

3 mm chloritic-calcareous fragments, with porphyroblastic growth(?).

Unit locally folded. Tuffs below 902' have local strain slip cleavage, 0-15° from core axis.

Acid Test Results

Footage	Angle of Hole from Horizontal	Bedding Angle with Core Axis	Schistosity Angle with Core Axis
50	40	22	26
500	43	13?	13
792	46	45	45
1008	44	54	54

Notes: Twenty-six thin section heels have been cut. Forty-nine composite and thirteen individual samples have been assayed for gold. Analytical results follow in Table A-2. Detailed log is available for study.

CONDENSED GEOLOGIC LOG FOR DDH A-5

Hole drilled at a 45° angle and an azimuth of 150°.

0'-200' Overburden.

200'-280' No Core.

280'-430' Dark grey pyritic siltstone. Somewhat phylitic. Often laminated. Very slightly sideritic-calcareous. Core is locally broken and locally has limonite staining. Rock contains 1-5% pyrite, with higher amounts in 301'-310', 312'-322', 330'-337', 367'-368', 392'-430'. Minor weathered out grains-crystals smaller than 1 mm (carbonate? sulfides? evaporites??). White, siliceous, fine-grained sand laminae in basal 20'. Bedding measures 0-40° to core axis. Schistosity and tight fold axial planes measure 65-70° to core axis.

430'-463' Dark-light grey siltstone grading into laminated siliceous (chert-chamosite) iron formation. Somewhat sideritic laminated and pyritic (to 5%) in basal 30'. Both contacts have laminations with 50% dissolved out crystals. Basal 16' contains intraclastic conglomerate or boundinaged laminae.

463'-547.7' Laminated chamosite-stilpnomelane(?) chert iron formation. Typically dark green-light grey. Iron silicate to chert ratio equals about nine. Core locally broken. Laminae with dissolved out grains decrease downward. Magnetite lamina at 513.2'. Locally sideritic in laminae and few, thin veins. Locally several % (largely syngenetic) pyrite. This occurs as disseminations in chert (locally migrated toward chert rims), and in thin scattered veinlets. Quartz-sider-

ite veinlets also scattered. Most veins late, except 3 mm quartz vein with grunerite margins at 532.9'. Local coarse-grained clastic laminae at 471'.

547.7'-811.3' Laminated-bedded, black-green-white, magnetite-chamosite-chert iron formation with lesser stilpnomelane and siderite. Unit contains roughly 18% magnetite laminae (varies from 0% to 40% locally); 13% chert-siderite laminae (varies from 0%-40% locally); and 69% chamosite-stilpnomelane laminae (varies from 0%-95% locally). Below 622', lighter colored beds are more sideritic, less cherty. Basal 40' is fairly sideritic (20%?, with some as porphyroblasts) and slightly graphitic. 799.8'-800.1' and 804.4-804.7' is black, somewhat vuggy and leached(?). These intervals and scattered intervals below 703.5' have white crystals (sulfates) growing on core. Local load casting and soft sediment deformation. Laminae truncate others at 711' (younging downhole?). Basal 17' with disrupted beds-brecciation. Minor dissolved out grains 615.8'-616.4'. Bedding subparallel to flowage with associated en echelon fractures (and quartz-siderite veins) increasing downward. Local bed disruption-brecciation in basal 16'. Minor quartz-siderite ± pyrite ± calcite veins locally throughout.

811.3'- 827' Brecciated, silicate iron formation (above 819') grading into sulfide iron formation (below 819'). 811.3'-819' largely interbedded green chamositic(?) and white-light grey cherty iron formation. Brecciated, with deformation increasing downward. Chert tends to behave more brittlely, while iron silicates flow. Unit contains local disrupted argillite fragments-laminae (less ductile than iron silicates). Chert and disseminated-laminated pyrite (0-7%) increase downward. Minor pyrite, quartz, siderite veins. Unit 10% siderite in general. Chert may be clastic.

819'- 827' deformed, medium-dark grey-brown siliceous pyritic argillite (sulfide iron formation) with minor chert. Brecciated at top, grading into rock with much flattening (mylonitic) and flowing. Locally recrystallized-silicified. Local chert, solutioned out crystals, and/or poor core recovery. Pyrite varies from 7% to 25% as very fine-grained pyritic mud; scattered, coarse, deformed crystals; and minor pyrite veinlets.

827'-1332' T.D. Black, sulfide iron formation (pyritic-graphitic argillite). Both pyrite and graphite decrease with depth, while rock becomes more sideritic, clastic, siliceous, and lighter colored. Local very coarse-grained graded beds become finer downhole. Rock is somewhat phyllitic with generally conformable bedding and moderately developed schistosity. Slip laminae, flattening and boudinage are common, with scattered, local, minor fold closures. Pyrite ranges from 50% at top of unit to 7% at base. Pyrite occurs as syngenetic laminations (some brecciated-vuggy); disseminations; local very coarse-grained concretionary(?) masses, with a slight green tinge (marcasitic appearing), minor gypsum growth on core; and minor cross-cutting pyrite-sideritic veinlets.

Acid Test Results

Footage	Angle of Hole from Horizontal	Bedding Angle with Core Axis	Cleavage Angle with Core Axis
300	46	62	65
540	44	43	43(?)
780	42	41	46
990	35	23	68
1320	29	52	77

Notes: Twenty-six thin section heels have been cut. Sixty composite and individual samples have been sent in for analysis. Analytical results follow in Table A-5. Detailed log is available for study.

CONDENSED GEOLOGIC LOG FOR DDH RR-2

Hole drilled at a 43° angle and an azimuth of 348°.

0'-11' Overburden.

11'-553' T.D. Pale to dark brown, siliceous biotite-garnet schist and semi-schist. Rock is typically very fine-grained. Recrystallized. Unit contains numerous white to pale brown, more siliceous laminae and thin beds; and fewer thin (3 cm) green chloritic, tuffaceous layers. Unit as a whole is believed to be metasediments (tuffaceous) and locally contains 1-4 mm relict quartz-plagioclase volcaniclasts. Mode of darker bands: 20-40% biotite, muscovite, phlogopite; 40-65% quartz; 0-25% pink garnets; 5% plagioclase; and a trace of carbonate. Mode of paler brown bands: 50-75% quartz; 5-50% plagioclase (sodic); 0-20% pink garnet; 5-10% biotite (and other micas); 1% chlorite; and a trace of carbonate. Unit contains 1/2-5% pyrite and 0-1/2% chalcoppyrite, in veins, minor veinlets and as disseminated grains. Unit contains local, deformed, irregular milky-white quartz veins and bursts. There appear to be several cross-cutting sets of these, with thicknesses up to 2 1/2'. Besides quartz, these veins and bursts contain local vugs, biotite, chlorite, pyrite, yellow muscovite, garnet, calcite, epidote, plagioclase, and bent-brecciated tourmaline. More siliceous (less ductile) laminae-beds are often cut by hairline fractures with minor chloritization, carbonatization, and albitization(?). These internal fractures form-pseudobreccia patterns. Unit also contains minor veinlets with red fluorescent calcite. Other pseudobreccia intervals are associated with local brecciation and thin ultramylonites. Breccia zones also have associated chloritic-argillitic alteration and are typically garnet free. Fabric of bedding is generally subparallel to schistosity, with local minor folds and kinks. Rock is much flattened and has local boudinage. Recrystallization appears to have subdued schistosity locally to form a semischistose fabric. It has also healed the fracturing-brecciation of the rock, even though core is locally

broken. Local graded beds occur but recrystallization makes younging direction difficult to determine.

Acid Test Results

Footage	Angle of Hole from Horizontal	Bedding-Schistosity Angle with Core Axis
300	31	50
553	33	57

Notes: Thirty-three thin and polished thin sections have been made and are available for study. Forty-two composite and individual core samples and rock samples have been sent in for analysis. Analytical results follow in Table RR-2. Compared with DDH RR-1, rock in RR-2 is much more uniform. Detailed lithologic and structural log are available for study.

CONDENSED GEOLOGIC LOG FOR DDH RR-1

Drilled at a 48° angle and an azimuth of 180°.

0'-6' Overburden.

6'-329.8' Interbedded intermediate-felsic-mafic metatuffs, tuffaceous greywacke, and magnetite laminations. Rock is now fine to medium-grained semi-schist-schist, with much flattening, folding and local breccia. Moderate to well developed schistosity subparallels bedding. Volcanic fragments locally coarse lapilli-agglomerate originally.

Mode of intermediate-mafic metatuff (grey-green): 25-40% mafics and alteration products (chlorite, actinolite, hornblende); 5% quartz-carbonate veins; 40% quartz-carbonate veinlets or compositional laminae; 15-30% quartz-carbonate-plagioclase (more felsic component of groundmass).

Mode of intermediate-felsic metatuff (brown-grey) similar to above except only 10-30% mafics and alteration products; and 15-45% felsic component. Sheet silicates largely sericite-biotite.

Mode of the intermediate tuff-tuffaceous greywacke (green-grey): 10-30% chlorite; 10-30% biotite; 10-20% muscovite; 20-40% quartz; 10-15% plagioclase; 10-20% actinolite; and 0-5% carbonate.

Intermediate-mafic tuff intervals are 6'-13.5' and 33.5'-35.5'. Felsic-intermediate tuff is from 13.5'-18.0'. Other intervals predominantly intermediate metatuffs. Local scattered 1 mm magnetite grains (up to 5% of rock) and 1-10 mm dark green hornblende phenocrysts(?) porphyroblasts (up to 10% of rock) from 35.5'-271.5'. Magnetite and hornblende appear to vary antithetically (on the small scale). Laminae with up to 80% magnetite occur in close proximity to