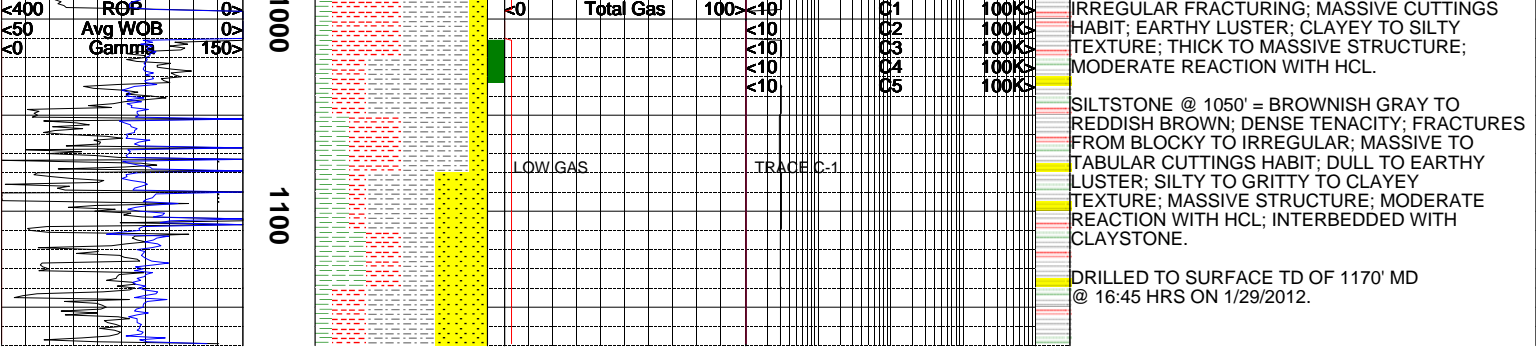


| Encana Oil_Gas | | | Twin Creek 12-5D1 | | | 1/30/2012 | | | |
|--|--|--|-------------------|--|-----------|--|--|--|---|
| | | | Depth ft | Lithology | Slide | Interp. Lith | | | Remarks Survey Data, Mud Reports, Other Info. |
| | | | | | | | | | |
| <400 ROP ft/hr 0> | | | | | | <10 C1 100K> | | | |
| <50 Avg WOB klbs 0> | | | | | | <10 C2 100K> | | | |
| <0 Gamma API Units 150> | | | | | | <10 C3 100K> | | | |
| | | | | | | <10 C4 100K> | | | |
| | | | | | | <10 C5 100K> | | | |
| BIT RR#1 12.25" IN @ 72' RIVAL CHIGJMS, 3 x 20 JETS SN: 6457 FTG: 122 HRS: 1.4 1/28/2012 | | | 100 | LOW GAS - CIRCULATING MUD TO CELLAR | TRACE C-1 | MM 9.2+ / VIS 45 / PV 10 / YP 15 GEL 7.25 / FL 10.5 / SOL 6.96 pH 9.2 / Ca+ 80 / Cl- 800 | | | GSA ROCK COLOR CHART. ROCK CONSTITUENTS ARE DESCRIBED WET AND LISTED IN ORDER OF MOST ABUNDANT TO LEAST ABUNDANT WITH RESPECT TO PERCENTAGE IN SAMPLE. |
| 1/29/2012 | | | 200 | | | MM 9.1+ / VIS 41 / pH 9.9 | | | CANRIG DML COMMENCED LOGGING FROM 72' MD @ 23:45 HRS ON 1/28/2012. |
| NE RR#2 12.25" IN @ 194' PDC LOGIC PL519, 7 x 13 JETS SN: SO7050 FTG: 976 HRS: 6.25 | | | 300 | LOW GAS | TRACE C-1 | | | | SANDSTONE @ 90' = WHITE TO OLIVE GRAY TO GRAYISH GREEN AND TRANSLUCENT WITH OCCASIONAL SALMON OVERTONES AND TRACE BLACK LITHIC CLASTS; MOSTLY UNCONSOL; FINE TO COARSE SIZE GRAINS WITH POOR SORTING; ANGULAR TO SUBANG WITH VERY LOW SPHERICITY; MODERATELY HARD FRIABLE TO CRUMBLY; STRONG REACTION WITH DILUTE HCL. |
| WOB 6-10 RPM: + MM 136 PP 694 GPM 500 | | | 400 | | | MM IN 9.1 / VIS 39 / PH 9.2 | | | SILTSTONE @ 210' = MEDIUM GRAY TO LIGHT BROWNISH GRAY WITH REDDISH AND GREEN HUES; HARD WITH A DENSE TENACITY; IRREGULAR FRACTURING; MASSIVE TO WEDGE LIKE CUTTINGS HABIT; DULL TO SLIGHTLY SPARKLING LUSTER; SILTY TO GRITTY TO CLAYEY TEXTURE; MASSIVE TO THICK STRUCTURE; MODERATE REACTION WITH DILUTE HCL. |
| WOB 14-19 RPM 5 PP 1275 GPM 582 | | | 500 | LOW GAS | TRACE C-1 | | | | SANDSTONE @ 300' = LIGHT GRAY TO WHITE OCCASIONAL GREENISH HUES; QUARTZ FRAMEWORK; MEDIUM FINE TO VERY FINE GRAIN SIZE WITH FAIR TO WELL SORTING; ANGULAR TO SUBANGULAR WITH LOW TO MODERATE SPHERICITY; HARD TO FIRMLY FRIABLE; CALCITE CEMENT; STRONG REACTION WITH DILUTE HCL; CLAY MATRIX SUPPORT; INTERBEDDED WITH SILTSTONE AND CLAYSTONE AND SHALE. |
| <400 ROP ft/hr 0> <50 Avg WOB klbs 0> <0 Gamma API Units 150> | | | 600 | | | MM IN 9.1 / VIS 40 / PH 9.9 | | | SHALE @ 420' = MEDIUM GRAY TO MEDIUM LIGHT GRAY WITH SOME OCCASIONAL RED AND GREEN HUES; DENSE TO BRITTLE TENACITY; PLANAR TO IRREGULAR TO BLOCKY FRACTURE; PLATY TO WEDGE LIKE CUTTINGS HABIT; DULL LUSTER; SMOOTH TO SILTY TEXTURE; THIN TO LAMINAE STRUCTURE; SLIGHT REACTION WITH DILUTE HCL. |
| | | | 700 | LOW GAS | TRACE C-1 | | | | SILTSTONE @ 510' = BROWNISH GRAY TO REDDISH BROWN TO MEDIUM GRAY; INTERBEDDED WITH CLAYSTONE; DENSE TO TOUGH TENACITY; IRREGULAR TO BLOCKY FRACTURING; MASSIVE TO WEDGE LIKE TO SLIGHTLY TABULAR CUTTINGS HABIT; EARTHY TO DULL LUSTER; SILTY TO GRITTY TO CLAYEY TEXTURE; THICK TO MASSIVE STRUCTURE; MODERATE REACTION WITH DILUTE HCL. |
| WOB 16-20 RPM 5 PP 1525 GPM 580 | | | 800 | | | MM IN 9.1 / VIS 40 / PH 9.9 | | | CLAYSTONE @ 600' = MODERATE BROWN TO REDDISH BROWN TO BROWNISH GRAY; FIRM WITH A DENSE TO SLIGHTLY BRITTLE TENACITY; IRREGULAR FRACTURE; MASSIVE TO WEDGE LIKE CUTTINGS HABIT; EARTHY LUSTER; CLAYEY TO SILTY TEXTURE; THICK STRUCTURE MODERATE REACTION WITH HCL; INTERBEDDED WITH SILTSTONE. |
| | | | 900 | LOW GAS | TRACE C-1 | | | | SHALE @ 690' = MEDIUM GRAY; DENSE TO BRITTLE TENACITY; PLANAR TO BLOCKY FRACTURE; PLATY TO SLIGHTLY TABULAR CUTTINGS HABIT; DULL LUSTER; SMOOTH TO SILTY WITH OCCASIONAL GRITTY TEXTURE; THIN STRUCTURE; SLIGHT REACTION WITH HCL |
| | | | | | | MM IN 9.1 / VIS 43 / PH 9.9 | | | SILTSTONE @ 780' = FIRM TO HARD WITH A DENSE TENACITY; FRACTURES FROM IRREGULAR TO BLOCKY; MASSIVE TO WEDGE LIKE CUTTINGS HABIT; EARTHY TO DULL WITH A SLIGHT SPARKLING LUSTER; SILTY TO GRITTY TO CLAYEY TEXTURE; THICK TO MASSIVE STRUCTURE; MODERATE REACTION WITH DILUTE HCL. |
| | | | | | | | | | SANDSTONE @ 870' = LIGHT GRAY TO LIGHT BROWNISH GRAY TO WHITE WITH GREEN AND RED HUES; QUARTZ FRAMEWORK; FINE TO MEDIUM FINE GRAINED WITH WELL SORTING; ANGULAR TO SUBANGULAR WITH LOW TO MODERATE SPHERICITY; FIRMLY FRIABLE TO MODERATE HARDNESS; CALCITE CEMENT; STRONG REACTION WITH DILUTE HCL; INTERBEDDED WITH SILTSTONE; MATRIX SUPPORT. |
| | | | | | | | | | CLAYSTONE @ 960' = MODERATE BROWN TO REDDISH BROWN TO DUSKY RED; FIRM WITH A DENSE TO SLIGHTLY BRITTLE TENACITY; |



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