

APPENDIX I (a): CUTTINGS

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Cuttings samples were collected, washed and described at 15 m intervals from Surface to 855 m and 3 m intervals from 855 m to 1540.0 m Total Depth (Logger Extrapolated), not all samples were able to be collected due to high ROP. All samples were checked for oil shows using ultraviolet fluorescence.

WEST MERREENIE 24:

MERREENIE SANDSTONE

LATE SILURIAN TO MID DEVONIAN

From 5.2m to 426.0m

Thickness: 420.7m TVD

5.2m to 29.3m	MASSIVE SANDSTONE SANDSTONE: off white to pale brown, translucent, fine to very fine, occasional medium, well sorted, sub-angular to sub-rounded t, strong to occasionally weak siliceous cement, common off white to pale brown argillaceous matrix, hard to occasional friable, minor loose, very poor visual porosity, poor inferred porosity.
29.3m to 60.0m	MASSIVE SANDSTONE SANDSTONE: off white to pale brown, translucent, very fine to medium, moderately well sorted, sub-rounded to sub-angular, strong to occasionally weak siliceous cement, common off white to pale brown argillaceous matrix, hard to occasional friable, minor loose, very poor visual porosity, poor inferred porosity.
60.0m to 165.0m	MASSIVE SANDSTONE SANDSTONE: pale grey to pale brown, translucent, rare pale orange staining, trace pale pink, fine to medium, moderately well sorted, sub-rounded to sub-angular, strong to occasionally weak siliceous cement, common off white to pale brown argillaceous matrix, hard to occasionally moderately hard, rare friable, minor loose, very poor visual porosity, poor inferred porosity.
165.0m to 225.0m	SANDSTONE WITH MINOR SILTSTONE INTERBEDS SANDSTONE: translucent, pale red brown, pale orange, mottled off white to grey and pale pink in part, rare off white, fine to very fine, minor medium, moderately well sorted, sub-angular to sub-rounded, strong siliceous cement, minor to common moderately strong calcareous cement, common pale pink and off white to grey argillaceous matrix, trace lithics, trace mica in parts, hard to occasionally moderately hard very poor visual porosity. SILTSTONE: red brown, argillaceous, arenaceous in part, siliceous, micro-micaceous in parts, trace lithics, hard, sub-blocky to sub-fissile in part.
225.0m to 315.0m	MASSIVE SANDSTONE SANDSTONE: off white to pale grey, translucent, trace pale pink, fine to very fine, minor medium, moderately well sorted, sub-rounded to sub-angular, rounded in part, strong siliceous cement, trace strong calcareous cement, common off white to grey argillaceous matrix, sucrose texture, hard, very poor visual porosity.

315.0m to 375.0m	<p>MASSIVE SANDSTONE</p> <p>SANDSTONE: off white to pale grey, translucent, trace pale pink, trace and pale brown at base, very fine to fine, well sorted, sub-rounded to sub-angular, strong siliceous cement, common off white to grey argillaceous matrix, sucrose texture, hard, very poor visual porosity.</p>
375.0m to 406.0m	<p>SANDSTONE WITH MINOR SILTSTONE INTERBEDS</p> <p>SANDSTONE: translucent, pale red brown, pale red grey, pale pink orange, off white to pale grey in parts, minor mottled off white to pale grey and pale pink, fine to very fine, minor medium, moderately well sorted, sub-rounded to sub-angular, strong siliceous cement, strong calcareous cement in part, common pale pink to pale grey argillaceous matrix, hard, very poor visual porosity.</p> <p>SILTSTONE: red brown, minor grey, argillaceous, siliceous, trace lithics, hard, sub-blocky to sub-fissile in part.</p>
406.0m to 422.0m	<p>INTERBEDDED SANDSTONE AND SILTSTONE</p> <p>SANDSTONE: translucent, pale red brown, pale grey to pale pink, off white to pale grey, trace to minor mottled off white to pale grey and pale pink, fine to very fine, minor medium, occasionally coarse, moderately well sorted, sub-rounded to sub-angular, strong siliceous cement, minor strong calcareous cement, common pale pink to pale grey argillaceous matrix, hard to occasionally moderately hard, very poor visual porosity.</p> <p>SILTSTONE: red brown, argillaceous, arenaceous in part, siliceous, trace lithics, trace micro-micaceous, hard to brittle, sub-blocky to sub-fissile in part.</p>
422.0m to 426.0m	<p>SANDSTONE</p> <p>SANDSTONE: translucent, grey, trace off white to pale grey, very fine to fine, well sorted, sub-rounded to sub-angular, strong siliceous cement, common pale grey silty matrix, hard to brittle, nil to very poor visual porosity.</p>

CARMICHAEL SANDSTONE

LATE ORDOVICIAN

From 426.0m to 517.0m

Thickness: 90.9m TVD

426.0m to 480.0m	<p>MASSIVE SANDSTONE</p> <p>SANDSTONE: translucent, pale red brown, pale red grey, pale pink orange, trace off white to grey, very fine to fine, well sorted, sub-rounded to sub-angular, strong siliceous cement, trace strong calcareous cement in part, common off white to pale grey and pale pink orange argillaceous matrix, trace lithics, hard to occasionally moderately hard, very poor visual porosity.</p>
480.0m to 517.0m	<p>MASSIVE SANDSTONE</p> <p>SANDSTONE: translucent, pale red brown, pale pink orange, trace off white to grey, very fine to occasionally fine, well sorted, sub-rounded to sub-angular, strong siliceous cement, minor strong calcareous cement in part, common off white to pale grey and pale pink orange argillaceous matrix, grading to arenaceous SILTSTONE in part, trace lithics, hard to occasionally moderately hard, very poor visual porosity.</p> <p>SILTSTONE: red brown, mottled light grey in part, argillaceous, minor arenaceous, siliceous, occasional lithics, hard to occasionally moderately hard, sub-fissile to occasionally sub-blocky.</p>

STOKES SILTSTONE
MID TO LATE ORDOVICIAN
From 517.0m to 867.0m
Thickness: 349.1m TVD

517.0m to 525.0m	<p>INTERBEDDED SILTSTONE AND SILTSTONE</p> <p>SILTSTONE: (1) red brown, mottled light grey in part, argillaceous, trace arenaceous, siliceous, occasional lithics, trace micro-micaceous, hard to brittle, occasionally moderately hard, sub-fissile to occasionally sub-blocky.</p> <p>(2) light grey, green grey, arenaceous, siliceous, hard, sub-blocky to occasionally sub-fissile.</p> <p>SANDSTONE: (1) translucent, pale pink orange, trace off white to pale grey pink, trace pale red brown to pale orange in part, very fine, well sorted, sub-rounded to sub-angular, strong siliceous cement, minor strong calcareous cement, common pale grey to off white and pale pink orange argillaceous matrix, grading to arenaceous SILTSTONE in part, hard to occasionally moderately hard, very poor visual porosity.</p> <p>(2) translucent, pale brown, clear, trace pale orange, trace off white, fine to medium, moderately well sorted, sub-rounded to sub-angular, strong siliceous cement, minor calcareous cement, common off white argillaceous matrix, hard to occasionally moderately hard, very poor to poor porosity.</p>
525.0m to 530.0m	<p>MASSIVE SILTSTONE WITH MINOR SANDSTONE INTERBEDS</p> <p>SILTSTONE: (1) red brown, mottled light grey in part, arenaceous, argillaceous in parts, siliceous, occasional lithics, trace micro-micaceous, hard to occasionally brittle, occasionally moderately hard, sub-fissile to occasionally sub-blocky.</p> <p>(2) light grey, green grey, arenaceous, siliceous, hard, sub-blocky to occasionally sub-fissile.</p> <p>SANDSTONE: translucent, off white-pale grey, trace pale orange, very fine to fine, trace medium, well sorted, sub-rounded to sub-angular, strong siliceous cement, minor moderately strong calcareous cement, common pale grey to off white to pale grey argillaceous matrix, grading to arenaceous SILTSTONE in part, hard, minor moderately hard, very poor visual porosity.</p>
530.0m to 570.0m	<p>MASSIVE SILTSTONE WITH RARE SANDSTONE INTERBEDS.</p> <p>SILTSTONE: red, light to medium grey to grey brown, occasionally argillaceous to arenaceous in part, locally micro micaceous, hard to moderately hard, sub blocky.</p> <p>SANDSTONE: clear to translucent, minor light brown, very fine to minor fine, well sorted, sub rounded to sub angular, weak siliceous cement, trace to localised common light brown argillaceous matrix, loose, hard, poor to tight visual porosity, no fluorescence.</p>
570.0m to 615.0m	<p>MASSIVE SILTSTONE.</p> <p>SILTSTONE: red, medium grey, dark red purple, grey brown in part, occasionally argillaceous, commonly arenaceous, micro micaceous, hard to moderately hard, sub blocky.</p>
615.0m to 630.0m	<p>MASSIVE SILTSTONE WITH MINOR SANDSTONE.</p> <p>SILTSTONE: red brown, medium grey, argillaceous, occasional lithics, minor locally micro micaceous, firm to moderately hard, sub blocky.</p> <p>SANDSTONE: clear to translucent, opaque brown, very fine, well sorted, sub rounded to sub angular, moderately siliceous cement, light grey brown argillaceous matrix, hard to very hard, tight visual porosity, no fluorescence.</p>

630.0m to 790.0m	<p>MASSIVE SILTSTONE.</p> <p>SILTSTONE: brown red, occasionally medium grey to grey green, minor purple, argillaceous, localised arenaceous, minor micro micaceous, hard, sub blocky to sub fissile.</p>
790.0m to 825.0m	<p>MASSIVE SILTSTONE WITH MINOR DOLOMITE.</p> <p>SILTSTONE: medium grey, minor light grey, rare medium red brown, argillaceous, micro micaceous, hard to very hard, dominantly sub fissile to rare sub blocky.</p> <p>DOLOMITE: off white, light grey, micritic, argillaceous to arenaceous, microcrystalline to occasionally crystalline, hard to minor moderately hard.</p>
825.0m to 867.0m	<p>SILTSTONE WITH OCCASIONAL INTERBEDDED DOLOMITE.</p> <p>SILTSTONE: dark grey, medium to dark grey brown, occasionally medium olive grey, argillaceous, occasionally arenaceous, locally micro micaceous, hard to very hard, sub blocky to sub fissile.</p> <p>DOLOMITE: off white to translucent, micritic, trace sparitic, argillaceous to arenaceous, microcrystalline to occasionally crystalline, hard to minor moderately hard.</p>

STAIRWAY SANDSTONE

MID ORDOVICIAN

From 867.0m to 1139.4m

Thickness: 271.9m TVD

867.0m to 875.0m	<p>INTERBEDDED SANDSTONE AND SILTSTONE.</p> <p>SANDSTONE: clear to translucent, frosted, white to off white, very fine to fine, moderately well sorted, sub angular to sub rounded, moderately strong siliceous cement, occasional off white argillaceous matrix, trace lithics, moderately hard to hard, tight visual porosity, no fluorescence.</p> <p>SILTSTONE: medium to dark grey, medium blue grey in part, occasionally medium to dark brown, argillaceous, minor arenaceous, micro micaceous in part, hard to very hard, sub blocky to blocky.</p>
875.0m to 905.0m	<p>SANDSTONE WITH OCCASIONAL INTERBEDDED SILTSTONE AND MINOR DOLOMITE.</p> <p>SANDSTONE: clear to translucent, frosted, very fine to fine, medium in part, moderately sorted, sub angular to sub rounded, moderately siliceous cement, rare off white argillaceous matrix, moderately hard to friable, loose in part, tight visual porosity, poor inferred porosity, no fluorescence.</p> <p>SILTSTONE: medium to dark grey, medium blue grey in part, occasionally medium to dark brown, argillaceous, minor arenaceous, micro micaceous in part, hard to very hard, sub blocky to blocky.</p> <p>DOLOMITE: translucent light brown to off white, micritic, argillaceous, micritic to occasionally crystalline, very hard to occasionally hard, dull orange mineral fluorescence.</p>

905.0m to 930.0m	<p>SANDSTONE WITH MINOR SILTSTONE.</p> <p>SANDSTONE: clear to translucent, frosted, light to medium grey, very fine to fine, well sorted, sub angular to sub rounded, strong siliceous cement, siliceous to argillaceous matrix, occasional carbonaceous specks and lithic inclusions, hard to very hard, tight visual porosity. Sandstone from 898.5m to 908m displays trace dull to moderately bright green white pinpoint fluorescence, trace diffuse crush cut, thin ring residue.</p> <p>SILTSTONE: medium to dark grey, argillaceous, arenaceous in part, locally micro micaceous, moderately hard, sub blocky to sub fissile.</p>
930.0m to 969.0m	<p>SILTSTONE WITH MINOR INTERBEDDED SANDSTONE.</p> <p>SILTSTONE: dark to occasionally medium grey, occasionally dark grey brown, argillaceous, occasionally arenaceous, micro micaceous, hard to very hard, sub blocky, minor blocky.</p> <p>SANDSTONE: off white to light grey, light grey brown in part, very fine to minor fine, well sorted, sub angular to occasionally angular, moderate to strong siliceous cement, occasional off white argillaceous matrix, trace lithics, hard to very hard, tight visual porosity, no fluorescence.</p>
969.0m to 993.0m	<p>SILTSTONE WITH OCCASIONAL INTERBEDDED SANDSTONE.</p> <p>SILTSTONE: dark to very dark grey, dark brown grey, argillaceous, arenaceous, occasionally micro micaceous, rare disseminated pyrite, moderately hard, sub blocky to blocky.</p> <p>SANDSTONE: clear to translucent, off white, medium to light grey, very fine, occasionally grading to arenaceous siltstone, well sorted, angular to sub angular, strong siliceous cement, occasional off white to light grey argillaceous matrix, trace lithics, hard to very hard, tight visual porosity, no fluorescence.</p>
993.0m to 1017.0m	<p>SILTSTONE WITH MINOR SANDSTONE INTERBEDS.</p> <p>SILTSTONE: dark to very dark grey, dark grey brown, argillaceous to occasionally arenaceous, locally micro micaceous, trace carbonaceous specks, hard to commonly very hard, sub blocky to sub fissile.</p> <p>SANDSTONE: clear to translucent, off white to light brown, very fine to fine, well sorted, angular to sub angular, strong siliceous cement, occasional off white to light brown argillaceous matrix, trace disseminated pyrite, trace lithics, hard to very hard, very poor to tight visual porosity, no fluorescence.</p>
1017.0m to 1046.0m	<p>SILTSTONE WITH OCCASIONAL SANDSTONE INTERBEDS.</p> <p>SILTSTONE: medium to dark grey, occasionally very dark grey, occasionally grey brown, argillaceous to arenaceous, micro micaceous, rare disseminated pyrite, hard to very hard, sub fissile to sub blocky.</p> <p>SANDSTONE: light to medium grey, minor translucent off white, very fine to fine, well sorted, angular to sub angular, strong siliceous cement, minor off white argillaceous matrix, minor lithics, trace nodular pyrite, very hard, tight visual porosity, no fluorescence.</p>
1046.0m to 1059.0m	<p>INTERBEDDED SILTSTONE AND SANDSTONE.</p> <p>SILTSTONE: medium to dark grey, occasionally very dark grey brown, argillaceous, trace arenaceous, micro micaceous, trace to occasional disseminated pyrite, hard to very hard, sub fissile to sub blocky.</p> <p>SANDSTONE: light to medium grey, minor translucent off white, very fine to fine, well sorted, angular to sub angular, strong siliceous cement, minor off white argillaceous matrix, minor lithics, very hard, tight visual porosity, no fluorescence.</p>

- 1059.0m to 1077.0m **SANDSTONE WITH OCCASIONAL SILTSTONE.**
SANDSTONE: clear to translucent, off white to light grey, very fine to medium, occasionally coarse, poor to moderately sorted, angular to sub angular, strong siliceous cement, off white argillaceous matrix, trace lithics, occasionally loose, hard, poor to tight visual porosity, poor inferred porosity, no fluorescence.
SILTSTONE: dark to very dark grey, occasionally dark grey brown, argillaceous to occasionally arenaceous, trace carbonaceous specks, occasional nodular pyrite, hard to very hard, sub blocky to blocky.
- 1077.0m to 1107.5m **SANDSTONE WITH OCCASIONAL SILTSTONE.**
SANDSTONE: clear to translucent, off white, medium to coarse, occasionally fine to medium, poor to moderately sorted, sub angular to sub rounded, strong siliceous cement, off white argillaceous matrix, occasional lithics, trace pyrite nodules, dominantly loose, occasionally friable to moderately hard aggregates, tight to poor visual porosity, poor inferred porosity, no fluorescence.
SILTSTONE: dark grey, brown grey, light brown to light grey, dominantly arenaceous, commonly micro micaceous, lithics, occasional pyrite nodules, firm to moderately hard, sub fissile to sub blocky.
- 1107.5m to 1126.0m **INTERBEDDED SANDSTONE AND SILTSTONE.**
SANDSTONE: off white, pale brown, medium grey, fine to coarse, dominantly medium, sub rounded to angular, strong siliceous cement, off white argillaceous matrix, occasional lithics, minor pyrite nodules, hard to very hard, loose in part, very poor to tight visual porosity, poor inferred porosity, no fluorescence.
SILTSTONE: dark to very dark brown grey, occasionally dark grey, argillaceous to arenaceous, locally micro micaceous, occasional lithics, hard to dominantly very hard, sub blocky to blocky.
- 1126.0m to 1131.0m **INTERBEDDED SANDSTONE AND SILTSTONE.**
SANDSTONE: light brown grey, light translucent brown, very fine, well sorted, angular to sub angular, strong siliceous cement, rare off white argillaceous matrix, minor nodular pyrite, hard to very hard, very poor to tight visual porosity. **Sandstone from 1126m to 1130m displays trace dull green yellow pinpoint fluorescence, trace diff crush cut, thin ring residue.**
SILTSTONE: dark grey, dark brown, arenaceous, minor to occasional pyrite nodules, occasionally micro micaceous, firm to moderately hard, sub blocky to blocky.
- 1131.0m to 1139.4m **SILTSTONE WITH OCCASIONAL SILTSTONE INTERBEDS.**
SILTSTONE: dark grey to dark grey brown, arenaceous, minor to occasional pyrite nodules, occasionally micro micaceous, moderately hard, sub blocky to blocky.
SANDSTONE: light brown, minor off white, very fine to minor fine, well sorted, angular to sub angular, strong siliceous cement, rare off white argillaceous matrix, minor nodular pyrite, hard to very hard, very poor to tight visual porosity, no fluorescence.

HORN VALLEY SILTSTONE

EARLY ORDOVICIAN

From 1139.4m to 1222.0m

Thickness: 83.2m TVD

- 1139.4m to 1149.0m **SILTSTONE.**
SILTSTONE: dark brown, occasionally dark grey, argillaceous, occasionally arenaceous, common micro micaceous, occasionally lithics, trace pyrite nodules, moderately hard to hard, sub blocky to blocky.
- 1149.0m to 1179.0m **SILTSTONE WITH MINOR LIMESTONE.**
SILTSTONE: dark brown grey, dark brown, dominantly argillaceous, commonly micro micaceous, occasional lithics, trace pyrite nodules, moderately hard to hard, sub blocky to sub fissile.
LIMESTONE: buff, light brown to off white, micritic, argillaceous, microcrystalline, trace lithics, occasional shell fragments, hard to very hard.
- 1179.0m to 1222.0m **SILTSTONE WITH OCCASIONAL INTERBEDDED LIMESTONE.**
SILTSTONE: medium to dark grey brown, trace very dark grey brown, dark grey, argillaceous, locally common micro micaceous, trace to occasional disseminated and nodular pyrite, hard, sub blocky to sub fissile.
LIMESTONE: buff, medium brown to minor off white, tan in part, sparitic, arenaceous, crystalline to cryptocrystalline, hard to dominantly very hard.

PACOOTTA SANDSTONE

EARLY ORDOVICIAN

From 1222.0m to 1329.0m (T.D.)

Thickness: 103.3m+ TVD

- 1222.0m to 1236.0m **INTERBEDDED SILTSTONE AND SANDSTONE.**
SILTSTONE: dark grey brown, dark grey, argillaceous, micro micaceous, minor lithics and glauconite grains, hard to very hard, sub fissile to minor sub blocky.
SANDSTONE: dark to medium brown, medium brown grey, grading to arenaceous Siltstone in part, very fine to fine, well sorted, sub angular, strong siliceous cement, common to abundant medium brown silty matrix, common to abundant glauconite grains, hard to very hard, tight visual porosity, no fluorescence.
- 1236.0m to 1248.0m **SILTSTONE WITH INTERBEDDED SANDSTONE.**
SILTSTONE: dark grey to grey brown, arenaceous, commonly micro micaceous, rare pyrite nodules, minor glauconite grains, moderately hard to dominantly hard, sub blocky to blocky.
SANDSTONE: light brown, clear to translucent, fine to occasionally medium, well sorted, sub angular to dominantly sub rounded, moderately siliceous cement, occasional off white argillaceous matrix, minor light brown silty matrix, occasional carbonaceous specks, friable to moderately hard, loose, poor inferred porosity, very poor visual porosity, no fluorescence.

- 1248.0m to 1259.0m **SILTSTONE WITH OCCASIONAL SANDSTONE INTERBEDS.**
 SILTSTONE: dark grey to grey brown, arenaceous, trace grading to very fine Sandstone in part, commonly micro micaceous, trace nodular and disseminated pyrite, moderately hard to dominantly hard, sub blocky to blocky.
 SANDSTONE: off white to light grey, occasionally light brown, very fine to fine, rare medium, well sorted, sub angular, strong siliceous cement, minor off white argillaceous matrix, rare light brown silty matrix laminations, minor nodular pyrite, very hard, very poor to tight visual porosity, no fluorescence.
- 1259.0m to 1274.0m **SILTSTONE WITH MINOR SANDSTONE.**
 SILTSTONE: dark to very dark grey to grey brown, argillaceous, commonly micro micaceous, localised nodular and disseminated pyrite, hard to very hard, sub blocky to minor sub fissile.
 SANDSTONE: light grey to light brown, off white, occasionally clear to translucent, very fine to rare fine, very well sorted, sub angular to occasionally angular, strong siliceous cement, minor to rare off white argillaceous matrix, minor nodular pyrite, hard to very hard, very poor to tight visual porosity, no fluorescence.
- 1274.0m to 1305.0m **INTERBEDDED SANDSTONE AND SILTSTONE.**
 SANDSTONE: light grey to light brown, off white, clear to translucent, very fine to fine, well sorted, sub angular to occasionally angular, strong siliceous cement, minor to rare off white argillaceous matrix, trace nodular pyrite, commonly loose, hard to very hard, poor inferred porosity, very poor to tight visual porosity, no fluorescence.
 SILTSTONE: dark grey brown, occasionally very dark brown, dark grey in part, argillaceous, commonly micro micaceous, locally disseminated and nodular pyrite, hard to very hard, sub blocky to sub fissile.
- 1305.0m to 1329.0m **SANDSTONE WITH OCCASIONAL INTERBEDDED SILTSTONE.**
 T.D.
 SANDSTONE: clear to translucent, off white, fine to medium, moderately well sorted, round to sub angular, strong siliceous cement, rare off white argillaceous matrix, trace pyrite nodules, occasional lithics, dominantly loose, occasionally hard to very hard, poor visual porosity, poor to fair inferred porosity, no fluorescence.
 SILTSTONE: dark brown grey, occasionally very dark grey, argillaceous, trace arenaceous, commonly micro micaceous, occasional lithics, sub fissile to sub blocky.

WEST MEREEENIE 24ST1:

HORN VALLEY SILTSTONE

EARLY ORDOVICIAN

From 1218.5m to 1222.8m

Thickness: 4.3m+ TVD

- 1218.5m to 1222.8m **SILTSTONE WITH MINOR LIMESTONE AND SANDSTONE.**
 SILTSTONE: dark grey, orange brown, brown grey, argillaceous, common lithics, hard to very hard, sub-blocky to sub-fissile.
 LIMESTONE: very light brown, occasional dark brown grey, micritic, argillaceous, microcrystalline, very hard.
 SANDSTONE: light grey to off white, very fine, well sorted, sub angular to angular, strong calcareous cement, common off-white argillaceous matrix, hard, tight visual porosity, no fluorescence.

PACOOTA SANDSTONE

EARLY ORDOVICIAN

From 1222.8m to 1540.0m (T.D.)

Thickness: 268.8m+ TVD

- 1222.8m to 1238.0m **INTERBEDDED SILTSTONE AND SANDSTONE.**
SILTSTONE: predominantly medium to dark grey, mottled grey black, argillaceous, rare arenaceous, commonly micro micaceous, rare nodular pyrite and carbonaceous specks, moderately hard to hard, sub-blocky to sub-fissile, no fluorescence
SANDSTONE: clear to translucent, light grey, very fine to fine, moderately well sorted, sub-angular to sub-rounded, weak to moderate siliceous cement, dark to light grey argillaceous to arenaceous matrix, occasional carbonaceous specks, commonly loose, occasional moderately hard to hard, tight visual porosity, tight to very poor inferred porosity, no fluorescence.
- 1238.0m to 1248.5m **SILTSTONE WITH MINOR SANDSTONE.**
SILTSTONE: dark grey, occasional light grey, dominantly argillaceous, rare arenaceous, trace carbonaceous specks, commonly micro micaceous, rare nodular pyrite, moderately hard, sub-fissile to sub-blocky, no fluorescence
SANDSTONE: light grey, mottled, very fine to fine grained, moderately well sorted, sub-rounded to sub-angular, strong siliceous cement, dark grey argillaceous matrix, occasional lithics, very hard to hard, tight to poor visual porosity, poor inferred porosity, no fluorescence.
- 1248.5m to 1252.0m **INTERBEDDED SANDSTONE AND SILTSTONE.**
SILTSTONE: medium to light grey, pale brown in parts, dominantly argillaceous, occasional arenaceous, commonly micro micaceous, occasional lithics, moderately hard, sub-fissile to sub-blocky.
SANDSTONE: off-white, milky, translucent, very fine to fine, moderately well sorted, rounded to sub-angular, strong siliceous cement, rare argillaceous matrix, occasional lithics, rare pyrite, hard to very hard, rare loose, nil to tight visual porosity, poor inferred porosity. **Sandstone from 1248.5m to 1252m displays trace dull light green pinpoint fluorescence. Trace crush cut, trace ring residue.**
- 1252.0m to 1282.5m **INTERBEDDED SANDSTONE AND SILTSTONE.**
SILTSTONE: light to occasional medium grey, trace dark grey, argillaceous, occasional very fine arenaceous, rare nodular pyrite, moderately hard to hard, sub-fissile to sub-blocky.
SANDSTONE: off-white to milky, clear to translucent, common light grey, very fine to fine, well sorted, trace strong siliceous cement, rare off-white argillaceous matrix, dominantly loose, trace moderately hard aggregates, tight visual porosity, tight to very poor inferred porosity, no fluorescence.
- 1282.5m to 1293.0m **INTERBEDDED SANDSTONE AND SILTSTONE.**
SILTSTONE: light to medium grey, minor dark grey, argillaceous, occasional very fine arenaceous, moderately hard to dominantly hard, sub-fissile to sub-blocky.
SANDSTONE: clear to translucent, opaque light grey, very fine to occasional medium grains, moderately sorted, strong siliceous cement, common light grey to off-white argillaceous matrix, predominantly loose, common hard aggregates, tight visual porosity, poor inferred porosity. **Sandstone from 1282.5m to 1285m displays trace dull light green/ white fluorescence. Pinpoint, trace diffuse crush cut, trace film residue.**

- 1293.0m to 1299.0m **INTERBEDDED SANDSTONE AND SILTSTONE.**
SILTSTONE: medium to dark grey, argillaceous, occasional arenaceous, light grey, rare carbonaceous, occasional micro micaceous, moderately hard to hard, sub-blocky to sub-fissile.
SANDSTONE: light grey, clear to translucent, very fine to fine grained, rare medium, moderately well sorted, sub-angular to predominantly sub-rounded, strong siliceous cement, occasional light grey to off white argillaceous matrix, dominantly loose, occasional hard, tight to poor visual porosity, poor inferred porosity, no fluorescence.
- 1299.0m to 1305.0m **INTERBEDDED SANDSTONE AND SILTSTONE.**
SILTSTONE: dominantly light grey, occasional medium to dark brown, argillaceous to arenaceous, micro micaceous in parts, trace nodular pyrite, moderately hard, common firm, sub-fissile to sub-blocky.
SANDSTONE: light grey, clear to translucent, occasional white, very fine to fine grained, rare medium, moderately well sorted, sub-angular to predominantly sub-rounded, strong siliceous cement, occasional light grey to off white argillaceous matrix, dominantly loose, occasional hard, tight to poor visual porosity, poor inferred porosity, no fluorescence.
- 1305.0m to 1322.0m **SANDSTONE WITH MINOR SILTSTONE.**
SANDSTONE: off-white to white, clear to translucent, rare light grey, very fine to medium, poor sorting, sub-angular to sub-rounded, strong siliceous cement, trace off-white argillaceous matrix increasing to common, dominantly loose, common hard aggregates, tight visual porosity, very poor to poor inferred porosity, no fluorescence.
SILTSTONE: predominantly dark to very dark grey, dark grey brown, argillaceous, occasional very fine arenaceous, occasional micro-micaceous and carbonaceous specks, firm to moderately hard, sub-fissile.
- 1322.0m to 1325.0m **MASSIVE SANDSTONE.**
SANDSTONE: off-white to light grey, very light brown, rare clear to translucent, fine to occasional very fine, moderately well sorted, angular to sub-rounded, strong siliceous cement, rare off-white argillaceous matrix, rare carbonaceous specks, dominantly loose, occasional friable to moderately hard aggregates, tight to very poor visual porosity, very poor inferred porosity, no fluorescence.
- 1325.0m to 1338.0m **INTERBEDDED SANDSTONE AND SILTSTONE.**
SANDSTONE: light grey to very light brown, off-white, translucent in parts, very fine grading to arenaceous SILTSTONE, occasional fine, well sorted, sub-angular to angular, strong siliceous cement, occasional off-white argillaceous matrix, trace carbonaceous specks and lithics, friable to hard aggregates, rare loose, tight to very poor visual porosity, very poor inferred porosity.
Sandstone from 1325m to 1328m displays trace, dull, light green fluorescence, pinpoint, trace diffuse crush cut, trace ring residue.
SILTSTONE: dark grey brown, occasional light brown, common very dark grey, argillaceous to arenaceous, commonly micro micaceous, rare disseminated pyrite, firm to moderately hard, sub-fissile to blocky.

- 1338.0m to 1345.0m **SANDSTONE WITH MINOR SILTSTONE.**
 SANDSTONE: clear to translucent, light grey to off-white, occasional milky white, very fine to fine, rare medium, moderately sorted, sub-angular to predominantly sub-rounded, strong siliceous cement, rare off-white argillaceous matrix, common moderately hard to hard aggregates, loose, tight visual porosity, very poor inferred porosity, no fluorescence.
 SILTSTONE: medium grey brown, occasional dark grey, argillaceous, rare very fine arenaceous, commonly micro micaceous, trace disseminated pyrite, hard, sub-fissile, occasional fissile.
- 1345.0m to 1355.0m **INTERBEDDED SANDSTONE AND SILTSTONE.**
 SANDSTONE: off-white to white, light grey, occasional clear to translucent, very fine to fine, moderately sorted, angular to sub-rounded, strong siliceous cement, rare localized off-white argillaceous matrix, rare siliceous overgrowths, moderately hard to hard, rare loose, tight visual porosity, tight to very poor inferred porosity. **Sandstone from 1345m to 1349.5m displays trace dull to moderately bright, light green/white fluorescence, spotted, nil crush cut, nil residue.**
 SILTSTONE: dominantly dark brown to brown grey, occasional dark grey, argillaceous, rare very fine arenaceous, common micro micaceous and carbonaceous specks, rare nodular pyrite, firm to hard, sub-fissile to sub-blocky.
- 1355.0m to 1365.0m **INTERBEDDED SANDSTONE AND SILTSTONE.**
 SANDSTONE: clear to translucent, light grey to occasional milky, rare light brown to tan, very fine to fine, well sorted, sub-angular to sub-rounded, trace argillaceous matrix, strong siliceous cement, hard aggregates, occasional loose, tight visual porosity, very poor inferred porosity, no fluorescence.
 SILTSTONE: dominantly dark brown to brown grey, occasional dark grey, argillaceous, rare very fine arenaceous, common micro micaceous and carbonaceous specks, rare nodular pyrite, firm to hard, sub-fissile to sub-blocky.
- 1365.0m to 1376.0m **INTERBEDDED SILTSTONE AND SANDSTONE.**
 SILTSTONE: medium to dark grey brown, dark grey, rare very dark grey, argillaceous, occasional arenaceous, rare carbonaceous, commonly micro micaceous, rare disseminated pyrite, firm to hard, sub-fissile to sub-blocky.
 SANDSTONE: predominantly light grey to off-white, occasional clear to translucent, very fine to fine, well sorted, sub-angular, occasional sub-rounded, moderate to strong siliceous cement, trace off-white argillaceous matrix, loose, rare hard aggregates, tight to very poor visual and inferred porosity, no fluorescence.
- 1376.0m to 1398.0m **SANDSTONE WITH MINOR SILTSTONE.**
 SANDSTONE: clear to translucent, light blue grey, very fine grading to arenaceous SILTSTONE, occasional fine, well sorted, sub-angular to sub-rounded, moderate to strong siliceous cement, nil visible matrix in general, rare localized argillaceous matrix, localized abundant glauconite, hard aggregates, occasional loose, tight visual and inferred porosity, no fluorescence.
 SILTSTONE: medium to dark grey brown, dark grey, rare very dark grey, argillaceous, occasional arenaceous, rare carbonaceous, commonly micro micaceous, rare disseminated pyrite, firm to hard, sub-fissile to sub-blocky.

- 1398.0m to 1400.5m **MASSIVE SANDSTONE.**
 SANDSTONE: clear to translucent, trace white, fine to rare medium, moderately well sorted, sub-rounded, moderate to strong siliceous cement, trace off-white argillaceous matrix, loose, rare moderately hard to hard aggregates, tight visual porosity, poor inferred porosity, no fluorescence.
- 1400.5m to 1448.0m **MASSIVE SANDSTONE.**
 SANDSTONE: clear to translucent, frosted, opaque white in parts, fine to medium, moderately sorted, angular to sub-angular, occasional sub-rounded, strong siliceous cement, rare off-white argillaceous matrix, loose, rare hard aggregates, tight visual porosity, poor inferred porosity. **Sandstone from 1400.5m to 1417m displays 5% - Trace, very dull to dim light green-white fluorescence. Patchy, very slow diffuse crush cut, thin ring residue.**
- 1448.0m to 1453.0m **SANDSTONE WITH TRACE SILTSTONE.**
 SANDSTONE: clear to translucent, rare off-white to white, translucent light pink in parts, fine to medium, moderately poorly sorted, sub-angular to sub-rounded, strong siliceous cement, rare off-white argillaceous matrix, generally loose, common hard aggregates, tight to very poor visual porosity, very poor to poor inferred porosity, no fluorescence.
 SILTSTONE: medium to dark red/brown, occasional medium to dark brown, argillaceous, common arenaceous, rare mica and carbonaceous specks, hard to very hard, sub-fissile to sub-blocky.
- 1453.0m to 1463m **SANDSTONE WITH TRACE SILTSTONE.**
 SANDSTONE: clear to translucent, off-white, light pink, fine to medium, occasional very fine, moderately sorted, sub-angular to sub-rounded, strong siliceous cement, occasional off-white argillaceous matrix, generally loose, common hard aggregates, tight visual porosity, very poor to poor inferred porosity. **Sandstone from 1457m to 1459m displays 10%, very dull light green-yellow fluorescence. Patchy, very slow diffuse crush cut, thin ring residue.**
 SILTSTONE: dark red to medium red/brown, dark brown, argillaceous to arenaceous, moderately hard to hard, sub-fissile to sub-blocky.
- 1463.0m to 1472.5m **SANDSTONE WITH MINOR SILTSTONE.**
 SANDSTONE: clear to translucent, off-white, very light pink to pink, fine to medium, occasional very fine, moderately sorted, sub-angular to sub-rounded, strong siliceous cement, occasional off-white argillaceous matrix, dominantly loose, minor hard to friable aggregates, tight visual porosity, poor inferred porosity. **Sandstone from 1463m to 1464m displays 10%, dull to dim light green fluorescence, patchy, streaked, slow diffuse cut, thin ring residue.**
 SILTSTONE: dark red to medium red/brown, dark brown, argillaceous to arenaceous, moderately hard to hard, sub-fissile to sub-blocky.
- 1472.5m to 1476.0m **SANDSTONE WITH MINOR SILTSTONE.**
 SANDSTONE: clear to translucent, light pink, common white to off-white, very fine to fine in general, common medium, moderately sorted, angular to sub-rounded, moderate to strong siliceous cement, common off-white argillaceous matrix, dominantly loose, common friable to hard aggregates, tight visual porosity, very poor inferred porosity. **Sandstone from 1472.5m to 1476m displays trace, very dull to dull light green fluorescence, spotted, trace diffuse crush cut, trace ring residue.**
 SILTSTONE: dark red to medium red/brown, dark brown, argillaceous to arenaceous, moderately hard to hard, sub-fissile to sub-blocky.

- 1476.0m to 1485.0m **SANDSTONE WITH MINOR SILTSTONE.**
 SANDSTONE: clear to translucent, very light pink, rare off-white to white, very fine to fine, moderately sorted, sub-angular to sub-rounded, weak to strong siliceous cement, rare off-white argillaceous matrix, loose, rare friable to moderately hard, tight visual porosity very poor inferred porosity, no fluorescence.
 SILTSTONE: dark red light brown, occasionally off-white, argillaceous to arenaceous, common mica and carbonaceous specks, firm to hard, fissile to sub-blocky.
- 1485.0m to 1493.5m **SANDSTONE WITH MINOR SILTSTONE.**
 SANDSTONE: clear to translucent, rare very light pink, rare off-white to white, very fine to fine, occasional medium, moderately sorted, sub-angular to sub-rounded, weak to strong siliceous cement, rare off-white argillaceous matrix, loose, very poor to poor inferred porosity. **Sandstone from 1485m to 1493.5m displays trace – 10%, very dull to dull, pinpoint to spotted, instant diffuse cut, thin ring residue.**
 SILTSTONE: dark red light brown, occasionally off-white, argillaceous to arenaceous, common mica and carbonaceous specks, firm to hard, fissile to sub-blocky.
- 1493.5m to 1515.0m **MASSIVE SANDSTONE.**
 SANDSTONE: clear to translucent, rare white, very fine to medium, moderately sorted, sub-rounded to sub-angular, inferred strong siliceous cement, nil visible matrix, loose, poor inferred porosity, no fluorescence.
- 1515.0m to 1540.0m **SANDSTONE WITH TRACE SILTSTONE:**
 T.D. SANDSTONE: clear to translucent, translucent pale pink, fine to medium, rare coarse, moderately sorted, sub-rounded to sub-angular, occasional rounded, strong siliceous cement, trace very light brown argillaceous matrix, loose, rare friable to hard aggregates, tight visual porosity, poor to fair inferred porosity, no fluorescence.
 SILTSTONE: red/brown, off-white, argillaceous, firm to moderately hard, sub-fissile.