

\* BIT # 32 SMITH F3 BIT DIAMETER : 8.50 inch NOZZ 13/13/ 0 MUD RHEOLOGICAL PARAMETERS : PV = 16 YP = 11 GEL = 3 \*

466032

| * TIME *  | * DEPTHS *   |            |            | * DRILLING PARAMETERS * |          |         |          |           | * MUD PARAMETERS * |          |             |                 | * GAS * |                 |         | * OVERPRESSURE SURVEY * |          |         | * ACCUMULATED ON BIT * |          |          |          |          |      |       |
|-----------|--------------|------------|------------|-------------------------|----------|---------|----------|-----------|--------------------|----------|-------------|-----------------|---------|-----------------|---------|-------------------------|----------|---------|------------------------|----------|----------|----------|----------|------|-------|
|           | * MEASURED * | * VERTCL * | * LAGGED * | * ROP *                 | * WOB *  | * RPM * | * TORQ * | * PRESS * | * FLOW *           | * PIT *  | * DENSITY * | * TEMPERATURE * |         | * RESISTIVITY * |         | * DCS *                 | * NORM * | * PF *  | * ECD *                | * FRAC * | * FEET * | * TIME * | * COST * |      |       |
| * Hr:mn * | * feet *     | * feet *   | * feet *   | * ft/h *                | * klbs * | * rpm * | * ftlb * | * psi *   | * gpm *            | * bbls * | * IN *      | * OUT *         | * IN *  | * OUT *         | * ohm * | * unit *                | * ppq *  | * ppq * | * ppq *                | * feet * | * Dhr *  | * \$ *   |          |      |       |
| D * 9:27  | * 11051.2    | 11049.6    | 11027.0    | * 7.6                   | * 24.0   | 60      | 1900     | 1632      | 338                | * 374    | * 9.6       | 9.6             | 76.0    | 95.7            | 1.26    | 1.25                    | * 6      | * 1.70  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 1.1    | .00  | 33071 |
| D * 9:28  | * 11052.4    | 11049.6    | 11027.0    | * 7.6                   | * 31.7   | 58      | 1900     | 1620      | 338                | * 374    | * 9.6       | 9.6             | 76.1    | 96.3            | 1.26    | 1.25                    | * 6      | * 1.70  | 2.27                   | * 8.8    | 9.9      | 16.9     | * 1.1    | .03  | 33071 |
| D * 9:32  | * 11053.1    | 11051.5    | 11027.0    | * 14.4                  | * 16.7   | 58      | 1900     | 1620      | 338                | * 372    | * 9.6       | 9.6             | 76.4    | 96.6            | 1.26    | 1.26                    | * 6      | * 1.36  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 3.0    | .00  | 12342 |
| D * 9:33  | * 11054.1    | 11052.4    | 11027.0    | * 63.9                  | * 28.7   | 58      | 1900     | 1642      | 338                | * 374    | * 9.6       | 9.6             | 76.5    | 96.7            | 1.26    | 1.26                    | * 6      | * 1.04  | 2.27                   | * 8.8    | 9.9      | 16.9     | * 4.0    | .09  | 9498  |
| D * 9:38  | * 11055.4    | 11052.4    | 11027.0    | * 63.9                  | * 37.9   | 59      | 2000     | 2575      | 334                | * 372    | * 9.6       | 9.6             | 76.9    | 95.3            | 1.26    | 1.26                    | * 6      | * 1.04  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 4.0    | .10  | 9498  |
| D * 9:40  | * 11056.3    | 11054.7    | 11027.0    | * 41.4                  | * 32.2   | 57      | 1900     | 2505      | 334                | * 372    | * 9.6       | 9.6             | 77.0    | 95.6            | 1.25    | 1.26                    | * 6      | * 1.33  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 6.2    | .20  | 6087  |
| D * 9:45  | * 11057.2    | 11054.7    | 11027.0    | * 41.4                  | * 23.3   | 57      | 1900     | 2500      | 334                | * 372    | * 9.6       | 9.6             | 77.5    | 96.5            | 1.26    | 1.25                    | * 6      | * 1.33  | 2.27                   | * 8.8    | 9.9      | 16.9     | * 6.2    | .30  | 6087  |
| D * 9:51  | * 11058.2    | 11056.6    | 11027.0    | * 10.2                  | * 37.5   | 57      | 1900     | 2500      | 334                | * 370    | * 9.7       | 9.6             | 78.0    | 96.7            | 1.25    | 1.26                    | * 6      | * 1.77  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 8.1    | .40  | 4772  |
| D * 9:56  | * 11059.2    | 11057.4    | 11027.0    | * 10.3                  | * 34.5   | 57      | 1900     | 2500      | 334                | * 368    | * 9.7       | 9.6             | 78.3    | 96.8            | 1.25    | 1.24                    | * 6      | * 1.70  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 8.9    | .47  | 4374  |
| D * 10: 0 | * 11060.2    | 11058.4    | 11027.0    | * 16.2                  | * 43.0   | 57      | 2000     | 2500      | 334                | * 370    | * 9.7       | 9.6             | 78.6    | 97.2            | 1.25    | 1.24                    | * 6      | * 1.65  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 10.0   | .54  | 3930  |
| D * 10: 4 | * 11061.1    | 11059.5    | 11027.0    | * 16.7                  | * 32.0   | 57      | 2000     | 2571      | 338                | * 370    | * 9.6       | 9.6             | 78.7    | 97.4            | 1.25    | 1.25                    | * 6      | * 1.64  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 11.0   | .60  | 3588  |
| D * 10:10 | * 11062.2    | 11060.5    | 11027.0    | * 10.0                  | * 39.0   | 57      | 2100     | 2594      | 334                | * 372    | * 9.7       | 9.6             | 79.2    | 98.4            | 1.25    | 1.24                    | * 6      | * 1.70  | 2.27                   | * 8.8    | 9.9      | 16.9     | * 12.1   | .71  | 3296  |
| D * 10:14 | * 11063.3    | 11061.7    | 11027.0    | * 17.4                  | * 40.7   | 57      | 2000     | 2613      | 338                | * 370    | * 9.6       | 9.6             | 79.6    | 98.2            | 1.25    | 1.25                    | * 6      | * 1.61  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 13.2   | .77  | 3035  |
| D * 10:21 | * 11129.2    | 11127.6    | 11027.0    | * 507.2                 | * .0     | 58      | 2000     | 2613      | 334                | * 370    | * 9.6       | 9.6             | 80.1    | 98.4            | 1.25    | 1.24                    | * 6      | * .45   | 2.28                   | * 8.8    | 9.0      | 16.9     | * 79.1   | .07  | 511   |
| D * 10:49 | * 11065.1    | 11061.2    | 11041.0    | * 2.7                   | * 34.2   | 57      | 1900     | 2491      | 328                | * 368    | * 9.6       | 9.6             | 81.0    | 99.1            | 1.25    | 1.26                    | * 6      | * 2.10  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 15.2   | 1.30 | 2769  |
| D * 11: 1 | * 11066.1    | 11062.2    | 11055.0    | * 5.1                   | * 30.5   | 57      | 1800     | 2510      | 329                | * 368    | * 9.6       | 9.6             | 82.4    | 99.6            | 1.25    | 1.25                    | * 6      | * 1.94  | 2.27                   | * 8.8    | 9.7      | 16.9     | * 16.2   | 1.50 | 2642  |
| D * 11: 7 | * 11067.0    | 11062.2    | 11057.0    | * 5.1                   | * 29.2   | 58      | 1800     | 2505      | 329                | * 370    | * 9.6       | 9.6             | 82.7    | 100.2           | 1.25    | 1.25                    | * 6      | * 1.94  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 16.2   | 1.60 | 2642  |
| D * 11:16 | * 11068.4    | 11064.5    | 11058.0    | * 7.4                   | * 37.5   | 57      | 1900     | 2505      | 334                | * 364    | * 9.6       | 9.6             | 83.2    | 100.4           | 1.25    | 1.24                    | * 6      | * 1.75  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 18.5   | 1.75 | 2358  |
| D * 11:18 | * 11069.1    | 11065.2    | 11059.0    | * 22.0                  | * 31.3   | 58      | 1800     | 2500      | 329                | * 366    | * 9.6       | 9.6             | 83.2    | 100.3           | 1.25    | 1.25                    | * 6      | * 1.51  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 19.2   | 1.70 | 2283  |
| D * 11:26 | * 11070.3    | 11066.4    | 11061.0    | * 0.4                   | * 37.5   | 57      | 1900     | 2491      | 329                | * 366    | * 9.6       | 9.8             | 83.6    | 100.0           | 1.25    | 1.24                    | * 6      | * 1.81  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 20.4   | 1.92 | 2175  |
| D * 11:31 | * 11071.0    | 11066.4    | 11062.0    | * 0.4                   | * 36.7   | 57      | 1900     | 2491      | 329                | * 368    | * 9.6       | 9.7             | 83.8    | 100.3           | 1.25    | 1.25                    | * 6      | * 1.81  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 20.4   | 1.99 | 2175  |
| D * 11:34 | * 11072.0    | 11068.1    | 11062.0    | * 12.8                  | * 38.9   | 57      | 1900     | 2486      | 329                | * 368    | * 9.6       | 9.6             | 83.8    | 100.4           | 1.25    | 1.24                    | * 6      | * 1.67  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 22.1   | 2.05 | 2022  |
| D * 11:46 | * 11073.2    | 11069.2    | 11067.0    | * 6.0                   | * 32.7   | 57      | 1800     | 2467      | 329                | * 356    | * 9.6       | 9.7             | 83.8    | 100.0           | 1.25    | 1.26                    | * 6      | * 1.07  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 23.2   | 2.24 | 1953  |
| D * 11:52 | * 11074.1    | 11070.2    | 11064.0    | * 0.2                   | * 38.0   | 57      | 1800     | 2450      | 329                | * 354    | * 9.6       | 9.7             | 84.0    | 101.1           | 1.24    | 1.24                    | * 6      | * 1.76  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 24.2   | 2.35 | 1895  |
| D * 12:13 | * 11075.2    | 11071.3    | 11064.0    | * 9.9                   | * 43.0   | 57      | 1900     | 2425      | 325                | * 362    | * 9.6       | 9.8             | 84.1    | 100.4           | 1.22    | 1.24                    | * 7      | * 1.71  | 2.27                   | * 8.8    | 9.7      | 16.9     | * 25.3   | 2.46 | 1829  |
| D * 12:20 | * 11076.0    | 11071.3    | 11065.0    | * 9.9                   | * 28.3   | 57      | 1800     | 2430      | 325                | * 356    | * 9.6       | 9.8             | 84.2    | 100.0           | 1.21    | 1.26                    | * 7      | * 1.71  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 25.3   | 2.57 | 1829  |
| D * 12:31 | * 11077.1    | 11072.1    | 11066.0    | * 7.1                   | * 29.7   | 57      | 1800     | 2411      | 329                | * 356    | * 9.6       | 9.8             | 84.4    | 101.4           | 1.21    | 1.24                    | * 7      | * 1.02  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 26.1   | 2.75 | 1786  |
| D * 12:42 | * 11078.1    | 11074.2    | 11067.0    | * 5.5                   | * 37.8   | 57      | 1800     | 2421      | 329                | * 354    | * 9.6       | 9.6             | 84.6    | 101.0           | 1.22    | 1.24                    | * 7      | * 1.09  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 28.2   | 2.94 | 1701  |
| D * 12:53 | * 11079.3    | 11075.4    | 11070.0    | * 6.9                   | * 42.4   | 57      | 1800     | 2397      | 325                | * 356    | * 9.6       | 9.9             | 84.9    | 101.8           | 1.23    | 1.24                    | * 7      | * 1.06  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 29.4   | 3.12 | 1653  |
| D * 13: 3 | * 11080.1    | 11075.4    | 11072.0    | * 6.9                   | * 33.9   | 57      | 1800     | 2411      | 329                | * 335    | * 9.6       | 9.8             | 85.0    | 101.4           | 1.23    | 1.25                    | * 7      | * 1.06  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 29.4   | 3.20 | 1653  |
| D * 13:16 | * 11081.1    | 11076.2    | 11073.0    | * 4.7                   | * 32.4   | 57      | 1800     | 2402      | 329                | * 297    | * 9.6       | 9.8             | 85.2    | 101.9           | 1.23    | 1.24                    | * 7      | * 1.90  | 2.27                   | * 10.5   | 9.8      | 17.3     | * 30.2   | 3.50 | 1631  |
| D * 13:26 | * 11082.1    | 11078.2    | 11074.0    | * 6.4                   | * 26.0   | 58      | 1800     | 2406      | 326                | * 299    | * 9.6       | 9.7             | 85.5    | 102.1           | 1.24    | 1.24                    | * 7      | * 1.07  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 32.2   | 3.67 | 1570  |
| D * 13:37 | * 11083.3    | 11079.4    | 11075.0    | * 6.6                   | * 39.5   | 57      | 1900     | 2416      | 329                | * 299    | * 9.6       | 9.8             | 85.8    | 102.9           | 1.25    | 1.23                    | * 7      | * 1.00  | 2.27                   | * 8.8    | 9.7      | 16.9     | * 33.4   | 3.05 | 1534  |
| D * 13:45 | * 11084.1    | 11080.2    | 11076.0    | * 5.4                   | * 35.7   | 57      | 1900     | 2425      | 329                | * 301    | * 9.6       | 9.8             | 86.1    | 102.3           | 1.24    | 1.22                    | * 7      | * 1.92  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 34.2   | 3.99 | 1515  |
| D * 13:53 | * 11085.1    | 11081.1    | 11076.0    | * 7.7                   | * 29.7   | 57      | 1800     | 2425      | 329                | * 305    | * 9.6       | 9.8             | 86.2    | 103.0           | 1.24    | 1.21                    | * 7      | * 1.79  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 35.1   | 4.11 | 1487  |
| D * 14: 1 | * 11086.3    | 11081.1    | 11077.0    | * 7.7                   | * 42.7   | 57      | 1900     | 2435      | 329                | * 305    | * 9.6       | 9.9             | 86.5    | 103.0           | 1.24    | 1.19                    | * 7      | * 1.79  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 35.1   | 4.25 | 1487  |
| D * 14: 7 | * 11087.1    | 11082.4    | 11078.0    | * 9.3                   | * 35.3   | 58      | 1900     | 2439      | 329                | * 305    | * 9.5       | 9.8             | 86.7    | 103.0           | 1.23    | 1.21                    | * 7      | * 1.74  | 2.27                   | * 8.8    | 9.7      | 16.9     | * 36.4   | 4.35 | 1449  |
| D * 14:13 | * 11088.1    | 11084.2    | 11078.0    | * 10.3                  | * 35.0   | 57      | 1900     | 2430      | 329                | * 305    | * 9.6       | 9.8             | 87.1    | 103.0           | 1.23    | 1.21                    | * 7      | * 1.72  | 2.27                   | * 8.8    | 9.0      | 16.9     | * 38.2   | 4.44 | 1401  |
| D * 14:16 | * 11089.2    | 11085.3    | 11079.0    | * 17.6                  | * 27.9   | 57      | 2000     | 2449      | 330                | * 303    | * 9.6       | 9.7             | 87.2    | 103.2           | 1.23    | 1.21                    | * 7      | * 1.55  | 2.27                   | * 8.8    | 9.7      | 16.9     | * 39.3   | 4.51 | 1367  |
| D * 14:25 | * 11090.2    | 11085.3    | 11079.0    | * 17.6                  | * 34.3   | 57      | 1900     | 2453      | 325                | * 303    | * 9.6       | 9.7             | 87.4    | 104.1           | 1.22    | 1.21                    | * 7      | * 1.55  | 2.27                   | * 8.8    | 9.7      | 16.9     | * 39.3   | 4.64 | 1367  |
| D * 14:31 | * 11091.1    | 11087.2    | 11080.0    | * 4.9                   | * 25.6   | 57      | 1900     | 2453      | 325                | * 301    | * 9.5       | 9.7             | 87.7    | 103.5           | 1.23    | 1.22                    | * 7      | * 1.93  | 2.27                   | * 8.8    | 9.7      | 16.9     | * 41.2   | 4.75 | 1326  |
| D * 14:36 | * 11092.2    | 11087.2    | 11080.0    | * 4.9                   | * 27.1   | 57      | 1900     | 2463      | 330                | * 301    | * 9.6       | 9.8             | 87.8    | 104.4           | 1.22    | 1.22                    | * 7      | * 1.93  | 2.27                   | * 8.8    | 9.7      | 16.9     | * 41.2   | 4.84 | 1326  |
| D * 14:42 | * 11093.4    | 11089.5    | 11081.0    | * 13.7                  | * 50.5   | 55      | 2100     | 2444      | 329                | * 301    | * 9.5       | 9.8             | 87.9    | 104.3           | 1.23    | 1.22                    | * 7      | * 1.64  | 2.27                   | * 8.8    | 9.7      | 16.9     | * 43.5   | 4.93 | 1269  |