intersertal qtz = 0.5 Gmass <0.1-0.2	Strongly porphyritic 85% feld. phenos in 5% intersertal qtz. + 10% f.g. dioritic gmass Feld. is subhedral to anhedral due close packing	85% white to mostly red-stained feld. phenos. 5% intersertal qtz. 10% gmass = 80% chl. 5% qtz 50% grey feld. 5-10% sphene	5% micro-breccia calcite Also gmass. contains 5% dissem. cal.	Nil	Gmass. contains 5-10% dissem magnetite (no spec. hem. despite red stain)	SYENITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS - 88 101-04	Brick red (hem. stained)	Unfoliated but has 10% microbreccia hairline frac. indicating shearing	Feld. Phen. = 1-3 Intersertal qtz. = 0.5 Gmass. = 0.05-0.2	Strongly porphyritic. 85% feld. phenos. of sub to anhedral form due to close packing 5% intersertal 10% f.g. chloritic gmass.	85% white to mostly red-stained feld. ph. 5% intersertal qtz 10% gmass = 5% qtz. 30% chlorite 50% gray feld 5-10% sphene	Groundmass contains 10% dissem cal. Also present is 5% fracture calcite	2% coarse py. cubes hosted in fractures + gmass	Gmass contains 20% Fe oxide of which 3/4 is spec. hem. and 1/4 mag. Also 0.5 spec. hem. in frac.	SYENITE
102-06	Pale pink flecked black	Massive: unmetamorphosed + unsheared at chip scale but contains 10% gray fractured chips	0.5-1.5 uniform	Equigranular interlocking	70% white to pink-stained feld. 1% qtz. 25% hb., no chl. 2-3% sphene	1% dissem. cal. with 10% in gray fractured chips	Tr. cpy. in gray frac. chips only	2% magnetite. Gray fract. chips have 5% spec. hem.	SYENITE (MAFIC)
103-05	90% pale green-pink phase 10% dk. gn. phase	Irregularly mixed leucocratic + intermed phases with gradational contacts. Mod. fol. for a competent rock. No shears but py. is shear controlled	0.1-0.3 rare grains to 0.5	Aplitic (xenomorphic)	Leucocratic: 40-50% white to pink-stained feld., 30% qtz., 15% hb to (mostly) chl., 3% epidote, no sphene Mafic 40-50% gray feld., 40% hb./chl., 10% qtz.	3% fracture calcite	2% finely dissem. cubic py.	No magnetite or hematite	QUARTZ DIORITE
104-05	White to patchily pink, flecked black	Weakly flow foliated but metamorphically unfoliated. 10% mylonitic shear zones indicating overall deformation	Feld. phenos 3-5 Gmass 0.3-1.0	Porphyritic with equigran. interlocking gmass.	70% white to locally pink-stained feld pheno. laths 30% gmass = 30-40% gray-white feld. 20% qtz., 30% hb., 1% epidote, 5% sphene	Groundmass contains 5% dissem calcite. Mylonite contains 20% calcite	Mylonite shrs. only contain 1% dissem. cubic py. + tr. cpy.	5% dissem magnetite in groundmass only, grading to hem. in mylonite	SYENITE
105-08	White to pale pink -stained, flecked black 10% ochre mylonite zone	Zero flow or metamorphic fol'n. 10% mylonitic zones indicating overall shear deformation	Feld. phenos 1-3 Gmass: 0.2-0.5, some hb. to 1.0	Porphyritic with 15% inequigranular interlocking gmass.	85% white to locally pink-stained feld. phenos. 15% gmass = 30% gray feld. 30% Hb. (locally chl.). 20% qtz., no epidote 10% sphene	Groundmass contains 5% dissem. calcite Mylonite contains 30% cal.	Mylonite only contains 1% dissem. cubic py.	Gmass contains 5% magnetite (locally spec. hem.) Mylonite (+ locally adjoining syenite) contains 3% spec. hem.	SYENITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 106-08	Dark gn. w. 15% gray-white veins	Not metamorphically foliated but has flow fol'n + fracture traced by hb. concentrations. Also shear-brecciated (coarser than chip scale) resulting in 15% qtz.carb veins (these also brecciated)	0.1-0.2	Aplitic to equigranular interlocking	50% plag 25% pale gn. px. 15-20% hb. (locally chl.) no qtz. no sphene	2% fracture calcite Veins also contain 10% calcite	Veins only contain 0.5% dissem. cubic py.	2% dissem. mt. or ilmenite (either or both variably present)	GABBRO
107-02	Pale to deep pink-stained, flecked black 5% white g.v.	Not metamorphically or flow foliated but is moderately microfractured (is shred) at chip scale + contains 5% g.v.	Feld phenos •1-4 Gmass 0.1-0.5 Intersertal qtz° 0.5-1	Strongly porphyritic w. inequigran. inter-locking gmass + intersertal qtz.	80% white to pink-stained feld. ph. 3-5% intersertal qtz 20% gmass = 40% gray feld. 50% hb. (mostly chl.) <10% qtz 3% sphene No epidote	2% fracture calcite Groundmass contains 10% dissem. cal	Groundmass contains tr. dissem. py.	Groundmass contains 10% mt./spec. hem. (either or both variably present, hem. predom.)	SYENITE
108-02	mottled white to light pink (stain) 10% chip are ochre (weathered due to fracturing)	massive no Flow foliation of feld phenocrysts but 10-15% Fractured (jointed) (lined c̄ mt.)	Feld phenos: 0.5 to 3mm hbld 0.5 to 2mm Intersertal quartz 0.5mm sphene: to 0.2mm mt.: to 0.2mm	Inequigranular interlocking. Subhedral feld & hornblende phenos with intercertal quartz, xls of sphene, and finely disseminated mt.	80% white to pink stained feldspar 10% hornblend (some chloritized) 2% chlorite 3-5% quartz 1-2% sphene Tr epidote	0.1% patchily disseminated calcite	Nil	3% fracture & disseminated mt.	SYENITE
109-01	grey white to light pink 5-10% ochre (weath'd due to fracturing)	weak to moderate flow foliation. 5% cross fractures w. hematite	Feld phenos. 0.5 to 3mm hbld 0.5 to 1mm Int. quartz 0.5mm mt. .05 to .2mm	Inequigranular interlocking anhedral to subhedral feldspar and hornblend phenos with intercertal quartz; (localized inequigranular gmass 3-5%; chloritized.)	85% white to pink (stain) feldspar 5-7% hblnd 3-5% Quartz .1% sphene Tr. epidote	2% disseminated calcite	Nil	1% disseminated and fracture hematite 2% disseminated mt.	SYENITE
110-09	white to reddish pink (stain)	no Flow foliation or met. foliation but moderately micro fractured	Feld phenos. 0.5-3.0mm gmass 0.1-0.5mm	Porphyritic with inequigranular interlocking g.mass & intercertal quartz	70% white-pink stain feldspar 10% intersertal quartz 5% hbld phenos 20% gmass: = 90% colorless to pink feldspar 25% chlorite; 10% quartz 2-3% sphene	5-10% calcite disseminated in gmass	Trace	15% of gmass is mt.	SYENITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 111-05	white to reddish pink (hematite stain)	massive : No flow foliation (isotropic) microfractures (10-15%) filled w. pyrite, hematite	Feld phenos: 0.5 to 3.0mm Intersertal quartz 0.5mm g.mass 0.1 to 0.5mm	Porphyritic w. inequigranular interlocking groundmass	75-90% pink feld phenos (stained) 2% intersertal quartz 5-7% chlorite 15% g.mass = 50% colourless to pink feldspar 10% quartz 20% chlorite	5% calcite along fractures and in groundmass	5% of g.mass both fracture filling and disseminated	~5% hematization of g.mass and coating fractures 3-5% mt. between fractures	SYENITE
112-02	white to deep pink (hematite stain)	massive No flow foliation (isotropic)	Feld./hbld. phenos: 0.5 to 2mm Int. qtz: 0.5mm sphene xls: 0.3mm mt.: .05 to .2mm	Inequigranular interlocking subhedral feldspar and hornblende phenos. with intersertal quartz. (localized inequigranular g.mass)	75% white to pink stained feldspar 10% hornblende 5% intersertal quartz 2% chlorite 1% sphene Tr epidote ~5% gmass	<1% patchily disseminated calcite	Tr	0.1% finely disseminated mt.	SYENITE
113-03	Dark gray-green with slight pink stain	No flow foliation. Weak met. fol'n. No shears but 1% joints filled w. epidote, red fld. + calcite. Chilled.	0.1-0.5	Inequigranular interlocking; hb. generally coarser than other min.	60-70% gray to faintly pink-stained plag. 30% hb. (half alt. to chl. 2% qtz No sphene	1% joint calcite, none dissem.	Nil	0.1% finely dissem. mt.	DIORITE
114-03	White flecked black	Unchilled. No flow or met. foliation No shear affects	0.2-1.5	Inequigranular interlocking to subdiabasic. Plag. generally coarsest, hb. intermediate and sphene + mt. finest.	60% plag. 30% fresh hb. (may be same px.) 2% epidote no qtz. 2% sphene	1% dissem. cal. mainly assoc. w. hb.	Nil	3% dissem mt. No hem.	DIORITE
115-02	50% is dk. green and 50% is dark brown	Recrystallized by contact metamorphism. Well foliated by regional metamorphism or shearing (causal not apparent because of recryst.)	Gmass: 0.05-0.2 Plag. metacrysts: 0.4-1.5	Groundmass is recrystallized sugary to crystalline. Plag. crystals often perfectly euhedral indicating they are metacrysts rather than volc. phenocrysts	60% plag. with 30% black hb. + gn. chlorite (green zones) or 30% black hb + bn. biotite (brown zones) 10% plag. phenos	Nil	<0.1% dissem. py.	Nil	ANDESITE.

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 116-05	Speckled black + white, overall dk. gn. black	Massive to weakly met. foliated; no flow fol'n, no effects of shearing; 1% joints filled w. ep. + red feld.	0.3-1.5	Inequigranular interlocking to sub-diabasic. Both major minerals vary in size.	40-50% px. (includes some hb. + secondary chl.) 40-50% plag 5% epidote no qtz. tr. sphene	1% dissem. cal.	Nil	0.1% finely dissem. mt.	GABBRO
117-09	Dk. gn (50%) w. 30% brick red hematized zones and 30% ochre weath. zones	Chilled w. 20-30% mafic hornfels spots in gmass. Strongly shear-foliated + fractured resulting in red hematitic stain	Plag. phenos 0.5-1.5 Gmass. aphanitic Hornfels 0.1-0.2	Strongly porphyritic with aphanitic gmass containing 30% coarser-grained equigranular interlocking hornfels patches	Where best preserved in green phase: 40% plag. phenos 60% gmass. = hard albitic w. 10-20% free chlorite, and 30% hornfels patches having 40% hb + chl., 60% plag	Green phase has 1% dissem. calcite. Brick red + ochre zones have 20% shear-controlled calcite	0.1% finely dissem. py. in red phase only	0.1% finely dissem mag. in green phase only. No specular hem.	ANDESITE
118-05	Dk. gn. + pale gy.-white in bands; 10% pink hem. stained patches	70% mafic and 30% leucocratic phases now dislocated and mixed by shearing. 25% aphanitic mylonitic zones	Aphanitic and 0.2-0.3 mm in bands; vestiges plag. phenos to 1.0	Aphanitic + granulose in bands w. vestiges plag. phenos	Where best preserved: 30% partly chloritized hb., 70% plag. Leucocratic phase contains only 10% hb, 30% qtz.	5% dissem. and fracture calcite	Nil	0.2% finely dissem mt. in best preserved zones No spec. hem.	DIORITE
119-04	Med. gn. w. 30% dk. gn. areas in gmass.	Strongly flow-foliated Moderate metamorphic foliation. 30% of gmass is hornfelsed + these areas also foliated Unsheared	Phenos: 0.3-1.5 Gmass 0.05 Hornfels 0.1-0.2	Strongly porphyritic with near-aphanitic gmass containing coarser equigranular interlocking hornfels patches	40% plag. phenos. 60% hard albitic gmass with 10-20% visible chlorite Hornfels patches contain 50% hb. and 50% plag.	Trace fracture calcite	0.05% finely dissem. py.	No mag. or spec. hem.	ANDESITE
120-08	Med. gn. w. 20% dk. gn. patches	Massive to weakly foliated. Chilled. Unsheared 20% hornfels patches in groundmass	Phenos 0.2-1.0 Gmass aphan. Hornfels 0.1-0.2	Aphanitic to locally porphyritic with aphan. gmass; these por. zones often hornfelsed so gmass is equigranular interlocking. Phenos are basalt-type laths giving sub-diabasic text.	Hard to soft with no free chlorite. Locally 30% plag phenos. Hornfelsed patches in gmass contain 50% hb., 50% plag	10% microfracture calcite	0.1% dissem. py.	No mag. or hem.	BASALT

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 121-11	(a) Dk gn (60% sample) (b) Md. gn. (10% sample) (c) Dk. brown (30% sample)	Weak met. fol'n, strongest in (a). Contacts between (a) (b) + (c) irregular suggesting all are hornfels phases of same host Unsheared, basically, just a few fractures	(a) 0.2 to 1.0 (b) pheno. laths to 1.5 x 0.2 gmass 0.05 (c) Phenos to 1.0; gmass aphanitic	(a) anequigranular-interlocking to sub-porphyritic to sub-diabasic. (b) Porphyritic w. near-aphanitic gmass (c) Porphyritic w. aphanitic gmass.	(a) 70% plag. 30% chloritized hb. (b) 5% plag. phenos, 95% hard aphanitic groundmass, green. (c) 15% euhedral plag. phenos. 85% gmass hard cherty-feldsp. porphyritic w. 10-20% biotite/chl	1% fracture calcite	0.2% fracture pyrite	Nil	BASALT
122-14	Pale green w. 20% dk. gn. spots (hornfels)	Weakly foliated. Chilled. Unsheared. 1% xenoliths 20% hornfels spots 5% cherty vesicles	Groundmass <0.05 Hornfels spots 0.2 to 5.0 across. Vesicles to 2 mm. Plag. phenos 0.2-0.4	Porphyritic with near-aphanitic but equigranular interlocking groundmass. Vesicles are cherty. Hornfels spots are equigranular interlocking. Xenoliths are aphanitic.	5% aphanitic glass vesicles 75% hard, near-aphanitic, albitic gmass containing 30% 0.2-0.4 mm. plag. microphenos. 20% hornblende hornfels spots (0.2 mm grains; 70% hb. and 30% plag. 1% chilled aphanitic to feld.-porphyritic int volc. xenoliths	Hornfels spots only contain 10% dissem. cal.	Nil	Nil	ANDESITE
123-12	Pale gray + med. gn. (colour varies between lithics)	Primary fragmental (tuffaceous) structure exceptionally well preserved. Met. fol'n. occurs in only a few lapilli. Unsheared.	Ash 0.1 to 2.0 Lapilli / blocks (?) 2.0 to at least 20 X'ls to 0.5	Tuffaceous -- lapilli (possibly block) tuff with unsorted fine to coarse ash matrix.	30% lapilli 5% plag. crystals 60-70% ash lithics No free chlorite Ash + lapilli are all pale gy. to med. gn. aphanitic to feldspar-porphyritic int. volcanics	3% fracture calcite	Tr. very finely dissem. py.	Nil	INT LAPILLI TUFF
124-04	Dark gn.	Unchilled. Moderately shear laminated (near shear axis) with 15% shear-parallel qtz.-carb veinlets	Groundmass 0.3-0.5 (reduced where shear laminated) Phenos to 2.0	Sub-diabasic gmass; porphyritic. Shredded where shear laminated	10-20% dk. gn chloritized px. phenos (ie tholeiitic) Gmass = 40% dk. gn chloritized px. 50-60% epidote-altered plag	Veins contain 50% calcite, host none	Veins contain 0.1% py.	Veins contain 0.5% spec. hem (conc. in walls)	BASALT
125-01	(a) 85% Dark grey/black to reddish with 20% of chips rusty weathered (b) 15% dk. gn	(a) 80% magnetite-chert bands interbedded with 20% chert-magnetite bands on a scale of 0.2 to 2 mm. overall weakly foliated (b) locally sheared, containing up to 1% recrystallized chert beds.	(a) 0.1 mm recrystallized chert and <0.1 mag (b) shredded grains <0.1	(a) crystalline to sugary texture (b) granular sedimentary texture partially obscured by structure.	(a) (i) chert-magnetite bands contain 80% chert (ii) magnetite-chert bands contain 20% chert (b) 30% dk. gn. chlorite. 70% plag. and qtz.	(a) trace dissem. and fracture calcite (b) <1% fracture calcite	trace py. along iron formation and sedimentary contact, bedding, and associated with chert bands	(a) (i) magnetite-chert bands contain 80% magnetite (ii) chert-magnetite bands contain 20% magnetite (b) Nil	IRON FORMATION (85%) SILTSTONE (15%)

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 126-02	Pale green-yellow	Well foliated Sheared, silicified 15% sericitic shears 2% qtz vein	G. mass: aphanitic qtz phenos. 0.5 to 2 mm	Porphyritic with aphanitic groundmass	5% qtz phenocrysts Groundmass: 5% gn chl 15% sericite 80% quartz-feldspar undifferentiated	5% fracture filling calcite 1% dissem. calcite	tr. dissem. py.	Trace dissem. leucoxene	Rhyolite
127-05	Dark gray & red (50/50)	50% magnetite-chert bands interbedded with 50% chert-magnetite bands on scale of between 0.3 to 5 mm. - chert is recrystalized massive and magnetite-chert bands are weakly to moderately foliated.	recrystallized chert: 0.1 to 0.2 magnetite 0.1	Sugary to crystalline	Chert-magnetite bands contain 80% chert, magnetite-chert bands contain 20% chert	1% dissem calcite in chert beds tr. calcite in magnetite-chert bands	tr. dissem py	magnetite-chert bands contain 80% magnetite, chert-magnetite bands contain 20%	IRON FORMATION (chert and magnetite)
128-01	(a) Dark gray (45%) (b) Dark green (45%) 10% white/orange vein	(a) 90% magnetite-chert bands interbedded with 10% chert-magnetite bands, bedding delineated by faint rust coloured beds in some chips. - overall structure is massive to weakly foliated, 5% white vein (b) moderate to well foliated, 5% white-orange vein	(a) <0.1 (b) 0.1	(a) crystalline (b) Granular, sandy	(a) (i) chert-magnetite bands contain 90% chert (ii) magnetite chert bands contain 10% chert (b) 50% gn. chlorite 50% plag. and qtz.	(a) 5% calcite vein (b) 5% white/orange calcite vein	(b) tr dissem & fracture py.	(a) (i) magnetite-chert bands contain 90% magnetite (ii) chert-magnetite bands contain 10% magnetite (b) 5% magnetite in wacke	IRON FORMATION and GRAYWACKE
129-02A	Dark green 5% pale chips of 02B sample	Well foliated, laminated due to shearing on 0.2 mm scale. - lamination across foliation causes secondary grain sizes. 3% thin magnetite bands	0.1 to 0.2	Equigranular interlocking	45% dk gn. chl 5% buff chl along lamination 50% plag	3% fracture lining Fe/Mg carbonate	Nil	tr. spec. hem - (3% thin hematite bearing bands - shears)	BASALT
129-02B	Pale yellow	Well foliated, laminated sericitic shears rare amygdules (qtz) 1% white vein	aphanitic	Aphanitic, hard due to silicification	15-20% sericite remainder qtz and feldspar.	5% fracture lining Fe/Mg carbonate	tr py. rimming qtz amygdules	Nil	BASALT

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 130-01	Medium green 5% of chips are rusty weathered	Well foliated, laminated with crenulations and laminations on scale of .1 to .2mm, separated by sericitic/chloritic shear planes. Partly bleached	<0.1	Disrupted by structure (Non-porphyritic)	10% gn chl 5% buff chl 15% sericite 70% plag.	1% fracture lining calcite 5% dissem Fe/mg carb.	tr. dissem cubic py.	Nil	BASALT
131-03	Dark green	Sheared; fractured 10% shear controlled talc 10% stretched volcanic lapillis	ash: 0.05 to 0.1 crystals: 0.1-1.5 Lapilli:lithics up to 10.0 long.	fine ash with 5% qtz crystals and 5% plag (albite) crystals and 10% lapillis lithics Ashy texture obscured by intense shearing and introduction of dark green chlorite/serpentine	Ash and lithics are of intermediate composition. Shearing and fracturing has introduced 25-30% dark green chlorite/serpentine Also 10% shear talc	1% fracture calcite (explains mafic Jensen comp.)	Tr. py.	Nil	INTERMEDIATE TUFF (Lapilli)
132-02	Pale yellow-gn.	Sheared and siliceous (hard between sericitic/chloritic shear planes) 0.5 to [illegible]0mm apart, often crenulated Bleached	aphanitic	Aphanitic due to silicification and intensive shearing Anastomosing sericitic shears breaking up sample integrity	5% pale gn chl. 25% sericite 65% feldspar-quartz silicification	5% dissem Fe/mg carb. 3% fracture filling Fe/mg carb,	tr dissem cubic py up to 2mm	Nil	BASALT.
133-01	Med. gray-green w. slight pink stain	Not flow foliated. Mod. foliation + fracturing due to shearing	Phenos: 0.5-2 Gmass: 0.1-0.3	Strongly porphyritic with inequigranular (variable hb. grain size) gmass.	60% gray to pink-stained feld. phenos 40% gmass. = 25% chloritized hb. 60% gray feld. 10% qtz no [illegible] Rare	10% dissem + fract. cal	Rare tr. py.	No. mt. or hem.	QTZ. DIORITE
134-06	Med. gy-gn. with dk. gn. spots	Chilled with 20% coarser grained hornfels spots of 0.5-5 mm diam. No shear effects.	Host: Aphan. to 0.1 Spots 0.1-0.2	Aphanitic to equigranular interlocking. Spots equigranular interlocking	Host Hard, albitic with <10% free chl. Spots Basaltic: 40% dk gn. chlorite 60% plag., 1% epidote No hb. left indicating	1% fracture calcite contact predates regional met'm.	Hornfels spots only contain 1% coarse dissem. cubic py	Nil	ANDESITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 135-09	Pale green w. darker dk. gn. spots	Very similar #122 Chilled. 5-10% hornfels spots of 0.3 to 2 mm size Weakly foliated 10% shear-controlled fractures	Groundmass variable aphanitic to 0.1 Phenos 0.2-0.5 Hornfels 0.1-0.2	Porphyritic with aphanitic to equigranular interlocking groundmass & scattered hornfels spots of very irregular shape (hb. chloritized due to fracture alteration)	5% hornfels spots containing 40% dk. gn chl., 60% plag. 20% plag. phenos. 75% hard, aphanitic, albitic gmass with no free chlorite	2% fracture calcite	1% fine to coarse cubic py. assoc. w. fractures	Nil	ANDESITE
136-02	Med. gn.	Weakly fol. Unsheared. Chilled, variably glassy to crystalline in irregular patches. Metaporphyritic.	Aphan. to 0.1 Epidote metacrysts 0.2-0.5	Glassy to equigranular interlocking in irregular patches. Epidote metacrysts record contact met'm.	5% epidote metacrysts. Groundmass is hard, albitic with 20% free chlorite where coarsest.	1% dissem. cal. 3% frac. cal.	Rare trace py.	Nil	ANDESITE
137-10	Medium gray, mottled white	strong shearing, Finely laminated 0.05 to 1mm (bedding) also shearing at 15-20° to bedding.	G. mass aphanitic to 0.05 mm Fe/Mg metacrysts 0.3 to 1mm	- Silty texture, also 10% carbonate metacrysts cutting schistosity - locally a ~~secondary~~ sand-like grain size results from cross laminations.	10% gray-gn chlorite 5% buff chlorite. remainder of rock is plag/qtz.	10% Fe/Mg carbonate metacrysts	0.5% dissem py.	Nil	SILTSTONE
138-07	Medium gray	Well Foliated local shearing, 5% sericitic shear partings locally crenulated -several % brecciated gray quartz carbonate vein	aphanitic to 0.1 mm	Aphanitic, silty and sandy texture, gradational	10-15% graychlorite 1% buff chlorite 5% sericite remainder qtz and plag. 2% qtz vein.	10% Fe/mg carbonate mostly dissem. but also along fractures	Nil	Nil	GRAYWACKE and SILTSTONE
139-06	Pale gray (buff)	very well Foliated shear brecciated with sericitic shear slips approx 0.1mm apart.	G. mass aphanitic plag phenos ~~0.5~~ qtz phenos: 0.3 to 1mm	Porphyritic with an aphanitic groundmass, very hard groundmass	2% qtz. phenos. 1% plag phenos approx 15% white sericite along shear partings remainder of rock is qtz-plag no chlorite.	5% dissem. Fe/mg carb 2% fracture lining Fe/mg carb.	Nil	Nil	RHYOLITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 140-07	Medium gray mottled white.	Strong shearing and shear breccia 80-90% quartz-carbonate vein original rock is [illegible] Finely shear laminated un bleached.	breccia fragments up to 2mm qtz & plag grains 0.1 to 0.3 remainder of rock is <0.1	Sandy-silty texture where not disrupted by brecciation and shearing	original rock is: 5-10% relict qtz grains, 1-2% relict feldspar 15% gray chlorite, remainder of rock plag & qtz.	80-90% of rock 60% Fe/Mg carb 40% qtz.	trace py.	Nil	GRAYWACKE/ QTZ-CARB VEIN
141-11	Pale yellow (bleached) 2% of chips rusty weathered	Schistose, microlaminated well sheared (Sericitic shears throughout) 40% white carbonate veins	Aphanitic	Aphanitic hard between shear partings	original rock: 35% sericite along shears no chlorite remainder of is plag-qtz.	40%	Nil	Nil	RHYOLITE
142-10	Medium gray	Finely bedded - siltstone is finely shear laminated with sericitic shear slips (crenulated) -entire rock is schistose - 5% veining Fe/Mg carb and Qtz.	0.05 to 0.1 some coarser beds up to 0.3	Very fine sandy (wacke predominates) Siltstone is aphanitic	5-10% relict qtz grains 20% gray chlorite remainder of rock plag and qtz.	3% vein Fe/mg carb. 3% dissem. Fe/mg carb.	Nil	Nil	GRAYWACKE and SILTSTONE
143-10	Pale grey 10% of chips rusty weathered (bleached)	Schistose, microlaminated (crinkled) with sericite along shear planes laminations often crenulated.	Aphanitic with relict qtz grains up to 0.2	Silty to Aphanitic	2% relict qtz grains in least deformed chips 5% gray chlorite 5% buff chlorite 10% sericite, remainder of rock plag & qtz.	3% dissem. Fe/Mg carb. 1% fracture lining calcite	Nil	Nil	SILTSTONE
144-08	Medium green, mottled white	well foliated, weakly sheared, leucoxene & chlorite and sericite along shear slips	G. mass aphanitic Qtz and plag. phenos: 0.3-1.5mm	Porphyritic with an aphanitic groundmass	5% Qtz phenos. 25% plag. phenos. Groundmass: Fairly hard, 10-15% gn chlorite 2-3% sericite remainder qtz & plag.	< 1% dissem. and fracture calcite	0.5% dissem py.	Nil	DACITE

SAMPLE NUMBER	COLOUR	STRUCTURE	GRAIN SIZE (mm)	TEXTURE	MINERALOGY				NAME
					Silicates	Carbonates	Sulphides	Other	
PLS-88 145-03	Medium to pale green (partially bleached and silicified)	Weak to moderate foliation, local sericite shear partings - some shredding of grains.	G. mass: aphanitic to 0.1 plag & qtz phenocrysts: 0.3 to 2mm	Porphyrytic with an aphanitic to equigranular interlocking groundmass.	40-50% plag phenos. 2% qtz phenos. Groundmass: 15% chl 85% plag and qtz	tr. dissem calcite	tr. dissem. py.	Nil	DACITE
146-14	Medium green mottled white	weakly foliated not sheared. Chilled 1% quartz vein	G. mass aphanitic to 0.1 plag phenos 0.3 to 2.0 epidote phenos 0.3 to 0.8	Porphyrytic with an aphanitic to equigranular interlocking groundmass	50% plag. phenos. 10% epidote phenos. Groundmass: 25% chlorite 75% plag and 1-2% qtz 0.1% sphene	tr. dissem and fracture calcite	Nil	Nil	ANDESITE
147-16	Medium green, mottled white	Moderate foliation, unsheared -1% qtz. vein - minor fractures unchilled	G. mass 0.1 to 0.2 plag. phenos 0.5 to 3mm	Porphyrytic with equigranular interlocking groundmass	40% plag phenos. G. Mass: 20% gn and buff chl. 70% plag 10% qtz.	0.5% fracture calcite	0.5% dissem py	Nil	ANDESITE
148-03	Medium green, mottled white	weakly foliated, unsheared - minor fractures - unchilled	G. mass 0.1 to 0.2 plag. phenos 0.5 to 3mm	Porphyrytic with equigranular interlocking groundmass	40% plag phenos. G. Mass: 20% gn and buff chl. 70% plag 10% qtz	0.5% calcite vein 0.5% dissem & fracture calcite	tr. chalcopyrite	Nil	ANDESITE
149-06	Gray	Schistose, finely laminated (bedded) to moderate foliation 5% white vein	aphanitic to 0.05	Silty to aphanitic	20% gray chlorite 10% sericite 70% qtz and plag.	5% calcite vein 1% dissem. calcite	tr. dissem py.	Nil	SILTSTONE

APPENDIX I

BONDAR-CLEGG BEDROCK ANALYSES

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BONDAR-CLEGG

Geochemical Lab Report

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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
PLS88-01-09B		65.50	0.29	14.70	4.53	0.04	1.79	2.17	3.84	1.92	<0.01	2.55
PLS88-02-05		60.70	0.08	16.50	6.17	0.08	3.14	1.95	3.33	2.05	0.05	4.55
PLS88-03-07		63.80	0.01	16.30	1.74	0.01	0.83	5.00	3.85	0.83	0.18	6.00
PLS88-04-05		63.50	0.08	18.60	1.67	0.02	0.71	3.75	4.44	0.64	<0.01	3.80
PLS88-05-04		60.50	0.14	16.90	4.54	0.05	2.09	3.45	3.33	1.50	0.02	5.30
PLS88-06-02		60.90	0.10	14.30	4.79	0.13	1.48	4.48	2.52	2.42	<0.01	6.40
PLS88-07-04		59.90	0.30	18.80	3.81	0.05	1.76	5.21	4.08	0.86	0.14	2.60
PLS88-08-02		56.60	0.43	18.70	5.08	0.07	2.25	5.62	4.02	1.10	0.14	3.00
PLS88-09-02		60.50	0.30	16.60	5.37	0.07	2.67	5.39	3.95	0.65	0.22	3.00
PLS88-10-02		60.60	0.33	18.30	3.85	0.04	1.32	4.44	4.28	1.36	0.33	2.25
PLS88-11-09		62.80	0.11	12.90	5.37	0.04	2.04	2.54	3.69	1.91	0.31	5.80
PLS88-12-03		57.90	0.13	16.80	7.17	0.09	3.11	2.37	3.26	1.04	0.29	5.10
PLS88-13-03		46.80	0.28	13.50	10.30	0.11	3.25	5.20	2.01	2.89	0.45	12.35
PLS88-14-03		79.50	0.10	6.34	4.16	0.01	0.45	0.59	0.60	1.41	0.37	4.30
PLS88-15-03		42.40	0.07	12.40	5.20	0.13	5.62	10.90	2.29	2.50	0.46	16.50
PLS88-16-03		57.90	0.10	14.30	5.05	0.08	2.30	4.58	4.07	1.92	0.25	7.00
PLS88-17-03		62.60	0.07	14.10	2.57	0.05	1.63	4.54	4.90	1.40	0.50	5.00
PLS88-18-03		55.40	0.16	14.80	7.93	0.16	2.31	4.31	2.79	1.29	0.22	9.70
PLS88-19-04		45.60	0.21	6.03	35.50	0.05	1.84	2.14	0.71	0.97	0.33	3.70
PLS88-20-16		56.40	0.17	15.40	9.08	0.18	2.42	4.34	2.67	1.42	0.22	5.80
PLS88-21-03		64.20	0.49	16.70	4.45	0.06	2.01	3.28	4.13	1.56	0.33	2.50
PLS88-22-12		57.90	0.16	15.20	5.68	0.11	1.42	5.04	4.25	1.93	0.19	5.60
PLS88-23-15		52.50	0.09	11.30	6.72	0.15	3.57	7.30	2.08	1.26	0.31	12.10
PLS88-25-07		53.50	0.41	13.50	6.31	0.10	6.88	7.07	3.51	0.09	0.34	6.60
PLS88-26-03		60.40	0.07	13.50	4.48	0.08	3.41	4.58	3.87	0.92	0.13	5.70
PLS88-27-07		53.50	0.12	14.10	7.68	0.15	2.33	4.18	2.48	1.35	0.31	12.35
PLS88-28-08		56.80	0.06	13.90	4.93	0.03	4.89	6.07	3.78	0.13	0.19	6.70

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SAMPLE NUMBER	ELEMENT UNITS	Total PCT	Cu PPM	Zn PPM	Ag PPM	As PPM	Zr PPM	Au PPB
PLS88-01-09B		97.33	29	57	<0.1	3	98	9
PLS88-02-05		98.60	54	77	0.1	46	150	<5
PLS88-03-07		98.55	17	32	<0.1	3	71	<5
PLS88-04-05		97.20	15	24	<0.1	<2	66	<5
PLS88-05-04		97.82	45	69	0.1	19	94	<5
PLS88-06-02		97.52	75	32	0.3	20	81	13
PLS88-07-04		97.51	31	45	0.1	<2	93	<5
PLS88-08-02		97.01	34	65	<0.1	<2	102	<5
PLS88-09-02		98.72	28	46	<0.1	<2	101	<5
PLS88-10-02		97.11	34	48	<0.1	8	106	<5
PLS88-11-09		97.51	46	101	0.2	45	109	6
PLS88-12-03		97.26	5	21	<0.1	21	115	<5
PLS88-13-03		97.14	105	25	0.1	>2000	70	614
PLS88-14-03		97.83	55	55	0.2	81	61	<5
PLS88-15-03		98.47	69	28	<0.1	260	50	35
PLS88-16-03		97.55	38	81	<0.1	26	103	13
PLS88-17-03		97.36	17	57	<0.1	<2	141	<5
PLS88-18-03		99.07	47	72	<0.1	29	104	<5
PLS88-19-04		97.08	15	30	<0.1	3	15	<5
PLS88-20-16		98.09	60	82	<0.1	15	108	<5
PLS88-21-03		99.71	50	65	0.2	4	153	<5
PLS88-22-12		97.48	51	94	0.1	43	106	9
PLS88-23-15		97.38	28	56	<0.1	19	72	<5
PLS88-25-07		98.30	44	63	<0.1	<2	98	<5
PLS88-26-03		97.14	43	56	0.1	2	78	<5
PLS88-27-07		98.55	37	53	<0.1	2	88	<5
PLS88-28-08		97.48	39	24	<0.1	2	72	7

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SAMPLE NUMBER	ELEMENT UNITS	As PCT
PLS88-13-03		0.62

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SAMPLE NUMBER	ELEMENT UNITS	CO2 PCT
PLS88-01-098		0.71
PLS88-02-05		2.32
PLS88-03-07		4.42
PLS88-04-05		2.22
PLS88-05-04		3.94
PLS88-06-02		5.17
PLS88-07-04		0.77
PLS88-08-02		1.04
PLS88-09-02		1.37
PLS88-10-02		0.35
PLS88-11-09		5.37
PLS88-12-03		2.66
PLS88-13-03		7.16
PLS88-14-03		0.22
PLS88-15-03		16.63
PLS88-16-03		6.66
PLS88-17-03		3.74
PLS88-18-03		8.20
PLS88-19-04		3.05
PLS88-20-16		3.71
PLS88-21-03		0.64
PLS88-22-12		3.72
PLS88-23-15		11.23
PLS88-25-07		3.87
PLS88-26-03		4.12
PLS88-27-07		12.02
PLS88-28-03		5.07

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Zn

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Ag PPM	As PPM	Au PPB	SiO2 PCT	TiO2 PCT	Al2O3 PCT	Fe2O3A PCT	MnO PCT	MgO PCT
PLS88-29-05-B		30	61	<0.1	2	12	63.40	0.13	15.00	4.38	0.07	3.48
PLS88-30-07-B		23	63	<0.1	2	<5	52.50	0.12	12.60	6.18	0.12	5.91
PLS88-31-11-B		18	29	<0.1	2	10	49.10	0.09	11.10	6.09	0.09	3.15
PLS88-32-03-B		41	46	<0.1	<2	<5	56.40	0.13	13.60	5.45	0.10	7.18
PLS88-33-04-B		38	55	<0.1	<2	7	63.50	0.12	13.20	4.62	0.12	2.53
PLS88-34-09-B		382	30	0.1	2	38	56.90	0.08	14.10	3.95	0.04	3.05
PLS88-35-08-B		44	41	0.1	3	7	57.40	0.13	12.40	4.44	0.08	3.02
PLS88-36-08-B		28	53	<0.1	<2	<5	57.50	0.13	15.00	5.42	0.10	3.85
PLS88-37-03-B		16	76	<0.1	2	<5	59.30	0.61	12.70	4.30	0.09	4.22
PLS88-38-03-B		29	36	0.1	2	5	61.50	0.11	12.70	4.17	0.09	3.80
PLS88-39-07-B		72	61	<0.1	2	<5	66.60	0.13	15.60	4.99	0.06	2.66
PLS88-40-03-B		50	58	<0.1	<2	<5	53.10	0.12	13.70	4.71	0.11	4.65
PLS88-41-03-B		29	50	<0.1	5	<5	60.20	0.27	13.70	4.54	0.11	2.31
PLS88-42-03-B		19	24	0.4	<2	12	67.10	0.11	11.90	3.94	0.05	2.40
PLS88-43-03-B		28	61	<0.1	22	7	54.40	0.17	14.20	5.38	0.12	5.55
PLS88-44-02-B		41	74	<0.1	<2	<5	55.30	0.55	14.60	7.00	0.16	4.07
PLS88-45-03-B		87	100	<0.1	15	<5	58.00	0.27	15.60	9.62	0.15	2.35
PLS88-46-07-B		85	84	<0.1	2	<5	57.00	0.06	16.10	7.89	0.08	2.25
PLS88-47-02-B		27	81	<0.1	5	5	56.00	0.17	14.10	8.03	0.20	2.84
PLS88-48-02-B		68	105	<0.1	9	<5	58.40	0.30	15.60	9.28	0.14	2.42
PLS88-49-03-B		6	72	0.3	2	<5	63.90	0.03	14.80	2.35	0.03	1.76
PLS88-50-04-B		35	62	<0.1	<2	<5	53.80	0.08	11.80	4.25	0.09	3.23
PLS88-51-03-B		25	47	<0.1	<2	<5	58.30	0.07	15.10	2.73	0.05	1.82
PLS88-52-02-B		33	78	<0.1	3	<5	52.00	0.08	10.30	20.80	0.07	2.31
PLS88-53-03-B		40	87	<0.1	2	6	50.20	0.09	13.70	5.76	0.10	3.55
PLS88-54-06-B		44	65	<0.1	3	7	50.20	0.11	13.40	3.95	0.08	2.72
PLS88-55-06-B		46	75	<0.1	7	<5	61.40	0.11	14.70	5.40	0.06	2.16
PLS88-56-02-B		60	89	<0.1	28	7	61.90	0.09	15.30	6.50	0.08	2.65
PLS88-57-03-B		61	71	<0.1	6	6	58.80	0.09	16.20	7.14	0.08	2.52
PLS88-58-02-B		31	65	<0.1	5	<5	58.70	0.08	8.59	18.20	0.09	1.96
PLS88-59-06-B		27	45	<0.1	10	9	60.20	0.06	12.50	3.80	0.07	1.64
PLS88-60-06-B(A)		47	63	<0.1	6	5	57.70	1.14	16.80	5.99	0.18	2.97
PLS88-60-06-B(B)		29	42	<0.1	4	9	64.00	0.44	15.50	3.26	0.56	1.37
PLS88-61-03-B		31	83	<0.1	5	<5	59.90	0.54	15.70	5.06	0.10	3.26
PLS88-62-02-B		12	39	<0.1	3	<5	69.40	0.51	15.60	3.15	0.07	0.96
PLS88-63-04-B		30	55	<0.1	<2	8	51.00	0.51	12.00	6.19	0.09	10.70

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SAMPLE NUMBER	ELEMENT UNITS	CaO PCT	Na2O PCT	K2O PCT	P2O5 PCT	LOI PCT	Total PCT
PLS88-29-05-B		4.78	3.84	1.01	<0.01	5.25	101.34
PLS88-30-07-B		7.22	3.91	0.47	0.10	10.55	99.68
PLS88-31-11-B		13.10	1.83	0.28	0.25	14.00	99.08
PLS88-32-03-B		6.27	3.15	0.35	<0.01	8.90	101.53
PLS88-33-04-B		6.02	2.69	1.37	0.09	7.35	101.61
PLS88-34-09-B		6.80	2.95	0.92	0.16	8.40	97.35
PLS88-35-08-B		8.54	3.35	0.47	0.05	8.45	98.34
PLS88-36-08-B		4.90	2.28	0.79	0.08	7.00	97.05
PLS88-37-03-B		5.60	3.62	0.65	0.10	6.00	97.19
PLS88-38-03-B		3.70	3.91	1.57	0.15	5.60	97.30
PLS88-39-07-B		0.84	1.62	1.63	<0.01	3.90	98.03
PLS88-40-03-B		7.05	2.88	1.46	0.27	9.30	97.35
PLS88-41-03-B		5.04	3.93	1.14	0.20	6.95	98.39
PLS88-42-03-B		2.90	2.55	1.66	0.11	4.40	97.13
PLS88-43-03-B		5.97	3.47	0.70	0.05	7.45	97.46
PLS88-44-02-B		6.79	3.98	0.53	0.22	4.05	97.25
PLS88-45-03-B		3.16	2.48	1.20	<0.01	5.70	98.53
PLS88-46-07-B		1.89	1.79	1.91	0.19	9.05	98.21
PLS88-47-02-B		4.60	4.18	1.12	0.38	6.80	98.41
PLS88-48-02-B		3.14	2.41	1.39	0.22	4.70	98.00
PLS88-49-03-B		4.15	2.07	1.29	0.03	8.00	98.41
PLS88-50-04-B		7.90	3.38	0.60	0.19	11.90	97.21
PLS88-51-03-B		5.84	4.67	0.74	0.03	7.95	97.30
PLS88-52-02-B		3.18	0.70	1.91	0.36	6.25	97.97
PLS88-53-03-B		8.66	2.82	0.80	0.24	11.50	97.42
PLS88-54-06-B		10.50	2.98	0.63	<0.01	13.25	97.82
PLS88-55-06-B		2.98	3.63	1.73	0.42	4.85	97.45
PLS88-56-02-B		2.53	2.99	2.09	0.26	5.80	100.19
PLS88-57-03-B		2.75	2.29	2.44	0.23	4.70	97.24
PLS88-58-02-B		5.21	1.03	0.50	0.38	5.80	100.54
PLS88-59-06-B		7.17	2.63	0.67	0.56	7.95	97.25
PLS88-60-06-B(A)		5.16	4.12	1.02	0.39	2.00	97.47
PLS88-60-06-B(B)		3.82	4.19	1.23	0.19	2.75	97.31
PLS88-61-03-B		6.01	5.84	0.31	0.25	1.70	98.67
PLS88-62-02-B		4.12	4.85	0.90	0.15	1.65	101.36
PLS88-63-04-B		7.08	2.66	1.39	0.50	7.30	99.92

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SAMPLE NUMBER	ELEMENT UNITS	Zr PPM
PLS88-29-05-B		85
PLS88-30-07-B		114
PLS88-31-11-B		63
PLS88-32-03-B		81
PLS88-33-04-B		77
PLS88-34-09-B		85
PLS88-35-08-B		84
PLS88-36-08-B		86
PLS88-37-03-B		112
PLS88-38-03-B		74
PLS88-39-07-B		111
PLS88-40-03-B		88
PLS88-41-03-B		74
PLS88-42-03-B		78
PLS88-43-03-B		75
PLS88-44-02-B		80
PLS88-45-03-B		108
PLS88-46-07-B		114
PLS88-47-02-B		97
PLS88-48-02-B		121
PLS88-49-03-B		58
PLS88-50-04-B		50
PLS88-51-03-B		71
PLS88-52-02-B		48
PLS88-53-03-B		90
PLS88-54-06-B		58
PLS88-55-06-B		120
PLS88-56-02-B		108
PLS88-57-03-B		79
PLS88-58-02-B		48
PLS88-59-06-B		42
PLS88-60-06-B(A)		122
PLS88-60-06-B(B)		100
PLS88-61-03-B		136
PLS88-62-02-B		154
PLS88-63-04-B		113

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SAMPLE NUMBER	ELEMENT UNITS	CO2 PCT
PLS88-29-05-B		3.36
PLS88-30-07-B		8.80
PLS88-31-11-B		13.70
PLS88-32-03-B		5.83
PLS88-33-04-B		5.79
PLS88-34-09-B		8.24
PLS88-35-08-B		7.04
PLS88-36-08-B		5.16
PLS88-37-03-B		4.25
PLS88-38-03-B		4.99
PLS88-39-07-B		0.33
PLS88-40-03-B		7.65
PLS88-41-03-B		6.19
PLS88-42-03-B		3.61
PLS88-43-03-B		4.62
PLS88-44-02-B		2.47
PLS88-45-03-B		3.24
PLS88-46-07-B		7.67
PLS88-47-02-B		5.98
PLS88-48-02-B		2.22
PLS88-49-03-B		6.30
PLS88-50-04-B		10.73
PLS88-51-03-B		7.04
PLS88-52-02-B		4.72
PLS88-53-03-B		10.05
PLS88-54-06-B		12.25
PLS88-55-06-B		3.26
PLS88-56-02-B		3.79
PLS88-57-03-B		2.60
PLS88-58-02-B		4.48
PLS88-59-06-B		6.88
PLS88-60-06-B(A)		0.59
PLS88-60-06-B(B)		1.68
PLS88-61-03-B		0.68
PLS88-62-02-B		0.91
PLS88-63-04-B		4.44

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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
PLS88-64-06		62.20	0.48	15.60	5.71	0.14	1.95	5.60	4.24	1.13	0.29	1.95
PLS88-65-05		55.70	0.39	15.00	6.64	0.11	3.12	5.82	4.51	1.57	0.60	5.05
PLS88-66-12		62.20	0.55	15.90	5.61	0.09	2.64	4.77	6.01	1.11	0.62	0.40
PLS88-67-10		61.40	0.50	10.90	6.70	0.12	5.15	7.00	3.71	1.38	0.54	2.40
PLS88-68-04		51.70	0.78	12.00	9.81	0.17	8.39	8.95	3.20	1.50	0.47	2.85
PLS88-69-04		52.80	0.30	13.30	7.70	0.20	4.00	7.25	0.25	2.69	0.42	8.60
PLS88-70-05		52.80	0.66	13.10	7.21	0.12	7.87	6.92	4.46	1.43	0.61	2.10
PLS88-71-02		66.30	0.43	14.80	5.19	0.09	1.83	4.10	3.31	1.44	0.47	0.80
PLS88-72-02		62.60	0.43	15.20	5.48	0.09	2.78	5.07	3.62	1.30	0.36	1.45
PLS88-73-05		64.10	0.60	15.80	5.02	0.07	1.88	5.57	3.59	1.06	0.38	1.25
PLS88-74-06		54.40	0.23	17.40	7.79	0.17	3.61	4.86	2.93	2.25	0.41	6.00
PLS88-75-10		51.70	1.82	12.70	16.70	0.21	4.00	7.58	3.45	0.15	0.37	2.20
PLS88-76-03		48.10	1.68	15.30	14.70	0.20	4.91	9.19	2.97	0.10	0.34	3.80
PLS88-77-02		47.90	1.10	15.60	12.80	0.18	4.71	6.96	3.64	0.14	0.21	3.80
PLS88-78-09		58.70	0.23	15.10	7.17	0.07	3.49	4.19	3.37	2.08	0.28	4.75
PLS88-79-12		42.60	0.36	8.83	13.60	0.26	3.89	11.00	0.22	1.76	0.09	15.90
PLS88-80-10		45.50	0.10	9.08	20.10	0.47	2.91	7.09	0.38	1.29	0.22	10.30
PLS88-81-02		63.00	0.38	14.60	5.44	0.09	2.81	3.81	3.62	1.84	0.13	4.00
PLS88-82-02		59.80	0.13	14.10	4.68	0.07	2.13	5.24	3.01	2.88	<0.01	5.70
PLS88-83-02		65.30	0.50	14.00	5.16	0.07	2.41	4.02	5.73	1.16	0.16	1.40
PLS88-84-02		62.70	0.52	13.70	5.45	0.10	2.71	5.04	3.98	1.64	0.07	1.55
PLS88-85-02		47.20	0.24	11.30	13.80	0.15	4.97	7.29	0.39	1.46	<0.01	12.25
PLS88-86-03		49.70	2.30	11.60	18.40	0.22	4.99	3.19	1.67	0.23	0.40	4.40
PLS88-88-04		57.20	0.58	17.30	6.45	0.09	4.01	5.53	4.30	1.88	0.28	0.80
PLS88-89-24		50.80	0.55	14.30	11.60	0.17	3.93	6.39	4.33	0.33	0.08	6.45
PLS88-90-05(A)		43.40	0.26	14.00	7.88	0.13	8.22	11.00	0.46	1.56	<0.01	12.55
PLS88-90-05(B)		42.80	0.30	14.50	8.05	0.13	8.34	10.20	0.62	1.60	0.28	12.30
PLS88-91-05		59.00	0.04	15.40	3.16	0.07	1.48	3.90	6.36	2.57	0.13	5.30
PLS88-92-05		59.50	0.40	15.10	5.77	0.07	3.46	3.05	4.70	1.85	0.53	3.40
PLS88-93-02		61.40	0.11	16.00	3.05	0.05	1.22	3.13	7.19	2.34	0.21	2.30
PLS88-94-03		60.00	0.08	16.30	3.48	0.07	1.43	4.23	8.47	0.87	0.41	4.35
PLS88-95-06		65.90	0.11	16.40	2.47	0.03	0.58	2.56	7.63	1.74	0.45	1.80
PLS88-96-18		65.80	0.09	15.20	2.16	0.04	0.62	2.50	6.78	2.31	0.34	1.75
PLS88-97-14		63.60	0.25	16.11	3.19	0.06	1.52	3.27	6.52	2.85	0.33	2.20
PLS88-98-14		60.80	0.42	16.60	4.23	0.07	1.97	3.69	5.76	2.44	0.02	1.25
PLS88-99-03		62.40	0.55	16.50	6.95	0.12	3.21	5.34	4.99	1.00	<0.01	0.80
PLS88-100-02		63.20	0.21	17.40	3.50	0.06	1.54	3.62	6.77	2.69	<0.01	2.80
PLS88-101-04		62.10	0.13	16.60	3.54	0.09	1.23	4.50	7.23	1.50	<0.01	3.60
PLS88-102-06		58.80	0.53	14.90	5.61	0.09	4.26	5.46	6.04	1.34	<0.01	1.25
PLS88-103-05		57.80	0.61	16.30	8.45	0.12	2.85	4.85	3.50	1.52	<0.01	2.00

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SAMPLE NUMBER	ELEMENT UNITS	Total PCT	Cu PPM	Zn PPM	Ag PPM	As PPM	Zr PPM	Au PPB
PLS88-64-06		99.29	12	61	<0.1	2	127	9
PLS88-65-05		98.51	37	61	<0.1	<2	132	<5
PLS88-66-12		99.90	192	24	<0.1	4	127	<5
PLS88-67-10		99.80	39	37	<0.1	<2	84	<5
PLS88-68-04		99.82	38	37	<0.1	<2	71	6
PLS88-69-04		97.51	58	186	<0.1	25	113	<5
PLS88-70-05		97.28	72	34	<0.1	2	104	<5
PLS88-71-02		98.76	30	40	<0.1	2	101	<5
PLS88-72-02		98.38	33	53	<0.1	<2	148	<5
PLS88-73-05		99.32	33	49	<0.1	<2	159	<5
PLS88-74-06		100.05	23	79	<0.1	<2	143	<5
PLS88-75-10		100.87	23	67	<0.1	2	125	<5
PLS88-76-03		101.28	133	95	<0.1	2	90	<5
PLS88-77-02		97.04	58	131	<0.1	4	94	<5
PLS88-78-09		99.43	52	58	<0.1	2	134	9
PLS88-79-12		98.52	85	130	<0.1	56	83	28
PLS88-80-10		97.44	162	122	0.6	141	67	66
PLS88-81-02		99.72	15	83	<0.1	2	138	<5
PLS88-82-02		97.74	60	51	<0.1	<2	144	118
PLS88-83-02		99.91	26	35	<0.1	<2	137	7
PLS88-84-02		97.46	33	42	<0.1	<2	156	<5
PLS88-85-02		99.05	450	83	<0.1	83	125	<5
PLS88-86-03		97.11	69	122	<0.1	12	119	<5
PLS88-88-04		98.42	27	55	<0.1	<2	118	13
PLS88-89-24		98.92	57	139	<0.1	3	95	14
PLS88-90-05(A)		99.46	103	65	<0.1	4	40	6
PLS88-90-05(B)		99.12	105	60	<0.1	3	38	7
PLS88-91-05		97.41	28	58	<0.1	<2	133	110
PLS88-92-05		97.82	31	60	<0.1	<2	148	45
PLS88-93-02		97.00	3	58	<0.1	<2	121	20
PLS88-94-03		99.69	1	45	<0.1	4	132	82
PLS88-95-06		99.67	2	39	<0.1	<2	119	44
PLS88-96-18		97.59	<1	40	<0.1	<2	123	8
PLS88-97-14		99.90	1	55	<0.1	<2	122	27
PLS88-98-14		97.45	12	35	<0.1	<2	130	7
PLS88-99-03		101.85	35	41	<0.1	<2	137	7
PLS88-100-02		101.79	13	63	<0.1	<2	124	22
PLS88-101-04		100.52	41	54	<0.1	<2	132	16
PLS88-102-06		98.28	43	21	0.5	<2	111	8
PLS88-103-05		98.00	34	91	0.1	<2	158	11

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SAMPLE NUMBER	ELEMENT UNITS	SiO_2 PCT	TiO_2 PCT	Al_2O_3 PCT	Fe_2O_3* PCT	MnO PCT	MgO PCT	CaO PCT	Na_2O PCT	K_2O PCT	P_2O_5 PCT	LOI PCT
PLS88-104-05		60.40	0.28	16.10	3.67	0.07	1.83	4.53	7.68	1.00	<0.01	3.10
PLS88-105-08		61.00	0.28	15.30	3.77	0.06	1.86	4.21	6.74	1.09	0.01	2.85
PLS88-106-08		54.40	1.14	13.80	8.17	0.18	4.92	9.02	3.96	0.56	<0.01	3.40
PLS88-107-02		60.80	0.30	15.90	3.72	0.06	1.57	4.07	6.66	1.87	0.22	3.50
PLS88-108-02		65.00	0.33	17.40	3.54	0.05	1.50	2.14	6.93	2.29	0.32	0.65
PLS88-109-0		61.70	0.38	16.00	2.99	0.05	1.47	3.54	8.70	0.34	0.20	2.25
PLS88-110-09		64.50	0.27	16.70	3.57	0.04	1.41	2.39	7.77	1.14	<0.01	1.55

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REPORT: 088-52570.0

PROJECT: PN-090 114 116

SAMPLE NUMBER	ELEMENT UNITS	Total PCT	Cu PPM	Zn PPM	Ag PPM	As PPM	Zr PPM	Au PPB
PLS88-104-05		98.66	10	47	<0.1	<2	129	25
PLS88-105-08		97.18	9	43	0.1	<2	130	11
PLS88-106-08		99.55	57	40	<0.1	<2	84	8
PLS88-107-02		98.67	8	71	<0.1	<2	134	<5
PLS88-108-02		100.15	6	47	<0.1	<2	125	<5
PLS88-109-0		97.63	<1	20	<0.1	<2	129	<5
PLS88-110-09		99.34	3	48	<0.1	2	121	13

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SAMPLE	ELEMENT	CO2
NUMBER	UNITS	PCT
PLS88-64-06		0.55
PLS88-65-05		3.33
PLS88-66-12		0.63
PLS88-67-10		1.82
PLS88-68-04		1.72
PLS88-69-04		5.81
PLS88-70-05		1.13
PLS88-71-02		0.09
PLS88-72-02		0.18
PLS88-73-05		0.39
PLS88-74-06		3.09
PLS88-75-10		0.80
PLS88-76-03		1.34
PLS88-77-02		1.32
PLS88-78-09		2.58
PLS88-79-12		15.52
PLS88-80-10		11.34
PLS88-81-02		2.03
PLS88-82-02		4.15
PLS88-83-02		0.92
PLS88-84-02		0.56
PLS88-85-02		10.92
PLS88-86-03		0.36
PLS88-88-04		0.18
PLS88-89-24		4.16
PLS88-90-05(A)		8.39
PLS88-90-05(B)		7.98
PLS88-91-05		5.23
PLS88-92-05		1.83
PLS88-93-02		2.18
PLS88-94-03		4.58
PLS88-95-06		1.39
PLS88-96-18		1.66
PLS88-97-14		1.78
PLS88-98-14		0.64
PLS88-99-03		0.09
PLS88-100-02		1.97
PLS88-101-04		3.04
PLS88-102-06		0.84
PLS88-103-05		0.44

SAMPLE	ELEMENT	CO2
NUMBER	UNITS	PCT
PLS88-104-05		2.80
PLS88-105-08		2.32
PLS88-106-08		2.42
PLS88-107-02		2.61
PLS88-108-02		0.12
PLS88-109-0		1.97
PLS88-110-09		1.08

BR

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Geochemical Lab Report

REPORT: 088-52736.0

PROJECT: PN-090 114 116 PAGE 1A

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
PLS-88-111-05-B		57.20	0.08	15.90	3.72	0.08	2.15	4.87	7.83	0.63	<0.01	5.10
PLS-88-112-02-B		61.40	0.35	17.10	3.37	0.06	1.84	3.74	5.97	2.08	<0.01	1.90
PLS-88-113-03-B		54,80	0.61	13.10	7.39	0.13	8.34	7.49	3.97	1.70	0.18	2.00
PLS-88-114-03-B		53.80	0.65	17.60	6.62	0.11	3.20	6.77	4.34	2.29	0.08	1.90
PLS-88-115-02-B		59.40	0.45	14.80	5.79	0.13	5.63	5.98	2.72	1.27	<0.01	1.20
PLS-88-116-05-B		52.20	0.86	14.30	9.17	0.17	7.82	9.79	3.54	1.33	0.40	1.80
PLS-88-117-09-B		57.80	0.27	12.50	4.52	0.10	4.83	6.91	4.21	1.62	<0.01	6.20
PLS-88-118-05-B		62.80	0.40	14.20	5.63	0.09	3.44	2.54	5.60	0.79	<0.01	3.20
PLS-88-119-04-B		58.00	0.79	16.50	6.42	0.14	3.14	5.98	3.92	1.31	<0.01	1.70
PLS-88-120-08-B		48.20	0.41	11.80	7.10	0.15	6.22	12.00	1.68	1.05	<0.01	9.00
PLS-88-121-11-B		56.40	0.55	14.10	6.21	0.11	6.57	7.99	3.10	1.60	<0.01	1.10
PLS-88-122-14-B		58.90	0.41	15.00	5.40	0.09	4.18	6.81	3.28	0.88	<0.01	3.40
PLS-88-123-12-B		61.80	0.36	14.30	4.01	0.06	2.68	4.65	3.17	1.40	0.12	4.50
PLS-88-124-04-B		44.70	0.38	10.00	12.10	0.35	6.41	10.70	1.50	0.18	<0.01	11.50
PLS-88-125-01-B		48.30	0.07	5.94	36.30	0.06	1.19	1.74	1.35	0.37	<0.01	2.70
PLS-88-126-02-B		62.20	0.04	13.60	1.37	0.08	0.80	6.90	4.23	1.12	0.20	6.50
PLS-88-127-05-B		53.30	0.09	10.20	21.90	0.07	2.31	3.17	1.64	1.02	0.02	4.50
PLS-88-128-01-B		50.00	0.11	9.84	28.80	0.07	1.81	2.00	1.31	0.90	0.25	3.55
PLS-88-129-02A-B		55.00	0.22	14.70	10.10	0.09	3.27	3.45	2.79	1.55	0.35	6.00
PLS-88-129-02B-B		56.20	0.06	11.60	7.72	0.08	2.68	4.79	2.22	1.33	0.28	10.80
PLS-88-130-01-B		55.60	0.12	13.20	6.49	0.11	3.09	4.78	3.00	1.63	0.28	8.80
PLS-88-131-03-B		53.20	0.61	11.40	8.93	0.16	10.20	6.62	3.14	0.87	0.19	2.70
PLS-88-132-02-B		53.80	0.06	12.50	11.30	0.10	2.86	3.63	2.57	2.26	0.29	11.00
PLS-88-133-01-B		59.30	0.08	15.30	4.12	0.08	2.84	5.04	4.57	2.19	0.27	6.00
PLS-88-134-06-B		63.70	0.37	14.40	5.12	0.10	4.14	3.09	5.41	0.44	0.33	2.50
PLS-88-135-09-B		65.50	0.25	15.10	3.62	0.08	3.22	2.89	3.87	1.36	0.31	3.30
PLS-88-136-02-B		62.70	0.36	13.50	4.76	0.07	4.56	4.04	3.68	1.58	0.22	5.20
PLS-88-137-10-B		59.20	0.16	16.90	6.49	0.09	3.30	2.76	3.85	2.09	0.13	5.40
PLS-88-138-07-B		55.60	0.16	14.40	7.62	0.10	3.07	5.33	2.09	1.58	0.22	10.20
PLS-88-139-06-B		63.00	0.04	14.60	2.52	0.05	1.36	5.78	5.01	0.74	0.20	7.40
PLS-88-140-07-B		58.20	0.06	12.50	6.68	0.42	2.67	5.47	1.24	1.43	0.33	8.85
PLS-88-141-11-B		57.80	0.04	10.50	1.71	0.07	0.60	12.90	2.23	0.48	0.21	11.60
PLS-88-142-10-B		60.70	0.11	14.80	5.91	0.07	2.76	2.99	3.22	1.35	0.17	6.15
PLS-88-143-10-B		64.00	0.09	12.70	3.16	0.07	2.11	3.67	3.75	0.96	0.22	6.40
PLS-88-144-08-B		62.00	0.09	16.80	4.94	0.06	2.19	3.29	4.53	1.84	0.02	4.00
PLS-88-145-03-B		62.30	0.31	18.60	4.55	0.08	1.76	4.23	4.65	1.35	0.04	3.05
PLS-88-146-14-B		60.50	0.36	16.80	4.58	0.07	2.58	5.23	5.08	0.41	0.11	2.85
PLS-88-147-16-B		59.30	0.31	19.80	4.26	0.06	2.67	6.11	4.38	0.77	0.18	2.55
PLS-88-148-03-B		59.70	0.37	18.90	5.42	0.06	1.98	5.70	4.31	1.08	0.39	2.60
PLS-88-149-06-B		58.90	0.63	15.90	6.81	0.12	2.70	4.65	2.17	1.85	0.01	5.70

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SAMPLE NUMBER	ELEMENT UNITS	Total PCT	Cu PPM	Zn PPM	Ag PPM	As PPM	Zr PPM	Au PPB
PLS-88-111-05-B		97.56	26	50	<0.1	<2	149	12
PLS-88-112-02-B		97.81	36	35	<0.1	<2	140	<5
PLS-88-113-03-B		99.71	44	26	<0.1	2	127	<5
PLS-88-114-03-B		97.36	55	18	<0.1	2	310	<5
PLS-88-115-02-B		97.37	16	21	<0.1	<2	78	<5
PLS-88-116-05-B		101.38	129	32	<0.1	4	110	<5
PLS-88-117-09-B		98.96	26	25	<0.1	<2	73	<5
PLS-88-118-05-B		98.69	9	35	<0.1	<2	61	<5
PLS-88-119-04-B		97.90	59	34	<0.1	2	97	<5
PLS-88-120-08-B		97.61	16	50	<0.1	11	57	<5
PLS-88-121-11-B		97.73	58	23	<0.1	5	88	<5
PLS-88-122-14-B		98.35	37	52	<0.1	2	85	<5
PLS-88-123-12-B		97.05	27	204	0.1	<2	100	<5
PLS-88-124-04-B		97.82	52	74	<0.1	2	70	<5
PLS-88-125-01-B		98.02	22	50	<0.1	5	18	<5
PLS-88-126-02-B		97.04	5	29	<0.1	2	38	<5
PLS-88-127-05-B		98.22	37	83	<0.1	5	60	<5
PLS-88-128-01-B		98.64	34	54	<0.1	5	27	<5
PLS-88-129-02A-B		97.52	61	75	<0.1	4	90	<5
PLS-88-129-02B-B		97.76	58	63	<0.1	6	73	<5
PLS-88-130-01-B		97.10	58	86	<0.1	17	124	<5
PLS-88-131-03-B		98.02	38	36	<0.1	2	68	<5
PLS-88-132-02-B		100.37	55	71	<0.1	2	96	6
PLS-88-133-01-B		99.79	41	55	<0.1	2	138	9
PLS-88-134-06-B		99.60	26	63	<0.1	2	94	7
PLS-88-135-09-B		99.50	32	165	<0.1	4	92	8
PLS-88-136-02-B		100.67	30	52	<0.1	<2	94	9
PLS-88-137-10-B		100.37	58	97	<0.1	40	136	<5
PLS-88-138-07-B		100.37	53	98	0.1	60	91	<5
PLS-88-139-06-B		100.70	11	64	0.1	13	43	13
PLS-88-140-07-B		97.85	62	126	0.2	8	65	7
PLS-88-141-11-B		98.14	9	23	<0.1	6	38	7
PLS-88-142-10-B		98.23	43	88	<0.1	42	100	9
PLS-88-143-10-B		97.13	61	58	<0.1	6	57	5
PLS-88-144-08-B		99.76	44	64	<0.1	9	98	5
PLS-88-145-03-B		100.94	27	38	<0.1	3	63	5
PLS-88-146-14-B		98.57	15	56	<0.1	<2	90	23
PLS-88-147-16-B		100.39	20	51	<0.1	2	77	<5
PLS-88-148-03-B		100.51	143	76	<0.1	2	100	8
PLS-88-149-06-B		99.45	64	88	<0.1	7	124	11

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SAMPLE NUMBER	ELEMENT UNITS	CO2 PCT
PLS-88-111-05-B		4.91
PLS-88-112-02-B		1.04
PLS-88-113-03-B		0.45
PLS-88-114-03-B		0.76
PLS-88-115-02-B		0.02
PLS-88-116-05-B		0.63
PLS-88-117-09-B		4.61
PLS-88-118-05-B		1.05
PLS-88-119-04-B		0.26
PLS-88-120-08-B		6.16
PLS-88-121-11-B		0.24
PLS-88-122-14-B		1.84
PLS-88-123-12-B		2.27
PLS-88-124-04-B		8.18
PLS-88-125-01-B		2.05
PLS-88-126-02-B		5.57
PLS-88-127-05-B		2.89
PLS-88-128-01-B		2.56
PLS-88-129-02A-B		3.93
PLS-88-129-02B-B		9.66
PLS-88-130-01-B		7.18
PLS-88-131-03-B		0.34
PLS-88-132-02-B		10.52
PLS-88-133-01-B		3.68
PLS-88-134-06-B		0.64
PLS-88-135-09-B		1.18
PLS-88-136-02-B		2.43
PLS-88-137-10-B		3.20
PLS-88-138-07-B		8.11
PLS-88-139-06-B		6.25
PLS-88-140-07-B		7.24
PLS-88-141-11-B		10.64
PLS-88-142-10-B		4.24
PLS-88-143-10-B		5.21
PLS-88-144-08-B		2.19
PLS-88-145-03-B		1.35
PLS-88-146-14-B		1.08
PLS-88-147-16-B		0.51
PLS-88-148-03-B		0.85
PLS-88-149-06-B		2.76

BEDROCK ANALYSES

Minnova Projects: PN-090, 114, 116

	Percent												PPM					PPB
Sample ID	Si02	Ti02	Al203	Fe203*	Mn0	Mg0	Ca0	Na20	K20	P205	LOI	Total	C02	Cu	Zn	Ag	As	Zr	Au
PLS88-01-09B	65.50	0.29	14.70	4.53	0.04	1.79	2.17	3.84	1.92	-0.01	2.55	97.33	0.71	29.00	57.00	-0.10	3.00	98.00	9.00
PLS88-02-05	60.70	0.08	16.50	6.17	0.08	3.14	1.95	3.33	2.05	0.05	4.55	98.60	2.32	54.00	77.00	0.10	46.00	150.00	-5.00
PLS88-03-07	63.80	0.01	16.30	1.74	0.01	0.83	5.00	3.85	0.83	0.18	6.00	98.55	4.42	17.00	32.00	-0.10	3.00	71.00	-5.00
PLS88-04-05	63.50	0.08	18.60	1.67	0.02	0.71	3.75	4.44	0.64	-0.01	3.80	97.20	2.22	15.00	24.00	-0.10	-2.00	66.00	-5.00
PLS88-05-04	60.50	0.14	16.90	4.54	0.05	2.09	3.45	3.33	1.50	0.02	5.30	97.82	3.94	45.00	69.00	0.10	19.00	94.00	-5.00
PLS88-06-02	60.90	0.10	14.30	4.79	0.13	1.48	4.48	2.52	2.42	-0.01	6.40	97.52	5.17	75.00	32.00	0.30	20.00	81.00	13.00
PLS88-07-04	59.90	0.30	18.80	3.81	0.05	1.76	5.21	4.08	0.86	0.14	2.60	97.51	0.77	31.00	45.00	0.10	-2.00	93.00	-5.00
PLS88-08-02	56.60	0.43	18.70	5.08	0.07	2.25	5.62	4.02	1.10	0.14	3.00	97.01	1.04	34.00	65.00	-0.10	-2.00	102.00	-5.00
PLS88-09-02	60.50	0.30	16.60	5.37	0.07	2.67	5.39	3.95	0.65	0.22	3.00	98.72	1.37	28.00	46.00	-0.10	-2.00	101.00	-5.00
PLS88-10-02	60.60	0.33	18.30	3.85	0.04	1.32	4.44	4.28	1.36	0.33	2.25	97.11	0.35	34.00	48.00	-0.10	8.00	106.00	-5.00
PLS88-11-09	62.80	0.11	12.90	5.37	0.04	2.04	2.54	3.69	1.91	0.31	5.80	97.51	5.37	46.00	101.00	0.20	45.00	109.00	6.00
PLS88-12-03	57.90	0.13	16.80	7.17	0.09	3.11	2.37	3.26	1.04	0.29	5.10	97.26	2.66	5.00	21.00	-0.10	21.00	115.00	-5.00
PLS88-13-03	46.80	0.28	13.50	10.30	0.11	3.25	5.20	2.01	2.89	0.45	12.35	97.14	7.16	105.00	25.00	0.10	6200.00	70.00	614.00
PLS88-14-03	79.50	0.10	6.34	4.16	0.01	0.45	0.59	0.60	1.41	0.37	4.30	97.83	0.22	55.00	55.00	0.20	81.00	61.00	-5.00
PLS88-15-03	42.40	0.07	12.40	5.20	0.13	5.62	10.90	2.29	2.50	0.46	16.50	98.47	16.63	69.00	28.00	-0.10	260.00	50.00	35.00
PLS88-16-03	57.90	0.10	14.30	5.05	0.08	2.30	4.58	4.07	1.92	0.25	7.00	97.55	6.66	38.00	81.00	-0.10	26.00	103.00	13.00
PLS88-17-03	62.60	0.07	14.10	2.57	0.05	1.63	4.54	4.90	1.40	0.50	5.00	97.36	3.74	17.00	57.00	-0.10	-2.00	141.00	-5.00
8-18-03	55.40	0.16	14.80	7.93	0.16	2.31	4.31	2.79	1.29	0.22	9.70	99.07	8.20	47.00	72.00	-0.10	29.00	104.00	-5.00
8-19-04	45.60	0.21	6.03	35.50	0.05	1.84	2.14	0.71	0.97	0.33	3.70	97.08	3.05	15.00	30.00	-0.10	3.00	15.00	-5.00
PLS88-20-16	56.40	0.17	15.40	9.08	0.18	2.42	4.34	2.67	1.42	0.22	5.80	98.09	3.71	60.00	82.00	-0.10	15.00	108.00	-5.00
PLS88-21-03	64.20	0.49	16.70	4.45	0.06	2.01	3.28	4.13	1.56	0.33	2.50	99.71	0.64	50.00	65.00	0.20	4.00	153.00	-5.00
PLS88-22-12	57.90	0.16	15.20	5.68	0.11	1.42	5.04	4.25	1.93	0.19	5.60	97.48	3.72	51.00	94.00	0.10	43.00	106.00	9.00
PLS88-23-15	52.50	0.09	11.30	6.72	0.15	3.57	7.30	2.08	1.26	0.31	12.10	97.38	11.23	28.00	56.00	-0.10	19.00	72.00	-5.00
PLS88-25-07	53.50	0.41	13.50	6.31	0.10	6.88	7.07	3.51	0.09	0.34	6.60	98.30	3.87	44.00	63.00	-0.10	-2.00	98.00	-5.00
PLS88-26-03	60.40	0.07	13.50	4.48	0.08	3.41	4.58	3.87	0.92	0.13	5.70	97.14	4.12	43.00	56.00	0.10	2.00	78.00	-5.00
PLS88-27-07	53.50	0.12	14.10	7.68	0.15	2.33	4.18	2.48	1.35	0.31	12.35	98.55	12.02	37.00	53.00	-0.10	2.00	88.00	-5.00
PLS88-28-08	56.80	0.06	13.90	4.93	0.03	4.89	6.07	3.78	0.13	0.19	6.70	97.48	5.07	39.00	24.00	-0.10	2.00	72.00	7.00
PLS88-29-05-B	63.40	0.13	15.00	4.38	0.07	3.48	4.78	3.84	1.01	-0.01	5.25	101.34	3.36	30.00	61.00	-0.10	2.00	85.00	12.00
PLS88-30-07-B	52.50	0.12	12.60	6.18	0.12	5.91	7.22	3.91	0.47	0.10	10.55	99.68	8.80	23.00	63.00	-0.10	2.00	114.00	-5.00
PLS88-31-11-B	49.10	0.09	11.10	6.09	0.09	3.15	13.10	1.83	0.28	0.25	14.00	99.08	13.70	18.00	29.00	-0.10	2.00	63.00	10.00
PLS88-32-03-B	56.40	0.13	13.60	5.45	0.10	7.18	6.27	3.15	0.35	-0.01	8.90	101.53	5.83	41.00	46.00	-0.10	-2.00	81.00	-5.00
PLS88-33-04-B	63.50	0.12	13.20	4.62	0.12	2.53	6.02	2.69	1.37	0.09	7.35	101.61	5.79	38.00	55.00	-0.10	-2.00	77.00	7.00
PLS88-34-09-B	56.90	0.08	14.10	3.95	0.04	3.05	6.80	2.95	0.92	0.16	8.40	97.35	8.24	382.00	30.00	0.10	2.00	85.00	38.00
PLS88-35-08-B	57.40	0.13	12.40	4.44	0.08	3.02	8.54	3.35	0.47	0.05	8.45	98.34	7.04	44.00	41.00	0.10	3.00	84.00	7.00
PLS88-36-08-B	57.50	0.13	15.00	5.42	0.10	3.85	4.90	2.28	0.79	0.08	7.00	97.05	5.16	28.00	53.00	-0.10	-2.00	86.00	-5.00
PLS88-37-03-B	59.30	0.61	12.70	4.30	0.09	4.22	5.60	3.62	0.65	0.10	6.00	97.19	4.25	16.00	76.00	-0.10	2.00	112.00	-5.00
PLS88-38-03-B	61.50	0.11	12.70	4.17	0.09	3.80	3.70	3.91	1.57	0.15	5.60	97.30	4.98	29.00	36.00	0.10	2.00	74.00	5.00
PLS88-39-07-B	66.60	0.13	15.60	4.99	0.06	2.66	0.84	1.62	1.63	-0.01	3.90	98.03	0.33	72.00	61.00	-0.10	2.00	111.00	-5.00
PLS88-40-03-B	53.10	0.12	13.70	4.71	0.11	4.65	7.05	2.88	1.46	0.27	9.30	97.35	7.65	50.00	58.00	-0.10	-2.00	88.00	-5.00
PLS88-41-03-B	60.20	0.27	13.70	4.54	0.11	2.31	5.04	3.93	1.14	0.20	6.95	98.39	6.19	29.00	50.00	-0.10	5.00	74.00	-5.00
PLS88-42-03-B	67.10	0.11	11.90	3.94	0.05	2.40	2.90	2.55	1.66	0.11	4.40	97.13	3.61	19.00	24.00	0.40	-2.00	78.00	12.00
PLS88-43-03-B	54.40	0.17	14.20	5.38	0.12	5.55	5.97	3.47	0.70	0.05	7.45	97.46	4.62	28.00	61.00	-0.10	22.00	75.00	7.00
8-44-02-B	55.30	0.55	14.60	7.00	0.16	4.07	6.79	3.98	0.53	0.22	4.05	97.25	2.47	41.00	74.00	-0.10	-2.00	80.00	-5.00
-45-03-B	58.00	0.27	15.60	9.62	0.15	2.35	3.16	2.48	1.20	-0.01	5.70	98.53	3.24	87.00	100.00	-0.10	15.00	108.00	-5.00
PLS88-46-07-B	57.00	0.06	16.10	7.89	0.08	2.25	1.89	1.79	1.91	0.19	9.05	98.21	7.67	85.00	84.00	-0.10	2.00	114.00	-5.00
PLS88-47-02-B	56.00	0.17	14.10	8.03	0.20	2.84	4.60	4.18	1.12	0.38	6.80	98.41	5.98	27.00	81.00	-0.10	5.00	97.00	5.00
PLS88-48-02-B	58.40	0.30	15.60	9.28	0.14	2.42	3.14	2.41	1.39	0.22	4.70	98.00	2.22	68.00	105.00	-0.10	9.00	121.00	-5.00
PLS88-49-03-B	63.90	0.03	14.80	2.35	0.03	1.76	4.15	2.07	1.29	0.03	8.00	98.41	6.30	6.00	72.00	0.30	2.00	58.00	-5.00

BEDROCK ANALYSES

Minnova Projects: PN-090, 114, 116

	Percent													PPM					PPB
Sample ID	SiO_2	TiO_2	Al_2O_3	Fe_2O_3*	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	Total	CO_2	Cu	Zn	Ag	As	Zr	Au
PLS88-50-04-B	53.80	0.08	11.80	4.25	0.09	3.23	7.90	3.38	0.60	0.19	11.90	97.21	10.73	35.00	62.00	-0.10	-2.00	50.00	-5.00
PLS88-51-03-B	58.30	0.07	15.10	2.73	0.05	1.82	5.84	4.67	0.74	0.03	7.95	97.30	7.04	25.00	47.00	-0.10	-2.00	71.00	-5.00
PLS88-52-02-B	52.00	0.08	10.30	20.80	0.07	2.31	3.18	0.70	1.91	0.36	6.25	97.97	4.72	33.00	78.00	-0.10	3.00	48.00	-5.00
PLS88-53-03-B	50.20	0.09	13.70	5.76	0.10	3.55	8.66	2.82	0.80	0.24	11.50	97.42	10.05	40.00	87.00	-0.10	2.00	90.00	6.00
PLS88-54-06-B	50.20	0.11	13.40	3.95	0.08	2.72	10.50	2.98	0.63	-0.01	13.25	97.82	12.25	44.00	65.00	-0.10	3.00	58.00	7.00
PLS88-55-06-B	61.40	0.11	14.70	5.40	0.06	2.16	2.98	3.63	1.73	0.42	4.85	97.45	3.26	46.00	75.00	-0.10	7.00	120.00	-5.00
PLS88-56-02-B	61.90	0.09	15.30	6.50	0.08	2.65	2.53	2.99	2.09	0.26	5.80	100.19	3.79	60.00	89.00	-0.10	28.00	108.00	7.00
PLS88-57-03-B	58.80	0.09	16.20	7.14	0.08	2.52	2.75	2.29	2.44	0.23	4.70	97.24	2.60	61.00	71.00	-0.10	6.00	79.00	6.00
PLS88-58-02-B	58.70	0.08	8.59	18.20	0.09	1.96	5.21	1.03	0.50	0.38	5.80	100.54	4.48	31.00	65.00	-0.10	5.00	48.00	-5.00
PLS88-59-06-B	60.20	0.06	12.50	3.80	0.07	1.64	7.17	2.63	0.67	0.56	7.95	97.25	6.88	27.00	45.00	-0.10	10.00	42.00	9.00
PLS88-60-06-B(A)	57.70	1.14	16.80	5.99	0.18	2.97	5.16	4.12	1.02	0.39	2.00	97.47	0.59	47.00	63.00	-0.10	6.00	122.00	5.00
PLS88-60-06-B(B)	64.00	0.44	15.50	3.26	0.56	1.37	3.82	4.19	1.23	0.19	2.75	97.31	1.68	29.00	42.00	-0.10	4.00	100.00	9.00
PLS88-61-03-B	59.90	0.54	15.70	5.06	0.10	3.26	6.01	5.84	0.31	0.25	1.70	98.67	0.68	31.00	83.00	-0.10	5.00	136.00	-5.00
PLS88-62-02-B	69.40	0.51	15.60	3.15	0.07	0.96	4.12	4.85	0.90	0.15	1.65	101.36	0.91	12.00	39.00	-0.10	3.00	154.00	-5.00
PLS88-63-04-B	51.00	0.51	12.00	6.19	0.09	10.70	7.08	2.66	1.39	0.50	7.80	99.92	4.44	30.00	55.00	-0.10	-2.00	113.00	8.00
PLS88-64-06	62.20	0.48	15.60	5.71	0.14	1.95	5.60	4.24	1.13	0.29	1.95	99.29	0.55	12.00	61.00	-0.10	2.00	127.00	9.00
PLS88-65-05	55.70	0.39	15.00	6.64	0.11	3.12	5.82	4.51	1.57	0.60	5.05	98.51	3.33	37.00	61.00	-0.10	-2.00	132.00	-5.00
8-66-12	62.20	0.55	15.90	5.61	0.09	2.64	4.77	6.01	1.11	0.62	0.40	99.90	0.63	192.00	24.00	-0.10	4.00	127.00	-5.00
8-67-10	61.40	0.50	10.90	6.70	0.12	5.15	7.00	3.71	1.38	0.54	2.40	99.80	1.82	39.00	37.00	-0.10	-2.00	84.00	-5.00
PLS88-68-04	51.70	0.78	12.00	9.81	0.17	8.39	8.95	3.20	1.50	0.47	2.85	99.82	1.72	38.00	37.00	-0.10	-2.00	71.00	6.00
PLS88-69-04	52.80	0.30	13.30	7.70	0.20	4.00	7.25	0.25	2.69	0.42	8.60	97.51	5.81	58.00	186.00	-0.10	25.00	113.00	-5.00
PLS88-70-05	52.80	0.66	13.10	7.21	0.12	7.87	6.92	4.46	1.43	0.61	2.10	97.28	1.13	72.00	34.00	-0.10	2.00	104.00	-5.00
PLS88-71-02	66.30	0.43	14.80	5.19	0.09	1.83	4.10	3.31	1.44	0.47	0.80	98.76	0.09	30.00	40.00	-0.10	2.00	101.00	-5.00
PLS88-72-02	62.60	0.43	15.20	5.48	0.09	2.78	5.07	3.62	1.30	0.36	1.45	98.38	0.18	33.00	53.00	-0.10	-2.00	148.00	-5.00
PLS88-73-05	64.10	0.60	15.80	5.02	0.07	1.88	5.57	3.59	1.06	0.38	1.25	99.32	0.39	33.00	49.00	-0.10	-2.00	159.00	-5.00
PLS88-74-06	54.40	0.23	17.40	7.79	0.17	3.61	4.86	2.93	2.25	0.41	6.00	100.05	3.09	23.00	79.00	-0.10	-2.00	143.00	-5.00
PLS88-75-10	51.70	1.82	12.70	16.70	0.21	4.00	7.58	3.45	0.15	0.37	2.20	100.87	0.80	23.00	67.00	-0.10	2.00	125.00	-5.00
PLS88-76-03	48.10	1.68	15.30	14.70	0.20	4.91	9.19	2.97	0.10	0.34	3.80	101.28	1.34	133.00	95.00	-0.10	2.00	90.00	-5.00
PLS88-77-02	47.90	1.10	15.60	12.80	0.18	4.71	6.96	3.64	0.14	0.21	3.80	97.04	1.32	58.00	131.00	-0.10	4.00	94.00	-5.00
PLS88-78-09	58.70	0.23	15.10	7.17	0.07	3.49	4.19	3.37	2.08	0.28	4.75	99.43	2.58	52.00	58.00	-0.10	2.00	134.00	9.00
PLS88-79-12	42.60	0.36	8.83	13.60	0.26	3.89	11.00	0.22	1.76	0.09	15.90	98.52	15.52	85.00	130.00	-0.10	56.00	83.00	28.00
PLS88-80-10	45.50	0.10	9.08	20.10	0.47	2.91	7.09	0.38	1.29	0.22	10.30	97.44	11.34	162.00	122.00	0.60	141.00	67.00	66.00
PLS88-81-02	63.00	0.38	14.60	5.44	0.09	2.81	3.81	3.62	1.84	0.13	4.00	99.72	2.03	15.00	83.00	-0.10	2.00	138.00	-5.00
PLS88-82-02	59.80	0.13	14.10	4.68	0.07	2.13	5.24	3.01	2.88	-0.01	5.70	97.74	4.15	60.00	51.00	-0.10	-2.00	144.00	118.00
PLS88-83-02	65.30	0.50	14.00	5.16	0.07	2.41	4.02	5.73	1.16	0.16	1.40	99.91	0.92	26.00	35.00	-0.10	-2.00	137.00	7.00
PLS88-84-02	62.70	0.52	13.70	5.45	0.10	2.71	5.04	3.98	1.64	0.07	1.55	97.46	0.56	33.00	42.00	-0.10	-2.00	156.00	-5.00
PLS88-85-02	47.20	0.24	11.30	13.80	0.15	4.97	7.29	0.39	1.46	-0.01	12.25	99.05	10.92	450.00	83.00	-0.10	83.00	125.00	-5.00
PLS88-86-03	49.70	2.30	11.60	18.40	0.22	4.99	3.19	1.67	0.23	0.40	4.40	97.11	0.36	69.00	122.00	-0.10	12.00	119.00	-5.00
PLS88-88-04	57.20	0.58	17.30	6.45	0.09	4.01	5.53	4.30	1.88	0.28	0.80	98.42	0.18	27.00	55.00	-0.10	-2.00	118.00	13.00
PLS88-89-24	50.80	0.55	14.30	11.60	0.17	3.93	6.39	4.33	0.33	0.08	6.45	98.92	4.16	57.00	139.00	-0.10	3.00	95.00	14.00
PLS88-90-05(A)	43.40	0.26	14.00	7.88	0.13	8.22	11.00	0.46	1.56	-0.01	12.55	99.46	8.39	103.00	65.00	-0.10	4.00	40.00	6.00
PLS88-90-05(B)	42.80	0.30	14.50	8.05	0.13	8.34	10.20	0.62	1.60	0.28	12.30	99.12	7.98	105.00	60.00	-0.10	3.00	38.00	7.00
8-91-05	59.00	0.04	15.40	3.16	0.07	1.48	3.90	6.36	2.57	0.13	5.30	97.41	5.23	28.00	58.00	-0.10	-2.00	133.00	110.00
-92-05	59.50	0.40	15.10	5.77	0.07	3.46	3.05	4.70	1.85	0.53	3.40	97.82	1.83	31.00	60.00	-0.10	-2.00	148.00	45.00
PLS88-93-02	61.40	0.11	16.00	3.05	0.05	1.22	3.13	7.19	2.34	0.21	2.30	97.00	2.18	3.00	58.00	-0.10	-2.00	121.00	20.00
PLS88-94-03	60.00	0.08	16.30	3.48	0.07	1.43	4.23	8.47	0.87	0.41	4.35	99.69	4.58	1.00	45.00	-0.10	4.00	132.00	82.00
PLS88-95-06	65.90	0.11	16.40	2.47	0.03	0.58	2.56	7.63	1.74	0.45	1.80	99.67	1.39	2.00	39.00	-0.10	-2.00	119.00	44.00
PLS88-96-18	65.80	0.09	15.20	2.16	0.04	0.62	2.50	6.78	2.31	0.34	1.75	97.59	1.66	-1.00	40.00	-0.10	-2.00	123.00	8.00

BEDROCK ANALYSES

Minnova Projects: PN-090, 114, 116

	Percent													PPM					PPB
Sample ID	SiO_2	TiO_2	Al_2O_3	Fe_2O_3*	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	Total	CO_2	Cu	Zn	Ag	As	Zr	Au
PLS88-97-14	63.60	0.25	16.11	3.19	0.06	1.52	3.27	6.52	2.85	0.33	2.20	99.90	1.78	1.00	55.00	-0.10	-2.00	122.00	27.00
PLS88-98-14	60.80	0.42	16.60	4.23	0.07	1.97	3.89	5.76	2.44	0.02	1.25	97.45	0.64	12.00	35.00	-0.10	-2.00	130.00	7.00
PLS88-99-03	62.40	0.55	16.50	6.95	0.12	3.21	5.34	4.99	1.00	-0.01	0.80	101.85	0.09	35.00	41.00	-0.10	-2.00	137.00	7.00
PLS88-100-02	63.20	0.21	17.40	3.50	0.06	1.54	3.62	6.77	2.69	-0.01	2.80	101.79	1.97	13.00	63.00	-0.10	-2.00	124.00	22.00
PLS88-101-04	62.10	0.13	16.60	3.54	0.09	1.23	4.50	7.23	1.50	-0.01	3.60	100.52	3.04	41.00	54.00	-0.10	-2.00	132.00	16.00
PLS88-102-06	58.80	0.53	14.90	5.61	0.09	4.26	5.46	6.04	1.34	-0.01	1.25	98.28	0.84	43.00	21.00	0.50	-2.00	111.00	8.00
PLS88-103-05	57.80	0.61	16.30	8.45	0.12	2.85	4.85	3.50	1.52	-0.01	2.00	98.00	0.44	34.00	91.00	0.10	-2.00	158.00	11.00
PLS88-104-05	60.40	0.28	16.10	3.67	0.07	1.83	4.53	7.68	1.00	-0.01	3.10	98.66	2.80	10.00	47.00	-0.10	-2.00	129.00	25.00
PLS88-105-08	61.00	0.28	15.30	3.77	0.06	1.86	4.21	6.74	1.09	0.01	2.85	97.18	2.32	9.00	43.00	0.10	-2.00	130.00	11.00
PLS88-106-08	54.40	1.14	13.80	8.17	0.18	4.92	9.02	3.96	0.56	-0.01	3.40	99.55	2.42	57.00	40.00	-0.10	-2.00	84.00	8.00
PLS88-107-02	60.80	0.30	15.90	3.72	0.06	1.57	4.07	6.66	1.87	0.22	3.50	98.67	2.61	8.00	71.00	-0.10	-2.00	134.00	-5.00
PLS88-108-02	65.00	0.33	17.40	3.54	0.05	1.50	2.14	6.93	2.29	0.32	0.65	100.15	0.12	6.00	47.00	-0.10	-2.00	125.00	-5.00
PLS88-109-01	61.70	0.38	16.00	2.99	0.05	1.47	3.54	8.70	0.34	0.20	2.25	97.63	1.97	-1.00	20.00	-0.10	-2.00	129.00	-5.00
PLS88-110-09	64.50	0.27	16.70	3.57	0.04	1.41	2.39	7.77	1.14	-0.01	1.55	99.34	1.08	3.00	48.00	-0.10	2.00	121.00	13.00
PLS-88-111-05-B	57.20	0.08	15.90	3.72	0.08	2.15	4.87	7.83	0.63	-0.01	5.10	97.56	4.91	26.00	50.00	-0.10	-2.00	149.00	12.00
PLS-88-112-02-B	61.40	0.35	17.10	3.37	0.06	1.84	3.74	5.97	2.08	-0.01	1.90	97.81	1.04	36.00	35.00	-0.10	-2.00	140.00	-5.00
PLS-88-113-03-B	54.80	0.61	13.10	7.39	0.13	8.34	7.49	3.97	1.70	0.18	2.00	99.71	0.45	44.00	26.00	-0.10	2.00	127.00	-5.00
88-114-03-B	53.80	0.65	17.60	6.62	0.11	3.20	6.77	4.34	2.29	0.08	1.90	97.36	0.76	55.00	18.00	-0.10	2.00	310.00	-5.00
88-115-02-B	59.40	0.45	14.80	5.79	0.13	5.63	5.98	2.72	1.27	-0.01	1.20	97.37	0.02	16.00	21.00	-0.10	-2.00	78.00	-5.00
PLS-88-116-05-B	52.20	0.86	14.30	9.17	0.17	7.82	9.79	3.54	1.33	0.40	1.80	101.38	0.63	129.00	32.00	-0.10	4.00	110.00	-5.00
PLS-88-117-09-B	57.80	0.27	12.50	4.52	0.10	4.83	6.91	4.21	1.62	-0.01	6.20	98.96	4.61	26.00	25.00	-0.10	-2.00	73.00	-5.00
PLS-88-118-05-B	62.80	0.40	14.20	5.63	0.09	3.44	2.54	5.60	0.79	-0.01	3.20	98.69	1.05	9.00	35.00	-0.10	-2.00	61.00	-5.00
PLS-88-119-04-B	58.00	0.79	16.50	6.42	0.14	3.14	5.98	3.92	1.31	-0.01	1.70	97.90	0.26	59.00	34.00	-0.10	2.00	97.00	-5.00
PLS-88-120-08-B	48.20	0.41	11.80	7.10	0.15	6.22	12.00	1.68	1.05	-0.01	9.00	97.61	6.16	16.00	50.00	-0.10	11.00	57.00	-5.00
PLS-88-121-11-B	56.40	0.55	14.10	6.21	0.11	6.57	7.99	3.10	1.60	-0.01	1.10	97.73	0.24	58.00	23.00	-0.10	5.00	88.00	-5.00
PLS-88-122-14-B	58.90	0.41	15.00	5.40	0.09	4.18	6.81	3.28	0.88	-0.01	3.40	98.35	1.84	37.00	52.00	-0.10	2.00	85.00	-5.00
PLS-88-123-12-B	61.80	0.36	14.30	4.01	0.06	2.68	4.65	3.17	1.40	0.12	4.50	97.05	2.27	27.00	204.00	0.10	-2.00	100.00	-5.00
PLS-88-124-04-B	44.70	0.38	10.00	12.10	0.35	6.41	10.70	1.50	0.18	-0.01	11.50	97.82	8.18	52.00	74.00	-0.10	2.00	70.00	-5.00
PLS-88-125-01-B	48.30	0.07	5.94	36.30	0.06	1.19	1.74	1.35	0.37	-0.01	2.70	98.02	2.05	22.00	50.00	-0.10	5.00	18.00	-5.00
PLS-88-126-02-B	62.20	0.04	13.60	1.37	0.08	0.80	6.90	4.23	1.12	0.20	6.50	97.04	5.57	5.00	29.00	-0.10	2.00	38.00	-5.00
PLS-88-127-05-B	53.30	0.09	10.20	21.90	0.07	2.31	3.17	1.64	1.02	0.02	4.50	98.22	2.89	37.00	83.00	-0.10	5.00	60.00	-5.00
PLS-88-128-01-B	50.00	0.11	9.84	28.80	0.07	1.81	2.00	1.31	0.90	0.25	3.55	98.64	2.56	34.00	54.00	-0.10	5.00	27.00	-5.00
PLS-88-129-02A-B	55.00	0.22	14.70	10.10	0.09	3.27	3.45	2.79	1.55	0.35	6.00	97.52	3.93	61.00	75.00	-0.10	4.00	90.00	-5.00
PLS-88-129-02B-B	56.20	0.06	11.60	7.72	0.08	2.68	4.79	2.22	1.33	0.28	10.80	97.76	9.66	58.00	63.00	-0.10	6.00	73.00	-5.00
PLS-88-130-01-B	55.60	0.12	13.20	6.49	0.11	3.09	4.78	3.00	1.63	0.28	8.80	97.10	7.18	58.00	86.00	-0.10	17.00	124.00	-5.00
PLS-88-131-03-B	53.20	0.61	11.40	8.93	0.16	10.20	6.62	3.14	0.87	0.19	2.70	98.02	0.34	38.00	36.00	-0.10	2.00	68.00	-5.00
PLS-88-132-02-B	53.80	0.06	12.50	11.30	0.10	2.86	3.63	2.57	2.26	0.29	11.00	100.37	10.52	55.00	71.00	-0.10	2.00	96.00	6.00
PLS-88-133-01-B	59.30	0.08	15.30	4.12	0.08	2.84	5.04	4.57	2.19	0.27	6.00	99.79	3.68	41.00	55.00	-0.10	2.00	138.00	9.00
PLS-88-134-06-B	63.70	0.37	14.40	5.12	0.10	4.14	3.09	5.41	0.44	0.33	2.50	99.60	0.64	26.00	63.00	-0.10	2.00	94.00	7.00
PLS-88-135-09-B	65.50	0.25	15.10	3.62	0.08	3.22	2.89	3.87	1.36	0.31	3.30	99.50	1.18	32.00	165.00	-0.10	4.00	92.00	8.00
PLS-88-136-02-B	62.70	0.36	13.50	4.76	0.07	4.56	4.04	3.68	1.58	0.22	5.20	100.67	2.43	30.00	52.00	-0.10	-2.00	94.00	9.00
PLS-88-137-10-B	59.20	0.16	16.90	6.49	0.09	3.30	2.76	3.85	2.09	0.13	5.40	100.37	3.20	58.00	97.00	-0.10	40.00	136.00	-5.00
88-138-07-B	55.60	0.16	14.40	7.62	0.10	3.07	5.33	2.09	1.58	0.22	10.20	100.37	8.11	53.00	98.00	0.10	60.00	91.00	-5.00
8-139-06-B	63.00	0.04	14.60	2.52	0.05	1.36	5.78	5.01	0.74	0.20	7.40	100.70	6.25	11.00	64.00	0.10	13.00	43.00	13.00
PLS-88-140-07-B	58.20	0.06	12.50	6.68	0.42	2.67	5.47	1.24	1.43	0.33	8.85	97.85	7.24	62.00	126.00	0.20	8.00	66.00	7.00
PLS-88-141-11-B	57.80	0.04	10.50	1.71	0.07	0.60	12.90	2.23	0.48	0.21	11.60	98.14	10.64	9.00	23.00	-0.10	6.00	38.00	7.00
PLS-88-142-10-B	60.70	0.11	14.80	5.91	0.07	2.76	2.99	3.22	1.35	0.17	6.15	98.23	4.24	43.00	88.00	-0.10	42.00	100.00	9.00
PLS-88-143-10-B	64.00	0.09	12.70	3.16	0.07	2.11	3.67	3.75	0.96	0.22	6.40	97.13	5.21	61.00	58.00	-0.10	6.00	57.00	5.00

BEDROCK ANALYSES

Minnova Projects: PN-090, 114, 116

	Percent													PPM					PPB
Sample ID	Si02	Ti02	Al203	Fe203*	MnO	MgO	CaO	Na20	K20	P205	LOI	Total	C02	Cu	Zn	Ag	As	Zr	Au
PLS-88-144-08-B	62.00	0.09	16.80	4.94	0.06	2.19	3.29	4.53	1.84	0.02	4.00	99.76	2.19	44.00	64.00	-0.10	9.00	98.00	5.00
PLS-88-145-03-B	62.30	0.31	18.60	4.55	0.08	1.76	4.23	4.66	1.36	0.04	3.05	100.94	1.35	27.00	38.00	-0.10	3.00	63.00	5.00
PLS-88-146-14-B	60.50	0.36	16.80	4.58	0.07	2.58	5.23	5.08	0.41	0.11	2.85	98.57	1.08	15.00	56.00	-0.10	-2.00	90.00	23.00
PLS-88-147-16-B	59.30	0.31	19.80	4.26	0.06	2.67	6.11	4.38	0.77	0.18	2.55	100.39	0.51	20.00	51.00	-0.10	2.00	77.00	-5.00
PLS-88-148-03-B	59.70	0.37	18.90	5.42	0.06	1.98	5.70	4.31	1.08	0.39	2.60	100.51	0.85	143.00	76.00	-0.10	2.00	100.00	8.00
PLS-88-149-06-B	58.90	0.63	15.90	6.81	0.12	2.70	4.65	2.17	1.86	0.01	5.70	99.45	2.76	64.00	88.00	-0.10	7.00	124.00	11.00

BEDROCK ANALYSES

Minnova Projects: PN-090, 114, 116

	Percent													PPM						PPB
Sample ID	SiO2	TiO2	Al2O3	Fe2O3*	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	CO2	Cu	Zn	Ag	As	Zr	Au
PLS88-01-09B	65.50	0.29	14.70	4.53	0.04	1.79	2.17	3.84	1.92	-0.01	2.55	97.33	0.71	29.00	57.00	-0.10	3.00	98.00	9.00
PLS88-02-05	60.70	0.08	16.50	6.17	0.08	3.14	1.95	3.33	2.05	0.05	4.55	98.60	2.32	54.00	77.00	0.10	46.00	150.00	-5.00
PLS88-03-07	63.80	0.01	16.30	1.74	0.01	0.83	5.00	3.85	0.83	0.18	6.00	98.55	4.42	17.00	32.00	-0.10	3.00	71.00	-5.00
PLS88-04-05	63.50	0.08	18.60	1.67	0.02	0.71	3.75	4.44	0.64	-0.01	3.80	97.20	2.22	15.00	24.00	-0.10	-2.00	66.00	-5.00
PLS88-05-04	60.50	0.14	16.90	4.54	0.05	2.09	3.45	3.33	1.50	0.02	5.30	97.82	3.94	45.00	69.00	0.10	19.00	94.00	-5.00
PLS88-06-02	60.90	0.10	14.30	4.79	0.13	1.48	4.48	2.52	2.42	-0.01	6.40	97.52	5.17	75.00	32.00	0.30	20.00	81.00	13.00
PLS88-07-04	59.90	0.30	18.80	3.81	0.05	1.76	5.21	4.08	0.86	0.14	2.60	97.51	0.77	31.00	45.00	0.10	-2.00	93.00	-5.00
PLS88-08-02	56.60	0.43	18.70	5.08	0.07	2.25	5.62	4.02	1.10	0.14	3.00	97.01	1.04	34.00	65.00	-0.10	-2.00	102.00	-5.00
PLS88-09-02	60.50	0.30	16.60	5.37	0.07	2.67	5.39	3.95	0.65	0.22	3.00	98.72	1.37	28.00	46.00	-0.10	-2.00	101.00	-5.00
PLS88-10-02	60.60	0.33	18.30	3.85	0.04	1.32	4.44	4.28	1.36	0.33	2.25	97.11	0.35	34.00	48.00	-0.10	8.00	106.00	-5.00
PLS88-11-09	62.80	0.11	12.90	5.37	0.04	2.04	2:54	3.69	1.91	0.31	5.80	97.51	5.37	46.00	101.00	0.20	45.00	109.00	6.00
PLS88-12-03	57.90	0.13	16.80	7.17	0.09	3.11	2.37	3.26	1.04	0.29	5.10	97.26	2.66	5.00	21.00	-0.10	21.00	115.00	-5.00
PLS88-13-03	46.80	0.28	13.50	10.30	0.11	3.25	5.20	2.01	2.89	0.45	12.35	97.14	7.16	105.00	25.00	0.10	6200.00	70.00	614.00
PLS88-14-03	79.50	0.10	6.34	4.16	0.01	0.45	0.59	0.60	1.41	0.37	4.30	97.83	0.22	55.00	55.00	0.20	81.00	61.00	-5.00
PLS88-15-03	42.40	0.07	12.40	5.20	0.13	5.62	10.90	2.29	2.50	0.46	16.50	98.47	16.63	69.00	28.00	-0.10	260.00	50.00	35.00
PLS88-16-03	57.90	0.10	14.30	5.05	0.08	2.30	4.58	4.07	1.92	0.25	7.00	97.55	6.66	38.00	81.00	-0.10	26.00	103.00	13.00
PLS88-17-03	62.60	0.07	14.10	2.57	0.05	1.63	4.54	4.90	1.40	0.50	5.00	97.36	3.74	17.00	57.00	-0.10	-2.00	141.00	-5.00
8-18-03	55.40	0.16	14.80	7.93	0.16	2.31	4.31	2.79	1.29	0.22	9.70	99.07	8.20	47.00	72.00	-0.10	29.00	104.00	-5.00
8-19-04	45.60	0.21	6.03	35.50	0.05	1.84	2.14	0.71	0.97	0.33	3.70	97.08	3.05	15.00	30.00	-0.10	3.00	15.00	-5.00
PLS88-20-16	56.40	0.17	15.40	9.08	0.18	2.42	4.34	2.67	1.42	0.22	5.80	98.09	3.71	60.00	82.00	-0.10	15.00	108.00	-5.00
PLS88-21-03	64.20	0.49	16.70	4.45	0.06	2.01	3.28	4.13	1.56	0.33	2.50	99.71	0.64	50.00	65.00	0.20	4.00	153.00	-5.00
PLS88-22-12	57.90	0.16	15.20	5.68	0.11	1.42	5.04	4.25	1.93	0.19	5.60	97.48	3.72	51.00	94.00	0.10	43.00	106.00	9.00
PLS88-23-15	52.50	0.09	11.30	6.72	0.15	3.57	7.30	2.08	1.26	0.31	12.10	97.38	11.23	28.00	56.00	-0.10	19.00	72.00	-5.00
PLS88-25-07	53.50	0.41	13.50	6.31	0.10	6.88	7.07	3.51	0.09	0.34	6.60	98.30	3.87	44.00	63.00	-0.10	-2.00	98.00	-5.00
PLS88-26-03	60.40	0.07	13.50	4.48	0.08	3.41	4.58	3.87	0.92	0.13	5.70	97.14	4.12	43.00	56.00	0.10	2.00	78.00	-5.00
PLS88-27-07	53.50	0.12	14.10	7.68	0.15	2.33	4.18	2.48	1.35	0.31	12.35	98.55	12.02	37.00	53.00	-0.10	2.00	88.00	-5.00
PLS88-28-08	56.80	0.06	13.90	4.93	0.03	4.89	6.07	3.78	0.13	0.19	6.70	97.48	5.07	39.00	24.00	-0.10	2.00	72.00	7.00
PLS88-29-05-B	63.40	0.13	15.00	4.38	0.07	3.48	4.78	3.84	1.01	-0.01	5.25	101.34	3.36	30.00	61.00	-0.10	2.00	85.00	12.00
PLS88-30-07-B	52.50	0.12	12.60	6.18	0.12	5.91	7.22	3.91	0.47	0.10	10.55	99.68	8.80	23.00	63.00	-0.10	2.00	114.00	-5.00
PLS88-31-11-B	49.10	0.09	11.10	6.09	0.09	3.15	13.10	1.83	0.28	0.25	14.00	99.08	13.70	18.00	29.00	-0.10	2.00	63.00	10.00
PLS88-32-03-B	56.40	0.13	13.60	5.45	0.10	7.18	6.27	3.15	0.35	-0.01	8.90	101.53	5.83	41.00	46.00	-0.10	-2.00	81.00	-5.00
PLS88-33-04-B	63.50	0.12	13.20	4.62	0.12	2.53	6.02	2.69	1.37	0.09	7.35	101.61	5.79	38.00	55.00	-0.10	-2.00	77.00	7.00
PLS88-34-09-B	56.90	0.08	14.10	3.95	0.04	3.05	6.80	2.95	0.92	0.16	8.40	97.35	8.24	382.00	30.00	0.10	2.00	85.00	38.00
PLS88-35-08-B	57.40	0.13	12.40	4.44	0.08	3.02	8.54	3.35	0.47	0.05	8.45	98.34	7.04	44.00	41.00	0.10	3.00	84.00	7.00
PLS88-36-08-B	57.50	0.13	15.00	5.42	0.10	3.85	4.90	2.28	0.79	0.08	7.00	97.05	5.16	28.00	53.00	-0.10	-2.00	86.00	-5.00
PLS88-37-03-B	59.30	0.61	12.70	4.30	0.09	4.22	5.60	3.62	0.65	0.10	6.00	97.19	4.25	16.00	76.00	-0.10	2.00	112.00	-5.00
PLS88-38-03-B	61.50	0.11	12.70	4.17	0.09	3.80	3.70	3.91	1.57	0.15	5.60	97.30	4.98	29.00	36.00	0.10	2.00	74.00	5.00
PLS88-39-07-B	66.60	0.13	15.60	4.99	0.06	2.66	0.84	1.62	1.63	-0.01	3.90	98.03	0.33	72.00	61.00	-0.10	2.00	111.00	-5.00
PLS88-40-03-B	53.10	0.12	13.70	4.71	0.11	4.65	7.05	2.88	1.46	0.27	9.30	97.35	7.65	50.00	58.00	-0.10	-2.00	88.00	-5.00
PLS88-41-03-B	60.20	0.27	13.70	4.54	0.11	2.31	5.04	3.93	1.14	0.20	6.95	98.39	6.19	29.00	50.00	-0.10	5.00	74.00	-5.00
PLS88-42-03-B	67.10	0.11	11.90	3.94	0.05	2.40	2.90	2.55	1.66	0.11	4.40	97.13	3.61	19.00	24.00	0.40	-2.00	78.00	12.00
PLS88-43-03-B	54.40	0.17	14.20	5.38	0.12	5.55	5.97	3.47	0.70	0.05	7.45	97.46	4.62	28.00	61.00	-0.10	22.00	75.00	7.00
8-44-02-B	55.30	0.55	14.60	7.00	0.16	4.07	6.79	3.98	0.53	0.22	4.05	97.25	2.47	41.00	74.00	-0.10	-2.00	80.00	-5.00
-45-03-B	58.00	0.27	15.60	9.62	0.15	2.35	3.16	2.48	1.20	-0.01	5.70	98.53	3.24	87.00	100.00	-0.10	15.00	108.00	-5.00
PLS88-46-07-B	57.00	0.06	16.10	7.89	0.08	2.25	1.89	1.79	1.91	0.19	9.05	98.21	7.67	85.00	84.00	-0.10	2.00	114.00	-5.00
PLS88-47-02-B	56.00	0.17	14.10	8.03	0.20	2.84	4.60	4.18	1.12	0.38	6.80	98.41	5.98	27.00	81.00	-0.10	5.00	97.00	5.00
PLS88-48-02-B	58.40	0.30	15.60	9.28	0.14	2.42	3.14	2.41	1.39	0.22	4.70	98.00	2.22	68.00	105.00	-0.10	9.00	121.00	-5.00
PLS88-49-03-B	63.90	0.03	14.80	2.35	0.03	1.76	4.15	2.07	1.29	0.03	8.00	98.41	6.30	6.00	72.00	0.30	2.00	58.00	-5.00

BEDROCK ANALYSES

Minnova Projects: PN-090, 114, 116

	Percent												PPM					PPB
Sample ID	SiO_2	TiO_2	Al_2O_3	Fe_2O_3*	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	Total	CO_2	Cu	Zn	Ag	As	Zr	Au
PLS88-50-04-B	53.80	0.08	11.80	4.25	0.09	3.23	7.90	3.38	0.60	0.19	11.90	97.21	10.73	35.00	62.00	-0.10	-2.00	50.00	-5.00
PLS88-51-03-B	58.30	0.07	15.10	2.73	0.05	1.82	5.84	4.67	0.74	0.03	7.95	97.30	7.04	25.00	47.00	-0.10	-2.00	71.00	-5.00
PLS88-52-02-B	52.00	0.08	10.30	20.80	0.07	2.31	3.18	0.70	1.91	0.36	6.25	97.97	4.72	33.00	78.00	-0.10	3.00	48.00	-5.00
PLS88-53-03-B	50.20	0.09	13.70	5.76	0.10	3.55	8.66	2.82	0.80	0.24	11.50	97.42	10.05	40.00	87.00	-0.10	2.00	90.00	6.00
PLS88-54-06-B	50.20	0.11	13.40	3.95	0.08	2.72	10.50	2.98	0.63	-0.01	13.25	97.82	12.25	44.00	65.00	-0.10	3.00	58.00	7.00
PLS88-55-06-B	61.40	0.11	14.70	5.40	0.06	2.16	2.98	3.63	1.73	0.42	4.85	97.45	3.26	46.00	75.00	-0.10	7.00	120.00	-5.00
PLS88-56-02-B	61.90	0.09	15.30	6.50	0.08	2.65	2.53	2.99	2.09	0.26	5.80	100.19	3.79	60.00	89.00	-0.10	28.00	108.00	7.00
PLS88-57-03-B	58.80	0.09	16.20	7.14	0.08	2.52	2.75	2.29	2.44	0.23	4.70	97.24	2.60	61.00	71.00	-0.10	6.00	79.00	6.00
PLS88-58-02-B	58.70	0.08	8.59	18.20	0.09	1.96	5.21	1.03	0.50	0.38	5.80	100.54	4.48	31.00	65.00	-0.10	5.00	48.00	-5.00
PLS88-59-06-B	60.20	0.06	12.50	3.80	0.07	1.64	7.17	2.63	0.67	0.56	7.95	97.25	6.88	27.00	45.00	-0.10	10.00	42.00	9.00
PLS88-60-06-B(A)	57.70	1.14	16.80	5.99	0.18	2.97	5.16	4.12	1.02	0.39	2.00	97.47	0.59	47.00	63.00	-0.10	6.00	122.00	5.00
PLS88-60-06-B(B)	64.00	0.44	15.50	3.26	0.56	1.37	3.82	4.19	1.23	0.19	2.75	97.31	1.68	29.00	42.00	-0.10	4.00	100.00	9.00
PLS88-61-03-B	59.90	0.54	15.70	5.06	0.10	3.26	6.01	5.84	0.31	0.25	1.70	98.67	0.68	31.00	83.00	-0.10	5.00	136.00	-5.00
PLS88-62-02-B	69.40	0.51	15.60	3.15	0.07	0.96	4.12	4.85	0.90	0.15	1.65	101.36	0.91	12.00	39.00	-0.10	3.00	154.00	-5.00
PLS88-63-04-B	51.00	0.51	12.00	6.19	0.09	10.70	7.08	2.66	1.39	0.50	7.80	99.92	4.44	30.00	55.00	-0.10	-2.00	113.00	8.00
PLS88-64-06	62.20	0.48	15.60	5.71	0.14	1.95	5.60	4.24	1.13	0.29	1.95	99.29	0.55	12.00	61.00	-0.10	2.00	127.00	9.00
PLS88-65-05	55.70	0.39	15.00	6.64	0.11	3.12	5.82	4.51	1.57	0.60	5.05	98.51	3.33	37.00	61.00	-0.10	-2.00	132.00	-5.00
8-66-12	62.20	0.55	15.90	5.61	0.09	2.64	4.77	6.01	1.11	0.62	0.40	99.90	0.63	192.00	24.00	-0.10	4.00	127.00	-5.00
8-67-10	61.40	0.50	10.90	6.70	0.12	5.15	7.00	3.71	1.38	0.54	2.40	99.80	1.82	39.00	37.00	-0.10	-2.00	84.00	-5.00
PLS88-68-04	51.70	0.78	12.00	9.81	0.17	8.39	8.95	3.20	1.50	0.47	2.85	99.82	1.72	38.00	37.00	-0.10	-2.00	71.00	6.00
PLS88-69-04	52.80	0.30	13.30	7.70	0.20	4.00	7.25	0.25	2.69	0.42	8.60	97.51	5.81	58.00	186.00	-0.10	25.00	113.00	-5.00
PLS88-70-05	52.80	0.66	13.10	7.21	0.12	7.87	6.92	4.46	1.43	0.61	2.10	97.28	1.13	72.00	34.00	-0.10	2.00	104.00	-5.00
PLS88-71-02	66.30	0.43	14.80	5.19	0.09	1.83	4.10	3.31	1.44	0.47	0.80	98.76	0.09	30.00	40.00	-0.10	2.00	101.00	-5.00
PLS88-72-02	62.60	0.43	15.20	5.48	0.09	2.78	5.07	3.62	1.30	0.36	1.45	98.38	0.18	33.00	53.00	-0.10	-2.00	148.00	-5.00
PLS88-73-05	64.10	0.60	15.80	5.02	0.07	1.88	5.57	3.59	1.06	0.38	1.25	99.32	0.39	33.00	49.00	-0.10	-2.00	159.00	-5.00
PLS88-74-06	54.40	0.23	17.40	7.79	0.17	3.61	4.86	2.93	2.25	0.41	6.00	100.05	3.09	23.00	79.00	-0.10	-2.00	143.00	-5.00
PLS88-75-10	51.70	1.82	12.70	16.70	0.21	4.00	7.58	3.45	0.15	0.37	2.20	100.87	0.80	23.00	67.00	-0.10	2.00	125.00	-5.00
PLS88-76-03	48.10	1.68	15.30	14.70	0.20	4.91	9.19	2.97	0.10	0.34	3.80	101.28	1.34	133.00	95.00	-0.10	2.00	90.00	-5.00
PLS88-77-02	47.90	1.10	15.60	12.80	0.18	4.71	6.96	3.64	0.14	0.21	3.80	97.04	1.32	58.00	131.00	-0.10	4.00	94.00	-5.00
PLS88-78-09	58.70	0.23	15.10	7.17	0.07	3.49	4.19	3.37	2.08	0.28	4.75	99.43	2.58	52.00	58.00	-0.10	2.00	134.00	9.00
PLS88-79-12	42.60	0.36	8.83	13.60	0.26	3.89	11.00	0.22	1.76	0.09	15.90	98.52	15.52	85.00	130.00	-0.10	56.00	83.00	28.00
PLS88-80-10	45.50	0.10	9.08	20.10	0.47	2.91	7.09	0.38	1.29	0.22	10.30	97.44	11.34	162.00	122.00	0.60	141.00	67.00	66.00
PLS88-81-02	63.00	0.38	14.60	5.44	0.09	2.81	3.81	3.62	1.84	0.13	4.00	99.72	2.03	15.00	83.00	-0.10	2.00	138.00	-5.00
PLS88-82-02	59.80	0.13	14.10	4.68	0.07	2.13	5.24	3.01	2.88	-0.01	5.70	97.74	4.15	60.00	51.00	-0.10	-2.00	144.00	118.00
PLS88-83-02	65.30	0.50	14.00	5.16	0.07	2.41	4.02	5.73	1.16	0.16	1.40	99.91	0.92	26.00	35.00	-0.10	-2.00	137.00	7.00
PLS88-84-02	62.70	0.52	13.70	5.45	0.10	2.71	5.04	3.98	1.64	0.07	1.55	97.46	0.56	33.00	42.00	-0.10	-2.00	156.00	-5.00
PLS88-85-02	47.20	0.24	11.30	13.80	0.15	4.97	7.29	0.39	1.46	-0.01	12.25	99.05	10.92	450.00	83.00	-0.10	83.00	125.00	-5.00
PLS88-86-03	49.70	2.30	11.60	18.40	0.22	4.99	3.19	1.67	0.23	0.40	4.40	97.11	0.36	69.00	122.00	-0.10	12.00	119.00	-5.00
PLS88-88-04	57.20	0.58	17.30	6.45	0.09	4.01	5.53	4.30	1.88	0.28	0.80	98.42	0.18	27.00	55.00	-0.10	-2.00	118.00	13.00
PLS88-89-24	50.80	0.55	14.30	11.60	0.17	3.93	6.39	4.33	0.33	0.08	6.45	98.92	4.16	57.00	139.00	-0.10	3.00	95.00	14.00
PLS88-90-05(A)	43.40	0.26	14.00	7.88	0.13	8.22	11.00	0.46	1.56	-0.01	12.55	99.46	8.39	103.00	65.00	-0.10	4.00	40.00	6.00
PLS88-90-05(B)	42.80	0.30	14.50	8.05	0.13	8.34	10.20	0.62	1.60	0.28	12.30	99.12	7.98	105.00	60.00	-0.10	3.00	38.00	7.00
8-91-05	59.00	0.04	15.40	3.16	0.07	1.48	3.90	6.36	2.57	0.13	5.30	97.41	5.23	28.00	58.00	-0.10	-2.00	133.00	110.00
-92-05	59.50	0.40	15.10	5.77	0.07	3.46	3.05	4.70	1.85	0.53	3.40	97.82	1.83	31.00	60.00	-0.10	-2.00	148.00	45.00
PLS88-93-02	61.40	0.11	16.00	3.05	0.05	1.22	3.13	7.19	2.34	0.21	2.30	97.00	2.18	3.00	58.00	-0.10	-2.00	121.00	20.00
PLS88-94-03	60.00	0.08	16.30	3.48	0.07	1.43	4.23	8.47	0.87	0.41	4.35	99.69	4.58	1.00	45.00	-0.10	4.00	132.00	82.00
PLS88-95-06	65.90	0.11	16.40	2.47	0.03	0.58	2.56	7.63	1.74	0.45	1.80	99.67	1.39	2.00	39.00	-0.10	-2.00	119.00	44.00
PLS88-96-18	65.80	0.09	15.20	2.16	0.04	0.62	2.50	6.78	2.31	0.34	1.75	97.59	1.66	-1.00	40.00	-0.10	-2.00	123.00	8.00

BEDROCK ANALYSES

Minnova Projects: PN-090, 114, 116

	Percent													PPM					PPB
Sample ID	SiO_2	TiO_2	Al_2O_3	Fe_2O_3*	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	Total	CO_2	Cu	Zn	Ag	As	Zr	Au
PLS88-97-14	63.60	0.25	16.11	3.19	0.06	1.52	3.27	6.52	2.85	0.33	2.20	99.90	1.78	1.00	55.00	-0.10	-2.00	122.00	27.00
PLS88-98-14	60.80	0.42	16.60	4.23	0.07	1.97	3.89	5.76	2.44	0.02	1.25	97.45	0.64	12.00	35.00	-0.10	-2.00	130.00	7.00
PLS88-99-03	62.40	0.55	16.50	6.95	0.12	3.21	5.34	4.99	1.00	-0.01	0.80	101.85	0.09	35.00	41.00	-0.10	-2.00	137.00	7.00
PLS88-100-02	63.20	0.21	17.40	3.50	0.06	1.54	3.62	6.77	2.69	-0.01	2.80	101.79	1.97	13.00	63.00	-0.10	-2.00	124.00	22.00
PLS88-101-04	62.10	0.13	16.60	3.54	0.09	1.23	4.50	7.23	1.50	-0.01	3.60	100.52	3.04	41.00	54.00	-0.10	-2.00	132.00	16.00
PLS88-102-06	58.80	0.53	14.90	5.61	0.09	4.26	5.46	6.04	1.34	-0.01	1.25	98.28	0.84	43.00	21.00	0.50	-2.00	111.00	8.00
PLS88-103-05	57.80	0.61	16.30	8.45	0.12	2.85	4.85	3.50	1.52	-0.01	2.00	98.00	0.44	34.00	91.00	0.10	-2.00	158.00	11.00
PLS88-104-05	60.40	0.28	16.10	3.67	0.07	1.83	4.53	7.68	1.00	-0.01	3.10	98.66	2.80	10.00	47.00	-0.10	-2.00	129.00	25.00
PLS88-105-08	61.00	0.28	15.30	3.77	0.06	1.86	4.21	6.74	1.09	0.01	2.85	97.18	2.32	9.00	43.00	0.10	-2.00	130.00	11.00
PLS88-106-08	54.40	1.14	13.80	8.17	0.18	4.92	9.02	3.96	0.56	-0.01	3.40	99.55	2.42	57.00	40.00	-0.10	-2.00	84.00	8.00
PLS88-107-02	60.80	0.30	15.90	3.72	0.06	1.57	4.07	6.66	1.87	0.22	3.50	98.67	2.61	8.00	71.00	-0.10	-2.00	134.00	-5.00
PLS88-108-02	65.00	0.33	17.40	3.54	0.05	1.50	2.14	6.93	2.29	0.32	0.65	100.15	0.12	6.00	47.00	-0.10	-2.00	125.00	-5.00
PLS88-109-01	61.70	0.38	16.00	2.99	0.05	1.47	3.54	8.70	0.34	0.20	2.25	97.63	1.97	-1.00	20.00	-0.10	-2.00	129.00	-5.00
PLS88-110-09	64.50	0.27	16.70	3.57	0.04	1.41	2.39	7.77	1.14	-0.01	1.55	99.34	1.08	3.00	48.00	-0.10	2.00	121.00	13.00
PLS-88-111-05-B	57.20	0.08	15.90	3.72	0.08	2.15	4.87	7.83	0.63	-0.01	5.10	97.56	4.91	26.00	50.00	-0.10	-2.00	149.00	12.00
PLS-88-112-02-B	61.40	0.35	17.10	3.37	0.06	1.84	3.74	5.97	2.08	-0.01	1.90	97.81	1.04	36.00	35.00	-0.10	-2.00	140.00	-5.00
PLS-88-113-03-B	54.80	0.61	13.10	7.39	0.13	8.34	7.49	3.97	1.70	0.18	2.00	99.71	0.45	44.00	26.00	-0.10	2.00	127.00	-5.00
88-114-03-B	53.80	0.65	17.60	6.62	0.11	3.20	6.77	4.34	2.29	0.08	1.90	97.36	0.76	55.00	18.00	-0.10	2.00	310.00	-5.00
88-115-02-B	59.40	0.45	14.80	5.79	0.13	5.63	5.98	2.72	1.27	-0.01	1.20	97.37	0.02	16.00	21.00	-0.10	-2.00	78.00	-5.00
PLS-88-116-05-B	52.20	0.86	14.30	9.17	0.17	7.82	9.79	3.54	1.33	0.40	1.80	101.38	0.63	129.00	32.00	-0.10	4.00	110.00	-5.00
PLS-88-117-09-B	57.80	0.27	12.50	4.52	0.10	4.83	6.91	4.21	1.62	-0.01	6.20	98.96	4.61	26.00	25.00	-0.10	-2.00	73.00	-5.00
PLS-88-118-05-B	62.80	0.40	14.20	5.63	0.09	3.44	2.54	5.60	0.79	-0.01	3.20	98.69	1.05	9.00	35.00	-0.10	-2.00	61.00	-5.00
PLS-88-119-04-B	58.00	0.79	16.50	6.42	0.14	3.14	5.98	3.92	1.31	-0.01	1.70	97.90	0.26	59.00	34.00	-0.10	2.00	97.00	-5.00
PLS-88-120-08-B	48.20	0.41	11.80	7.10	0.15	6.22	12.00	1.68	1.05	-0.01	9.00	97.61	6.16	16.00	50.00	-0.10	11.00	57.00	-5.00
PLS-88-121-11-B	56.40	0.55	14.10	6.21	0.11	6.57	7.99	3.10	1.60	-0.01	1.10	97.73	0.24	58.00	23.00	-0.10	5.00	88.00	-5.00
PLS-88-122-14-B	58.90	0.41	15.00	5.40	0.09	4.18	6.81	3.28	0.88	-0.01	3.40	98.35	1.84	37.00	52.00	-0.10	2.00	85.00	-5.00
PLS-88-123-12-B	61.80	0.36	14.30	4.01	0.06	2.68	4.65	3.17	1.40	0.12	4.50	97.05	2.27	27.00	204.00	0.10	-2.00	100.00	-5.00
PLS-88-124-04-B	44.70	0.38	10.00	12.10	0.35	6.41	10.70	1.50	0.18	-0.01	11.50	97.82	8.18	52.00	74.00	-0.10	2.00	70.00	-5.00
PLS-88-125-01-B	48.30	0.07	5.94	36.30	0.06	1.19	1.74	1.35	0.37	-0.01	2.70	98.02	2.05	22.00	50.00	-0.10	5.00	18.00	-5.00
PLS-88-126-02-B	62.20	0.04	13.60	1.37	0.08	0.80	6.90	4.23	1.12	0.20	6.50	97.04	5.57	5.00	29.00	-0.10	2.00	38.00	-5.00
PLS-88-127-05-B	53.30	0.09	10.20	21.90	0.07	2.31	3.17	1.64	1.02	0.02	4.50	98.22	2.89	37.00	83.00	-0.10	5.00	60.00	-5.00
PLS-88-128-01-B	50.00	0.11	9.84	28.80	0.07	1.81	2.00	1.31	0.90	0.25	3.55	98.64	2.56	34.00	54.00	-0.10	5.00	27.00	-5.00
PLS-88-129-02A-B	55.00	0.22	14.70	10.10	0.09	3.27	3.45	2.79	1.55	0.35	6.00	97.52	3.93	61.00	75.00	-0.10	4.00	90.00	-5.00
PLS-88-129-02B-B	56.20	0.06	11.60	7.72	0.08	2.68	4.79	2.22	1.33	0.28	10.80	97.76	9.66	58.00	63.00	-0.10	6.00	73.00	-5.00
PLS-88-130-01-B	55.60	0.12	13.20	6.49	0.11	3.09	4.78	3.00	1.63	0.28	8.80	97.10	7.18	58.00	86.00	-0.10	17.00	124.00	-5.00
PLS-88-131-03-B	53.20	0.61	11.40	8.93	0.16	10.20	6.62	3.14	0.87	0.19	2.70	98.02	0.34	38.00	36.00	-0.10	2.00	68.00	-5.00
PLS-88-132-02-B	53.80	0.06	12.50	11.30	0.10	2.86	3.63	2.57	2.26	0.29	11.00	100.37	10.52	55.00	71.00	-0.10	2.00	96.00	6.00
PLS-88-133-01-B	59.30	0.08	15.30	4.12	0.08	2.84	5.04	4.57	2.19	0.27	6.00	99.79	3.68	41.00	55.00	-0.10	2.00	138.00	9.00
PLS-88-134-06-B	63.70	0.37	14.40	5.12	0.10	4.14	3.09	5.41	0.44	0.33	2.50	99.60	0.64	26.00	63.00	-0.10	2.00	94.00	7.00
PLS-88-135-09-B	65.50	0.25	15.10	3.62	0.08	3.22	2.89	3.87	1.36	0.31	3.30	99.50	1.18	32.00	165.00	-0.10	4.00	92.00	8.00
PLS-88-136-02-B	62.70	0.36	13.50	4.76	0.07	4.56	4.04	3.68	1.58	0.22	5.20	100.67	2.43	30.00	52.00	-0.10	-2.00	94.00	9.00
PLS-88-137-10-B	59.20	0.16	16.90	6.49	0.09	3.30	2.76	3.85	2.09	0.13	5.40	100.37	3.20	58.00	97.00	-0.10	40.00	136.00	-5.00
88-138-07-B	55.60	0.16	14.40	7.62	0.10	3.07	5.33	2.09	1.58	0.22	10.20	100.37	8.11	53.00	98.00	0.10	60.00	91.00	-5.00
3-139-06-B	63.00	0.04	14.60	2.52	0.05	1.36	5.78	5.01	0.74	0.20	7.40	100.70	6.25	11.00	64.00	0.10	13.00	43.00	13.00
PLS-88-140-07-B	58.20	0.06	12.50	6.68	0.42	2.67	5.47	1.24	1.43	0.33	8.85	97.85	7.24	62.00	126.00	0.20	8.00	66.00	7.00
PLS-88-141-11-B	57.80	0.04	10.50	1.71	0.07	0.60	12.90	2.23	0.48	0.21	11.60	98.14	10.64	9.00	23.00	-0.10	6.00	38.00	7.00
PLS-88-142-10-B	60.70	0.11	14.80	5.91	0.07	2.76	2.99	3.22	1.35	0.17	6.15	98.23	4.24	43.00	88.00	-0.10	42.00	100.00	9.00
PLS-88-143-10-B	64.00	0.09	12.70	3.16	0.07	2.11	3.67	3.75	0.96	0.22	6.40	97.13	5.21	61.00	58.00	-0.10	6.00	57.00	5.00

BEDROCK ANALYSES

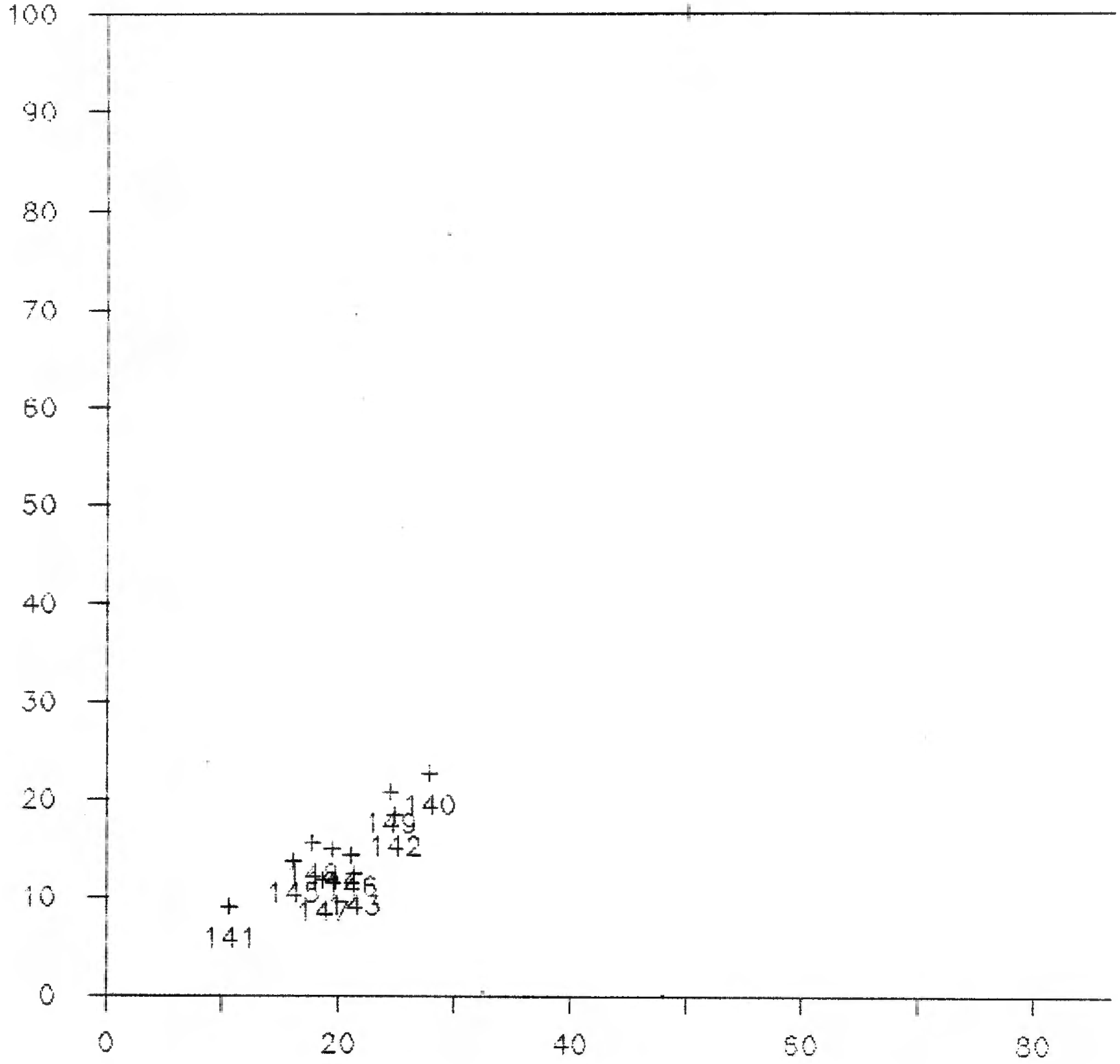
Minnova Projects: PN-090, 114, 116

	Percent													PPM					PPB
Sample ID	SiO_2	TiO_2	Al_2O_3	$Fe_2O_3^*$	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	Total	CO_2	Cu	Zn	Ag	As	Zr	Au
PLS-88-144-08-B	62.00	0.09	16.80	4.94	0.06	2.19	3.29	4.53	1.84	0.02	4.00	99.76	2.19	44.00	64.00	-0.10	9.00	98.00	5.00
PLS-88-145-03-B	62.30	0.31	18.60	4.55	0.08	1.76	4.23	4.66	1.36	0.04	3.05	100.94	1.35	27.00	38.00	-0.10	3.00	63.00	5.00
PLS-88-146-14-B	60.50	0.36	16.80	4.58	0.07	2.58	5.23	5.08	0.41	0.11	2.85	98.57	1.08	15.00	56.00	-0.10	-2.00	90.00	23.00
PLS-88-147-16-B	59.30	0.31	19.80	4.26	0.06	2.67	6.11	4.38	0.77	0.18	2.55	100.39	0.51	20.00	51.00	-0.10	2.00	77.00	-5.00
PLS-88-148-03-B	59.70	0.37	18.90	5.42	0.06	1.98	5.70	4.31	1.08	0.39	2.60	100.51	0.85	143.00	76.00	-0.10	2.00	100.00	8.00
PLS-88-149-06-B	58.90	0.63	15.90	6.81	0.12	2.70	4.65	2.17	1.86	0.01	5.70	99.45	2.76	64.00	88.00	-0.10	7.00	124.00	11.00

SAMPLE NUMBER	TI02 PCT	AL203 PCT	FE203 PCT	MGO PCT	TOTAL PCT	AL203	MGO	FEO+FE203 +TI02
PLS88-01-09B	0.29	14.70	4.53	1.79	97.33	72.64	11.19	16.17
PLS88-02-05	0.08	16.50	6.17	3.14	98.60	66.56	16.03	17.41
PLS88-03-07	0.01	16.30	1.74	0.83	98.55	88.18	5.68	6.14
PLS88-04-05	0.08	18.60	1.67	0.71	97.20	90.19	4.36	5.46
PLS88-05-04	0.14	16.90	4.54	2.09	97.82	74.32	11.63	14.05
PLS88-06-02	0.10	14.30	4.79	1.48	97.52	73.25	9.59	17.16
PLS88-07-04	0.30	18.80	3.81	1.76	97.51	79.01	9.36	11.63
PLS88-08-02	0.43	18.70	5.08	2.25	97.01	73.94	11.26	14.80
PLS88-09-02	0.30	16.60	5.37	2.67	98.72	69.60	14.16	16.24
PLS88-10-02	0.33	18.30	3.85	1.32	97.11	80.32	7.33	12.35
PLS88-11-09	0.11	12.90	5.37	2.04	97.51	67.02	13.41	19.57
PLS88-12-03	0.13	16.80	7.17	3.11	97.26	65.14	15.26	19.60
PLS88-13-03	0.28	13.50	10.30	3.25	97.14	54.06	16.47	29.47
PLS88-14-03	0.10	6.34	4.16	0.45	97.83	64.62	5.80	29.58
PLS88-15-03	0.07	12.40	5.20	5.62	98.47	53.60	30.74	15.66
PLS88-16-03	0.10	14.30	5.05	2.30	97.55	68.94	14.03	17.03
PLS88-17-03	0.07	14.10	2.57	1.63	97.36	78.68	11.51	9.81
PLS88-18-03	0.16	14.80	7.93	2.31	99.07	63.43	12.53	24.04
PLS88-19-04	0.21	6.03	35.50	1.84	97.08	17.97	6.94	75.09
PLS88-20-16	0.17	15.40	9.08	2.42	98.09	61.87	12.30	25.83
PLS88-21-03	0.49	16.70	4.45	2.01	99.71	73.99	11.27	14.74
PLS88-22-12	0.16	15.20	5.68	1.42	97.48	72.34	8.55	19.11
PLS88-23-15	0.09	11.30	6.72	3.57	97.38	55.04	22.00	22.95
PLS88-25-07	0.41	13.50	6.31	6.88	98.30	50.36	32.47	17.17
PLS88-26-03	0.07	13.50	4.48	3.41	97.14	64.51	20.62	14.87
PLS88-27-07	0.12	14.10	7.68	2.33	98.55	62.79	13.13	24.09
PLS88-28-08	0.06	13.90	4.93	4.89	97.48	59.12	26.31	14.57
PLS88-29-05-B	0.13	15.00	4.38	3.48	101.34	66.74	19.59	13.67
PLS88-30-07-B	0.12	12.60	6.18	5.91	99.68	51.59	30.62	17.79
PLS88-31-11-B	0.09	11.10	6.09	3.15	99.08	57.37	20.60	22.04
PLS88-32-03-B	0.13	13.60	5.45	7.18	101.53	51.29	34.26	14.44
PLS88-33-04-B	0.12	13.20	4.62	2.53	101.61	67.22	16.30	16.48
PLS88-34-09-B	0.08	14.10	3.95	3.05	97.35	68.11	18.64	13.25
PLS88-35-08-B	0.13	12.40	4.44	3.02	98.34	64.12	19.76	16.12
PLS88-36-08-B	0.13	15.00	5.42	3.85	97.05	63.33	20.57	16.10
PLS88-37-03-B	0.61	12.70	4.30	4.22	97.19	59.54	25.03	15.43
PLS88-38-03-B	0.11	12.70	4.17	3.80	97.30	62.18	23.54	14.27
PLS88-39-07-B	0.13	15.60	4.99	2.66	98.03	69.42	14.98	15.61
PLS88-40-03-B	0.12	13.70	4.71	4.65	97.35	59.86	25.71	14.44
PLS88-41-03-B	0.27	13.70	4.54	2.31	98.39	68.88	14.70	16.43
PLS88-42-03-B	0.11	11.90	3.94	2.40	97.13	67.27	17.17	15.56
PLS88-43-03-B	0.17	14.20	5.38	5.55	97.46	56.73	28.06	15.21
PLS88-44-02-B	0.55	14.60	7.00	4.07	97.25	58.58	20.66	20.75
PLS88-45-03-B	0.27	15.60	9.62	2.35	98.53	61.31	11.69	27.00
PLS88-46-07-B	0.06	16.10	7.89	2.25	98.21	65.79	11.63	22.57
PLS88-47-02-B	0.17	14.10	8.03	2.84	98.41	60.31	15.37	24.32
PLS88-48-02-B	0.30	15.60	9.28	2.42	98.00	61.64	12.10	26.26
PLS88-49-03-B	0.03	14.80	2.35	1.76	98.41	79.55	11.97	8.48
PLS88-50-04-B	0.08	11.80	4.25	3.23	97.21	62.63	21.69	15.68
PLS88-51-03-B	0.07	15.10	2.73	1.82	97.30	78.34	11.95	9.71
PLS88-52-02-B	0.08	10.30	20.80	2.31	97.97	36.90	10.47	52.63
PLS88-53-03-B	0.09	13.70	5.76	3.55	97.42	61.65	20.21	18.14
PLS88-54-06-B	0.11	13.40	3.95	2.72	97.82	68.37	17.56	14.08
PLS88-55-06-B	0.11	14.70	5.40	2.16	97.45	69.27	12.88	17.85

SAMPLE NUMBER	Ti02 PCT	AL203 PCT	FE203 PCT	MGO PCT	TOTAL PCT	AL203	MGO	FEO+FE203 +Ti02
PLS88-56-02-B	0.09	15.30	6.50	2.65	100.19	65.93	14.45	19.62
PLS88-57-03-B	0.09	16.20	7.14	2.52	97.24	66.40	13.07	20.54
PLS88-58-02-B	0.08	8.59	18.20	1.96	100.54	35.92	10.37	53.71
PLS88-59-06-B	0.06	12.50	3.80	1.64	97.25	72.68	12.06	15.26
PLS88-60-06-B(A	1.14	16.80	5.99	2.97	97.47	66.28	14.83	18.89
PLS88-60-06-B(B	0.44	15.50	3.26	1.37	97.31	78.72	8.80	12.48
PLS88-61-03-B	0.54	15.70	5.06	3.26	98.67	66.49	17.47	16.04
PLS88-62-02-B	0.51	15.60	3.15	0.96	101.36	81.13	6.32	12.55
PLS88-63-04-B	0.51	12.00	6.19	10.70	99.92	39.85	44.96	15.18
PLS88-64-06	0.48	15.60	5.71	1.95	99.29	70.01	11.07	18.92
PLS88-65-05	0.39	15.00	6.64	3.12	98.51	63.10	16.61	20.29
PLS88-66-12	0.55	15.90	5.61	2.64	99.90	67.88	14.26	17.86
PLS88-67-10	0.50	10.90	6.70	5.15	99.80	48.78	29.16	22.05
PLS88-68-04	0.78	12.00	9.81	8.39	99.82	40.12	35.50	24.38
PLS88-69-04	0.30	13.30	7.70	4.00	97.51	55.68	21.19	23.13
PLS88-70-05	0.66	13.10	7.21	7.87	97.28	46.06	35.01	18.93
PLS88-71-02	0.43	14.80	5.19	1.83	98.76	70.70	11.06	18.24
PLS88-72-02	0.43	15.20	5.48	2.78	98.38	66.84	15.47	17.70
PLS88-73-05	0.60	15.80	5.02	1.88	99.32	71.91	10.83	17.26
PLS88-74-06	0.23	17.40	7.79	3.61	100.05	63.24	16.60	20.16
PLS88-75-10	1.82	12.70	16.70	4.00	100.87	41.60	16.58	41.82
PLS88-76-03	1.68	15.30	14.70	4.91	101.28	46.67	18.95	34.37
PLS88-77-02	1.10	15.60	12.80	4.71	97.04	50.07	19.13	30.80
PLS88-78-09	0.23	15.10	7.17	3.49	99.43	61.32	17.93	20.75
PLS88-79-12	0.36	8.83	13.60	3.89	98.52	37.58	20.95	41.47
PLS88-80-10	0.10	9.08	20.10	2.91	97.44	33.67	13.65	52.68
PLS88-81-02	0.38	14.60	5.44	2.81	99.72	66.00	16.07	17.93
PLS88-82-02	0.13	14.10	4.68	2.13	97.74	70.21	13.42	16.37
PLS88-83-02	0.50	14.00	5.16	2.41	99.91	67.03	14.60	18.36
PLS88-84-02	0.52	13.70	5.45	2.71	97.46	64.67	16.19	19.14
PLS88-85-02	0.24	11.30	13.80	4.97	99.05	41.23	22.95	35.82
PLS88-86-03	2.30	11.60	18.40	4.99	97.11	36.07	19.63	44.30
PLS88-88-04	0.58	17.30	6.45	4.01	98.42	63.67	18.67	17.66
PLS88-89-24	0.55	14.30	11.60	3.93	98.92	51.62	17.95	30.44
PLS88-90-05(A)	0.26	14.00	7.88	8.22	99.46	46.62	34.63	18.74
PLS88-90-05(B)	0.30	14.50	8.05	8.34	99.12	47.04	34.23	18.73
PLS88-91-05	0.04	15.40	3.16	1.48	97.41	79.25	9.64	11.11
PLS88-92-05	0.40	15.10	5.77	3.46	97.82	63.74	18.48	17.79
PLS88-93-02	0.11	16.00	3.05	1.22	97.00	81.36	7.85	10.79
PLS88-94-03	0.08	16.30	3.48	1.43	99.69	79.45	8.82	11.73
PLS88-95-06	0.11	16.40	2.47	0.58	99.67	87.04	3.90	9.06
PLS88-96-18	0.09	15.20	2.16	0.62	97.59	87.04	4.49	8.47
PLS88-97-14	0.25	16.11	3.19	1.52	99.90	79.24	9.46	11.30
PLS88-98-14	0.42	16.60	4.23	1.97	97.45	74.69	11.22	14.10
PLS88-99-03	0.55	16.50	6.95	3.21	101.85	64.22	15.81	19.97
PLS88-100-02	0.21	17.40	3.50	1.54	101.79	79.67	8.92	11.41
PLS88-101-04	0.13	16.60	3.54	1.23	100.52	80.45	7.54	12.00
PLS88-102-06	0.53	14.90	5.61	4.26	98.28	60.91	22.03	17.06
PLS88-103-05	0.61	16.30	8.45	2.85	98.00	62.36	13.80	23.85
PLS88-104-05	0.28	16.10	3.67	1.83	98.66	76.41	10.99	12.60
PLS88-105-08	0.28	15.30	3.77	1.86	97.18	75.07	11.55	13.39
PLS88-106-08	1.14	13.80	8.17	4.92	99.55	52.36	23.62	24.03
PLS88-107-02	0.30	15.90	3.72	1.57	98.67	77.23	9.65	13.13
PLS88-108-02	0.33	17.40	3.54	1.50	100.15	79.50	8.67	11.83

SAMPLE NUMBER	TiO2 PCT	AL2O3 PCT	FE2O3 PCT	MGO PCT	TOTAL PCT	AL2O3	MGO	FEO+FE2O3 +TiO2
PLS88-109-0	0.38	16.00	2.99	1.47	97.63	79.64	9.26	11.10
PLS88-110-09	0.27	16.70	3.57	1.41	99.34	79.29	8.47	12.24
PLS-88-111-05-B	0.08	15.90	3.72	2.15	97.56	75.00	12.83	12.17
PLS-88-112-02-B	0.35	17.10	3.37	1.84	97.81	78.04	10.63	11.33
PLS-88-113-03-B	0.61	13.10	7.39	8.34	99.71	44.97	36.22	18.81
PLS-88-114-03-B	0.65	17.60	6.62	3.20	97.36	66.15	15.22	18.64
PLS-88-115-02-B	0.45	14.80	5.79	5.63	97.37	56.53	27.21	16.26
PLS-88-116-05-B	0.86	14.30	9.17	7.82	101.38	46.02	31.84	22.14
PLS-88-117-09-B	0.27	12.50	4.52	4.83	98.96	57.17	27.95	14.88
PLS-88-118-05-B	0.40	14.20	5.63	3.44	98.69	62.65	19.20	18.15
PLS-88-119-04-B	0.79	16.50	6.42	3.14	97.90	65.04	15.66	19.30
PLS-88-120-08-B	0.41	11.80	7.10	6.22	97.61	47.52	31.69	20.79
PLS-88-121-11-B	0.55	14.10	6.21	6.57	97.73	52.18	30.76	17.06
PLS-88-122-14-B	0.41	15.00	5.40	4.18	98.35	61.87	21.81	16.32
PLS-88-123-12-B	0.36	14.30	4.01	2.68	97.05	69.30	16.43	14.27
PLS-88-124-04-B	0.38	10.00	12.10	6.41	97.82	37.31	30.26	32.43
PLS-88-125-01-B	0.07	5.94	36.30	1.19	98.02	17.93	4.55	77.52
PLS-88-126-02-B	0.04	13.60	1.37	0.80	97.04	87.73	6.53	5.74
PLS-88-127-05-B	0.09	10.20	21.90	2.31	98.22	35.66	10.22	54.12
PLS-88-128-01-B	0.11	9.84	28.80	1.81	98.64	30.27	7.04	62.69
PLS-88-129-02A-	0.22	14.70	10.10	3.27	97.52	56.49	15.90	27.60
PLS-88-129-02B-	0.06	11.60	7.72	2.68	97.76	56.88	16.63	26.50
PLS-88-130-01-B	0.12	13.20	6.49	3.09	97.10	60.90	18.04	21.07
PLS-88-131-03-B	0.61	11.40	8.93	10.20	98.02	36.92	41.80	21.29
PLS-88-132-02-B	0.06	12.50	11.30	2.86	100.37	51.96	15.04	33.00
PLS-88-133-01-B	0.08	15.30	4.12	2.84	99.79	70.33	16.52	13.15
PLS-88-134-06-B	0.37	14.40	5.12	4.14	99.60	61.61	22.41	15.98
PLS-88-135-09-B	0.25	15.10	3.62	3.22	99.50	69.34	18.71	11.95
PLS-88-136-02-B	0.36	13.50	4.76	4.56	100.67	59.36	25.37	15.27
PLS-88-137-10-B	0.16	16.90	6.49	3.30	100.37	65.86	16.27	17.87
PLS-88-138-07-B	0.16	14.40	7.62	3.07	100.37	60.83	16.41	22.76
PLS-88-139-06-B	0.04	14.60	2.52	1.36	100.70	81.01	9.55	9.44
PLS-88-140-07-B	0.06	12.50	6.68	2.67	97.85	60.84	16.44	22.71
PLS-88-141-11-B	0.04	10.50	1.71	0.60	98.14	84.75	6.13	9.12
PLS-88-142-10-B	0.11	14.80	5.91	2.76	98.23	65.95	15.56	18.49
PLS-88-143-10-B	0.09	12.70	3.16	2.11	97.13	72.33	15.21	12.46
PLS-88-144-08-B	0.09	16.80	4.94	2.19	99.76	72.98	12.04	14.98
PLS-88-145-03-B	0.31	18.60	4.55	1.76	100.94	77.11	9.23	13.66
PLS-88-146-14-B	0.36	16.80	4.58	2.58	98.57	71.76	13.94	14.29
PLS-88-147-16-B	0.31	19.80	4.26	2.67	100.39	75.38	12.86	11.76
PLS-88-148-03-B	0.37	18.90	5.42	1.98	100.51	74.55	9.88	15.56
PLS-88-149-06-B	0.63	15.90	6.81	2.70	99.45	65.17	14.00	20.82



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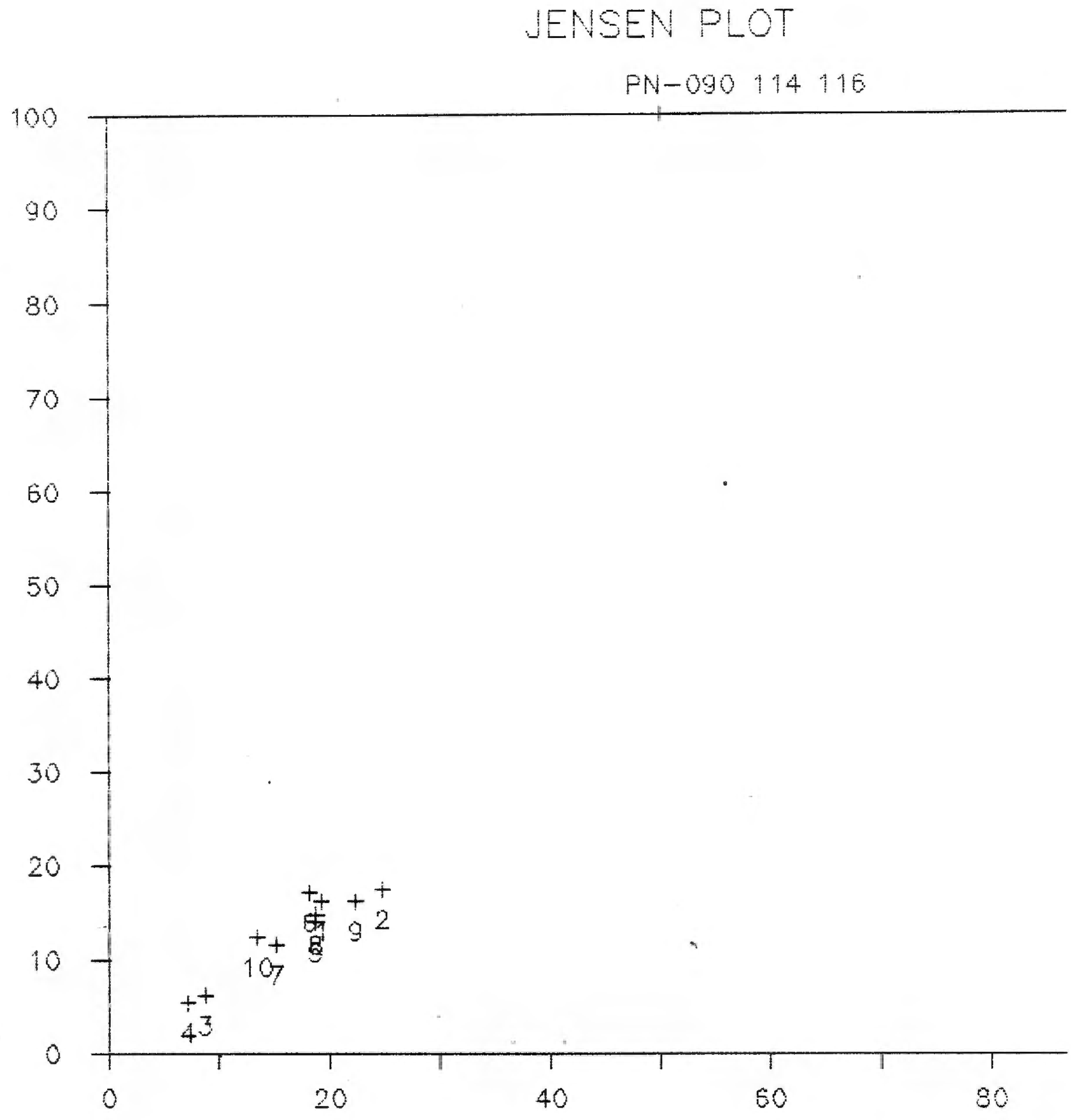
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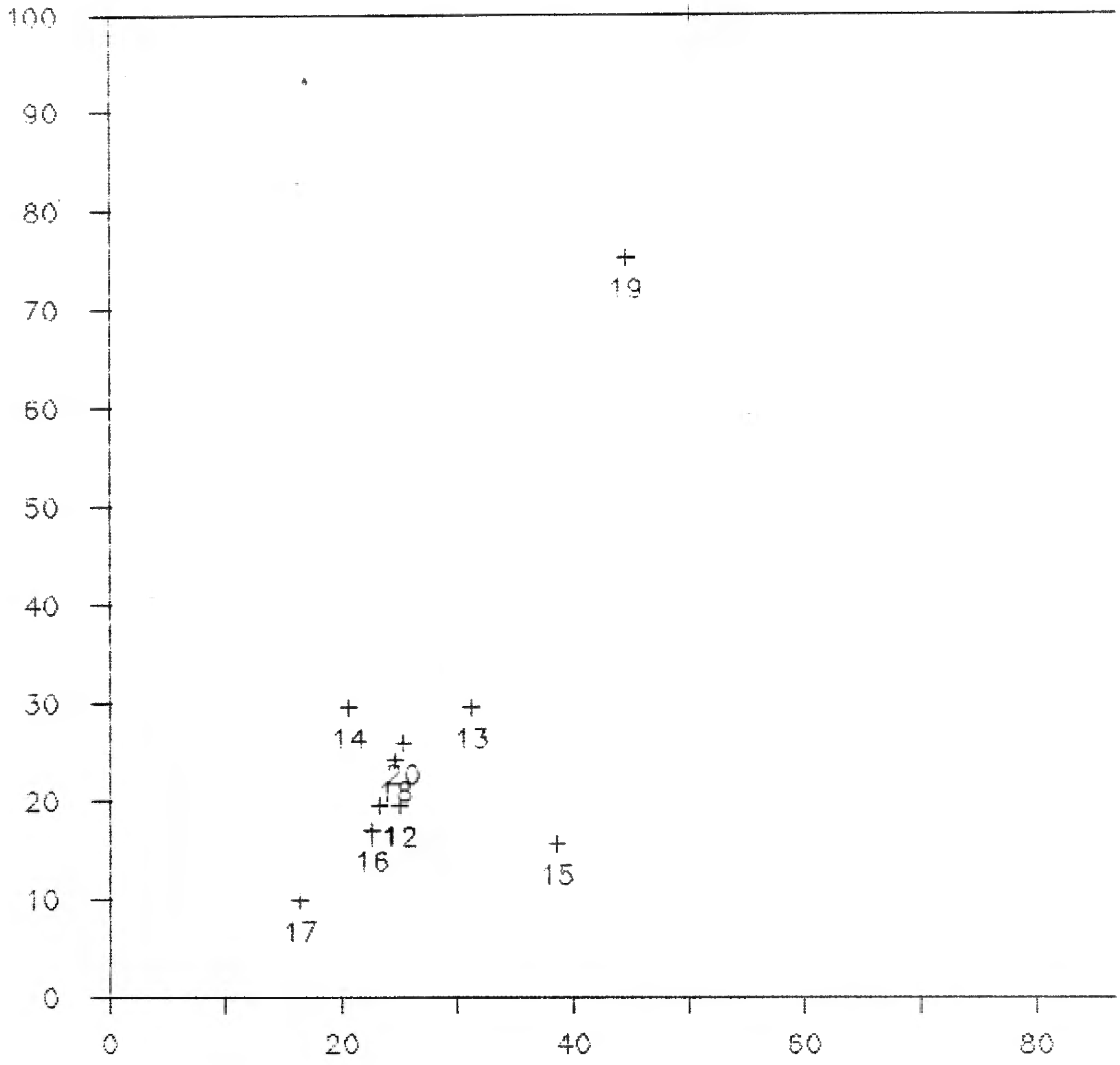

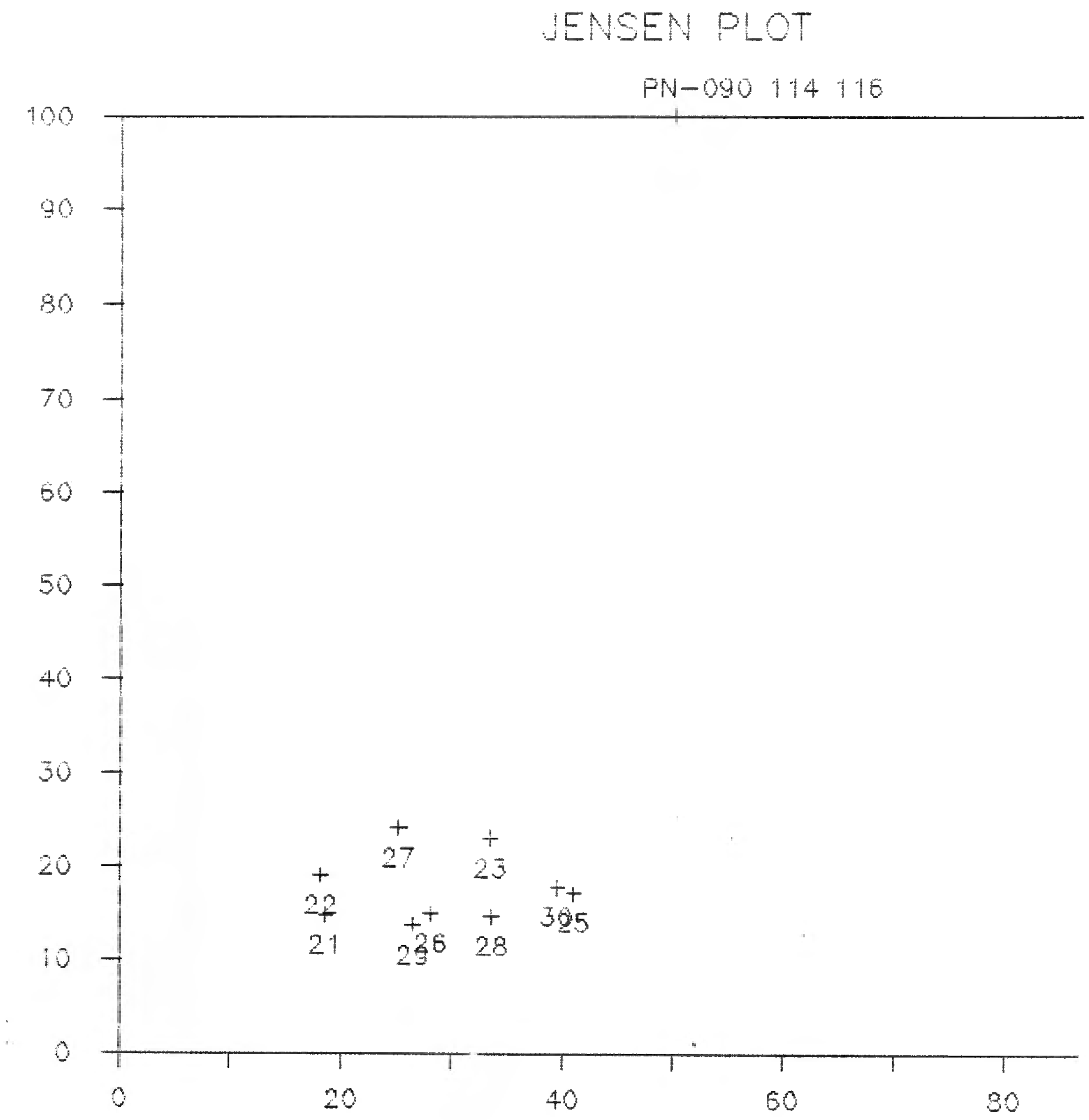
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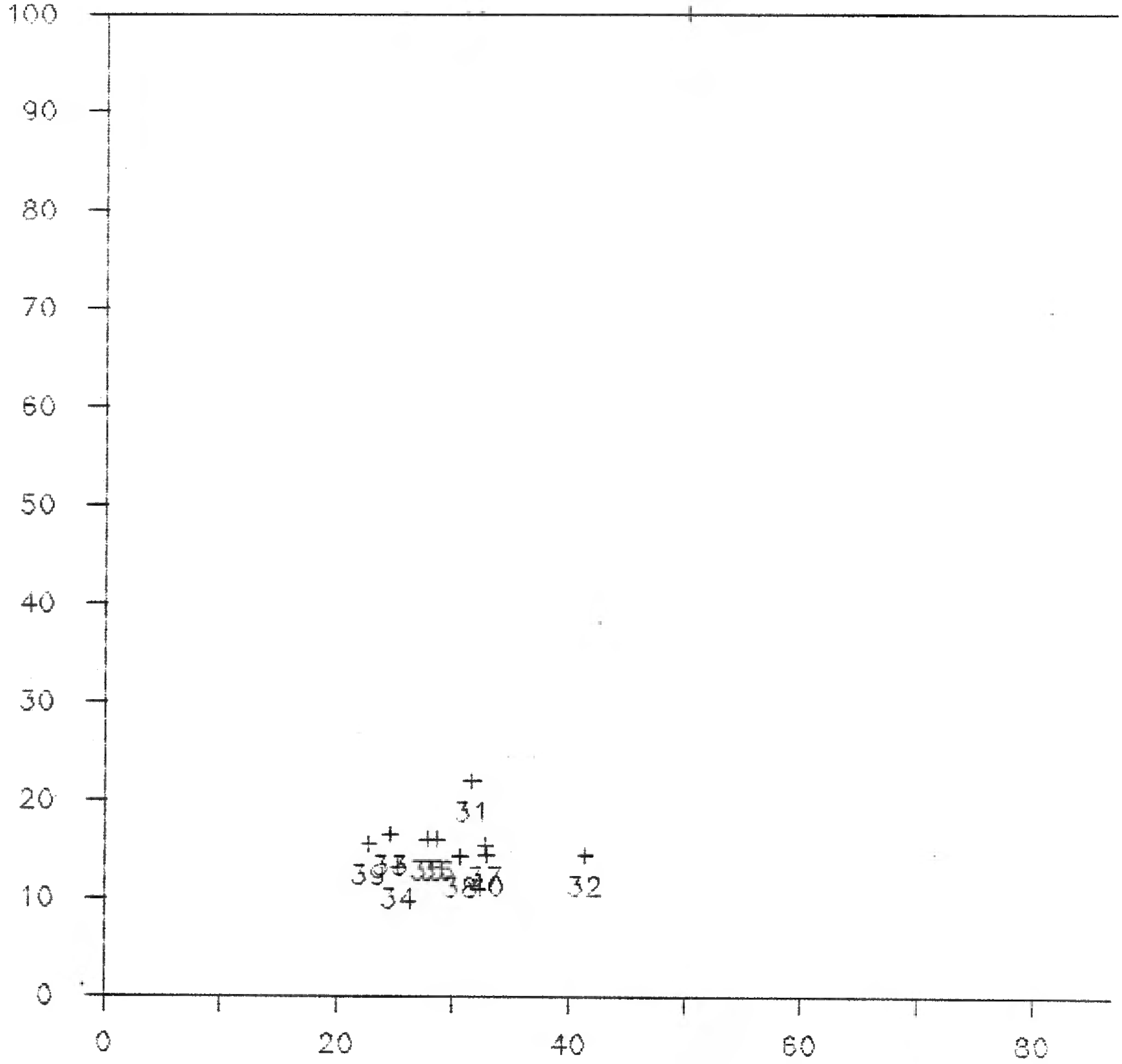

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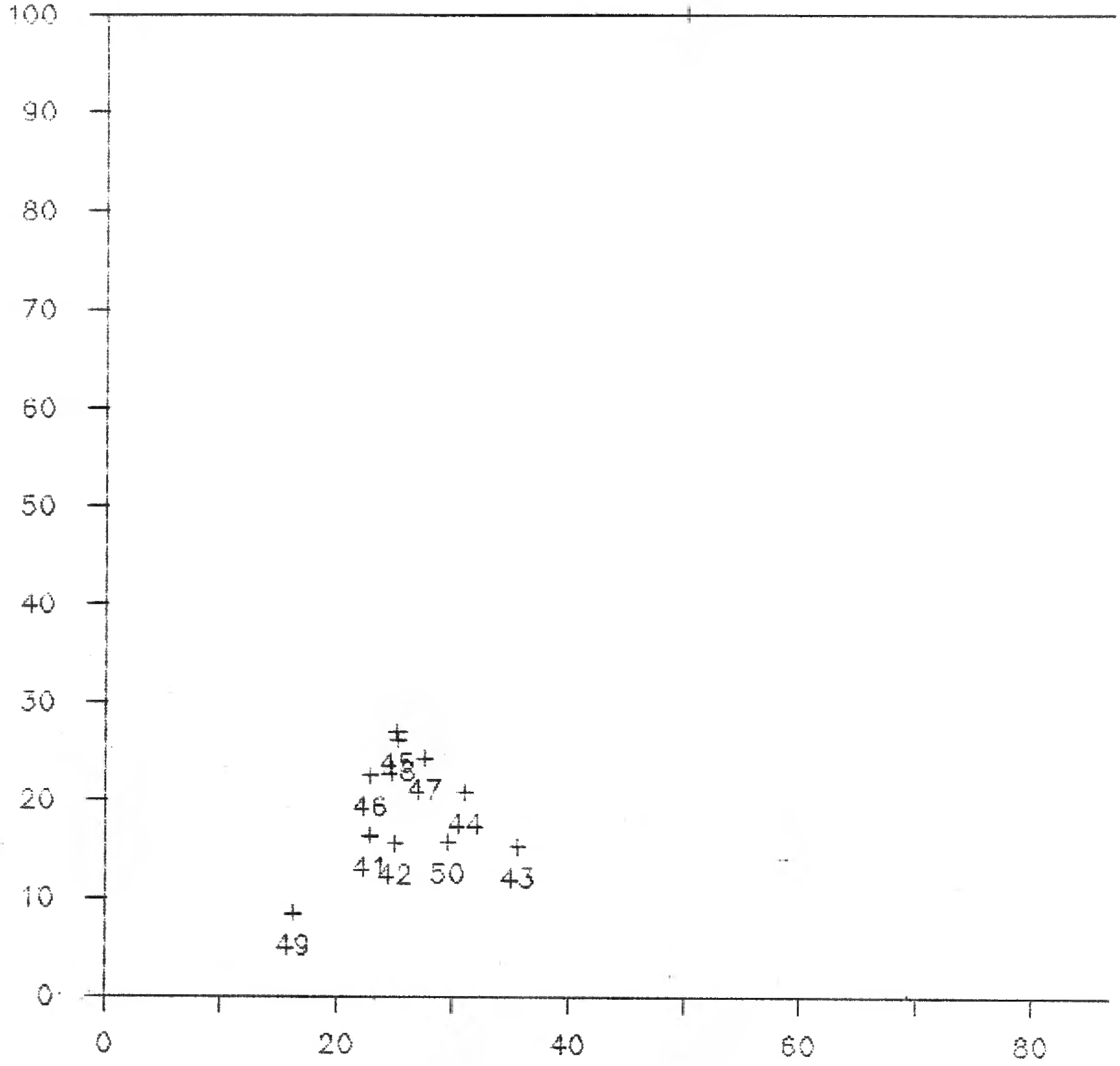

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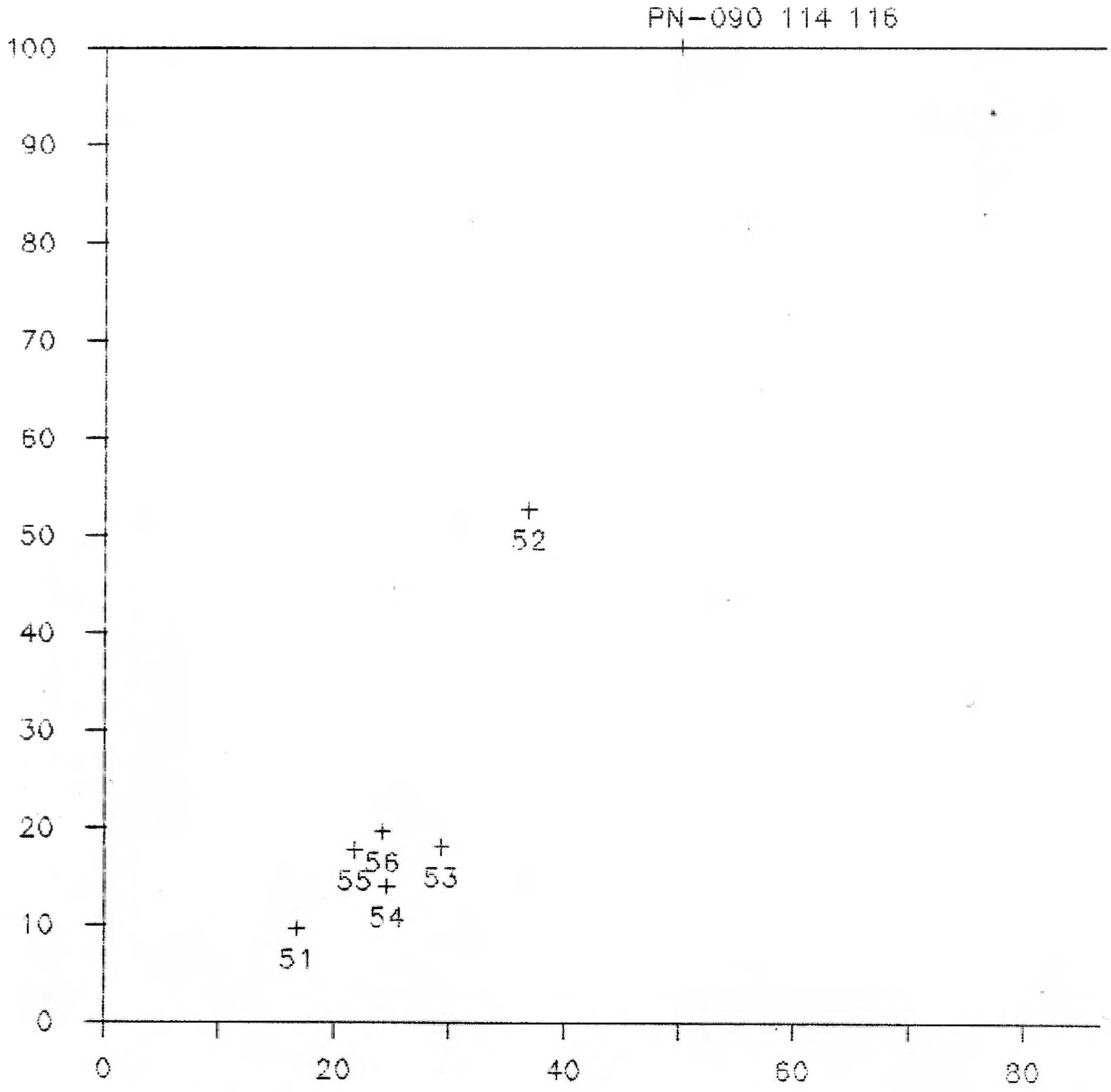
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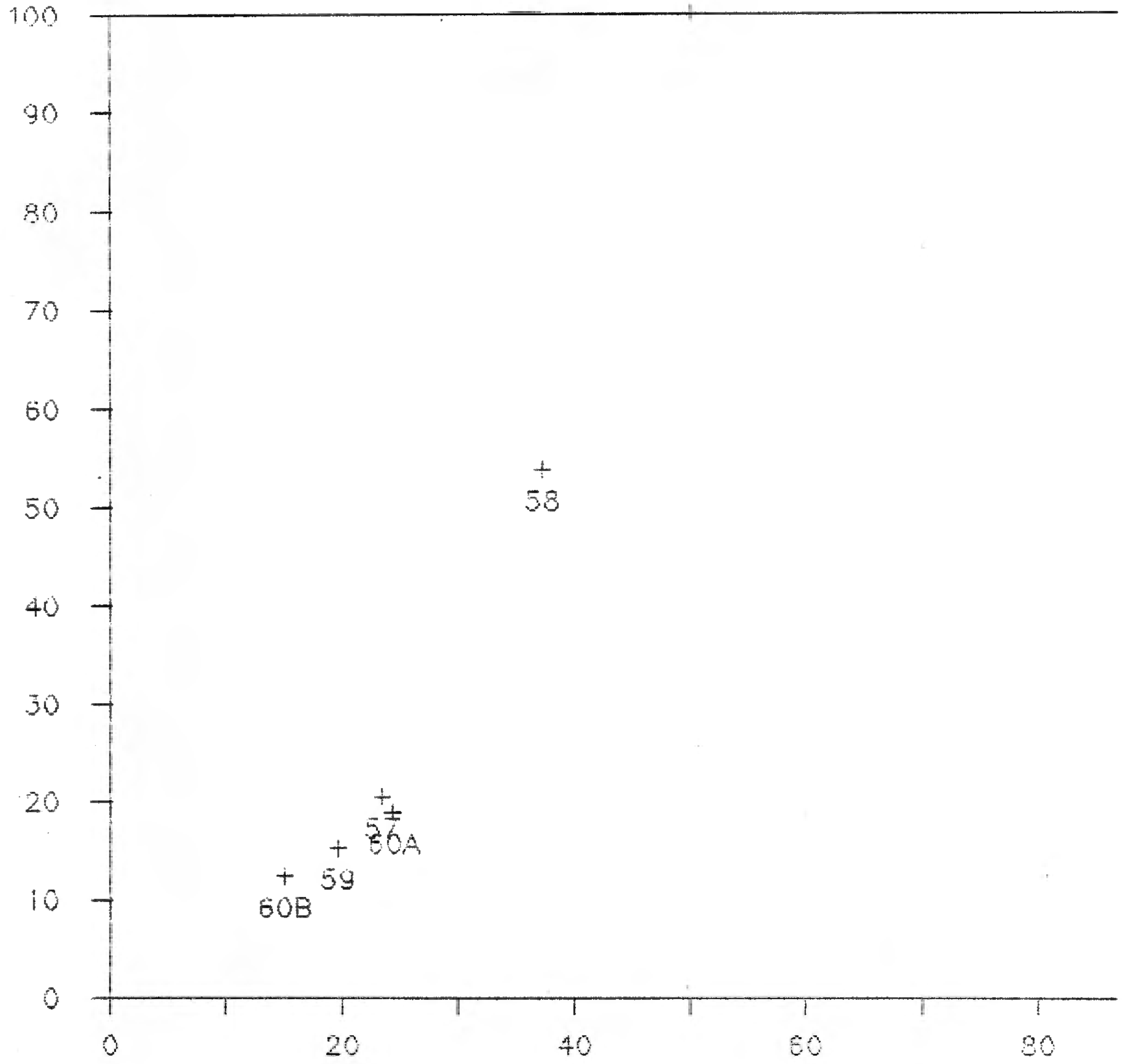

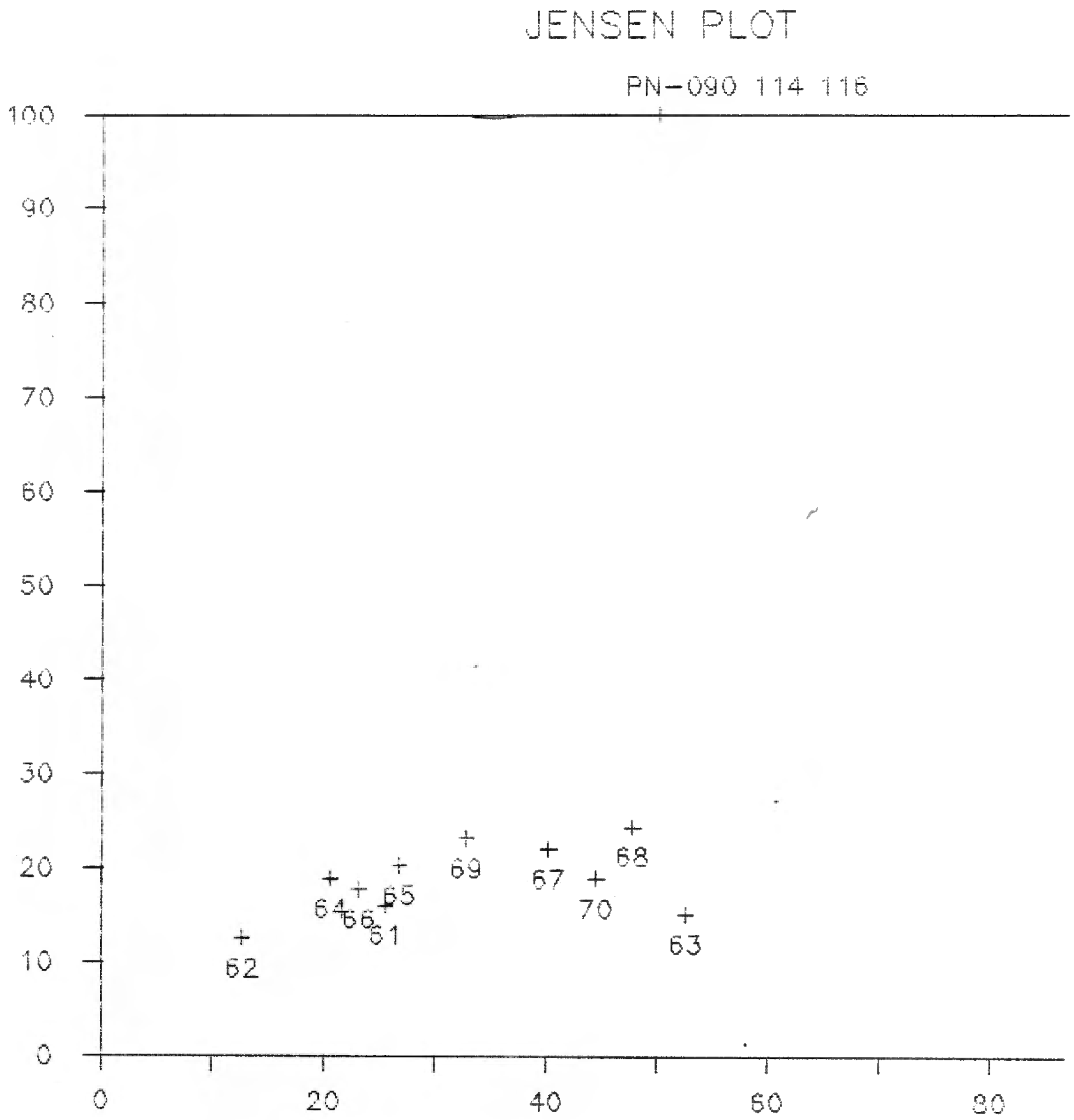
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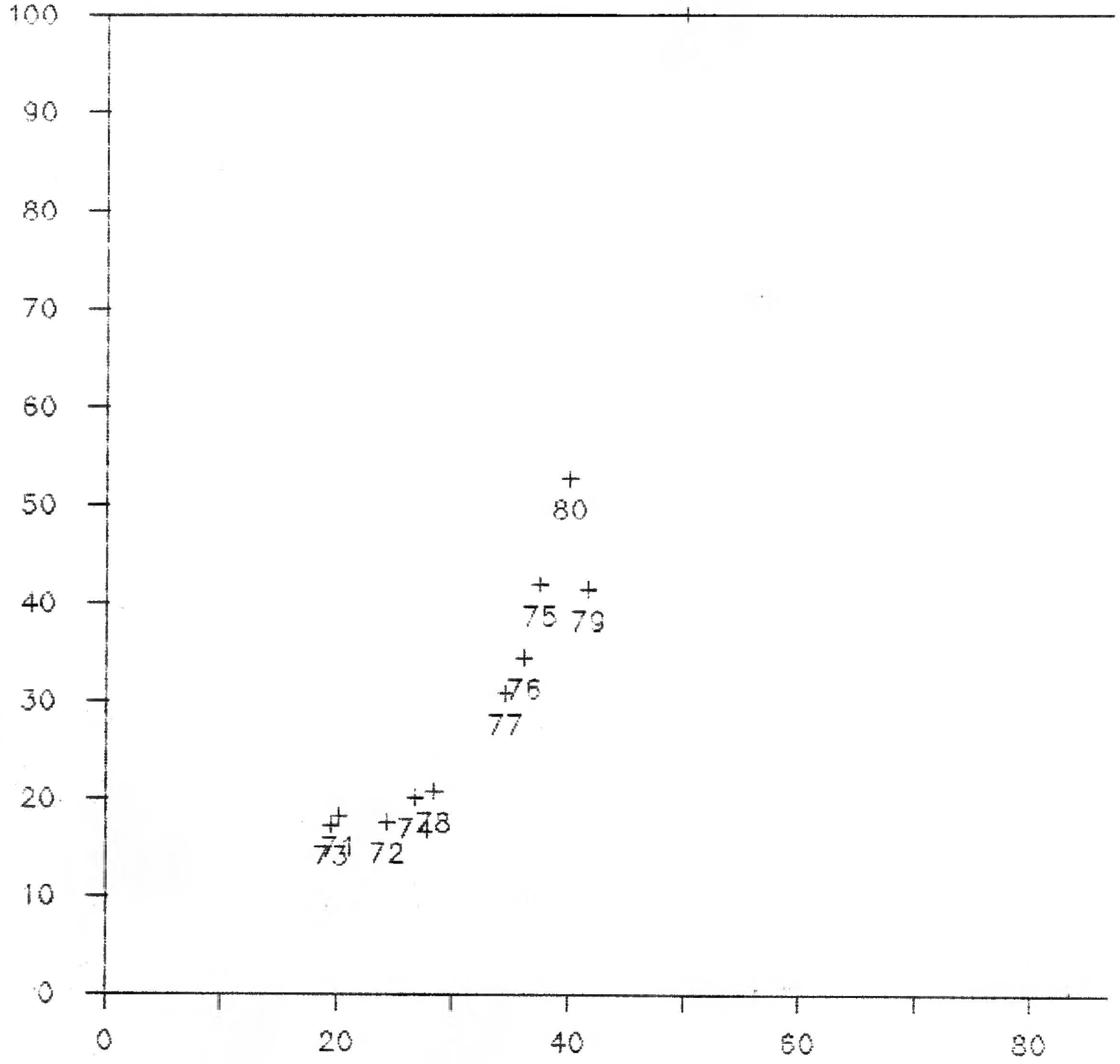

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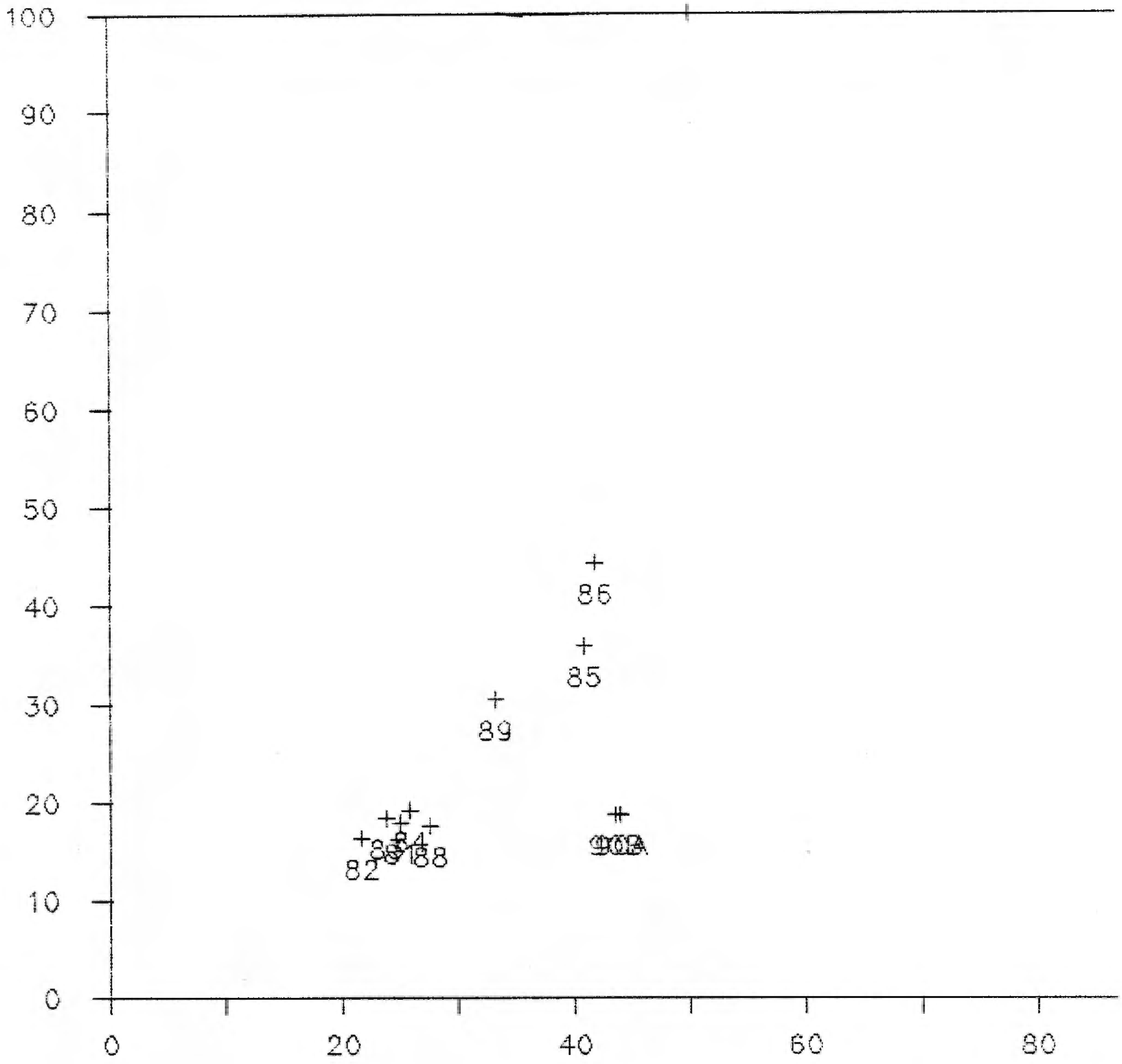

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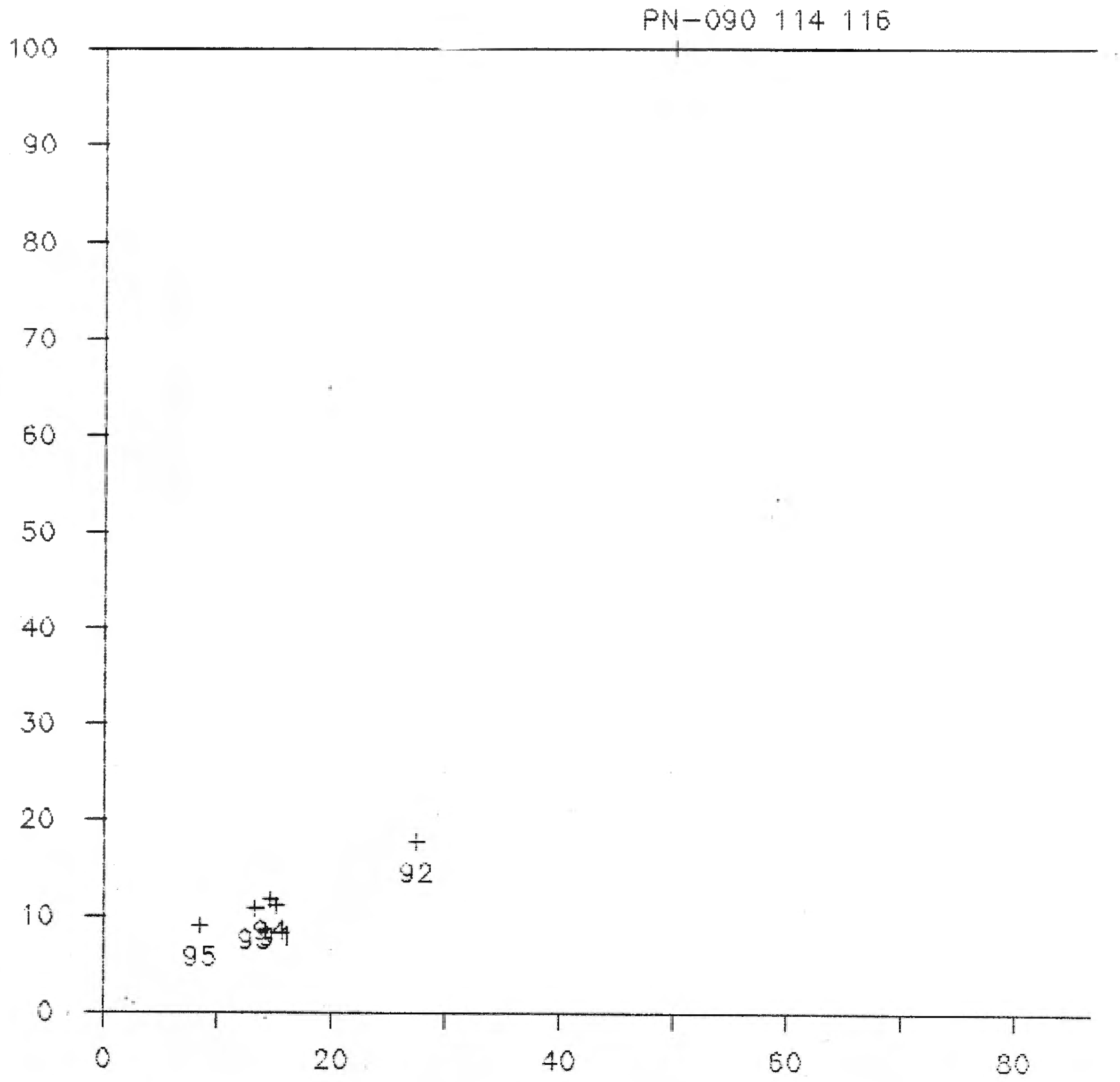
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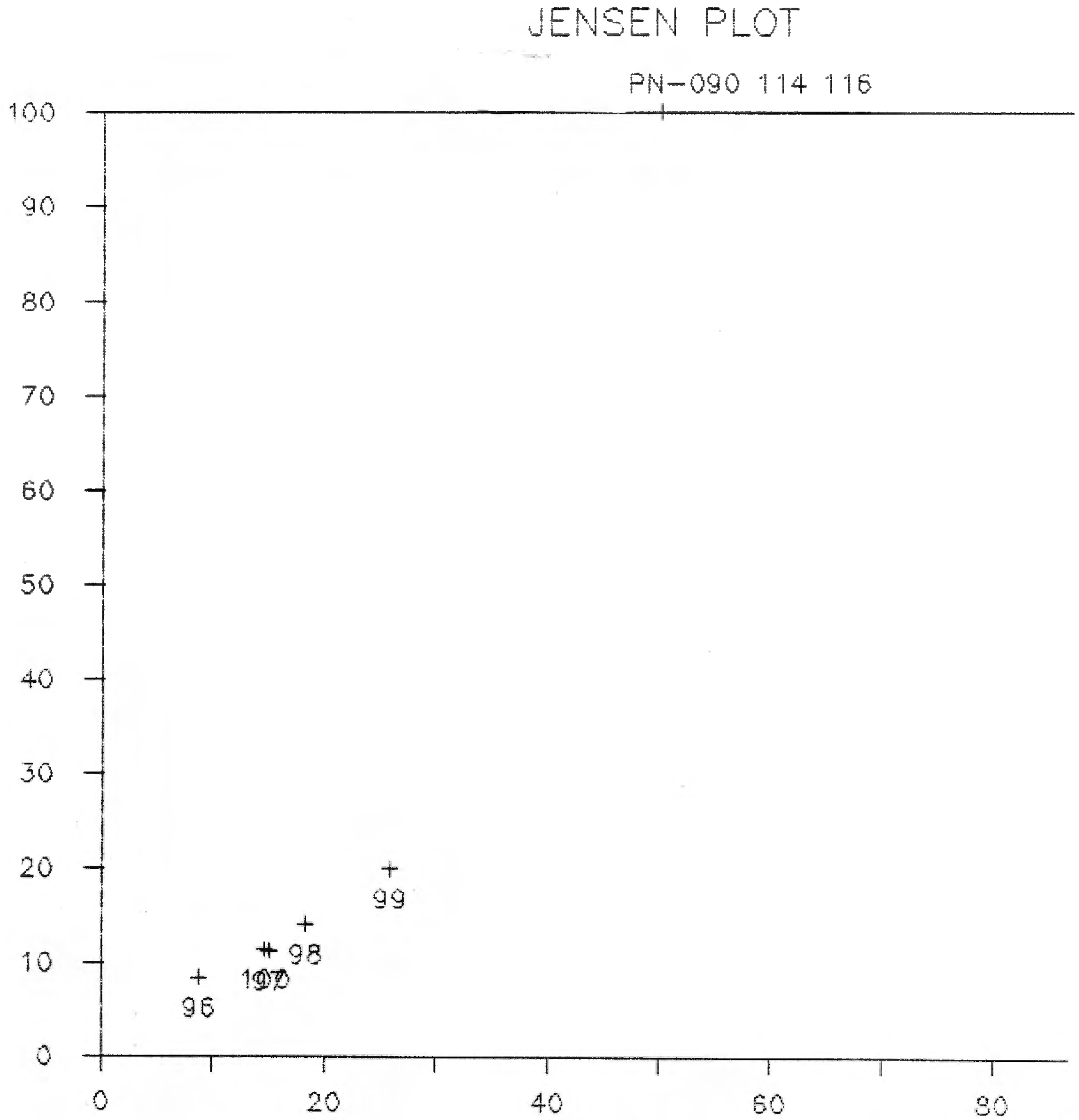
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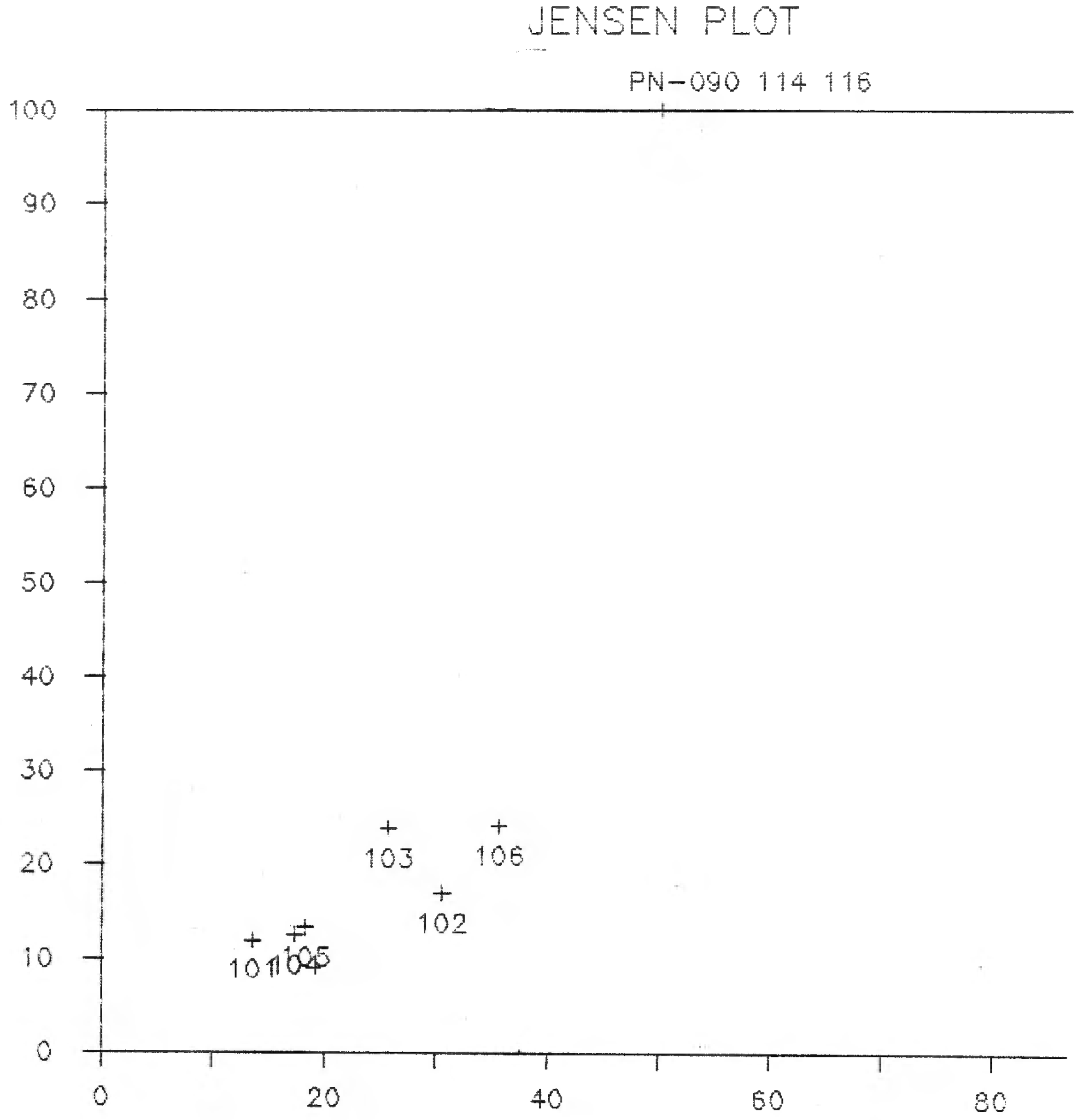
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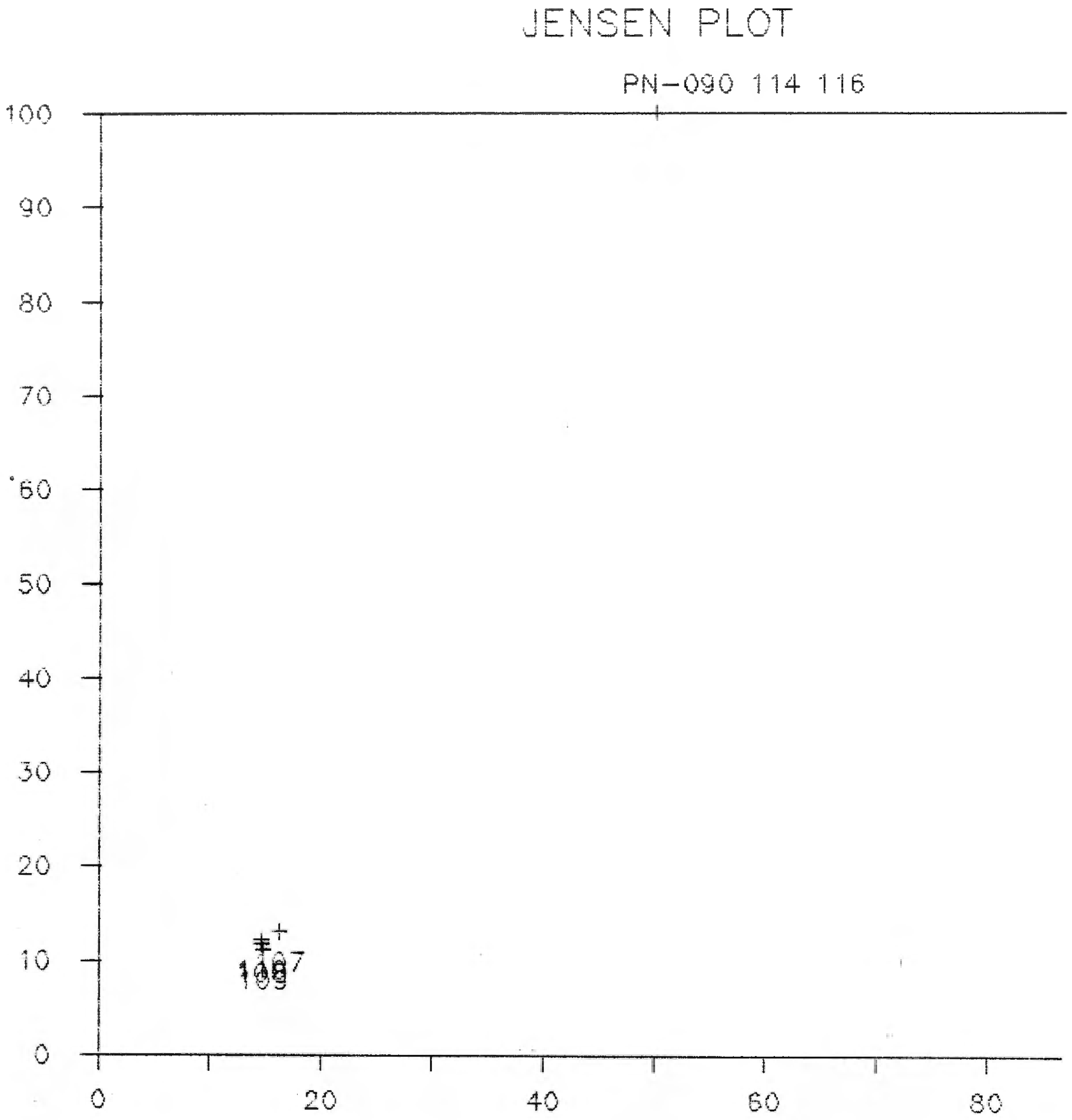
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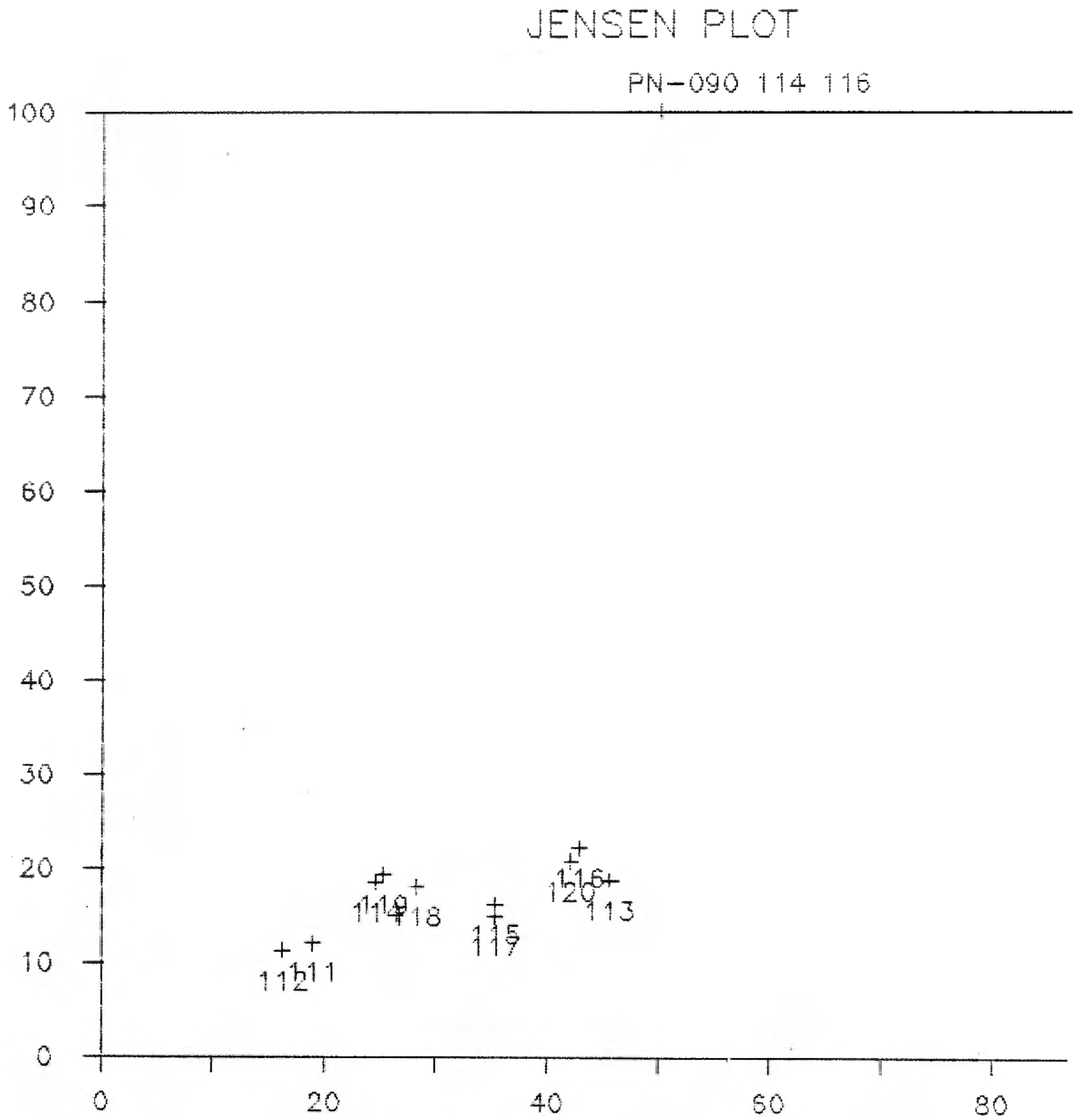
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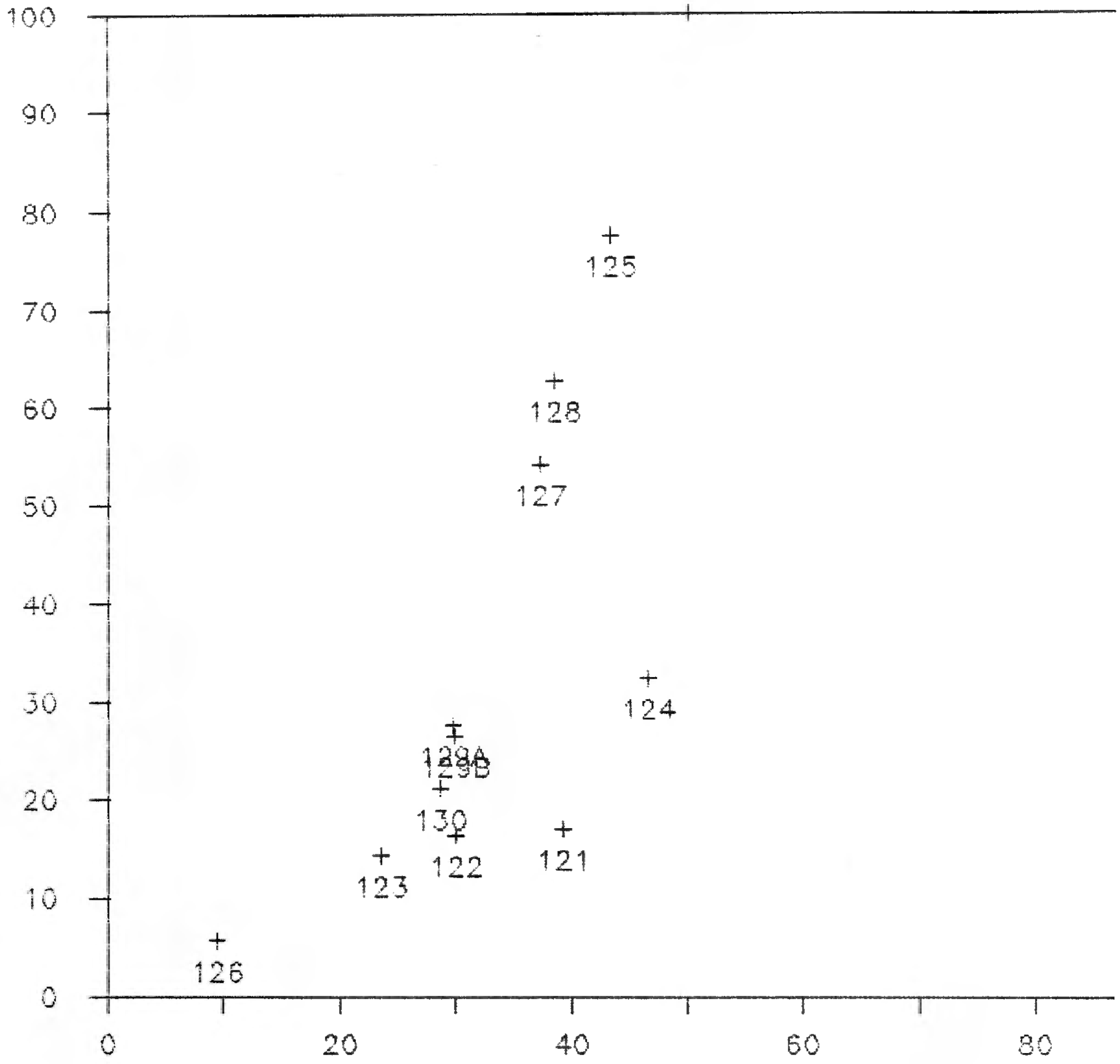

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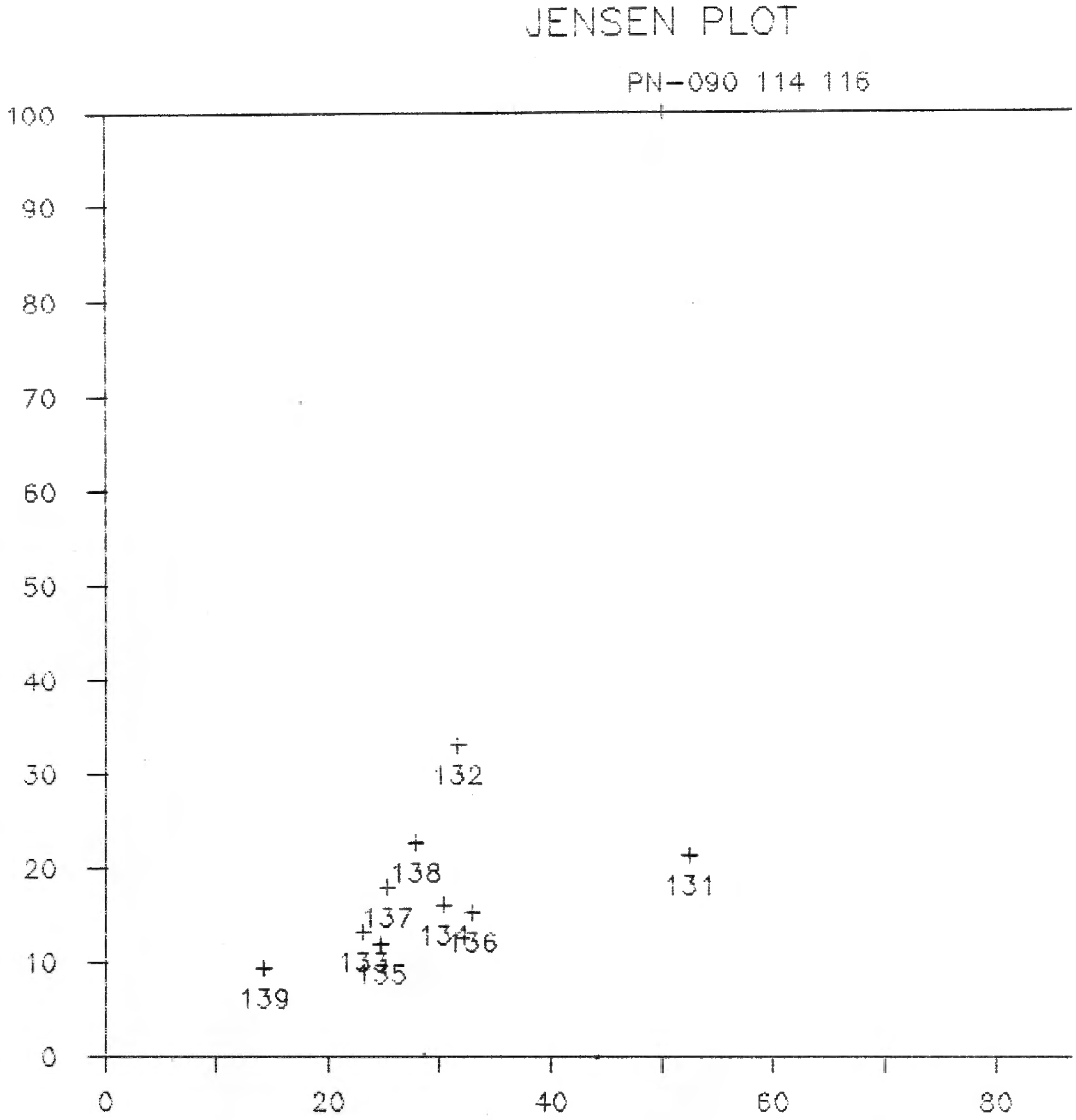
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