

(Stoppel)

15-167-06619

3210-3220 Clay, red and green. Chert. Bulky residue (10 gram sample).

Chert---- Milky, slightly gray, inclusions, fossils.

Shale---- Red, green, white.

Sand----- Grains of all sizes. Rare.

3220-3230 Clay, red, green and white. Bulky residue (10 gram sample).
Residue as Above.

Top Viola 3235'.

3230-3240 Clay, red, green and white. Rare coarse crystalline dolomitic limestone.
Bulky residue (10 gram sample).
As above. Also clear quartzose chert in bladed form. A cast of Viola crystals.3240-3245 Dolomitic lime, coarsely crystalline. Clay shale, red and green.
Bulky residue (10 gram sample).

3245-3251 As above. Bulky residue (6 gram sample).

3251-3255 " " " " (10 gram sample).

3255-3265 " " " " "

Set pipe at 3260?

3260-3265 Dolomitic lime, dense to coarsely crystalline. Bulky residue (5 gram sample).

Plus $\frac{1}{2}$ mm.Chert---- Milky, slightly granular, some fragments have tinge of gray.
Quartzose, casts of coarse crystalline Viola.
Dolocasts, soft, fine, white, fossils.

Dominant Shale---- Clay, gray-green, dense. Slightly silty, rare fossils.

Minus $\frac{1}{2}$ mm. As above.3265-3275 As above. Bulky residue (6 gram sample).
Red shale in sample becomes green in acid.3275-3280 Dolomitic lime, coarse crystalline. Bulky residue (2 gram sample).
Residue similar to 3260-3265.

3280-3285 As above. Bulky residue (5 gram sample).

3285-3290 Dolomitic lime, coarse. Red clay shale. Sand. Bulky residue (10 gram sample).
Red clay shale dominant.
High percentage of coarse sand.

Top Simpson 3288'.

Top Siliceous lime 3355'.

3355-3360 Dolomite, white to light brown, medium crystalline.
Bulky residue (5 gram sample).

Plus $\frac{1}{2}$ mm.

Dominant Chert---- Dead white opaque, hackly to milky and highly cloudy translucent.
Yellow to amber, quartzose to cloudy translucent, oolite &
banded chalcedony.
Dolocasts, dead white, thick-walled.

Oolite--- Oolite bodies in amber chert. Probably chalcedony.

Shale---- Pale green, silty. Probably caving from Simpson.

Minus $\frac{1}{2}$ mm.

Dominant Chert---- As above.

Oolite--- " "

Shale---- " "

Sand----- $\frac{1}{8}$ - $\frac{1}{16}$ mm. Probably caving from Simpson.

3360-3362 Dolomite as above. Bulky residue (2 gram sample).

Plus $\frac{1}{2}$ mm.

Dominant Chert---- Milky to highly cloudy translucent. Rare dead white opaque.
Other types as in sample above.

Oolite--- As above.

Shale---- Light green. Probably caving.
Clay, pale green to white.

Minus $\frac{1}{2}$ mm.

Dominant Chert---- As above.

Oolite--- " "

Shale---- " "

Sand----- $\frac{1}{2}$ - $\frac{1}{16}$ mm. Rare.

3362-3368 Dolomite, white to brown, medium crystalline. Bulky residue (4 gram sample).

Plus $\frac{1}{2}$ mm.

Chert---- Opalescent to translucent, fresh, dense.
Cloudy translucent to milky, dull.

Dominant Oolite--- Loose, spherical to ovoid, white to brown, rough to smooth.
Smooth surface has coating of granular, spongy quartz which
is friable. Some oolites hollow.
Oolite bodies in opalescent chert.

Shale---- Clay, white, with inclusions of green and sand and silt. Common.

Minus $\frac{1}{2}$ mm.

Dominant Chert---- As above.
Also quartzose, brown, drusy.

Oolite--- As above, 1/2 - 1/4 mm.

Shale---- As above. Common.
Also green, probably caving.

Sand----- 1/2 - 1/16 mm. Rare.

3368-3374 As above. Bulky residue (5 gram sample).

Plus $\frac{1}{2}$ mm.

Chert---- Similar to Minus $\frac{1}{2}$ mm., 3362-68.

Dominant Oolite--- " " Plus 1/2 mm. "

Shale---- " " " " "

Minus $\frac{1}{2}$ mm.

Similar to minus $\frac{1}{2}$ mm. grade, 3362-68. Chert dominant.

3374-3376 Dolomite, brown, medium crystalline. Bulky residue (5 gram sample).

Plus $\frac{1}{2}$ mm.

Chert---- Quartzose, deep brown, "turtleshell" druses.
Cloudy translucent, dull.
Opalescent.

Oolite--- Loose, white to brown, relatively smooth.
Oolitoid bodies in opalescent chert.

Dominant Shale---- Clay, light green to white, sandy.
Green, caving from Simpson?

Minus $\frac{1}{2}$ mm.

Dominant Chert---- Quartzose, clear to brown, drusy clusters.
Other types as above

Oolite--- As above.

Shale---- " "

Sand----- 1/4 - 1/16 mm. Very rare.

3376-3380 As above. Bulky residue (4 gram sample).

Plus $\frac{1}{2}$ mm.

Chert---- Quartzose, clear, may be quartzite.
" brown, drusy.

Oolite--- Loose, relatively smooth. Rare.

Dominant Shale---- Clay, pale green to white. Included sand grains and brown quartzose chert.

Minus $\frac{1}{2}$ mm.

Dominant Chert---- As above.

Oolite--- " "

Shale---- " " Common.

Sand----- $1/2 - 1/16$ mm. Common.

3380-3385 Dolomite, brown and white, medium crystalline. Bulky residue (3 gram sample).

Plus $\frac{1}{2}$ mm.

Dominant Chert---- Milky, granular to cloudy translucent, dull.
Opalescent, fresh, dense.
Quartzose, clear, may be quartzite.
" brown, drusy clusters.

Oolite--- Loose, white and brown, nearly smooth. Rare.
Oolitoid bodies in opalescent chert.

Shale---- Clay, pale green to white. Abundant.
Green, probably Simpson caving.

Minus $\frac{1}{2}$ mm.

Dominant Chert---- Quartzose, brown, drusy clusters.
Other types as above.

Oolite--- As above.

Shale---- " "

Sand----- $1/2 - 1/16$ mm. Very rare.

3385-3390 Dolomite, white, medium crystalline. Medium residue (10 gram sample).

Plus $\frac{1}{2}$ mm.

Dominant Chert----Opalescent to highly cloudy translucent, oolitic.
Quartzose, brown, drusy clusters.

Oolite---Loose, nearly smooth, white & brown. Abundant.
Concentric oolites in opalescent chert.

Shale---- Clay, white to pale green, sandy.

Minus $\frac{1}{2}$ mm.

Dominant Chert---- Quartzose, clear to pale brown, drusy clusters.
Other types as above.

Oolite---- As above.

Shale----- " "

Sand----- 1/2 - 1/8 mm. Rare.
1/8 - 1/16 mm. Common. Arkosic?

3390-3393 Dolomite, white to light brown, medium crystalline.
Medium residue (10 gram sample).

Plus $\frac{1}{2}$ mm.

Dominant Chert---- Opalescent
Quartzose, clear, massive.

Oolite---- Loose, nearly smooth, brown to white.
Oolitoid bodies in opalescent chert.

Shale----- Clay, white to nearly green. Common.

Minus $\frac{1}{2}$ mm.

Chert---- Quartzose, clear to brown, massive to clusters.
Opalescent.

Oolite---- Smooth, loose. Common.

Shale----- As above.

Dominant Sand----- 1/2 - 1/4 mm. Rare.
1/4 - 1/16 mm. Abundant.

3393-3400 As above. Medium residue (7 gram sample).

Plus $\frac{1}{2}$ mm.

Dominant Chert---- Cloudy translucent to opalescent. Chalcedony bands.
Quartzose, brown, drusy clusters.

Oolite---- Oolitoid bodies in chert, large, concentric. Common.
Smooth oolites. Rare.

Shale----- Clay, white to pale green. Rare.

Minus $\frac{1}{2}$ mm

Dominant Chert---- As above.

Oolite---- " "

Shale----- " " Common.

Sand----- 1/2 - 1/4 mm. Rare.

3400-3405 Dolomite, white, to light brown, finely crystalline.
Medium residue (10 gram sample).

Plus $\frac{1}{2}$ mm.

Dominant Chert---- Cloudy translucent to opalescent.
 Quartzose, clear massive, to granular and faint brown, somewhat dolocastic.

Oolite--- As above. Common.

Shale---- Pale green, pyritic.

Minus $\frac{1}{2}$ mm.As above, except rare sand $\frac{1}{2}$ - $\frac{1}{16}$ mm.

3405-3415 Dolomite, white, coarse crystalline. Medium residue (10 gram sample).

Plus $\frac{1}{2}$ mm.

Dominant Chert---- Cloudy translucent to opalescent. Rare milky & translucent.
 Some includes sand grains.
 Quartzose, brown.

Oolite--- Loose, white to brown, rough to smooth.
 Oolitoid bodies in opalescent chert.

Shale---- Clay, pale green to white, common.

Sand----- Plus $\frac{1}{2}$ mm. Rare.

Minus $\frac{1}{2}$ mm.

Dominant Chert---- As above.
 Also, quartzose, clear, massive, drusy, dolocastic.
 " dead white opaque. Rare.

Oolite--- As above.

Shale---- Pale green, pyritic, micaceous. Common.
 Clay, pale green to nearly white. "

Sand----- $\frac{1}{2}$ - $\frac{1}{16}$ mm. Rare.

3415-3425 As above. Bulky residue (9 gram sample).

Minus $\frac{1}{2}$ mm.

Dominant Chert---- Brown, quartzose, granular, slightly drusy, to dense opalescent.
 Translucent to cloudy translucent, rare milky.

Oolite--- Smooth, white to brown.
 Rough, brown, from quartzose chert.
 Oolitoid bodies, concentric in both brown and white chert.

Shale---- Green.
 Clay, pure white, pyritic.

3425-3435 As above. Bulky residue (10 gram sample).

Minus $\frac{1}{2}$ mm.

Chert---- Cloudy translucent to opalescent. Rare translucent and dead white opaque.

Quartzose, massive, probably quartzite.
Dolocasts, dead white, thick-walled.

Shale---- Clay, white to pale green.

Dominant

Sand----- $\frac{1}{2}$ - $\frac{1}{8}$ mm. Rare.
 $\frac{1}{8}$ - $\frac{1}{16}$ mm. Abundant.

3435-3440 As above. Bulky residue (10 gram sample).

Minus $\frac{1}{2}$ mm.

Dominant

Chert---- Opalescent to translucent, rare thinly distributed cloudy translucent. Rare chalcedony bands.
Dead white opaque, as fragments and as thick walled dolocasts and as spots similar to botryoidal chalcedony.
Quartzose, clear, probably quartzite.

Oolite--- Concentric in translucent chert. Rare.
White, smooth, not caving. Very rare.

Quartz--- Fragments of larger crystals.

Shale---- Clay pale green to white.

Sand----- $\frac{1}{2}$ - $\frac{1}{8}$ mm. Rare.
 $\frac{1}{8}$ - $\frac{1}{16}$ mm. Common.

3440-3445 Dolomite, brown, coarsely crystalline. Bulky residue (10 gram sample).

Minus $\frac{1}{2}$ mm.

Dominant

Chert---- Cloudy translucent, varies from thinly distributed to highly cloudy. May contain sponge spicules. Some pieces granular & milky as though semi-weathered.
Quartzose, clear to faint brown, massive to drusy clusters.

Shale---- Pale green.

Sand----- $\frac{1}{4}$ - $\frac{1}{16}$ mm. Rare.

3445-3452 As above. Medium residue (10 gram sample).

Minus $\frac{1}{2}$ mm.

Dominant

Chert---- As above, including loose spicules.

Shale---- Light green to dark green. (Dark green may be due to excessive heating of residue during drying.)

Sand----- $\frac{1}{4}$ - $\frac{1}{16}$ mm. Rare.

3452-3458 As above. Medium residue (10 gram sample).

Minus $\frac{1}{2}$ mm.

Dominant Chert---- Cloudy translucent to milky, granular, semi-weathered, in part dolocastic.
Rare dead white opaque.
Rare opalescent.

Shale---- Pale green to dark green.

Sand----- 1/4 - 1/16 mm. Rare.

3458-3465 Dolomite, brown, coarsely crystalline. Medium residue (2 gram sample).

Minus $\frac{1}{2}$ mm.

Dominant Chert---- Cloudy translucent to opalescent. Rare milky and dead white opaque. Loose tubular spicules, Fossils.
Quartzose, clear to brown, slightly dolocastic.

Shale---- Pale green, pyritic.

Sand----- 1/8 - 1/16 mm. Rare.

3465-3470 Dolomite, white, coarse crystalline. Medium residue (8 gram sample).

Minus $\frac{1}{2}$ mm.

Dominant Chert---- Opalescent to highly cloudy translucent, rare dead white opaque, very soft.

Oolite--- Loose, white, relatively smooth. Rare.

Quartz--- Plates, thin, flat striated,

Shale---- Pale green. Rare.

Sand----- 1/4 - 1/16 mm. Rare.

3470-3480 Dolomite, as above. Medium residue (5 gram sample).

Plus $\frac{1}{2}$ mm. Cavings of Penn. shale and some Viola chert.

Minus $\frac{1}{2}$ mm.

Dominant Chert---- Cloudy translucent to milky. Rare dead white opaque.
Quartzose, clear to brown, drusy clusters.

Oolite--- Loose, brown, to white, nearly smooth.
Concentric oolites in white chert, mostly with brown centers.

Quartz--- Plates.

Shale---- Clay, pale green.
Cavings of Penn.

Sand----- 1/2 - 1/8 mm. Rare.
1/8 - 1/16 mm. Common.

3480-3490 Dolomite, white, coarse crystalline. Medium residue (10 gram sample).

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Minus $\frac{1}{2}$ mm.

Dominant Chert---- Milky to cloudy translucent. Rare dead white opaque.
Quartzose, clear to brown, drusy clusters.

Oolite--- Smooth white, rough brown. Rare.

Shale---- Black. (Sample was strongly heated during drying.)

Sand----- $\frac{1}{4}$ - $\frac{1}{8}$ mm. Common.
 $\frac{1}{8}$ - $\frac{1}{16}$ mm, Rare

3490-3496 As above. Small residue (10 gram sample).

Minus $\frac{1}{2}$ mm.

Dominant Shert---- Milky to dolocastic, latter white to gray very fine textured,
thin walled. Some of milky chert is granular.
Dead white opaque, very soft. Rare.
Quartzose, clear to brown, drusy clusters. Common.

Oolite--- Smooth, loose, white, Rare.

Shale---- Gray, silky, silty.
Dark green to black. (Strongly heated).

Sand----- $\frac{1}{2}$ - $\frac{1}{4}$ mm. Common.
 $\frac{1}{8}$ - $\frac{1}{16}$ mm. "

3496-3503 As above. Medium residue (10 gram sample).

Minus $\frac{1}{2}$ mm.

Dominant Chert---- Quartzose to milky, some material resembling cloudy translucent.
Clear to faint brown. Rare dead white opaque. Some milky with
needle inclusions.
Quartzose, clear to brown, drusy clusters.

Oolite--- Oolitoid bodies. Sand grains.
Loose oolites, white, smooth.

Quartz--- Fragments of larger crystals.

Shale---- Green, pale, pyritic sandy
Gray, silky.

Sand----- $\frac{1}{2}$ - $\frac{1}{8}$ mm. Rare.

"Douglas Oil Col, Stopel #1, center # $\frac{1}{2}$, Sec. 25; T.14S; R.11W, Russell, County, Kansas, had top of the Pennsylvanian basal conglomerate at 3195'. The top of the underlying Simpson formation, consisting largely of green shale, was found at 3293'. The 'Siliceous lime' was encountered at 3360, and drilled 3503'.