

MINNOVA, INC.

Richter  
824139

DATE: November 17, 1991

TO: I. PIRIE, D. HEBERLEIN, C. CLAYTON

FROM: Cam Clayton

RE: DRILL HOLE SUMMARY

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DRILL HOLE: TM 91-16 (F-18) START DATE: Nov 9 END DATE: Nov 11NORTHING: 2+00N EASTING: 7+75E ELEVATION: 1360mAZIMUTH: 270 DIP: -45 LENGTH: 166.12mPURPOSE: To test strong magnetic anomaly beneath siliceous topographic high with associated anomalous soil and rock geochemistry and chargeability anomaly.

<u>INTERVAL</u>		<u>DESCRIPTION OF INTERVAL</u>
<u>FROM</u>	<u>TO</u>	
0.0	3.05	CASING
3.05	7.00	BROKEN CORE. Oxidized bedrock up to 10% Py.
7.00	15.22	SILICIFIED ANDESITE. This is a fine to medium grained silicified andesitic unit containing small sections of hydrothermal breccias cemented by quartz carbonate. The interval contains 10% Py on average with up to 30% locally. The dominant sulphide appears to be marcasite. From 13.89 to 13.92 is an interval of 70% pyrite. Some trace amounts of arsenopyrite are observed. Alteration through the interval is chloritic with one zone from 11.47 to 11.7 of 20% sericite.
15.22	19.13	CROWDED FELDSPAR DYKE. This a fine to medium grained dyke with 70%-80% euhedral feldspars. The feldspars are altered to clay, chlorite and epidote. Pyrite occurs in trace amounts finely disseminated throughout. A fault zone occurs from 16.6 to 17.86.
19.13	25.15	HYDROTHERMAL BRECCIA. This is a grey green crowded feldspar porphyry dyke that has been hydro-brecciated. Trace to 1% pyrite occurs throughout. It is weakly magnetic in areas.

## DDH TM 91-16 CONT... -2-

25.15	39.00	SILICEOUS ANDESITE/CROWDED FELDSPAR DYKE. This is an interval of alternating siliceous andesite and crowded feldspar porphyry dykes. Pyrite averages 5-10% throughout the interval with local highs of 20%. Trace amounts of Cp are seen locally. Chloritic alteration and quartz-carbonate veinlets are common throughout. Some talc veining is also observed.
39.00	42.40	MAGNETITE/SULPHIDE VEIN. This vein is strongly oxidized and contains 20 to 30% Mt as patchy blotches throughout. The remainder is pyrite. Some local stockwork silicification is observed.
42.40	54.78	SILICEOUS ANDESITE/CROWDED FELDSPAR DYKE. This is similar to the interval from 24.15 to 39.00. Alteration appears to be increasing down hole with greater presence of chlorite, epidote, sericite, and albite. Again Py averages about 10% through this interval with local highs of 25%.
54.78	55.4	SILICA/PYRITE STOCKWORK. This is a fine grained zone of silica and pyrite stockworking. The density of stockworking is 70 to 80%. Stockwork pyrite occurs up to 30% locally with trace amounts of Cp.
55.40	60.66	SILICA/CHLORITE ALTERATION. The protolith is most likely andesite but generally this unit is indistinguishable. Talc veinlets occur locally. Pyrite averages 10 to 20% through the interval occurring as disseminations and fracture filling veinlets.
60.66	64.31	STOCKWORK SILICIFICATION. The interval consists of 70 to 90% stockwork fracturing with subsequent introduction of silica. Trace amounts of Cp are seen and Py is present averaging 10%. From 64.11 to 64.31 is a semi-massive pyrite vein.
64.31	66.13	SILICIFIED ANDESITE. This interval is moderately silicified with Py averaging 10%. From 65.53 to 66.13 is a shear zone containing 20 to 30% disseminated Py and trace Cp.

## DDH TM 91-16 CONT... -3-

66.13	73.14	CHLORITE/MAGNETITE ALTERATION. Magnetite throughout this interval averages 20% with local highs of 30 to 40% occurring as patchy blotches. Py averages 5 to 10% through the interval with local highs of 20 to 30%. Occasional quartz carbonate veins are seen and have a vuggy appearance with bladed calcite replaced by silica.
73.14	75.15	CROWDED FELDSPAR DYKE.
75.15	80.75	PYRITIC CHERT. This unit shows a weak stockwork silicification and 5% pyrite.
80.75	96.36	STOCKWORK SILICIFICATION. As described previously, a unit of high fracture density (to 90%) that has seen subsequent introduction or remobilization of silica. Pyrite averages 5% occurring as disseminations and stockwork mineral-ization. Trace Cp is seen.
96.36	99.07	BRECCIA ZONE. This is a brecciated zone containing fragments of the overlying stockwork silicification. Pyrite averages 15 to 20% with trace amounts of Cp, and occurs as stockwork and disseminated mineralization.
99.07	104.23	PYRITIC CHERTY TUFF. Minor chlorite and sericite alteration occur through this siliceous unit which averages 2 to 5% pyrite.
104.23	108.51	STOCKWORK SILICIFICATION. As described previously, this interval also contains local sericitization along fractures. Pyrite averages 2 to 5% as disseminations and veinlets.
108.51	110.10	ALTERED ANDESITE. Alteration of this unit varies from strong silicification to sericitization to chloritization of foliation. Pyrite averages 30%.
110.1	144.5	STOCKWORK SILICIFICATION. As described previously, up to 90% stockwork fracturing with subsequent introduction of silica. Pyrite occurs as disseminations and as fracture filling veinlets averaging 5 to 10%. Local highs of 20% are seen, as are trace amounts of Cp. Sericite occurs up to 20% locally.

## DDH TM 91-16 CONT... -4-

144.5	151.90	ANDESITE TUFF/FLOW. This interval consists of interlayered sericitically altered tuff and silicified andesite. Pyrite averages 2-5%.
151.90	153.5	FAULT.
153.50	155.71	STOCKWORK SILICIFICATION. As previously described. This interval contains Py averaging 15% occurring as fine grained disseminations and veinlets.
155.71	156.82	SILICIFIED ANDESITE. The interval contains 2 to 5% disseminated pyrite.
156.82	164.5	CHERTY SILICIFICATION. This interval is clearly a chert in areas while elsewhere it resembles the stockwork silicification previously described. Pyrite occurs up to 10% as veinlets and disseminations.
164.50	166.12	TUFF. This medium grained tuffaceous unit has undergone strong sericite alteration (20 to 30% sericite) and contains only trace amounts of Py.

\*\*\*\* END OF HOLE \*\*\*\*

DISCUSSION

The magnetic anomaly is easily explained by the presence of both the magnetite/pyrite vein, and the zone of chloritic/magnetitic alteration. The disseminated pyrite content through the hole undoubtedly resulted in the broad zone of chargeability shown by the I.P. anomaly. The zone of stockwork silification and minor stockwork mineralization is the most interesting aspect of this hole. If this zone carries gold values it may be a very attractive future exploration target.

*Dave: Believe it or not, I didn't just add this.*