

Great Gull Lake Resources - Gullbridge Project 2001

DDH - SW-01

License #:	Collar Easting: 3+15 E	Logged by: Victor French /	<u>Down Hole Surveys (Tropari):</u>
Property: Gullbridge	Collar Northing: 24+00 N	Chad Wells	132 /58 @ ~243 m
Project: Southwest Shaft	Hole Azimuth: 130 deg.	Date: Nov. 12/00	132 /58 @ ~91 m
	Hole Inclination: 60	Start Nov. 16/00	
	Total Depth: 244.75 m	Finish	
	(803 ft)		

<u>Depth</u>	<u>Description</u>
(from) (to)	
2.5	<u>Quartz-Chlorite+Sericitic Schist</u> 20.43 Dark grey to greenish blue lithology with well developed foliation characterized by laminations & bands of white quartz, dark green chlorite, and brownish sericite & biotite, sulphide minerals predominantly pyrite also occurs as disseminated laminations and bands (< 1%). Fabric is generally 55-65 deg. t.c.a, and is regularly contorted and undulated locally. The crenulations reveal no particular structural measurement or feature useful in determination of structural complexity of region. Minor dark grey to blue anhedral grains are likely dark green chloritized cordierite porphyroblasts giving rise to local mottled texture. The porphyroblasts are typically elongated to fabric direction with other mineralogy, specifically, quartz and chlorite surrounding the altered cordierite grains. Sericite and lesser biotite is often interbanded with the chlorite & quartz laminations in upper 13.1 m whereas continuing downhole section becomes more sericitized and biotiferous with less quartz banding. Milky white quartz veins are common as contorted, broken bands throughout. Sulphide predominantly pyrite with trace cpy occurs as fine to medium grained disseminations and laminations, up to 2-3% locally. @ 18.7 m unit becomes progressively white and highly siliceous with increasing sulphide content, interpreted as a very quartz rich section of the the variable schist described above. Likewise unit also gets more massive and other mineralogy, chlorite, sericite and biotite diminishes significantly, only appears as very thin laminations in quartz rich lithology. Sulphide, py content increases slightly to 1-2% as 1-2 cm laminations averaging 1-2 veins every 1 m.
20.43	<u>Quartz-Chlorite+ sericitic schist</u> 22.86 Identical to unit described a beginning of hole. Common ~10 % sulphide laminations occurring ~55 deg. t.c.a., predominantly pyrite with trace cpy (?). Unit is also weakly magnetic marginal sulphide and appears to be wispy magnetite bands disguised in dark green chlorite alteration. However, unit does lack cordierite rich sections as seen in similar unit above.
22.86	<u>Felsic Volcanic</u> 32.3 Short section of dark grey to white siliceous rock interpreted as a more massive felsic volcanic unit, possibly rhyolite (?) Wispy contorted laminations of dark green chlorite occur throughout, minor veins or laminations of pyrite are also associated with this lithology. Gradational lower contact.

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<u>Depth</u>	<u>Description</u>
(from) (to)	<u>Cordierite</u> Dark green mottled section of cordierite rich quartz chlorite schist as described above. Abundant 1-2 cm anhedral cordierite porphyroblasts are generally surrounded by a chlorite rich matrix. Sulphide minerals, pyrite with possible cpy occurs as wispy veinlets or laminations within altered host rock surrounding porphyroblasts. Gradational, subjective contacts.

Quartz-Chlorite+ sericite schist

Variable white to grey to green unit of variably bedded felsic schist and remnant white felsic volcanic described above. Unit is very siliceous (quartz-rich) with common dark green chloritic alteration and trace sericite as well as biotite. Compared to the typical quartz-chlorite schist encountered thus far in the hole stratigraphy this section is more quartz rich, cordierite is lacking. Minor sulphide, pyrite with trace cpy occur as medium grained lamination parallel to fabric @45-50 deg. t.c.a. Top ~ 2 meters of section contains >5% 2-5 cm laminations of pyrite, and grades into a less sulphide enriched bottom section of more chloritic-sericitic schist depleted in quartz composition.

Metavolcanic

32.3	54.35	Medium green unit of metamorphosed (baked) mafics with local cordierite sections that maybe more felsic. Chlorite alteration is variable but consistent throughout, overall lithology is weakly foliated 45-50 deg. t.c.a and is rather homogeneous except for the local cordierite enriched section mentioned above. Trace disseminated sulphide throughout. Top part of unit 32.30-33.95 has been infiltrated by abundant quartz veins that have been apparently re-worked and broken up, giving unit a mottled white texture.
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Felsic Volcanics / Tuffs (bimodal?)

54.35	79.89	Dark grey to almost bluish unit of felsic rocks, characteristic of the bimodal unit observed and described elsewhere on the Gullbridge property. Variable sections of more siliceous altered rocks as well as local chloritic enrichments. Overall unit is quite homogeneous with a variable developed fabric generally 45-65 deg. t.c.a. Wispy quartz and chlorite laminations are more developed locally, and somewhat resemble the quartz-chlorite schists intersected above,
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Depth
(from) (to)
cont...

Description

aside from the well developed fabric. Minor fractures are generally 65-70 deg. t.c.a, and are chlorite coated. One short section of 20 cm @ 58.63 m that has a 1-2 cm dark grey porphyryblasts, presumably cordierite. Sulphide content is variable but overall is less than 1% and considered insignificant. Irregular contorted patchy quartz veins become common at ~ 76 m as does contorted chlorite laminations. These variable zones of quartz and chlorite mineralogy continues and increase until lower gradational contact. A stronger fabric @40-45 deg. t.c.a. also becomes more prevalent locally with chlorite and quartz presence. Absolutely no sulphide associated with strong quartz and chlorite mineralogy. Fault Gouge @ 60.03 m and 67.84 m.

Mafic Tuff

79.89 89.65 Medium light green unit with variable brown laminated sections as well as local zones of a mottled like texture. The brown zones are interpreted as more tufaceous horizons in this intermingled mafic volcanic/tuff, the mottled section may reflect a minor cordierite presence as observed above. A wispy fabric generally enveloped anhedral porphyryblasts of dark grey to blue cordierite. A weak to moderate fabric of 40-45 deg. t.ca. is especially revealed in the brown sections, presumably aligned biotite mineralogy. Minor epidote laminations are present locally as is trace quartz laminations. No worthy sulphide mineralization associated with lithology.

Basalt (phyric)

89.65 117.75 Medium green mafic lithology characterized by a medium grained texture of hornblende, plagioclase, lesser chlorite, and minor biotite. Overall unit is massive with only local intervals that display a weak to moderate foliation (~40 deg. t.c.a.), those intervals are consistent with finer grained sections, and an increase in biotite composition. Unit display a phyrlic texture with both plagioclase and hornblende (?) phenocrysts surrounded by a finer grained matrix of those two minerals plus chlorite, biotite and trace epidote. Unit is interpreted as a medium grained mafic volcanic that has underwent considerable hydration and thus alteration to an hornblende rich facies, amphibolite. Minor milky white contorted, patchy like quartz veins occur locally. The lithology

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(from) (to)	
cont...	seems to be totally barren of any sulphide mineralization or prospective alteration.
	<u>Tuff (felsic)</u>
117.75 127.74	Variably colored, medium to dark green to brown in part unit that appears quite hard and siliceous interpreted as a felsic tuff. White to slightly grey quartz-carbonate veins are common throughout as contorted wispy laminations that overall conform to a local well developed 50-55 deg. t.c.a. fabric. Short interval of brown laminated tuff, possibly a more mafic-rich horizon. Dark green to black chlorite alteration is prevalent especially towards lower contact. In fact, black chlorite is frequently mistaken (but associated to) for black magnetite bands or laminations. Overall unit is moderately magnetic but locally very magnetic. Minor epidote alteration is also present as both thin wispy veinlets and intermingled with qtz-carb veins. Towards lower contact magnetite and chlorite become very common interbanded with alteration veining mentioned above. Unit also becomes less foliated and contorted, crenulated section are common. No sulphide mineralization present. Upper contact is gradational but lower contact is ~60 deg. t.c.a. with a lower maroon colored jasper sediment.
	<u>Jasper</u>
127.74 130.5	Maroon to red colored unit of siliceous sediment, jasper. Unit is variably bedded with an altered, silicified and sericitized quartz rich sediment. A well developed fabric 55-65 deg. t.c.a, is consistent throughout. jasper bands alternating with black magnetite beds is the general make up of this lithology. Towards lower (55 deg.) contact red jasper becomes less common, only as irregular wavy laminations typically associated with quartz rich sections. No worthy sulphide content or prospective alteration.
	<u>Metasediment / felsic tuff ?</u>
130.5 134.39	Essentially identical to the siliceous sericitized sediment intermingled with the jasper unit described above, also trace jasper lamination suggest a sedimentary protolith ?) Light to medium grey, slightly green in part, fine to occasionally medium grained lithology that is primarily composed of quartz and sericite with lesser biotite and possible

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<u>Depth</u>	<u>Description</u>
(from) (to) cont...	chlorite. Does somewhat resemble the quartz-sericite schist seen earlier in hole but is not as well banded with easily recognizable laminations of quartz and chlorite. A weak to moderate 50-60 deg. foliation quickly disappears with presence of a more massive felsic unit. The gradational nature of the contact supports lithology may be an altered felsic rather than a sediment (?) Unit is simply characterized by alternating bands or laminations of fine grained quartz and sericite and what appears to be chlorite. The unit is relatively non-magnetic, again there is no contained sulphide mineralogy. Gradational upper and lower contacts.
	<u>Felsic Volcanic</u> 134.39 136.6 Light to increasingly dark grey felsic unit that is quite massive and homogeneous. An aphanetic texture with no identifiable mineralogy due to the very fine grained nature. Unit is more blocky than typical, an explainable feature a result of the brittle nature of the lithology. A cm of clay like fault gouge suggest a fault presence at 136.14 m. Minor chlorite + kaolinite alteration is present along fracture plane which generally trend 50-55 deg. t.c.a.
	<u>Quartz-chlorite-sericite schist</u> 136.6 144.78 Same as the metasediment / felsic tuff described above. However @ ~142 m unit is characterized by increase in magnetism due to increase presence of magnetite associated with chloritic bands. Biotite also seems to have increased in this section of altered felsics as compared to that described less than 5 m above.
	<u>Granite (granitized phyrlic basalt)</u> 144.78 155.9 Green to white phyrlic unit that initially looks like a very silicified, sericitized felsic intrusive??? However, an apparent presence of angular quartz and lithic fragment toward lower contact suggest this extremely altered unit may in fact has a sedimentary origin. The unit is predominantly composed of quartz laminations and anhedral phenocrysts that are surrounded by a medium to fine grained matrix of sericite, biotite, and chlorite. Pink irregular patches of what appear to be feldspar

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Depth
(from) (to)
cont...

Description

also seem to reflect an igneous protolith. Progressing down hole a weak foliation of 50 deg. t.c.a. practically disappears and unit appears more massive, consistent with that observation the quartz laminations described above become more like irregular quartz veins that ate ultimately flooding the unit with ample silica. Overall unit is moderately magnetic, again the chl0rite rich bands contains disguised magnetite. Pink crystal of feldspar composition can also be observed locally. ~154 m unit becomes darker, less quartz and perhaps more silica, at the same point dark angular vitreous shards of fragments become evident, as does green and black chert fragments of various sizes. Obviously an altered sediment, contrasting the igneous type feature identified in the upper section of interval. The lack of a contact makes the distinction of this variable interval as separate lithologies difficult but it does appear a contact between an altered granite (granitized phyric basalt) and mixed interval of phyric basalt and incorporated chert occurs @ ~154 m.

Phyric Basalt (& interbedded chert)

155.9	190.67	Medium to dark green interval of phyric basalt as described up hole @ 89.65 m.
(see 89.65 m)		Rather massive lithology with very little indication of deformation or structural fabric except for common presence of grey to maroon chert beds throughout. Contacts of chert bed are generally 35-50 deg. t.c.a. Chert is typically maroon to lesser grey and green, epidote alteration is often the associated alteration. Chert horizons are weakly magnetic but do not seem to contains as much magnetite as generally associated with that lithology. The chert beds are generally 10's of cms thick and are often staggered by zones of mixing, basaltic lava with angular red and green fragments of chert. This observation helps explain the problematic unit intersected immediately above. There are no sulphide within chert beds or host basalt. Chert beds are most prevalent for the top 2-3 m of interval and increase to regular interbeds @ ~166 m.
		@171.1 m & 181.88 m, zones of intense epidote alteration characterized by erratic veins or patches, mottled like. The epidote alteration appears to have some association with adjacent sediments, presumably the sediment / igneous contact is alter zone of permeability for sea floor altering fluids. The zones of epidote alteration is quite magnetic and closer observation

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<u>Depth</u>	<u>Description</u>
(from) (to)	
cont...	suggests bands of black magnetite coupled with the epidote. Lower contact is ~65 deg. t.c.a.
	<u>Jasper</u>
190.67 193.25	Maroon colored siliceous sediment as described earlier in hole. Unit progressively develops into a highly contorted metasediment. Upper contact is ~65 deg. t.c.a, lower contact is gradational but appears to conform to a similar 65 deg. trend.
	<u>Metasediment</u>
193.25 207.86	Dark grey to green siliceous sediment that is strongly deformed. Highly irregular contorted beds are consistent throughout. Micro folding with identifiable kinks and bends are characterized by interbedded quartz and chlorite with local magnetite bands apparently associated with more chloritic sections. Minor maroon chert beds can also be observed locally. The deformation has no apparent consistency suggestive of a major structural trend, just irregular crenulations. A light brownish yellow coloration also suggests a presence of ample sericite and lesser biotite. The sediment does become less pervasively deformed down hole and a more typical laminated fabric of ~50-60 deg.becomes more typical. @ 202.83 m a definitive zone with a striking mottled texture suggest presence of cordierite porphyryblasts as identified elsewhere in stratigraphy. The cordierite are a black to blue anhedral grains that has some elongation due to the deformation. The cordierite rich section (10-15%) lasts for ~1 m.
	<u>Diabase Dike</u>
206.26 206.48	Black, fine grained texture mafic intrusive, upper contact is perpendicular t.c.a whereas lower contact is ~ 60 deg. t.c.a.
	<u>Jasper / Fe-formation</u>
207.86 216.9	A more variable interbedded jasper unit than that described above. Increased alternating black banding identified as magnetite. A more typical iron formation. Otherwise as above. From 210-211 m, interbedded grey to green metasediment like that identified above.

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<u>Depth</u>	<u>Description</u>
(from) (to)	<u>Metasediment (quartz sericite schist)</u>
216.9 220.97	Grey to pale green unit of metasediment like that described at 193.15 m, common sericite alteration coupled with ample quartz rich laminations. An irregular fabric with abundant parasitic folding and bedding crenulations. The quartz mineralogy is especially irregular, present as crenulated patches rather than consistent laminations. Overall unit resemble that described above, gradational contacts. No worthy sulphide.
	<u>Fe-Mg Alteration Zone</u>
220.97 223.66	Sizable black to dark green unit with intense chlorite alteration and magnetism. Common wavy black bands of magnetite. Unit is interpreted as a Fe-Mg altered fescic volcanic as mentioned and described by past workers in area. Minor quartz veining occur throughout and is sometimes associated with weak epidote halos of alteration. The quartz veining suggest a fabric of ~65-75 deg. t.c.a. Locally zone appears tufaceous with visible elongated felsic fragments. Gradational, diffuse subjective contacts.
	<u>Intermediate - Mafic volcanic</u>
223.66 244.75 (E.O.H.)	Dark to increasingly medium green (downhole) volcanic unit that overall appears quite massive and homogeneous with little alteration except for minor irregular quartz-epidote veinlets and patches. A possible weak foliation can be observed locally @~60 deg. t.c.a, also majority of the fracture planes are likewise 60 deg. Trace chlorite alteration occurs along those fracture plane. Lithology appears to become progressively more mafic downhole (>234 m) as does a slight increase in grain size. An identifiable fabric also becomes noticeable with the introduction of more mafic rocks @ ~234 m. Unit is interpreted as a volcanic flow with a slightly variable composition. No prospective alteration or contained sulphide.

Total Depth: 244.75 m, 11/16/00 @ 6:00 am.