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APACHE CANADA LTD

GEOLOGICAL REPORT

APACHE PARAMOUNT WEST NOGHA K-14

U.W.I. # 300K146640126000

Prepared for: **Ross Pitman**

A.F.E. # **NT-04-0211**

Prepared by: **Tom Hebert, B.Sc.**

WELL DATA SUMMARY

Well Name: APACHE PARAMOUNT WEST NOGHA K-14

U.W.I.#: 300K146640126000

Licence #: WID # 2006

Well Location: Unit: K Section 14 Grid: 66deg 40', 126deg 00'

Licensee: APACHE CANADA LTD Field Name: N/A

Lahee Class: Exploratory AFE#: NT-04-0211

Elevation: Ground: 308.00 m
Kelly Bushing: 313.20 m

Surface Co-ordinates: Lat: 66deg 33' 39.092"N Long: 126deg 03' 02.842"West

Bottom Co-ordinates: 1.23m S, 5.14m E (from wellhead center)

Contractor: Akita Sahtu Rig # 51

Spud Date: 04-03-01-2115

Hole Size: Surface: 311.00 mm
Main: 216.00 mm

Condutor: Set @ 65.0 m 339.70 mm

Surface Casing: Set at 548.00 m K.B. 244.5mm (59.53kg/m, L-8
Drilled Out: 04-03-11-0905

Production Casing: 177.8 mm 43.16 Kg/m

Total Depth: 1404.00 m 04-03-18-1630

Cores: None

Drill Stem Tests: Determined after logging

Open Hole Logs: Schlumberger Norman Well, NWT
Run#1(AIT-TLD-CNL-LI) S.C. to TD
(GR-neutron to surface) 1:240; 1:600
Run #2(DSI-EMS-GR) S.C. to TD
Run #3(VSP) 1:240; 1:600

Well Status: Cased Rig release Date: N/A

Ditch Samples: 5 m samples from 0-275; 548-TD (2.5 m sample from 1290-1380 m) for
APACHE CANADA LTD; PARAMOUNT RESOURCES & NEB.

APACHE PARAMOUNT WEST NOGHA K-14

GEOLOGICAL MARKERS

K.B. ELEVATION: 313.20 m

<u>Formation</u>	<u>Sample Depth (m)</u>	<u>Log Depth (m)</u>	<u>Log Subsea (m)</u>
Franklin Mtn - Cherty	-	-	-
Franklin Mtn - Rhythmic	250.00	-	-
Franklin Mtn - Cyclic	-	-	-
Saline River - Shale	775.00	770.50	-457.30
Saline River - Up salt	834.20	830.00	-516.80
Saline River - Lower Shale	932.00	931.00	-617.80
Saline River- Lower Salt	947.50	945.00	-631.80
Mt. Cap - Upper Shale	1135.00	1147.50	-834.30
Mt. Cap - Chert	1187.50	-	-
Mt. Cap - Lower Zone	1289.50	1291.00	-977.80
Mt. Cap - Clastic Zone	1323.00	1323.30	-1010.10
Mt. Cap - Basal	1339.50	1340.00	-1026.80
Mt. Clarke - A Zone	1362.50	1360.80	-1047.60
Mt. Clarke - B Zone	1367.20	1369.20	-1056.00
Mt. Clarke - C Zone	1372.00	1374.50	-1061.30
Proterozoic	1379.20	1379.10	-1065.90
Total Depth	1404.00	1404.00	-1090.80

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

0 - 65

Dolomite (100%): light gray, brown gray, very finely crystalline, mudstone, weak argillaceous, trace silty, tight to spotty poor vuggy porosity, no shows;

Bulk sample - not representative of interval.

65 - 70

Dolomite (100%): light gray, light brown, very finely crystalline, minor lower finely crystalline, mudstone, occasional clear medium to coarse dolomite rhombs, trace brown argillaceous chert, tight to poor vuggy porosity, no shows.

70 - 75

Dolomite (100%): light gray, light brown gray, microcrystalline to very finely crystalline, mudstone, predominantly as above, trace green dolomitic shale, weak argillaceous, tight to poor vuggy porosity to 5%, no shows.

75 - 80

Dolomite (100%): light gray, brown gray, microcrystalline to very finely crystalline, minor lower finely crystalline, mudstone, occasional fine dolomitic rhombs, weak argillaceous, spotty vugs, poor to spotty fair vuggy porosity to 8%, no shows.

80 - 85

Dolomite (100%): light gray, light brown gray, microcrystalline to very finely crystalline, mudstone, predominantly as above, trace green dolomite shale, poor to spotty fair vuggy porosity to 8%, no shows

85 - 90

Dolomite (100%): light brown, light gray, microcrystalline to very finely crystalline, mudstone, mudstone, weak to occasional slightly argillaceous, occasional dolomitic rhombs, trace gray to green gray dolomitic shale, poor to spotty fair vuggy porosity to 8%, no shows.

90 - 95

Dolomite (100%): light brown, cream, light gray, microcrystalline to very finely crystalline, minor lower finely crystalline, mudstone, trace argillaceous, rare shale, occasional dolomite rhombs, poor to spotty fair vuggy porosity to 8%, no shows.

95 - 100

Dolomite (100%): light gray, tan gray, microcrystalline to part lower very finely crystalline, mudstone, spotty clear dolomite rhombs, trace green dolomitic shale, poor to spotty fair vuggy porosity to 8%, no shows.

SAMPLE DESCRIPTIONS

Depth (m)

100 - 115

Dolomite (100%): light gray, tan gray, microcrystalline to part lower very finely crystalline, mudstone, spotty clear dolomite rhombs, poor to spotty fair vuggy porosity to 8%, no shows.

105 - 110

Dolomite (100%): light gray, tan gray, microcrystalline to part lower very finely crystalline, mudstone, minor white chert, weak argillaceous, spotty clear dolomite rhombs, poor to spotty fair vuggy porosity to 8%, no shows.

110 - 115

Dolomite (100%): light gray, tan gray, cream, microcrystalline to very finely crystalline, occasional lower finely crystalline, trace silty, mudstone, trace chert, minor sucrosic, clear dolomite rhombs, minor medium to dark green gray dolomitic shale, poor to spotty fair vuggy porosity to 10%, no shows.

115 - 120

Dolomite (100%): light gray, white, tan gray, predominantly very finely crystalline, mudstone, trace argillaceous, trace shale, trace to minor chert, trace to spotty clear dolomite rhombs, trace to poor vuggy porosity, no shows.

120 - 125

Dolomite (100%): light gray, white, minor medium gray, predominantly very finely crystalline, occasional microcrystalline, mudstone, trace argillaceous, trace shale, trace to minor chert, trace to spotty clear dolomite rhombs, trace to poor vuggy porosity, no shows.

125 - 130

Dolomite (100%): white, light gray, very finely crystalline, part microcrystalline, mudstone, trace chert, rare spotty pyritic, trace poor vuggy porosity, no shows.

130 - 135

Dolomite (100%): white, light gray, very finely crystalline, part microcrystalline, mudstone, trace shale partings, trace pyritic, trace poor vuggy porosity, no shows.

135 - 140

Dolomite (100%): white, light gray, microcrystalline to very finely crystalline, mudstone, trace clear dolomite rhombs, tight to rare poor vuggy porosity, no shows.

140 - 145

Dolomite (100%): white, light gray, microcrystalline to very finely crystalline, mudstone, trace pyritic, trace clear dolomite rhombs, tight to rare poor vuggy porosity, no shows.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

145 - 150

Dolomite (100%): light gray, white, minor medium gray, microcrystalline to part very finely crystalline, mudstone, spotty disseminated pyritic, rare clear dolomite rhombs, tight to rare poor vuggy porosity, no shows.

150 - 155

Dolomite (100%): light gray, white, trace medium gray, microcrystalline to part very finely crystalline, mudstone, spotty disseminated pyritic, rare clear dolomite rhombs, tight to rare poor vuggy porosity, no shows.

155 - 160

Dolomite (100%): light gray, white, trace medium gray, microcrystalline to very finely crystalline, rare lower finely crystalline, mudstone, spotty pyritic, rare argillaceous to shaly, tight to trace poor vuggy porosity, no shows.

160 - 165

Dolomite (100%): light gray, white, trace medium gray, microcrystalline to very finely crystalline, rare lower finely crystalline, mudstone, spotty pyritic, rare argillaceous to shaly, tight to trace poor vuggy porosity, no shows.

165 - 170

Dolomite (100%): light gray, minor tan gray, occasional white, microcrystalline to very finely crystalline, minor lower fine clean, mudstone, trace pyritic, rare green gray, rare shaly, spotty clear dolomite rhombs, rare rounded fine quartz grains, tight to spotty fair vuggy porosity to 6%, no shows.

170 - 175

Dolomite (90%): white, tan gray, light green gray, microcrystalline, part finely crystalline, mudstone, occasional slightly argillaceous, trace sandy, trace pyritic, trace green shale, occasional clear dolomite rhombs, tight to spotty fair vuggy porosity, no shows;

Chert (10%): white, light gray, massive, occasional vuggy with euhedral quartz, assumed poor to fair porosity to 8%, no shows.

175 - 180

Chert (80%): white, massive, trace oolites, minor dolomitic, spotty vugs with euhedral silica, assumed poor to spotty fair vuggy porosity to 8%, no shows;

Dolomite (20%): predominantly as above.

180 - 185

Dolomite (90%): white, occasional light to medium gray, massive, part finely crystalline, occasional cryptocrystalline, trace pyritic, minor dolomite rhombs, tight to spotty poor vuggy porosity, no shows;

Chert (10%): as above.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

185 - 190

Dolomite (100%): white, minor light to medium gray, massive, cryptocrystalline, slightly finely crystalline, mudstone, trace pyritic, minor chert, common dolomite rhomb, tight to spotty fair vuggy porosity to 6%, no shows.

190 - 195

Dolomite (80%): white, minor light to medium gray, massive, cryptocrystalline, slightly lower finely crystalline, mudstone, trace green shaly, trace rounded quartz, trace pyritic, tight to spotty poor vuggy porosity, no shows;

Chert (20%): white, light gray, spotty vuggy lined with euhedral quartz, spotty vuggy porosity to 6% questionable, no shows.

195 - 200

Chert (60%): white, minor dolomitic, vugs lined with clear euhedral quartz, minor oolites, spotty fair porosity to 8%, no shows;

Dolomite (40%): white, minor light to medium gray, cryptocrystalline, slightly lower finely crystalline, rare light brown, mudstone, part chert, silica, trace green shaly, rare pyritic, tight to spotty poor vuggy porosity, no shows.

200 - 205

Chert (50%): white, massive, euhedral silica lined vugs, slightly dolomitic, rare oolites, spotty poor to fair vuggy porosity to 8%, no shows;

Dolomite (50%): white, minor light gray, rare medium gray, massive, lower finely crystalline, part silica, part chert altered, spotty poor to fair vuggy porosity, no shows.

205 - 210

Dolomite (95%): white, occasional cream, minor light to medium gray, cryptocrystalline, part very fine to finely crystalline, mudstone, trace pyritic, occasional euhedral silica in vugs, clear dolomite rhombs, minor silica altered, poor to spotty poor vuggy porosity, no shows;

Chert (5%): predominantly as above.

210 - 215

Chert (55%): white, minor light gray, slightly dolomitic, euhedral silica, trace oolites, poor to slightly fair vuggy porosity to 8%, no shows;

Dolomite (45%): white, slightly light gray, cryptocrystalline, part lower finely crystalline, mudstone, trace oolites, common silica altered, part chert, euhedral silica in vugs, common loose clear quartz prisms, poor to fair vuggy porosity to 8%, no shows.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

215 - 220

Dolomite (70%): light gray, slightly tan gray, microcrystalline, finely crystalline, part chert, euhedral silica, poor to fair vuggy porosity to 8%, no shows;

Chert (30%): white, slightly dolomitic, trace oolites, euhedral silica, poor to fair vuggy porosity to 8%, no shows.

220 - 225

Dolomite (60%): light gray, cream, microcrystalline, finely crystalline, part silicified to chert, common clear quartz, poor to spotty poor vuggy porosity to 8%, no shows;

Chert (40%): predominantly as above.

225 - 230

Dolomite (85%): light gray, cream, cryptocrystalline, part finely crystalline, occasional part silicified, common clear quartz, poor to fair spotty vuggy porosity to 8%, no shows;

Chert (15%): predominantly as above.

230 - 235

Dolomite (100%): light gray, cream, cryptocrystalline, part finely crystalline, patchy silicified, common clear loose quartz, spotty euhedral quartz lining vugs, poor to fair vuggy porosity to 8%, no shows.

235 - 240

Dolomite (100%): light gray, minor medium gray, cream, cryptocrystalline, part finely crystalline, minor very finely crystalline, occasional silicified, part common loose clear quartz, spotty euhedral quartz and dolomite lined vugs, poor to spotty fair vuggy porosity to 8%, no shows.

240 - 245

Dolomite (100%): light gray, minor medium gray, cream, cryptocrystalline, part finely crystalline, minor very finely crystalline, occasional silicified, part common loose clear quartz, occasional chert, spotty euhedral quartz and dolomite lined vugs, poor to spotty fair vuggy porosity to 8%, no shows.

---- FRANKLIN MOUNTAIN - RHYTHMIC 250.0 m ----

245 - 250

Dolomite (100%): light gray, cream, minor medium gray, cryptocrystalline, part finely crystalline, minor silicified, occasional chert, rare green dolomitic shale, occasional loose clear quartz, poor to spotty fair vuggy porosity to 6%, no shows, poor quality sample.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

250 - 255

No sample.

255 - 260

Dolomite (100%): white, minor light gray, minor light brown, microcrystalline to very finely crystalline, occasional finely crystalline, occasional chert altered, minor clear quartz, tight to poor spotty vuggy porosity to 5%, no shows.

260 - 265

Dolomite (100%): white, part light gray, occasional medium gray, minor light brown, microcrystalline to very finely crystalline, part finely crystalline, mudstone, spotty disseminated pyritic, tight to spotty poor vuggy porosity, no shows.

265 - 270

Dolomite (100%): white, occasional light gray, trace medium gray, predominantly as above, tight to spotty poor vuggy porosity, no shows.

270 - 275

Dolomite (100%): white, part light gray, minor medium gray, very finely crystalline, part microcrystalline, occasional finely crystalline, trace argillaceous, trace green gray shale, trace silty, spotty silica altered, minor clear dolomite rhombs, tight to spotty poor vuggy porosity, no shows.

275 - 280

No returns.

548 - 550

Dolomite (100%): light gray, light brown, microcrystalline to very finely crystalline, mudstone, weak silty, occasional silicified, tight, no shows.

550 - 555

Dolomite (100%): light brown, part white, minor light gray, microcrystalline to very finely crystalline, mudstone, trace dark shale partings, trace to minor chert, tight, no shows.

555 - 560

Dolomite (100%): white, light brown, microcrystalline to very finely crystalline, mudstone, trace dark shale partings, tight, no shows.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

560 - 565

Dolomite (100%): light gray, light brown, white, microcrystalline, part very finely crystalline, mudstone, occasional weak argillaceous, trace shaly, tight, no shows;

Shale (trace): medium to dark green, green gray, dolomitic.

565 - 570

Dolomite (95%): white, light gray, occasional light brown, microcrystalline to part very finely crystalline, mudstone, occasional silty to argillaceous, minor shaly, trace to 1% oolites chert, tight, no shows;

Shale (1 to 5%): green gray, green, dolomitic, occasional silty.

570 - 575

Dolomite (95%): white, light gray, light brown, minor light green gray, microcrystalline to part very finely crystalline, mudstone, occasional oolites chert, trace silty, trace marly, tight, no shows;

Shale (1 to 5%): light to medium gray, green gray, brown gray, spotty pyritic, dolomitic.

575 - 580

Dolomite (100%): white, light to occasional medium brown, brown gray, light gray, microcrystalline to very finely crystalline, mudstone, trace green shale, minor argillaceous, trace silty, spotty pyritic, tight, no shows.

580 - 585

Dolomite (100%): white, light to occasional medium brown, minor brown gray, microcrystalline to part very finely crystalline mudstone, rare light green gray, rare part silty, trace spotty pyritic, trace green gray dolomitic shale, trace marlstone.

585 - 590

Dolomite (100%): white, light gray, light brown, occasional medium brown, microcrystalline to very finely crystalline, mudstone, minor argillaceous, minor shale, trace shale partings, trace spotty pyritic, trace to minor oolites chert, tight, no shows.

590 - 595

Dolomite (100%): white, part light gray, minor light brown, microcrystalline, part very finely crystalline, mudstone, spotty pyritic, trace shaly, trace silty, tight, no shows.

595 - 600

Dolomite (100%): white, part light gray, light medium to occasional dark brown, microcrystalline, part very finely crystalline, mudstone, spotty pyritic, trace oolites chert, trace shale, trace silty, tight to rare poor vuggy porosity, no shows.

SAMPLE DESCRIPTIONS

Depth (m)

600 - 605

Dolomite (100%): white, minor light brown, microcrystalline to part very finely crystalline, occasional finely crystalline, mudstone, spotty disseminated to massive pyritic, minor light green clay and shaly, trace green shale, tight, no shows.

605 - 610

Dolomite (100%): white, light to medium brown, microcrystalline to very finely crystalline, part finely crystalline, mudstone, spotty disseminated to massive pyritic, trace light green clay and shaly, trace green shale, tight, no shows.

610 - 615

Dolomite (100%): white, light to medium brown, minor light green gray, microcrystalline to very finely crystalline, occasional lower finely crystalline, mudstone, minor green gray dolomitic shale, occasional weak argillaceous, trace spotty disseminated pyrite, tight, no shows.

615 - 620

Dolomite (100%): white, part medium brown, trace light green gray, microcrystalline to very finely crystalline, minor lower finely crystalline, mudstone, trace green gray shale, occasional weak argillaceous, tight to spotty poor vuggy porosity, no shows.

620 - 625

Dolomite (100%): white, light gray, light to medium brown, microcrystalline to part very finely crystalline, mudstone, trace pyritic, occasional weak argillaceous, trace shale partings, tight, no shows.

625 - 630

Dolomite (100%): light to part medium gray, light to medium brown, white, microcrystalline to very finely crystalline, mudstone, patchy brown shaly, trace disseminated pyritic, occasional weak argillaceous, tight, no shows.

630 - 635

Dolomite (100%): light to part medium gray, light to medium brown, white, microcrystalline to very finely crystalline, mudstone, trace light green gray, trace to patch dark gray to brown gray shale partings, trace pyritic, rare oolites chert, weak to slightly argillaceous, trace brown and green gray shaly, tight, no shows.

635 - 640

Dolomite (100%): tan gray, light gray, light to part medium brown, white, microcrystalline to very finely crystalline, mudstone, spotty dark gray to dark brown shale partings, trace pyritic, occasional weak argillaceous, tight to spotty poor vuggy porosity, no shows.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

640 - 645

Dolomite (80%): light to medium brown, brown gray, light gray, white, microcrystalline to very finely crystalline, minor brown shale partings, weak to occasional argillaceous, trace silty, tight to spotty poor vuggy porosity, no shows;

Shale (20%): light to medium green, green gray, subblocky, trace pyritic, minor to part very dolomitic, dolomitic marl.

645 - 650

Dolomite (100%): light to medium brown, brown gray, light gray, microcrystalline to very finely crystalline, mudstone, occasional brown shale partings, trace green gray shale, tight, no shows.

650 - 655

Dolomite (100%): light to medium gray, occasional dark gray, light to minor medium brown, white, microcrystalline to very finely crystalline, mudstone, shaly partings, trace to occasional argillaceous, occasional slightly silty, trace pyritic, trace green gray to dark gray shale lamination, tight, no shows.

655 - 660

Dolomite (100%): light to dark brown, light to medium gray, part white, microcrystalline, part very finely crystalline, occasional cryptocrystalline, mudstone, trace massive pyritic, trace silica, trace to occasional argillaceous, trace silty, minor shale partings, tight, no shows.

660 - 665

Dolomite (95%): light to medium brown, part dark brown, light to medium gray, white, microcrystalline, slightly very finely crystalline, slightly cryptocrystalline, mudstone, occasional shale partings, trace to occasional slightly argillaceous, rare vuggy porosity, no shows;

Dolomite (5%): medium to dark gray, part to very argillaceous, part shaly, slightly grading to dolomitic shale, marly?.

665 - 670

Dolomite (100%): light to medium brown, light to part medium gray, white, minor dark brown, microcrystalline, slightly very finely crystalline, slightly cryptocrystalline, mudstone, trace silty, trace to occasional argillaceous, minor shale partings, tight, no shows;

Shale (trace to 1%): dark brown, brown gray, subblocky, dolomitic,

670 - 675

Dolomite (100%): light to medium brown, brown gray, occasional dark brown, light to part medium gray, white, microcrystalline to slightly very finely crystalline, slightly cryptocrystalline, occasional part very argillaceous, minor shale partings, tight, no shows;

Shale (trace to 1%): medium to dark gray, brown gray, dark brown, dolomitic, trace silty, grading to shaly dolomite.

SAMPLE DESCRIPTIONS

Depth (m)

675 - 680

Dolomite (70%): light to medium brown, occasional dark brown, microcrystalline, part very finely crystalline, minor finely crystalline, mudstone, occasional slightly argillaceous, tight, no shows;

Shale (30%): medium green gray, green, subblocky, part to very dolomitic, common grading to argillaceous dolomitic.

680 - 685

Dolomite (100%): light gray, microcrystalline to part very finely crystalline, minor to occasional slightly argillaceous, minor light brown, trace shaly lamination, tight, no shows.

685 - 690

Dolomite (100%): light to part medium gray, light brown, white, microcrystalline, part very finely crystalline, minor marly, weak to occasional slightly argillaceous, minor shaly partings and lamination, tight, no shows.

690 - 695

Dolomite (100%): light gray, part medium gray, minor light brown, microcrystalline to slightly very finely crystalline, mudstone, minor shaly lamination, minor to occasional part argillaceous, minor marly?, tight, no shows;

Shale (trace to 1%): medium to dark gray, slightly brown gray, subblocky, dolomitic.

695 - 700

Dolomite (95%): light gray, white, occasional light brown, microcrystalline, slightly very finely crystalline, mudstone, minor shaly lamination, minor to occasional very argillaceous, tight, no shows;

Shale (5%): medium gray, occasional dark gray, subblocky, part to very dolomitic, part grading to very argillaceous dolomite.

700 - 705

Dolomite (100%): white, light gray, part medium gray, part light to medium brown, minor dark brown, microcrystalline, occasional very finely crystalline, mudstone, minor to part argillaceous, minor marly, occasional very argillaceous to slightly shaly, minor shaly lamination, minor brown shale, tight, no shows.

705 - 710

Dolomite (100%): white, light gray, part medium gray, part light to medium brown, minor dark brown, microcrystalline, occasional very finely crystalline, mudstone, minor to part argillaceous, minor marly, occasional very argillaceous to slightly shaly, minor shaly lamination, minor brown shale, tight, no shows.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

710 - 715

Dolomite (100%): light gray, light to part medium brown, minor medium grained, occasional white, microcrystalline, occasional very finely crystalline, mudstone, minor to part argillaceous, trace silty, rare red and green shale, occasional shale partings, trace to minor dark gray and brown gray dolomitic shale, tight, no shows.

715 - 720

Dolomite (100%): light to part medium brown, part light gray, minor medium gray, microcrystalline to lower very finely crystalline, mudstone, trace sucrosic matrix, minor to part argillaceous, trace to minor shaly partings, tight to spotty poor intercrystalline and vuggy porosity, no shows.

720 - 725

Dolomite (100%): light to medium gray, part light to occasional medium brown, minor white, microcrystalline to part very finely crystalline, mudstone, slightly to part argillaceous, minor shaly lamination, tight, no shows.

725 - 730

Dolomite (95%): light gray to part medium gray, part light to occasional medium brown, microcrystalline, occasional very finely crystalline, mudstone, part to occasional very argillaceous, shale partings, tight, no shows;

Shale (5%): medium to dark gray, subblocky, dolomitic.

730 - 735

Dolomite (100%): light to medium gray, minor dark gray, minor light brown, microcrystalline, occasional very finely crystalline, mudstone, minor to part argillaceous, minor very argillaceous, minor shaly lamination and partings, tight, no shows.

735 - 740

Dolomite (95%): light to medium gray, minor dark gray, minor light brown, microcrystalline, occasional very finely crystalline, mudstone, minor to part argillaceous, minor very argillaceous, minor shaly lamination and partings, tight, no shows;

Shale (5%): medium to dark gray, subblocky, dolomitic, part grading to very shaly dolomite.

740 - 745

Dolomite (95%): light to medium gray, minor dark gray, minor light brown, microcrystalline, occasional very finely crystalline, mudstone, minor to part argillaceous, minor very argillaceous, minor shaly lamination and partings, tight, no shows;

Shale (5%): medium to dark gray, subblocky, dolomitic, part grading to very shaly dolomite.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

745 - 750

Dolomite (95%): light gray, part medium gray, tan gray, minor light brown, microcrystalline, minor very finely crystalline, mudstone, trace shaly lamination, minor to part argillaceous, tight, no shows;

Shale (5%): as above.

750 - 755

Dolomite (70%): light gray, part medium gray, tan gray, white, minor light brown, microcrystalline to part very finely crystalline, mudstone, part argillaceous, trace shaly lamination, tight, no shows;

Shale (30%): medium to dark gray, green gray, subblocky, part dolomitic.

755 - 760

Dolomite (80%): light gray, part medium gray, tan gray, white, minor light brown, microcrystalline to part very finely crystalline, mudstone, part to very argillaceous, trace shaly lamination, tight, no shows;

Shale (30%): medium to dark gray, green gray, subblocky, part dolomitic.

760 - 765

Dolomite (75%): light gray, part medium gray, tan gray, white, minor light brown, microcrystalline to part very finely crystalline, mudstone, part to very argillaceous, trace shaly lamination, tight, no shows;

Shale (25%): medium to dark gray, green gray, subblocky, part dolomitic.

765 - 770

Dolomite (80%): light gray, part medium gray, light to part medium brown, occasional green gray, white, microcrystalline, part very finely crystalline, mudstone, part to occasional very argillaceous, minor silty, minor shaly lamination, tight, no shows;

Shale (20%): green gray, green, subblocky, part dolomitic.

---- SALINE RIVER - SHALE 775.0 m ----

770 - 775

Shale (50%): medium to dark gray, green gray, occasional medium to dark gray, subblocky, occasional subfissile, dolomitic;

Dolomite (50%): light gray, part medium gray, tan gray, occasional white, microcrystalline, minor very finely crystalline, mudstone, part to very argillaceous, marly?, slightly shaly, trace silty, tight, no shows.

775 - 780

Shale (50%): medium to dark gray, medium to dark red, gray, subblocky to part subfissile, slightly silty, dolomitic;

SAMPLE DESCRIPTIONS

Depth (m)

Dolomite (45%): light to medium gray, tan gray, minor round, microcrystalline, minor very finely crystalline, mudstone, argillaceous, occasional shaly, minor silty to occasional part silty, trace anhydritic, tight, no shows;
Siltstone (5%): light gray, occasional red gray, blocky, quartz, occasional shaly, slightly argillaceous, dolomitic.

780 - 785

Shale (70%): medium to dark gray, green gray, medium to dark red, dolomitic, occasional silty;
Dolomite (30%): light to medium gray, round gray, white, microcrystalline, mudstone, minor very finely crystalline, mudstone, occasional part to rare very silty, minor grading to dolomitic siltstone, part argillaceous, tight, no shows.

785 - 790

Dolomite (65%): light to medium red, gray, white, microcrystalline, minor very finely crystalline, mudstone, occasional silty, argillaceous, occasional shaly, minor grading to dolomitic siltstone, tight, no shows;
Shale (35%): red, green, green gray, dark gray, subblocky, minor spotty micromicaceous, minor silty, dolomitic.

790 - 795

Dolomite (80%): light to medium gray, brown gray, red gray, green gray, microcrystalline, minor very finely crystalline, occasional cryptocrystalline, mudstone, part to very argillaceous, tight, no shows;
Shale (20%): predominantly as above.

795 - 800

Dolomite (60%): light to medium gray, green gray, red gray, white, microcrystalline, minor very finely crystalline, minor cryptocrystalline, mudstone, part argillaceous, minor silty, trace anhydritic, tight, no shows;
Shale (40%): red, green, green gray, subblocky, dolomitic, grading to shaly dolomitic, minor silty.

800 - 805

Dolomite (70%): light to medium gray, green gray, red gray, white, microcrystalline, minor very finely crystalline, minor cryptocrystalline, mudstone, part argillaceous, minor silty, trace anhydritic, tight, no shows;
Shale (30%): red, green, green gray, subblocky, dolomitic, grading to shaly dolomitic, minor silty.

805 - 810

Shale (50%): green, red, green gray, subblocky to subfissile, spotty micromicaceous, minor silty, dolomitic;
Dolomite (50%): light gray, light red, green gray, minor white, microcrystalline, minor very finely crystalline, mudstone, minor silty, minor silty, part very argillaceous, tight, no shows.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

810 - 815

Shale (60%): green, green gray, red, subblocky to subfissile, dolomitic, minor silty;

Dolomite (40%): predominantly as above.

815 - 820

Shale (70%): green, round, green gray, subblocky to subfissile, part dolomitic;

Dolomite (30%): red, green, light gray, white, microcrystalline, minor very finely crystalline, mudstone, part argillaceous, slightly shaly, minor silty, tight, no shows.

820 - 825

Shale (50%): green, green gray, red, as above;

Dolomite (50%): light gray, red gray, red, minor brown, white, microcrystalline, minor very finely crystalline, mudstone, part argillaceous, occasional shaly, minor silty, trace massive pyritic, tight, no shows.

825 - 830

Shale (50%): green, green gray, red, as above;

Dolomite (50%): light gray, red gray, red, minor brown, white, microcrystalline, minor very finely crystalline, mudstone, part argillaceous, occasional shaly, minor to part silty, trace massive pyritic, tight, no shows.

---- SALINE RIVER - UPPER SALT 834.2 m ----

830 - 835

Shale (75%): light to medium green gray, green, gray, subblocky, dolomitic, trace silty;

Dolomite (25%): predominantly as above;

Salt (trace): white, clear, washed away.

835 - 840

Dolomite (50%): white, light gray, red, green, microcrystalline, part argillaceous, tight, no shows;

Shale (50%): as above;

Salt: washed away.

840 - 845

Shale (60%): predominantly as above;

Dolomite (40%): as above;

Salt: washed away.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

845 - 850

Dolomite (60%): as above;

Shale (40%): as above;

Salt: red, cream, microcrystalline, white, predominantly washed away.

850 - 855

Dolomite (60%): as above;

Shale (35%): as above;

Salt (5%): clear, red.

855 - 860

Shale (70%): varicolored, dolomitic;

Dolomite (30%): light gray, green gray, red, microcrystalline, part argillaceous, trace anhydritic, tight, no shows:

Salt (trace): as above.

860 - 865

Salt (40%): clear, red;

Shale (40%): as above;

Dolomite (20%): as above.

865 - 870

Dolomite (50%): as above;

Shale (40%): as above;

Salt (10%): as above.

870 - 875

Salt (70%): clear, red, massive;

Shale (20%): as above;

Dolomite (10%): as above

875 - 880

Dolomite (55%): as above;

Shale (40%): as above;

Salt (5%): as above.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

880 - 885

Dolomite (75%): as above;

Shale (20%): as above;

Salt (5%): as above.

885 - 890

Shale (60%): as above;

Dolomite (40%): as above;

Salt (trace): as above.

890 - 895

Sample washed away.

895 - 900

Dolomite (60%): predominantly as above;

Shale (35%): as above;

Salt (5%): as above.

900 - 905

Shale (100%): green, cavings;

Sample washed away.

905 - 910

Shale (100%): green, cavings;

Sample washed away.

910 - 915

Salt (100%): white, clear, massive.

915 - 920

Salt (100%): as above.

920 - 925

Salt (100%): as above.

925 - 930

Salt (100%): as above.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

---- SALINE RIVER - LOWER SHALE 932.0 m ----

930 - 935

Salt (70%): as above;

Shale (30%): green.

935 - 940

Shale (100%): green, soft, slightly dolomitic.

940 - 945

Shale (100%): green, soft, slightly dolomitic.

---- SALINE RIVER - LOWER SALT 947.5 m ----

945 - 950

Salt (60%): as above;

Shale (30%): as above;

Dolomite (10%): light gray, microcrystalline, tight, no shows.

950 - 955

Salt (90%): as above;

Shale (10%): green, soft, dolomitic.

955 - 960

Salt (100%): as above, shale cavings.

960 - 965

Salt (100%): as above.

965 - 970

Salt (100%): as above.

970 - 975

Salt (80%): as above;

Shale (20%): green.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

975 - 980

Salt (100%): as above.

980 - 985

Salt (100%): as above.

985 - 990

Salt (100%): as above.

990 - 995

Salt (100%): as above.

995 - 1000

Dolomite (100%): light gray, minor light brown, microcrystalline, slightly very finely crystalline, part argillaceous, spotty vuggy porosity, no shows.

1000 - 1005

Anhydrite (80%): white, clear, occasional dolomitic, trace argillaceous;

Dolomite (20%): light brown, microcrystalline, mudstone, slightly anhydritic, occasional argillaceous to shaly.

1005 - 1010

Anhydrite (70%): as above;

Dolomite (30%): white, light brown, microcrystalline, slightly very finely crystalline, clean to occasional argillaceous, trace shaly, spotty poor vuggy porosity, no shows.

1010 - 1015

Salt (100%): clear, white, massive.

1015 - 1020

Salt (100%): as above.

1020 - 1025

Salt (100%): as above.

1025 - 1030

Salt (100%): as above.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

1030 - 1035

Salt (100%): as above.

1035 - 1040

Salt (100%): as above.

1040 - 1045

Salt (100%): as above.

1045 - 1050

Salt (100%): as above.

1050 - 1055

Salt (100%): as above.

1055 - 1060

Salt (100%): as above.

1060 - 1065

Salt (100%): as above, predominantly Calcarb.

1065 - 1070

Salt (100%): as above, and Calcarb.

1070 - 1075

Salt (100%): as above, and Calcarb.

1075 - 1080

Shale (100%): green, salt, predominantly Calcarb.

1080 - 1085

Dolomite (80%): white, microcrystalline, patchy anhydrite, slightly argillaceous, tight, no shows;

Salt (5%): as above;

Shale (15%): as above.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

1085 - 1090

Dolomite (65%): light gray, white, microcrystalline, slightly argillaceous, tight, no shows;
Salt (35%): as above, mainly Calcarb.

1090 - 1095

Dolomite (80%): white, minor light brown, light gray, microcrystalline, patchy anhydritic, slightly argillaceous, tight, no shows;

Anhydrite (20%): common Calcarb.

1095 - 1100

Anhydrite (80%): white, microcrystalline, slightly dolomitic;

Dolomite (20%): as above.

1100 - 1105

Dolomite (60%): light gray, white, microcrystalline, minor anhydritic, slightly argillaceous, tight, no shows;

Anhydrite (20%): as above;

Shale (20%): green, soft;

Salt washed away.

1105 - 1110

Salt (100%): as above.

1110 - 1115

Salt (100%): as above.

1115 - 1120

Dolomite (70%): white, light gray, minor light brown, microcrystalline, occasional part argillaceous, tight, no shows;

Shale (30%): medium to part dark gray, subblocky, part dolomitic;

Salt dissolved.

1120 - 1125

Salt (85%): as above;

Dolomite (15%): predominantly as above;

Shale (5%): as above.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

1125 - 1130

Salt (40%): as above;

Dolomite (40%): light gray, white, microcrystalline, minor light brown, mudstone, minor anhydrite, occasional part argillaceous, tight, no shows;

Shale (20%): green.

---- MOUNTAIN CAP - UPPER SHALE 1135.0 m ----

1130 - 1135

Salt (80%);

Dolomite (10%): light gray, occasional medium gray, microcrystalline, mudstone, part argillaceous, tight, no shows;

Shale (10%): as above.

1135 - 1140

Shale (65%): medium green, green gray, subfissile, slightly dolomitic;

Dolomite (35%): light gray, microcrystalline, mudstone, minor anhydritic, occasional argillaceous, tight, no shows.

1140 - 1145

Shale (50%): green gray, subblocky to subfissile, slightly dolomitic;

Dolomite (45%): predominantly as above;

Anhydrite (5%): white, microcrystalline, slightly dolomitic

1145 - 1150

Shale (60%): green gray, dark gray, part dolomitic, trace silty;

Dolomite (40%): light to part medium gray, microcrystalline, mudstone, part argillaceous, minor anhydritic, tight, no shows.

1150 - 1155

Dolomite (60%): light gray, tan gray, microcrystalline, mudstone, occasional silty, minor to part argillaceous, spotty anhydritic, tight, no shows;

Shale (40%): as above.

1155 - 1160

Shale (70%): green gray, medium to dark gray, subfissile, dolomitic;

Dolomite (30%): as above.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

1160 - 1165

Shale (70%): medium to dark green gray, green, subblocky, minor silty, dolomitic;

Dolomite (30%): light gray, tan gray, microcrystalline, mudstone, minor silty, trace anhydritic, occasional part argillaceous, tight, no shows.

1165 - 1170

Shale (60%): green gray, medium to dark gray, subblocky, part dolomitic, minor silty;

Dolomite (40%): light gray, tan gray, microcrystalline, minor silty, part argillaceous, tight, no shows.

1170 - 1175

Dolomite (55%): light gray, brown gray, microcrystalline, minor very finely crystalline, occasional part argillaceous, tight, no shows;

Shale (45%): predominantly as above.

1175 - 1180

Shale (60%): medium to dark gray, minor green gray, subblocky, dolomitic, trace silty;

Dolomite (40%): light to medium gray brown, microcrystalline, part to very argillaceous, trace silty, rare anhydritic, tight to poor intercrystalline porosity, no shows.

1180 - 1185

Dolomite (55%): tan gray, light to medium brown, occasional dark brown, part to very argillaceous, slightly grading to dolomitic shale, trace silty, tight, no shows;

Shale (45%): medium to dark gray, dark gray brown, subblocky, part to dolomitic.

---- MOUNTAIN CAP - CHERT 1187.5 m ----

1185 - 1190

Dolomite (70%): light to dark brown, gray brown, microcrystalline, minor very finely crystalline, slightly cryptocrystalline, mudstone, trace dark brown chert, argillaceous, tight, no shows;

Shale (30%): medium to dark gray, brown gray, minor green, subblocky, part to very dolomitic.

1190 - 1195

Shale (70%): medium to dark gray, green gray, subblocky to subfissile, slightly carbonaceous;

Dolomite (30%): light to dark brown, microcrystalline, part very finely crystalline, patchy silica, minor dark brown chert, minor argillaceous, tight, no shows.

SAMPLE DESCRIPTIONS

Depth (m)

1195 - 1200

Shale (60%): medium to dark green gray, as above;

Dolomite (30%): medium to dark brown, microcrystalline to part very finely crystalline, part chert, weak argillaceous, spotty calcareous, tight to spotty poor intercrystalline porosity, no shows;

Chert (10%): light to dark brown, tan gray, mottled, slightly dolomitic, tight to spotty poor porosity, no shows.

1200 - 1205

Shale (100%): dark gray, dark gray green, subblocky to part subfissile, slightly subwaxy, trace chert altered.

1205 - 1210

Shale (100%): dark gray, dark gray green, subblocky to part subfissile, slightly subwaxy.

1210 - 1215

Shale (100%): dark gray, dark gray green, subblocky to part subfissile, slightly subwaxy.

1215 - 1220

Shale (100%): dark green, dark green gray, dark gray to black, subblocky to subfissile, trace dark brown chert altered, trace silty.

1220 - 1225

Shale (70%): dark gray, dark green, subblocky to subfissile, occasional siltstone stringer, slightly dolomitic, trace chert altered;

Limestone (30%): light to medium gray, microcrystalline, argillaceous, tight, no shows.

1225 - 1230

Shale (100%): dark gray, dark gray, to occasional black, subblocky to subfissile, minor dolomitic, trace chert.

1230 - 1235

Shale (100%): medium green gray, medium gray, subfissile, occasional light gray argillaceous limestone stringer.

1235 - 1240

Shale (100%): medium gray, green gray, subfissile, trace limestone stringer.

1240 - 1245

Shale (100%): dark gray, green gray, subblocky, occasional subfissile, minor limestone stringer.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

1245 - 1250

Shale (100%): dark gray, dark green gray, medium to dark gray, subblocky to subfissile, trace silty, minor limestone stringer, slightly dolomitic.

1250 - 1255

Shale (100%): dark green gray, dark gray, subblocky to subfissile, minor limestone stringer, trace siltstone, slightly dolomitic.

1255 - 1260

Shale (100%): dark green gray, green gray, subfissile, minor limestone stringer, minor dolomitic.

1260 - 1265

Shale (100%): dark green gray, green gray, subfissile, minor limestone stringer, slightly dolomitic.

1265 - 1270

Shale (100%): dark green gray, medium to dark gray, subfissile, slightly dolomitic, trace limestone stringer.

1270 - 1275

Shale (100%): green gray, dark gray, subfissile, trace limestone stringer, trace silty, slightly dolomitic.

1275 - 1280

Shale (100%): dark green gray, occasional dark brown, dark gray, subfissile, slightly dolomitic, occasional silty, spotty micromicaceous.

1280 - 1285

Shale (100%): dark green gray, dark gray, minor brown gray, subfissile, minor silty, slightly dolomitic.

---- MOUNTAIN CAP - LOWER ZONE 1289.5 m ----

1285 - 1290

Shale (100%): brown gray, part green gray, subfissile, spotty micromicaceous, part dolomitic, occasional calcareous, trace silty, slightly argillaceous microcrystalline argillaceous stringer.

1290 - 1292.5

Limestone (60%): light gray, brown gray, microcrystalline, minor very finely crystalline, mudstone, common argillaceous, trace silty, part shaly, tight to poor intercrystalline porosity, no shows;

Shale (30%): dark brown, black, occasional green gray, subblocky, calcareous, dolomitic, trace silty.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

1292.5 - 1295

Shale (60%): black, brown black, occasional green gray, subblocky to occasional subfissile, part calcareous, slightly dolomitic, trace silty;

Limestone (40%): light to medium gray, brown gray, microcrystalline, minor very finely crystalline, mudstone, part argillaceous to shaly, trace silty, tight to poor intercrystalline porosity, no shows.

1295 - 1297.5

Limestone (70%): brown gray, medium to occasional dark brown, light gray, microcrystalline, minor very finely crystalline, part to very argillaceous, part very shaly, trace silty, tight, no shows;

Shale (30%): predominantly as above.

1297.5 - 1300

Shale (85%): black, brown, dark gray, minor green gray, calcareous, trace brown chert, trace silty;

Limestone (15%): gray, brown, microcrystalline, mudstone, part shaly, tight, no shows.

1300 - 1302.5

Shale (90%): brown gray, black brown, green gray, subblocky to subfissile, slightly dolomitic, part calcareous, trace silty;

Limestone (10%): light gray, brown gray, occasional dark brown, microcrystalline, mudstone, minor cryptocrystalline, part to very argillaceous, occasional shaly, tight, no shows.

1302.5 - 1305

Shale (100%): green gray, brown gray, part light green gray, subblocky to subfissile, spotty micromicaceous, rare fossil, brown argillaceous microcrystalline limestone stringer.

1305 - 1307.5

Limestone (80%): light gray, minor medium gray, minor brown gray, cryptocrystalline to microcrystalline, slightly argillaceous, tight, no shows;

Shale (20%): predominantly as above.

1307.5 - 1310

Shale (60%): green gray, brown gray, medium gray, subblocky to subfissile, spotty micromicaceous;

Limestone (40%): light gray, microcrystalline, part cryptocrystalline, mudstone, part argillaceous, occasional shaly, tight, no shows.

SAMPLE DESCRIPTIONS

Depth (m)

1310 - 1312.5

Shale (100%): green gray, dark green, dark gray, subfissile, slightly dolomitic, microcrystalline slightly argillaceous mudstone limestone.

1312.5 - 1315

Shale (95%): predominantly as above;

Limestone (5%): light gray, minor brown, microcrystalline, minor cryptocrystalline, slightly argillaceous, tight, no shows.

1315 - 1317.5

Shale (90%): medium to dark gray, green gray, dark brown, subblocky to subfissile, subwaxy;

Limestone (10%): light gray, cream, medium to dark brown, cryptocrystalline to microcrystalline, minor very finely crystalline, slightly argillaceous, minor shaly, tight, no shows.

1317.5 - 1320

Shale (100%): medium to dark green, green gray, minor brown, subblocky to subfissile, microcrystalline to very finely crystalline limestone stringer.

1320 - 1322.5

Shale (95%): green gray, medium to dark gray, minor brown, subblocky to subfissile, limestone stringer;

Limestone (5%): light gray, cream, minor brown, cryptocrystalline to microcrystalline, slightly argillaceous, tight, no shows;

Siltstone (trace): light gray, blocky, quartzose, trace spotty glauconitic, slightly argillaceous, dolomitic, tight.

---- MOUNTAIN CAP - CLASTIC ZONE 1323.0 m ----

1322.5 - 1325

Siltstone (50%): light to dark brown, gray, blocky, quartzose, very dolomitic, spotty bituminous, argillaceous, spotty micromicaceous, part grading to very silty dolomite, tight to poor porosity, weak slow cut;

Shale (45%): medium to dark gray green, medium gray, as above;

Limestone (5%): light gray, cream, microcrystalline, slightly argillaceous, tight, no shows.

1325 - 1327.5

Siltstone (80%): medium to dark brown, brown gray, light gray, blocky, quartzose, spotty micromicaceous, common argillaceous, occasional shaly, rare glauconitic, occasional grading to very silty dolomite, dolomitic cement, part argillaceous matrix, tight to poor porosity, weak slow cut (invert?);

Shale (20%): predominantly as above.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

1327.5 - 1330

Shale (95%): green gray, medium to dark gray, minor brown gray, subblocky to subfissile, occasional dolomite and limestone stringer, minor silty, slightly dolomitic;

Siltstone (5%): predominantly as above.

1330 - 1332.5

Shale (95%): green gray, minor brown gray, green, subblocky to subfissile, limestone stringer;

Siltstone (5%): medium to dark brown, occasional light gray to light brown, blocky, quartzose, slightly to very argillaceous, minor shaly, dolomitic, slightly bituminous?, grading to very silty dolomitic, tight.

1332.5 - 1335

Shale (95%): green gray, minor brown gray, green, subblocky to subfissile, limestone stringer;

Siltstone (5%): medium to dark brown, occasional light gray to light brown, blocky, quartzose, slightly to very argillaceous, minor shaly, dolomitic, slightly bituminous?, grading to very silty dolomitic, tight.

1335 - 1337.5

Shale (100%): medium to dark brown, brown gray, brown gray, medium green gray, subblocky to subfissile, occasional limestone stringer, occasional dark shaly silty stringer.

---- MOUNTAIN CAP - BASAL 1339.5 m ----

1337.5 - 1340

Shale (85%): green gray, dark brown gray, subblocky to subfissile, argillaceous siltstone stringer;

Siltstone (10%): light gray, light green gray, brown gray, dark brown, blocky, quartzose, part to very argillaceous, occasional shaly, trace glauconitic, dolomitic, tight;

Dolomite (5%): medium to dark brown, mottled, microcrystalline, slightly argillaceous, tight silica altered, tight, no shows.

1340 - 1342.5

Shale (65%): green gray, medium to dark gray, subblocky to subfissile, slightly dolomitic;

Dolomite (35%): light to medium brown, occasional dark brown, mottled, very fine to minor lower finely crystalline, part argillaceous, trace bituminous?, trace silica altered?, tight to trace poor intercrystalline porosity, weak slow cut (invert?);

Poor sample, bitumen pulverized?

SAMPLE DESCRIPTIONS

Depth (m)

1342.5 - 1345

Shale (55%): green gray, medium to dark gray, brown gray, subblocky to subfissile, trace silty;Dolomite (25%): light to medium brown, gray brown, very finely crystalline, minor lower finely crystalline, mudstone, minor silty, spotty bituminous?, part argillaceous, tight, no shows;Siltstone (20%): light gray, blocky, quartzose, spotty glauconite, slightly argillaceous, minor lower very fine grained, dolomitic, tight, no shows.

1345 - 1347.5

Dolomite (65%): medium to dark brown, minor cream to light gray, very finely crystalline, minor microcrystalline, occasional lower finely crystalline, mudstone, slightly to occasional part argillaceous, trace shaly, trace silty, tight, no shows;Siltstone (20%): white, light gray, minor light brown gray, blocky, quartzose, spotty glauconitic, trace sandy, dolomitic, slightly argillaceous, tight;Shale (15%): as above.

1347.5 - 1350

Dolomite (45%): medium to dark brown, part light brown, minor gray, very finely crystalline, occasional microcrystalline and lower finely crystalline, mudstone, minor to occasional part argillaceous, trace silty, tight, no shows;Siltstone (40%): white, light gray, minor brown gray, blocky, quartzose, spotty to common glauconitic, slightly argillaceous, minor sandy, dolomitic, slightly grading to very silty dolomitic, tight, no shows;Shale (15%): as above.

1350 - 1352.5

Shale (70%): medium to dark green gray, dark gray, rare red, subblocky to subfissile, spotty micromicaceous, occasional silty;Dolomite (20%): light to medium brown, occasional dark brown, minor white and light gray, very finely crystalline, occasional microcrystalline, mudstone, part argillaceous, trace silty, tight, no shows;Siltstone (10%): as above.

1352.5 - 1355

Dolomite (70%): light to medium brown, occasional dark brown, gray brown, very fine to part lower finely crystalline, minor microcrystalline, mudstone, slightly argillaceous, trace glauconitic, minor silty, tight to poor intercrystalline porosity, no shows;

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

Siltstone (20%): light to part medium gray, brown gray, blocky, quartzose, glauconitic, dolomitic, slightly grading to very silty dolomitic, part argillaceous, tight, no shows;

Shale (10%): predominantly as above.

1355 - 1357.5

Dolomite (55%): light to medium brown, minor dark brown, minor light gray, very fine to lower finely crystalline, minor microcrystalline, minor argillaceous, trace bituminous plug, tight to spotty poor intercrystalline porosity, no shows;

Shale (30%): predominantly as above;

Sandstone (10%): light gray, minor red, medium to occasional lower coarse grained, subrounded to rounded, trace feldspar?, unconsolidated, porosity?, no shows;

Siltstone (5%): predominantly as above.

1357.5 - 1360

Dolomite (80%): light to dark brown, black brown, minor light gray, very fine to lower finely crystalline, minor microcrystalline, spotty bituminous plug, occasional slightly argillaceous, trace glauconitic to silty, tight to spotty poor intercrystalline porosity, no shows;

Shale (20%): as above;

Siltstone (trace to 1%): as above.

---- MT CLARKE - A ZONE 1362.5 m ----

1360 - 1362.5

Siltstone (45%): light gray, blocky, quartzose, trace sandy, spotty glauconitic, dolomitic, slightly argillaceous, tight;

Dolomite (40%): light to dark brown, part light gray, microcrystalline to very finely crystalline, occasional lower finely crystalline, trace glauconitic, minor silty, mudstone, occasional weak argillaceous, tight, no shows;

Sandstone (10%): light gray, medium to lower coarse grained, unconsolidated, subrounded to rounded, porosity?, no shows;

Shale (5%): as above.

1362.5 - 1365

Siltstone (50%): white, light gray, blocky, quartzose, spotty glauconitic, occasional lower very fine grained, well consolidated, silica and dolomitic cement, tight, no shows;

Sandstone (20%): light to dark gray, very fine to occasional lower fine grained, part silty, clear quartz, well to occasional fine consolidated, common bituminous plugging, subangular to subrounded, well sorted, silica cement, tight to poor porosity, no shows;

SAMPLE DESCRIPTIONS

Depth (m)

Sandstone (15%): light gray, medium to lower coarse grained, occasional grained, frosted quartz, subrounded to rounded, unconsolidated, porosity?, no shows;

Shale (10%): green gray;

Dolomite (5%): predominantly as above.

---- MT CLARKE - B ZONE 1367.2 m ----

1365 - 1367.5

Siltstone (45%): white, light gray, occasional light brown, blocky, quartzose, slightly lower very fine grained, well consolidated, trace slightly glauconitic, silica and dolomitic cement, tight;

Dolomite (15%): medium to dark brown, occasional light brown to light gray, very fine to minor lower finely crystalline, occasional microcrystalline, predominantly as above;

Sandstone (20%): light gray, medium to lower coarse grained, frosted quartz, unconsolidated, subrounded to rounded, unconsolidated, porosity?, no shows;

Sandstone (10%): light to dark gray, very fine grained, occasional lower fine grained, slightly silty, clear quartz, spotty bituminous plugging, subangular to subrounded, well sorted, silica cement, tight to poor porosity, very weak cut;

Shale (10%): green gray.

1367.5 - 1370

Sandstone/Siltstone (80%): light gray, white, minor light gray, blocky, quartzose, silty to lower very fine grained, trace spotty glauconitic, well consolidated, minor argillaceous, minor shaly, trace spotty micromicaceous, silica and slightly dolomitic cement, trace spotty bituminous, tight to poor porosity, no shows;

Shale (10%): predominantly as above;

Sandstone (10%): light gray, medium to lower coarse grained, frosted quartz, unconsolidated, subrounded to rounded, moderately sorted, estimated porosity to 8% questionable, very weak cut.

---- MT CLARKE - C ZONE 1372.0 m ----

1370 - 1372.5

Sandstone/Siltstone (85%): light to medium gray, white, minor brown, blocky, quartzose, hard, silty to lower very fine grained, occasional upper very fine to lower fine grained, trace argillaceous, well consolidated, subrounded, well to part moderately sorted, trace bituminous, silica and slightly dolomitic cement, tight to poor porosity, no shows;

SAMPLE DESCRIPTIONS

Depth (m)

Sandstone (10%): light gray, upper medium to lower coarse grained, rounded, unconsolidated, well sorted, estimated porosity to 8% questionable, no shows;

Shale (5%): green gray, subblocky to subfissile.

1372.5 - 1375

Sandstone/Siltstone (80%): light gray, minor medium to dark brown, silty to lower very fine grained, occasional upper very fine to lower fine grained, part loose medium to lower coarse rounded quartz grains, trace glauconitic, well consolidated, hard, trace bituminous, subangular to subrounded, slightly rounded, silica and slightly dolomitic cement, tight to poor porosity, minor weak slow cut;

Sandstone (10%): light gray, upper medium to lower coarse grained, unconsolidated, rounded, well sorted, porosity?, no shows;

Shale (10%): green gray, as above.

1375 - 1377.5

Sandstone (75%): light gray, predominantly medium grained, part upper fine and occasional lower coarse grained, frosted quartz, unconsolidated, trace massive pyritic, rounded to subrounded, well to part moderately sorted, silica and slightly dolomitic cement?, assumed porosity to 8% questionable, very weak slow cut (invert?);

Sandstone (20%): light gray, minor tan gray and medium gray, very fine grained, part fine grained, frosted and minor clear quartz stringer?, trace spotty bituminous plugging, predominantly well consolidated, trace massive pyritic, well to part moderately sorted, silica and minor dolomitic cement, tight to poor porosity, weak milky cut (invert?);

Shale (5%): green gray, medium to dark gray, cavings.

1377.5 - 1380

Sandstone (60%): light gray, predominantly medium grained, occasional upper fine and minor lower coarse grained, frosted rounded quartz grains, trace massive pyritic, unconsolidated, subrounded to rounded, well to moderately sorted, estimated porosity to 8% questionable, no shows;

Sandstone (20%): light gray, minor medium gray to tan gray, very fine to fine grained, frosted and minor clear quartz, well consolidated, hard, minor argillaceous to shaly, subangular to subrounded, well sorted, silica cement, tight to spotty poor porosity, trace bituminous plugging, no shows;

Basalt (10%): red, mottled white and red, hard, part porphyritic;

Shale (10%): gray, green gray, green.

1380 - 1385

Basalt (100%): red, purple, very fine groundmass, minor porphyritic, common quartz and shale cavings.

APACHE PARAMOUNT WEST NOGHA K-14

SAMPLE DESCRIPTIONS

Depth (m)

1385 - 1390

Basalt (100%): red, purple, very fine groundmass, common shale and minor quartz cavings, most of sample washed away.

1390 - 1395

Basalt (100%): red, purple, very fine groundmass, common shale and minor quartz cavings, poor sample quality.

1395 - 1400

Basalt (100%): red, purple, very fine groundmass, common shale and minor quartz cavings, poor sample quality.

1400 - 1404

Basalt (100%): red, purple, very fine groundmass, trace porphyritic, common shale and occasional quartz cavings, poor sample quality.

TOTAL DEPTH 1404.0 meters

APACHE PARAMOUNT WEST NOGHA K-14

DAILY MUD PROPERTIES

DATE	DEPTH (m)	DENSITY Kg/M3	WATER LOSS (cm3/30 min)	FILTER CAKE (mm)	pH	VISCOSITY (s/l)	PV/YP	GELS
04-03-01	65.0	1025	32.0	-	11.5	39	6/8.6	4/9
04-03-02	120.0	1050	17.4	1.5	10.5	51	6/10	5/11
04-03-03	213.0	1045	10.2	1.5	9.5	56	10/7.66	3.5/8
04-03-04	268.0	1005	28.0	-	8.0	28	-	-
04-03-05	347.0	1000	-	-	7.5	28	-	-
04-03-06	453.0	1000	-	-	7.5	28	-	-
04-03-07	493.0	1000	-	-	7.5	28	-	-
04-03-08	548.0	1000	-	-	7.5	28	-	-
04-03-09	548.0	1000	-	-	7.5	28	-	-
04-03-10	549.0	1000	-	-	7.5	28	-	-
04-03-11	596.0	1030	11.2	2.5	-	101	15/3.35	2/3.5
04-03-12	637.0	1070	8.5	1.5	-	77	18/5.27	2/3.5
04-03-13	690.0	1085	9.8	1.5	-	94	21/5.75	2.5/4
04-03-14	800.0	1135	7.8	1.5	-	138	30/11.97	5/8
04-03-15	1138.0	1150	7.5	1.5	-	115	21/8.62	3.5/6.5
04-03-16	1332.0	1190	6.7	1.0	-	141	28/13.89	6.5/10.5
04-03-17	1358.0	1210	6.5	1.0	-	178	29/15.32	7/12
04-03-18	1404.0	1230	6.0	1.0	-	148	30/15.32	6/10.5
04-03-19	1404.0	1230	6.0	1.0	-	148	30/15.32	6/10.5

APACHE PARAMOUNT WEST NOGHA K-14

SURVEY RECORD

<u>DEPTH</u> (m)	DEVIATION (degrees)	AZIMUTH (m)	TVD (degrees)
68.3	0.10	113.2	68.3
97.1	0.20	121.5	97.1
122.5	0.10	1.2	122.5
149.3	0.30	72.9	149.3
176.2	0.20	53.5	176.2
203.9	0.20	181.5	203.9
259.0	0.25	-	-
279.0	1.00	-	-
312.0	1.00	-	-
344.0	1.00	-	-
383.0	1.00	-	-
406.0	0.75	-	-
438.0	1.00	-	-
467.0	1.00	-	-
500.0	0.75	-	-
556.2	0.40	54.0	556.2
584.1	0.40	49.4	584.1
613.3	0.30	47.6	613.3
642.1	0.40	15.9	642.09
671.1	0.60	25.3	671.09
699.7	0.70	35.4	699.69
727.8	1.00	43.2	727.79
756.1	1.40	314.1	756.08
784.7	1.20	346.0	784.68
813.2	0.80	307.4	813.17
841.7	0.70	226.6	841.67
870.2	0.30	250.5	870.17
899.0	0.10	44.5	898.97
919.1	0.10	109.0	919.07
947.7	0.30	313.2	947.67
974.8	0.30	338.2	974.77
1003.4	0.60	17.1	1003.37
1031.3	1.00	38.4	1031.27
1059.3	0.80	102.8	1059.26
1087.9	0.40	244.4	1087.86
1115.2	0.10	112.6	1115.16
1142.7	0.50	77.3	1142.66
1170.1	1.80	144.7	1170.06
1198.6	2.10	158.2	1198.54
1228.9	2.40	143.0	1228.82
1255.6	1.70	155.0	1255.5
1284.3	0.90	181.2	1284.19
1312.8	0.60	154.6	1312.69
1341.5	0.70	115.3	1341.39
1369.5	0.80	101.1	1369.39
1390.0	1.40	109.5	1389.88
1404.0	1.40	109.5	1403.88

APACHE PARAMOUNT WEST NOGHA K-14

BIT RECORD

BIT	SIZE (mm)	MAKE	TYPE	JETS (mm)	SERIAL #	DEPTH IN (m)	DRILLED	HOURS	CONDITION
1A	311	HUGHES	GTS20	3x22	6019006	0.0	251.0	51.00	3-5-BT-A-E-I-NO-BHA
2A	311	HUGHES	GTS20	OPEN	6018948	251.0	242.0	53.75	8-8-BT-A-F-2-NO-TD
3ARR	311	HUGHES	HR-S44	3/22.1	6006514	493.0	55.0	20.75	1-1-NO-A-4-1-NO-TD
1	216	HUGHES	HCM404	5/12.7	7002042	548.0	4.0	2.00	4-4-DL-C-----
2	216	HUGHES	HCM404	5/12.7	7002297	552.0	101.0	18.75	4-4-BT-N-----
3	216	HUGHES	GTS-20	3/17.5	5043465	653.0	133.0	27.50	-
4	216	HUGHES	HCM404	5/12.7	7002043	786.0	558.0	50.25	-
5	216	HUGHES	HXS20	3/22.1	5040439	1344.0	60.0	26.75	2-2-WT-A-E-I-NO-TD

APACHE PARAMOUNT WEST NOGHA K-14

Detailed Wireline Logging Report

Logging Company : Schlumberger **Base:** Norman Well, NWT
Logging Engineer : Kelly Roncin

Elevations : **Ground :** 308.00
Kelly Bushing : 313.20

Total Depth : **Drillers :** 1404.00 **Licence #:** WID # 2006
Loggers : 1404

Hole Size : 216.00 **Casing Depth :** 548m
Hole Orientation : Vertical **Casing Size :** 244.5mm
Maximum Deviation : 2.4 **Casing Weight :** 59.53kg/m

Mud Parameters

Mud Type : Distillate
Density : 1230
Viscosity : 152
PH :
Fluid Loss :
Salinity : Rmf :
BHT : 25 deg C

Operations Summary

Hole Condition Prior to Logging : good
Circulation time after Wiper Trip : 3
Number of Wiper Trips : 1
Details of Wiper Trips : no problems
Number of Runs in the Hole : 3
Succeeded : 3 **Failed :** 0 **Total :** 3

Time Report

Loggers Called for : 04-03-19-1800	Logging Completed : 04-03-19-1830
Loggers Arrived : 04-03-19-2200	Loggers Released : 04-03-19-2000
Loggers Rigged Up : 04-03-19-0415	Total Logging Time : 12
Loggers On Bottom : 04-03-19-0530	Total time on site : 22

Comments

Good hole condition.

Future Casing Size : 177.8mm

Log Runs

<u>Tools Run</u>	<u>Intervals :</u>	<u>Scales:</u>
Run #1: AIT-TLD-CNL-LDT-GR (Gamma ray & neutron to surface); HiRes TD- 1300m	TD-S.C.	1:240; 1:600
Run #2: DSI-EMS-GR	TD-surface	1:240; 1:600
Run #3: VSP		

DAILY PROGRESS SUMMARY REPORT

GEOLOGIST: Tom Hebert, B.Sc.

WELL NAME: APACHE PARAMOUNT WEST NOGHA K-14

OPERATOR: APACHE CANADA LTD



BELLOY PETROLEUM CONSULTING LTD.

Suite 102, 902 - 9th Avenue S.E.
Calgary, Alberta T2G 0S4
24 Hrs. Bus: (403) 237 - 8700

Scale 1:240 (5"=100') Metric

Well Name: APACHE PARAMOUNT WEST NOGHA K-14
Location: (UWI) 300K146640126000
Licence Number: WID: 2006
Spud Date: 04-03-01-2145
Surface Coordinates: 66 deg 33' 39.092" N; 126deg 03'02.842" W
Bottom Hole Coordinates: 1.23m South; 5.14m East (from wellhead center)
Ground Elevation (m): 308.0m K.B. Elevation (m): 313.2m
Logged Interval (m): S.C. To: T.D. Total Depth (m): 1404m
Formation: Mt Clarke Sands
Type of Drilling Fluid: Water/Gel Chem (surface hole); Distillate (main hole)
Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: APACHE CANADA LTD
Address: 1000, 700 - 9th Ave S.W.
Calgary, AB
T2P 3V4

GEOLOGIST

Name: Tom Hebert, B.Sc.
Company: Belloy Petroleum Consulting Ltd.
Address: Suite 102, 902 - 9th Avenue S.E.
Calgary, Alberta T2G 0S4
403-237-8700

Comments

AFE: NT-04-0211

WID#: 2006

Total Gas Detection from surface to TD.

5m samples from surface to TD (2.5 samples from 1290 to 1380m for APACHE CANADA LTD; PARAMOUNT

RESOURCES & NEB. (no returns from 275 to 548m)

Logging: Schlumberger, Norman Wells, NWT.

Run #1: AIT-TLD-CNL-LDT-GR

Run #2: DSI-EMS-GR

Run #3: VSP.

Well Cased.

ROCK TYPES

Gysh	Brec	Dol	Mrlst	Sltst
Redsh	Cht	Gyp	Salt	Ss
Dkcht	Clyst	Igne	Shale	Till
Anhy	Coal	Lmst	Shcol	
Bent	Congl	Meta	Shgy	

ACCESSORIES

MINERAL	Gyp	FOSSIL	Ostra	Mrst
Anhy	Hvymin	Algae	Pelec	Sltstrg
Arggrn	Kaol	Amph	Pellet	Ssstrg
Arg	Marl	Belm	Pisolite	
Bent	Minxl	Bioclst	Plant	
Bit	Nodule	Brach	Strom	
Brecfrag	Phos	Bryozoa		
Calc	Pyr	Cephal		
Carb	Salt	Coral		
Chtdk	Sandy	Crin		
Chtlt	Silt	Echin		
Dol	Sil	Fish		
Feldspar	Sulphur	Foram		
Ferrpel	Tuff	Fossil		
Ferr		Gastro		
Glau		Oolite		

OTHER SYMBOLS

POROSITY TYPE	Vuggy	ROUNDING	Spotted	EVENTS
Earthy		Rounded	Ques	Mrst
Fenest		Subrnd	Dead	Sltstrg
Fracture	Well	Subang		
Inter	Moderate	Angular		
Moldic	Poor			

OIL SHOWS

ROUNDING

INTERVALS

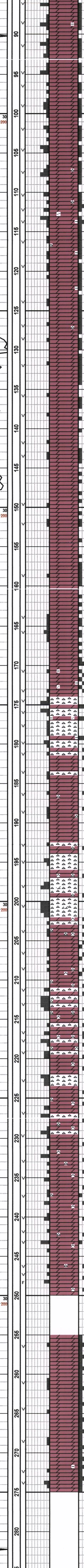
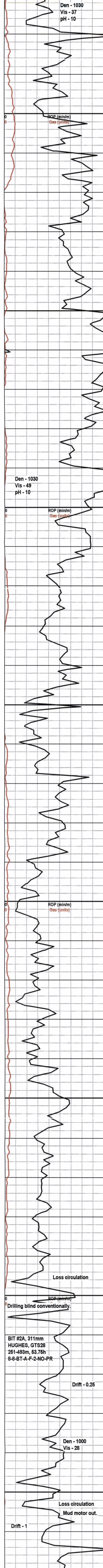
EVENTS

DEPTH

RODING

INTervals

</div



88-90 DOL(100).it brn,tl gy,mix xi to vt xin,mast,mast,wk to occ sl arg,occ dolc rhombs,tr gy to gn gy dolc sh,p-sp fr vug por to 8%,no show.

51,000 del. thumbs, p-pp. 11 vug per. to 8%, no show.

140-145 DOL(100): It gy, tan gy, micx1 to pt L vf xln, mdst, sp clr dol
rhombs, p-sp fr vug por to 8%, no show.

11. *Leucosia* (Leucosia) *leucostoma* (Fabricius) (Fig. 11)

sh,tr-mnr cht,tr-sp cir dol rhombs,tr-p vug por,no show.

130-136 DOL(100):wh,lt gy,vf xln,pt micl,mdst,tr sh partings, tr pyr,tr vug por,no show.

135-140 DOL(100): wh,lt gy,micx1 to vf xln,mdst,tr clr dol rhombs,tt-rr p vug por,no show.

145-150 DOL(100):It gy,wh,mnr m gy,micxl to pt vf xin,mdst,sp desm pvr,rr cir dol rhombs,tt-rr p vug por,no show.

150-155 DOL(100):it gy,wh,tr m gy,micxl to pt vf xin,mdst,sp desm pyr
cir dol rhombs,tt-rr p vug por,no show.

arg to shy, tt-tr p vug por, no show.

arg to shy, tt-tr p vug por, no show.

170-175 DOL(90):wh,tan gy,lt gn gy,micxl,pt f xin,mdst,occ sl arg,tr sdy
pyr,tr gn sh,occ cir dol rhombs,tt-sp fr vug por,no show. CHT(10):wh,lt
av.massive,occ vug with euherd ctz,assumed p-fr por to 8%,no show.

silica, assumed p-sp fr vug por to 8%, no show. DOL(20):predly aa.

185-190 DOL(100):wh,mnr lt-m gy,mas,crpxl,sl f xln,mdst,tr pyr,mnr
cht,com dol rhomb,tt-sp fr vug por to 6%,no show.

195-200 CHT(60):wh,mnr dolc,vugs lined with ch euhed qtz, mnr ool,sp f
por to 8%,no show.DOL(40):wh,mnr lt-m gy, crpxl,sl L f xln,rr lt
brn,mdct,rt,cht,all tr gr,shv,rr,pvt,rr,sp,pvt,rr,por,no show.

por to 8%, no show. DOL(50):wh,mnr lt gy,rr m gy, mas,L f xln,pt sil,pt ch alt,sp p -fr vug por,no show.

8%,no show. DOL(45):wh,sl lt gy,crpxl,pt L f xln, mdst,tr ool,com sil alt,pc
cht,euhed sil in vugs,com loose cir qtz prisms,p-fr vug por to 8%,no
show.

220-225 DOL(60): It gy, crm, micx1, f xin, pt silicified to chl, com clr qtz, p-sp p vug por to 8%, no show. CHT(40): predly aa.

225-230 DOL(85):it gy,crm,crpxl,pt f xln,occ pt silicified,com clr qtz,p-fr sp vug por to 8%,no show.CHT(15):predly aa.

235-240 DOL(100): It gy, mnr m gy, crm, crpxl, pt f xln, mnr vf xln, occ silicified, pt com loose clr qtz, sp eu hed qtz & dol lined vugs, p-sp fr vug por to 8%, no show.

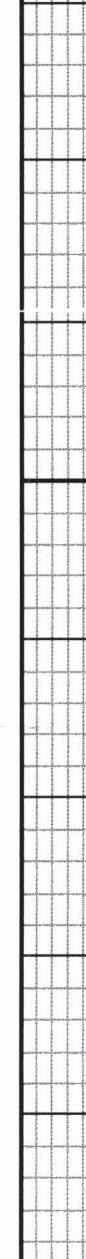
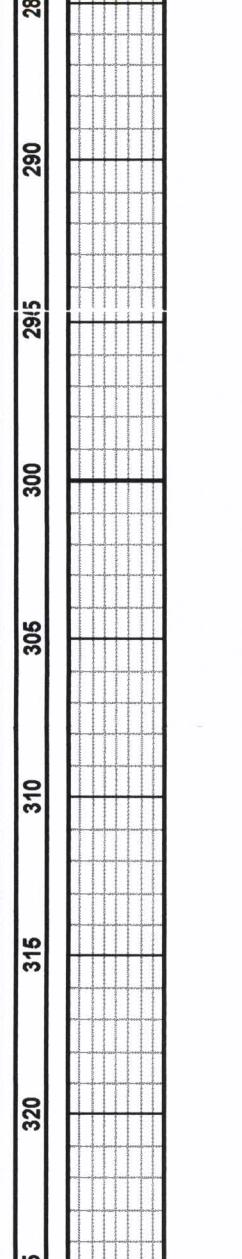
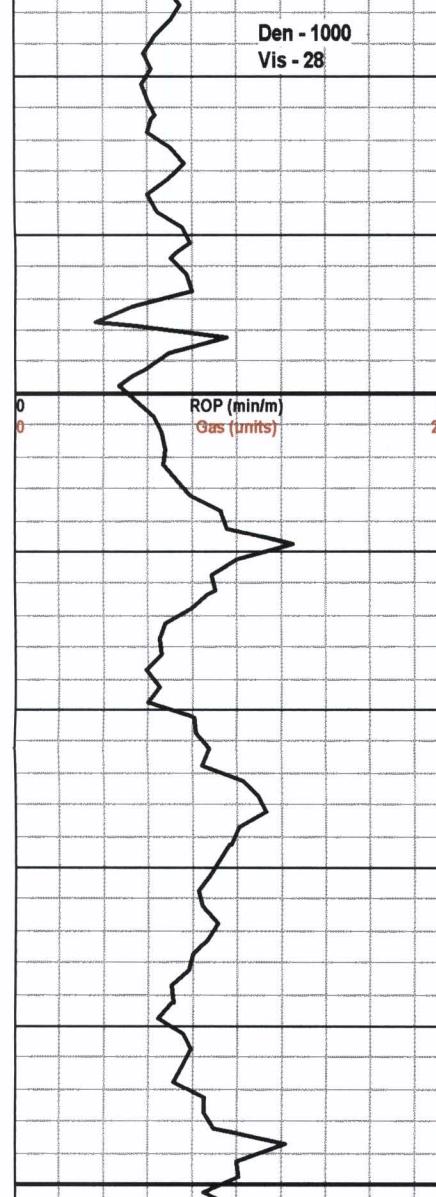
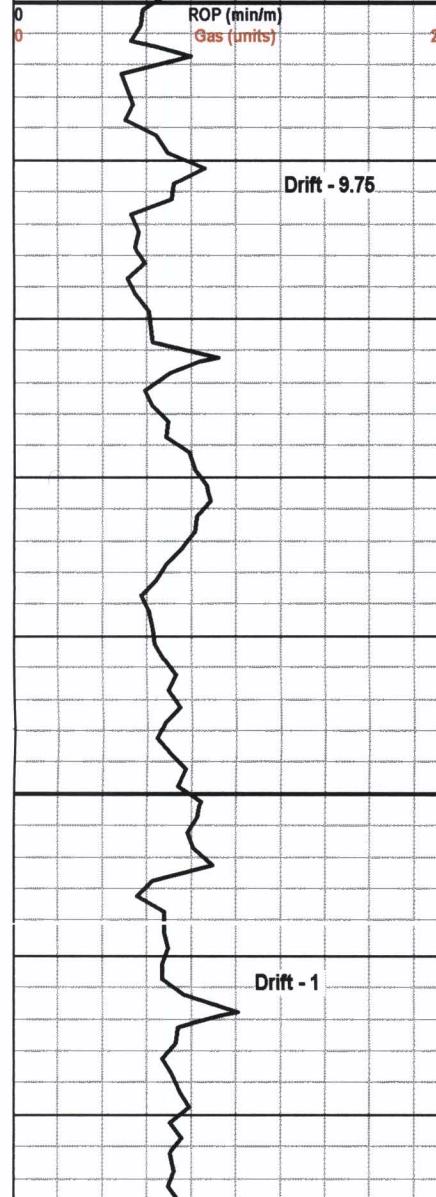
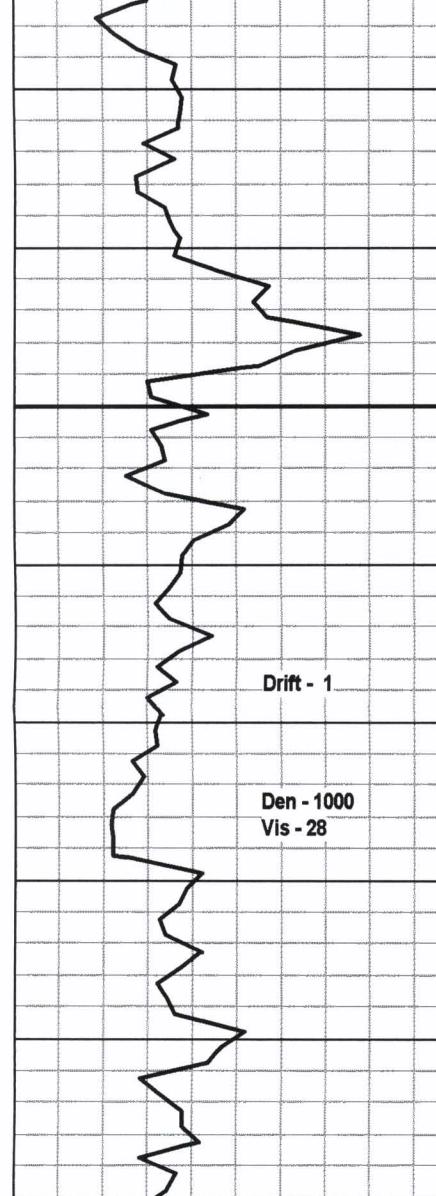
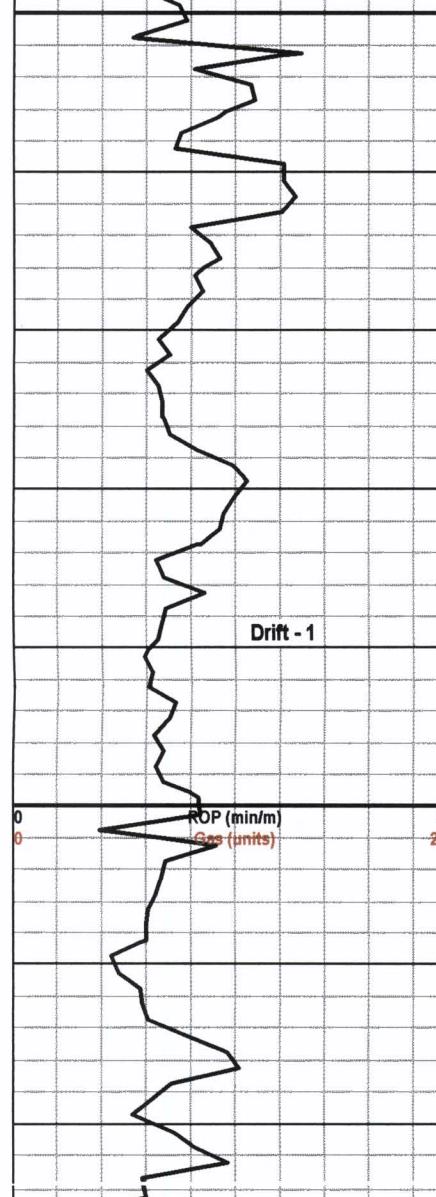
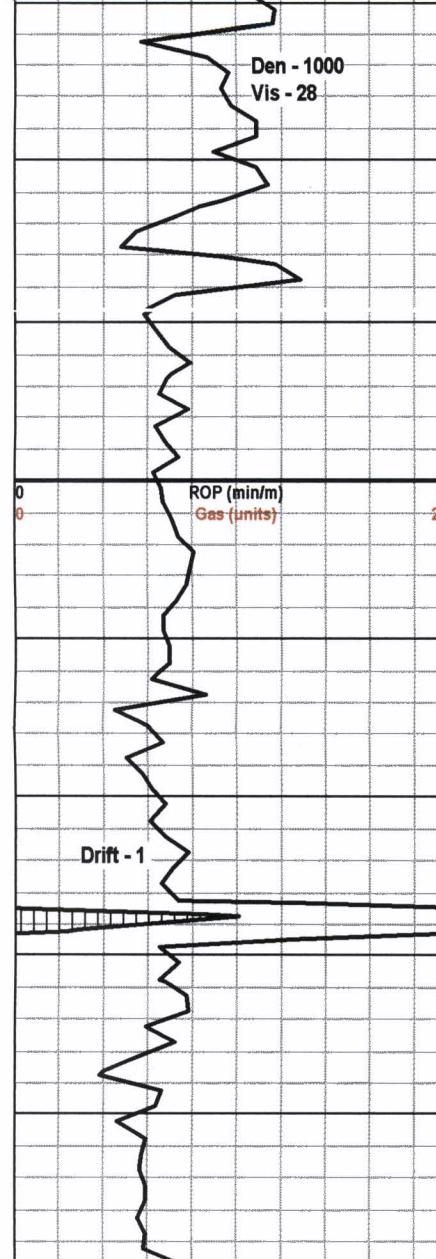
fr vug por to 8%, no show.

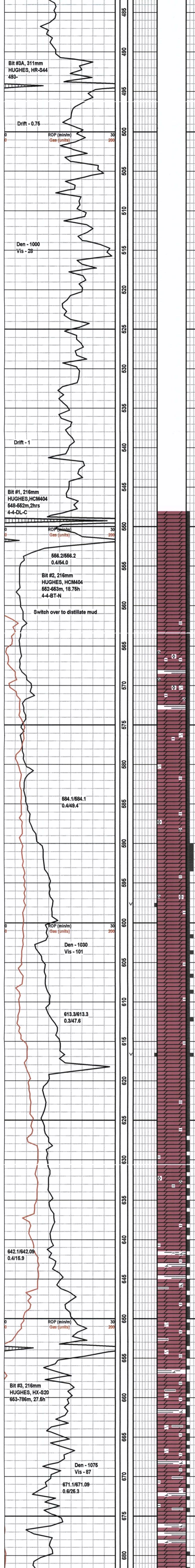
No sample.

265-270 DOL(100):wh,occ lt gy,tr m gy,predly aa,tt-sp p vug por,no shd

270-276 DOL(100):wn,pt it gy,mnr m gy,fr xin,pt micxi,occ f xin,tr arg,ti
gn gy sh,tr slyt,sp sil alt,mnr clr dol rhombs, tt-sp p vug por,no show.

No returns.





570-575 DOL(95):wh,lt gy,lt brn,mnr lt gn gy,miexl to pt vf xln,mdst,occ
ool cht,tr sity,tr mrlly,tt,no show. SH(1-5):lt-m gy,gn gy,brn gy,sp pyr,de

675-680 DOL(100):wh,lt-occ m brn,brn gy,lt gy, micrl-vf xln,r
sh,mnr arg,tr sity,sp pyr,tt,no show.

580-585 DOL(100):wh,lt-occ m brn,mnr brn gy, micxl-pt vf xin mdst,
gn gy,rr pt sity,tr sp pyr,tr gn gy dolc sh,tr marl.

500-600 BCE (100). Wh, it gy, it Brh, 500 m Brh, mlnx1 to Vt Xmt, mlnx1 arg, mnr sh, tr sh ptgs, tr sp pyr, tr-mnr ool cht, tt, no show.

595-600 DOL(100):wh,pt lt gy,lt m- occ dk brn, micxl,pt vf xin,mdst,sp
pyr,tr ool cht,tr sh,tr sity,tt -rr p vug por,no show.

to this pyramidal gray & shiny, it will not show.

610-615 DOL(100):wh,lt-m brn,mnr lt gn gy,micxl to vf xin,occ L f
xln mdst mnr gn gy,dole sh see wk arg fr sp desm pu ft no show

600-605, DOI 10.1007/s00339-009-9460-6, published online first, 10 August 2009

625-630 DOL(100):lt-pt m gy,lt-m brn,wh,micx1-vf xln,mdst,ptchy brn
shy,tr desm pyr,occ wk arg,tt,no show.

635-640 DOI:10.1007/s00339-010-0610-6

640-645 DOL(80):lt-m brn,brn gy,lt gy,wh,micxi to vf xln,mnr brn sh ptgs,wk to occ arg,tr sity,tt-sp p vug por,no show. SH(20):lt-m gn,gn gy,sh blky,tr pvr mnr to pt v dole dole mnr.

646-650 DOL(100): It-m brn,brn gy, It gy, micxl to vf xln, mdst, occ brn sh
ptgs, tr gn gy sh, tt, no show.

660-665 DOL(100):it-m gy,occ dk gy,it-mnr m brn,wh,micx1 to vf
xln,mdst,shy ptgs,tr to occ arg,occ sl sity,tr pyr,tr gn gy to dk gy sh lan
tt,no show.

660-660 DOL(100).lt-kr brn,lt-m gy,pt wr,mixxi,pt vt xin,occ crpxi,mas
mas pyr,tr sil,tr to occ arg,tr sity,mnr sh ptgs,tt,no show.

gy,pt to v arg,pt shy ,sl grdg to dolc sh,mrlly?.

670-675 DOL(100):lt-m brn,brn gy,occ dk brn,lt-pt m gy,wh,micxi to si w
xlp cl arxyl occ pt w arg mpr ab ptcs tt no show, SH(TR-4)um dk gy brn

880-885 DOL(75):aa. SH(20):aa. SA(5):aa.

885-890 SH(60):aa. DOL(40):aa. SA(TR):aa.

890-895 Sample washed away.

895-900 DOL(60):predly aa. SH(35):aa. SA(5):aa.

900-905 SH(100):gn,cvg. Sample washed away.

905-910 SH(100):gn,cvg. Sample washed away.

910-915 SA(100):wh,clr,mas.

915-920 SA(100):aa.

925-930 SA(100):aa.

SALINE R. LOWER SHALE: 932m; -618.8m SS

930-935 SA(70):aa. SH(30):gn.

935-940 SH(100):gn,sft,sl dolc.

940-945 SH(100):gn,sft,sl dolc.

945-950 SA(60):aa. SH(30):aa. DOL(10):lt gy,micxi,tt,no show.

SALINE R. LOWER SALT: 947.5m; -634.3m SS

950-955 SA(90):aa. SH(10):gn,sft,dolc.

955-960 SA(100):aa, sh cvg.

960-965 SA(100):aa.

965-970 SA(100):aa.

970-975 SA(80):aa. SH(20):gn.

975-980 SA(100):aa.

985-990 SA(100):aa.

990-995 SA(100):aa.

995-1000 DOL(100):lt gy,mnr lt brn,micxi,sl vf xln,pt arg,sp vug por,no show.

1000-1005 ANHY(80):wh,clr,occ dolc,tr arg. DOL(20):lt brn,micxi,mdst,sl anhy,occ arg to shy.

1005-1010 ANHY(70):aa. DOL(30):wh,lt brn,micxi,sl vf xln, clin to occ arg,tr shy,sp p vug por,no show.

1010-1015 SA(100):cir,wh,mas.

1015-1020 SA(100):aa.

1020-1025 SA(100):aa.

1025-1030 SA(100):aa.

1030-1035 SA(100):aa.

1035-1040 SA(100):aa.

1040-1045 SA(100):aa.

1045-1050 SA(100):aa.

1050-1055 SA(100):aa.

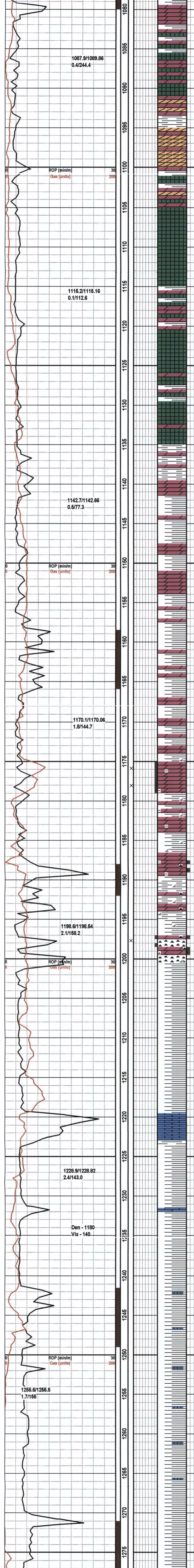
1055-1060 SA(100):aa.

1060-1065 SA(100):aa,predly calccarb.

1065-1070 SA(100): aa, and calccarb.

1070-1075 SA(100): aa, and calccarb.

1075-1080 SH: gn, SA.,predly calccarb.



1080-1086 DOL(80):wh,micxi,patchy anhy,sl arg,tt,no show. SA(6):aa. SH(15):aa.

1086-1090 DOL(65):lt gy,wh,micxi,sl arg,tt,no show. SA(35):aa. mainly calc carb.

1090-1095 DOL(80):wh,mnr lt brn,lt gy,micxi,patchy anhy,sl arg,tt,no show. ANHY(20). com calc carb.

1095-1100 ANHY(80):wh,micxi,sl dolc. DOL(20):aa.

1100-1105 DOL(60):lt gy,wh,micxi,mnr anhy,sl arg,tt,no show. ANHY(20). SH(20):gn,sft. SA washed away.

1105-1110 SA(100)..

1110-1115 SA(100).

1115-1120 DOL(70):wh,lt gy,mnr lt brn,micxi,occ pt arg,tt,no show. SH(30):m-pt dk gy,sb blky,pt dolc. SA dissolved.

1120-1125 SA(85). DOL(15):predly aa. SH(5):aa.

1125-1130 SA(40). DOL(40):lt gy,wh,micxi,mnr lt brn,mdst,mnr anhy,occ pt arg,tt,no show. SH(20):gn.

1130-1135 SA(80). DOL(10):lt gy,occ m gy,micxi,mdst,pt arg,tt,no show. SH(10):aa.

MT CAP UPPER SHALE: 1135m; -821.8m SS

1135-1140 SH(65):m gn,gn gy,sb fis,sl dolc. DOL(35):lt gy,micxi,mdst,mnr anhy,occ arg,tt,no show.

1140-1145 SH(50):gn gy,sb blky to sb fis,sl dolc. DOL(45): predly aa. ANHY(5):wh,micxi,sl dolc

1145-1150 SH(60):gn gy,dk gy,pt dolc,tr sity. DOL(40):lt-pt m gy, micxi,mdst,pt arg,mnr anhy,tt,no show.

1150-1155 DOL(60):lt gy,tan gy,micxi,mdst,occ sity,mnr to pt arg,sp anhy,tt,no show. SH(40):aa.

1160-1165 SH(70):m-dk gn gy,gn,sb blky,mnr sity,dolc. DOL(30):lt gy,tan gy,micxi,mdst,mnr sity,tr anhy,occ pt arg,tt,no show.

1165-1170 SH(60):gn gy,m-dk gy,sb blky,pt dolc,mnr sity. DOL(40):lt gy,tan gy,micxi,mnr sity,pt arg,tt,no show.

1170-1175 DOL(55):lt gy,brn gy,micxi,mnr vf xin,occ pt arg,tt,no show. SH(45):predly aa.

1175-1180 SH(60):m-dk gy,mnr gn gy,sb blky,dolc,tr sity. DOL(40):lt-m gy brn,micxi,pt-v arg, tr sity,,rr anhy,tt-p intxl por,no show.

1180-1185 DOL(55):tan gy,lt-m brn,occ dk brn,pt to v arg,sl grdg to dolc sh,tr sity,tt,no show. SH(45):m-dk gy,dk gy brn,sb blky,pt to dolc.

Mt CAP CHERT: 1187.5m; -874.3m SS

1185-1190 DOL(70):lt-dk brn,gy brn,micxi,mnr vf xin,sl crpxi,mdst,tr dk brn cht,arg,tt,no show. SH(30):m-dk gy,brn gy,mnr gn,sb blky,pt to v dolc.

1190-1195 SH(70):m-dk gy,gn gy,sb blky to sb fis,sl carb. DOL(30):lt brn,micxi,pt vf xin,patchy sl,mnr dk brn cht,mnr arg,tt,no show.

1195-1200 SH(60):m-dk gn gy,aa. DOL(30):m-dk brn,micxi-pt vf xin,pt cht,wk arg,sp calc,tt-sp p intxl por,no show. CHT(10):lt brn,tan gy,mot, sl dolc,tt-sp p por,no show.

1200-1205 SH(100):dk gy,dk gy gn,sb blky to pt sb fis,sl sb wxy,tr cht alt.

1205-1210 SH(100):dk gy,dk gy gn,sb blky to pt sb fis,sl sb wxy.

1210-1215 SH(100):dk gy,dk gy gn,sb blky to pt sb fis,sl sb wxy.

1215-1220 SH(100):dk gn,dk gn gy,dk gy to blk,sb blky to sb fis,tr dk brn cht alt,tr sity .

1220-1225 SH(70):dk gy,dk gn gy,sb blky to sb fis,occ sitst strg,sl dolc,tr cht alt. LS(30):lt-m gy,micxi,arg,tt,no show.

1225-1230 SH(100):dk gy,dk gy,to occ blk,sb blky to sb fis, mnr dolc,tr cht.

1230-1235 SH(100):m gn gy,m gn gy,sb fis,occ lt gy arg is strg.

1235-1240 SH(100):m gn gn gy,sb fis,tr ls strg.

1240-1245 SH(100):dk gy,dk gy,occ blk,sb blky to sb fis, mnr dolc,tr cht.

1245-1250 SH(100):dk gn gy,dk gn gy,sb blky to sb fis, tr sity,mnr ls strg,sl dolc.

1250-1255 SH(100):dk gn gy,dk gy,sb blky to sb fis,mnr ls strg,tr sitst,sl dolc.

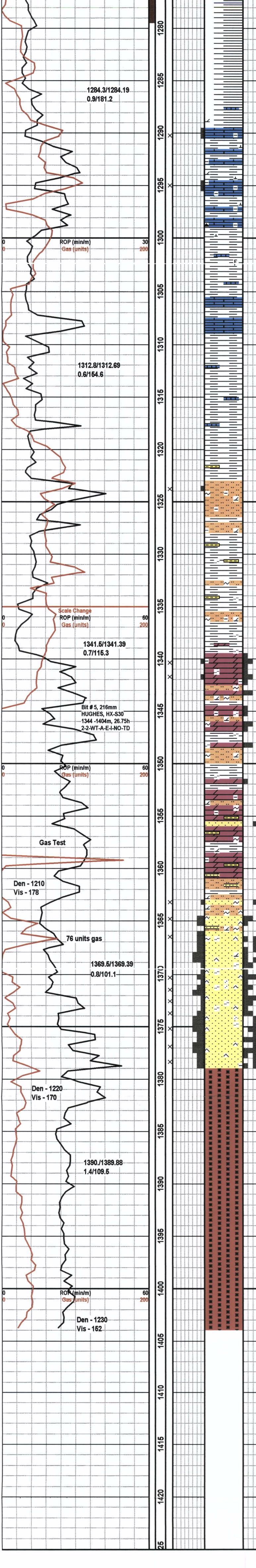
1255-1260 SH(100):dk gn gy,gn gy,sb fis,mnr ls strg,mnr dolc.

1260-1265 SH(100):dk gn gy,m-dk gy,sb blky to sb fis,sl dolc,tr ls strg.

1265-1270 SH(100):dk gn gy,m-dk gy,sb blky,sl dolc,tr ls strg.

1270-1275 SH(100):gn gy,dk gy,sb fis,tr ls strg,tr sity,sl dolc.

1275-1280 SH(100):dk gn gy,dk brn,dk gy,sb fis,sl dolc,occ sity,sl dolc.



Total Depth: 04-03-18-1630