

FINAL WELL REPORT

AMOCO PRODUCTION CO.

OCS Y-0302 #1 MARS PROSPECT

NORTH SLOPE, ALASKA

March 13, 1986 to April 14, 1986

6B

ED
OCS DISTRICT OFFICE

MAY 15 1986

MINERALS MANAGEMENT SERVICE
ANCHORAGE, ALASKA

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EXPLORATION LOGGING OF USA, INC.

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1. INTRODUCTION

A. WELL AND RIG DATA

OPERATOR AMOCO PRODUCTION CO. OCS DISTRICT OFFICE

WELL NAME OCS Y-0302 #1

MAY 15 1986

API WELL INDEX # 5523100004

CDF WELL # 10

MINERALS MANAGEMENT SERVICE
ANCHORAGE, ALASKA

PARTNERS EXXON

SHELL

UNION

LOCATION BEAUFORT SEA, OFFSHORE ALASKA

COORDINATES LAT 70° 50' 35.0" N

LONG 154° 4' 18.5" W

FIELD MARS PROSPECT

RIG PARKER DRILLING #123

RKB - ML 75 ft

WATER DEPTH 25 ft

SPUD DATE & TIME March 13, 1986 : 0200 hrs

TOTAL DEPTH DATE & TIME April 7, 1986 : 2027 hrs

TOTAL DEPTH 7,982 ft

COMPLETION STATUS Plugged and Abandoned

EXPLORATION LOGGING UNIT # 238

GEMDAS OPERATORS G. GUNDERSON, R. MANSKER

M. SELLENS, R. WHIFFEN

MWD OPERATORS M. HILL, P. HOUSTON

1. INTRODUCTION

B. PROGNOSIS

Amoco Production Co. OCS-Y-0302 #1 (Mars Prospect) was a wildcat well drilled from an ice island built in the Beaufort Sea, offshore Cape Halkett on the North Slope, Alaska. The well was planned to be drilled to a total depth of 8,342 feet. Information concerning formation tops and anticipated formation pressures was not made available to Exploration Logging prior to the drilling of the well. Access to the logging unit was restricted to authorized personnel only.

Exploration Logging provided Geological Engineering Monitoring and Data Analysis Service (GEMDAS), Measurement While Drilling (MWD), Pressure Evaluation and Data Communication services on OCS-Y-0302 #1 from 140 feet to 7,982 feet. Automatic real time data monitoring, recording and formation pressure and drilling analysis were carried out. Continuous evaluation of the formation pressures and drilling progress aided in optimizing drilling costs and ensured that drilling continued with maximum safety to personnel, the well and equipment. The operator was advised of the status of all analyses and data, and results were stored on magnetic media for post well evaluation. Data printouts and plots are contained in the appendices.

This well was also the tenth well in the Amoco Research Critical Drilling Facility (CDF) project and as such, real time data was continuously being transmitted directly to Tulsa, Oklahoma via the Exploration Logging Data Communication system.

The theory of the pressure evaluation methods used are presented in the Pressure Evaluation Manual (MS-156).

Aiding pressure evaluation were four HP 2100 series computers with auxiliary keyboard terminals, disc drives, printers, dual mud density monitors, and dual temperature and resistivity monitors. Extra services of remote CRTs and Drillers Assistants were also provided. Standard mud logging services were not provided by Exploration Logging on this well.

2. DRILLING AND ENGINEERING

A. CHRONOLOGY

26 INCH HOLE SECTION (137 - 1,550 ft)

Amoco Production Co. OCS Y-0302 #1 was spudded at 0200 hours on March 13, 1985, with Parker Drilling Company Rig 123. A 17.5 inch bit with a 26 inch hole opener was used to drill out ice and formation from a 30 inch conductor driven to 137 feet. Bit #1 drilled 68 feet in 6.6 hours with three 20/32 inch jets. Spud mud consisted of seawater and gel.

A 12.25 inch pilot hole was drilled from 137 to 1,550 feet with one bit (IADC 114) in 9.4 hours. No major problems were encountered during drilling of the pilot hole. Weight on bit (WOB) varied between 15,000 and 29,000 lbs, and rotary speed ranged from 60 to 70 rpm. Penetration rate varied from 27 to 1,243 ft/hr exhibiting a marked increase below 1,125 feet, the base of the permafrost. A gel seawater mud was used and maintained between 8.8 and 9.3 lb/gal, with funnel viscosities typically 50 sec/qt and filtration at 20 cm³/30 min (see Table 2).

After drilling the pilot hole, a 26 inch hole opener was picked up behind bit #1 (17.5 inches) with a total flow area (TFA) of 1.84 in². This bit drilled 1,426 feet down to 1,569 feet, drilling an additional 19 feet of new formation, in 20.3 hours (see Table 1). Hole stability and solids processing problems were encountered during drilling of this section due to poorly lithified sediments and the volume of hole being cut. WOB varied from 15,000 to 45,000 lbs with a rotary speed averaging 120 rpm. This produced an average ROP of 70.2 ft/hr. Pump pressure averaged 1,170 psi with flow rates averaging 713 gal/min.

Casing was then run and consisted of 36 joints (1,538 feet) of 20 inch, 133 lb/ft, X-56, Vetco LS-2 with the shoe set at 1,563 feet. The string was cemented with a lead of 300 sacks Arcticset II cement (slurry weight 15.2 lb/gal) followed by 450 sacks of Arcticset III (slurry weight 11.9 lb/gal) and 1,050 sacks of Arcticset II cement (slurry weight 15.2 lb/gal). The total volume of cement pumped was 3,316 cubic feet. One inch tubing was run into the surface annulus and the annulus displaced with saltwater.

17.5 INCH HOLE SECTION (1,569 - 3,322 ft)

A 17.5 inch bit (IADC 114) was used on a "slick" bottom hole assembly (BHA) to drill out the float equipment, cement and shoe of the 20 inch casing. Prior to drilling out of the casing the mud system was changed over to a potassium-lime-morex (KLM) mud. The casing was successfully pressure tested to 250 psi for 30 minutes. Formation was drilled to 1,576 feet and a pressure integrity test (PIT) was performed (gauge pressure 160 psi, EMW 11.06 lb/gal). An additional 81 feet of formation was then drilled. Bit 3 was pulled and rerun with an MWD tool and stabilizers to continue drilling the 17.5 inch hole. No jets were utilized, anticipating that any pressure drop across the bit would produce pump pressures at depth requiring more horsepower to pump than the rig could produce. Drilling ahead was commenced with the intention of keeping the mud weight as low as possible to help lower the pump pressure.

The mud weight was initially 8.8 lb/gal but had increased to 9.4 lb/gal at 3,322 feet. The 17.5 inch hole drilled to 2,202 feet with increasingly poor drill rates in the clay formations due to severe bit "balling". Nutplug was added to the mud in an attempt to aid bit cleaning, but this proved ineffective. Before pulling the bit, penetration rate had dropped to less than 7 ft/hr.

A second 17.5 inch bit (IADC 114) was run in after laying down the MWD tool. The bit was run with three 20/32 inch jets in the hope that the modest increase in bit cleaning would alleviate the balling problem. This turned out to be unsuccessful in preventing the problem as the bit drilled only 21 feet in 1.9 hours. Drilling proceeded with a 12.25 inch pilot hole.

The 12 1/4 inch pilot hole was drilled to 3,322 feet, using one bit (IADC 114) in 8.4 hours (1,099 feet) (see Table 1). Three 14/32 inch jets were used and the pump liner size was reduced allowing higher pump pressures and thus achieving a 66% calculated pressure drop across the bit to maximize bit cleaning. WOB ranged between 30,000 and 40,000 lbs, rotary speed averaged 130 rpm and pump pressure averaged 2,900 psi. No substantial problems were encountered while drilling the 12.25 inch hole.

A 17.5 inch hole opener was used in conjunction with the previously run 12.25 inch bit to open 239 feet of hole, from 2,223 to 2,462 feet. The assembly was run with three 20/32 inch jets in the bit and open jets in the hole opener. Severe balling again occurred in the clay sections reducing the average drilling rate to 23 ft/hr (11.8 total drilling hours). WOB ranged between 30,000 and 48,000 lbs with rotary speeds of 145 rpm and pump pressures ranging between 1,500 and 2,000 psi.

The hole opener was pulled due to the slow drill rate and a 17.5 inch bit (IADC 114) was run with three 16/32 inch and one 13/32 inch jet to complete the hole opening operation. The cementing pumps were run in conjunction with the rig pumps to provide the hydraulic horsepower necessary to pump the mud. This bit drilled 860 feet in 7.2 hours, with an average drill rate of 119 ft/hr. No further critical problems were experienced during the hole opening. WOB ranged from 20,000 to 40,000 lbs with rotary speeds ranging between 125 to 150 rpm and pump pressure averaged 2,900 psi.

Directional surveys were taken by the MWD tool every 150 feet to a depth of 3,322 feet and indicated a maximum deviation of 1.3 degrees to the southeast.

A wiper trip to the shoe of the 26 inch casing was performed in preparation for running an electric log. Tight spots were encountered in many locations and the hole was reamed and washed from 2,714 to 3,322 feet. A few tight spots persisted on the trip out. These were worked free with the pipe on the way out of the hole. Dresser Atlas then ran the following electric wireline logs:

DIL-BHC AL-GR-SP

A wiper trip was then made and the hole circulated and conditioned prior to running casing, which consisted of 84 joints of 13.375 inch, 72 lb/ft, Buttress N-80 with the shoe set at 3,315 feet. The casing was flushed

with 50 bbls of freshwater followed by 100 bbls of CW spacer prior to pumping cement. The cement job lead consisted of 1600 sacks Arcticset III cement with 10 lbs/sack Gilsonite and 0.2 % antifoamer in 11.11 gal/sack freshwater (slurry weight 11.9 lb/gal). The yield was 2.05 ft³/sack. The tail consisted of 570 sacks of class 'G' cement mixed with 2% CaCl₂ and 0.2% antifoamer in 4.97 gal/sack water (slurry weight 15.8 lb/gal). The yield was 1.15 ft³/sack. Displacement was achieved with 44 bbls of freshwater at a final displacement pressure of 900 psi, which remained steady until bled off. Returns were lost after displacing approximately 20 bbls and no cement returns were observed at the surface.

12.25 INCH HOLE SECTION (3,322 - 7,982 ft)

Drilling continued with a 12.25 inch hole. A well-head was welded to the casing and 5,000 psi blowout prevention equipment (BOPE) attached and tested. Cement was cleaned out of the casing with a slick BHA and the casing was pressure tested to 1000 psi for 30 minutes. The shoe was drilled out together with 10 feet of new formation to 3,332 feet and a PIT was performed resulting in a gauge pressure of 720 psi with 9.2 lb/gal mud and yielding an EMW of 13.39 lb/gal. Drilling continued to 3,430 feet whereupon a trip was made to pick up stabilizers and the Exlog MWD tool.

The 12.25 inch hole section required 10 bits to drill. These consisted of eight milled tooth bits (IADC 114, 116, 135) and two insert bits (IADC 437, 517). Total drilling time was 162.8 hours (see Table 1). The MWD tool provided surveys periodically (see Table 3 and Appendix F), along with a continuous 16 inch short normal resistivity and gamma ray log (see MWD Section and Appendices K and L).

The second bit run in this section, 3,430 to 4,665 feet, was conducted with a pendulum BHA with the intention of dropping hole angle. Drilling parameters were initially 8,000 to 25,000 lbs WOB, 70 to 115 rpm rotary speed and 1,800 to 2,700 psi pump pressure with a flow 500 to 600 gal/min. Due to decreasing drilling rate, from 150 ft/hr average to 80 ft/hr average the parameters were gradually changed to 50,000 to 60,000 lbs WOB and 115 rpm rotary speed. This did not substantially increase the drill rate but did raise the hole angle from less than 2 degrees to 5.9 degrees.

Clay hydration was a continual problem throughout this section, causing the bit to "ball up", the annulus to pack off and the shaker screens to plug. High viscosity pills and circulating to clean the annulus were employed to help alleviate the problem. Mud weight was increased from 9.3 to 9.6 lb/gal while funnel viscosity was kept at 45 sec/qt and filtration at 12.0 cm³/30 min. Lithology consisted mainly of clay and siltstone.

Torque was relatively high throughout this section ranging between 180 and 410 ft-lbs. This was probably due to the nature of the BHA, considering that the bearings in the bit were not locked and the torque was reduced on the next bit run which was made to pick up a new BHA.

Locked up BHAs were run from 4,665 feet to 7,982 feet. Relatively uniform drilling parameters were employed to 7,397 feet reflecting the homogeneous nature of the lithology of clay, siltstone and shale. WOB averaged 55,000 lbs and the rotary speed averaged 120 rpm. Pump pressure averaged

2,780 psi with a 540 gal/min flow rate to 6,383 feet. The TFA of the bit was decreased at this depth from 0.528 to 0.389 in² increasing the pressure loss at the bit from an average of 44% to 55%. This produced typical pump pressures of 2,700 psi with average flow rates of 480 gal/min.

The mud weight was further increased from 9.6 to 9.8 lb/gal in an attempt to counter hole swelling and tight hole on trips. This weight was maintained to 6,910 feet then decreased to 9.7 lb/gal with the hope of increasing the drill rate. This produced excessive tight hole problems and the mud weight was raised to 10.0 lb/gal beginning at 7,080 feet. The mud weight stabilized at 10.1 lb/gal while funnel viscosity remained at about 45 sec/qt and filtration decreased to about 7.0 cm³/30 min (see Table 2).

Problems encountered in this section of hole consisted of clay hydration causing bit "balling" and subsequent trips to replace green bits, tight hole and clogged shaker screens. The steps taken to combat these problems consisted of pumping high viscosity & nutplug pills, raising the mud weight and reaming the hole.

A change in lithology, from clay to sand at 7,346 feet, caused the torque to increase significantly above the average and a trip for a new bit was made at 7,397 feet. Insert bits were used to complete the well in lithologies consisting of sandstone, limestone, dolomite, shale, quartzite and argillite. Drilling parameters used were 25,000 to 55,000 lbs WOB, 50 to 85 rpm rotary speed and 2,680 psi pump pressure with 480 gal/min flow rate. Torque ranged between 50 and 350 ft-lbs.

The hole deviation was relatively constant from 4,693 to 5,531 feet at 6.0 degrees inclination to the west. A gradual decrease in deviation occurred over 5,531 to 7,982 feet from 6.0 to 1.0 degree with approximately the same direction. The greatest dogleg severity occurred from 4,429 to 4,693 feet reaching 2.32 deg/100 ft.

Two significant problems were experienced while drilling this last section. Circulation was partially lost at 7,780 feet after encountering high torque in the carbonate section. This was probably due to fracture porosity in the carbonates. Drilling was suspended and the hole slow circulated until a 20 bbl nutplug pill was mixed and pumped to the bottom. The mud weight was also lowered from 10.1 to 9.8 lb/gal as drilling ahead was resumed at a flow rate reduced to 430 gal/min with 2,200 psi (ECD reduced from 10.2 to 9.9 lb/gal). The hole was drilled to total depth under these conditions. While performing a wiper trip in preparation for running logs severe tight hole was encountered from 4,841 to 4,467 feet through which the pipe was jarred and pumped free. This was probably caused by a key seat in the dogleg of this section (see Table 3 and Appendix F). The hole was reamed on the return trip from 4,396 to 4,771 feet at which point tripping in could be accomplished with little drag. Dresser Atlas then ran the following logs:

DIFL-SP-GR
BHC AL-GR-SP-CAL
CNL-CDL
TEMP-FMT
SWS
RFT
Seismic spot check

One wiper trip was made prior to running the final two logs. Also, a strapped measurement of the drillstring, while running to bottom during the first wiper trip resulted in total depth being corrected to 7,982 feet.

A further wiper trip was performed after logging and 211 joints of 53.5 lb/ft, 9.625 inch, L-80, Buttress casing were run and the shoe landed at 7,976 feet in preparation for testing. A 60 bbl freshwater spacer mixed with 15 gal/bbl CW-7 was pumped prior to cementing with 1,000 sacks of class "G" cement mixed with 3% KCl, 1% D-60, 0.2% D-133 and 0.2% D-46. The first 200 sacks were mixed to 14.0 lb/gal weight and the last 800 sacks to 15.8 lb/gal weight. The cement was displaced with 545 bbls of mud at 10 bbl/min using the rig pumps, the plug was bumped with 500 psi and held for 7 minutes until bled off.

Dresser Atlas ran a CBL, perforated the casing and testing commenced on April 14, 1986. The test results were considered classified and are not included in this report.

A total of 27 days from spud was required to drill to total depth (see Figure 2) and although no major delays to drilling occurred, much time was lost as the well progressed due to poor hole conditions and inadequate bit cleaning, that required reaming and extra bit trips.

3. FORMATION PRESSURES

A. FORMATION PORE PRESSURE

Specific data concerning formation pore pressure from adjacent wells was not made available. However, abnormally high pressures were not anticipated and it was expected that excessive mud weights would not be required. A normal formation pressure gradient of 8.5 lb/gal was estimated.

From 137 to 7,981 feet the Dxc (corrected drilling exponent) was calculated automatically every 5 feet by the computer and plotted together with rate of penetration (ROP), background gas and lithology on the Drilling Data Pressure Log (Appendix G) averaged over 10 feet intervals. The flowline mud temperature and the delta mud temperature (difference between lagged mud temperature out and mud temperature in) were plotted on the Temperature Data Log (Appendix I) over 10 feet intervals. The resistivity of the mud at the flowline and the delta mud resistivity (difference between lagged mud resistivity out and mud resistivity in) was plotted on the Mud Resistivity Log (Appendix J) over 10 feet intervals. An interpretation based on all these pressure parameters was plotted on the Pressure Evaluation Log (Appendix H).

26 INCH HOLE SECTION (137 - 1,569 ft)

The ROP while drilling the initial 12.25 inch pilot hole below the shoe of the 30 inch conductor to 1,569 feet was extremely erratic, ranging from over 1,000 to 40 ft/hr though was typically in excess of 150 ft/hr and extremely rapid over the lower 400 feet of the section. The high ROP was probably due to hydraulic jetting at the bit while penetrating the poorly consolidated sand and gravel that was the major lithology of this interval.

Consequently, the resulting Dxc data also exhibited a high degree of scatter and did not allow a normal compaction trend to be established, especially as argillaceous sediments were poorly represented.

Background gas remained in a range of 12 to 40 units with higher readings often associated with the thin coal horizons (see Appendix G). With a mud weight of between 8.9 and 9.2 lb/gal there was no connection gas observed.

Both the delta temperature and the flowline temperature plots did not reveal any meaningful trends and this was probably to be expected while drilling through permafrost down to approximately 1,100 feet. Evaluation of mud temperature below this depth, however, was restricted due to loss of data caused by computer malfunction. For similar reasons mud resistivity data was also lost from this interval, while above 1,100 feet delta resistivity and mud resistivity out did not reveal any significant trends.

It was considered that down to 1,569 feet the formations drilled remained normally pressured at approximately 8.5 lb/gal.

17.5 INCH HOLE SECTION (1,569 - 3,322 ft)

A 17.5 inch hole was drilled down to 2,223 feet and 12.25 inch pilot hole for the remainder of the section. The ROP, while less erratic than in the

previous section, still varied considerably in a range from 12 to 500 feet/hr while drilling sand and gravel and not until slightly more consolidated siltstones and claystones became the main lithology at 2,100 feet did ROP become less erratic (100-200 ft/hr).

The plotted Dxc data was also erratic down to 2,100 feet due to the poorly consolidated formations, but from this depth there was less scatter of data although extreme bit balling due to poor bit cleaning resulted in slow ROP and unrealistic Dxc data. From approximately 2,600 feet the argillaceous sediments being drilled appeared to be more consolidated and bit balling was no longer a serious problem. More reliable Dxc data resulted and although there was still considerable scatter it was apparent that a normal compaction trend was being established (see Appendix C).

The drilling of this section commenced with 8.8 lb/gal mud and background gas ranged from 12 to 100 units down to 2,000 feet. From here, gas stabilized at between 20 and 40 units with 9.1 to 9.2 lb/gal mud weight. Gas readings rose gradually from 2,400 feet to 100 units at 2,600 feet and steadily increased to approximately 200 units by 3,323 feet with 9.2 to 9.3 lb/gal mud in the hole. No connection gases were observed and only two relatively small trip gases of 80 and 45 units were recorded, near 2,200 feet.

Flowline temperature gradients ranged between 1.2 and 3.1 deg F/100 ft through this section and did not exhibit any significant trend variation indicative of increasing formation pressure. Similarly the delta temperature plot did not show any anomalous trends.

The mud resistivity out and delta resistivity plots did not reveal any significant trends to assist formation pressure evaluation. Data varied inconsistently between .60 and .80 ohm-m for mud resistivity and delta resistivity was typically 0.2 ohm-m.

The formation pore pressure gradient was considered to still be essentially normal down to 3,332 feet at 8.5 lb/gal, though possibly increasing very slightly to 8.6 lb/gal from 2,700 feet as suggested by the rising background gas from that depth.

12.25 INCH HOLE SECTION (3,332 - 7,982 ft)

The 12.25 inch hole drilled from 3,332 feet to total depth was characterized by argillaceous sediments of claystone, siltstone and shale until 7,400 feet where sandstone, carbonates and quartzite were encountered, allowing good Dxc data to be obtained for the majority of the interval. The ROP for this section gradually decreased from an initial range of 30 to 200 ft/hr down to 15 to 25 ft/hr at 7,400 feet indicating gradual compaction with depth. The large fluctuations of ROP characteristic of earlier hole sections were not in evidence and this was particularly true below 4,800 feet. ROP increased and became more variable while drilling the sandstone and fractured carbonates near total depth (see Appendix G).

Dxc data was still somewhat erratic after drilling out of the 13.375 inch shoe but began to closely follow the normal compaction trend established earlier from 4,300 feet. From 7,000 feet Dxc data began to decrease slightly suggesting the beginning of a pressure transition zone. At 7,350 feet

just before the sandstone was drilled, Dxc data relative to the normal trend indicated a formation pressure of 9.6 lb/gal. Dxc data also exhibited a similar decrease from 6,500 to 6,900 feet before returning to the normal trend at 6,950 feet but this suggested pressure change was not confirmed by other indicators.

The mud weight was maintained at approximately 9.2 lb/gal when drilling continued below the 13.375 inch shoe. Background gas was initially about 80 units before increasing from 3600 feet to approximately 300 units at 3,800 feet. Connection gas was also much in evidence after first appearing at 3,340 feet (20 units), increasing up to about 600 units near 3,800 feet and indicating a change in formation pressure. Mud weight was raised to 9.6 lb/gal at 4,050 feet in response to higher gas and from 4,100 feet there were no further connection gases seen until deeper in the hole. Only one trip was made in the interval associated with connection gas, at 3,430 feet, with a trip gas of 275 units.

Background gas stabilized at approximately 200 units with 9.6 lb/gal mud weight in the hole and dropped further to about 50 units by 4,700 feet when the mud weight was raised further due to tight hole conditions during the trip at 4,665 feet and the trip gas of 1,480 units, which was significantly higher than before. Mud weight was then maintained in a range of 9.6 to 9.8 lb/gal down to 7,100 feet. Background gas began gradually increasing again from 4,900 feet to approximately 100 units at 5,400 feet before slowly decreasing to 40 units from 5,600 feet. Thereafter background gas decreased slowly to 20 units at 6,900 feet, before showing a slight increasing trend from 7,100 feet, which correlated with the transition zone suggested by the Dxc.

Connection gas was again present from 4,920 feet in a range of 5 to 1240 units but was typically 20 to 30 units. Mud weight was not raised further, however, and connection gas eventually disappeared below 5,130 feet as background gas decreased. This interval of connection gas and higher background gas suggested higher formation pore pressure and probably greater formation porosity and permeability. Trip gases below 4,900 feet were generally high, but variable and ranged from 275 to 980 units, with higher readings associated with depths exhibiting connection gas.

Connection gas appeared briefly again at 7,230 feet corresponding with the rising background gas trend from 7,100 feet and the decreasing Dxc data, and occurred intermittently to total depth in a range of 5 to 46 units. Background gas increased while drilling the sandstone below 7,350 feet with a peak of 3,800 units and continued to increase to about 100 units in the underlying carbonates.

The mud weight was raised at 7,057 feet from 9.8 to 10.0 lb/gal due to tight hole conditions while tripping and this also suggested increasing formation pressure. Lost circulation occurred in the carbonates at 7,780 feet and required lowering of the mud weight back to 9.8 lb/gal to reduce effective circulating density (ECD). This mud weight was maintained to total depth. Background gas did not increase significantly as a result, but connection gas did reappear briefly and hole condition deteriorated again.

Flowline temperature gradients below the the 13.375 inch shoe exhibited relatively uniform gradients of 3 deg F/100 ft within a range of 1.3 to

4.3 deg F/100 ft until 6,750 feet (see Appendix I). At this depth there was a distinct reduction in gradient to 0.13 deg F/100 ft down to 7,030 feet followed by a sharp gradient increase to 11.0 deg F/100 ft. The latter continued briefly to 7,200 feet before typical gradients appeared to be present again. Flowline temperature for the remainder of the hole was somewhat erratic and did not allow easy trend recognition and this may have been due to the several changes of lithology. The large temperature gradient increase at 7,030 feet corresponded very closely with and appeared to confirm the initiation of a transition zone at 7,000 feet as indicated by the Dxc plot. The delta temperature plot, however was not as informative and did not indicate any meaningful trends or variations.

The mud resistivity out plot revealed considerable scatter down to 5,100 feet where a gradually increasing trend began to develop. This persisted to 6,100 feet where a decreasing trend was initiated that continued to 7,100 feet where an increasing trend began to form again (see Appendix J). These changes did not seem to indicate formation pressure changes as much as changes in mud properties and amount of gas in the mud at the flowline. The delta resistivity plot was very similar and did not appear to indicate much, for the same reasons and also probably due to insufficient difference between formation water resistivity and that of the mud.

The formation pore pressure gradient was thought to begin increasing gradually from 3,400 feet and was estimated to be close to 9.0 lb/gal at 4,100 feet when the mud weight was raised from 9.1 to 9.6 lb/gal due to high background and connection gas (see Appendix H). Formation pressure appeared to continue to increase slightly to 9.2 lb/gal down to 4,950 feet where it probably rose to about 9.5 lb/gal between there and 5,700 feet in the interval characterized by increased background and connection gas. A gradual reduction in pressure probably ensued to 9.0 to 9.1 lb/gal down to 6,000 feet and remained as such to 7,000 feet where it increased to about 9.7 lb/gal as suggested by the decrease in Dxc, sharp flowline temperature gradient increase and the deterioration of hole condition.

Evaluation of formation pressure during the drilling of this well was based primarily on gas data, Dxc and flowline temperature. The latter two did give a good indication of a minor pressure transition zone beginning at 7,000 feet and the analysis of both background and connection gas clearly indicated relative changes of formation pressure gradient.

3. FORMATION PRESSURES

B. FORMATION OVERBURDEN PRESSURE

The overburden pressure at any point in the formation is that pressure exerted by the total weight of the overlying formations. This is expressed

by: $S = 0.433 \times b \text{ average} \times D$

where: 0.433 = constant for converting g/cc to psi/ft

S = overburden pressure (psi) for interval

D = depth interval (ft)

b = average bulk density for interval

This pressure is then converted to a gradient through the relationship:

$$\text{OBG} = \frac{\sum S}{\sum D} = \frac{\sum 0.433 \times b \text{ average} \times D}{\sum D}$$

The bulk density of a rock is a function of the density of the rock matrix itself, the density of the pore fluids, and the porosity. Formation bulk density can be determined by a number of methods. It can be obtained from the LDT, FDC, or Sonic electric logs, or determined directly from cuttings. This final method may give erroneously low bulk density values, due to possible hydration of clay cuttings in the annulus and consequent swelling.

On Amoco Production Co. OCS Y-0302 #1 electric logs were only run below 1,569 feet so that bulk densities for the initial section of the hole were taken from the density log of a correlation well (W. Foran #1) approximately 5 miles away. At the 3,322 feet log run only the acoustic log was run and bulk densities were derived from it. These were however unrealistically low, due to hydration of the clay formations and it was decided that a more meaningful overburden gradient would be provided by extrapolating the gradient obtained from the correlation well. At the total depth log run at 7,982 feet a density log was run and bulk densities derived from the porosity data still were anomalously low down to about 3,400 feet. Consequently the overburden gradient was further developed by extrapolation before using the log derived density data. While not ideal, the resultant gradient appeared to be more realistic than one derived totally from the electric log data of this well.

Overburden pressure gradients have been used as a tool for abnormal pressure detection. Geopressures often occur in claystones, and, due to the abnormally high porosity, the bulk density is exceedingly low. If the zone is thick enough, the amount of low density readings may be sufficient to cause the overall average bulk density (and consequently the overburden pressure gradient curve) to decrease. Since these low density zones are usually relatively thin, the overburden gradient reversal is normally small and occurs over a short interval.

A graphical representation of estimated overburden pressure is shown on the Pressure Evaluation Log (Appendix G).

3. FORMATION PRESSURES

C. FORMATION FRACTURE PRESSURE

A number of theoretical models have been developed in an attempt to estimate formation fracture pressures. Hubbert and Willis found that, in areas characterized by normal faulting, simple topography, and horizontal beds, fracture would occur when:

$$F = \frac{(S - P)}{3} + P$$

where:

F = pressure in the borehole at the point of fracture (psi)

S = total pressure of the overburden (psi)

P = pore pressure (psi)

This expression provided an estimate for minimum fracture pressure, given the limitations above.

Matthews and Kelly used empirical data from a number of Gulf Coast wells and introduced a factor of "cohesive nature of the matrix" and from this developed a method that gave more precise fracture pressure determinations for that area.

Eaton brought the concept of a variable overburden gradient into his fracture pressure calculation. He also used empirical data from Gulf Coast wells and introduced Poisson's ratio () as a variable that controlled fracture pressure gradients. Eaton's Poisson's ratio was not a function of the rock itself, rather a function of the regional stress field--the horizontal-to-vertical stress ratio. The utilization of a variable overburden allowed for an increase in accuracy of the fracture gradient calculation.

Exlog has noted the limitations in fracture pressure prediction models used previously. These limitations are mainly due to the application of empirically derived constants, developed primarily from Gulf Coast data, usually representing the "stress ratio". The fact that these "stress ratio" calculations are based on Gulf Coast data which may be unrelated to a wildcat area means that actual fracture pressures can be very different from calculated pressures.

Accurate information of the in-situ principal stresses is vital for the solution of the fracture pressure problem. Exlog has proposed a hypothesis (Daines or Zero Tensile Strength model) that has the capacity to resolve and extrapolate the principal local stresses, subsequent to the first fracture test (Pressure Integrity Test) in compact formations. Along with other pertinent data usually calculated on wildcat wells, i.e. overburden gradients and pore pressures, fracture pressures can then be calculated for any point within the drilled hole. The ELOS system uses the Zero Tensile Strength model to calculate estimated fracture pressures.

Accurate fracture pressure estimates must be obtained, and then used to calculate as precise values for kick tolerance as possible. Kick tolerance is that maximum pressure that the formation can stand in the event a kick is taken.

Kick tolerance calculations obviously become more accurate when based on fracture pressure calculations for that specific well. In the event abnormal hole conditions are encountered, the chance of safely and effectively completing the well is greater than if reliance is placed on formulae containing unrelated empirical constants.

The estimated fracture gradient curve for Amoco Production Co. OCS Y 0302 #1 is presented on the Pressure Evaluation Log (Appendix G).

Two pressure integrity tests were run during the well, their results are summarized below:

<u>PIT</u> <u>DEPTH</u> <u>(ft)</u>	<u>VERTICAL</u> <u>DEPTH</u> <u>(ft)</u>	<u>GAUGE PRESSURE</u> <u>AT LEAKOFF</u> <u>(psi)</u>	<u>MUD WEIGHT</u> <u>IN HOLE</u> <u>(lb/gal)</u>	<u>FRACTURE PRESSURE</u> <u>EQUIVALENT MUD WEIGHT</u> <u>(lb/gal)</u>
1,576	1,576	160	9.10	11.06
3,332	3,332	725	9.20	12.10

Data from the second PIT was used as the basis for the calculation of the fracture pressure gradient on this well. Observation of the resultant curve indicates that lost circulation should not have been anticipated while drilling this hole with a maximum mud weight of 10.1 lb/gal. However, at 7,780 feet while drilling through the carbonate section, approximately 65 bbls of mud were lost to formation before remedial action was effective. Associated high torque in this zone suggested that the formation was highly fractured.

4. MEASUREMENT WHILE DRILLING

A. THE MWD TOOL

The main component of the MWD system is an instrumentation assembly housed in a special non-magnetic stainless steel drill collar. Including crossover subs, the whole assembly is typically 36 feet in length.

The collar is placed in the drill string near the bit and is powered by the circulation of the drilling mud. The MWD system is capable of measuring the following parameters:

1. Formation Resistivity - A 16 inch short normal tool. Readings are stored in the downhole memory and transmitted to surface once per minute.
2. Gamma Ray - A scintillation counter provides data which is averaged downhole over one minute intervals. Readings are stored in memory and transmitted to surface once per minute.
3. Directional Surveys - A solid state magnetometer / accelerometer array measures the inclination, azimuth and tool face. Surveys may be taken, dependant on operator entered setpoints, whenever the pumps are restarted, for example after a connection.

The data is transmitted to surface in real time by means of a negative mud pulse telemetry system, this involves modulating the flow of mud through the drillstring by a valve and control mechanism mounted in the drill collar assembly. Valving the mud from within the drill collar to the annulus creates negative pressure pulses which are transmitted to surface at a speed close to sonic velocity in mud. Since the transmission medium is the pressure field generated by the mud pumps, data can not be transmitted when circulation stops. The pulses are detected and decoded at the surface using computational equipment in the Exlog surface unit. The data is depth correlated, merged with other surface parameters and stored for output as required. When the tool is returned to surface, the data from the downhole memory (BRAM) is retrieved, cross referenced and merged with the transmitted data.

Field prints of all logs are provided at the wellsite to scales required by the client.

4. MEASUREMENT WHILE DRILLING

B. INTRODUCTION

Amoco Production Co. OCS-Y-0302 #1 was drilled in March and April of 1986. Exlog provided MWD service from spud at 147 feet to total depth at 7,976 feet. No tool was run over the interval between 1,550 and 1,650 feet since this footage was made while opening the 12.25 inch pilot hole to 26 inches. Also, because of the anticipated addition of large quantities of nutplug and lack of necessity for an MWD log, no tool was run between 2,202 and 3,430 feet.

The rest of the hole was logged in 11 MWD tool runs using a total of three MWD assemblies. The total footage covered by the MWD tools was 6,501 feet, of this, 6,397 feet was successfully logged (98.4%). Log resolution was poor during parts of MWD run 1 due to very high rates of penetration up to 1,000 ft/hr, thereby causing a low density of data relative to depth. The interval that was not successfully logged was between 7,178 and 7,282 feet where the tool did not transmit data and when the tool was subsequently layed down the downhole memory was found to be excessively corrupted.

4. MEASUREMENT WHILE DRILLING

C. RUN SUMMARIES

<u>RUN #01</u>	<u>BIT #2</u>
Assembly	: 03-140
Impeller/Nozzle	: 400-800 / #8
Depth In - Out (ft)	: 147 - 1,550
Date In - Out	: 3/13/86 - 3/14/86
Circulating Hours (run/cum.)	: 12.75 / 12.75
Pulsing Hours (run/cum.)	: 10.25 / 10.25
Drilling Hours (run/cum.)	: 10.75 / 10.75
Downhole Hours (run/cum.)	: 25.75 / 25.75

Assembly 03-140 was run in the hole behind a new 12.25 inch bit with one 18/32 and two 16/32 inch jets, in a 60 feet, 90 feet pendulum BHA. At 147 feet circulation was established at 675 gal/min and with 1,290 psi pump pressure 20 psi pulses were detected and decoded.

After drilling ahead, at 209 feet the tool stopped pulsing for 20 minutes. At 280 feet the tool again stopped pulsing for 130 minutes. These two periods of no pulsing were attributed to clogging of the pulser assembly with nutplug which was in the mud system in significant amounts from the end of the previous bit / hole opener run. The tool pulsed without problem from this point until the end of the bit run at 1,550 feet. Some problems occurred in decoding the data, largely due to very high rates of penetration, which at times were in excess of 800 ft/hr.

After pulling out of hole the tool was layed down while the hole was opened to 26 inches prior to running casing. The tool was in good visual external condition and after the downhole memory was dumped and found to contain a complete set of good data, it was merged with real time data, filling in the gaps from the periods of no pulsing.

<u>RUN #02</u>	<u>BIT #3.1</u>
Assembly	: 03-139
Impeller/Nozzle	: 600-1,200 / 12
Depth In - Out (ft)	: 1,649 - 2,202
Date In - Out	: 3/19/86 - 3/20/86
Circulating Hours (run/cum.)	: 16 / 16
Pulsing Hours (run/cum.)	: 0 / 0
Drilling Hours (run/cum.)	: 12.75 / 12.75
Downhole Hours (run/cum.)	: 24.75 / 24.75

After drilling out the casing shoe and performing the leak off test assembly 03-139 was run in the hole behind a new 17.5 inch bit with three 20/32 inch jets. However, once the tool was tested below the rotary table the bit was pulled to surface again and the jets removed. Circulation was established on bottom at 660 gal/min and 1,000 psi. As anticipated, no data was transmitted from the tool because of the low pressure differential at the bit. However, data was being stored in the downhole memory and was later retrieved following the run.

No drilling problems were encountered until 2,192 feet when the penetration rate dropped to less than 10 ft/hr. This was considered to be the result of bit balling in a clay formation. A trip was made and this was seen to be the case. It was decided to lay down the MWD tool as large amounts of nutplug were likely to be used to combat further bit balling.

When the tool memory was retrieved the data was merged with the surface data. This resulted in a complete data set for the drilled interval.

<u>RUN #03</u>	<u>BIT #8</u>
Assembly	: 03-140
Impeller/Nozzle	: 400-800 / 6
Depth In - Out (ft)	: 3,430 - 4,665
Date In - Out	: 3/27/86 - 3/29/86
Circulating Hours (run/cum.)	: 26.5 / 39.25
Pulsing Hours (run/cum.)	: 26.5 / 36.75
Drilling Hours (run/cum.)	: 16.75 / 27.5
Downhole Hours (run/cum.)	: 36 / 61.75

After drilling out the 13.375 inch casing shoe and performing a pressure integrity test, assembly 03-140 was re-run in the hole behind a 12.25 inch bit with four 13/32 inch jets, in a 60 feet, 90 feet pendulum BHA.

The tool was not fitted with the optimum nozzle size for the hole hydraulics as there had been a last minute change in bit nozzle size. However, circulation was established on bottom at 540 gal/min with 2,740 psi and the resulting 20 psi pulse size was adequate for good data decoding. As drilling proceeded there were problems with the shaker screens becoming blocked from the formation clay. This necessitated decreasing the flow rate to 420 gal/min and 1,740 psi which on occasion resulted in data decoding difficulties. Throughout the run there were periods when drilling proceeded at under 400 gpm, for the same reason, and data was only decoded intermittently. However, it was assumed and subsequently confirmed that a complete data set was stored in the downhole memory allowing a complete log to be produced.

Hole inclination was maintained at less than 2 degrees to 4,400 feet but increased to 5.9 degrees at 4,630 feet. At 4,665 feet the bit was tripped to run a locked-up BHA. A single shot survey check was run and this confirmed that the inclination was between 5.5 and 6 degrees.

The tool was inspected on the drill floor and was re-run without retrieving the downhole memory at this time.

RUN #04BIT #9

Assembly : 03-140
Impeller/Nozzle : 400-800 / 6
Depth In - Out (ft) : 4,665 - 5,486
Date In - Out : 3/29/86 - 3/30/86
Circulating Hours (run/cum.) : 20.5 / 59.75
Pulsing Hours (run/cum.) : 20.5 / 57.25
Drilling Hours (run/cum.) : 16 / 43.5
Downhole Hours (run/cum.) : 30 / 91.75

Assembly 03-140 was re-run at 5,486 feet in a locked BHA with 2 stabilizers and a pony collar below the tool and another stabilizer above. Circulation was established at 515 gal/min with 2,700 psi and the tool started pulsing immediately. Flow rates were maintained at over 500 gal/min throughout most of the run and there were no data transmission problems.

Following a connection at 5,472 feet the torque increased and began to fluctuate considerably. It was suspected that a cone was locked and the bit was tripped. The MWD tool was inspected on the drill floor and was re-run without re-initialising or retrieving the downhole memory at this time.

The hole inclination remained between 6 and 6.5 degrees throughout the run.

RUN #05BIT #10

Assembly : 03-140
Impeller/Nozzle : 400-800 / 6
Depth In - Out (ft) : 5,486 - 5,740
Date In - Out : 3/30/86 - 3/31/86
Circulating Hours (run/cum.) : 10 / 69.75
Pulsing Hours (run/cum.) : 10 / 67.25
Drilling Hours (run/cum.) : 8.25 / 51.75
Downhole Hours (run/cum.) : 16 / 107.75

Assembly 03-140 was re-run at 5,740 feet in the same BHA. Some tight hole was experienced on the trip in at 10 stands off bottom and circulation was established at 516 gal/min with 2,650 psi in order to ream to bottom. Good pulses were observed from the tool immediately.

As drilling proceeded the torque patterns from the last run were occasionally seen again and by 5,720 feet the penetration rate had decreased from 30 to under 10 ft/hr. Due to the slow penetration rate and fluctuating torque it was decided to trip the bit at 5,740 feet. It was seen that the problem was due to severe bit balling behind the cones.

The tool was inspected and again re-run without retrieving the memory. The hole inclination dropped slightly to 5.7 degrees during the run.

RUN #06BIT #11

Assembly : 03-140
Impeller/Nozzle : 400-800 / 6
Depth In - Out (ft) : 5,740 - 6,382
Date In - Out : 3/31/86 - 4/1/86
Circulating Hours (run/cum.) : 26 / 96.75
Pulsing Hours (run/cum.) : 26 / 94.25
Drilling Hours (run/cum.) : 23 / 73.75
Downhole Hours (run/cum.) : 32.25 / 140

Assembly 03-140 was re-run again at 6,382 feet in the same locked BHA. Circulation was established at 525 gal/min with 2,880 psi and 30 psi pulses were observed immediately. As drilling continued there were no indications of any torque fluctuations as seen on the last run. Good data was transmitted throughout the run and no drilling problems were encountered. The hole inclination decreased slightly to 4.7 degrees during the run.

When the tool was out of the hole for a bit change, it was again inspected on the drill floor and re-run without retrieving the memory.

RUN #07BIT #12

Assembly : 03-140
Impeller/Nozzle : 400-800 / 6
Depth In - Out (ft) : 6,382 - 7,057
Date In - Out : 4/1/86 - 4/3/86
Circulating Hours (run/cum.) : 35.75 / 132.5
Pulsing Hours (run/cum.) : 35.75 / 130.0
Drilling Hours (run/cum.) : 32.6 / 107.4
Downhole Hours (run/cum.) : 42.0 / 182.0

Assembly 03-140 was re-run behind a new 12.25 inch bit with one 10/32 inch and three 14/32 inch jets in the same locked BHA.

After establishing circulation on bottom at 497 gal/min with 3,100 psi pump pressure, 25-35 psi pulses were detected and decoded without problem. The hole was drilled ahead at an average flow rate of 520 gal/min with 2,450 psi pump pressure. Good data was transmitted from all sensors throughout the run. There were some minor decoding problems towards the end of the run due to a high level of pump induced noise in the pressure signal. However, because of the relatively low penetration rates the real time log quality remained good.

At 7,057 feet a trip was made to change the bit. The tool was inspected at surface and found to be in good external visual condition. The downhole memory was not accessed at this time.

RUN #08BIT #13

Assembly : 03-140
Impeller/Nozzle : 400-800 / 6
Depth In - Out (ft) : 7,057 - 7,178
Date In - Out : 4/3/86 - 4/4/86
Circulating Hours (run/cum.) : 9.75 / 142.25
Pulsing Hours (run/cum.) : 6.0 / 136.0
Drilling Hours (run/cum.) : 8.0 / 115.4
Downhole Hours (run/cum.) : 18.0 / 200.0

Assembly 03-140 was re-run behind a new 12.25 inch bit with one 9/32 inch and three 11/32 inch jets in the same locked BHA.

After establishing circulation on bottom at 366 gal/min with 2,750 psi pump pressure, 55 psi pulses were detected and decoded without problem. It was apparent from the relative pump pressure that one of the nozzles had become plugged during the trip in the hole. The hole was drilled ahead with an average flow of 405 gal/min and 3,050 psi pressure. After 1 hour of circulating the pulse size decreased to 20 psi and further degenerated to 5-10 psi over the following 4 hours. The result was very little or no decoding of transmitted data for the rest of the run.

At 7,178 feet the bit was pulled due to erratic torque and low rate of penetration. The MWD tool was laid down to dump the memory which, while containing a good data record for the missed intervals, did however have some corruption elsewhere. This along with the uncertainty of the pulser reliability prompted the decision not to run this tool again.

RUN #09BIT #14

Assembly : 03-139
Impeller/Nozzle : 400-800 / 6
Depth In - Out (ft) : 7,178 - 7,397
Date In - Out : 4/4/86 - 4/5/86
Circulating Hours (run/cum.) : 15.0 / 31.0
Pulsing Hours (run/cum.) : 0.0 / 0.1
Drilling Hours (run/cum.) : 12.1 / 24.8
Downhole Hours (run/cum.) : 21.5 / 46.25

Assembly 03-139 was run behind a new 12.25 inch bit with three 13/32 inch jets. The tool was function tested at 700 feet with 400 gal/min and 1,300 psi pump pressure, but no pulses were detected. Several restarts and various flow rates were unsuccessful in getting the tool to pulse. It was however decided to run the tool regardless, with the saving of rig time being of prime concern.

The hole was drilled to 7,397 feet with an average flow rate of 480 gal/min and pump pressure of 2,450 psi. No pulses were detected throughout the run. After pulling out of hole to change the bit, the MWD tool was laid down. The tool was in good visual external condition, though, the memory was found to contain excessive data corruption rendering it useless.

RUN #10BIT #15

Assembly : 03-142
Impeller/Nozzle : 400-800 / 6
Depth In - Out (ft) : 7,397 - 7,647
Date In - Out : 4/5/86 - 4/6/86
Circulating Hours (run/cum.) : 17.75 / 17.75
Pulsing Hours (run/cum.) : 17.75 / 17.75
Drilling Hours (run/cum.) : 17.3 / 17.3
Downhole Hours (run/cum.) : 25.5 / 25.5

Assembly 03-142 was run behind a new 12.25 inch bit with three 13/32 inch jets. The tool was not function tested on the trip in. At 7,282 feet the kelly was picked up and circulation commenced at 387 gal/min with 1,850 psi pump pressure, 10-15 psi pulses were detected and decoded. The rate was increased to 485 gal/min with 2,700 psi giving 40 psi pulses. The interval from 7,282 to 7,397 feet was reamed over once in order to log the formation with the MWD tool.

The hole was drilled ahead with an average flow of 480 gal/min and 2,680 psi pump pressure, giving an average pulse size of 45 psi. Good data was transmitted, detected and decoded from all sensors throughout the run. At 7,647 feet the bit was pulled due to low rate of penetration. The tool was in good visual external condition and was re-run without accessing the downhole memory.

RUN #11BIT #16

Assembly : 03-142
Impeller/Nozzle : 400-800 / 6
Depth In - Out (ft) : 7,647 - 7,976 (T.D.)
Date In - Out : 4/6/86 - 4/8/86
Circulating Hours (run/cum.) : 35.0 / 42.75
Pulsing Hours (run/cum.) : 1.0 / 18.75
Drilling Hours (run/cum.) : 28.0 / 45.3
Downhole Hours (run/cum.) : 46.25 / 71.75

Assembly 03-142 was re-run behind a new bit with three 13/32 inch jets. After running in the hole circulation was established at 480 gal/min with pressure of 2,690 psi, no pulses were detected despite trying a variety of flow rates and restarts.

The hole was drilled to total depth at 7,976 feet and no pulses were detected during drilling.

On the wiper trip tight hole due to a probable key seat necessitated back reaming, during which operations the jars were tripped several times. This apparently freed what was probably a stuck valve in the tool and it started pulsing for the last hour of circulation.

The tool was in good external condition and was laid down. The memory was dumped and found to contain a complete set of good data for the entire periods of circulation. This data was used to produce a log for the missed interval.

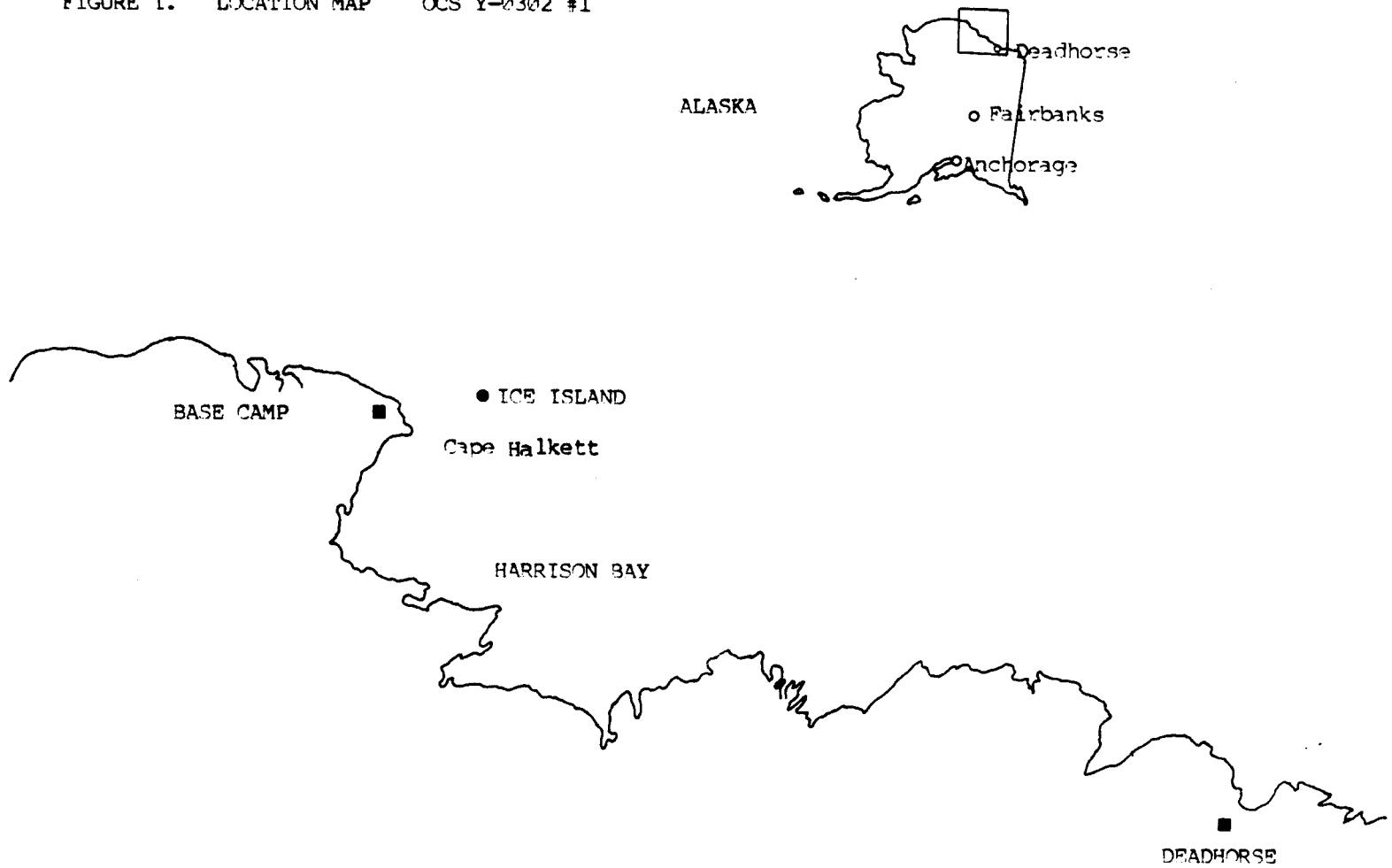
5. GEOLOGY AND SHOWS

Exploration Logging did not provide their Formation Evaluation Service on this well. NL Baroid Logging Systems was responsible for all collection and analysis of cuttings lithology in addition to monitoring formation gas. Total gas and chromatograph data were routed to the Exploration Logging unit to be recorded and transmitted, together with GEMDAS data, to Tulsa.

Lagged total gas, chromatograph gas data and lithology presented in Appendices C and E were manually entered and stored on magnetic media as derived from Baroid mud log work sheets and the mud log itself. The latter was also the source for the gas data and lithology presented on the Drilling Data Pressure Log (Appendix G).

For further details regarding the geology and shows encountered during this well, please refer to the Baroid mud log.

FIGURE 1. LOCATION MAP OCS Y-0302 #1



Appendix A Well Summary Report Gunders

FIGURE 2. WELL PROGRESS GRAPH

Amoco Production Co. OCS Y-0302 #1 Mars Prospect

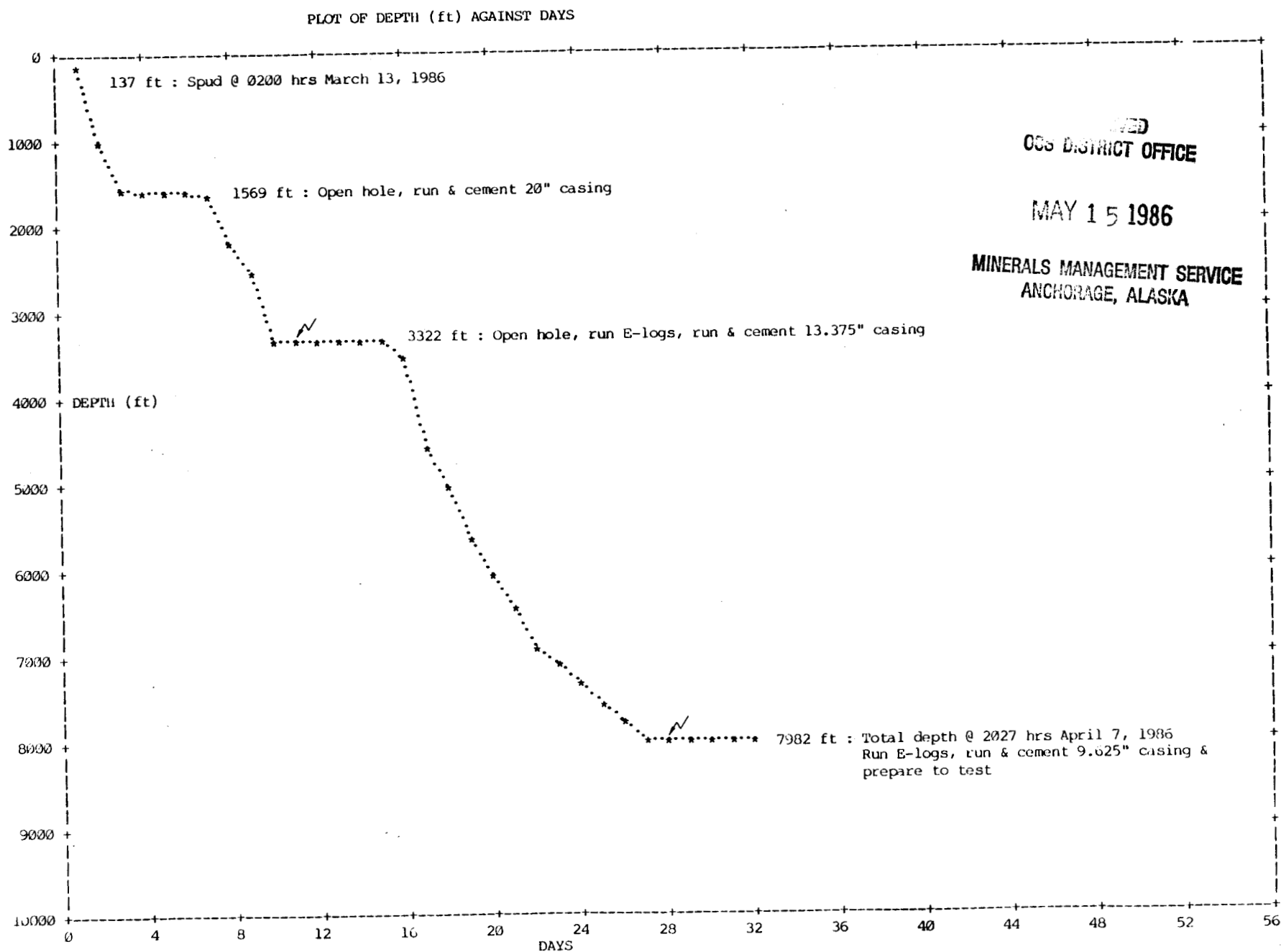


TABLE 1.

AMOCO Production Co. OCS Y-0302 #1 Mars Prospect

Bit Performance Record

RUN #	BIT #	MAKE	TYPE	SERIAL #	IADC #	SIZE inches	COST US \$	JETS 1/32 inch	DEPTH IN ft	FEET CUT	HOURS DRLG RMG	ROP ft/hr	WOB klbs	RPM	PUMP PRESS psi	FLOW gal/min	GRADE S W B G	COMMENTS
1	1	SMTH	SDS	XE4708	114	17.5	-	20:20:20	75	68	6.6	0.0	10.3	0-5	60-70	150-250	600	Y 1/1 0/0 00 w/26" hole-opener
2	2	SMTH	SDS	XD1046	114	12.25	5300	16:16:18	143	1407	9.4	0.0	149.7	15-25	120	1400-1550	650	Y 1/4 0/0 00 Drill pilot hole
3	1.1	SMTH	SDS	XE4708	114	17.5	-	20:20:20	1550	1426	20.3	0.0	70.2	15-45	120	1170	713	N 7/7 0/0 08 w/26" hole-opener
4	1.2	SMTH	SDS	XE4708	114	17.5	-	20:20:20	1569	-								Wiper trip
5	3	SMTH	SDS	XE4711	114	17.5	7316	open	1569	80	0.9	2.3	88.9	30	100	1330	885	Y 1/1 0/0 00 Drill 49' cement
6	3.1	SMTH	SDS	XE4711	114	17.5	7316	open	1649	553	10.0	1.0	55.3	30	125	1200	770	Y 1/1 0/0 01 Balled up
7	4	SMTH	SDS	XE3849	114	17.5	7316	20:20:20	2202	21	1.9	0.2	12.1	37	140	2000	680	Y 1/1 0/0 00 Balled up
8	5	SMTH	SDS	XD6453	114	12.25	5300	14:14:13	2223	1099	8.4	0.0	130.8	30	135	2900	585	Y 1/1 0/0 00 Drill pilot hole
9	5.1	SMTH	SDS	XD6453	114	12.25	-	20:20:20	2223	239	11.8	3.0	20.3	35	145	1500-2000	818	Y 1/1 0/0 00 w/17.5" hole-opener
10	6	SMTH	SDS	XE4739	114	17.5	7316	13:16:16:16	2462	860	7.2	-	119.4	25	138	2900	615	Y 1/1 0/0 00 Open 12.25" hole
11	7	SMTH	SDS	XD1015	114	12.25	5300	13:14:14	3322	108	1.7	1.6	63.5	30	100	2100	550	Y 1/1 0/2 00 Drill 92' cement
12	8	SMTH	SDSCE	EX7530	114	12.25	5300	13:13:13:13	3430	1235	16.7	0.0	73.9	30	105	2700	570	Y 1/2 2/3 01
13	9	SMTH	SDSCE	EZ2033	114	12.25	5300	13:13:13:13	4665	821	16.7	0.0	49.2	50	118	2700	550	N 1/1 0/0 01 Locked
14	10	HUGH	TJ1	KM469	116	12.25	5300	13:13:13:13	5486	254	8.2	0.0	31.0	60	118	2800	532	N 1/1 0/0 00 Loose cone
15	11	SECU	MS33S	328501	114	12.25	5300	9:14:14:14	5740	642	23.1	0.5	27.9	55	120	2900	550	N 1/2 1/0 00
16	12	SECU	MS33S	337525	114	12.25	5300	10:14:14:14	6383	674	32.6	0.5	20.7	50-60	120	2450	536	N 2/4 0/2 00
17	13	SMTH	SDGHCE	XE8882	135	12.25	5300	9:11:11:11	7057	124	8.3	0.5	14.9	60	120	3000	401	N 1/2 1/2 00 Balled-up/plugged
18	14	SMTH	SDGH	XD5381	135	12.25	5300	13:13:13	7181	216	12.1	0.3	17.9	60	125	2700	480	N 4/4 0/0 04
19	15	SMTH	F1	FDC941	437	12.25	8400	13:13:13	7397	250	17.3	1.3	14.5	35-40	60-80	2680	480	Y 0/0 5/1 00 Ream 100' for MWD
20	16	SMTH	F2	EV3569	517	12.25	8400	13:13:13	7647	329	26.1	0.2	12.6	40-50	60-70	2640	490	Y 1/1 0/2 02 Drill to TD
21	17	SMTH	SDS	XD4508	114	12.25	5300	15:15:15	7976	0	0.0	1.3	-	0	80	2310	517	Y 0/0 1/1 00 Ream, wiper trip
22	17.1	SMTH	SDS	XD4508	114	12.25	-	15:15:15	7982	0	0.0	0.2	-	0	80	2450	524	Y 0/0 1/1 00 Wiper trip

OCS DISTRICT OFFICE

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MINERALS MANAGEMENT SERVICE
ANCHORAGE, ALASKA

TABLE 2.

AMOCO Production Co. OCS Y-0302 #1 Mars Prospect

Mud Reports

DATE d m y	TIME	DEPTH ft	DENSITY lb/gal	VIS sec/qt	PV cP	YP lb/100 ft ²	FILTRATE cm ³ /30 min	FC 1/32 in	GELS lb/100 ft ² .17/10 min	pH	Cl ppm	Ca ppm	SD %	SOL %	OIL %	COMMENTS
12/03/86	2230	137	9.2	47	7	29	20.0	4	25 / 36	9.0	4100	280	-	7	0	Gel/seawater
13/03/86	2330	1001	9.2	50	7	29	20.0	4	35 / 36	9.0	4100	280	Tr	7	0	Drill 12.25" hole
14/03/86	2330	1553	9.4	37	5	29	45.0	4	12 / 16	8.0	8200	760	1.00	6	0	Open hole to 26"
15/03/86	2330	1569	9.6	35	8	21	45.0	4	18 / 20	8.5	13500	1160	2.00	8	0	
16/03/86	2330	1569	9.6	35	8	21	45.0	4	18 / 20	8.5	13500	1160	2.00	8	0	Run 20" casing
17/03/86		1569														Clean pits & prepare to mix potassium/lime/mor-rex (KLM) mud
18/03/86	2330	1569	8.6	42	10	4	24.0	2	0 / 1	12.0	2500	360	-	3	0	Drill cut / PIT
19/03/86	2300	1569	8.6	42	11	4	20.0	2	0 / 2	12.0	3000	360	-	3	0	Drill 17.5" hole
20/03/86	2330	2186	9.1	44	17	9	26.0	3	0 / 4	12.5	3200	720	0.25	6	0	Drill 12.25" hole
21/03/86	2200	3322	9.3	43	17	9	12.5	2	0 / 2	12.5	3300	320	0.25	6.5	0	
22/03/86	2200	3522	9.3	43	17	4	12.5	2	0 / 2	12.5	3300	320	0.25	6.0	0	Open hole to 17.5"
23/03/86	2200	3322	9.3	43	17	7	12.5	2	1 / 2	12.5	3000	300	0.25	6.0	0	Ream hole
24/03/86	1900	3322	9.4	52	20	12	4.6	2	3 / 35	12.5	2800	240	0.25	7.0	0	Run 13.375" casing
25/03/86	2200	3322	9.2	46	17	9	9.3	2	1 / 4	12.5	2900	210	0.25	6.0	0	Cement casing
26/03/86	2200	3322	9.2	44	13	4	12.0	2	1 / 3	12.5	3100	200	0.25	6.0	0	Nipple-up BOPE
27/03/86	2300	3535	9.1	50	16	7	13.3	2	1 / 18	12.5	3000	360	0.25	6.0	0	Drill 12.25" hole
28/03/86	2300	4575	9.8	43	17	5	12.4	2	1 / 15	12.5	2900	230	0.25	9.5	0	Raise weight
29/03/86	2300	4968	9.8	41	14	4	11.8	2	1 / 6	12.5	2500	600	0.25	10.0	0	
30/03/86	2300	5560	9.8	42	13	6	10.5	2	1 / 8	12.5	2200	400	0.25	10.0	0	
31/03/86	2300	6030	9.8	47	17	7	9.0	2	1 / 10	12.5	2000	540	0.25	9.0	Tr	
01/04/86	2300	6436	9.8	41	13	5	8.7	1	1 / 4	12.5	2700	400	0.25	10.0	0	
02/04/86	2300	6910	9.7+	42	14	7	6.8	1	1 / 4	12.5	1600	360	0.00	8.0	0	
03/04/86	2315	7070	9.7	48	17	8	8.5	1	1 / 5	12.5	1600	320	0.00	9.0	0	Tight hole
04/04/86	2300	7285	10.0	42	14	6	9.2	1	1 / 5	12.3	1400	270	Tr	9.0	0	Raise weight
05/04/86	2330	7550	10.1	49	21	7	6.4	1	1 / 7	12.5	1000	280	Tr	11.0	0	

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Mud Reports

MINERALS MANAGEMENT SERVICE
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Amoco Production Co. OCS Y-0302 #1 Mars Prospect

TABLE 3. EXLOG MWD: DIRECTIONAL SURVEY DATA

CLIENT	AMOCO PRODUCTION CO.		MWD SURVEY TIE IN DATA				
WELL	OCS Y-0302 #1		MEASURED DEPTH		0.00 ft		
FIELD	MARS PROSPECT		VERTICAL DEPTH		0.00 ft		
COORDINATES	70 deg 50' 35.00'' N		INCLINATION		0.00 deg		
	152 deg 4' 18.50'' W		AZIMUTH		0.00 deg		
MAG. DECLIN.	29.00 E		N-S COORD.		0.00 ft		
RKB - MSL/GL	50 ft		E-W COORD.		0.00 ft		
RKB - SB	75 ft						
FILE #	DEPTH ft	V.DEPTH ft	INCLIN. degree	AZIMUTH degree	N-S ft	E-W ft	DOGLEG deg/100'
RADIUS OF CURVATURE METHOD							
0	227.00	227.00	.580	241.000	.48	-.82	.25
1	375.00	374.99	.790	351.000	1.14	-2.18	.76
2	544.00	543.97	.560	209.000	1.41	-3.67	.75
3	687.00	686.97	.520	222.000	.34	-4.44	.07
4	873.00	872.96	.580	0.000	.83	-5.73	.55
5	1019.00	1018.95	.560	260.000	1.68	-6.73	.60
6	1158.00	1157.95	.410	176.000	.83	-7.39	.47
8	1424.00	1423.94	.230	98.000	-.21	-7.06	.18
10	1663.00	1662.92	1.270	112.000	.25	-3.83	.66
11	1790.00	1789.90	.670	69.000	.24	-1.73	.71
12	1950.00	1949.89	.650	87.000	.61	.02	.12
13	2040.00	2039.88	.750	92.000	.62	1.12	.10
14	2134.00	2133.87	.650	83.000	.67	2.26	.14
15	2193.00	2192.87	.380	4.000	1.03	2.60	1.16
16	2462.00	2461.86	.750	153.000	1.42	4.53	.41
17	2931.00	2930.84	.250	284.000	-1.13	2.50	.20
18	3075.00	3074.84	.250	230.000	-1.27	1.91	.15
19	3428.00	3427.78	1.670	220.000	-5.45	-2.27	.40
20	3545.00	3544.73	1.600	207.000	-8.22	-4.11	.32
21	3637.00	3636.70	1.440	235.000	-10.05	-5.70	.81
22	3794.00	3793.65	1.520	204.000	-13.14	-8.24	.50
23	3856.00	3855.63	.610	229.000	-14.06	-8.92	1.61
24	3949.00	3948.63	.820	195.000	-15.03	-9.53	.49
25	4043.00	4042.61	1.170	236.000	-16.33	-10.45	.82
26	4137.00	4136.58	1.790	210.000	-18.09	-12.09	.95
27	4199.00	4198.55	1.920	207.000	-19.85	-13.05	.23
28	4326.00	4325.48	1.730	217.000	-23.28	-15.20	.28
29	4430.00	4429.41	2.590	240.000	-25.86	-18.11	1.16
30	4573.00	4572.15	4.290	238.000	-30.28	-25.47	1.19
31	4695.00	4693.60	6.520	257.000	-34.66	-36.04	2.32

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Amoco Production Co. OCS Y-0302 #1 Mars Prospect

TABLE 3. (cont.) EXLOG MWD: DIRECTIONAL SURVEY DATA

FILE #	DEPTH ft	V.DEPTH ft	INCLIN. degree	AZIMUTH degree	N-S ft	E-W ft	DOGLEG deg/100'
32	4790.00	4788.04	5.890	260.000	-36.71	-46.10	.74
33	4914.00	4911.38	5.950	258.000	-39.15	-58.64	.16
34	5039.00	5035.68	6.140	254.000	-42.33	-71.41	.37
35	5162.00	5157.94	6.450	254.000	-46.05	-84.38	.25
36	5288.00	5283.19	6.070	260.000	-49.14	-97.76	.60
37	5411.00	5405.44	6.600	258.000	-51.73	-111.08	.47
38	5538.00	5531.63	6.370	257.000	-54.83	-125.09	.20
39	5663.00	5655.92	5.780	266.000	-56.79	-138.10	.89
40	5789.00	5781.29	5.670	258.000	-58.53	-150.60	.64
41	5882.00	5873.85	5.580	260.000	-60.27	-159.55	.23
42	5976.00	5967.43	5.280	264.000	-61.51	-168.35	.51
43	6070.00	6061.05	5.000	263.000	-62.46	-176.72	.31
44	6162.00	6152.72	4.690	252.000	-64.14	-184.30	1.06
45	6288.00	6278.30	4.710	253.000	-67.24	-194.10	.04
46	6352.00	6342.09	4.540	252.000	-68.79	-199.03	.28
47	6413.00	6402.90	4.570	259.000	-70.00	-203.72	.91
48	6506.00	6495.63	4.140	257.000	-71.47	-210.62	.49
49	6568.00	6557.48	3.920	253.000	-72.60	-214.83	.57
50	6634.00	6623.34	3.380	250.000	-73.93	-218.82	.86
51	6729.00	6718.19	3.080	250.000	-75.76	-223.85	.31
52	6853.00	6842.03	2.700	238.000	-78.50	-229.46	.57
53	6978.00	6966.88	2.960	232.000	-82.04	-234.51	.31
54	7035.00	7023.81	2.850	244.000	-83.57	-236.96	1.08
55	7095.00	7083.73	2.900	244.000	-84.89	-239.68	0.00
56	7137.00	7125.69	2.260	242.000	-85.75	-241.36	1.53
57	7387.00	7375.53	1.770	244.000	-89.74	-249.19	.20
58	7513.00	7501.46	2.240	258.000	-91.17	-253.35	.53
59	7605.00	7593.39	1.970	261.000	-91.79	-256.67	.30
60	7751.00	7739.33	1.450	271.000	-92.09	-261.01	.41
61	7854.00	7842.31	1.000	271.000	-92.05	-263.21	.43
62	7932.00	7920.29	1.360	267.000	-92.08	-264.82	.46
PROJECTED BOTTOM HOLE CLOSURE			1.360	267.000	-92.14	-265.86	
PROJECTED TO DEPTH 7976 ft			(7964.28 ft TVD)				
EQUIVALENT TO:-			281.37 ft HEADING S70.9W FROM RKB				

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Amoco Production Co. OCS Y-0302 #1 Mars Prospect

TABLE 4. MWD TOOL PERFORMANCE - MODULE OPERATING HOURS

RUN NUMBER	1	2	3	4	5	6
DEPTH IN (MD)	147'	1550'	3430'	4665'	5486'	5740'
DEPTH OUT (MD)	1550'	2202'	4665'	5486'	5740'	6382'
CIRCULATING HRS	12.75	16	26.5	20.5	10	26
TRANSMITTER HRS	10.25	0	26.5	20.5	10	26
BRAM HRS	12.75	16	26.5	20.5	10	26
GAMMA RAY HRS	12.75	16	26.5	20.5	10	26
FORM. RES. HRS	12.75	16	26.5	20.5	10	26
SURVEY HRS	12.75	16	26.5	20.5	10	26

RUN NUMBER	7	8	9	10	11
DEPTH IN (MD)	6382'	7057'	7178'	7397'	7647'
DEPTH OUT (MD)	7057'	7178'	7397'	7647'	7976'
CIRCULATING HRS	35.75	9.75	15.0	17.75	35.0
TRANSMITTER HRS	35.75	6.0	0	17.75	0
BRAM HRS	2.0	9.75	0	17.75	35.0
GAMMA RAY HRS	35.75	9.75	0	17.75	35.0
FORM. RES. HRS	35.75	9.75	0	17.75	35.0
SURVEY HRS	35.75	9.75	0	17.75	35.0

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Amoco Production Co. OCS Y-0302 #1 Mars Prospect

TABLE 5. MWD TOOL CONFIGURATION AND HYDRAULIC PARAMETERS

RUN NUMBER	1	2	3	4	5	6
TOOL NOZZLE /32"	8	12	6	6	6	6
IMPELLER min.	400	600	400	400	400	400
RANGE (GPM) max.	800	1200	800	800	800	800
min.	5		15	15	15	15
avg.	25	0	22	27	27	27
PULSE SIZE max.	30		30	35	35	35
BIT NOZZLES	2 x 16					3 x 14
/ 32"	1 x 18	NONE	4 x 13	4 x 13	4 x 13	1 x 9
AVG. FLOW (GPM)	600	780	500	530	530	520
AVG. PRESS.(PSI)	1350	1450	2600	2820	2860	2910
MUD WT. (PPG)	9.2	9.2	9.6	9.8	9.8	9.8
PV/YP	7/29	12/17	16/7	14/4	13/6	17/7

RUN NUMBER	7	8	9	10	11	
TOOL NOZZLE /32"	6	6	6	6	6	
IMPELLER min.	400	400	400	400	400	
RANGE (GPM) max.	800	800	800	800	800	
min.	20	5		10	30	
avg.	25	10	0	45	35	
PULSE SIZE max.	30	65		50	40	
BIT NOZZLES	1 x 10	1 x 9				
/32"	3 x 14	3 x 11	3 x 13	3 x 13	3 x 13	
AVG. FLOW (GPM)	520	405	480	480	477	
AVG. PRESS.(PSI)	2450	3050	2690	2680	2640	
MUD WT. (PPG)	9.8	10.0	10.0	10.1	9.9	
PV/YP	14/7	17/8	14/6	21/7	11/4	

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APPENDIX A.

GEMDAS DRILLING PRINTOUT

AMOCO Production Co. OCS Y-0302 #1 Mars Prospect

Data Printed at time 15:24 Date Apr 11 '86

Data Recorded at time 21:56 Date Mar 13 '86

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS BIT	EST	DXC	NX	NXB	ECD	NXMW				
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW								
Rigged up Parker Drilling Co. Rig 123 on an ice island built offshore Cape Halkett, Alaska in the Beaufort Sea;																												
Used a pile driver to run 4 joints, 310 lb/ft, 1" wall 30" conductor pipe to 137 ft below RKB & 62 ft below mud-line;																												
NB #1 Smith SDS 17.5" Ser.# XE4708 IADC 114 Jets 20:20:20 - in @ 75 ft w/ 26" hole opener - cleaned out ice and formation to shoe of																												
30" conductor in 5.1 hrs and spudded Amoco Production Co. OCS Y-0302 #1 Mars Prospect @ 137 ft @ 0200 hrs, March 13, 1986;																												
4	0222	140.0	9.8	0	0	63	5	290	683	679	683	138.0	0	8.92	9.54	54.5	49.6	.840	1.080	3.0	5.6	.60	.89	1.02*	.66	9.00	8.50	D
POOH @ 143 ft to pick-up 12.25" bit & MWD tool - NB #1 cut 6 ft in 1.5 hrs - graded SY-W1/1-BU/0-G00;																												
NB #2 Smith SDS 12.25" Ser.# XD1046 IADC 114 Jets 16:16:18 - in @ 143 ft w/ MWD tool to drill pilot hole;																												
9	0928	145.0	59.8	0	0	58	12	1140	674	679	747	143.0	14	8.89	9.12	54.9	56.1	.870	1.190	2.0	.0	.01	.87	.88*	.67	9.16	8.50	D
11	1104	150.0	50.2	0	0	60	12	640	504	510	736	147.1	28	8.91	9.14	57.6	55.6	.840	1.210	7.0	.1	.01	.91	.92*	.67	9.16	8.50	D
12	1108	155.0	71.7	0	0	75	14	640	509	505	741	149.9	30	8.93	9.14	57.2	55.4	.850	1.220	12.0	.2	.04	.92	.93*	.67	9.15	8.50	D
13	1112	160.0	90.1	0	0	79	15	1110	583	587	740	155.4	24	8.94	9.12	57.0	55.2	.840	1.220	17.0	.3	.06	.89	.89*	.67	9.18	8.50	D
T.V.D. 159.9 ft HYDRAULIC POWER 176.1 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 1046 COST INST 37.7 US\$/ft COST BIT 395.0 US\$/ft																												
14	1113	165.0	198	0	0	78	12	1300	709	705	739	155.8	21	8.89	8.92	57.0	55.2	.940	1.150	22.0	.3	.07	.68	.68	.67	9.18	8.50	D
15	1115	170.0	210	0	0	79	14	1300	713	710	739	157.7	18	8.91	8.92	57.0	54.9	.840	1.150	27.0	.3	.08	.69	.69	.67	9.17	8.48	D
16	1116	175.0	231	0	0	78	13	1300	709	712	740	159.1	18	8.93	8.92	57.0	54.7	.850	1.160	32.0	.3	.09	.66	.66	.67	9.18	8.49	D
17	1117	180.0	210	0	0	80	14	1310	700	701	740	160.1	18	8.91	9.08	56.8	54.7	.850	1.160	37.0	.4	.10	.69	.69	.67	9.16	8.48	D
18	1146	185.0	121	0	0	76	15	1190	661	664	746	179.9	22	8.89	9.32	57.4	51.6	.861	1.220	42.0	.4	.11	.82	.83*	.67	9.15	8.48	D
T.V.D. 185.0 ft HYDRAULIC POWER 327.7 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 1693 COST INST 28.1 US\$/ft COST BIT 173.0 US\$/ft																												
19	1149	190.0	134	0	0	74	15	1190	665	661	747	180.1	18	8.92	9.32	57.4	51.6	.861	1.210	47.0	.4	.12	.78	.79*	.67	9.18	8.48	D
20	1151	195.1	133	0	0	73	12	1190	674	669	746	179.8	22	8.90	9.32	57.4	51.6	.870	1.190	52.1	.5	.13	.75	.75*	.67	9.16	8.48	D
21	1154	200.0	110	0	0	74	15	1200	674	672	746	185.2	19	8.94	9.34	57.4	51.6	.870	1.190	57.0	.5	.14	.83	.83*	.67	9.17	8.48	D
22	1156	205.0	102	0	0	74	14	1200	674	676	748	184.8	17	8.93	9.23	57.4	51.8	.870	1.190	62.0	.6	.15	.84	.84*	.67	9.17	8.48	D
23	1159	210.0	105	0	0	77	12	1200	674	675	749	187.8	19	8.93	9.30	57.4	51.8	.880	1.200	67.0	.6	.16	.81	.81*	.67	9.15	8.48	D
T.V.D. 210.0 ft HYDRAULIC POWER 355.6 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 2663 COST INST 32.3 US\$/ft COST BIT 120.7 US\$/ft																												
24	1204	210.5	32.7	0	0	77	15	1140	683	680	749	194.8	19	8.91	9.33	57.6	51.6	.880	1.220									P
25	1223	210.5	32.7	0	0	77	14	1090	152	148	739	200.0	14	8.92	9.30	58.1	52.2	.870	1.230									P
26	1225	215.0	122	0	0	93	13	1090	657	661	744	204.8	17	8.89	9.27	58.3	52.2	.870	1.230	72.0	.7	.17	.83	.83*	.68	9.15	8.48	D
27	1229	220.1	87.4	0	0	94	15	1090	661	661	751	210.3	19	8.93	9.32	58.3	52.3	.880	1.230	77.1	.7	.19	.93	.93*	.68	9.18	8.48	D
28	1236	225.1	61.7	0	0	93	15	1120	670	667	755	220.0	22	8.94	9.30	58.6	52.3	.880	1.220	82.1	.8	.21	1.01	1.01*	.68	9.15	8.48	D
29	1240	230.1	79.7	0	0	90	15	1120	678	673	756	225.3	19	8.93	9.34	58.8	52.5	.880	1.220	87.1	.9	.23	.95	.94*	.63	9.18	8.48	D
30	1242	235.0	105	0	0	90	15	1120	678	677	754	226.1	20	8.91	9.28	58.8	52.5	.880	1.220	92.0	.9	.24	.89	.88*	.68	9.17	8.48	D
T.V.D. 235.0 ft HYDRAULIC POWER 359.5 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 4324 COST INST 32.4 US\$/ft COST BIT 99.9 US\$/ft																												
31	1247	240.1	65.2	0	0	93	14	1150	670	605	756	228.1	21	8.94	9.27	59.2	52.7	.880	1.250	97.1	1.0	.26	.99	.98*	.68	9.17	8.48	D
Survey @ 227 ft = 0.58 degree (S61W);																												
33	1307	245.1	83.1	0	0	97	12	1130	644	638	767	239.7	17	8.92	9.32	59.9	53.2	.890	1.240	102	1.0	.30	.91	.91*	.68	9.18	8.48	D
35	1311	250.0	78.1	0	0	97	12	1130	639	634	766	245.1	19	8.92	9.27	60.1	53.4	.890	1.250	107	1.1	.31	.93	.92*	.68	9.16	8.48	D
36	1316	255.0	64.3	0	0	98	13	1120	644	640	763	245.3	19	8.91	9.29	60.4	53.4	.890	1.250	112	1.2	.34	.98	.98*	.68	9.16	8.48	D
37	1319	260.0	32.6	0	0	98	14	1130	652	649	765	249.9	18	8.89	9.34	60.6	53.2	.890	1.250	117	1.3	.35	.94	.93*	.68	9.18	8.48	D
T.V.D. 259.9 ft HYDRAULIC POWER 316.2 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 6267 COST INST 41.1 US\$/ft COST BIT 89.1 US\$/ft																												
38	1323	265.0	88.7	0	0	98	14	1130	648	650	762	255.4	19	8.93	9.31	61.0	53.2	.890	1.250	122	1.3	.37	.92	.92*	.68	9.16	8.48	D
39	1326	270.0	77.2	0	0	102	14	1130	643	643	764	257.7	19	8.94	9.27	61.3	53.2	.890	1.250	127	1.4	.39	.96	.96*	.68	9.15	8.48	D
40	1351	275.0	50.3	0	0	104	10	450	418	415	760	272.7	21	8.39	9.31	62.2	53.4	.870	1.290	132	1.5	.42	.99	.99*	.68	9.19	8.48	D
41	1359	280.0	39.1	0	0	90	14	470	418	422	759	273.8	18	8.89	9.34	62.4	53.2	.880	1.310	137	1.6	.45	1.08	1.08*	.68	9.18	8.48	D
42	1405	286.2	62.9	0	0	90	14	420	413	403	756	274.7	19	8.94	9.34	62.2	53.2	.880	1.230	143	1.7	.47	.98	.97*	.68	9.18	8.48	D
T.V.D. 284.5 ft HYDRAULIC POWER 83.3 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 8839 COST INST 54.0 US\$/ft COST BIT 84.1 US\$/ft																												
43	1412	290.0	43.0	0	0	90	14	430	413	409	762	279.7	13	8.92	9.26	62.2	53.1	.890	1.250	147	1.8	.50	1.08	1.08*	.68	9.19	8.43	D
44	1419	295.0	40.1	0	0	90	15	430	413	416	764	286.7	17	8.93	9.34	62.1	53.0	.890	1.250	157	1.9	.53	1.09	1.09*	.69	9.19	8.48	D
46	1443	300.0	30.9	0	0	92	9	450	400	396	771	291.7	17	9.01	9.45	62.1	53.5	.890	1.260	157	2.1	.56	1.04	1.03*	.69	9.22	8.48	D

MAY 15 1986

MINERALS MANAGEMENT SERVICE
ANCHORAGE, ALASKA

F#	TIME	DEPTH	ROP	TORQUE		RPM	WOB	PUMP	MUD FLOW		PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW					
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW										
47	1449	305.0	46.5	0	0	90	9	430	404	402	774	294.9	16	9.01	9.48	62.1	53.7	.869	1.187	162	2.2	.60	.95	.94*	.69	9.19	8.48	D				
48	1456	310.0	50.0	0	0	90	6	430	404	402	772	302.2	16	9.01	9.49	62.1	53.8	.869	1.187	167	2.3	.62	.86	.85*	.69	9.17	8.48	D				
T.V.D.		309.9	ft	HYDRAULIC POWER				78.4	hp				KICK TOLERANCE				0.00	lb/gal				T.B.R.	12031	COST INST		67.9	US\$/ft		COST BIT	84.5	US\$/ft	
49	1503	315.0	53.4	0	0	90	6	440	404	405	775	307.5	12	8.98	9.48	62.1	54.1	.867	1.182	172	2.4	.64	.84	.83*	.69	9.18	8.48	D				
50	1511	320.0	109	0	0	91	3	450	404	410	775	312.9	14	9.01	9.45	62.1	54.4	.869	1.178	177	2.4	.65	.65	.64	.69	9.21	8.50	D				
51	1519	325.0	37.7	0	0	93	12	440	404	403	776	318.6	16	8.99	9.44	62.1	54.4	.869	1.178	182	2.6	.67	1.06	1.05*	.69	9.20	8.50	D				
52	1534	330.0	40.4	0	0	93	13	450	404	404	777	323.2	19	9.01	9.34	62.1	54.8	.872	1.165	187	2.7	.69	1.08	1.06*	.69	9.17	8.50	D				
53	1540	335.0	54.5	0	0	110	9	450	409	410	777	327.3	16	9.03	9.30	62.0	55.1	.871	1.165	192	2.8	.72	.95	.94*	.69	9.18	8.50	D				
T.V.D.		334.9	ft	HYDRAULIC POWER				77.5	hp				KICK TOLERANCE				0.00	lb/gal				T.B.R.	14827	COST INST		62.3	US\$/ft		COST BIT	82.6	US\$/ft	
54	1548	340.0	58.4	0	0	113	12	1060	635	633	774	334.3	14	8.92	9.26	61.9	55.4	.872	1.165	197	2.9	.75	1.01	.99*	.69	9.19	8.50	D				
55	1552	345.0	67.7	0	0	115	12	1050	631	627	774	337.0	13	8.92	9.26	61.9	55.8	.871	1.169	202	2.9	.77	.99	.97*	.69	9.19	8.50	D				
56	1557	350.0	55.7	0	0	119	12	1050	635	638	773	343.5	13	8.92	9.26	61.9	55.9	.872	1.170	207	3.0	.80	1.05	1.03*	.69	9.13	8.50	D				
57	1602	355.0	70.6	0	0	122	12	1190	674	680	771	347.9	13	8.92	9.25	61.9	56.2	.875	1.169	212	3.1	.82	1.00	.98*	.69	9.14	8.50	D				
58	1621	357.5	75.7	0	0	129	12	930	648	645	774	352.6	15	9.02	9.28	62.4	56.4	.875	1.166	PUMP SPM = 149								P				
59	1623	360.1	84.3	0	0	123	11	980	648	652	773	354.3	14	9.02	9.21	62.4	56.3	.874	1.177	217	3.2	.85	.95	.93*	.69	9.11	8.50	D				
T.V.D.		360.0	ft	HYDRAULIC POWER				333.4	hp				KICK TOLERANCE				0.00	lb/gal				T.B.R.	17556	COST INST		40.3	US\$/ft		COST BIT	79.5	US\$/ft	
60	1626	365.1	106	0	0	110	13	930	648	644	773	357.0	14	9.02	9.23	62.4	56.8	.874	1.180	222	3.2	.86	.90	.88*	.69	9.16	8.50	D				
61	1629	370.1	108	0	0	110	13	980	652	655	770	358.4	13	9.02	9.23	62.6	56.7	.873	1.180	227	3.3	.87	.89	.87*	.69	9.25	8.50	D				
62	1631	375.0	142	0	0	112	17	990	644	647	769	361.1	11	9.03	9.23	62.6	57.0	.874	1.180	232	3.3	.88	.88	.86*	.69	9.32	8.50	D				
63	1633	380.0	144	0	0	113	14	1030	665	664	769	364.9	14	9.02	9.23	62.6	57.1	.874	1.180	237	3.3	.89	.83	.81*	.69	9.35	8.50	D				
64	1635	385.1	145	0	0	119	7	1020	661	661	768	368.0	14	9.02	9.23	62.8	57.2	.875	1.181	242	3.4	.90	.73	.71	.69	9.38	8.49	D				
T.V.D.		384.9	ft	HYDRAULIC POWER				345.2	hp				KICK TOLERANCE				0.00	lb/gal				T.B.R.	18892	COST INST		23.5	US\$/ft		COST BIT	74.4	US\$/ft	
65	1702	388.4	99.0	0	0	123	5	1090	678	681	774	382.0	14	9.02	9.22	63.0	57.4	.880	1.185	PUMP SPM = 156								P				
66	1705	388.4	99.0	0	0	123	5	1090	678	682	775	388.7	13	9.03	9.22	63.0	57.5	.881	1.185	PUMP SPM = 156								P				
67	1706	390.1	102	0	0	132	4	1090	678	680	776	389.3	12	9.02	9.22	63.0	57.4	.881	1.184	247	3.4	.92	.73	.71	.70	9.13	8.43	D				
68	1708	395.2	170	0	0	144	6	1090	674	680	775	389.3	13	9.02	9.22	63.0	57.1	.881	1.183	252	3.4	.93	.73	.71	.70	9.20	8.47	D				
Survey @		375	ft	= 0.79 degree (N8W);																												
70	1710	400.0	147	0	0	146	9	1070	674	668	777	389.3	13	9.02	9.22	63.1	57.0	.881	1.186	257	3.5	.94	.81	.78*	.70	9.28	8.47	D				
72	1712	405.0	133	0	0	145	9	1100	674	671	775	389.3	14	9.02	9.22	63.1	57.0	.882	1.190	262	3.5	.96	.83	.80*	.70	9.35	8.47	D				
73	1714	410.0	143	0	0	145	12	1090	670	673	777	392.9	18	9.02	9.22	63.1	57.0	.883	1.193	267	3.5	.98	.85	.83*	.70	9.38	8.47	D				
T.V.D.		410.0	ft	HYDRAULIC POWER				367.4	hp				KICK TOLERANCE				0.00	lb/gal				T.B.R.	20443	COST INST		23.8	US\$/ft		COST BIT	70.1	US\$/ft	
74	1716	415.0	161	0	0	146	14	1100	687	687	776	397.8	15	9.02	9.22	63.3	56.9	.883	1.194	272	3.6	.99	.88	.85*	.70	9.38	8.47	D				
75	1718	420.0	164	0	0	145	15	1100	678	680	776	402.1	15	9.02	9.22	63.3	56.9	.883	1.196	277	3.6	1.00	.89	.87*	.70	9.38	8.47	D				
76	1733	425.0	137	0	0	136	10	1150	687	689	775	409.9	17	9.02	9.22	63.9	56.5	.881	1.195	282	3.6	1.02	.82	.80*	.70	9.34	8.47	D				
77	1735	430.0	154	0	0	133	7	1140	678	680	780	415.3	17	9.02	9.22	63.9	56.6	.881	1.196	287	3.7	1.03	.75	.72	.70	9.33	8.46	D				
78	1738	435.0	122	0	0	134	6	1130	633	678	779	421.3	16	9.02	9.22	64.0	56.4	.881	1.195	292	3.7	1.05	.77	.75	.71	9.32	8.43	D				
T.V.D.		434.9	ft	HYDRAULIC POWER				376.7	hp				KICK TOLERANCE				0.00	lb/gal				T.B.R.	21896	COST INST		27.9	US\$/ft		COST BIT	66.4	US\$/ft	
79	1740	440.1	158	0	0	136	7	1140	683	684	779	423.5	12	9.02	9.22	64.0	56.4	.880	1.195	297	3.7	1.06	.73	.71	.71	9.36	8.43	D				
80	1742	445.1	142	0	0	140	7	1140	678	677	779	428.2	12	9.02	9.22	64.2	56.3	.881	1.197	302	3.8	1.07	.76	.74	.71	9.36	8.41	D				
81	1744	450.0	109	0	0	144	7	1140	683	681	779	434.8	13	9.02	9.22	64.2	56.3	.882	1.200	307	3.8	1.09	.83	.80*	.71	9.34	8.41	D				
82	1754	455.0	140	0	0	105	6	1070	657	660	765	445.7	18	9.02	9.23	64.4	56.3	.885	1.194	312	3.9	1.10	.69	.68	.71	9.26	8.43	D				
83	1756	460.1	197	0	0	102	6	1070	661	666	787	449.2	15	9.02	9.23	64.4	56.3	.886	1.192	317	3.9	1.10	.63	.61*	.71	9.28	8.43	D				
T.V.D.		460.0	ft	HYDRAULIC POWER				334.7	hp				KICK TOLERANCE				0.00	lb/gal				T.B.R.	23256	COST INST		17.3	US\$/ft		COST BIT	63.3	US\$/ft	
84	1758	465.0	138	0	0	105	7	1070	661	663	788	451.1	15	9.02	9.23	64.4	56.3	.887	1.193	322	3.9	1.11	.71	.69	.71	9.31	8.44	D				
85	1800	473.1	210	0	0	108	7	1060	661	666	788	451.1	15	9.02	9.23	64.4	56.4	.887	1.194	327	3.9	1.12	.64	.63*	.71	9.33	8.44	D				
86	1801	475.1	158	0	0	110	7	1070	657	656	789	452.8	16	9.02	9.23	64.6	56.2	.888	1.194	332	4.0	1.12	.70	.68	.71	9.41	8.46	D				
87	1803	480.0	162	0	0	121	7	1070	661	660	789	458.2	18	9.02	9.23	64.6	56.2	.889	1.196	337	4.0	1.13	.71	.69	.71	9.42	8.47	D				
88	1814	485.1	128	0	0	126	9	730	565	566	794	472.8	18	9.02	9.24	64.9	55.3	.890	1.201	342	4.0	1.14	.80	.78	.71*	9.27	8.43	D				
T.V.D.		485.0	ft	HYDRAULIC POWER				279.6	hp				KICK TOLERANCE				0.00	lb/gal				T.B.R.	24364	COST INST		26.5	US\$/ft		COST BIT	60.5	US\$/ft	
89	1816	490.0	178	0	0	132	3																									

F#	TIME	DEPTH	ROP	TORQUE		RPM	WOB	PUMP	MUD	FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP (F)		RES	ohm-in	THIS	BIT	EST	DXC	NX	NXB	ECD	NXW		
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbbl	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW							
90	1818	495.0	184	0	0	132	11	870	583	580	798	481.4	15	9.02	9.24	64.9	55.8	.890	1.200	352	4.1	1.16	.78	.75	.72	9.29	8.40	D	
91	1820	500.0	155	0	0	133	8	1090	661	659	797	483.8	16	9.01	9.24	65.1	55.7	.890	1.198	357	4.1	1.17	.76	.73	.72	9.32	8.39	D	
93	1821	505.0	205	0	0	133	5	1100	665	671	795	483.8	14	9.02	9.23	65.1	56.1	.891	1.197	362	4.2	1.18	.63	.61*	.72	9.39	8.39	D	
94	1823	510.1	135	0	0	135	7	1090	657	656	793	487.0	14	9.02	9.23	65.1	56.1	.892	1.196	367	4.2	1.19	.76	.73	.72	9.42	8.38	D	
T.V.D.		510.0	ft	HYDRAULIC POWER				333.9	hp	KICK TOLERANCE				0.00	lb/gal	T.B.R.		25552	COST INST	25.1	US\$/ft	COST BIT		58.0				US\$/ft	
95	1833	515.1	141	0	0	141	5	1120	652	647	797	498.3	17	9.02	9.23	65.3	56.7	.891	1.213	372	4.2	1.21	.71	.68	.72	9.34	8.40	D	
96	1835	520.1	129	0	0	138	10	1120	661	661	799	505.6	14	9.02	9.23	65.3	56.6	.892	1.212	377	4.3	1.22	.84	.81*	.72	9.31	8.40	D	
97	1838	525.1	122	0	0	138	11	1130	665	671	797	511.1	14	9.02	9.23	65.3	56.7	.893	1.213	382	4.3	1.23	.87	.85*	.72	9.30	8.40	D	
98	1840	530.1	115	0	0	138	10	1130	670	669	798	513.5	13	9.02	9.23	65.3	57.0	.895	1.213	387	4.4	1.25	.86	.83*	.72	9.34	8.40	D	
99	1843	535.0	129	0	0	140	7	1120	661	667	798	518.8	11	9.02	9.23	65.3	57.0	.896	1.213	392	4.4	1.26	.78	.75	.72	9.33	8.38	D	
T.V.D.		535.0	ft	HYDRAULIC POWER				348.2	hp	KICK TOLERANCE				0.00	lb/gal	T.B.R.		27196	COST INST	26.2	US\$/ft	COST BIT		56.2				US\$/ft	
100	1845	540.1	114	0	0	144	6	1120	665	660	797	524.4	33	9.02	9.23	65.3	57.3	.897	1.213	397	4.4	1.27	.78	.75	.73	9.32	8.36	D	
Survey @		544	ft	= 0.56 degree (S29W)																									
102	1915	545.0	113	0	0	144	12	1140	665	666	796	545.0	11	9.02	9.23	65.8	68.5	.900	1.133	402	4.5	1.29	.93	.89*	.73	9.13	8.36	D	
103	1917	550.0	175	0	0	128	16	1130	670	667	796	545.1	16	9.02	9.23	65.8	69.8	.899	1.159	407	4.5	1.30	.86	.83*	.73	9.20	8.36	D	
104	1919	555.0	162	0	0	128	21	1130	661	667	796	545.1	14	9.02	9.23	65.8	67.4	.900	1.202	412	4.5	1.32	.93	.90*	.73	9.25	8.36	D	
105	1921	560.0	144	0	0	128	20	1140	657	661	796	545.1	18	9.02	9.23	65.8	66.1	.899	1.223	417	4.6	1.33	.94	.91*	.73	9.30	8.36	D	
T.V.D.		560.0	ft	HYDRAULIC POWER				353.1	hp	KICK TOLERANCE				0.00	lb/gal	T.B.R.		23680	COST INST	23.7	US\$/ft	COST BIT		54.5				US\$/ft	
106	1923	565.0	158	0	0	129	20	1150	665	667	799	545.1	16	9.02	9.23	65.8	67.6	.902	1.222	422	4.6	1.34	.92	.89*	.73	9.36	8.36	D	
107	1925	570.0	143	0	0	131	18	1150	670	682	799	549.7	23	9.02	9.23	65.8	67.6	.904	1.242	427	4.6	1.35	.92	.89*	.73	9.37	8.36	D	
108	1933	575.0	159	0	0	135	16	1090	644	650	799	558.9	62	9.02	9.31	65.8	70.5	.903	1.227	432	4.7	1.36	.88	.85*	.73	9.31	8.36	D	
109	1935	580.0	183	0	0	123	22	1080	635	629	802	562.8	14	9.02	9.23	65.8	69.9	.904	1.234	437	4.7	1.37	.90	.87*	.73	9.33	8.36	D	
110	1936	585.0	192	0	0	121	23	1100	644	642	802	566.7	23	9.02	9.23	65.8	69.5	.904	1.239	442	4.7	1.38	.90	.87*	.73	9.34	8.36	D	
T.V.D.		585.0	ft	HYDRAULIC POWER				313.9	hp	KICK TOLERANCE				0.00	lb/gal	T.B.R.		29846	COST INST	17.7	US\$/ft	COST BIT		52.8				US\$/ft	
111	1938	590.1	191	0	0	124	22	1100	644	641	803	570.3	24	9.02	9.23	65.8	68.6	.904	1.258	447	4.8	1.38	.89	.86*	.73	9.35	8.36	D	
112	1939	595.0	222	0	0	125	24	1100	639	634	804	573.7	25	9.02	9.23	65.8	67.6	.904	1.260	452	4.8	1.39	.87	.83*	.73	9.37	8.36	D	
113	1941	600.0	219	0	0	129	23	1090	639	639	805	575.3	21	9.02	9.23	66.0	68.5	.905	1.253	457	4.8	1.40	.87	.84*	.73	9.40	8.36	D	
115	1947	605.0	174	0	0	126	17	1110	622	623	806	580.2	2	9.02	9.30	66.0	68.9	.906	1.259	462	4.8	1.41	.85	.82*	.73	9.36	8.36	D	
116	1948	610.0	223	0	0	118	11	1100	639	639	805	584.2	10	9.02	9.23	66.0	67.6	.906	1.245	467	4.9	1.41	.71	.68	.73	9.39	8.39	D	
T.V.D.		610.0	ft	HYDRAULIC POWER				344.2	hp	KICK TOLERANCE				0.00	lb/gal	T.B.R.		30761	COST INST	15.3	US\$/ft	COST BIT		51.1				US\$/ft	
117	1950	615.0	176	0	0	121	15	1100	631	627	804	589.6	29	9.02	9.23	66.0	67.9	.906	1.258	472	4.9	1.42	.81	.78	.74	9.39	8.35	D	
118	1952	620.0	168	0	0	121	20	1090	635	632	804	595.7	31	9.02	9.23	66.0	67.7	.907	1.286	477	4.9	1.43	.89	.86*	.74	9.38	8.35	D	
119	1954	625.0	156	0	0	125	12	1110	626	-284	803	602.3	12	9.03	9.17	66.0	68.1	.912	1.274	482	5.0	1.44	.86	.82*	.74	9.29	8.35	D	
120	1957	630.0	151	0	0	117	9	1140	635	-237	809	613.0	17	9.02	9.18	66.0	67.3	.910	1.246	487	5.0	1.45	.72	.70	.74	9.28	8.37	D	
121	2006	635.0	130	0	0	128	12	1150	626	625	808	619.0	3	9.04	9.20	66.0	68.1	.912	1.274	492	5.0	1.47	.86	.82*	.74	9.29	8.37	D	
T.V.D.		635.0	ft	HYDRAULIC POWER				332.5	hp	KICK TOLERANCE				0.00	lb/gal	T.B.R.		32063	COST INST	26.0	US\$/ft	COST BIT		50.0				US\$/ft	
122	2008	640.0	148	0	0	114	7	1150	635	635	810	624.0	22	9.04	9.18	66.0	67.3	.910	1.246	497	5.1	1.47	.72	.70	.73	9.28	8.39	D	
123	2011	645.0	137	0	0	113	12	1150	626	626	813	629.2	25	9.04	9.18	66.0	67.3	.911	1.257	502	5.1	1.48	.82	.80	.74*	.75	9.28	8.35	D
124	2013	650.0	121	0	0	115	17	1150	635	632	814	635.3	27	9.04	9.18	65.8	67.4	.912	1.264	507	5.1	1.49	.92	.89*	.74	9.27	8.35	D	
125	2016	655.0	122	0	0	114	9	1150	626	629	812	635.5	1200	9.04	9.18	65.8	67.3	.911	1.248	512	5.2	1.50	.79	.76	.74	9.31	8.34	D	
126	2018	660.0	142	0	0	115	9	1140	622	620	811	640.2	12	9.04	9.18	65.7	67.5	.911	1.248	517	5.2	1.51	.77	.74	.74	9.32	8.34	D	
T.V.D.		660.0	ft	HYDRAULIC POWER				291.4	hp	KICK TOLERANCE				0.00	lb/gal	T.B.R.		33356	COST INST	24.0	US\$/ft	COST BIT		48.8				US\$/ft	
127	2020	665.0	107	0	0	121	13	1150	635	638	811	646.6	12	9.04	9.18	65.5	68.0	.897	1.242	522	5.3	1.52	.91	.88*	.74	9.30	8.34	D	
128	2032	670.1	136	0	0	128	15	1130	618	620	820	654.2	17	9.04	9.18	63.9	69.5	.795	1.246	527	5.3	1.53	.89	.86*	.74	9.28	8.34	D	
129	2034	675.0	149	0	0	127	13	1130	626	629	822	658.5	9	9.04	9.18	63.9	69.9	.788	1.255	532	5.3	1.54	.84	.81	.75	9.29	8.29	D	
130	2036	680.0	133	0	0	129	17	1130	622	617	824	663.1	10	9.04	9.18	63.9	69.9	.783	1.247	537	5.4	1.55	.93	.90*	.75	9.30	8.29	D	
131	2038	685.0	139	0	0	129	14	1130	626	621	826	666.4	9	9.04	9.18	63.9	70.2	.778	1.155	542	5.4	1.56	.88	.85*	.75	9.32	8.29	D	

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS BIT	EST	DXC	NX	NXB	ECD	NXMW					
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW									
134	2058	697.6	90.0	0	0	136	16	1100	609	609	846	696.1	13	9.04	9.17	63.9	69.0	.735	1.060	PUMP SPM = 140									
Survey @ 687 ft = 0.52 degree (S42W);																													
137	2106	730.0	114	0	0	132	18	1090	609	608	852	698.5	2	9.04	9.18	63.9	69.3	.733	1.027	557	5.5	1.60	1.00	.96*	.76	9.15	8.23	D	
138	2108	735.0	154	0	0	126	16	1100	609	608	852	698.5	1	9.04	9.18	63.9	69.3	.733	1.027	562	5.6	1.61	.88	.85*	.76	9.19	8.23	D	
139	2109	710.0	171	0	0	127	13	1100	609	606	852	698.5	3	9.04	9.18	63.9	69.3	.731	1.031	567	5.6	1.62	.82	.79	.76	9.23	8.21	D	
T.V.D. 710.0 ft HYDRAULIC POWER 129.5 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 36280 COST INST 19.8 US\$/ft COST BIT 47.1 US\$/ft																													
140	2111	715.0	170	0	0	125	12	1090	609	613	851	698.5	2	9.04	9.22	63.9	70.8	.729	1.030	572	5.6	1.63	.80	.76	.76	9.24	8.21	D	
141	2113	720.1	167	0	0	126	11	1100	609	614	853	698.5	4	9.04	9.18	63.9	69.3	.723	1.034	577	5.6	1.63	.79	.76	.76	9.33	8.21	D	
142	2115	725.1	130	0	0	130	12	1100	609	612	853	698.5	3	9.04	9.23	63.9	71.1	.721	1.048	582	5.7	1.64	.85	.82	.77	9.34	8.17	D	
143	2123	730.1	136	0	0	120	10	1210	639	644	869	700.2	14	9.04	9.18	63.3	69.2	.685	1.045	587	5.7	1.65	.80	.76	.77	9.41	8.17	D	
144	2125	735.0	171	0	0	119	14	1210	644	649	870	704.7	1	9.04	9.18	63.3	69.3	.678	1.023	592	5.8	1.66	.80	.77	.77	9.41	8.17	D	
T.V.D. 735.0 ft HYDRAULIC POWER 317.5 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 37482 COST INST 19.9 US\$/ft COST BIT 46.2 US\$/ft																													
145	2126	740.0	182	0	0	118	23	1210	644	643	870	710.9	16	9.04	9.18	63.3	69.3	.675	1.005	597	5.8	1.67	.89	.86*	.77	9.40	8.17	D	
146	2128	745.0	173	0	0	122	22	1210	644	642	869	718.8	41	9.04	9.17	63.3	69.1	.670	1.010	602	5.8	1.68	.99	.86*	.77	9.38	8.17	D	
147	2130	750.0	182	0	0	124	13	1200	644	638	868	726.9	34	9.04	9.16	63.3	68.4	.667	.993	607	5.8	1.68	.80	.76	.77	9.36	8.18	D	
148	2131	755.0	231	0	0	128	9	1210	644	648	869	729.2	22	9.04	9.17	63.3	68.4	.664	.980	612	5.9	1.69	.68	.65*	.77	9.37	8.18	D	
149	2136	760.1	247	0	0	129	12	1170	644	638	887	734.9	20	9.03	9.17	63.3	68.0	.662	.951	617	5.9	1.70	.72	.69	.77	9.29	8.22	D	
T.V.D. 759.9 ft HYDRAULIC POWER 362.3 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 38419 COST INST 13.8 US\$/ft COST BIT 45.1 US\$/ft																													
150	2138	765.0	269	0	0	109	15	1150	644	641	883	737.7	19	9.02	9.20	63.1	68.5	.647	.945	622	5.9	1.70	.70	.67*	.77	9.35	8.22	D	
151	2139	770.0	155	0	0	108	13	1170	644	647	883	741.9	33	9.02	9.21	63.1	69.0	.643	.937	627	5.9	1.71	.80	.77	.77	9.35	8.22	D	
152	2141	775.0	150	0	0	108	15	1170	644	645	881	747.4	36	9.02	9.19	63.5	67.6	.655	.945	632	6.0	1.71	.83	.79	.77	9.38	8.21	D	
153	2143	780.0	162	0	0	107	14	1170	644	646	880	751.7	31	9.02	9.20	63.8	67.4	.667	.988	637	6.0	1.72	.80	.76	.77	9.40	8.21	D	
154	2146	785.0	129	0	0	108	13	1170	644	645	876	758.2	30	9.02	9.21	64.3	67.9	.682	.969	642	6.0	1.73	.83	.80	.77	9.36	8.19	D	
T.V.D. 785.0 ft HYDRAULIC POWER 332.3 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 39411 COST INST 26.2 US\$/ft COST BIT 44.3 US\$/ft																													
155	2154	790.1	104	0	0	103	17	1340	652	648	882	773.2	15	9.02	9.21	65.0	67.8	.709	.922	647	6.1	1.74	.95	.91*	.77	9.27	8.19	D	
156	2156	795.0	133	0	0	108	9	1330	652	648	879	778.9	14	9.02	9.19	65.3	67.4	.722	.931	652	6.1	1.75	.78	.75	.77	9.31	8.21	D	
157	2158	800.0	146	0	0	109	11	1330	652	651	876	784.3	15	9.02	9.19	65.3	66.8	.725	.949	657	6.2	1.75	.79	.75	.77	9.28	8.22	D	
158	2200	805.0	150	0	0	108	10	1330	657	652	873	788.2	12	9.02	9.19	65.3	66.4	.726	.946	662	6.2	1.76	.77	.74	.77	9.28	8.23	D	
159	2203	810.1	92.8	0	0	109	7	1330	657	662	872	790.8	15	9.02	9.19	65.1	66.7	.724	.978	667	6.2	1.77	.80	.77	.77	9.28	8.24	D	
T.V.D. 810.0 ft HYDRAULIC POWER 331.4 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 40758 COST INST 36.6 US\$/ft COST BIT 43.8 US\$/ft																													
160	2205	815.0	136	0	0	109	9	1330	652	652	869	793.9	16	9.02	9.19	65.1	66.4	.723	.907	672	6.3	1.77	.77	.74	.77	9.29	8.26	D	
161	2208	820.0	127	0	0	115	8	1330	657	653	866	799.5	18	9.02	9.19	65.1	66.4	.719	.997	677	6.3	1.78	.78	.75	.77	9.29	8.28	D	
162	2215	825.0	126	0	0	108	8	1370	661	655	880	807.7	11	9.02	9.19	65.1	67.3	.712	1.005	682	6.4	1.79	.77	.74	.77	9.25	8.30	D	
163	2218	830.0	134	0	0	110	8	1370	657	656	879	811.0	13	9.02	9.19	65.1	67.4	.709	1.002	687	6.4	1.80	.74	.71	.77	9.27	8.34	D	
164	2220	835.0	122	0	0	110	21	1350	657	658	877	816.4	10	9.02	9.19	65.1	67.6	.708	1.001	692	6.4	1.81	.97	.93*	.77	9.27	8.34	D	
T.V.D. 835.0 ft HYDRAULIC POWER 338.0 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 42043 COST INST 27.9 US\$/ft COST BIT 43.3 US\$/ft																													
166	2222	840.0	130	0	0	110	17	1370	661	655	878	821.0	10	9.02	9.19	65.1	67.6	.707	.997	697	6.5	1.81	.90	.86*	.77	9.27	8.34	D	
167	2224	845.0	139	0	0	109	13	1370	661	658	877	823.2	34	9.02	9.19	65.2	67.8	.707	.983	702	6.5	1.82	.83	.79	.77	9.29	8.33	D	
168	2227	850.0	122	0	0	111	15	1370	661	660	876	828.3	13	9.02	9.19	65.3	67.6	.707	.980	707	6.5	1.83	.89	.85*	.77	9.29	8.33	D	
169	2233	855.1	161	0	0	121	9	1470	674	670	881	835.7	17	9.02	9.19	65.7	68.3	.710	.976	712	6.6	1.84	.76	.72	.77	9.26	8.36	D	
170	2235	860.0	188	0	0	131	9	1460	678	684	880	839.1	6	9.02	9.19	65.7	68.4	.711	.977	717	6.6	1.84	.75	.71	.76*	.77	9.28	8.40	D
T.V.D. 860.0 ft HYDRAULIC POWER 366.5 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 43236 COST INST 18.1 US\$/ft COST BIT 42.8 US\$/ft																													
171	2236	865.0	190	0	0	131	7	1470	678	681	881	842.7	14	9.02	9.19	65.8	68.6	.711	.978	722	6.6	1.85	.70	.66*	.76	9.29	8.40	D	
172	2238	870.1	164	0	0	130	4	1480	678	684	881	847.0	23	9.06	9.16	65.9	68.6	.713	.991	727	6.7	1.86	.66	.63*	.77	9.29	8.40	D	
173	2240	875.1	172	0	0	131	2	1470	674	673	880	851.5	19	9.06	9.16	66.0	68.0	.713	1.000	732	6.7	1.87	.59	.56*	.77	9.30	8.40	D	
174	2242	880.0	214	0	0	138	5	1470	678	683	878	853.4	28	9.06	9.16	66.1	67.5	.713	.997	737	6.7	1.87	.64	.61*	.77	9.31	8.40	D	
Survey @ 873 ft = 0.58 degree (North);																													
176	2255	885.1	168	0	0	136	10	1390	657	657	883	876.0	25	9.03	9.18	66.6	67.1	.720	.983	742	6.7	1.88	.80	.76	.77	9.39	8.40	D	
T.V.D. 884.9 ft HYDRAULIC POWER 355.3 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 44350 COST INST 20.2 US\$/ft COST BIT 42.1 US\$/ft																													
177	2256	890.0	222	0	0	136	12	1410	657	652	883	879.0	25	9.10	9.18	66.6	67.1	.720	.983	747	6.8	1.88	.75	.71	.76*	.77	9.39	8.44	D

F#	TIME	DEPTH	ROP	TORQUE		RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW		
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbt	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW						
178	2258	895.0	292	0	0	136	12	1410	657	651	883	880.0	25	9.11	9.18	66.6	67.1	.720	.983	752	6.8	1.88	.70	.66*	.76	9.39	8.44	D
179	2307	900.0	220	0	0	136	10	1400	657	662	883	880.0	25	9.09	9.18	66.6	67.1	.720	.983	757	6.8	1.88	.72	.68	.76	9.39	8.51	D
181	2309	905.0	279	0	0	138	8	1390	657	659	883	883.1	25	9.08	9.18	66.6	67.1	.720	.983	762	6.8	1.88	.65	.61*	.76	9.39	8.51	D
182	2311	910.0	193	0	0	138	7	1390	657	660	883	886.6	25	9.08	9.18	66.6	67.1	.720	.983	767	6.9	1.88	.71	.67*	.76	9.39	8.51	D
T.V.D. 884.9 ft				HYDRAULIC POWER				355.3 hp	KICK TOLERANCE				0.00 lb/gal	T.B.R. 45218 COST INST				17.6 US\$/ft	COST BIT				41.3 US\$/ft					
183	2314	915.0	254	0	0	138	8	1390	657	656	883	890.0	25	9.11	9.18	66.6	67.1	.720	.983	772	6.9	1.88	.67	.64*	.76	9.39	8.51	D
184	2315	920.0	238	0	0	141	11	1390	657	651	883	891.9	25	9.11	9.18	66.6	67.1	.720	.983	777	6.9	1.88	.74	.70	.75	9.39	8.57	D
185	2316	925.0	213	0	0	141	11	1390	657	652	883	894.4	25	9.12	9.18	66.6	67.1	.720	.983	782	6.9	1.88	.76	.72	.75	9.39	8.60	D
186	2317	930.0	171	0	0	141	12	1390	657	651	883	898.1	25	9.14	9.18	66.6	67.1	.720	.983	787	6.9	1.88	.82	.78	.75	9.39	8.58	D
187	2319	935.0	135	0	0	141	10	1390	657	659	883	904.0	25	9.16	9.18	66.6	67.1	.720	.983	792	7.0	1.88	.83	.79	.75	9.39	8.56	D
T.V.D. 884.9 ft				HYDRAULIC POWER				355.3 hp	KICK TOLERANCE				0.00 lb/gal	T.B.R. 46319 COST INST				25.2 US\$/ft	COST BIT				40.6 US\$/ft					
188	2321	940.0	113	0	0	137	12	1460	657	653	883	907.5	25	9.18	9.18	66.6	67.1	.720	.983	797	7.0	1.88	.90	.86*	.75	9.39	8.56	D
189	2323	945.0	129	0	0	137	9	1460	657	662	883	910.7	25	9.18	9.18	66.6	67.1	.720	.983	802	7.1	1.88	.81	.77	.75	9.39	8.55	D
190	2325	950.1	140	0	0	131	9	1490	648	652	890	915.7	65	9.08	9.18	67.5	67.8	.728	1.015	807	7.1	1.94	.79	.75	.76	9.41	8.55	D
191	2328	955.0	128	0	0	131	9	1470	648	651	886	919.3	51	9.08	9.18	67.5	67.8	.730	1.006	812	7.1	1.95	.81	.77	.76	9.40	8.55	D
192	2330	960.1	139	0	0	134	5	1470	652	651	890	929.0	34	9.08	9.18	67.5	67.8	.733	1.005	817	7.2	1.96	.69	.66*	.76	9.39	8.55	D
T.V.D. 960.0 ft				HYDRAULIC POWER				334.5 hp	KICK TOLERANCE				0.00 lb/gal	T.B.R. 47881 COST INST				24.5 US\$/ft	COST BIT				40.3 US\$/ft					
193	2333	965.2	121	0	0	140	7	1470	665	671	889	937.5	27	9.03	9.18	67.3	67.9	.736	1.005	822	7.2	1.97	.79	.75	.76	9.36	8.56	D
194	2339	970.0	309	0	0	136	5	1420	644	640	899	943.9	4	9.17	9.20	67.3	68.4	.741	1.003	827	7.2	1.98	.58	.55*	.76	9.35	8.56	D
195	2340	975.0	214	0	0	133	4	1420	644	644	897	947.8	23	9.08	9.18	67.3	68.5	.740	1.003	832	7.3	1.98	.62	.59*	.76	9.36	8.56	D
196	2342	980.0	254	0	0	133	3	1410	635	637	896	950.8	20	9.03	9.18	67.3	68.8	.739	1.010	837	7.3	1.99	.56	.53*	.77	9.37	8.56	D
197	2344	985.0	161	0	0	132	8	1400	635	633	895	954.6	19	9.08	9.18	67.3	68.5	.741	1.018	842	7.3	1.99	.75	.71	.76	9.38	8.61	D
T.V.D. 935.0 ft				HYDRAULIC POWER				306.2 hp	KICK TOLERANCE				0.00 lb/gal	T.B.R. 48957 COST INST				21.1 US\$/ft	COST BIT				39.7 US\$/ft					
198	2346	990.0	148	0	0	135	6	1420	644	639	894	959.2	15	9.16	9.13	67.1	68.7	.743	1.021	847	7.3	2.01	.71	.68*	.76	9.55	8.61	D
199	2350	995.0	93.6	0	0	140	8	1400	639	636	892	966.4	21	9.16	9.13	67.3	69.0	.744	1.038	852	7.4	2.02	.84	.81	.77	9.56	8.58	D
Date Mar 14 '86																												
200	0002	1000.0	85.7	0	0	136	10	1350	626	620	889	982.7	16	9.16	9.12	67.6	68.6	.746	1.028	857	7.5	2.04	.90	.86*	.77	9.52	8.58	D
202	0005	1005.0	133	0	0	120	16	1350	631	625	891	989.4	16	9.16	9.12	67.8	68.8	.745	1.027	862	7.5	2.05	.94	.90*	.77	9.52	8.58	D
203	0008	1010.0	103	0	0	122	17	1350	618	619	888	992.8	18	9.16	9.12	67.8	69.1	.745	1.036	867	7.6	2.06	.95	.91*	.77	9.53	8.58	D
T.V.D. 1010.0 ft				HYDRAULIC POWER				287.6 hp	KICK TOLERANCE				0.00 lb/gal	T.B.R. 50856 COST INST				32.8 US\$/ft	COST BIT				39.6 US\$/ft					
204	0011	1015.0	88.2	0	0	122	16	1330	618	620	886	997.6	12	9.16	9.12	67.8	69.1	.746	1.048	872	7.6	2.08	.97	.93*	.77	9.53	8.58	D
205	0014	1020.0	113	0	0	122	16	1350	622	621	885	998.0	10	9.16	9.12	68.0	69.3	.744	1.037	877	7.7	2.09	.92	.88*	.77	9.56	8.58	D
206	0016	1025.0	133	0	0	124	15	1340	626	621	886	1001.1	17	9.16	9.12	68.0	69.6	.745	1.029	882	7.7	2.10	.86	.82	.77	9.57	8.55	D
Survey @ 1019 ft = 0.56 degree (S80W):																												
208	0033	1030.0	142	0	0	124	19	1330	618	620	885	1020.5	30	9.14	9.12	68.5	69.5	.744	1.034	887	7.7	2.11	.91	.87*	.77	9.48	8.55	D
209	0034	1035.0	160	0	0	119	18	1330	618	612	884	1024.3	23	9.16	9.12	68.7	69.4	.745	1.030	892	7.8	2.12	.85	.80	.77	9.49	8.54	D
T.V.D. 1035.0 ft				HYDRAULIC POWER				286.8 hp	KICK TOLERANCE				0.00 lb/gal	T.B.R. 52351 COST INST				20.2 US\$/ft	COST BIT				39.4 US\$/ft					
210	0036	1040.0	200	0	0	119	15	1330	622	626	881	1027.5	16	9.16	9.12	68.7	69.4	.744	1.027	897	7.8	2.12	.77	.73	.77	9.49	8.57	D
211	0038	1045.0	200	0	0	122	16	1350	622	621	883	1028.0	21	9.16	9.12	68.7	69.7	.744	1.029	902	7.8	2.13	.79	.75	.77	9.53	8.59	D
212	0039	1050.0	228	0	0	121	10	1340	613	611	882	1028.0	22	9.16	9.12	68.8	69.7	.744	1.032	907	7.8	2.13	.68	.64*	.77	9.56	8.59	D
213	0041	1055.0	149	0	0	124	13	1340	613	609	881	1028.0	18	9.16	9.12	68.9	69.5	.744	1.033	912	7.9	2.16	.82	.73	.77	9.58	8.59	D
214	0049	1060.0	222	0	0	124	12	1370	631	629	884	1028.0	30	9.16	9.15	69.3	69.3	.743	1.063	917	7.9	2.25	.71	.67*	.77	9.61	8.59	D
T.V.D. 1060.0 ft				HYDRAULIC POWER				285.4 hp	KICK TOLERANCE				0.00 lb/gal	T.B.R. 53288 COST INST				15.3 US\$/ft	COST BIT				38.9 US\$/ft					
215	0051	1065.0	151	0	0	122	15	1360	631	625	885	1032.6	30	9.16	9.12	69.4	69.1	.742	1.070	922	7.9	2.30	.84	.79	.78	9.62	8.58	D
216	0052	1070.0	154	0	0	122	17	1370	631	631	883	1039.4	34	9.16	9.12	69.4	69.1	.741	1.065	927	7.9	2.31	.85	.81	.78	9.60	8.56	D
217	0055	1075.0	293	0	0	123	16	1370	626	621	880	1044.3	44	9.16	9.12	69.5	69.1	.742	1.059	932	8.0	2.31	.71	.66*	.78	9.61	8.56	D
218	0057	1080.0	198	0	0	122	15	1360	626	632	880	1049.8	41	9.16	9.16	69.6	69.0	.741	1.050	937	8.0	2.32	.77	.72	.78	9.61	8.60	D
219	0058	1085.0	184	0	0	123	15	1370	631	636	877	1053.8	23	9.16	9.12	69.6	69.0	.742	1.048	942	8.0	2.33	.79	.75	.77	9.61	8.62	D
T.V.D. 1085.0 ft				HYDRAULIC POWER				297.7 hp	KICK TOLERANCE				0.00 lb/gal	T.B.R. 54278 COST INST				18.5 US\$/ft	COST BIT				38.4 US\$/ft					
220	0100	1090.1	180	0	0	128	14	1370	631	627	878	1057.2	16	9.16	9.12	69.6	68.7	.742	1.049	947	8.0	2.33	.79	.75	.77	9.62	8.64	D

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS BIT	EST	DXC	NX	NXB	ECD	NXW				
		ft	ft/hr	AVG	MAX	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	IN	ft	hr	TW								
221	0111	1090.4	40.9	0	0	128	15	1350	618	621	887	1064.3	27	9.16	9.12	69.6	68.6	.743	1.349	PUMP SPM = 142								
222	0114	1095.0	158	0	0	105	15	1470	605	606	888	1068.3	32	9.16	9.12	69.6	69.0	.745	1.045	952	8.1	2.34	.80	.75	.77	9.58	8.66	D
223	0115	1100.0	267	0	0	109	13	1470	605	601	889	1073.3	37	9.19	9.12	69.6	69.0	.746	1.045	957	8.1	2.35	.67	.62*	.77	9.58	8.66	D
225	0116	1105.0	299	0	0	109	12	1600	618	618	887	1076.5	35	9.16	9.12	69.6	69.0	.745	1.044	962	8.1	2.35	.64	.59*	.77	9.59	8.66	D
226	0118	1110.0	314	0	0	109	16	1600	618	615	887	1076.5	35	9.16	9.12	69.6	69.0	.745	1.044	967	8.1	2.36	.66	.61*	.77	9.63	8.66	D
No data recorded for interval 1110 - 1490 ft due to computer malfunction;																												
310	0439	1495.0	1004	0	0	128	9	1330	567	565	806	1492.3	21	9.30	9.41	68.0	70.2	.625	.912	1352	9.2	3.52	.36	.29*	.83	10.1	8.66	D
T.V.D. 1495.0 ft													HYDRAULIC POWER 225.6 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 63624 COST INST 3.4 US\$/ft COST BIT 30.9 US\$/ft															
312	0440	1500.9	569	0	0	133	15	1570	618	622	798	1494.3	37	9.30	9.37	68.1	70.3	.644	1.085	1358	9.3	3.54	.52	.45*	.83	10.2	8.66	D
313	0442	1505.0	555	0	0	130	7	1570	611	610	800	1496.6	19	9.30	9.39	67.3	70.5	.620	1.061	1362	9.3	3.55	.45	.39*	.83	10.0	8.66	D
314	0443	1510.0	217	0	0	132	11	1380	594	596	803	1498.0	14	9.30	9.40	67.5	70.5	.622	1.049	1367	9.3	3.57	.67	.60*	.83	10.0	8.66	D
315	0443	1515.0	919	0	0	140	8	1380	585	581	801	1502.0	16	9.30	9.37	67.5	70.5	.622	1.043	1372	9.3	3.58	.38	.32*	.83	10.0	8.66	D
316	0444	1520.0	474	0	0	139	7	1370	574	577	801	1506.0	18	9.30	9.39	67.5	70.5	.623	1.032	1377	9.3	3.60	.48	.42*	.83	10.0	8.66	D
T.V.D. 1519.9 ft													HYDRAULIC POWER 230.0 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 64381 COST INST 7.2 US\$/ft COST BIT 30.5 US\$/ft															
Survey @ 1500 ft = 0.69 degree (N54E):																												
318	0456	1525.1	634	0	0	149	8	1340	542	546	798	1509.0	26	9.30	9.43	66.6	70.3	.596	.952	1382	9.3	3.61	.46	.40*	.83	9.89	8.66	D
319	0456	1530.1	557	0	0	114	5	1350	556	560	800	1515.0	28	9.30	9.40	66.6	70.3	.596	.950	1387	9.3	3.63	.40	.34*	.83	9.89	8.66	D
320	0508	1535.0	421	0	0	118	7	1350	564	570	801	1518.3	13	9.30	9.40	67.0	70.3	.605	.945	1392	9.3	3.64	.49	.42*	.83	9.82	8.66	D
321	0509	1540.0	372	0	0	115	5	1530	567	572	806	1521.2	20	9.30	9.43	68.0	70.2	.625	.912	1397	9.3	3.66	.49	.43*	.84	9.54	8.66	D
322	0510	1545.0	76.0	0	0	115	12	1330	567	571	806	1524.3	19	9.30	9.38	68.0	70.2	.625	.912	1402	9.4	3.67	.90	.83	.84	9.54	8.66	D
T.V.D. 1550.0 ft													HYDRAULIC POWER 225.0 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 64843 COST INST 44.7 US\$/ft COST BIT 30.3 US\$/ft															
323	0512	1550.0	134	0	0	115	13	1330	567	571	806	1526.3	21	9.30	9.40	68.0	70.2	.625	.912	1407	9.4	3.69	.83	.72*	.84	9.54	8.66	D
POOH @ 1550 ft to open 12.25" hole to 26" - NB #2 1407 ft in 9.4 hrs - graded SY-W1/4-B0/D-G00;																												
RRB #1.1 Smith SDS 17.5" Ser.# XE4708 IADC 114 Jets 20:20:20 - in @ 143 ft w/ 26" hole opener (jets 14:14:14);																												
Opened 1407 ft of 12.25" hole in 19.0 hrs & began drilling new formation from 1550 ft;																												
Date Mar 15 '86																												
328	2134	1555.0	10.8	0	0	130	38	1180	713	706	630	1550.0	22	9.62	9.60	64.1	66.1	.346	.483	1412	19.7	4.21	1.76	1.66*	.84	9.70	8.66	D
329	2154	1560.0	15.4	0	0	127	37	1170	713	704	632	1550.6	25	9.62	9.62	64.9	65.5	.346	.491	1417	20.0	4.29	1.64	1.54*	.84	9.68	8.66	D
331	2222	1565.0	30.4	0	0	126	35	1140	704	705	629	1552.4	31	9.62	9.64	65.1	67.5	.347	.475	1422	20.3	4.34	1.43	1.33*	.84	9.69	8.66	D
Circulated returns & conditioned hole & mud for 1.5 hrs & made wiper trip - circulated returns when back on bottom & POOH @ 1569 ft to run casing -																												
RRB #1.1 cut 19 ft of new formation in 1.3 hrs - graded SN-W7/7-B0/D-G08;																												
Ran 20" casing: 38 joints, Buttress, 133 lb/ft, X-56 w/ collar @ 1521 ft & shoe set @ 1563 ft;																												
Cemented casing w/ 300 sx Arctic Set II cement (slurry density 15.2 lb/gal), 450 sx Arctic Set III cement (slurry density 11.9 lb/gal), 1050 sx Arctic Set II (slurry density 12.1 lb/gal) and tail of 460 sx Arctic Set II cement (slurry density 15.2 lb/gal); Total volume of 3316 ft^3 cement pumped;																												
Set II (slurry density 12.1 lb/gal) and tail of 460 sx Arctic Set II cement (slurry density 15.2 lb/gal); Total volume of 3316 ft^3 cement pumped;																												
NB #3 Smith SDS 17.5" Ser.# XE4711 IADC 114 (open) - in @ 1569 ft (drilled 49 ft cement to bottom in 2.3 hrs);																												
Date Mar 18 '86																												
337	2029	1570.1	45.1	0	0	62	11	1280	861	863	747	1563.0	10	9.12	9.09	65.1	66.2	.510	.680	1.1	.0	.37	1.02	1.02*	.84	9.07	8.66	D
T.V.D. 1569.8 ft													HYDRAULIC POWER 52.7 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 94 COST INST 75.3 US\$/ft COST BIT 11162 US\$/ft															
338	2146	1575.0	156	0	0	67	11	1270	705	761	769	1563.2	9	9.28	9.08	67.0	65.8	.530	.670	6.0	.1	.38	.75	.75	.83	9.13	8.73	D
339	2305	1580.0	57.1	0	0	110	18	1310	905	908	761	1563.4	9	9.27	9.02	66.5	65.5	.530	.670	11.0	.1	.44	1.02	1.01*	.83	9.26	8.73	D
340	2306	1585.0	172	0	0	112	12	1320	905	908	762	1563.6	9	9.20	9.03	66.1	65.5	.530	.680	16.0	.2	.45	.72	.71*	.84	9.20	8.73	D
341	2312	1585.4	65.9	0	0	112	12	1240	866	871	753	1565.8	9	8.99	9.04	65.5	65.5	.530	.690	PUMP SPM = 199								P
342	2314	1590.0	261	0	0	110	14	1240	870	869	756	1566.0	8	9.05	9.07	65.2	65.8	.527	.720	21.0	.2	.46	.65	.64*	.84	9.30	8.73	D
343	2315	1595.2	214	0	0	102	10	1250	866	867	756	1566.0	9	9.12	9.02	65.1	65.8	.523	.720	26.2	.2	.47	.63	.62*	.84	9.32	8.73	D
T.V.D. 1594.8 ft													HYDRAULIC POWER 57.4 hp KICK TOLERANCE 0.00 lb/gal T.B.R. 1300 COST INST 15.8 US\$/ft COST BIT 514.2 US\$/ft															
344	2316	1600.0	262	0	0	103	11	1260	874	874	755	1566.0	9	9.19	9.03	65.1	65.9	.521	.740	31.0	.2	.47	.60	.59*	.84	9.35	8.73	D
345	2317	1605.0	305	0	0	103	11	1260	861	861	755	1566.0	10	9.24	8.98	65.0	66.0	.520	.750	36.0	.3	.48	.57	.56*	.84	9.37	8.73	D

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD	FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXW		
		ft	ft/hr	AVG	MAX	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW							
391	1104	1755.7	499	351	370	133	13	1270	805	802	821	1683.6	59	9.06	9.21	69.8	70.7	.538	.720	107	1.0	.43	.54	.53*	.86	9.37	8.71	D
392	1105	1758.0	317	351	364	133	13	1280	809	810	820	1687.5	70	9.02	9.21	69.8	70.7	.538	.730	PUMP	SPM =	186						P
393	1116	1758.0	317	351	387	133	13	1230	809	812	820	1696.1	64	9.07	9.13	70.0	71.2	.537	.740	PUMP	SPM =	186						P
394	1119	1758.0	317	351	387	133	13	1280	809	810	817	1708.6	111	9.09	9.16	70.1	71.2	.534	.750	PUMP	SPM =	186						P
395	1133	1758.0	317	351	387	133	13	1270	809	809	818	1729.1	85	9.08	9.23	70.5	70.9	.521	.750	PUMP	SPM =	186						P
396	1135	1758.0	317	351	387	133	13	1270	818	821	821	1746.4	92	9.10	9.19	70.5	71.2	.520	.760	PUMP	SPM =	188						P
397	1138	1758.0	317	351	387	133	13	1260	813	815	821	1755.9	84	9.05	9.27	70.7	71.2	.520	.770	PUMP	SPM =	187						P
398	1152	1760.0	215	290	387	138	18	1220	800	804	818	1758.0	18	9.13	9.22	71.1	71.7	.530	.750	111	1.0	.45	.79	.78	.86	9.07	8.77	D
399	1152	1765.1	394	292	378	147	26	1220	800	800	819	1758.0	25	9.16	9.30	71.1	71.2	.530	.750	116	1.0	.46	.74	.72*	.86	9.10	8.77	D
400	1154	1770.1	161	302	378	145	27	1310	831	828	823	1758.0	27	9.16	9.35	71.1	71.3	.530	.730	121	1.0	.49	.96	.94	.86	9.13	8.73	D
T.V.D. 1769.9 ft				HYDRAULIC POWER				48.0 hp	KICK TOLERANCE				1.70 lb/gal	T.B.R.				6548	COST INST 21.1 US\$/ft				COST BIT 78.0 US\$/ft					
401	1155	1775.0	241	311	378	144	25	1310	831	832	824	1758.0	28	9.09	9.34	71.1	71.9	.530	.720	126	1.0	.50	.84	.82	.86	9.15	8.76	D
402	1157	1780.0	294	305	378	145	21	1310	822	817	824	1758.0	27	9.11	9.31	71.1	72.0	.530	.740	131	1.0	.51	.76	.74*	.86	9.17	8.76	D
403	1158	1785.2	309	323	378	143	25	1310	827	830	823	1758.0	29	9.13	9.31	71.1	72.0	.530	.730	136	1.1	.52	.77	.75*	.86	9.19	8.76	D
404	1200	1790.0	119	318	378	144	26	1310	822	823	822	1758.0	30	9.13	9.27	71.2	72.0	.530	.730	141	1.1	.55	1.00	.98*	.86	9.22	8.76	D
+ Survey @ 1790 ft = 0.67 degree (N69E);																												
406	1236	1790.1	46.1	318	378	144	26	1090	735	732	843	1782.0	79	9.09	9.32	72.1	72.5	.540	.730	PUMP	SPM =	169						P
407	1239	1790.1	46.1	318	378	144	26	1080	740	737	844	1788.6	102	9.12	9.36	72.1	72.7	.540	.753	PUMP	SPM =	170						P
408	1252	1795.0	196	155	378	121	21	1150	757	759	850	1790.1	42	9.13	9.22	72.3	72.7	.539	.765	146	1.1	.58	.81	.79	.86	9.15	8.81	D
T.V.D. 1794.9 ft				HYDRAULIC POWER				39.2 hp	KICK TOLERANCE				1.62 lb/gal	T.B.R.				7888	COST INST 17.3 US\$/ft				COST BIT 68.1 US\$/ft					
409	1254	1800.4	253	154	378	119	23	1150	766	765	852	1790.1	39	9.06	9.20	72.3	72.7	.532	.767	151	1.2	.59	.77	.75*	.86	9.17	8.81	D
410	1255	1805.0	235	172	220	116	26	1150	761	767	850	1790.1	37	9.08	9.19	72.3	72.7	.530	.770	156	1.2	.60	.79	.78	.85	9.19	8.88	D
411	1256	1810.0	196	148	185	122	20	1150	770	771	850	1790.1	40	9.09	9.25	72.4	72.7	.530	.775	161	1.2	.61	.80	.78	.85*	9.21	8.92	D
412	1258	1815.0	199	149	178	131	20	1150	757	754	852	1790.1	40	9.13	9.08	72.5	72.7	.531	.778	166	1.2	.63	.81	.79	.85*	9.23	8.96	D
413	1300	1820.0	149	157	295	125	20	1150	761	766	851	1790.1	35	9.08	9.12	72.5	72.7	.530	.750	171	1.3	.64	.86	.85	.85	9.25	8.96	D
T.V.D. 1819.9 ft				HYDRAULIC POWER				38.9 hp	KICK TOLERANCE				1.61 lb/gal	T.B.R.				8808	COST INST 22.8 US\$/ft				COST BIT 61.2 US\$/ft					
414	1323	1825.0	102	164	239	124	20	1220	787	781	859	1790.1	27	9.12	9.10	73.2	72.9	.540	.708	176	1.3	.67	.94	.93	.85*	9.24	8.92	D
415	1326	1830.0	93.9	181	272	120	23	1230	787	789	859	1795.1	36	9.09	9.10	73.4	72.9	.540	.719	181	1.4	.69	.99	.97*	.85	9.25	8.92	D
416	1330	1835.0	75.7	167	251	117	22	1220	783	789	859	1809.0	74	9.12	9.27	73.6	72.9	.532	.761	186	1.4	.71	1.02	1.00*	.85	9.22	8.92	D
417	1336	1840.0	57.4	148	187	121	24	1220	796	795	858	1823.4	58	9.07	9.31	73.8	72.9	.538	.716	191	1.5	.75	1.12	1.10*	.85	9.18	8.92	D
418	1341	1845.0	58.1	148	176	120	25	1230	787	783	858	1826.0	33	9.05	9.18	73.9	73.0	.536	.716	196	1.6	.79	1.13	1.11*	.86	9.20	8.92	D
T.V.D. 1844.9 ft				HYDRAULIC POWER				43.1 hp	KICK TOLERANCE				1.61 lb/gal	T.B.R.				11271	COST INST 58.4 US\$/ft				COST BIT 59.9 US\$/ft					
419	1346	1850.0	53.9	161	281	117	25	1230	787	781	855	1827.2	26	9.02	9.05	73.9	73.0	.541	.766	201	1.7	.82	1.13	1.11*	.86	9.21	8.92	D
421	1357	1855.0	137	142	184	124	21	1170	735	737	855	1829.1	34	8.98	9.14	73.9	73.1	.549	.681	206	1.7	.84	.89	.87	.86	9.21	8.91	D
422	1359	1860.0	111	116	151	122	21	1180	770	771	860	1832.9	46	8.85	9.18	73.9	73.2	.548	.687	211	1.8	.85	.93	.91	.86	9.21	8.88	D
423	1402	1865.0	103	126	151	122	24	1160	761	756	859	1836.2	41	8.87	9.16	73.9	73.2	.550	.692	216	1.8	.87	.98	.96*	.86	9.20	8.88	D
424	1409	1867.9	87.8	128	155	123	23	1280	761	762	861	1840.9	15	8.91	9.13	74.1	73.2	.550	.715	PUMP	SPM =	175						P
425	1411	1870.0	71.3	128	155	128	23	1200	774	769	862	1843.9	33	8.95	9.13	74.1	73.2	.546	.702	221	1.9	.90	1.07	1.05*	.86	9.16	8.88	D
T.V.D. 1869.9 ft				HYDRAULIC POWER				38.6 hp	KICK TOLERANCE				1.64 lb/gal	T.B.R.				13415	COST INST 47.6 US\$/ft				COST BIT 58.1 US\$/ft					
426	1417	1875.0	51.8	131	153	123	23	1260	805	803	857	1849.0	27	8.95	9.10	74.5	73.4	.540	.698	226	2.0	.94	1.14	1.12*	.86	9.11	8.88	D
427	1421	1880.0	72.7	127	154	121	24	1270	796	798	861	1852.9	28	8.85	9.12	74.8	73.4	.545	.700	231	2.1	.97	1.07	1.05*	.86	9.10	8.88	D
428	1425	1885.0	75.4	117	141	116	26	1280	800	806	860	1856.5	29	8.93	9.13	75.0	73.4	.540	.707	236	2.1	.99	1.07	1.05*	.86	9.10	8.88	D
429	1435	1890.0	91.5	102	132	129	25	1190	774	780	862	1864.9	36	8.88	9.20	75.4	73.6	.540	.723	241	2.2	1.01	1.05	1.03*	.87	9.05	8.88	D
430	1440	1895.0	62.1	102	119	130	25	1190	770	769	858	1871.2	33	9.14	9.25	75.6	73.8	.540	.731	246	2.3	1.04	1.15	1.12*	.87	9.04	8.88	D
T.V.D. 1894.9 ft				HYDRAULIC POWER				38.7 hp	KICK TOLERANCE				1.72 lb/gal	T.B.R.				16171	COST INST 54.7 US\$/ft				COST BIT 57.7 US\$/ft					
431	1446	1900.0	55.8	112	134	129	25	1190	770	770	859	1874.0	29	9.08	9.23	75.7	73.8	.540	.732	251	2.4	1.07	1.17	1.15*	.87	9.04	8.88	D
432	1451	1905.0	58.7	111	124	130	24	1190	761	756	861	1878.5	29	8.88	9.20	75.9	73.8	.550	.738	256	2.5	1.10	1.14	1.11*	.87	9.04	8.88	D
433	1454	1910.0	108	105	122	129	22	1190	766	772	862	1880.9	32	9.08	9.24	75.9	77.4	.550	.728	261	2.5	1.11	.98	.96	.87	9.05	8.83	D

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD	FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW			
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bb1	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW							
434	1457	1915.0	105	101	117	129	23	1200	766	765	862	1885.5	32	8.86	9.23	76.0	77.4	.550	.725	266	2.6	1.13	1.00	.97	.88*	9.05	8.79	D	
435	1511	1920.1	367	93	111	123	27	1180	757	756	861	1893.6	29	8.85	9.24	76.5	77.7	.550	.721	271	2.6	1.14	.73	.70*	.88	9.01	8.79	D	
T.V.D. 1919.7 ft				HYDRAULIC POWER				37.8	hp				KICK TOLERANCE				1.73	lb/gal				T.B.R. 18441 COST INST 9.3 US\$/ft				COST BIT 56.6 US\$/ft			
436	1518	1925.0	96.7	82	102	122	25	1180	761	761	863	1899.7	26	8.88	9.25	76.6	78.0	.550	.709	276	2.7	1.15	1.04	1.01*	.88	8.99	8.79	D	
437	1520	1930.0	65.2	75	88	122	25	1190	757	751	862	1901.0	25	8.88	9.24	76.7	78.1	.550	.702	281	2.7	1.16	1.12	1.09*	.88	9.00	8.79	D	
438	1522	1935.0	58.5	83	97	122	25	1190	757	754	862	1903.7	26	8.85	9.23	76.8	78.1	.550	.695	286	2.7	1.17	1.15	1.12*	.88	9.01	8.79	D	
439	1526	1940.0	65.0	89	103	122	26	1190	753	749	862	1908.3	29	8.89	9.20	76.8	78.3	.550	.694	291	2.8	1.19	1.13	1.10*	.88	9.01	8.79	D	
441	1534	1945.0	41.6	84	102	122	25	1190	753	747	864	1921.8	25	8.88	9.31	77.0	78.3	.553	.712	296	2.9	1.22	1.24	1.21*	.88	8.98	8.79	D	
T.V.D. 1944.9 ft				HYDRAULIC POWER				37.5	hp				KICK TOLERANCE				1.72	lb/gal				T.B.R. 20660 COST INST 81.6 US\$/ft				COST BIT 55.8 US\$/ft			
442	1548	1950.0	48.7	82	101	122	26	1200	757	760	897	1931.1	20	9.09	9.33	74.3	78.4	.531	.670	301	3.0	1.25	1.20	1.17*	.88	8.97	8.79	D	
443	1554	1955.0	47.0	80	92	122	25	1180	757	758	906	1936.1	21	9.07	9.31	74.4	78.8	.530	.681	306	3.1	1.28	1.21	1.17*	.88	8.99	8.79	D	
444	1601	1960.0	43.7	90	109	122	26	1190	753	753	917	1943.4	21	9.06	9.14	74.6	78.8	.528	.694	311	3.2	1.31	1.23	1.20*	.89	9.03	8.79	D	
445	1626	1965.1	19.5	95	119	122	27	1230	761	762	921	1952.7	33	9.12	9.14	77.7	78.1	.540	.642	316	3.5	1.38	1.42	1.39*	.89	9.10	8.79	D	
446	1712	1967.6	6.3	105	155	120	29	1130	696	701	822	1970.0	9	9.11	9.16	78.4	79.7	.510	.630	PUMP SPM = 160									
447	1716	1970.1	11.0	93	155	118	28	1210	748	744	826	1970.5	16	9.08	9.23	78.4	79.4	.525	.650	321	4.0	1.49	1.57	1.54*	.89	9.09	8.79	D	
T.V.D. 1969.9 ft				HYDRAULIC POWER				38.3	hp				KICK TOLERANCE				1.52	lb/gal				T.B.R. 28313 COST INST 308.8 US\$/ft				COST BIT 62.7 US\$/ft			
448	1722	1975.1	54.8	79	101	118	28	1210	774	771	831	1970.7	19	9.07	9.33	78.4	79.9	.530	.690	326	4.1	1.52	1.18	1.15*	.89	9.10	8.79	D	
Survey @ 1950 ft = 0.65 degree (N87E);																													
450	1737	1980.0	50.7	94	117	120	28	1200	766	768	830	1972.1	18	9.09	9.37	78.6	80.4	.540	.700	331	4.2	1.54	1.20	1.17*	.89	9.10	8.79	D	
451	1743	1985.1	57.6	95	111	122	28	1200	766	763	830	1972.6	21	9.08	9.25	78.8	80.1	.530	.720	336	4.2	1.56	1.18	1.14*	.89	9.12	8.79	D	
452	1748	1990.1	54.6	100	118	122	30	1200	766	768	832	1972.9	20	9.05	9.22	79.1	80.6	.520	.730	341	4.3	1.59	1.20	1.16*	.89	9.16	8.79	D	
453	1754	1995.1	50.5	106	120	122	30	1190	766	771	834	1976.8	19	9.08	9.10	79.3	80.6	.520	.750	346	4.4	1.61	1.22	1.18*	.89	9.17	8.79	D	
T.V.D. 1994.9 ft				HYDRAULIC POWER				39.3	hp				KICK TOLERANCE				1.50	lb/gal				T.B.R. 31795 COST INST 67.3 US\$/ft				COST BIT 63.0 US\$/ft			
454	1800	2000.1	52.7	110	126	121	31	1210	757	753	823	1981.4	17	9.11	9.15	79.6	80.4	.504	.760	351	4.5	1.63	1.22	1.18*	.89	9.17	8.79	D	
455	1807	2005.1	42.7	109	125	121	32	1200	766	767	824	1982.7	15	9.13	9.24	79.9	80.9	.500	.760	356	4.6	1.66	1.27	1.23*	.89	9.18	8.79	D	
456	1822	2010.1	38.8	109	142	122	31	1160	757	752	821	1992.3	6	9.16	9.27	80.4	81.4	.500	.720	361	4.8	1.69	1.30	1.26*	.89	9.16	8.79	D	
457	1826	2015.1	76.3	100	143	122	31	1170	744	744	823	1995.7	11	9.13	9.26	80.4	81.7	.500	.730	366	4.8	1.71	1.13	1.09*	.89	9.18	8.79	D	
458	1830	2020.0	73.3	86	119	124	25	1150	740	743	822	1999.2	11	9.17	9.06	80.6	81.7	.509	.720	371	4.9	1.73	1.08	1.04*	.89	9.19	8.79	D	
T.V.D. 2019.9 ft				HYDRAULIC POWER				37.2	hp				KICK TOLERANCE				1.48	lb/gal				T.B.R. 35274 COST INST 46.4 US\$/ft				COST BIT 63.4 US\$/ft			
459	1838	2025.0	64.9	92	121	117	27	1150	740	741	820	2006.2	19	9.20	9.24	80.8	82.1	.511	.710	376	5.0	1.74	1.12	1.08*	.90	9.19	8.79	D	
460	1843	2030.0	60.5	85	120	118	30	1140	740	745	819	2009.5	17	9.19	9.22	81.0	82.2	.510	.720	381	5.1	1.76	1.16	1.12*	.90	9.21	8.79	D	
461	1847	2035.0	72.1	84	132	118	31	1140	740	742	821	2012.0	14	9.16	9.19	81.1	82.4	.508	.710	386	5.1	1.77	1.13	1.09*	.90	9.23	8.79	D	
462	1855	2039.7	66.2	88	126	117	34	1130	740	738	822	2014.5	32	9.19	9.16	81.3	82.6	.502	.710	PUMP SPM = 170									
463	1900	2039.7	66.2	88	126	117	34	1140	748	743	825	2019.9	31	9.20	9.20	81.5	82.6	.500	.720	PUMP SPM = 172									
464	1913	2039.7	66.2	88	126	117	34	1140	744	739	824	2030.1	31	9.18	9.17	82.0	83.3	.496	.720	PUMP SPM = 171									
Survey @ 2040 ft = 0.75 degree (S88E);																													
467	2041	2040.0	66.5	87	126	117	34	1580	766	762	818	2039.5	13	9.37	9.17	83.3	83.2	.500	.670	391	5.2	1.79	1.19	1.14*	.90	9.08	8.79	D	
468	2046	2045.0	75.7	63	85	114	25	1590	766	767	820	2039.6	20	9.37	9.23	83.3	83.3	.497	.690	396	5.3	1.80	1.06	1.02*	.90	9.09	8.79	D	
T.V.D. 2044.9 ft				HYDRAULIC POWER				41.2	hp				KICK TOLERANCE				1.47	lb/gal				T.B.R. 37901 COST INST 44.8 US\$/ft				COST BIT 62.9 US\$/ft			
469	2052	2050.0	49.8	65	75	115	25	1600	770	773	820	2041.0	19	9.31	9.22	83.1	82.9	.490	.700	401	5.4	1.82	1.16	1.12*	.90	9.15	8.79	D	
470	2056	2055.0	76.7	66	84	119	25	1600	766	763	821	2042.2	16	9.33	9.30	83.1	82.8	.500	.700	406	5.5	1.84	1.06	1.02*	.90	9.18	8.79	D	
471	2101	2060.0	65.3	69	89	119	26	1610	766	769	824	2043.7	14	9.29	9.36	82.9	82.9	.500	.690	411	5.5	1.85	1.09	1.05*	.90	9.25	8.79	D	
472	2106	2065.0	65.3	72	91	119	26	1600	774	770	824	2044.4	15	9.29	9.39	82.9	83.4	.500	.690	416	5.6	1.87	1.09	1.05*	.90	9.31	8.79	D	
473	2112	2070.1	48.2	76	96	118	28	1610	766	764	824	2045.0	31	9.28	9.29	82.9	84.3	.500	.690	421	5.7	1.89	1.17	1.13*	.90	9.39	8.79	D	
T.V.D. 2069.9 ft				HYDRAULIC POWER				40.9	hp				KICK TOLERANCE				1.30	lb/gal				T.B.R. 40873 COST INST 70.5 US\$/ft				COST BIT 62.9 US\$/ft			
475	2126	2075.1	65.1	67	84	113	28	1550	748	745	837	2052.6	23	9.20	9.28	83.1	84.6	.500	.680	426	5.8	1.91	1.08	1.04*	.90	9.43	8.79	D	
476	2131	2080.1	77.1	64	86	118	27	1530	748	744	836	2056.9	24	9.12	9.28	83.1	84.7	.500	.700	431	5.9	1.92	1.05	1.01*	.90	9.43	8.79	D	
477	2136	2085.1	136	60	71	122	26	1530	748	753	835	2061.9	26	9.00	9.29	83.1	84.7	.494	.710	436	5.9	1.93	.92	.87	.90	9.43	8.81	D	
478	2141	2090.1	159	59	82	128	28	1530	748	751	834	2067.0	25	8.96	9.22	83.1	84.7	.490	.710	441	6.0	1.93	.90	.86	.90	9.42	8.84	D	

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD	FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW		
		ft	ft/hr	AVG	MAX	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW							
479	2201	2095.0	384	59	71	118	28	1550	757	759	831	2075.9	6	9.17	9.29	83.3	83.5	.500	.650	446	6.0	1.94	.69	.65*	.90	9.33	8.84	D
480	2203	2100.0	96.8	70	70	111	22	1540	753	748	835	2077.2	19	9.23	9.23	83.3	84.5	.497	.660	451	6.1	1.94	.94	.90	.90	9.31	8.85	D
T.V.D. 2099.9 ft				HYDRAULIC POWER				38.3	hp				KICK TOLERANCE				1.33	lb/gal	T.B.R.	42700	COST INST		35.1	US\$/ft		COST BIT	61.4	US\$/ft
481	2204	2105.0	50.7	70	70	116	27	1540	744	744	837	2078.4	20	9.23	9.23	83.3	84.5	.497	.670	456	6.1	1.95	1.15	1.11*	.90	9.33	8.85	D
482	2210	2110.0	38.8	70	70	124	26	1530	744	744	837	2085.5	25	9.09	9.28	83.3	84.7	.500	.690	461	6.2	1.97	1.23	1.19*	.90	9.27	8.85	D
483	2219	2115.0	32.2	75	98	119	26	1530	748	747	834	2097.5	27	9.09	9.27	83.3	84.7	.500	.700	466	6.3	2.00	1.27	1.23*	.90	9.19	8.85	D
484	2228	2120.0	34.8	81	108	118	26	1540	748	747	834	2104.2	31	9.13	9.27	83.3	84.7	.500	.700	471	6.5	2.02	1.26	1.21*	.91	9.15	8.85	D
485	2235	2125.0	39.6	91	108	117	25	1550	744	747	833	2107.6	30	9.14	9.28	83.2	84.9	.500	.700	476	6.6	2.05	1.21	1.17*	.91	9.15	8.85	D
T.V.D. 2124.8 ft				HYDRAULIC POWER				36.9	hp				KICK TOLERANCE				1.42	lb/gal	T.B.R.	46495	COST INST		85.8	US\$/ft		COST BIT	62.2	US\$/ft
486	2242	2130.0	46.4	90	112	118	25	1560	748	749	833	2115.7	23	9.18	9.27	83.3	85.1	.500	.700	481	6.7	2.07	1.17	1.13*	.91	9.15	8.85	D
+ Survey @ 2134 ft = 0.65 degree = (N83E);																												
488	2258	2135.0	33.1	92	113	115	26	1520	740	735	836	2123.6	20	9.13	9.27	83.4	84.9	.500	.700	486	6.9	2.10	1.26	1.21*	.91	9.17	8.85	D
489	2304	2140.0	53.6	108	131	124	30	1530	726	730	837	2126.5	20	9.12	9.24	83.1	85.3	.510	.710	491	6.9	2.12	1.20	1.15*	.91	9.18	8.85	D
490	2308	2145.0	73.5	116	135	127	35	1530	726	725	836	2129.0	20	9.08	9.26	83.3	85.3	.501	.710	496	7.0	2.13	1.17	1.12*	.91	9.19	8.85	D
491	2311	2150.0	104	121	145	127	34	1500	722	722	834	2130.5	22	9.08	9.29	83.3	85.3	.500	.710	501	7.1	2.14	1.08	1.03*	.91	9.20	8.85	D
T.V.D. 2149.9 ft				HYDRAULIC POWER				34.3	hp				KICK TOLERANCE				1.37	lb/gal	T.B.R.	49933	COST INST		32.6	US\$/ft		COST BIT	62.5	US\$/ft
493	2315	2155.1	63.3	113	137	127	34	1520	731	732	833	2133.6	25	9.10	9.30	83.4	85.3	.500	.720	506	7.1	2.16	1.21	1.16*	.91	9.23	8.85	D
494	2319	2160.1	88.3	113	135	127	34	1520	726	721	833	2136.1	25	9.11	9.31	83.5	85.1	.500	.710	511	7.2	2.18	1.12	1.06*	.91	9.25	8.85	D
495	2332	2165.1	52.0	116	137	128	35	1560	779	774	831	2141.6	12	9.11	9.37	83.2	84.3	.502	.620	516	7.3	2.20	1.26	1.21*	.91	9.26	8.85	D
496	2336	2170.0	75.7	118	145	129	33	1580	757	752	840	2142.6	21	9.14	9.29	83.5	85.1	.500	.660	521	7.4	2.22	1.15	1.10*	.91	9.27	8.85	D
497	2341	2175.1	64.6	125	142	131	33	1770	809	810	836	2144.8	24	9.12	9.26	83.7	85.1	.500	.730	526	7.4	2.23	1.19	1.13*	.91	9.28	8.85	D
T.V.D. 2174.9 ft				HYDRAULIC POWER				41.6	hp				KICK TOLERANCE				1.33	lb/gal	T.B.R.	52871	COST INST		52.6	US\$/ft		COST BIT	62.1	US\$/ft
498	2354	2180.1	65.1	126	148	125	34	1750	792	795	832	2151.1	29	9.17	9.30	83.7	84.7	.510	.690	531	7.5	2.25	1.18	1.13*	.92	9.27	8.85	D
499	2358	2185.1	61.1	133	153	123	35	1750	787	791	831	2158.8	30	9.12	9.30	83.5	84.7	.510	.700	536	7.6	2.27	1.21	1.15*	.92	9.25	8.85	D
Date Mar 20 '86																												
500	0005	2190.1	44.7	126	149	123	34	1750	787	784	830	2167.9	29	9.11	9.27	83.5	84.7	.519	.710	541	7.7	2.29	1.28	1.22*	.92	9.23	8.85	D
501	0010	2193.1	51.2	127	153	123	33	1730	783	788	828	2172.9	26	9.08	9.30	83.5	84.9	.520	.720	PUMP SPM = 180								P
502	0030	2194.0	15.2	128	189	124	34	1430	705	710	829	2186.3	28	9.13	9.14	83.5	85.2	.506	.720	PUMP SPM = 162								P
+ Circulated 45 minutes @ 2194 ft to clean shakers;																												
504	0121	2195.0	8.1	123	189	121	34	1750	787	783	823	2194.0	11	9.13	9.23	83.8	85.0	.530	.700	546	8.3	2.41	1.72	1.67*	.92	9.12	8.85	D
505	0325	2200.1	2.0	127	180	117	35	1740	783	778	777	2197.8	8	9.23	9.24	84.7	86.1	.482	.670	551	9.9	2.68	2.00	2.02*	.92	9.17	8.85	D
T.V.D. 2200.1 ft				HYDRAULIC POWER				79.5	hp				KICK TOLERANCE				1.32	lb/gal	T.B.R.	69954	COST INST		1729	US\$/ft		COST BIT	74.2	US\$/ft
+ Survey @ 2193 ft = 0.38 degree (N4E);																												
Circulated 10 minutes & POOH @ 2202 ft to inspect bit - RRB #3.1 cut 553 ft in 10.0 hrs - graded SY-W1/1-B0/0-G00 (balled up);																												
+ NB #4 Smith SDS 17.5" Ser.# XE3849 IADC 114 Jets 20:20:20 - in @ 2202 ft (washed 50 ft to bottom in 0.2 hr);																												
510	1021	2205.3	4.4	122	235	133	37	2080	661	644	824	2203.2	13	9.35	9.06	76.5	78.7	.508	.700	3.3	.8	.46	1.90	1.88*	.92	9.35	8.85	D
512	1109	2210.0	8.4	137	187	144	37	2030	670	613	822	2205.3	13	9.33	9.33	78.1	79.6	.480	.680	7.9	1.4	.76	1.76	1.74*	.92	9.31	8.85	D
513	1137	2215.0	12.6	137	190	145	36	2000	687	631	818	2207.7	15	9.23	9.24	78.8	80.0	.480	.690	12.9	1.8	.95	1.66	1.63*	.92	9.29	8.85	D
514	1143	2220.0	49.2	145	169	144	29	1980	709	636	819	2208.7	13	9.20	9.16	78.8	80.3	.477	.670	17.9	1.9	1.00	1.24	1.21*	.92	9.29	8.85	D
515	1247	2222.6	3.0	129	163	143	35	900	557	454	816	2220.1	11	9.10	9.27	80.1	81.2	.490	.710	PUMP SPM = 128								P
516	1247	2222.6	3.0	129	163	143	35	900	557	454	816	2220.1	11	9.10	9.27	80.1	81.2	.490	.710	PUMP SPM = 128								P
+ Circulated returns & POOH @ 2223 ft to change bit - NB #4 cut 21 ft in 1.9 hrs - graded SY-B1/1-W0/0-G00 (balled up);																												
+ NB #5 Smith SDS 12.25" Ser.# XD6453 IADC 114 Jets 14:14:14 - in @ 2223 ft to drill pilot hole (changed pump liners to 6");																												
521	1930	2225.0	69.9	70	80	135	15	2690	602	650	803	2223.0	17	9.09	9.30	77.4	72.9	.510	.670	2.0	.05	.05	1.06	1.06*	.92	9.17	8.85	D
T.V.D. 2229.9 ft				HYDRAULIC POWER				534.8	hp				KICK TOLERANCE				1.31	lb/gal	T.B.R.	701	COST INST		49.2	US\$/ft		COST BIT	2098	US\$/ft
522	1937	2230.0	69.9	70	80	135	15	2690	602	650	803	2223.0	17	9.09	9.30	77.4	72.9	.510	.670	7.0	.1	.05	1.06	1.06*	.92	9.17	8.85	D
523	1940	2235.0	87.9	72	85	134	14	2680	608	640	806	2223.0	17	9.32	9.33	77.2	74.1	.510	.670	12.0	.1	.09	1.00	.99	.93	9.19	8.81	D
524	1944	2240.0	93.4	79	89	135	15	2660	608	624	807	2223.0	17	9.19	9.32	77.1	74.6	.510	.670	17.0	.2	.12	1.00	.99	.93	9.22	8.78	D

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS MW	lb/gal	TEMP	(F)	RES	ohm-in	THIS BIT	EST	DXC	NX	NXB	ECD	NXMW					
		ft	ft/hr	AVG	MAX	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW									
525	1947	2245.0	100	84	104	134	15	2680	611	653	809	2223.0	15	9.39	9.23	76.8	75.1	.510	.680	22.0	.2	.15	.97	.96	.93	9.25	8.76	D
526	1950	2250.0	97.9	89	98	134	16	2820	608	630	810	2223.0	18	9.19	9.27	76.5	75.5	.509	.670	27.0	.3	.17	1.00	.99	.94	9.28	8.73	D
	T.V.D.	2249.9	ft	HYDRAULIC POWER				564.1	hp	KICK TOLERANCE				1.27	lb/gal	T.B.R.	2399	COST INST	34.7	US\$/ft	COST BIT 445.6 US\$/ft							
528	2005	2255.0	38.0	118	130	147	29	2850	614	692	815	2225.0	44	9.28	9.23	74.9	76.2	.500	.750	32.0	.4	.27	1.03	1.02	.94*	9.36	8.69	D
529	2011	2260.0	170	118	130	147	29	2850	614	692	815	2225.0	44	9.28	9.23	74.9	76.2	.500	.750	37.0	.4	.27	1.03	1.02	.95*	9.36	8.65	D
530	2013	2265.0	154	118	128	147	29	2860	608	680	815	2225.0	39	9.27	9.25	74.8	75.8	.500	.750	42.0	.4	.29	1.06	1.04	.95*	9.38	8.61	D
531	2014	2270.0	168	120	131	147	30	2850	608	689	815	2225.0	34	9.30	9.32	74.7	75.0	.497	.740	47.0	.4	.31	1.04	1.02	.96*	9.40	8.57	D
532	2016	2275.0	150	123	138	147	30	2860	611	673	815	2225.0	36	9.30	9.28	74.7	75.1	.491	.730	52.0	.5	.34	1.06	1.05	.96*	9.44	8.53	D
	T.V.D.	2274.9	ft	HYDRAULIC POWER				561.9	hp	KICK TOLERANCE				1.21	lb/gal	T.B.R.	4443	COST INST	21.8	US\$/ft	COST BIT 237.2 US\$/ft							
533	2018	2280.0	157	120	134	147	28	2860	608	668	812	2225.0	41	9.31	9.33	74.7	75.3	.490	.730	57.0	.5	.36	1.03	1.01	.97	9.47	8.50	D
534	2026	2285.1	136	123	138	147	29	2850	605	630	800	2228.1	13	9.22	9.15	74.7	76.0	.490	.700	62.1	.5	.39	1.08	1.06	.97*	9.52	8.46	D
535	2028	2290.0	147	115	127	144	29	2870	614	597	802	2230.6	19	9.20	9.17	74.7	76.3	.490	.690	67.0	.6	.41	1.05	1.03	.98*	9.54	8.42	D
536	2031	2295.0	124	119	137	137	30	2870	608	608	804	2233.7	22	9.17	9.22	74.7	76.3	.490	.700	72.0	.6	.44	1.08	1.06	.99*	9.55	8.38	D
537	2033	2300.0	119	116	137	136	30	2880	608	599	807	2237.0	25	9.17	9.25	74.7	76.4	.490	.690	77.0	.7	.46	1.09	1.07	.99*	9.56	8.34	D
	T.V.D.	2299.9	ft	HYDRAULIC POWER				546.5	hp	KICK TOLERANCE				1.15	lb/gal	T.B.R.	6018	COST INST	28.6	US\$/ft	COST BIT 167.8 US\$/ft							
538	2036	2305.0	127	120	133	135	31	2880	611	614	807	2240.3	26	9.20	9.23	74.7	76.6	.490	.690	82.0	.7	.49	1.09	1.07	1.00*	9.55	8.30	D
539	2039	2310.0	107	122	140	135	32	2880	605	609	807	2244.3	27	9.19	9.17	74.8	76.9	.493	.690	87.0	.7	.51	1.14	1.12*	1.00	9.55	8.30	D
540	2042	2315.0	90.5	120	139	134	30	2880	608	609	809	2249.1	27	9.19	9.17	74.8	77.0	.491	.690	92.0	.8	.54	1.16	1.14*	1.00	9.53	8.30	D
542	2051	2320.1	91.8	121	141	140	31	2870	608	605	803	2251.5	27	9.21	9.18	75.0	77.8	.490	.680	97.1	.9	.58	1.18	1.16*	1.00	9.51	8.30	D
543	2054	2325.1	104	116	128	143	29	2890	605	606	808	2251.5	30	9.24	9.19	75.2	77.5	.491	.680	102	.9	.61	1.14	1.12*	1.00	9.53	8.30	D
	T.V.D.	2324.9	ft	HYDRAULIC POWER				549.3	hp	KICK TOLERANCE				1.19	lb/gal	T.B.R.	8071	COST INST	33.3	US\$/ft	COST BIT 135.0 US\$/ft							
544	2058	2330.1	78.3	111	128	142	25	2890	605	601	809	2251.5	22	9.26	9.22	75.2	77.5	.494	.680	107	1.0	.64	1.15	1.13*	1.00	9.54	8.30	D
545	2101	2335.0	102	114	126	140	26	2890	605	599	812	2254.7	26	9.26	9.26	75.4	77.7	.500	.690	112	1.0	.67	1.09	1.07	1.01	9.55	8.24	D
546	2103	2340.0	142	117	128	139	29	2900	599	585	812	2260.2	26	9.23	9.27	75.4	77.7	.500	.680	117	1.1	.69	1.04	1.02	1.01	9.55	8.24	D
547	2105	2345.0	127	119	134	142	30	2880	596	579	813	2266.4	32	9.25	9.26	75.6	77.8	.500	.680	122	1.1	.71	1.09	1.07	1.02*	9.54	8.20	D
548	2108	2347.3	99.4	120	131	142	30	2880	602	589	812	2273.6	35	9.24	9.28	75.6	77.9	.500	.680	PUMP SPM = 192								P
549	2112	2347.3	99.4	120	131	142	30	2870	488	462	805	2276.2	14	9.24	9.28	75.6	77.9	.500	.670	PUMP SPM = 156								P
550	2113	2350.1	119	119	131	128	29	2890	608	611	804	2281.1	14	9.19	9.28	75.7	78.0	.491	.670	127	1.1	.74	1.07	1.05	1.02	9.50	8.17	D
	T.V.D.	2349.9	ft	HYDRAULIC POWER				532.3	hp	KICK TOLERANCE				1.18	lb/gal	T.B.R.	10045	COST INST	29.2	US\$/ft	COST BIT 114.7 US\$/ft							
551	2116	2355.1	137	117	139	112	33	2880	608	612	808	2282.9	33	9.12	9.31	75.9	78.2	.470	.670	132	1.2	.75	1.04	1.02	1.02	9.51	8.17	D
552	2118	2360.1	117	115	133	111	32	2890	608	607	811	2283.7	30	9.13	9.35	75.9	78.3	.470	.670	137	1.2	.77	1.07	1.05	1.03	9.52	8.14	D
553	2121	2365.0	96.9	119	138	110	36	2890	599	593	814	2290.5	27	9.15	9.26	76.1	78.4	.470	.670	142	1.3	.79	1.16	1.14	1.03*	9.51	8.10	D
554	2124	2370.0	106	113	131	111	33	2900	605	588	816	2295.8	28	9.16	9.32	76.2	78.5	.470	.680	147	1.3	.80	1.10	1.08	1.04*	9.50	8.06	D
555	2128	2375.0	71.2	113	134	121	33	2890	605	579	816	2304.4	32	9.18	9.33	76.3	78.6	.470	.680	152	1.4	.83	1.23	1.21*	1.04	9.49	8.06	D
	T.V.D.	2374.8	ft	HYDRAULIC POWER				539.0	hp	KICK TOLERANCE				1.18	lb/gal	T.B.R.	11733	COST INST	46.4	US\$/ft	COST BIT 101.8 US\$/ft							
557	2132	2377.5	62.6	115	127	123	34	2880	605	590	816	2310.8	35	9.16	9.38	76.5	78.8	.470	.680	PUMP SPM = 193								P
558	2137	2380.0	74.2	121	135	131	32	2520	593	546	810	2314.6	12	9.20	9.36	76.6	79.1	.463	.670	157	1.5	.86	1.23	1.21*	1.04	9.46	8.06	D
559	2142	2385.0	86.6	117	129	144	28	2840	602	586	815	2316.6	28	9.14	9.20	76.8	79.0	.461	.670	162	1.5	.89	1.18	1.15	1.06	9.47	7.95	D
560	2146	2390.0	80.4	122	137	139	32	2870	602	582	818	2322.9	30	9.17	9.21	77.0	79.2	.460	.670	167	1.6	.93	1.23	1.20*	1.06	9.47	7.95	D
561	2150	2395.0	82.6	133	145	137	38	2870	608	581	820	2327.7	32	9.16	9.22	77.0	79.3	.460	.680	172	1.6	.96	1.28	1.25*	1.06	9.46	7.95	D
562	2153	2400.0	82.6	139	151	137	38	2880	602	580	821	2333.8	35	9.13	9.23	77.2	79.4	.460	.690	177	1.7	1.00	1.29	1.26*	1.06	9.45	7.95	D
	T.V.D.	2399.9	ft	HYDRAULIC POWER				539.1	hp	KICK TOLERANCE				1.19	lb/gal	T.B.R.	14272	COST INST	40.3	US\$/ft	COST BIT 93.8 US\$/ft							
563	2156	2405.0	102	140	156	137	37	2900	605	589	822	2340.3	48	9.14	9.30	77.3	79.5	.460	.690	182	1.7	1.02	1.22	1.19*	1.06	9.44	7.95	D
564	2159	2409.8	158	141	154	137	32	2880	608	585	821	2345.7	42	9.16	9.38	77.4	79.7	.469	.690	PUMP SPM = 194								P
565	2204	2410.1	164	142	157	138	31	2870	602	599	812	2345.9	13	9.13	9.34	77.5	79.7	.469	.670	187	1.8	1.04	1.04	1.01	1.06	9.42	7.97	D

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS BIT	EST	DXC	NX	NXB	ECD	NXMW					
		ft	ft/hr	AVG	MAX	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW									
570	2216	2435.1	157	149	175	136	37	2810	596	555	822	2368.2	32	9.13	9.20	77.9	81.0	.460	.630	212	2.0	1.16	1.10	1.06	1.06	9.43	7.99	D
571	2219	2440.0	101	151	163	136	38	2790	589	559	823	2371.6	29	9.14	9.37	78.1	81.1	.460	.630	217	2.0	1.18	1.23	1.20*	1.06	9.43	7.99	D
573	2226	2440.9	63.6	151	159	136	38	2880	439	444	824	2375.0	12	9.17	9.36	78.1	81.2	.460	.630	PUMP SPM = 140								P
574	2229	2445.1	110	138	159	141	37	2920	602	616	813	2375.9	22	9.18	9.32	78.2	81.2	.460	.630	222	2.1	1.21	1.21	1.17	1.07*	9.43	7.91	D
575	2231	2450.0	108	138	154	143	38	2950	602	634	817	2378.3	24	9.14	9.33	78.4	81.1	.470	.620	227	2.1	1.24	1.23	1.19	1.08*	9.44	7.87	D
T.V.D.		2449.9	ft	HYDRAULIC POWER				525.9	hp	KICK TOLERANCE				1.18 lb/gal		T.B.R.		18002	COST INST	31.3	US\$/ft	COST BIT		80.3			US\$/ft	
576	2234	2455.0	105	138	156	143	38	2930	602	632	821	2380.5	26	9.17	9.32	78.4	81.3	.470	.620	232	2.2	1.26	1.23	1.19	1.09*	9.45	7.83	D
577	2236	2460.0	132	156	180	142	37	2930	602	633	823	2384.1	26	9.20	9.29	78.4	81.5	.478	.610	237	2.2	1.28	1.16	1.12	1.09	9.45	7.79	D
578	2239	2465.0	136	160	192	142	35	2930	602	626	824	2387.0	26	9.18	9.30	78.6	81.7	.480	.610	242	2.3	1.30	1.13	1.09	1.09	9.46	7.79	D
579	2241	2470.0	136	162	177	142	35	2920	599	625	826	2390.0	28	9.19	9.23	78.6	81.7	.470	.610	247	2.3	1.32	1.13	1.09	1.09	9.46	7.79	D
580	2245	2472.0	133	162	174	142	34	2920	602	604	826	2395.9	27	9.18	9.29	78.8	82.0	.470	.620	PUMP SPM = 192								P
+ Survey @ 2462 ft = 0.75 degree (S27E);																												
583	2333	2475.0	145	125	174	142	34	2890	614	567	812	2405.2	11	9.18	9.31	79.2	81.6	.460	.630	252	2.3	1.33	1.11	1.07	1.09	9.44	7.80	D
T.V.D.		2474.9	ft	HYDRAULIC POWER				547.8	hp	KICK TOLERANCE				1.17 lb/gal		T.B.R.		19713	COST INST	24.5	US\$/ft	COST BIT		75.3			US\$/ft	
584	2335	2480.0	132	108	125	141	37	2820	596	614	817	2408.2	35	9.17	9.29	79.3	80.9	.460	.630	257	2.4	1.36	1.16	1.12	1.10	9.44	7.78	D
585	2338	2485.0	143	111	128	141	37	2830	596	599	820	2408.9	36	9.17	9.32	79.3	81.2	.460	.630	262	2.4	1.37	1.14	1.09	1.10	9.46	7.78	D
586	2340	2490.0	149	110	122	141	37	2840	586	592	822	2413.9	38	9.17	9.33	79.3	81.2	.463	.630	267	2.4	1.39	1.12	1.08	1.10	9.46	7.79	D
587	2342	2495.0	122	110	135	142	34	2950	611	612	824	2420.3	38	9.18	9.29	79.5	81.3	.463	.630	272	2.5	1.41	1.15	1.11	1.10	9.46	7.78	D
588	2344	2500.1	145	119	135	141	38	2930	608	634	826	2424.2	36	9.21	9.30	79.5	81.3	.460	.630	277	2.5	1.43	1.14	1.09	1.10	9.46	7.78	D
T.V.D.		2499.8	ft	HYDRAULIC POWER				537.1	hp	KICK TOLERANCE				1.15 lb/gal		T.B.R.		21249	COST INST	23.4	US\$/ft	COST BIT		71.0			US\$/ft	
589	2347	2503.3	136	120	138	141	38	2940	602	597	828	2426.5	29	9.19	9.28	79.7	81.3	.460	.620	PUMP SPM = 192								P
590	2353	2503.3	136	120	138	141	38	2610	391	388	816	2430.4	12	9.23	9.27	79.7	81.5	.460	.630	PUMP SPM = 125								P
591	2355	2505.0	136	117	138	132	36	2890	602	581	816	2434.2	11	9.21	9.36	79.8	81.8	.460	.630	282	2.5	1.45	1.12	1.08	1.10	9.45	7.79	D
592	2357	2510.0	124	106	125	118	32	2890	602	621	820	2438.0	37	9.18	9.35	79.9	81.6	.462	.640	287	2.6	1.46	1.08	1.04	1.10	9.46	7.81	D
Date Mar 21 '86																												
593	0000	2515.1	140	111	134	119	36	2890	599	623	824	2439.3	38	9.19	9.36	79.9	81.5	.460	.630	292	2.6	1.47	1.08	1.04	1.10	9.48	7.83	D
594	0001	2520.0	159	119	140	134	40	2880	605	613	822	2440.3	38	9.20	9.35	80.1	81.6	.460	.640	297	2.7	1.48	1.11	1.06	1.10	9.49	7.85	D
595	0004	2525.1	117	117	135	133	37	2880	602	617	825	2444.8	37	9.21	9.20	80.1	81.7	.460	.640	302	2.7	1.50	1.16	1.12	1.10	9.49	7.83	D
T.V.D.		2524.9	ft	HYDRAULIC POWER				530.6	hp	KICK TOLERANCE				1.13 lb/gal		T.B.R.		22731	COST INST	29.0	US\$/ft	COST BIT		67.5			US\$/ft	
596	0006	2530.1	121	122	136	132	35	2890	602	607	825	2448.8	37	9.21	9.38	80.2	81.7	.460	.640	307	2.7	1.52	1.14	1.09	1.10	9.50	7.83	D
597	0010	2533.9	123	130	148	132	39	2930	632	620	824	2455.4	43	9.21	9.22	80.2	81.5	.467	.660	PUMP SPM = 192								P
598	0014	2535.1	136	135	151	135	39	2850	593	482	818	2459.3	16	9.16	9.21	80.3	81.2	.467	.660	312	2.8	1.54	1.15	1.11	1.10	9.47	7.83	D
599	0016	2540.0	132	136	147	147	38	2830	593	543	819	2464.2	33	9.16	9.25	80.4	81.1	.470	.670	317	2.8	1.56	1.17	1.13	1.10	9.47	7.81	D
600	0019	2545.1	121	136	156	146	41	2820	593	556	821	2469.9	43	9.17	9.31	80.4	81.1	.470	.660	322	2.9	1.58	1.22	1.17	1.11*	9.47	7.77	D
601	0022	2550.1	98.4	130	146	147	36	2870	596	553	822	2470.4	50	9.15	9.31	80.4	81.4	.470	.660	327	2.9	1.61	1.23	1.19	1.12*	9.48	7.73	D
T.V.D.		2549.9	ft	HYDRAULIC POWER				504.4	hp	KICK TOLERANCE				1.11 lb/gal		T.B.R.		24534	COST INST	32.6	US\$/ft	COST BIT		64.7			US\$/ft	
602	0023	2555.0	238	139	162	147	36	2870	602	553	823	2470.4	47	9.18	9.37	80.6	81.4	.470	.670	332	2.9	1.62	.99	.94*	1.12	9.50	7.73	D
603	0025	2560.1	138	141	156	146	37	2870	593	559	823	2470.4	63	9.20	9.39	80.6	81.1	.470	.650	337	3.0	1.64	1.15	1.10	1.12	9.52	7.74	D
604	0026	2565.1	259	140	151	146	33	2870	596	555	823	2470.8	59	9.20	9.31	80.6	80.9	.470	.660	342	3.0	1.65	.94	.89*	1.12	9.53	7.74	D
606	0031	2566.8	40.0	139	111	146	33	2780	508	499	818	2476.2	45	9.19	9.26	80.6	81.1	.470	.660	PUMP SPM = 162								P
607	0034	2570.0	103	133	153	146	33	2870	596	547	816	2481.3	15	9.17	9.30	80.8	81.8	.470	.660	347	3.0	1.66	1.19	1.14	1.12	9.51	7.72	D
608	0036	2575.0	158	137	156	138	35	2870	599	560	818	2485.9	47	9.18	9.32	80.8	81.9	.469	.660	352	3.0	1.68	1.07	1.02	1.12	9.52	7.76	D
T.V.D.		2574.9	ft	HYDRAULIC POWER				519.6	hp	KICK TOLERANCE				1.10 lb/gal		T.B.R.		25793	COST INST	22.1	US\$/ft	COST BIT		61.7			US\$/ft	
609	0037	2580.0	204	138	165	138	35	2880	596	559	821	2488.8	51	9.18	9.32	80.8	81.9	.469	.670	357	3.1	1.69	1.00	.96*	1.12	9.52	7.76	D
610	0038	2585.0	207	143	158	138	36	2870	596	545	821	2492.0	50	9.16	9.31	80.8	82.1	.466	.690	362	3.1	1.70	1.01	.96*	1.12	9.53	7.76	D
611	0040	2590.0	223	147	164	138	38	2870	596	544	822	2495.2	54	9.19	9.32	80.8	82.1	.462	.710	367	3.1	1.71	1.01	.96*	1.12	9.53	7.76	D
612	0041	2595.0	217	149	167	138	39	2860	593	542	821	2498.6	58	9.20	9.31	80.8	82.0	.462	.730	372	3.1	1.72	1.02	.97*	1.12	9.54	7.76	D
614	0048	2600.0	175	143	157	129	34	2830	589	476	815	2502.1	16	9.21	9.27	80.8	81.8	.466	.730	377	3.2	1.73	1.02	.98*	1.12	9.53	7.76	D
T.V.D.		2599.9	ft	HYDRAULIC POWER				498.6	hp	KICK TOLERANCE				1.09 lb/gal		T.B.R.		26808	COST INST	20.0	US\$/ft	COST BIT		58.9			US\$/ft	

F#	TIME	DEPTH	ROP	TORQUE		RPM	WOB	PUMP	MUD FLOW		PVT	RETURNS	GAS	MW	lb/gal	TEMP (F)		RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW	
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW						
615	0050	2605.1	229	144	154	116	35	2880	593	573	816	2502.7	16	9.18	9.40	80.8	81.9	.467	.720	382	3.2	1.74	.93	.88*	1.12	9.56	7.76	D
616	0051	2610.0	275	142	191	118	32	2880	596	583	818	2503.8	26	9.17	9.22	80.8	82.0	.469	.710	387	3.2	1.75	.85	.81*	1.13	9.57	7.76	D
617	0052	2615.0	221	144	168	126	38	2870	596	570	820	2506.4	34	9.17	9.22	80.8	82.0	.469	.720	392	3.2	1.75	.97	.93*	1.13	9.58	7.76	D
618	0054	2620.0	168	147	158	125	40	2880	599	569	820	2509.9	42	9.15	9.23	80.8	82.4	.470	.730	397	3.3	1.77	1.07	1.02	1.12	9.58	7.80	D
619	0056	2625.1	167	145	165	126	38	2860	596	569	822	2514.7	51	9.20	9.27	80.8	82.7	.470	.740	402	3.3	1.78	1.05	1.00	1.12*	9.58	7.84	D
T.V.D. 2624.8 ft			HYDRAULIC POWER				510.6 hp	KICK TOLERANCE				1.08 lb/gal				T.B.R. 27700				COST INST 20.7 US\$/ft				COST BIT 56.5 US\$/ft				
620	0058	2629.3	138	148	167	126	39	2880	596	512	821	2520.3	56	9.21	9.27	80.8	82.8	.470	.738	PUMP SPM = 190								P
621	0103	2629.3	138	148	167	126	39	2880	603	589	810	2525.9	28	9.22	9.22	80.9	82.9	.470	.739	PUMP SPM = 192								P
622	0104	2630.0	140	147	167	129	38	2860	593	456	812	2527.3	14	9.22	9.24	80.9	82.9	.470	.728	407	3.3	1.79	1.11	1.07	1.11	9.55	7.86	D
623	0106	2635.0	123	142	158	132	38	2860	596	537	815	2531.8	52	9.19	9.27	81.0	83.5	.473	.723	412	3.4	1.81	1.15	1.10	1.12	9.55	7.86	D
624	0109	2640.0	126	145	165	131	39	2880	586	543	817	2533.3	67	9.20	9.28	81.0	83.4	.473	.712	417	3.4	1.83	1.15	1.10	1.12	9.56	7.87	D
625	0111	2645.0	155	139	161	133	31	2870	593	549	818	2535.4	56	9.22	9.25	81.0	83.2	.471	.709	422	3.4	1.84	1.03	.98*	1.12	9.58	7.87	D
626	0113	2650.0	128	145	167	132	37	2860	589	556	821	2540.1	60	9.23	9.27	81.0	83.3	.470	.710	427	3.5	1.85	1.14	1.08	1.12	9.58	7.88	D
T.V.D. 2649.9 ft			HYDRAULIC POWER				508.1 hp	KICK TOLERANCE				1.07 lb/gal				T.B.R. 29203				COST INST 27.5 US\$/ft				COST BIT 54.9 US\$/ft				
627	0115	2655.0	134	148	168	131	34	2860	593	552	820	2544.4	62	9.23	9.33	81.0	83.3	.470	.708	432	3.5	1.86	1.09	1.04	1.11	9.58	7.92	D
629	0117	2660.1	198	141	160	132	29	2860	593	553	820	2546.9	63	9.24	9.21	81.0	83.5	.470	.712	437	3.5	1.87	.94	.89*	1.11	9.58	7.92	D
630	0118	2660.6	90.1	141	150	132	29	2860	596	511	820	2549.4	65	9.22	9.16	81.1	83.7	.470	.709	PUMP SPM = 190								P
631	0123	2660.6	90.1	141	150	132	29	2810	576	314	811	2556.4	52	9.25	9.18	81.1	84.0	.470	.694	PUMP SPM = 184								P
632	0125	2665.1	139	152	170	129	37	2890	589	530	815	2563.4	27	9.22	9.16	81.1	84.1	.470	.701	442	3.6	1.88	1.11	1.06	1.11	9.55	7.95	D
633	0127	2670.0	154	147	157	130	37	2890	599	548	816	2565.1	62	9.22	9.16	81.3	83.8	.464	.700	447	3.6	1.90	1.08	1.03	1.10*	9.56	7.99	D
634	0129	2675.0	156	151	172	129	39	2890	596	559	817	2567.2	71	9.23	9.15	81.3	83.7	.460	.720	452	3.6	1.91	1.09	1.04	1.10	9.57	8.02	D
T.V.D. 2674.8 ft			HYDRAULIC POWER				516.2 hp	KICK TOLERANCE				1.06 lb/gal				T.B.R. 30505				COST INST 22.3 US\$/ft				COST BIT 53.2 US\$/ft				
635	0131	2680.0	145	155	169	128	38	2910	596	561	819	2570.1	58	9.21	9.13	81.3	83.7	.460	.750	457	3.7	1.92	1.10	1.05	1.10	9.58	8.06	D
636	0133	2685.0	116	157	171	130	41	2890	596	560	820	2577.6	54	9.23	9.24	81.5	83.8	.460	.667	462	3.7	1.93	1.18	1.13	1.10	9.58	8.04	D
637	0136	2690.0	102	161	243	129	36	2890	596	561	819	2587.7	76	9.22	9.19	81.5	83.8	.460	.690	467	3.8	1.95	1.17	1.12	1.10	9.57	8.03	D
638	0139	2691.8	81.1	158	171	129	34	2900	596	537	820	2595.4	101	9.24	9.25	81.7	83.8	.460	.704	PUMP SPM = 190								P
640	0145	2695.0	93.5	164	216	121	34	2920	599	556	812	2600.1	25	9.26	9.26	81.8	83.8	.451	.726	472	3.8	1.96	1.17	1.12	1.10	9.55	8.02	D
641	0148	2700.0	109	163	185	119	39	2930	589	569	817	2610.4	102	9.25	9.25	81.9	83.8	.450	.719	477	3.9	1.98	1.17	1.12	1.11	9.53	8.02	D
T.V.D. 2699.9 ft			HYDRAULIC POWER				513.3 hp	KICK TOLERANCE				1.04 lb/gal				T.B.R. 32232				COST INST 31.1 US\$/ft				COST BIT 52.2 US\$/ft				
642	0152	2705.0	85.0	149	164	125	31	2930	586	575	818	2620.7	107	9.25	9.25	82.0	83.8	.453	.726	482	3.9	1.99	1.17	1.12	1.11	9.52	8.01	D
643	0154	2710.0	103	159	175	123	37	2940	589	563	820	2627.8	99	9.27	9.13	82.2	83.8	.457	.741	487	4.0	2.01	1.18	1.13	1.11	9.51	8.00	D
644	0157	2715.0	116	166	190	122	41	2950	586	575	820	2628.6	89	9.28	9.06	82.2	83.8	.460	.741	492	4.0	2.02	1.18	1.12	1.11	9.53	7.99	D
645	0200	2720.0	113	168	177	122	41	2930	593	584	819	2631.0	72	9.28	9.09	82.3	83.8	.457	.741	497	4.1	2.04	1.19	1.13	1.11	9.54	7.99	D
646	0204	2723.4	106	173	185	121	40	2910	593	517	820	2640.3	84	9.27	9.22	82.5	83.8	.458	.737	PUMP SPM = 189								P
647	0208	2725.0	116	174	185	119	40	2940	596	487	812	2645.2	16	9.27	9.22	82.5	83.8	.458	.722	502	4.1	2.05	1.16	1.11	1.12	9.51	7.99	D
T.V.D. 2724.8 ft			HYDRAULIC POWER				505.8 hp	KICK TOLERANCE				1.01 lb/gal				T.B.R. 34020				COST INST 29.5 US\$/ft				COST BIT 51.4 US\$/ft				
648	0211	2730.0	119	169	193	116	38	2970	596	553	815	2650.6	62	9.27	9.24	82.7	83.9	.457	.719	507	4.1	2.06	1.13	1.08	1.11	9.52	8.00	D
649	0214	2735.0	85.0	161	200	116	37	2920	589	567	816	2658.8	102	9.27	9.27	82.9	84.0	.452	.721	512	4.2	2.08	1.21	1.16	1.12	9.51	7.98	D
650	0217	2740.0	98.5	151	162	116	36	2950	593	577	818	2659.9	118	9.27	9.24	82.9	84.0	.452	.720	517	4.3	2.09	1.16	1.11	1.12	9.53	7.98	D
651	0220	2745.0	118	160	171	116	39	2940	593	560	818	2663.8	89	9.28	9.16	83.0	84.0	.458	.709	522	4.3	2.10	1.14	1.09	1.12	9.53	8.00	D
652	0223	2750.0	91.0	158	174	115	40	2950	593	549	818	2672.3	94	9.28	9.20	83.1	84.0	.460	.709	527	4.4	2.11	1.23	1.17	1.12	9.52	7.98	D
T.V.D. 2749.9 ft			HYDRAULIC POWER				501.5 hp	KICK TOLERANCE				1.00 lb/gal				T.B.R. 35741				COST INST 36.5 US\$/ft				COST BIT 50.7 US\$/ft				
653	0227	2754.3	80.9	150	162	117	39	2920	589	531	817	2682.1	48	9.30	9.20	83.2	84.0	.460	.710	PUMP SPM = 188								P
654	0230	2754.3	80.9	150	162	117	39	2910	593	502	819	2686.7	39	9.27	9.24	83.3	84.0	.461	.704	PUMP SPM = 189								P
655	0234	2755.0	83.4	148	162	119	38	2950	596	493	810	2689.4	15	9.26	9.24	83.3	84.0	.461	.698	532	4.4	2.13	1.24	1.19	1.13	9.49	7.95	D
656	0239	2760.1	53.4	144	171	125	38	2960	596	552	811	2692.2	70	9.32	9.24	83.3	83.9	.460	.698	537	4.5	2.16	1.38	1.32*	1.13	9.50	7.95	D
657	0243	2765.0	86.2	143	153	122	36	2960	593	541	811	2697.4	122	9.32	9.22	83.5	84.4	.458	.700	542	4.6	2.17	1.22	1.16	1.13	9.51	7.93	D
658	0245	2770.1	121	140	164	123	36	2950	596	537	813	2701.3	132	9.31	9.24	83.5	85.0	.455	.700	547	4.6	2.19	1.13	1.07	1.13	9.51	7.96	D

AMOCO Production Co. OCS Y-0302 #1 Mars Prospect

Data Printed at time 17:10 Date Apr 11 '86
Data Recorded at time 02:47 Date Mar 21 '86

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMM		
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bb1	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW							
659	0247	2775.0	131	143	160	121	36	2950	593	580	809	2704.6	134 9.30 9.31	83.5	85.3	.451	.680	552	4.6 2.20	1.10	1.05	1.13	9.52	7.99	D		
	T.V.D.	2774.9	ft	HYDRAULIC POWER				520.7	hp	KICK TOLERANCE				.97 lb/gal	T.B.R.		37908	COST INST	25.9 US\$/ft	COST BIT	50.3 US\$/ft					D	
660	0250	2780.1	120	143	164	123	38	2950	593	589	812	2708.8	91 9.33 9.32	83.5	85.4	.458	.670	557	4.7 2.21	1.14	1.09	1.12	9.53	8.00	D		
661	0252	2785.1	126	145	167	123	38	2960	596	584	812	2713.3	63 9.32 9.30	83.7	85.5	.460	.670	562	4.7 2.22	1.13	1.07	1.12	9.53	8.02	D		
662	0254	2785.9	93.0	145	160	122	38	2970	589	576	811	2717.1	67 9.31 9.27	83.7	85.7	.460	.670	PUMP SPM = 188							P		
664	0302	2790.1	123	128	160	118	33	2960	593	595	804	2722.8	53 9.30 9.25	83.8	85.9	.460	.650	567	4.8 2.23	1.08	1.02	1.12*	9.52	8.06	D		
665	0307	2795.0	76.4	125	290	118	28	2960	593	585	810	2728.0	63 9.29 9.22	83.9	86.2	.452	.660	572	4.8 2.24	1.15	1.10	1.12	9.53	8.07	D		
666	0309	2800.0	110	119	146	119	27	2950	593	581	811	2732.2	62 9.31 9.21	83.9	86.4	.457	.660	577	4.9 2.25	1.05	1.00	1.11*	9.53	8.11	D		
	T.V.D.	2799.9	ft	HYDRAULIC POWER				515.8	hp	KICK TOLERANCE				.95 lb/gal	T.B.R.		39658	COST INST	31.4 US\$/ft	COST BIT	49.7 US\$/ft					D	
667	0312	2805.0	131	127	141	118	30	2950	593	577	812	2735.8	60 9.30 9.21	84.0	86.4	.451	.650	582	4.9 2.26	1.03	.98*	1.11	9.54	8.11	D		
668	0314	2810.0	123	117	132	118	25	2950	596	578	813	2739.9	63 9.32 9.16	84.0	86.3	.450	.660	587	5.0 2.27	1.00	.95*	1.11	9.54	8.11	D		
669	0316	2815.0	136	121	142	119	26	2960	599	579	812	2743.8	66 9.30 9.15	84.0	86.4	.450	.670	592	5.0 2.28	.99	.94*	1.12	9.54	8.11	D		
670	0321	2816.0	85.8	121	130	119	26	2940	596	533	813	2750.5	76 9.30 9.23	84.3	86.4	.456	.680	PUMP SPM = 190							P		
671	0326	2820.0	133	121	146	112	28	2890	589	541	803	2753.3	12 9.27 9.14	84.4	86.4	.459	.660	597	5.0 2.29	.99	.94*	1.12	9.53	8.11	D		
672	0328	2825.0	145	113	129	120	29	2920	589	577	805	2753.6	66 9.28 9.18	84.5	86.3	.460	.660	602	5.1 2.29	1.00	.94*	1.12	9.55	8.11	D		
	T.V.D.	2824.9	ft	HYDRAULIC POWER				502.7	hp	KICK TOLERANCE				.94 lb/gal	T.B.R.		40988	COST INST	23.3 US\$/ft	COST BIT	48.8 US\$/ft					D	
673	0330	2830.0	132	116	136	119	32	2910	583	572	809	2754.3	60 9.28 9.17	84.6	86.6	.460	.670	607	5.1 2.30	1.05	.99*	1.12	9.56	8.11	D		
674	0333	2835.0	110	116	151	120	31	2910	586	569	809	2757.1	67 9.30 9.18	84.6	86.8	.460	.670	612	5.1 2.31	1.09	1.04	1.11	9.57	8.15	D		
675	0336	2840.0	106	121	133	120	30	2960	589	574	810	2758.7	61 9.31 9.22	84.7	87.0	.460	.660	617	5.2 2.32	1.09	1.03	1.11*	9.58	8.19	D		
676	0338	2845.0	111	124	139	119	31	2960	589	574	811	2761.9	67 9.30 9.21	84.7	87.1	.459	.660	622	5.2 2.33	1.08	1.03	1.11*	9.59	8.23	D		
678	0345	2847.2	113	126	142	118	31	2870	506	499	802	2769.5	82 9.31 9.32	84.9	87.5	.458	.660	PUMP SPM = 161							P		
679	0347	2850.0	123	130	142	119	29	2950	593	561	803	2773.8	31 9.29 9.34	85.0	87.3	.460	.660	627	5.3 2.34	1.04	.99	1.10*	9.57	8.27	D		
	T.V.D.	2849.9	ft	HYDRAULIC POWER				509.8	hp	KICK TOLERANCE				.93 lb/gal	T.B.R.		42567	COST INST	28.1 US\$/ft	COST BIT	48.2 US\$/ft					D	
680	0349	2855.0	125	134	155	119	33	2960	596	587	805	2778.5	74 9.30 9.20	85.1	87.5	.460	.660	632	5.3 2.35	1.07	1.01	1.10*	9.57	8.31	D		
681	0352	2860.0	116	135	164	118	35	2960	593	583	807	2783.8	79 9.31 9.21	85.1	87.4	.460	.660	637	5.4 2.36	1.11	1.05	1.09	9.57	8.34	D		
682	0355	2865.0	100	136	152	117	33	2970	589	582	808	2785.2	71 9.31 9.18	85.3	87.0	.460	.670	642	5.4 2.37	1.13	1.07	1.09	9.57	8.36	D		
683	0358	2870.0	95.3	144	153	118	35	2970	596	575	816	2787.3	68 9.31 9.17	85.3	86.8	.461	.660	647	5.5 2.38	1.16	1.10	1.09	9.58	8.36	D		
684	0400	2875.1	120	143	152	116	33	2960	593	570	817	2791.8	67 9.32 9.16	85.4	86.7	.467	.650	652	5.5 2.39	1.07	1.02	1.09*	9.58	8.40	D		
	T.V.D.	2874.9	ft	HYDRAULIC POWER				508.8	hp	KICK TOLERANCE				.92 lb/gal	T.B.R.		44160	COST INST	28.8 US\$/ft	COST BIT	47.6 US\$/ft					D	
685	0405	2878.3	128	138	149	117	31	2960	586	586	817	2795.7	55 9.32 9.19	85.5	86.9	.470	.650	PUMP SPM = 187							P		
686	0409	2880.0	140	133	149	119	29	2910	580	576	807	2800.2	26 9.31 9.30	85.6	87.2	.470	.650	657	5.5 2.40	1.00	.95*	1.09	9.57	8.40	D		
687	0411	2885.0	165	124	137	122	26	2970	596	570	810	2804.1	53 9.30 9.24	85.6	87.4	.470	.650	662	5.6 2.41	.94	.89*	1.09	9.57	8.40	D		
688	0414	2890.1	105	121	136	122	30	2990	589	567	812	2809.9	67 9.31 9.20	85.6	87.6	.470	.650	667	5.6 2.42	1.10	1.04	1.09	9.57	8.43	D		
689	0417	2895.1	96.9	121	131	120	30	2970	596	578	814	2815.1	89 9.32 9.21	85.8	87.6	.470	.650	672	5.7 2.43	1.11	1.05	1.08	9.57	8.46	D		
690	0420	2900.0	105	123	132	123	30	2970	596	568	815	2815.4	81 9.32 9.20	85.8	87.3	.470	.650	677	5.7 2.44	1.09	1.03	1.08*	9.59	8.50	D		
	T.V.D.	2899.9	ft	HYDRAULIC POWER				504.2	hp	KICK TOLERANCE				.92 lb/gal	T.B.R.		45715	COST INST	32.1 US\$/ft	COST BIT	47.1 US\$/ft					D	
691	0422	2905.1	129	118	136	121	25	2990	583	563	817	2817.7	64 9.35 9.19	85.9	87.3	.468	.660	682	5.8 2.45	.98	.93*	1.08	9.60	8.50	D		
692	0427	2909.7	165	125	150	119	27	2430	580	514	816	2827.9	91 9.36 9.22	86.0	87.4	.462	.660	PUMP SPM = 185							P		
693	0430	2910.0	174	125	150	120	27	2910	583	402	806	2833.6	39 9.34 9.19	86.0	87.7	.462	.650	687	5.8 2.45	.93	.88*	1.08	9.56	8.50	D		
694	0432	2915.0	152	118	132	130	25	2940	586	566	809	2834.0	35 9.34 9.19	86.0	87.7	.462	.650	692	5.8 2.46	.97	.91*	1.08	9.57	8.50	D		
695	0434	2920.0	178	122	132	127	31	2940	593	578	811	2837.1	69 9.31 9.17	86.2	88.0	.460	.650	697	5.8 2.47	.98	.92*	1.08	9.58	8.50	D		
696	0435	2925.0	192	123	134	126	33	2940	589	584	811	2839.8	70 9.31 9.17	86.2	88.0	.460	.650	702	5.9 2.48	.97	.91*	1.09	9.59	8.50	D		
	T.V.D.	2924.9	ft	HYDRAULIC POWER				495.6	hp	KICK TOLERANCE				.91 lb/gal	T.B.R.		46903	COST INST	17.5 US\$/ft	COST BIT	46.3 US\$/ft					D	
697	0437	2930.0	151	118	129	127	33	2950	586	582	813	2843.5	76 9.31 9.18	86.2	88.3	.460	.660	707	5.9 2.48	1.04	.98	1.07	9.59	8.59	D		
698	0440	2935.0	139	118	129	129	32	2930	583	568	814	2846.0	74 9.32 9.19	86.2	88.2	.460	.660	712	5.9 2.49	1.05	.99	1.07*	9.60	8.63	D		
699	0445	2939.7	134	122	133	126	32	2930	586	553	817	2850.7	61 9.31 9.18	86.2	88.3	.463	.660	PUMP SPM = 187							P		
+ Survey @ 2931 ft = 0.25 degree (N76W) ;																											
701	0542	2939.7	134	122	133	126	32	2880	586	368	792	2860.2	8 9.25 9.24	86.4	72.5	.466	.470	PUMP SPM = 187							P		
703	0547	2940.0	133	120	133	126	32	2880	580	542	800	2868.1	75 9.23 9.32	86.4	87.5	.470	.600	717	6.0 2.52	1.06	1.00	1.07*	9.56	8.67	D		

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS BIT	EST	DXC	NX	NXB	ECD	NXMW				
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW								
704	0549	2945.0	127	99	113	124	29	2890	583	450	799	2871.9	89	9.22	9.33	86.4	87.7	.470	.650	722	6.0	2.53	1.05	.99	1.06*	9.56	8.71	D
705	0550	2950.1	154	101	120	124	28	2880	580	445	801	2874.7	99	9.26	9.44	86.4	87.6	.470	.660	727	6.0	2.53	.99	.93*	1.06	9.57	8.71	D
T.V.D. 2949.9 ft				HYDRAULIC POWER 479.7 hp				KICK TOLERANCE .89 lb/gal				T.B.R. 48769 COST INST 23.2 US\$/ft				COST BIT 45.6 US\$/ft												
706	0552	2955.1	113	97	105	122	25	2880	580	498	800	2877.6	111	9.26	9.44	86.4	87.6	.470	.680	732	6.1	2.54	1.02	.96	1.06*	9.57	8.79	D
707	0553	2960.1	139	103	108	124	28	2880	577	501	801	2877.7	118	9.28	9.45	86.4	88.4	.470	.690	737	6.1	2.54	1.01	.95	1.05*	9.59	8.83	D
708	0554	2965.0	140	96	113	124	25	2880	586	515	801	2877.7	123	9.27	9.45	86.4	88.3	.470	.690	742	6.1	2.55	.97	.91*	1.05	9.59	8.83	D
709	0556	2970.0	133	106	116	124	29	2880	583	514	802	2877.7	138	9.27	9.45	86.4	88.3	.470	.690	747	6.1	2.55	1.03	.97	1.04*	9.62	8.91	D
710	0558	2975.5	56.3	106	117	124	29	2910	583	531	801	2881.9	173	9.27	9.47	86.4	88.1	.470	.690	PUMP SPM = 186								
711	0606	2970.5	56.3	106	117	124	29	2940	589	418	786	2887.8	10	9.26	9.38	86.4	88.0	.470	.650	PUMP SPM = 188								
712	0607	2975.1	151	111	139	145	31	2900	586	536	786	2891.0	12	9.23	9.37	86.4	87.8	.470	.660	752	6.2	2.56	1.06	.99	1.04*	9.59	8.95	D
T.V.D. 2974.9 ft				HYDRAULIC POWER 492.7 hp				KICK TOLERANCE .89 lb/gal				T.B.R. 49735 COST INST 22.0 US\$/ft				COST BIT 44.7 US\$/ft												
713	0610	2980.0	134	103	122	141	26	2930	586	553	788	2894.9	135	9.16	9.38	86.4	87.6	.470	.660	757	6.2	2.57	1.02	.96	1.04*	9.59	8.99	D
714	0612	2985.0	138	107	126	134	27	2930	586	543	788	2899.0	150	9.26	9.37	86.4	87.7	.471	.660	762	6.2	2.58	1.02	.96	1.03*	9.59	9.03	D
715	0613	2990.1	223	107	127	134	25	2940	583	545	788	2901.9	146	9.25	9.33	86.4	87.8	.470	.670	767	6.3	2.58	.88	.82*	1.03	9.59	9.03	D
716	0615	2995.0	162	108	133	134	27	2950	583	543	790	2905.7	138	9.26	9.37	86.4	87.8	.471	.670	772	6.3	2.59	.97	.91*	1.03	9.59	9.03	D
717	0617	3000.0	175	107	131	134	26	2960	583	552	792	2910.6	127	9.26	9.37	86.4	87.8	.471	.670	777	6.3	2.60	.95	.89*	1.04	9.59	9.03	D
T.V.D. 2999.9 ft				HYDRAULIC POWER 483.5 hp				KICK TOLERANCE .89 lb/gal				T.B.R. 50994 COST INST 19.4 US\$/ft				COST BIT 44.1 US\$/ft												
718	0624	3005.0	239	110	136	132	23	2910	577	399	779	2914.0	12	9.26	9.31	86.4	87.8	.475	.660	782	6.3	2.61	.84	.78*	1.04	9.58	9.03	D
719	0625	3010.0	167	112	138	131	28	2920	580	524	784	2914.0	25	9.26	9.31	86.4	87.8	.475	.650	787	6.4	2.61	.97	.91*	1.04	9.60	9.03	D
720	0627	3015.0	226	97	124	132	17	2910	574	536	786	2917.4	119	9.24	9.32	86.4	87.8	.476	.670	792	6.4	2.62	.79	.73*	1.04	9.60	9.03	D
721	0629	3020.1	139	112	125	131	26	2890	577	532	786	2923.9	147	9.21	9.35	86.5	87.6	.477	.660	797	6.4	2.62	1.00	.94	1.02	9.60	9.18	D
722	0631	3025.0	150	110	126	131	23	2900	577	531	792	2930.5	162	9.22	9.36	86.4	87.6	.480	.680	802	6.5	2.63	.95	.89*	1.02	9.59	9.18	D
T.V.D. 3024.9 ft				HYDRAULIC POWER 469.0 hp				KICK TOLERANCE .89 lb/gal				T.B.R. 52077 COST INST 22.0 US\$/ft				COST BIT 43.4 US\$/ft												
723	0633	3030.0	133	113	125	131	29	2940	577	534	786	2937.3	142	9.26	9.38	86.5	87.3	.478	.670	807	6.5	2.64	1.04	.97	1.02*	9.58	9.26	D
724	0639	3035.0	148	110	130	131	23	2870	567	385	793	2946.4	65	9.20	9.32	86.5	87.5	.475	.660	812	6.5	2.65	.96	.90*	1.02	9.55	9.26	D
725	0641	3040.0	159	117	132	120	26	2900	571	529	796	2948.6	28	9.20	9.32	86.5	87.5	.475	.660	817	6.6	2.65	.95	.89*	1.02	9.57	9.26	D
726	0642	3045.0	190	116	128	119	20	2910	574	546	796	2948.9	90	9.28	9.29	86.5	87.3	.475	.670	822	6.6	2.66	.91	.85*	1.02	9.58	9.26	D
727	0652	3050.1	51.3	112	138	133	28	2890	571	526	792	2949.0	108	9.28	9.27	86.7	87.8	.469	.680	827	6.8	2.70	1.40	1.33*	1.02	9.58	9.26	D
T.V.D. 3049.7 ft				HYDRAULIC POWER 459.0 hp				KICK TOLERANCE .89 lb/gal				T.B.R. 54363 COST INST 41.5 US\$/ft				COST BIT 43.4 US\$/ft												
728	0653	3055.0	289	125	140	137	27	2910	574	542	792	2950.5	109	9.28	9.27	86.7	87.8	.469	.680	832	6.8	2.70	.84	.78*	1.02	9.59	9.26	D
729	0655	3060.1	232	124	164	137	28	2910	574	530	790	2952.5	98	9.24	9.27	86.7	88.0	.470	.680	837	6.8	2.71	.91	.84*	1.02	9.59	9.26	D
730	0656	3065.0	177	113	137	138	24	2920	574	530	790	2956.9	98	9.24	9.27	86.7	88.0	.470	.670	842	6.8	2.72	.93	.87*	1.02	9.59	9.26	D
732	0703	3070.1	148	110	125	113	18	2870	564	516	782	2960.1	22	9.25	9.32	86.5	88.2	.470	.670	847	6.9	2.72	.85	.80*	1.02	9.59	9.26	D
733	0705	3075.0	116	108	123	112	20	2860	571	527	756	2962.1	108	9.24	9.34	86.5	88.3	.470	.680	852	6.9	2.73	.94	.88*	1.02	9.61	9.26	D
T.V.D. 3074.9 ft				HYDRAULIC POWER 452.3 hp				KICK TOLERANCE .89 lb/gal				T.B.R. 55423 COST INST 29.9 US\$/ft				COST BIT 42.8 US\$/ft												
734	0707	3080.0	184	113	132	112	25	2880	571	530	739	2962.4	106	9.29	9.31	86.5	88.4	.470	.690	857	6.9	2.73	.88	.82*	1.02	9.62	9.26	D
735	0709	3085.0	150	121	137	110	29	2890	571	470	711	2964.2	130	9.30	9.29	86.5	88.6	.471	.700	862	6.9	2.74	1.20	1.14	1.03	9.63	9.21	D
736	0712	3085.0	148	121	137	110	29	2860	567	481	703	2969.2	114	9.30	9.36	86.5	88.7	.471	.700	PUMP SPM = 181								
737	0716	3085.0	148	121	137	110	29	2870	571	495	705	2979.2	139	9.30	9.35	86.5	89.1	.476	.690	PUMP SPM = 182								
738	0723	3085.0	148	121	137	110	29	2850	571	449	707	2990.9	141	9.32	9.35	86.5	89.6	.479	.700	PUMP SPM = 182								
739	0726	3085.0	148	121	137	110	29	2850	577	478	707	3002.0	167	9.33	9.34	86.5	90.1	.480	.690	PUMP SPM = 184								
740	0728	3085.0	148	121	137	110	29	2840	567	491	707	3009.6	152	9.31	9.36	86.5	90.0	.479	.700	PUMP SPM = 181								
741	0733	3085.0	148	121	137	110	29	2830	567	496	708	3020.0	126	9.31	9.38	86.4	89.8	.482	.700	PUMP SPM = 181								
742	0738	3085.0	148	121	137	110	29	2820	571	480	708	3029.5	116	9.32	9.39	86.6	89.6	.480	.690	PUMP SPM = 182								
743	0746	3085.0	148	121	137	110	29	2840	567	493	707	3040.3	108	9.30	9.40	87.1	90.3	.480	.690	PUMP SPM = 181								
744	0753	3085.0	148	121	137	110	29	2820	571	493	707	3052.4	179	9.34	9.40	87.4	90.0	.482	.700	PUMP SPM = 182								
745	0757	3085.0	148	121	137	110	29	2820	571	509	707	3059.4	172	9.31	9.42	87.5	89.7	.482	.690	PUMP SPM = 182								
746	0803	3085.0	148	121	137	110	29	2970	564	503	707	3071.0	129	9.32	9.41	87.7	90.5	.484	.680	PUMP SPM = 180								

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS BIT	EST	DXC	NX	NXB	ECD	NXMW	
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW					
747	0827	3085.0	148	121	137	110	29	2850	571	528	705	3084.5	67	9.38	9.37	88.5	90.5	.481	.670	PUMP SPM =	182				
+ Survey @ 3075 ft = 0.25 degree (S50W);																									
+ Circulated 2.2 hrs @ 3085 ft while waiting on orders;																									
751	1003	3090.0	95.2	99	114	110	20	2910	577	581	693	3085.0	12	9.28	9.33	88.5	89.1	.470	.680	867	7.0	2.78	1.02	.96	1.03* 9.24 9.25
752	1004	3095.0	164	118	105	109	29	2910	577	446	695	3085.0	15	9.28	9.33	88.5	89.1	.470	.680	872	7.0	2.78	.96	.94	1.02* 9.25 9.29
753	1005	3100.0	114	114	119	126	28	2890	580	504	696	3085.2	62	9.29	9.29	88.5	89.4	.468	.680	877	7.0	2.79	.98	.97	1.02* 9.28 9.33
T.V.D. 3099.9 ft				HYDRAULIC POWER				475.1 hp	KICK TOLERANCE				.89 lb/gal		T.B.R. 57820		COST INST		36.5 US\$/ft	COST BIT		42.2 US\$/ft			
754	1006	3105.1	43.1	113	113	133	24	2890	577	509	699	3085.4	67	9.29	9.29	88.5	89.4	.468	.690	882	7.0	2.79	1.30	1.24*	1.02 9.30 9.33
755	1007	3110.0	139	108	132	133	23	2990	586	512	701	3085.9	75	9.32	9.29	88.5	89.1	.469	.690	887	7.0	2.80	1.00	.93	1.01* 9.33 9.41
756	1008	3115.0	146	113	132	133	29	2970	589	509	700	3086.1	84	9.32	9.29	88.5	89.1	.469	.690	892	7.1	2.80	1.05	.98	1.01* 9.33 9.45
757	1010	3120.0	163	111	128	133	26	2980	589	514	701	3086.6	75	9.31	9.29	88.5	89.1	.467	.700	897	7.1	2.81	.99	.92	1.01* 9.35 9.49
758	1010	3125.2	75.6	106	108	130	21	2990	586	512	701	3086.8	73	9.31	9.29	88.5	89.1	.467	.690	902	7.1	2.81	1.11	1.05	1.01 9.36 9.47
T.V.D. 3125.0 ft				HYDRAULIC POWER				496.0 hp	KICK TOLERANCE				.88 lb/gal		T.B.R. 58520		COST INST		21.1 US\$/ft	COST BIT		41.5 US\$/ft			
759	1011	3130.0	138	110	122	134	26	2980	586	512	701	3087.0	74	9.34	9.29	88.5	89.1	.475	.700	907	7.1	2.81	1.02	.96*	1.01 9.37 9.47
760	1014	3135.0	182	121	148	133	29	2970	589	516	704	3088.0	79	9.29	9.28	88.6	89.0	.466	.700	912	7.1	2.82	1.03	1.02	1.01 9.36 9.46
761	1014	3140.0	174	122	134	132	31	2970	586	520	705	3086.0	84	9.21	9.29	87.8	89.0	.465	.700	917	7.2	2.82	1.08	1.02	1.01 9.35 9.46
762	1015	3145.0	165	124	134	132	33	2970	586	520	705	3090.0	86	9.24	9.25	88.8	89.1	.466	.686	922	7.2	2.83	1.09	1.07	1.02 9.34 9.43
763	1018	3150.0	131	109	131	132	26	2950	583	444	705	3144.0	62	9.28	9.29	88.9	89.2	.464	.685	927	7.2	2.83	1.04	1.03	1.02 9.33 9.43
T.V.D. 3144.0 ft				HYDRAULIC POWER				494.0 hp	KICK TOLERANCE				.85 lb/gal		T.B.R. 59176		COST INST		23.1 US\$/ft	COST BIT		40.8 US\$/ft			
764	1018	3155.0	129	109	131	132	26	2940	568	581	705	3148.0	42	9.26	9.29	88.9	89.2	.468	.687	932	7.2	2.83	1.10	1.01	1.02 9.32 9.44
765	1020	3160.0	164	112	118	128	24	2930	577	526	697	3160.0	15	9.29	9.28	88.6	89.1	.466	.690	937	7.2	2.83	.96	.90*	1.02 9.32 9.44
766	1021	3165.0	149	115	127	127	23	2930	583	520	698	3160.0	61	9.30	9.31	88.4	89.2	.466	.690	942	7.2	2.83	1.02	.95	1.01* 9.33 9.52
767	1024	3170.0	115	112	128	128	25	2940	580	534	701	3160.0	118	9.30	9.31	88.2	89.1	.470	.670	947	7.2	2.84	1.05	.99	1.01* 9.35 9.56
768	1026	3175.1	193	126	145	126	29	2940	580	527	702	3160.0	127	9.26	9.30	88.1	89.2	.470	.690	952	7.3	2.85	.96	.89*	1.01 9.36 9.56
T.V.D. 3174.9 ft				HYDRAULIC POWER				473.0 hp	KICK TOLERANCE				.84 lb/gal		T.B.R. 59971		COST INST		17.8 US\$/ft	COST BIT		40.0 US\$/ft			
769	1027	3180.0	239	129	147	127	29	2930	577	539	704	3160.0	136	9.26	9.30	88.1	89.2	.470	.690	957	7.3	2.85	.90	.83*	1.01 9.37 9.56
770	1029	3185.0	166	125	138	126	31	2930	583	533	706	3160.0	126	9.29	9.30	88.0	89.2	.471	.690	962	7.3	2.86	1.02	.95	1.00 9.39 9.67
771	1031	3190.0	143	127	142	127	32	2940	586	544	707	3160.1	84	9.28	9.31	88.0	89.0	.470	.700	967	7.4	2.87	1.06	.99	1.00 9.41 9.69
773	1037	3195.0	128	118	139	120	26	2900	571	519	702	3160.1	90	9.29	9.27	88.2	89.1	.470	.710	972	7.4	2.88	1.02	.95	.99* 9.42 9.73
774	1038	3200.0	290	121	141	121	25	2900	574	527	704	3160.1	167	9.29	9.27	88.2	89.1	.470	.700	977	7.4	2.88	.80	.74*	1.00 9.43 9.73
T.V.D. 3199.8 ft				HYDRAULIC POWER				466.1 hp	KICK TOLERANCE				.83 lb/gal		T.B.R. 61075		COST INST		12.4 US\$/ft	COST BIT		39.5 US\$/ft			
775	1040	3205.0	210	118	150	122	23	2900	571	522	705	3160.1	218	9.30	9.30	88.2	89.2	.470	.690	98	7.4	2.88	.86	.80*	1.00 9.45 9.73
776	1042	3210.0	180	127	145	120	29	2890	571	524	705	3160.1	204	9.29	9.35	88.2	89.4	.470	.700	987	7.5	2.89	.96	.89	.98* 9.46 9.85
777	1043	3215.1	184	120	141	121	27	2900	574	525	706	3160.1	184	9.28	9.36	88.2	89.4	.470	.700	992	7.5	2.89	.93	.86*	.99 9.47 9.85
778	1045	3220.0	208	124	146	121	26	2890	574	522	708	3160.1	160	9.29	9.37	88.2	89.4	.471	.710	997	7.5	2.90	.89	.82*	.99 9.49 9.85
779	1050	3225.0	177	121	150	133	27	2950	574	460	703	3160.1	14	9.29	9.38	88.3	89.6	.471	.700	1002	7.5	2.91	.97	.90	.98* 9.50 9.97
T.V.D. 3224.9 ft				HYDRAULIC POWER				453.7 hp	KICK TOLERANCE				.83 lb/gal		T.B.R. 62070		COST INST		20.5 US\$/ft	COST BIT		39.1 US\$/ft			
780	1052	3230.0	165	116	134	144	23	2950	580	517	703	3160.2	175	9.29	9.36	88.3	89.9	.470	.700	1007	7.6	2.91	.96	.89	.97* 9.52 10.0
781	1053	3235.0	170	120	149	144	26	2950	580	514	704	3160.2	196	9.32	9.35	88.3	89.8	.469	.700	1012	7.6	2.92	.98	.91	.97* 9.53 10.1
782	1055	3240.0	184	132	176	143	30	2970	577	521	704	3160.2	190	9.30	9.34	88.3	89.7	.470	.700	1017	7.6	2.93	.99	.92	.97* 9.55 10.1
783	1056	3245.0	276	133	156	143	28	2970	577	527	706	3160.2	168	9.30	9.35	88.3	89.8	.470	.700	1022	7.7	2.93	.87	.80*	.97 9.55 10.1
784	1057	3250.0	238	130	151	143	30	2960	577	530	708	3160.2	166	9.32	9.35	88.3	89.8	.470	.700	1027	7.7	2.94	.92	.85*	.97 9.57 10.1
T.V.D. 3249.9 ft				HYDRAULIC POWER				466.6 hp	KICK TOLERANCE				.82 lb/gal		T.B.R. 63144		COST INST		14.1 US\$/ft	COST BIT		38.6 US\$/ft			
786	1100	3255.1	147	125	141	141	29	2910	571	574	695	3160.2	13	9.28	9.34	88.4	89.7	.470	.670	1032	7.7	2.95	1.04	.96	.97 9.57 10.1
787	1110	3260.0	80.4	114	145	136	33	2890	564	525	701	3160.2	119	9.32	9.27	88.5	89.6	.470	.660	1037	7.8	2.96	1.22	1.14*	.97 9.60 10.1
788	1114	3265.0	87.0	112	127	136	30	2900	567	515	703	3160.3	108	9.29	9.26	88.5	89.8	.471	.670	1042	7.8	2.98	1.16	1.09*	.97 9.61 10.1
789	1116	3270.0	107	121	151	136	30	2900	567	513	706	3160.3	149	9.31	9.33	88.5	90.1	.472	.680	1047	7.9	2.99	1.11	1.04	.97 9.63 10.1
790	1120	3275.0	84.2	126	147	135	28	2890	561	515	706	3160.3	167	9.35	9.37	88.5	90.1	.476	.690	1052	7.9	3.00	1.15	1.08	.98* 9.64 10.0
T.V.D. 3274.8 ft				HYDRAULIC POWER				448.9 hp	KICK TOLERANCE				.81 lb/gal		T.B.R. 65235		COST INST		38.9 US\$/ft	COST BIT		38.6 US\$/ft			
791	1123	3280.0	91.9	117	146	136	26	2890	571	519	706	3160.3	164	9.36	9.37	88.7	90.1	.475	.690	1057	8.0	3.01	1.10	1.03	.98 9.66 10.0

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW			
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW								
792	1127	3285.0	74.7	120	135	136	27	2890	567	518	708	3162.8	153	9.35	9.34	88.7	90.1	.471	.680	1062	8.0	3.03	1.16	1.09	.99*	9.67	9.96	D
793	1133	3285.8	52.1	120	132	135	27	2890	571	397	698	3169.1	13	9.35	9.34	88.7	90.1	.471	.670	PUMP	SPM =	182						P
794	1136	3290.0	75.1	120	133	132	28	2920	564	515	702	3179.0	195	9.36	9.34	88.9	90.1	.470	.670	1067	8.1	3.04	1.17	1.10	.99*	9.65	9.92	D
795	1140	3295.0	84.2	120	134	132	29	2950	577	521	704	3188.5	184	9.40	9.35	88.9	90.1	.470	.680	1072	8.2	3.06	1.16	1.08	1.00*	9.63	9.88	D
796	1143	3300.1	90.1	116	134	133	28	2950	567	486	703	3192.2	213	9.41	9.35	88.9	90.1	.470	.700	1077	8.2	3.07	1.12	1.05	1.00	9.64	9.85	D
T.V.D. 3299.8 ft				HYDRAULIC POWER				467.9 hp	KICK TOLERANCE				.80 lb/gal	T.B.R.				67686	COST INST	38.4 US\$/ft	COST BIT	38.8 US\$/ft						
797	1146	3305.0	138	115	132	132	25	2960	574	515	705	3199.3	229	9.43	9.35	89.1	90.3	.472	.700	1082	8.3	3.08	.99	.92	1.00*	9.64	9.89	D
798	1148	3310.0	114	113	132	133	20	2970	564	511	706	3207.8	182	9.35	9.36	89.1	90.3	.477	.700	1087	8.3	3.09	.98	.91	.99*	9.64	9.93	D
799	1152	3315.1	84.5	108	129	134	15	2970	571	521	705	3218.0	215	9.34	9.36	89.1	90.3	.479	.700	1092	8.4	3.10	.97	.91	.99*	9.63	9.97	D
800	1155	3318.3	114	113	133	134	16	2960	577	492	706	3224.4	184	9.36	9.31	89.1	90.3	.482	.690	PUMP	SPM =	184						P
801	1201	3320.1	130	119	133	137	18	2930	571	471	698	3233.0	88	9.32	9.42	89.2	90.5	.487	.700	1097	8.4	3.10	.93	.86*	.99	9.61	9.97	D
802	1203	3322.0	32.8	119	124	137	18	2930	571	454	700	3238.3	204	9.36	9.47	89.2	90.5	.486	.690	PUMP	SPM =	182						P
803	1207	3320.2	32.8	119	124	137	18	2920	571	484	701	3252.0	186	9.35	9.44	89.4	90.7	.488	.690	PUMP	SPM =	182						P
804	1214	3322.0	32.8	119	124	137	18	2920	574	489	701	3259.8	136	9.34	9.42	89.6	90.8	.490	.700	PUMP	SPM =	183						P
805	1221	3322.0	32.8	119	124	137	18	2930	571	484	700	3270.7	144	9.33	9.38	89.8	91.0	.490	.700	PUMP	SPM =	182						P
806	1228	3322.0	32.8	119	124	137	18	2930	577	529	701	3280.7	165	9.39	9.36	90.0	91.2	.493	.700	PUMP	SPM =	184						P
807	1237	3322.0	32.8	119	124	137	18	2920	571	568	702	3290.2	89	9.37	9.32	90.0	91.4	.494	.690	PUMP	SPM =	182						P
808	1244	3322.0	32.8	119	124	137	18	2930	571	562	700	3299.9	92	9.34	9.33	90.3	91.4	.494	.690	PUMP	SPM =	182						P
809	1250	3322.0	32.8	119	124	137	18	2920	571	547	700	3310.6	97	9.30	9.30	90.5	91.6	.497	.690	PUMP	SPM =	182						P
810	1256	3322.0	32.8	119	124	137	18	2930	571	570	699	3320.0	88	9.30	9.31	90.7	91.6	.496	.690	PUMP	SPM =	182						P
811	1302	3322.0	32.8	119	124	137	18	2920	571	540	699	3322.0	80	9.28	9.21	90.7	91.6	.496	.690	PUMP	SPM =	182						P
+ Circulated returns & POOH @ 3322 ft to pick-up hole-opener - NB #5 cut 1099 ft in 8.4 hrs - graded SY-W1/1-B0/0-G00.																												
+ RRB #5 Smith SDS 12.25" w/ 17.5" hole opener Jets 20:20:20 & open in hole-opener. Opened hole from 2223 ft to 2462 ft using Dowel pump with rig pumps. Pulled bit due to slow drill rate caused by severe "balling" of bit in clay : Graded SY-W1/1-B0/0-G00.																												
+ NB #6 Smith SDS 17.5" Ser.# XE4739 IADC 114 Jets 13:16:16 - in at 2462 ft to continue opening 12.25" hole. Continue using Dowel pump unit to supplement rig pumps. Circulate bottoms up from 3322 ft after completing hole opening. Reamed & washed from 2714 to 3322 ft during wiper trip. POOH with NB #6 at 3322 ft, opened 860 ft in 7.2 hrs : Graded SY-W1/1-B0/0-G00.																												
+ Ran E-logs @ 3322 ft : BHC Sonic-GR-SP-Cal;																												
+ Ran 13.375" casing : 84 joints, 72 lb/ft, buttress N-80 w/ shoe set @ 3315 ft;																												
+ Circulated through casing prior to running in w/ stinger, stabbed same into cementing sub & pumped 50 bbls freshwater & 100 bbl CW spacer;																												
+ Cemented casing w/ 1600 sx Arcticset III cement w/ 100 bbls/sk Gilsonite & 0.2% antifoamer in 11.1 gal/sk freshwater (slurry density 11.9 lb/gal);																												
+ Followed by tail of 570 sx class 'G' cement w/ 2% CaCl2 & 0.2% antifoamer in 4.67 gal/sk freshwater (slurry density 15.8 lb/gal); Displaced cement w/ 44 bbls freshwater, losing returns after approximately 20 bbls pumped; Hung casing for 12 hrs prior to cutting same & making-up new well head;																												
+ Nipped-up new BOPE & rigged up choke manifold & flowline;																												
+ NB #7 Smith SDS 12.25" Ser.# XD1015 IADC 114 Jets 13:14:14 - in @ 3322 ft (drilled 92 ft cement to bottom in 1.6 hrs);																												
Date Mar 27 '86																												
3	1137	3325.9	111	693	850	90	21	2710	558	562	715	3322.0	3	9.22	9.29	75.7	79.2	.505	.761	3.0	.0	.26	.94	.94*	1.14	9.28	8.68	D
T.V.D. 3324.9 ft				HYDRAULIC POWER				462.0 hp	KICK TOLERANCE				.84 lb/gal	T.B.R.				131	COST INST	30.6 US\$/ft	COST BIT	5551 US\$/ft						
4	1143	3330.0	96.4	787	1110	91	24	2700	564	560	718	3322.0	3	9.28	9.31	75.7	79.0	.507	.760	8.0	.1	.27	1.01	1.01*	1.14	9.29	8.68	D
+ Circulated 20 minutes & performed formation leak-off test @ 3332 ft : guage pressure of 725 psi w/ 9.2 lb/gal mud = 13.4 lb/gal EMW;																												
6	1256	3335.1	6.0	82	130	97	40	2880	583	589	663	3332.8	21	9.23	9.27	77.8	78.8	.527	.758	13.1	.8	.52	2.00	1.93*	1.14	9.25	3.68	D
7	1315	3340.0	22.7	122	176	79	37	2660	561	569	652	3334.2	18	9.33	9.39	78.4	78.8	.520	.740	18.0	1.0	.58	1.50	1.49*	1.14	9.30	8.68	D
8	1318	3345.0	136	160	215	85	39	2670	561	563	653	3334.4	20	9.29	9.31	78.5	80.2	.519	.740	23.0	1.1	.58	1.00	1.00*	1.15	9.32	8.68	D
9	1320	3350.0	109	156	183	73	38	2670	561	567	654	3334.7	16	9.29	9.33	78.6	80.7	.517	.750	28.0	1.1	.60	1.05	1.04	1.15	9.34	8.68	D
T.V.D. 3349.9 ft				HYDRAULIC POWER				475.7 hp	KICK TOLERANCE				.80 lb/gal	T.B.R.				6088	COST INST	31.3 US\$/ft	COST BIT	728.5 US\$/ft						

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS	MW lb/gal	TEMP	(F)	RES	ohm-in	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW				
		ft	ft/hr	AVG	MAX	AVG	AVG	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW									
10	1323	3355.0	129	143	170	77	35	2670	558	566	654	3334.9	19	9.32	9.36	78.8	81.0	.517	.760	33.0	1.1	.60	.98	.98*	1.15	9.36	8.68	D
11	1325	3360.0	132	139	160	80	34	2670	561	570	654	3335.1	20	9.27	9.29	78.8	81.2	.516	.750	38.0	1.2	.61	.98	.97*	1.15	9.38	8.68	D
12	1328	3365.0	115	148	223	83	41	2680	558	564	655	3335.4	57	9.38	9.38	79.0	81.3	.510	.760	43.0	1.2	.62	1.09	1.08	1.15	9.39	8.70	D
13	1335	3370.0	104	141	169	84	37	2610	552	552	650	3335.9	52	9.24	9.24	79.3	81.9	.507	.750	48.0	1.2	.64	1.09	1.08	1.14	9.38	8.73	D
14	1339	3375.0	107	134	157	74	35	2610	552	564	654	3336.1	54	9.23	9.36	79.3	81.9	.505	.750	53.0	1.3	.64	1.02	1.02*	1.14	9.40	8.73	D
T.V.D. 3372.0 ft				HYDRAULIC POWER 452.0 hp				KICK TOLERANCE				.79 lb/gal				T.B.R.				7012 COST INST 31.8 US\$/ft				COST BIT 399.0 US\$/ft				
15	1342	3380.0	101	132	152	75	37	2610	555	560	657	3336.5	55	9.22	9.26	79.5	82.1	.502	.760	58.0	1.3	.66	1.06	1.05	1.14	9.41	8.77	D
16	1344	3385.0	105	115	140	80	33	2610	555	556	658	3336.9	42	9.26	9.30	79.7	82.2	.501	.760	63.0	1.4	.66	1.03	1.02	1.14*	9.42	8.81	D
17	1347	3390.0	117	121	140	80	36	2600	555	559	659	3337.4	33	9.22	9.24	79.7	82.4	.502	.770	68.0	1.4	.67	1.02	1.01	1.13*	9.43	8.85	D
18	1350	3395.0	111	115	134	87	35	2610	552	561	659	3342.5	57	9.19	9.20	79.9	82.4	.501	.770	73.0	1.5	.69	1.05	1.04	1.13*	9.43	8.89	D
19	1400	3420.1	83.4	330	661	89	36	2570	545	546	650	3355.6	55	9.11	9.15	80.1	82.6	.506	.760	78.1	1.5	.70	1.15	1.14	1.13	9.40	8.89	D
T.V.D. 3399.8 ft				HYDRAULIC POWER 442.6 hp				KICK TOLERANCE				.80 lb/gal				T.B.R.				8105 COST INST 40.7 US\$/ft				COST BIT 281.6 US\$/ft				
20	1403	3405.0	112	271	296	72	36	2560	549	555	655	3361.1	91	9.13	9.13	80.1	82.8	.510	.750	83.0	1.6	.71	1.01	1.00*	1.13	9.39	8.89	D
21	1405	3410.0	135	261	288	69	36	2560	542	550	656	3365.1	87	9.18	9.24	80.2	82.8	.510	.770	88.0	1.6	.72	.95	.95*	1.13	9.38	8.89	D
22	1407	3415.0	130	270	294	77	37	2550	552	561	654	3367.5	104	9.23	9.25	80.2	82.9	.511	.780	93.0	1.6	.72	1.00	.99*	1.13	9.37	8.89	D
23	1409	3420.3	132	279	314	78	38	2570	542	543	657	3367.9	99	9.23	9.25	80.4	82.9	.511	.780	98.3	1.7	.73	1.00	.99*	1.13	9.38	8.89	D
24	1412	3425.1	110	261	294	81	36	2560	545	554	657	3372.0	76	9.20	9.21	80.5	83.0	.510	.790	103	1.7	.74	1.05	1.04	1.13	9.37	8.93	D
T.V.D. 3424.9 ft				HYDRAULIC POWER 432.8 hp				KICK TOLERANCE				.82 lb/gal				T.B.R.				8931 COST INST 30.8 US\$/ft				COST BIT 220.1 US\$/ft				
25	1414	3430.0	119	266	290	87	37	2560	539	542	658	3376.1	81	9.30	9.33	80.6	83.1	.511	.790	108	1.7	.75	1.06	1.05	1.12*	9.37	8.97	D
26	1417	3430.0	40.0	263	271	87	36	2580	539	542	657	3380.0	92	9.30	9.30	80.7	83.1	.510	.780	PUMP SPM = 172				P				
28	1423	3430.0	40.0	263	271	87	36	2150	489	499	658	3390.4	79	9.23	9.23	81.0	83.4	.505	.790	PUMP SPM = 156				P				
29	1426	3430.0	40.0	263	271	87	36	2140	495	503	657	3395.2	89	9.22	9.28	81.1	83.5	.501	.810	PUMP SPM = 158				P				
30	1433	3430.0	40.0	263	271	87	36	2140	492	501	655	3399.9	96	9.34	9.39	81.4	83.8	.504	.840	PUMP SPM = 157				P				
31	1436	3430.0	40.0	263	271	87	36	2150	492	501	656	3404.6	91	9.38	9.39	81.5	83.8	.501	.840	PUMP SPM = 157				P				
32	1439	3430.0	40.0	263	271	87	36	2140	492	501	656	3410.8	94	9.43	9.48	81.7	84.0	.502	.840	PUMP SPM = 157				P				
33	1442	3430.0	40.0	263	271	87	36	2140	492	496	656	3416.9	88	9.34	9.38	81.7	84.2	.505	.850	PUMP SPM = 157				P				
34	1446	3430.0	40.0	263	271	87	36	1230	379	388	665	3422.8	53	9.32	9.33	81.9	84.2	.504	.850	PUMP SPM = 121				P				
Circulated 0.5 hr & POOH @ 3430 ft to change BHA - NB #7 cut 108 ft in 1.7 hrs - graded SY-W1/1-B0/0-G00;																												
NB #8 Smith SDSCE 12.25" Ser.# EX7530 IADC 114 Jets 13:13:13:13 - in @ 3430 ft w/ MWD tool;																												
Survey @ 3428 ft = 1.07 degrees (S40W);																												
39	2210	3435.1	149	316	333	103	19	2720	567	577	726	3430.0	62	9.29	9.32	74.3	72.3	.527	.740	5.1	.1	.03	.88	.87*	1.13	9.32	8.97	D
40	2212	3440.1	150	341	367	103	21	2750	567	569	729	3430.0	53	9.29	9.33	74.1	73.6	.528	.740	10.1	.1	.05	.89	.89*	1.13	9.33	8.97	D
41	2214	3445.0	165	333	366	105	20	2750	564	572	730	3430.0	61	9.28	9.29	74.1	74.1	.527	.750	15.0	.2	.06	.87	.86*	1.13	9.35	8.97	D
42	2216	3450.0	147	336	369	108	21	2750	564	571	732	3431.0	64	9.28	9.32	73.9	75.1	.531	.750	20.0	.2	.07	.91	.90*	1.13	9.36	8.97	D
T.V.D. 3449.9 ft				HYDRAULIC POWER 340.4 hp				KICK TOLERANCE				3.94 lb/gal				T.B.R.				1124 COST INST 23.1 US\$/ft				COST BIT 881.4 US\$/ft				
43	2255	3455.1	106	276	361	102	22	2300	517	525	645	3434.4	224	9.36	9.38	73.2	77.6	.506	.800	25.1	.2	.09	.98	.98*	1.13	9.38	8.97	D
44	2257	3460.0	95.3	252	300	107	19	1730	461	463	644	3434.8	189	9.36	9.38	73.4	77.9	.507	.790	30.0	.3	.11	.98	.98*	1.13	9.39	8.97	D
45	2300	3465.0	73.9	247	305	103	19	1810	451	458	643	3439.3	175	9.34	9.38	73.4	78.0	.507	.800	35.0	.3	.12	1.03	1.03	1.12	9.40	9.03	D
46	2302	3470.0	136	238	274	85	18	1810	451	454	641	3445.2	246	9.34	9.39	73.5	78.1	.509	.820	40.0	.3	.13	.89	.89*	1.12	9.40	9.03	D
47	2304	3475.0	103	233	274	85	17	1820	451	454	638	3451.4	258	9.32	9.33	73.6	78.2	.508	.820	45.0	.4	.14	.88	.88*	1.13	9.40	9.03	D
T.V.D. 3474.9 ft				HYDRAULIC POWER 169.1 hp				KICK TOLERANCE				3.88 lb/gal				T.B.R.				2264 COST INST 32.8 US\$/ft				COST BIT 408.4 US\$/ft				
48	2307	3480.0	96.5	233	274	89	16	1800	451	459	639	3455.0	124	9.37	9.40	73.8	78.3	.510	.810	50.0	.4	.15	.89	.89*	1.13	9.40	9.03	D
49	2310	3485.0	99.0	224	265	98	17	1810	451	456	641	3455.8	73	9.36	9.37	73.9	78.1	.509	.800	55.0	.5	.17	.92	.91*	1.13	9.42	9.03	D
50	2320	3490.0	81.4	216	255	96	14	2260	492	493	641	3455.8	73	9.34	9.37	74.9	77.1	.501	.780	60.0	.5	.18	.92	.92*	1.13	9.44	9.03	D
51	2322	3495.0	102	223	257	97	16	2260	508	517	640	3455.8	66	9.39	9.41	75.0	76.4	.503	.770	65.0	.6	.19	.89	.89*	1.13	9.45	9.03	D
52	2325	3500.0	115	231	261	98	16	2260	502	502	643	3455.8	66	9.40	9.44	75.3	77.8	.501	.760	70.0	.6	.21	.87	.87*	1.13	9.47	9.03	D
T.V.D. 3499.9 ft				HYDRAULIC POWER 244.0 hp				KICK TOLERANCE				3.84 lb/gal				T.B.R.				3571 COST INST 29.6 US\$/ft				COST BIT 274.8 US\$/ft				
53	2327	3505.0	121	242	270	98	18	2270	508	510	645	3455.8	63	9.41	9.47	75.5	78.1	.502	.750	75.0	.6	.22	.88	.88*	1.13	9.48	9.03	D

F#	TIME	DEPTH	ROP	TORQUE		RPM	WOB	PUMP	MUD FLOW		PVT	RETURNS	GAS	MW	lb/gal	TEMP (F)		RES	olm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW	
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW						
54	2330	3510.0	134	228	262	98	12	2260	502	504	644	3455.8	65	9.39	9.44	75.6	78.1	.500	.730	80.0	.7	.23	.79	.78*	1.13	9.50	9.03	D
55	2331	3515.0	170	247	274	98	16	2270	505	511	645	3455.8	62	9.40	9.43	75.8	78.3	.502	.740	85.0	.7	.24	.78	.78*	1.13	9.52	9.03	D
56	2334	3520.0	131	256	282	98	16	2260	502	507	643	3456.3	88	9.42	9.47	75.9	78.3	.503	.760	90.0	.8	.25	.84	.84*	1.13	9.54	9.03	D
57	2354	3525.0	142	213	286	86	10	2260	505	513	635	3475.3	228	9.33	9.35	76.8	77.2	.518	.720	95.0	.8	.26	.72	.72*	1.14	9.52	9.03	D
T.V.D. 3524.9 ft				HYDRAULIC POWER				240.6 hp	KICK TOLERANCE				3.79 lb/gal	T.B.R.		4595	COST INST		23.9 US\$/ft	COST BIT		209.7 US\$/ft						
59	2357	3530.2	156	197	234	87	10	2260	508	515	634	3480.7	265	9.38	9.43	77.0	78.4	.517	.720	100	.8	.27	.66	.66*	1.14	9.52	9.03	D
60	2359	3535.0	188	234	263	88	14	2260	508	513	637	3482.2	66	9.38	9.40	77.0	78.7	.518	.740	105	.8	.27	.68	.68*	1.14	9.53	9.03	D
Date Mar 28 '86																												
61	0001	3540.0	161	262	297	90	20	2240	505	509	637	3485.3	74	9.47	9.51	77.2	79.1	.520	.750	110	.9	.28	.77	.77*	1.14	9.53	9.03	D
62	0003	3545.0	159	237	287	103	16	2260	508	514	638	3487.6	74	9.44	9.48	77.2	79.2	.519	.740	115	.9	.29	.80	.79*	1.14	9.54	9.03	D
63	0005	3550.0	148	256	313	112	21	2710	552	560	639	3487.7	75	9.45	9.50	77.4	79.3	.521	.720	120	.9	.30	.89	.88*	1.14	9.56	9.03	D
T.V.D. 3549.9 ft				HYDRAULIC POWER				263.7 hp	KICK TOLERANCE				3.75 lb/gal	T.B.R.		5495	COST INST		23.0 US\$/ft	COST BIT		171.1 US\$/ft						
Survey @ 3545 ft = 1.00 degrees (S27W) ;																												
65	0016	3555.0	166	229	274	115	14	2540	545	552	635	3497.3	39	9.42	9.45	77.5	79.7	.521	.720	125	1.0	.31	.79	.78*	1.14	9.57	9.03	D
66	0018	3560.0	190	241	280	109	14	2530	539	545	637	3500.7	78	9.48	9.49	77.5	79.7	.524	.730	130	1.0	.32	.75	.75*	1.14	9.58	9.03	D
67	0021	3565.0	112	258	313	106	14	2510	542	542	639	3507.9	84	9.50	9.53	77.7	79.9	.523	.740	135	1.0	.34	.85	.84*	1.14	9.58	9.03	D
68	0023	3570.0	136	288	339	110	18	2530	539	546	638	3513.7	89	9.51	9.54	77.7	80.1	.520	.750	140	1.1	.35	.87	.86*	1.14	9.58	9.03	D
69	0025	3575.0	141	322	364	109	17	2540	539	549	638	3517.3	98	9.52	9.58	77.7	80.2	.519	.740	145	1.1	.36	.85	.84*	1.15	9.59	9.03	D
T.V.D. 3574.8 ft				HYDRAULIC POWER				299.4 hp	KICK TOLERANCE				3.68 lb/gal	T.B.R.		6624	COST INST		24.1 US\$/ft	COST BIT		146.3 US\$/ft						
71	0027	3580.0	161	342	395	113	18	2540	539	548	640	3518.1	89	9.51	9.56	77.7	80.2	.517	.750	150	1.1	.37	.84	.83*	1.15	9.60	9.03	D
72	0029	3585.0	161	377	424	114	24	2540	539	549	641	3518.6	88	9.53	9.54	77.9	80.2	.517	.750	155	1.2	.39	.91	.90*	1.15	9.62	9.03	D
73	0039	3590.0	219	302	451	94	14	2470	530	533	639	3522.5	80	9.45	9.47	78.1	80.2	.514	.760	160	1.2	.39	.68	.68*	1.15	9.63	9.03	D
74	0041	3595.0	197	295	338	92	15	2480	530	536	641	3525.6	84	9.46	9.50	78.1	80.1	.514	.750	165	1.2	.40	.71	.71*	1.15	9.65	9.03	D
75	0108	3600.0	316	245	335	99	12	2450	533	540	627	3543.6	78	9.51	9.55	78.1	79.7	.516	.760	171	1.2	.40	.59	.59*	1.15	9.64	9.03	D
T.V.D. 3599.5 ft				HYDRAULIC POWER				281.2 hp	KICK TOLERANCE				3.61 lb/gal	T.B.R.		7415	COST INST		10.7 US\$/ft	COST BIT		127.4 US\$/ft						
76	0109	3605.0	295	210	258	105	12	2460	533	539	628	3547.1	74	9.49	9.49	78.1	80.2	.518	.760	175	1.3	.41	.62	.61*	1.15	9.66	9.03	D
77	0110	3610.0	283	232	254	111	15	2460	539	544	628	3548.8	71	9.23	9.28	78.2	80.3	.516	.770	180	1.3	.42	.68	.67*	1.15	9.67	9.03	D
78	0111	3615.1	215	237	265	114	15	2470	533	534	630	3549.9	79	9.20	9.22	78.2	80.4	.515	.770	185	1.3	.42	.74	.73*	1.15	9.68	9.03	D
79	0206	3620.0	194	248	277	113	15	2450	533	536	645	3560.2	81	9.14	9.35	78.3	81.0	.519	.780	190	1.3	.43	.76	.75*	1.15	9.63	9.03	D
80	0211	3625.0	214	248	277	110	22	2430	535	537	647	3575.0	82	9.34	9.39	78.6	81.0	.546	.770	195	1.3	.43	.75	.74*	1.16	9.36	9.03	D
T.V.D. 3624.8 ft				HYDRAULIC POWER				281.0 hp	KICK TOLERANCE				3.82 lb/gal	T.B.R.		7902	COST INST		15.9 US\$/ft	COST BIT		113.1 US\$/ft						
82	0222	3629.2	224	231	224	82	17	2440	533	529	644	3591.6	110	9.34	9.39	79.0	80.8	.529	.770	PUMP SPM = 170								P
83	0231	3629.2	224	231	224	82	17	2430	533	535	638	3621.7	88	9.32	9.37	79.1	80.8	.524	.790	PUMP SPM = 170								P
84	0248	3629.2	224	231	224	82	17	2760	571	571	631	3625.2	83	9.32	9.37	79.7	81.3	.518	.770	PUMP SPM = 182								P
Hole packing off @ 3629 ft, circulated & worked pipe 2.5 hrs;																												
86	0447	3630.0	103	168	224	103	8	2460	536	538	564	3629.1	82	9.29	9.33	80.0	82.2	.484	.610	200	1.3	.44	.79	.78*	1.16	9.31	9.03	D
87	0453	3635.2	79.4	118	149	85	8	2470	533	543	567	3629.1	40	9.29	9.34	80.0	82.1	.477	.660	205	1.4	.45	.79	.79*	1.16	9.33	9.03	D
88	0505	3640.0	25.3	184	235	87	11	2730	571	573	569	3629.1	42	9.23	9.28	81.0	82.8	.469	.660	210	1.6	.49	1.10	1.10	1.15	9.35	9.07	D
89	0509	3645.0	68.4	227	251	90	13	2760	567	574	570	3629.1	35	9.24	9.27	81.3	83.1	.471	.660	215	1.7	.50	.90	.90*	1.16	9.36	9.07	D
Survey @ 3637 ft = 1.44 degrees (S55W) ;																												
91	0526	3650.0	78.2	237	287	89	12	2750	567	564	572	3636.4	56	9.15	9.19	81.9	83.6	.449	.650	220	1.8	.51	.97	.97*	1.16	9.33	9.07	D
T.V.D. 3649.9 ft				HYDRAULIC POWER				325.5 hp	KICK TOLERANCE				3.75 lb/gal	T.B.R.		10276	COST INST		43.4 US\$/ft	COST BIT		107.6 US\$/ft						
93	0535	3655.0	35.9	224	267	89	10	2740	567	571	573	3639.1	80	9.15	9.19	82.2	84.0	.449	.650	225	1.8	.52	.97	.97*	1.16	9.33	9.07	D
94	0543	3660.0	35.2	298	355	90	13	2730	564	567	574	3642.8	81	9.12	9.17	82.4	84.6	.450	.640	230	2.0	.54	1.03	1.03*	1.16	9.31	9.07	D
95	0553	3665.0	32.9	373	412	91	23	2710	561	563	577	3648.9	71	9.10	9.15	82.9	84.9	.462	.640	235	2.1	.56	1.21	1.20	1.16	9.27	9.05	D
96	0601	3670.0	37.2	321	395	79	20	2690	558	567	574	3650.9	70	9.14	9.17	83.1	85.3	.470	.640	240	2.3	.58	1.16	1.15	1.16	9.25	9.06	D
97	0608	3675.0	38.7	300	331	84	24	2690	555	555	575	3655.1	27	9.20	9.26	83.3	85.7	.471	.620	245	2.4	.61	1.23	1.22	1.17	9.23	9.04	D
T.V.D. 3674.8 ft				HYDRAULIC POWER				324.0 hp	KICK TOLERANCE				3.83 lb/gal	T.B.R.		13547	COST INST		87.7 US\$/ft	COST BIT		105.7 US\$/ft						
98	0614	3680.0	50.5	290	316	88	22	2690	558	565	575	3658.0	33	9.22	9.23	83.5	86.0	.469	.620	250	2.5	.63	1.15	1.14	1.10	9.23	9.05	D

Data Printed at time 17:33 Date Apr 11 '86
Data Recorded at time 06:24 Date Mar 28 '86

F#	TIME	DEPTH	ROP	TORQUE		RPM	WOB	PUMP	MUD FLOW		PVT	RETURNS	GAS MW lb/gal		TEMP (F)		RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW		
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bb1	DEPTH	unit	IN	OUT	IN	OUT		ft	hr	TW							
99	0624	3685.0	106	274	327	76	30	2660	552	556	569	3661.8	49	9.21	9.23	83.7	86.3	.468	.630	255	2.6	.64	1.00	.99*	1.17	9.24	9.05	D
100	0629	3690.0	63.9	243	279	75	23	2660	558	561	571	3664.6	31	9.22	9.26	83.8	86.5	.463	.640	260	2.6	.65	1.06	1.05	1.16	9.26	9.12	D
102	0635	3695.0	51.5	249	280	80	22	2660	558	567	573	3668.2	80	9.23	9.23	84.2	86.9	.461	.650	265	2.7	.67	1.11	1.10	1.15	9.28	9.15	D
103	0640	3700.0	55.3	263	290	82	23	2750	567	572	573	3670.9	80	9.17	9.19	84.4	87.1	.459	.650	270	2.8	.69	1.11	1.10	1.15	9.30	9.19	D
T.V.D. 3699.8 ft				HYDRAULIC POWER				324.4 hp	KICK TOLERANCE				3.76 lb/gal		T.B.R.		15630	COST INST	61.4 US\$/ft		COST BIT		101.6 US\$/ft					
104	0646	3705.0	53.3	271	294	84	24	2720	564	566	575	3675.1	60	9.14	9.16	84.7	87.4	.458	.650	275	2.9	.70	1.13	1.12	1.15	9.32	9.21	D
105	0653	3710.0	61.8	114	302	92	15	2740	538	539	585	3677.0	153	9.07	9.07	81.2	87.6	.479	.660	280	3.0	.71	.65	.65*	1.15	9.20	9.21	D
106	0705	3715.0	53.5	278	322	96	23	2730	543	546	597	3679.3	297	9.07	9.10	80.6	87.5	.479	.680	285	3.3	.73	1.16	1.14	1.15	9.32	9.22	D
107	0712	3720.0	41.0	244	311	90	21	2740	539	542	608	3679.4	158	9.07	9.11	81.1	87.4	.475	.650	290	3.5	.77	1.18	1.16	1.15	9.30	9.21	D
109	0718	3725.0	55.0	305	347	96	24	2720	539	543	615	3679.5	261	9.07	9.07	81.7	87.6	.476	.640	295	3.6	.78	1.17	1.15	1.15	9.28	9.21	D
T.V.D. 3724.8 ft				HYDRAULIC POWER				325.8 hp	KICK TOLERANCE				.93 lb/gal		T.B.R.		19941	COST INST	61.1 US\$/ft		COST BIT		102.3 US\$/ft					
110	0732	3730.0	49.2	296	335	83	20	2690	534	543	621	3679.6	143	9.07	9.12	82.7	88.0	.479	.660	300	3.7	.80	1.11	1.10	1.15	9.24	9.25	D
111	0738	3735.0	51.5	343	378	86	19	2690	533	539	628	3680.8	116	9.07	9.10	82.9	88.2	.479	.670	305	3.8	.82	1.09	1.08	1.15*	9.25	9.29	D
112	0744	3740.0	50.8	333	369	89	19	2700	533	537	636	3685.7	102	9.07	9.10	83.5	88.3	.480	.680	310	3.9	.84	1.10	1.09	1.14*	9.25	9.33	D
113	0758	3745.0	55.0	317	349	94	30	2700	533	536	635	3712.9	124	9.07	9.10	84.4	88.5	.481	.680	315	4.0	.85	1.24	1.23	1.15	9.18	9.29	D
114	0802	3750.0	79.4	317	380	100	45	2690	534	543	638	3712.9	93	9.07	9.10	84.6	88.7	.479	.680	320	4.1	.87	1.31	1.29*	1.15	9.20	9.29	D
T.V.D. 3749.8 ft				HYDRAULIC POWER				315.9 hp	KICK TOLERANCE				.93 lb/gal		T.B.R.		22378	COST INST	42.8 US\$/ft		COST BIT		99.3 US\$/ft					
115	0805	3755.0	82.7	270	297	100	37	2680	534	544	642	3714.1	119	9.07	9.09	84.9	88.7	.481	.680	325	4.1	.88	1.22	1.21	1.15	9.21	9.27	D
116	0809	3760.0	75.4	305	355	98	24	2650	534	540	643	3715.9	133	9.07	9.11	85.2	88.8	.480	.690	330	4.2	.89	1.09	1.08	1.15*	9.22	9.31	D
117	0814	3765.0	67.5	314	370	99	21	2680	534	537	638	3718.2	167	9.07	9.12	85.5	88.9	.480	.680	335	4.3	.90	1.09	1.07	1.14*	9.23	9.35	D
118	0818	3770.0	74.1	327	356	100	25	2690	534	543	640	3720.1	188	9.07	9.08	85.9	89.0	.481	.690	340	4.3	.91	1.11	1.10	1.14	9.23	9.39	D
119	0832	3775.0	76.0	325	369	101	28	2700	533	538	642	3723.7	210	9.07	9.09	86.5	89.6	.488	.690	345	4.4	.93	1.15	1.13	1.14	9.24	9.40	D
T.V.D. 3774.8 ft				HYDRAULIC POWER				313.7 hp	KICK TOLERANCE				.93 lb/gal		T.B.R.		24383	COST INST	44.7 US\$/ft		COST BIT		95.7 US\$/ft					
121	0836	3780.0	74.8	296	326	74	28	2720	534	538	646	3728.8	502	9.07	9.09	86.5	89.6	.488	.710	350	4.5	.94	1.07	1.06	1.14*	9.24	9.44	D
122	0840	3785.0	80.8	300	346	78	29	2710	535	542	651	3747.3	335	9.07	9.12	86.0	89.8	.503	.700	355	4.5	.95	1.07	1.07	1.13*	9.20	9.43	D
123	0844	3790.1	72.9	302	342	78	26	2690	536	539	656	3749.7	261	9.07	9.09	85.3	89.8	.509	.700	360	4.6	.96	1.07	1.06	1.13*	9.21	9.52	D
124	0847	3795.1	80.8	332	384	73	31	2710	536	543	661	3753.3	247	9.07	9.08	85.1	90.0	.508	.710	365	4.6	.97	1.08	1.07	1.13*	9.21	9.56	D
125	0851	3800.1	81.2	361	413	73	36	2710	537	540	665	3756.1	218	9.07	9.08	84.9	90.1	.506	.710	370	4.7	.98	1.13	1.12	1.13	9.22	9.56	D
T.V.D. 3799.9 ft				HYDRAULIC POWER				322.2 hp	KICK TOLERANCE				.93 lb/gal		T.B.R.		25826	COST INST	41.8 US\$/ft		COST BIT		92.4 US\$/ft					
126	0855	3805.1	72.6	367	416	81	35	2720	536	538	671	3759.8	179	9.07	9.10	84.9	90.1	.508	.720	375	4.8	1.00	1.17	1.16	1.13	9.22	9.55	D
+ Survey @ 3794 ft = 1.52 degrees (S24W);																												
128	0908	3810.1	76.3	341	391	84	34	2700	530	535	680	3762.3	108	9.07	9.10	84.7	90.0	.507	.700	380	4.8	1.01	1.17	1.15	1.13	9.23	9.54	D
129	0912	3815.0	83.3	339	382	82	36	2690	533	533	684	3764.6	183	9.07	9.11	85.2	90.0	.505	.720	385	4.9	1.02	1.15	1.14	1.13	9.23	9.53	D
130	0915	3820.1	95.8	362	417	91	37	2680	532	541	689	3767.6	180	9.07	9.08	85.5	90.1	.506	.720	390	5.0	1.03	1.15	1.13	1.13	9.24	9.53	D
131	0918	3825.0	105	380	419	101	40	2700	532	537	689	3771.2	178	9.07	9.08	85.9	90.1	.507	.730	395	5.0	1.04	1.18	1.16	1.14	9.24	9.52	D
T.V.D. 3824.9 ft				HYDRAULIC POWER				313.5 hp	KICK TOLERANCE				.93 lb/gal		T.B.R.		27352	COST INST	32.3 US\$/ft		COST BIT		89.3 US\$/ft					
133	0920	3830.0	105	375	420	109	37	2670	532	540	692	3774.7	404	9.07	9.09	86.0	90.3	.504	.730	400	5.0	1.05	1.18	1.16	1.14	9.25	9.51	D
134	0923	3835.0	104	378	431	110	37	2700	531	537	693	3778.5	177	9.07	9.07	86.4	90.4	.508	.730	405	5.1	1.05	1.18	1.16	1.14	9.25	9.50	D
135	0935	3840.0	97.4	367	434	94	36	2740	538	544	695	3790.5	198	9.07	9.11	86.9	91.0	.508	.730	410	5.1	1.06	1.15	1.13	1.14	9.23	9.51	D
136	0938	3845.1	115	350	379	86	36	2750	537	546	701	3791.9	247	9.07	9.08	87.1	90.9	.508	.730	415	5.2	1.07	1.07	1.06	1.14*	9.24	9.55	D
137	0941	3850.2	101	362	404	86	40	2770	536	540	702	3791.9	238	9.07	9.12	87.1	90.9	.508	.720	420	5.2	1.08	1.15	1.13	1.14	9.25	9.55	D
T.V.D. 3849.8 ft				HYDRAULIC POWER				321.4 hp	KICK TOLERANCE				.93 lb/gal		T.B.R.		28768	COST INST	33.7 US\$/ft		COST BIT		86.1 US\$/ft					
138	0944	3855.0	114	379	436	92	39	2760	537	547	705	3793.7	218	9.07	9.09	86.3	91.0	.509	.740	425	5.3	1.09	1.12	1.11	1.14	9.26	9.58	D
139	0946	3860.0	103	388	441	97	41	2760	536	537	711	3798.0	329	9.07	9.11	86.2	91.1	.512	.720	430	5.3	1.10	1.16	1.15	1.14	9.26	9.57	D
140	0949	3865.0	106	388	452	101	37	2750	537	538	716	3802.1	297	9.07	9.08	85.4	91.0	.510	.740	435	5.4	1.11	1.15	1.13	1.14	9.26	9.58	D
+ Survey @ 3856 ft = 0.61 degree (S49W);																												
142	1003	3870.0	115	340	431	89	35	2640	525	527	734	3821.5	224	9.07	9.12	84.5	91.6	.504	.740	440	5.4	1.11	1.07	1.05	1.13*	9.23	9.62	D
143	1006	3875.0	98.1	267	327	90	28	2700	527	528	736	3822.9	276	9.07	9.09	85.3	91.5	.501	.740	445	5.5	1.12	.97	.96*	1.13	9.24	9.62	D
T.V.D. 3874.8 ft				HYDRAULIC POWER				303.7 hp	KICK TOLERANCE				.93 lb/gal		T.B.R.		30060	COST INST	34.6 US\$/ft		COST BIT		83.2 US\$/ft					
145	1008	3880.0	111	298	338	90	37	2710	532	532	740	3822.9	185	9.07	9.13	86.2	91.2	.501	.730	450	5.5	1.13	.97	.97*	1.13	9.25	9.62	D

F#	TIME	DEPTH	ROP	TORQUE		RPM	WOB	PUMP	MUD	FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW	
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW						
146	1011	3885.0	95.3	291	328	90	37	2690	531	532	739	3825.2	189	9.07	9.11	86.9	91.2	.501	.740	455	5.6	1.14	1.04	1.04	1.13	9.26	9.70	
147	1017	3890.1	50.4	274	330	89	37	2700	532	539	740	3835.5	219	9.07	9.11	87.9	91.4	.503	.750	460	5.7	1.16	1.33	1.31*	1.13	9.24	9.70	
148	1019	3895.0	151	287	331	95	33	2690	531	538	741	3839.0	307	9.07	9.09	88.3	91.4	.506	.760	465	5.7	1.16	.99	.98*	1.13	9.25	9.70	
149	1028	3900.0	127	308	373	100	37	2760	503	503	735	3850.6	209	9.07	9.11	89.0	91.7	.511	.740	470	5.7	1.17	1.10	1.08	1.12	9.23	9.74	
T.V.D. 3099.9 ft				HYDRAULIC POWER				311.2 hp	KICK TOLERANCE				.93 lb/gal	T.B.R.		31538	COST INST		26.7 US\$/ft	COST BIT		80.9 US\$/ft						
150	1032	3905.1	82.7	309	357	80	41	2740	534	539	738	3854.2	699	9.07	9.12	89.2	91.8	.515	.760	475	5.8	1.18	1.19	1.18	1.13	9.23	9.72	
151	1034	3910.1	131	281	374	83	32	2750	533	541	739	3854.2	357	9.07	9.08	89.3	91.8	.518	.760	480	5.8	1.19	.99	.98*	1.13	9.25	9.72	
152	1037	3915.1	106	264	334	85	27	2750	534	539	741	3854.2	138	9.07	9.07	89.5	91.8	.514	.770	485	5.9	1.20	1.01	1.00*	1.13	9.26	9.72	
153	1039	3920.0	122	297	377	87	32	2750	535	536	742	3865.0	164	9.07	9.12	89.6	91.8	.516	.800	490	5.9	1.21	1.03	1.01	1.12	9.24	9.82	
154	1042	3925.1	116	256	355	90	23	2750	535	541	745	3868.5	1000	9.07	9.08	89.8	91.9	.516	.806	495	6.0	1.21	.96	.94*	1.12	9.25	9.82	
T.V.D. 3924.9 ft				HYDRAULIC POWER				277.0 hp	KICK TOLERANCE				.93 lb/gal	T.B.R.		32701	COST INST		29.4 US\$/ft	COST BIT		78.6 US\$/ft						
155	1045	3930.0	110	286	339	99	30	2740	534	539	744	3872.1	1097	9.07	9.09	89.8	91.9	.514	.810	500	6.0	1.22	1.07	1.05	1.11	9.25	9.89	
156	1054	3935.0	116	271	331	98	30	2720	528	530	736	3880.5	234	9.07	9.13	90.1	92.1	.518	.910	505	6.1	1.23	.98	.97*	1.11	9.24	9.89	
157	1057	3940.0	93.7	231	267	81	21	2140	515	516	731	3882.6	276	9.07	9.13	90.3	92.1	.517	.794	510	6.1	1.24	.95	.94*	1.12	9.25	9.89	
159	1100	3945.0	119	330	380	79	40	2140	464	471	730	3883.8	263	9.07	9.08	90.3	92.1	.517	.782	515	6.2	1.25	1.08	1.07	1.11	9.25	9.94	
160	1103	3950.0	83.9	310	408	82	38	1810	425	426	731	3888.9	470	9.07	9.09	90.4	92.2	.519	.781	520	6.2	1.26	1.16	1.15	1.11	9.25	9.92	
T.V.D. 3949.8 ft				HYDRAULIC POWER				165.3 hp	KICK TOLERANCE				.93 lb/gal	T.B.R.		33979	COST INST		40.5 US\$/ft	COST BIT		76.6 US\$/ft						
161	1108	3955.0	61.5	341	519	91	43	1790	421	425	729	3891.1	300	9.07	9.08	90.5	92.3	.519	.775	525	6.3	1.27	1.33	1.32*	1.12	9.26	9.92	
162	1113	3960.0	63.9	283	487	94	32	1910	435	444	729	3893.7	360	9.07	9.07	90.6	92.3	.521	.769	530	6.4	1.29	1.22	1.21	1.12	9.27	9.88	
Survey @ 3949 ft = 0.82 degree (S15W);																												
164	1141	3965.0	83.0	271	361	99	36	2430	502	508	721	3926.3	1350	9.07	9.10	90.3	91.0	.551	.680	535	6.4	1.30	1.21	1.19	1.13	9.20	9.85	
165	1145	3970.0	83.0	272	310	94	37	2410	504	513	724	3930.0	890	9.07	9.10	90.3	92.5	.548	.700	540	6.5	1.31	1.20	1.18	1.13	9.20	9.82	
166	1148	3975.0	88.3	280	333	98	37	2480	506	515	725	3930.8	430	9.07	9.10	90.4	92.6	.544	.790	545	6.5	1.32	1.20	1.18	1.13	9.21	9.79	
T.V.D. 3974.8 ft				HYDRAULIC POWER				233.4 hp	KICK TOLERANCE				.93 lb/gal	T.B.R.		35894	COST INST		38.4 US\$/ft	COST BIT		75.3 US\$/ft						
167	1152	3980.0	90.1	316	373	98	43	2470	504	504	727	3934.9	1220	9.07	9.12	90.4	92.8	.545	.750	550	6.6	1.33	1.24	1.23	1.14*	9.21	9.75	
168	1156	3985.0	77.7	302	352	102	38	2460	507	516	728	3938.6	530	9.07	9.12	90.5	93.0	.539	.760	555	6.7	1.34	1.26	1.24	1.15*	9.22	9.71	
169	1159	3990.0	83.4	317	371	107	39	2490	505	508	728	3939.0	390	9.07	9.08	90.7	93.2	.535	.760	560	6.7	1.35	1.25	1.23	1.15*	9.23	9.67	
170	1208	3995.1	80.1	312	362	96	36	2460	500	508	723	3944.0	280	9.07	9.13	90.7	93.6	.536	.760	565	6.8	1.36	1.21	1.19	1.15	9.23	9.65	
171	1214	4000.1	78.7	292	336	87	37	2510	500	507	725	3947.0	300	9.07	9.09	90.7	93.4	.536	.750	570	6.9	1.37	1.19	1.18	1.16	9.23	9.63	
T.V.D. 3999.9 ft				HYDRAULIC POWER				214.0 hp	KICK TOLERANCE				.93 lb/gal	T.B.R.		37693	COST INST		43.2 US\$/ft	COST BIT		74.0 US\$/ft						
172	1217	4005.1	96.4	277	318	93	38	2470	499	501	728	3949.0	280	9.07	9.08	90.7	93.4	.538	.760	575	6.9	1.38	1.16	1.14	1.16	9.23	9.64	
173	1220	4010.1	91.5	281	325	92	36	2520	503	523	728	3957.0	380	9.07	9.08	90.7	93.4	.537	.770	580	7.0	1.39	1.16	1.15	1.16	9.23	9.65	
174	1223	4015.1	95.8	295	352	97	39	2520	504	507	729	3963.8	310	9.07	9.07	90.7	93.4	.537	.800	585	7.0	1.40	1.19	1.17	1.16	9.23	9.64	
175	1227	4020.1	87.0	292	334	102	38	2510	503	505	729	3980.0	320	9.07	9.10	90.9	93.6	.537	.800	590	7.1	1.41	1.22	1.20	1.16	9.23	9.62	
176	1235	4025.0	105	285	342	105	39	2460	441	441	724	3988.1	170	9.07	9.10	90.9	93.8	.536	.780	595	7.1	1.42	1.19	1.17	1.16	9.20	9.62	
T.V.D. 4024.9 ft				HYDRAULIC POWER				223.1 hp	KICK TOLERANCE				.93 lb/gal	T.B.R.		39232	COST INST		32.4 US\$/ft	COST BIT		72.5 US\$/ft						
178	1238	4030.2	103	275	314	83	37	2460	495	498	724	3993.9	320	9.07	9.11	91.0	93.9	.536	.770	600	7.2	1.43	1.11	1.10	1.16	9.19	9.65	
179	1241	4035.0	101	283	330	85	40	2490	496	501	726	3998.9	300	9.07	9.11	91.0	93.7	.537	.780	605	7.2	1.44	1.15	1.13	1.16	9.19	9.67	
180	1245	4040.0	93.4	296	343	85	41	2490	499	499	727	4004.9	340	9.07	9.08	91.0	93.9	.539	.790	610	7.3	1.45	1.18	1.17	1.16	9.19	9.67	
181	1243	4045.1	90.5	283	327	87	39	2500	497	501	726	4005.9	370	9.07	9.08	91.2	93.9	.538	.780	615	7.3	1.46	1.17	1.16	1.16	9.20	9.67	
182	1252	4050.0	81.4	280	314	91	39	2510	497	507	727	4006.2	320	9.22	9.14	91.2	94.0	.538	.780	620	7.4	1.47	1.21	1.20	1.17	9.21	9.65	
T.V.D. 4049.8 ft				HYDRAULIC POWER				227.0 hp	KICK TOLERANCE				.93 lb/gal	T.B.R.		40621	COST INST		41.7 US\$/ft	COST BIT		71.2 US\$/ft						
183	1255	4055.0	91.9	281	327	97	39	2470	497	503	727	4006.8	460	9.34	9.19	91.2	94.1	.541	.790	625	7.4	1.48	1.20	1.18	1.17	9.22	9.64	
Survey @ 4043 ft = 1.17 degrees (S56W);																												
185	1315	4060.1	67.0	237	315	83	32	1920	429	431	721	4010.4	270	9.27	9.23	91.4	94.7	.543	.780	630	7.5	1.50	1.18	1.17	1.17	9.22	9.65	
186	1321	4065.1	56.7	258	304	79	36	1580	417	421	721	4011.8	260	9.38	9.40	91.6	94.2	.545	.810	635	7.6	1.52	1.25	1.23	1.17	9.24	9.61	
187	1331	4070.1	29.1	186	248	80	19	1580	383	385	723	4020.3	290	9.36	9.39	91.8	94.1	.548	.776	640	7.8	1.54	1.21	1.20	1.18	9.28	9.60	
188	1344	4075.1	23.0	162	214	82	16	1540	382	391	724	4021.0	290	9.49	9.51	91.9	94.1	.551	.782	645	8.0	1.57	1.21	1.20	1.18	9.30	9.59	
T.V.D. 4074.9 ft				HYDRAULIC POWER				105.0 hp	KICK TOLERANCE				3.42 lb/gal	T.B.R.		43626	COST INST		147.8 US\$/ft	COST BIT		71.7 US\$/ft						
189	1353	4080.1	35.3	212	320	89	26	2710	509	518	722	4048.1	320	9.50	9.55	91.9	94.1	.554	.769	650	8.1	1.60	1.28	1.26	1.18*	9.34	9.55	

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS BIT	EST	DXC	NX	NXB	ECD	NXW					
		ft	ft/hr	AVG	MAX	AVG	AVG	IN	OUT	bb1	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW									
191	1356	4085.0	81.0	289	339	100	42	2760	529	531	726	4049.0	260	9.58	9.63	91.9	94.1	.559	.770	655	8.2	1.62	1.25	1.23	1.19	9.36	9.52	D
192	1406	4090.1	74.3	314	378	94	41	2740	527	529	722	4051.7	240	9.52	9.57	91.9	94.3	.559	.776	660	8.3	1.64	1.24	1.22	1.19	9.43	9.50	D
193	1409	4095.1	81.9	291	346	88	37	2770	526	529	727	4060.3	240	9.52	9.56	91.9	94.3	.559	.766	665	8.3	1.66	1.16	1.14	1.19	9.47	9.52	D
194	1412	4100.0	104	338	379	91	46	2790	525	533	729	4062.4	260	9.56	9.57	91.9	94.5	.560	.770	670	8.4	1.67	1.18	1.15	1.19	9.48	9.54	D
T.V.D.		4099.8 ft	HYDRAULIC POWER				278.7 hp	KICK TOLERANCE				3.26 lb/gal	T.B.R.		45722	COST INST	32.5 US\$/ft	COST BIT		71.1 US\$/ft								
195	1415	4105.0	108	342	378	91	46	2750	526	531	730	4063.6	250	9.55	9.61	92.0	94.5	.561	.770	675	8.4	1.69	1.16	1.14	1.19	9.50	9.56	D
196	1418	4110.0	107	339	388	95	47	2780	525	533	730	4065.1	260	9.55	9.60	92.1	94.6	.562	.769	680	8.5	1.70	1.18	1.16	1.19	9.53	9.58	D
197	1421	4115.0	89.7	309	360	99	44	2790	523	524	731	4066.9	260	9.52	9.53	92.1	94.8	.560	.772	685	8.5	1.72	1.22	1.19	1.19	9.56	9.57	D
198	1442	4120.1	46.8	240	332	98	31	1480	365	372	722	4076.6	190	9.41	9.47	92.5	94.9	.561	.763	690	8.6	1.74	1.25	1.23	1.19	9.60	9.55	D
199	1451	4125.1	31.6	185	216	82	18	1470	364	369	721	4087.2	210	9.53	9.54	92.5	94.5	.559	.775	695	8.8	1.77	1.14	1.12	1.19	9.62	9.58	D
T.V.D.		4124.9 ft	HYDRAULIC POWER				91.9 hp	KICK TOLERANCE				3.12 lb/gal	T.B.R.		47998	COST INST	107.4 US\$/ft	COST BIT		70.7 US\$/ft								
200	1502	4130.0	27.5	173	213	82	19	1470	364	367	723	4091.3	250	9.50	9.52	92.3	94.5	.560	.770	700	9.0	1.79	1.18	1.16	1.19	9.65	9.60	D
202	1512	4135.0	30.3	152	207	87	16	1440	362	364	726	4102.7	220	9.49	9.53	92.3	94.5	.562	.769	705	9.1	1.82	1.13	1.11	1.19	9.62	9.64	D
203	1521	4140.0	31.0	172	239	88	16	1450	362	370	726	4110.4	160	9.35	9.38	92.2	94.5	.564	.768	710	9.3	1.84	1.12	1.10	1.18*	9.61	9.68	D
204	1533	4145.1	27.8	179	229	91	18	1420	361	367	729	4115.0	160	9.49	9.53	92.3	94.5	.569	.767	715	9.5	1.87	1.18	1.16	1.18	9.60	9.69	D
+ Survey @ 4137 ft = 1.79 degrees (S30W) ;																												
206	1552	4150.1	43.3	214	273	100	28	2660	500	501	713	4122.3	120	9.47	9.51	92.3	92.9	.572	.740	720	9.6	1.90	1.25	1.22	1.18	9.59	9.67	D
T.V.D.		4149.9 ft	HYDRAULIC POWER				127.4 hp	KICK TOLERANCE				3.11 lb/gal	T.B.R.		52298	COST INST	78.4 US\$/ft	COST BIT		72.2 US\$/ft								
207	1555	4155.0	102	261	313	96	45	2780	522	525	718	4124.0	130	9.52	9.53	92.3	94.1	.574	.750	725	9.6	1.91	1.17	1.14	1.18	9.58	9.69	D
208	1558	4160.0	102	290	336	93	48	2800	524	525	722	4125.4	130	9.51	9.56	92.3	94.2	.573	.790	730	9.7	1.93	1.19	1.17	1.18	9.59	9.70	D
209	1601	4165.0	100	315	356	98	49	2790	523	524	722	4126.9	200	9.53	9.58	92.3	94.4	.577	.800	735	9.7	1.94	1.22	1.19	1.18	9.59	9.70	D
210	1605	4170.0	80.4	333	397	97	49	2790	522	523	726	4128.7	190	9.52	9.56	92.5	94.7	.574	.810	740	9.8	1.96	1.28	1.25	1.19	9.59	9.67	D
+ Flow check @ 4170 ft : negative;																												
212	1610	4175.1	105	304	382	100	42	2790	522	524	724	4131.1	230	9.52	9.54	92.5	94.6	.575	.820	745	9.9	1.98	1.16	1.13	1.19	9.60	9.70	D
T.V.D.		4174.8 ft	HYDRAULIC POWER				264.0 hp	KICK TOLERANCE				3.12 lb/gal	T.B.R.		53807	COST INST	32.5 US\$/ft	COST BIT		71.1 US\$/ft								
213	1613	4180.1	126	354	432	109	51	2790	523	525	728	4132.4	220	9.52	9.55	92.5	95.0	.575	.830	750	9.9	1.99	1.20	1.16	1.19	9.62	9.72	D
215	1620	4185.0	143	343	417	95	54	2790	520	520	723	4134.9	220	9.53	9.57	92.5	94.8	.572	.830	755	9.9	2.01	1.13	1.10	1.18*	9.63	9.75	D
216	1622	4190.0	146	350	413	99	53	2690	511	514	726	4136.4	210	9.54	9.59	92.5	95.2	.572	.840	760	10.0	2.02	1.13	1.10	1.18*	9.63	9.79	D
217	1624	4195.2	120	361	421	99	55	2700	509	518	727	4139.8	210	9.53	9.58	92.5	95.2	.569	.830	765	10.0	2.04	1.21	1.17	1.18	9.64	9.80	D
218	1628	4200.0	95.0	366	425	104	55	2700	509	510	729	4141.4	220	9.55	9.58	92.5	95.2	.568	.850	770	10.1	2.06	1.30	1.26	1.18	9.65	9.77	D
T.V.D.		4199.9 ft	HYDRAULIC POWER				251.7 hp	KICK TOLERANCE				3.09 lb/gal	T.B.R.		55048	COST INST	35.8 US\$/ft	COST BIT		69.8 US\$/ft								
219	1630	4205.1	107	366	413	106	55	2700	509	510	729	4142.8	230	9.52	9.58	92.6	95.3	.563	.850	775	10.1	2.08	1.26	1.23	1.19	9.65	9.75	D
220	1633	4210.0	102	354	406	110	54	2700	509	517	730	4144.7	260	9.54	9.58	92.7	95.4	.562	.840	780	10.2	2.11	1.28	1.24	1.19	9.66	9.72	D
+ Survey @ 4199 ft = 1.92 degrees (S27W) ;																												
222	1650	4215.0	105	327	401	98	54	2710	509	512	744	4156.7	220	9.57	9.59	93.0	95.9	.540	.830	785	10.2	2.12	1.20	1.17	1.19	9.66	9.74	D
223	1653	4220.0	93.4	326	363	99	54	2700	509	512	737	4161.5	220	9.49	9.49	93.1	96.1	.530	.850	790	10.3	2.13	1.14	1.11	1.19*	9.67	9.78	D
224	1656	4225.0	98.0	348	419	99	54	2690	509	514	745	4165.7	240	9.51	9.55	93.1	96.0	.537	.850	795	10.3	2.14	1.11	1.09	1.18*	9.68	9.82	D
T.V.D.		4224.6 ft	HYDRAULIC POWER				251.3 hp	KICK TOLERANCE				3.04 lb/gal	T.B.R.		56570	COST INST	34.7 US\$/ft	COST BIT		68.7 US\$/ft								
225	1658	4230.0	138	357	411	100	53	2690	509	519	747	4168.4	310	9.57	9.63	93.0	95.9	.535	.870	800	10.3	2.15	.99	.97*	1.18	9.69	9.82	D
226	1701	4235.0	104	359	398	99	54	2700	507	510	742	4170.8	500	9.60	9.61	93.0	95.9	.537	.870	805	10.4	2.15	1.08	1.06	1.18	9.70	9.89	D
227	1704	4240.0	113	366	410	99	55	2700	503	513	738	4179.3	380	9.58	9.60	93.0	95.9	.538	.870	810	10.4	2.17	1.22	1.18	1.18	9.69	9.89	D
228	1713	4245.0	158	307	356	109	50	2690	508	506	721	4183.0	100	9.56	9.57	93.0	96.3	.543	.880	815	10.5	2.18	1.11	1.07	1.17*	9.69	9.93	D
229	1716	4250.0	121	316	365	108	52	2720	508	511	720	4186.6	1170	9.52	9.57	93.0	94.9	.534	.830	820	10.5	2.20	1.20	1.16	1.17	9.71	9.94	D
T.V.D.		4249.5 ft	HYDRAULIC POWER				241.0 hp	KICK TOLERANCE				3.01 lb/gal	T.B.R.		57809	COST INST	28.0 US\$/ft	COST BIT		67.6 US\$/ft								
230	1719	4255.1	90.1	344	391	108	54	2710	508	510	722	4190.3	430	9.53	9.59	93.0	96.2	.530	.840	825	10.6	2.22	1.30	1.26	1.18	9.71	9.90	D
232	1721	4260.0	167	329	395	110	53	2690	508	516	723	4199.1	310	9.52	9.57	93.1	96.2	.531	.840	830	10.6	2.23	1.11	1.07	1.17*	9.72	9.94	D
233	1724	4265.0	98.0	348	414	108	53	2700	509	518	721	4208.1	180	9.51	9.56	93.2	96.3	.533	.840	835	10.6	2.25	1.27	1.23	1.18	9.69	9.92	D
234	1727	4270.1	97.3	333	391	107	50	2690	507	510	724	4214.9	160	9.51	9.54	93.2	96.3	.530	.830	840	10.7	2.26	1.25	1.21	1.18	9.69	9.90	D
235	1737	4275.0	83.7	332	415	108	50	2710	508	510	726	4218.2	70	9.55	9.56	93.4	96.4	.531	.810	845	10.8	2.27	1.29	1.25	1.19	9.71	9.87	D
T.V.D.		4274.5 ft	HYDRAULIC POWER				242.2 hp	KICK TOLERANCE				2.98 lb/gal	T.B.R.		59419	COST INST	40.6 US\$/ft	COST BIT		66.7 US\$/ft								

F#	TIME	DEPTH	ROP	TORQUE		RPM	WOB	PUMP	MUD	FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW	
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW						
236	1740	4280.0	85.0	336	382	105	52	2710	507	514	729	4218.8	135	9.50	9.55	93.6	96.6	.538	.770	850	10.8	2.28	1.30	1.26	1.19	9.72	9.84	D
237	1744	4285.0	90.6	355	394	105	54	2720	506	513	731	4222.7	100	9.50	9.53	93.6	96.7	.540	.780	855	10.9	2.30	1.29	1.25	1.20	9.72	9.81	D
238	1747	4290.1	77.8	353	409	105	54	2720	505	508	732	4227.3	115	9.52	9.57	93.6	96.6	.541	.800	860	10.9	2.33	1.34	1.29	1.20*	9.72	9.77	D
239	1751	4295.0	87.1	346	407	105	53	2720	505	510	731	4232.3	100	9.54	9.58	93.7	96.7	.540	.840	865	11.0	2.35	1.30	1.25	1.21	9.72	9.74	D
240	1754	4300.0	93.3	369	410	105	55	2710	507	514	731	4236.7	115	9.54	9.55	93.8	96.8	.540	.910	870	11.0	2.37	1.29	1.25	1.21	9.72	9.72	D
T.V.D. 4299.5 ft			HYDRAULIC POWER				246.4 hp	KICK TOLERANCE				2.96 lb/gal		T.B.R. 61249		COST INST		36.4 US\$/ft		COST BIT		66.0 US\$/ft						
241	1758	4305.0	84.2	362	413	105	54	2700	505	513	731	4241.5	115	9.53	9.53	93.9	96.9	.541	.769	875	11.1	2.39	1.32	1.28	1.22	9.72	9.68	D
242	1807	4310.1	98.6	351	415	105	53	2710	506	516	725	4249.1	120	9.52	9.53	94.1	96.9	.543	.763	880	11.2	2.42	1.26	1.22	1.22	9.71	9.68	D
243	1810	4315.0	94.4	353	402	105	53	2710	507	507	729	4254.1	85	9.55	9.60	94.2	97.1	.544	.763	885	11.2	2.43	1.28	1.23	1.22	9.71	9.68	D
244	1813	4320.0	83.8	345	389	105	52	2710	506	510	731	4258.3	95	9.54	9.55	94.3	97.2	.546	.769	890	11.3	2.45	1.30	1.26	1.22	9.71	9.65	D
245	1817	4325.0	92.4	361	399	105	54	2700	506	514	732	4263.0	100	9.53	9.58	94.3	97.2	.552	.769	895	11.3	2.47	1.29	1.24	1.23	9.71	9.64	D
T.V.D. 4324.5 ft			HYDRAULIC POWER				247.4 hp	KICK TOLERANCE				2.95 lb/gal		T.B.R. 62997		COST INST		36.7 US\$/ft		COST BIT		65.3 US\$/ft						
246	1820	4330.1	96.7	366	400	104	55	2710	507	512	734	4266.9	110	9.55	9.59	94.4	97.2	.548	.772	900	11.4	2.49	1.31	1.26	1.23	9.71	9.62	D
248	1824	4335.1	88.3	354	393	104	53	2710	507	513	737	4280.6	145	9.55	9.59	94.5	97.3	.541	.770	905	11.4	2.51	1.29	1.25	1.23	9.68	9.61	D
+ Survey @ 4327 ft = 1.73 degrees (S37W);																												
250	1851	4340.0	71.5	334	408	104	52	2680	502	506	736	4304.4	130	9.57	9.58	94.9	99.0	.539	.771	910	11.5	2.54	1.36	1.31	1.24*	9.64	9.57	D
251	1856	4345.0	70.0	302	355	104	50	2670	500	507	737	4306.3	115	9.54	9.55	95.0	99.0	.542	.769	915	11.6	2.56	1.35	1.30	1.24	9.65	9.53	D
252	1858	4350.1	74.7	319	364	104	51	2670	501	510	737	4309.9	120	9.55	9.59	95.0	98.9	.544	.773	920	11.6	2.57	1.33	1.28	1.25	9.66	9.50	D
T.V.D. 4349.5 ft			HYDRAULIC POWER				240.0 hp	KICK TOLERANCE				2.94 lb/gal		T.B.R. 64889		COST INST		45.5 US\$/ft		COST BIT		64.7 US\$/ft						
253	1903	4355.1	73.3	348	415	104	53	2680	500	507	737	4315.3	110	9.56	9.57	95.3	98.8	.548	.870	925	11.7	2.60	1.37	1.32	1.25*	9.66	9.46	D
254	1908	4360.0	57.7	323	364	104	51	2680	499	508	737	4321.6	125	9.56	9.59	95.6	98.8	.550	.890	930	11.8	2.63	1.41	1.36	1.26*	9.66	9.42	D
255	1912	4365.0	73.8	342	404	104	54	2690	504	508	737	4330.5	120	9.56	9.61	95.9	98.8	.535	.890	935	11.9	2.65	1.36	1.31	1.27	9.65	9.38	D
256	1924	4370.1	78.5	360	396	104	56	2700	505	507	740	4335.6	60	9.61	9.64	96.4	98.6	.537	.840	940	11.9	2.67	1.36	1.31	1.27	9.64	9.35	D
257	1928	4375.1	81.1	341	381	105	55	2700	505	508	742	4335.6	100	9.55	9.58	96.4	98.6	.543	.840	945	12.0	2.69	1.35	1.29	1.28	9.66	9.33	D
T.V.D. 4374.5 ft			HYDRAULIC POWER				238.4 hp	KICK TOLERANCE				2.91 lb/gal		T.B.R. 67091		COST INST		41.9 US\$/ft		COST BIT		64.4 US\$/ft						
258	1932	4380.1	76.6	349	386	112	55	2720	505	507	742	4335.6	100	9.59	9.63	96.4	98.6	.545	.890	950	12.0	2.72	1.38	1.32	1.28	9.68	9.30	D
259	1935	4385.0	82.6	349	389	112	55	2720	505	508	742	4335.6	90	9.57	9.61	96.4	98.6	.545	.950	955	12.1	2.74	1.35	1.30	1.29	9.69	9.28	D
261	1939	4390.0	75.6	376	418	112	54	2730	504	514	742	4336.7	130	9.56	9.60	96.4	98.6	.546	.970	960	12.2	2.77	1.37	1.32	1.29	9.70	9.26	D
262	1943	4395.0	83.8	387	433	112	56	2710	504	509	744	4340.3	105	9.55	9.58	96.3	98.6	.549	.960	965	12.2	2.79	1.36	1.30	1.29	9.71	9.25	D
263	1946	4400.1	90.1	384	423	112	57	2700	503	504	744	4344.2	120	9.55	9.58	96.3	98.6	.551	.970	970	12.3	2.81	1.34	1.28	1.29	9.71	9.26	D
T.V.D. 4399.5 ft			HYDRAULIC POWER				243.7 hp	KICK TOLERANCE				2.89 lb/gal		T.B.R. 69153		COST INST		37.7 US\$/ft		COST BIT		63.9 US\$/ft						
264	2003	4405.1	96.9	335	414	111	56	2720	503	513	728	4363.5	100	9.52	9.53	96.3	98.4	.529	.800	975	12.3	2.83	1.31	1.25	1.29	9.68	9.27	D
265	2006	4410.0	87.9	338	375	111	57	2710	500	505	732	4365.8	120	9.56	9.58	96.3	98.5	.523	.810	980	12.4	2.86	1.34	1.28	1.29	9.69	9.28	D
266	2009	4415.0	89.2	348	407	111	57	2720	503	513	732	4368.3	125	9.54	9.57	96.3	98.8	.524	.810	985	12.5	2.88	1.34	1.28	1.29	9.70	9.28	D
267	2013	4420.0	88.8	366	396	112	57	2690	502	502	733	4371.4	135	9.55	9.61	96.3	99.0	.528	.800	990	12.5	2.90	1.34	1.28	1.29	9.71	9.28	D
268	2016	4425.0	82.5	370	412	112	56	2670	502	507	733	4373.2	130	9.57	9.58	96.3	99.0	.532	.830	995	12.6	2.92	1.36	1.30	1.29	9.72	9.28	D
T.V.D. 4424.4 ft			HYDRAULIC POWER				242.0 hp	KICK TOLERANCE				2.86 lb/gal		T.B.R. 71030		COST INST		41.2 US\$/ft		COST BIT		63.3 US\$/ft						
269	2020	4430.1	84.7	385	433	112	56	2700	502	504	733	4375.3	200	9.58	9.64	96.3	99.3	.542	.840	1000	12.6	2.94	1.35	1.29	1.30	9.72	9.29	D
+ Survey @ 4430 ft = 2.59 degrees (S60W);																												
271	2046	4435.0	54.3	309	442	112	44	1980	419	427	732	4389.6	110	9.54	9.56	96.3	100.4	.558	.840	1005	12.7	2.97	1.38	1.32	1.30	9.69	9.27	D
273	2053	4440.1	43.5	264	326	112	38	1970	419	429	733	4395.7	115	9.50	9.54	96.3	99.6	.559	.980	1010	12.8	3.00	1.37	1.32	1.30	9.69	9.26	D
274	2102	4445.1	35.0	250	301	112	32	1610	375	375	732	4400.7	110	9.46	9.50	96.4	99.1	.562	.820	1015	13.0	3.03	1.36	1.31	1.30	9.69	9.25	D
275	2111	4450.0	34.5	238	288	112	31	1580	372	375	732	4409.7	105	9.47	9.48	96.6	99.1	.565	.790	1020	13.1	3.06	1.36	1.31	1.31	9.67	9.25	D
T.V.D. 4449.4 ft			HYDRAULIC POWER				98.6 hp	KICK TOLERANCE				2.85 lb/gal		T.B.R. 74768		COST INST		98.5 US\$/ft		COST BIT		63.7 US\$/ft						
276	2119	4455.0	35.7	220	270	111	32	2600	417	420	733	4424.1	95	9.49	9.53	96.8	99.0	.568	.830	1025	13.3	3.08	1.37	1.31	1.31	9.65	9.25	D
277	2123	4460.0	67.1	313	367	111	54	2640	496	497	734	4434.1	110	9.55	9.60	96.8	99.3	.568	.810	1030	13.3	3.11	1.41	1.35	1.31	9.64	9.21	D
278	2139	4465.1	164	335	390	111	54	2690	503	505	735	4437.5	95	9.54	9.55	96.8	100.1	.567	.840	1035	13.4	3.12	1.14	1.08*	1.31	9.63	9.21	D
279	2143	4470.1	79.0	363	397	111	55	2690	502	504	738	4438.0	85	9.54	9.56	96.8	99.9	.565	.830	1040	13.4	3.14	1.38	1.31	1.31	9.63	9.22	D
280	2146	4475.0	83.4	375	416	111	56	2680	502	506	740	4440.0	100	9.56	9.58	96.8	99.8	.567	.840	1045	13.5	3.16	1.36	1.30	1.31	9.63	9.22	D
T.V.D. 4474.3 ft			HYDRAULIC POWER				240.4 hp	KICK TOLERANCE				2.86 lb/gal		T.B.R. 77218		COST INST		40.7 US\$/ft		COST BIT		63.5 US\$/ft						

F#	TIME	DEPTH	ROP	TORQUE		RPM	WOB	PUMP	MUD	FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW	
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW						
281	2149	4480.0	90.5	397	453	111	56	2690	504	509	741	4442.0	120	9.56	9.59	97.0	99.8	.566	.840	1050	13.5	3.18	1.34	1.27	1.31	9.64	9.24	D
282	2154	4485.0	73.5	383	431	111	56	2690	499	504	740	4444.4	110	9.57	9.59	97.0	99.9	.568	.870	1055	13.6	3.20	1.40	1.33	1.32	9.64	9.23	D
283	2158	4490.1	71.2	380	427	111	55	2680	501	504	740	4446.3	95	9.58	9.63	97.0	99.9	.564	.890	1060	13.7	3.23	1.41	1.34	1.32	9.64	9.22	D
284	2208	4495.1	77.6	380	436	111	55	2690	481	485	734	4450.5	70	9.58	9.59	97.2	100.3	.564	.870	1065	13.8	3.25	1.38	1.31	1.32	9.63	9.22	D
286	2212	4500.0	79.7	364	405	111	56	2690	502	509	738	4453.2	80	9.55	9.59	97.2	100.3	.549	.860	1070	13.8	3.28	1.37	1.30	1.32	9.64	9.23	D
T.V.D.		4499.3	ft	HYDRAULIC POWER				238.9	hp	KICK TOLERANCE				2.86		lb/gal	T.B.R.		79362	COST	INST	42.6	US\$/ft	COST		BIT	63.1	US\$/ft
287	2217	4505.0	60.8	354	414	111	51	2320	462	469	739	4457.5	110	9.55	9.58	97.2	100.2	.545	.880	1075	13.9	3.30	1.42	1.35	1.32	9.64	9.21	D
288	2222	4510.0	55.2	326	372	111	45	2360	460	467	742	4461.4	75	9.59	9.64	97.3	100.0	.547	.900	1080	14.0	3.32	1.39	1.32	1.32	9.65	9.21	D
289	2227	4515.0	60.2	326	375	111	47	2530	481	481	743	4461.6	85	9.60	9.64	97.3	100.1	.548	.870	1085	14.1	3.35	1.38	1.31	1.33	9.67	9.21	D
290	2232	4520.1	62.2	332	367	111	51	2540	480	481	743	4466.3	85	9.61	9.61	97.5	100.2	.547	.880	1090	14.2	3.37	1.40	1.33	1.33	9.68	9.21	D
291	2237	4525.0	62.3	330	373	111	51	2540	480	483	744	4472.6	90	9.59	9.62	97.5	100.2	.551	.890	1095	14.2	3.39	1.40	1.33	1.33	9.69	9.21	D
T.V.D.		4524.2	ft	HYDRAULIC POWER				211.2	hp	KICK TOLERANCE				2.82		lb/gal	T.B.R.		82139	COST	INST	54.6	US\$/ft	COST		BIT	63.0	US\$/ft
292	2251	4530.0	45.7	279	345	111	45	1760	387	392	743	4486.6	85	9.54	9.60	97.7	99.4	.554	.850	1100	14.3	3.42	1.44	1.37	1.33	9.67	9.18	D
293	2258	4535.0	43.3	241	277	111	36	1750	389	393	745	4492.5	95	9.54	9.57	97.7	100.2	.561	.920	1105	14.5	3.45	1.36	1.29	1.33	9.68	9.20	D
294	2306	4540.1	40.0	231	273	111	37	1730	387	391	748	4495.5	120	9.55	9.60	97.7	100.3	.566	.917	1110	14.6	3.47	1.38	1.32	1.33	9.69	9.20	D
295	2313	4545.1	40.8	237	280	111	37	1740	387	389	749	4501.7	95	9.55	9.58	97.8	100.4	.570	.909	1115	14.7	3.50	1.38	1.31	1.33	9.69	9.21	D
296	2321	4550.0	37.6	245	271	111	37	1710	387	395	752	4507.4	90	9.55	9.55	97.7	100.4	.560	.900	1120	14.8	3.52	1.40	1.33	1.33	9.70	9.21	D
T.V.D.		4549.2	ft	HYDRAULIC POWER				109.5	hp	KICK TOLERANCE				2.78		lb/gal	T.B.R.		86184	COST	INST	90.4	US\$/ft	COST		BIT	63.5	US\$/ft
297	2328	4555.0	43.5	256	311	111	38	2710	488	497	752	4512.8	105	9.52	9.53	97.7	100.4	.558	.905	1125	15.0	3.54	1.38	1.31	1.33	9.70	9.22	D
299	2345	4560.0	62.9	288	332	111	50	2710	499	508	746	4522.4	85	9.48	9.54	97.3	100.0	.564	.850	1130	15.0	3.57	1.39	1.32	1.33	9.68	9.23	D
300	2349	4565.1	67.0	295	339	111	51	2720	496	500	751	4525.6	80	9.48	9.52	97.3	100.0	.568	.898	1135	15.1	3.59	1.38	1.31	1.33	9.68	9.24	D
301	2354	4570.1	59.8	310	352	111	54	2680	496	499	753	4529.7	75	9.48	9.50	97.3	100.1	.569	.867	1140	15.2	3.61	1.45	1.37	1.34	9.69	9.23	D
Date		Mar 29 '86																										
302	0000	4575.0	51.4	328	400	111	54	2710	497	497	755	4535.0	85	9.49	9.51	97.3	100.2	.571	.813	1145	15.3	3.64	1.49	1.41	1.34	9.68	9.19	D
T.V.D.		4574.2	ft	HYDRAULIC POWER				232.3	hp	KICK TOLERANCE				2.77		lb/gal	T.B.R.		89189	COST	INST	66.1	US\$/ft	COST		BIT	63.5	US\$/ft
+ No gas readings 4576 - 4623 ft due to mud by-passing shakers;																												
304	0004	4580.0	76.6	347	405	111	52	2680	498	507	755	4538.3	0	9.51	9.55	97.3	100.3	.572	.829	1150	15.4	3.66	1.35	1.27	1.34	9.69	9.22	D
+ Survey @ 4573 ft = 4.29 degrees (S58W);																												
306	0040	4585.0	80.1	319	282	102	54	2670	500	500	731	4547.4	0	9.75	9.77	97.2	99.6	.555	.857	1155	15.5	3.68	1.33	1.33	1.34	9.65	9.23	D
307	0044	4590.1	71.2	268	346	104	53	2660	499	502	733	4551.2	0	9.81	9.85	97.2	101.0	.554	.878	1160	15.6	3.69	1.36	1.32	1.34	9.65	9.23	D
308	0048	4595.0	78.0	295	339	104	52	2640	499	507	735	4554.6	0	9.80	9.85	97.3	100.8	.553	.820	1165	15.7	3.70	1.33	1.35	1.34	9.64	9.23	D
309	0052	4600.0	73.2	306	340	104	53	2630	498	504	735	4555.4	0	9.84	9.86	97.3	100.6	.556	.794	1170	15.7	3.72	1.36	1.28	1.34	9.65	9.26	D
T.V.D.		4599.1	ft	HYDRAULIC POWER				279.2	hp	KICK TOLERANCE				.69		lb/gal	T.B.R.		91724	COST	INST	46.4	US\$/ft	COST		BIT	63.4	US\$/ft
310	0056	4605.0	71.4	324	382	104	54	2630	498	505	737	4558.8	0	9.85	9.85	97.3	100.7	.563	.830	1175	15.8	3.74	1.37	1.29	1.34	9.64	9.28	D
311	0101	4610.0	74.4	333	362	104	53	2660	499	505	736	4563.6	0	9.85	9.87	97.5	100.9	.567	.829	1180	15.8	3.76	1.37	1.29	1.33	9.53	9.30	D
312	0113	4614.4	61.6	340	388	104	54	2650	229	230	735	4571.9	0	9.87	9.90	97.7	101.5	.575	.838	PUMP SPM = 75								
313	0117	4615.1	64.6	341	388	104	53	2680	503	507	737	4576.6	0	9.80	9.85	97.7	101.4	.581	.835	1185	15.9	3.77	1.41	1.33	1.34	9.55	9.31	D
314	0121	4620.1	80.1	362	413	104	52	2680	503	504	737	4582.3	0	9.79	9.80	97.9	101.5	.586	.864	1190	16.0	3.79	1.33	1.25	1.33*	9.57	9.35	D
315	0125	4625.0	72.9	359	408	104	53	2670	503	513	739	4582.3	101	9.80	9.81	97.9	101.2	.585	.870	1195	16.0	3.81	1.36	1.28	1.33	9.60	9.37	D
T.V.D.		4624.1	ft	HYDRAULIC POWER				285.4	hp	KICK TOLERANCE				.69		lb/gal	T.B.R.		93910	COST	INST	46.6	US\$/ft	COST		BIT	63.2	US\$/ft
316	0129	4630.0	71.4	369	456	104	52	2680	505	510	741	4583.0	147	9.82	9.87	98.1	100.9	.585	.690	1200	16.1	3.82	1.36	1.28	1.33	9.65	9.40	D
317	0129	4630.0	71.4	369	456	104	52	2630	505	510	741	4583.0	147	9.82	9.87	98.1	100.9	.585	.690	1200	16.1	3.82	1.36	1.28	1.33*	9.65	9.40	D
318	0138	4640.1	62.8	371	487	104	54	2680	532	503	741	4593.4	171	9.85	9.88	98.2	101.5	.589	.800	1210	16.3	3.86	1.40	1.32	1.33	9.71	9.41	D
319	0141	4645.0	65.6	355	415	104	50	2680	502	506	740	4596.8	154	9.86	9.86	98.4	101.7	.590	.810	1215	16.3	3.87	1.36	1.28	1.32	9.72	9.44	D
321	0159	4650.1	55.0	354	436	104	50	2670	501	507	740	4619.2	103	9.96	9.86	98.6	103.2	.575	.820	1220	16.4	3.88	1.38	1.30	1.32	9.91	9.45	D
T.V.D.		4649.1	ft	HYDRAULIC POWER				288.6	hp	KICK TOLERANCE				.69		lb/gal	T.B.R.		95990	COST	INST	61.8	US\$/ft	COST		BIT	62.9	US\$/ft
322	0204	4655.1	60.4	312	384	106	49	2630	502	512	739	4619.4	109	9.99	9.88	98.8	102.3	.572	.850	1225	16.5	3.90	1.35	1.27	1.32	9.93	9.49	D
323	0209	4660.0	54.0	302	357	106	46	2680	504	511	733	4623.1	106	10.0	9.93	98.8	102.1	.551	.860	1230	16.6	3.92	1.35	1.27	1.31	9.93	9.53	D
324	0216	4665.0	47.6	284	347	106	41	2680	502	512	728	4630.2	101	9.97	9.87	99.0	102.4	.548	.860	1235	16.7	3.94	1.33	1.26	1.31*	9.94	9.57	D

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS BIT	EST	DXC	NX	NXB	ECD	NXMW	
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW					
325	0232	4665.0	18.1	276	300	106	40	1870	414	420	727	4649.3	110	9.93	9.84	99.6	103.8	.563	.860	PUMP SPM =	137				
326	0254	4665.0	18.1	276	300	106	40	1840	412	416	707	4654.0	88	9.93	9.84	100.2	105.1	.581	.820	PUMP SPM =	137				
327	0305	4665.0	18.1	276	300	106	40	1810	411	411	709	4660.5	92	9.98	9.86	100.4	104.9	.594	.820	PUMP SPM =	137				
328	0314	4665.0	18.1	276	300	106	40	1790	410	416	710	4665.0	86	9.93	9.84	100.5	104.8	.599	.830	PUMP SPM =	138				
Circulated returns & POOH @ 4665 ft to inspect bit - NB #8 cut 1235 ft in 16.7 hrs - graded SY-W1/2-B2/3-G01;																									
NB #9 Smith SDSCE 12.25" Ser.# EZ2033 IADC 114 Jets 13:13:13:13 - in @ 4665 ft;																									
333	1423	4670.0	44.0	65	87	106	29	2690	512	507	727	4665.0	29	9.78	9.82	87.1	82.7	.595	.860	5.0	.1	.02	1.22	1.21	1.31* 9.89 9.61
334	1429	4675.0	46.1	65	89	106	29	2680	512	507	734	4665.0	47	9.81	9.84	85.6	87.5	.598	.890	10.0	.2	.05	1.21	1.21	1.30* 9.89 9.65
T.V.D. 4674.1 ft HYDRAULIC POWER 305.7 hp KICK TOLERANCE 2.45 lb/gal T.B.R. 1413 COST INST 73.7 US\$/ft COST BIT 2193 US\$/ft																									
335	1436	4680.1	44.4	74	107	106	29	2650	513	515	736	4665.0	89	9.84	9.86	84.1	89.4	.599	.910	15.1	.3	.09	1.21	1.21	1.30* 9.89 9.69
336	1445	4685.0	35.0	75	96	106	27	2680	512	514	717	4665.0	140	9.81	9.82	82.8	90.0	.600	.906	20.0	.5	.13	1.25	1.25	1.29* 9.88 9.73
337	1556	4690.0	17.9	49	75	106	14	2700	514	511	678	4672.7	60	9.63	9.69	84.0	87.3	.616	.880	25.0	.8	.21	1.20	1.20	1.29* 9.84 9.77
338	1605	4695.0	29.4	49	75	106	15	2700	512	514	678	4677.0	61	9.63	9.72	84.2	87.7	.618	.880	30.0	.9	.22	1.12	1.12*	1.29 9.84 9.77
339	1615	4700.1	31.4	62	82	106	21	2720	513	513	684	4694.8	79	9.66	9.80	85.2	88.9	.629	.890	35.1	1.1	.25	1.21	1.20	1.28* 9.83 9.85
T.V.D. 4699.0 ft HYDRAULIC POWER 298.0 hp KICK TOLERANCE 2.54 lb/gal T.B.R. 6921 COST INST 108.1 US\$/ft COST BIT 712.0 US\$/ft																									
341	1623	4705.0	35.8	63	82	106	21	2750	513	511	688	4694.8	85	9.63	9.83	85.8	89.4	.629	.900	40.0	1.2	.28	1.19	1.19	1.28* 9.78 9.89
Survey @ 4695 ft = 6.52 degrees (S77W);																									
343	1632	4710.0	33.0	66	88	106	26	2810	526	521	693	4694.8	80	9.57	9.86	86.2	89.8	.626	.900	45.0	1.4	.31	1.23	1.27	1.28 9.73 9.89
344	1640	4715.0	40.0	72	89	106	26	2820	529	535	699	4694.8	70	9.59	9.95	86.5	90.1	.623	.910	50.0	1.5	.34	1.24	1.23	1.27* 9.71 9.93
345	1647	4720.1	39.8	69	88	106	26	2570	506	502	700	4694.8	75	9.61	9.67	86.9	90.6	.616	.910	55.1	1.6	.37	1.23	1.23	1.27* 9.71 9.97
346	1656	4725.1	36.0	72	98	106	26	2600	506	504	705	4697.1	80	9.60	9.63	87.3	91.2	.618	.950	60.1	1.8	.40	1.26	1.25	1.27 9.71 10.0
T.V.D. 4724.0 ft HYDRAULIC POWER 286.2 hp KICK TOLERANCE 2.65 lb/gal T.B.R. 11232 COST INST 94.3 US\$/ft COST BIT 455.3 US\$/ft																									
347	1720	4730.0	37.9	63	77	106	26	2820	527	531	715	4706.7	72	9.71	9.61	88.2	92.1	.615	.940	65.0	1.9	.43	1.25	1.24	1.26 9.69 10.0
348	1727	4735.0	47.9	72	86	106	35	2800	524	520	716	4710.4	77	9.69	9.57	88.7	91.6	.575	.940	70.0	2.0	.45	1.30	1.29	1.27 9.71 10.0
349	1733	4740.0	45.3	75	86	106	36	2820	525	523	718	4714.7	75	9.62	9.54	89.0	91.9	.569	.950	75.0	2.1	.47	1.33	1.31	1.27 9.72 10.0
351	1740	4745.1	47.1	77	89	106	36	2800	524	523	718	4719.0	71	9.60	9.56	89.3	92.4	.577	.960	80.1	2.2	.50	1.31	1.30	1.27 9.73 10.0
352	1746	4750.1	45.2	79	103	106	36	2820	524	526	714	4723.3	80	9.56	9.50	89.6	92.7	.586	.960	85.1	2.3	.53	1.32	1.31	1.28 9.74 9.98
T.V.D. 4747.9 ft HYDRAULIC POWER 316.0 hp KICK TOLERANCE 2.61 lb/gal T.B.R. 14814 COST INST 75.2 US\$/ft COST BIT 345.0 US\$/ft																									
353	1753	4755.0	44.6	78	89	106	36	2820	524	518	711	4725.3	67	9.64	9.50	90.0	93.0	.589	.960	90.0	2.4	.55	1.33	1.31	1.28 9.74 9.96
354	1810	4760.0	50.4	75	91	106	40	2810	527	525	715	4729.5	62	9.54	9.49	90.5	94.0	.573	.940	95.0	2.5	.58	1.33	1.31	1.28 9.75 9.95
Survey at 4726 feet : 5.84 degs to 274 degs (N86W);																									
356	1816	4765.0	47.9	77	92	106	42	2850	525	519	719	4734.4	61	9.62	9.62	90.7	94.0	.565	.940	100	2.6	.60	1.33	1.36	1.29 9.73 9.91
357	1822	4770.1	53.2	79	95	117	43	2810	524	521	721	4738.3	79	9.65	9.54	90.7	93.8	.554	.940	105	2.7	.63	1.33	1.36	1.29 9.72 9.87
358	1827	4775.1	53.0	81	93	118	43	2820	526	523	721	4743.0	66	9.60	9.62	91.0	94.1	.558	.860	110	2.8	.66	1.38	1.36	1.30 9.72 9.84
T.V.D. 4772.9 ft HYDRAULIC POWER 319.3 hp KICK TOLERANCE 2.62 lb/gal T.B.R. 18146 COST INST 64.0 US\$/ft COST BIT 282.9 US\$/ft																									
359	1833	4780.0	50.2	83	92	118	43	2820	526	529	723	4747.5	63	9.61	9.62	91.2	94.6	.560	.870	115	2.9	.69	1.40	1.38	1.31* 9.72 9.80
360	1839	4785.0	54.2	85	101	118	43	2820	526	528	723	4751.5	71	9.64	9.52	91.4	94.9	.568	.870	120	3.0	.72	1.38	1.35	1.31 9.72 9.77
Survey @ 4790 ft = 5.89 degrees (S80W);																									
362	1910	4790.0	50.9	81	93	106	42	2820	528	532	729	4754.0	62	9.60	9.51	92.7	95.4	.588	.910	125	3.1	.74	1.37	1.35	1.31 9.66 9.75
363	1915	4795.0	49.3	76	92	106	40	2820	527	523	731	4757.0	47	9.57	9.56	93.0	95.9	.580	.810	130	3.2	.76	1.35	1.33	1.32 9.67 9.74
364	1921	4800.0	50.6	80	87	106	43	2820	527	522	730	4760.0	46	9.58	9.50	93.0	96.1	.575	.810	135	3.3	.78	1.37	1.35	1.32 9.67 9.72
T.V.D. 4797.9 ft HYDRAULIC POWER 320.0 hp KICK TOLERANCE 2.60 lb/gal T.B.R. 21397 COST INST 67.2 US\$/ft COST BIT 243.6 US\$/ft																									
366	1926	4805.0	50.0	82	86	106	42	2830	527	531	731	4763.0	43	9.55	9.52	93.0	96.1	.571	.830	140	3.4	.80	1.37	1.35	1.32 9.67 9.71
367	1930	4810.0	51.3	79	92	106	43	2830	527	524	731	4766.0	39	9.55	9.58	93.0	96.1	.571	.820	145	3.5	.83	1.37	1.35	1.33 9.68 9.69
368	1934	4815.0	49.2	79	92	106	43	2830	526	525	733	4769.0	38	9.55	9.58	93.2	96.4	.568	.850	150	3.6	.85	1.38	1.36	1.33 9.68 9.67
369	1943	4820.0	48.8	71	80	106	42	2840	528	532	718	4784.0	68	9.49	9.52	93.0	97.7	.563	.850	155	3.7	.87	1.38	1.36	1.33 9.66 9.65
370	1948	4825.0	66.7	80	98	106	52	2830	527	522	718	4787.0	65	9.51	9.54	93.0	97.5	.565	.870	160	3.8	.89	1.38	1.36	1.34 9.66 9.64
T.V.D. 4822.3 ft HYDRAULIC POWER 322.0 hp KICK TOLERANCE 2.62 lb/gal T.B.R. 24429 COST INST 50.0 US\$/ft COST BIT 216.2 US\$/ft																									
371	1953	4830.0	62.9	80	93	106	54	2820	528	531	721	4790.0	62	9.51	9.55	93.2	97.3	.568	.880	165	3.9	.91	1.42	1.39	1.34 9.65 9.60

F#	TIME	DEPTH	ROP	TORQUE		RPM	WOB	PUMP	MUD FLOW		PVT	RETURNS	GAS	MW	lb/gal	TEMP (F)		RES	ohm-in	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW	
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW						
372	1958	4835.1	64.2	79	104	106	55	2850	527	526	722	4793.0	65	9.51	9.60	93.2	97.4	.570	.890	170	4.0	.92	1.42	1.39	1.35	9.65	9.57	D
373	2002	4840.1	64.4	83	96	106	55	2840	527	530	724	4796.0	63	9.51	9.58	93.4	97.6	.572	.890	175	4.0	.94	1.42	1.39	1.36	9.65	9.53	D
374	2008	4845.0	57.2	81	95	106	55	2840	526	531	725	4798.5	60	9.50	9.60	93.7	97.9	.567	.890	180	4.1	.97	1.45	1.42	1.36*	9.66	9.49	D
375	2011	4850.1	68.7	85	99	106	55	2840	527	530	727	4801.6	48	9.48	9.58	93.9	98.0	.564	.870	185	4.2	.99	1.40	1.37	1.36	9.66	9.49	D
T.V.D. 4847.2 ft				HYDRAULIC POWER				318.3 hp	KICK TOLERANCE				2.58 lb/gal		T.B.R.		26960	COST INST		49.4 US\$/ft		COST BIT		194.6 US\$/ft				
376	2027	4851.0	49.7	85	98	106	55	2840	525	525	733	4809.0	46	9.39	9.63	94.1	97.5	.564	.840	PUMP SPM = 177								P
377	2030	4851.0	49.7	85	98	106	55	2850	527	528	734	4811.0	46	9.46	9.68	94.1	98.6	.566	.830	PUMP SPM = 177								P
378	2036	4855.0	62.3	72	98	106	52	2840	527	524	732	4814.0	42	9.56	9.65	94.3	98.5	.577	.850	190	4.3	1.01	1.41	1.38	1.37	9.62	9.48	D
379	2041	4860.0	59.4	73	83	106	51	2850	526	530	734	4817.0	58	9.55	9.57	94.5	98.1	.583	.860	195	4.4	1.04	1.41	1.39	1.37	9.62	9.46	D
380	2046	4865.1	58.1	70	87	106	52	2840	528	528	735	4820.0	66	9.54	9.61	94.6	98.1	.586	.860	200	4.5	1.07	1.43	1.40	1.38	9.62	9.44	D
381	2051	4870.1	63.2	70	83	106	52	2840	528	532	736	4824.0	62	9.56	9.59	94.8	98.4	.592	.860	205	4.5	1.10	1.43	1.37	1.38	9.62	9.44	D
383	2055	4875.0	61.6	68	79	106	51	2810	529	526	737	4827.0	51	9.55	9.61	95.0	98.5	.594	.850	210	4.6	1.12	1.40	1.37	1.38	9.62	9.44	D
T.V.D. 4872.0 ft				HYDRAULIC POWER				325.3 hp	KICK TOLERANCE				2.63 lb/gal		T.B.R.		29592	COST INST		55.1 US\$/ft		COST BIT		178.6 US\$/ft				
384	2100	4880.0	63.6	69	83	106	51	2840	529	526	739	4830.0	63	9.56	9.62	95.2	98.8	.589	.850	215	4.7	1.14	1.39	1.36	1.38	9.62	9.45	D
385	2109	4885.2	56.1	67	76	113	51	2830	520	525	745	4835.0	35	9.54	9.60	95.3	98.0	.587	.840	220	4.8	1.16	1.45	1.41	1.38	9.62	9.42	D
386	2112	4890.0	57.5	65	73	117	51	2830	528	524	746	4840.0	67	9.55	9.59	95.4	98.7	.587	.830	225	4.9	1.18	1.45	1.42	1.39	9.63	9.40	D
387	2117	4895.0	62.9	68	78	117	51	2840	527	525	747	4848.5	52	9.58	9.62	95.4	98.9	.586	.840	230	4.9	1.21	1.42	1.38	1.39	9.64	9.40	D
388	2122	4900.0	60.4	68	78	117	51	2820	527	525	748	4849.3	57	9.59	9.64	95.5	99.0	.588	.860	235	5.0	1.24	1.43	1.39	1.39	9.67	9.40	D
T.V.D. 4896.9 ft				HYDRAULIC POWER				321.0 hp	KICK TOLERANCE				2.61 lb/gal		T.B.R.		32446	COST INST		56.3 US\$/ft		COST BIT		166.0 US\$/ft				
389	2127	4905.0	59.8	69	79	117	51	2830	528	523	747	4854.3	63	9.45	9.49	95.7	99.1	.587	.860	240	5.1	1.27	1.44	1.40	1.39	9.68	9.39	D
390	2132	4910.1	54.0	69	82	117	51	2840	528	522	748	4859.6	63	9.46	9.50	95.9	99.2	.584	.870	245	5.2	1.30	1.46	1.42	1.40	9.68	9.37	D
391	2137	4915.0	62.3	68	76	117	50	2830	529	524	750	4864.6	53	9.43	9.47	96.1	99.5	.580	.880	250	5.3	1.33	1.41	1.38	1.40	9.67	9.38	D
+ Survey @ 4915 ft = 5.95 degrees (S78W) ;																												
393	2149	4920.0	52.6	69	82	117	50	2840	540	544	754	4873.7	66	9.48	9.52	96.4	99.7	.576	.890	255	5.4	1.36	1.46	1.42	1.40	9.64	9.35	D
394	2154	4925.0	58.8	66	73	117	49	2850	540	544	755	4878.3	61	9.55	9.59	96.4	99.7	.571	.860	260	5.5	1.38	1.43	1.39	1.40	9.63	9.36	D
T.V.D. 4921.7 ft				HYDRAULIC POWER				300.6 hp	KICK TOLERANCE				2.62 lb/gal		T.B.R.		35513	COST INST		57.8 US\$/ft		COST BIT		156.1 US\$/ft				
395	2200	4930.0	55.0	67	83	117	49	2830	541	546	757	4885.9	48	9.57	9.61	96.6	99.8	.572	.870	265	5.6	1.41	1.45	1.41	1.40	9.62	9.36	D
396	2204	4935.1	63.3	67	78	117	49	2850	539	534	756	4889.8	51	9.57	9.61	96.6	99.9	.575	.880	270	5.6	1.43	1.41	1.37	1.40	9.62	9.37	D
397	2209	4940.0	61.0	65	75	117	49	2840	540	534	756	4894.2	55	9.59	9.63	96.8	100.0	.575	.880	275	5.7	1.45	1.42	1.37	1.40	9.63	9.38	D
398	2220	4945.0	69.8	68	80	117	49	2840	538	537	761	4945.0	58	9.58	9.62	97.2	100.9	.581	.870	280	5.8	1.34	1.38	1.35	1.40	9.57	9.40	D
399	2234	4950.1	83.2	61	74	117	50	2850	539	537	762	4945.0	64	9.60	9.64	97.2	101.2	.583	.860	285	5.8	1.36	1.34	1.30	1.40	9.58	9.44	D
T.V.D. 4946.6 ft				HYDRAULIC POWER				301.2 hp	KICK TOLERANCE				2.58 lb/gal		T.B.R.		38210	COST INST		40.8 US\$/ft		COST BIT		147.2 US\$/ft				
400	2239	4955.0	58.4	58	69	117	53	2850	539	541	763	4945.0	61	9.60	9.64	97.3	101.1	.576	.890	290	5.9	1.39	1.47	1.43	1.40	9.59	9.42	D
401	2245	4960.0	53.8	55	63	117	54	2840	538	538	764	4945.0	80	9.62	9.66	97.5	101.1	.572	.870	295	6.0	1.43	1.50	1.46	1.41	9.61	9.38	D
402	2250	4965.0	54.2	50	60	117	53	2860	537	536	765	4945.0	75	9.60	9.64	97.5	101.5	.573	.860	300	6.1	1.46	1.49	1.45	1.41	9.63	9.35	D
403	2256	4970.0	53.0	46	54	117	53	2850	538	542	766	4945.0	60	9.53	9.57	97.5	101.5	.575	.870	305	6.2	1.49	1.50	1.45	1.42	9.65	9.32	D
404	2301	4975.1	55.8	46	54	117	53	2860	539	538	769	4945.0	46	9.58	9.62	97.7	101.7	.578	.870	310	6.3	1.52	1.48	1.43	1.42	9.66	9.31	D
T.V.D. 4971.4 ft				HYDRAULIC POWER				298.3 hp	KICK TOLERANCE				2.55 lb/gal		T.B.R.		41404	COST INST		60.9 US\$/ft		COST BIT		140.6 US\$/ft				
405	2313	4980.0	53.3	42	50	117	52	2870	540	539	769	4945.0	103	9.50	9.54	97.9	101.8	.578	.870	315	6.4	1.55	1.48	1.43	1.42	9.67	9.30	D
406	2318	4985.0	62.7	39	47	117	53	2850	539	536	772	4945.0	68	9.55	9.59	97.9	101.7	.578	.860	320	6.5	1.57	1.43	1.39	1.42	9.69	9.31	D
408	2323	4990.0	54.7	36	45	117	53	2860	538	541	774	4947.2	51	9.56	9.60	98.1	101.7	.580	.890	325	6.6	1.60	1.48	1.43	1.43	9.69	9.31	D
409	2329	4995.1	57.3	36	41	117	54	2860	538	542	777	4952.5	56	9.53	9.57	98.1	101.8	.578	.900	330	6.7	1.63	1.47	1.42	1.43	9.69	9.31	D
410	2334	5000.1	56.7	35	42	117	54	2860	538	536	776	4957.4	52	9.53	9.57	98.2	102.0	.588	.880	335	6.7	1.66	1.47	1.42	1.43	9.68	9.31	D
T.V.D. 4996.2 ft				HYDRAULIC POWER				297.2 hp	KICK TOLERANCE				2.54 lb/gal		T.B.R.		44492	COST INST		59.9 US\$/ft		COST BIT		134.9 US\$/ft				
411	2339	5005.0	59.2	37	46	117	53	2840	539	540	778	4961.9	57	9.57	9.61	98.3	102.0	.589	.890	340	6.8	1.68	1.45	1.41	1.43	9.68	9.32	D
412	2354	5010.0	58.2	39	44	117	52	2820	536	539	781	4972.9	120	9.59	9.63	98.6	102.6	.592	.870	345	6.9	1.71	1.45	1.40	1.43	9.66	9.33	D
413	2359	5015.0	55.9	34	40	117	51	2830	536	535	779	4977.3	75	9.57	9.61	98.7	102.6	.594	.870	350	7.0	1.73	1.46	1.41	1.43	9.66	9.34	D
Date Mar 30 '86																												
414	0005	5020.1	58.2	35	41	117	54	2820	537	539	778	4979.6	141	9.58	9.62	98.8	102.6	.596	.890	355	7.1	1.76	1.47	1.42	1.43	9.67	9.34	D

F#	TIME	DEPTH	ROP	TORQUE		RPM	WOB	PUMP	MUD	FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP (F)		RES	ohm-in	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW	
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bb1	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW						
415	0010	5025.1	58.4	36	41	117	55	2810	535	539	779	4984.6	101	9.64	9.68	99.0	102.7	.599	.890	360	7.2	1.78	1.48	1.43	1.43	9.67	9.34	D
T.V.D. 5021.1 ft				HYDRAULIC POWER				294.9	hp	KICK TOLERANCE				2.53	lb/gal	T.B.R.		47520	COST INST	58.2	US\$/ft	COST BIT 129.8 US\$/ft						
416	0015	5030.0	61.6	35	43	117	55	2830	537	535	779	4989.0	71	9.54	9.58	99.0	102.9	.600	.890	365	7.3	1.81	1.46	1.41	1.43	9.68	9.35	D
417	0020	5035.0	55.2	32	38	117	55	2840	535	537	780	4994.1	58	9.51	9.55	99.1	103.1	.603	.880	370	7.3	1.84	1.49	1.44	1.43	9.69	9.35	D
418	0027	5038.2	46.6	31	37	117	54	2820	535	533	780	5000.2	83	9.57	9.61	99.3	103.5	.607	.900	PUMP SPM = 175								P
419	0034	5040.0	51.2	28	37	117	53	2830	534	533	782	5003.9	43	9.62	9.66	99.5	103.3	.608	.900	375	7.5	1.86	1.50	1.45	1.43	9.67	9.34	D
420	0039	5045.0	53.2	21	26	116	53	2830	533	538	782	5008.4	56	9.60	9.64	99.5	103.3	.608	.890	380	7.5	1.89	1.48	1.43	1.43	9.68	9.34	D
+ Survey @ 5039 ft = 6.14 degrees (S74W) ;																												
422	0045	5050.0	50.4	21	26	115	53	2800	533	527	780	5008.5	62	9.58	9.62	99.7	103.5	.609	.866	385	7.6	1.92	1.50	1.44	1.44	9.69	9.34	D
T.V.D. 5045.9 ft				HYDRAULIC POWER				290.9	hp	KICK TOLERANCE				2.51	lb/gal	T.B.R.		50786	COST INST	67.4	US\$/ft	COST BIT 125.7 US\$/ft						
423	0051	5055.0	51.7	21	25	115	53	2820	533	535	779	5013.4	66	9.67	9.71	99.8	103.6	.611	.922	390	7.7	1.94	1.49	1.43	1.44	9.69	9.34	D
424	0056	5060.1	53.5	20	25	115	53	2830	534	539	780	5013.8	71	9.79	9.83	100.0	103.8	.610	.863	395	7.8	1.97	1.48	1.42	1.44	9.69	9.35	D
426	0102	5065.0	53.0	20	24	115	54	2830	533	527	780	5024.1	68	9.78	9.82	100.2	104.0	.603	.930	400	7.9	1.99	1.49	1.43	1.44	9.70	9.35	D
427	0108	5070.0	53.5	20	25	115	54	2840	533	528	780	5029.7	92	9.78	9.82	100.5	104.1	.607	.903	405	8.0	2.01	1.48	1.43	1.44	9.73	9.35	D
428	0126	5075.0	56.9	23	27	115	54	2810	530	526	781	5038.6	104	9.82	9.86	100.9	105.0	.599	.868	410	8.1	2.04	1.45	1.39	1.44	9.79	9.37	D
T.V.D. 5070.7 ft				HYDRAULIC POWER				288.8	hp	KICK TOLERANCE				2.42	lb/gal	T.B.R.		54001	COST INST	59.7	US\$/ft	COST BIT 122.1 US\$/ft						
429	0130	5080.0	61.4	23	29	115	55	2800	530	527	782	5042.5	108	9.81	9.85	101.1	104.7	.600	.920	415	8.2	2.06	1.44	1.38	1.43	9.80	9.40	D
430	0136	5085.1	56.8	24	28	115	55	2810	531	536	781	5047.1	101	9.83	9.87	101.3	104.7	.602	.930	420	8.3	2.09	1.46	1.40	1.43	9.83	9.41	D
431	0141	5090.1	59.0	24	27	115	56	2810	529	531	781	5051.4	83	9.82	9.86	101.5	105.1	.601	.920	425	8.4	2.11	1.45	1.39	1.43	9.85	9.43	D
432	0146	5095.0	58.0	24	29	115	56	2820	530	534	780	5055.9	62	9.84	9.88	101.6	105.1	.598	.930	430	8.5	2.13	1.46	1.40	1.43	9.87	9.45	D
433	0152	5100.0	53.0	23	29	115	54	2810	529	524	780	5060.7	62	9.85	9.89	101.7	105.3	.597	.920	435	8.5	2.16	1.45	1.39	1.43	9.90	9.47	D
T.V.D. 5095.0 ft				HYDRAULIC POWER				291.2	hp	KICK TOLERANCE				2.34	lb/gal	T.B.R.		56991	COST INST	63.1	US\$/ft	COST BIT 118.7 US\$/ft						
434	0215	5105.0	51.4	11	26	119	48	2870	536	536	765	5070.0	45	9.88	9.92	102.0	105.1	.605	.830	440	8.6	2.18	1.42	1.36	1.42	9.91	9.51	D
435	0221	5110.0	49.3	9	13	120	49	2870	534	529	764	5070.5	68	9.83	9.87	102.1	105.1	.605	.860	445	8.7	2.20	1.44	1.38	1.42	9.93	9.53	D
436	0228	5115.1	46.1	11	14	120	49	2850	535	530	764	5076.6	69	9.81	9.85	102.2	105.4	.603	.890	450	8.9	2.23	1.46	1.40	1.42	9.94	9.55	D
437	0234	5120.1	46.3	13	17	120	49	2850	533	528	766	5082.8	81	9.79	9.83	102.4	105.6	.603	.880	455	9.0	2.25	1.46	1.40	1.42	9.94	9.56	D
438	0241	5125.0	45.9	14	18	120	49	2860	532	535	764	5094.7	90	9.76	9.80	102.4	105.8	.605	.880	460	9.1	2.28	1.47	1.40	1.42	9.93	9.57	D
T.V.D. 5120.4 ft				HYDRAULIC POWER				296.2	hp	KICK TOLERANCE				2.30	lb/gal	T.B.R.		60768	COST INST	74.1	US\$/ft	COST BIT 116.3 US\$/ft						
439	0247	5130.0	46.2	12	16	120	49	2860	534	537	763	5099.8	67	9.75	9.89	102.7	106.0	.605	.870	465	9.2	2.30	1.46	1.40	1.42	9.92	9.59	D
440	0304	5135.0	48.1	62	103	120	47	2810	529	530	763	5104.6	63	9.71	9.69	103.1	106.3	.612	.870	470	9.3	2.32	1.43	1.37	1.41	9.90	9.62	D
441	0312	5140.1	41.9	86	98	120	46	2820	527	522	762	5109.2	66	9.78	9.70	103.3	106.4	.616	.900	475	9.4	2.35	1.46	1.40	1.41	9.89	9.63	D
442	0319	5145.1	40.7	83	101	120	46	2810	528	528	763	5113.7	59	9.78	9.71	103.5	106.6	.615	.880	480	9.5	2.37	1.47	1.41	1.41	9.87	9.64	D
443	0326	5150.0	42.2	84	98	120	45	2800	528	529	762	5118.2	70	9.77	9.80	103.6	106.9	.614	.900	485	9.6	2.40	1.46	1.39	1.41	9.86	9.66	D
T.V.D. 5145.3 ft				HYDRAULIC POWER				287.3	hp	KICK TOLERANCE				2.34	lb/gal	T.B.R.		64915	COST INST	80.5	US\$/ft	COST BIT 114.5 US\$/ft						
445	0333	5155.0	41.8	80	94	120	46	2800	528	523	763	5123.4	86	9.78	9.84	103.8	107.1	.610	.880	490	9.8	2.42	1.47	1.41	1.41	9.85	9.66	D
446	0341	5160.0	39.8	82	99	120	46	2810	527	531	764	5128.9	83	9.83	9.88	103.8	107.2	.590	.870	495	9.9	2.44	1.48	1.42	1.42	9.85	9.66	D
+ Survey @ 5162 ft = 6.45 degrees (S74W) ;																												
448	0401	5165.0	39.8	83	101	120	46	2840	527	529	774	5135.5	92	9.80	9.95	104.0	108.2	.580	.910	500	10.0	2.47	1.48	1.42	1.42	9.86	9.66	D
449	0408	5170.1	41.4	85	103	120	46	2810	529	531	773	5141.1	93	9.80	9.94	103.8	107.6	.578	.890	505	10.1	2.49	1.47	1.40	1.42	9.87	9.67	D
450	0415	5175.1	43.9	90	100	120	49	2840	529	524	773	5145.5	88	9.86	9.92	104.0	107.8	.580	.910	510	10.3	2.52	1.48	1.42	1.42	9.88	9.67	D
T.V.D. 5170.1 ft				HYDRAULIC POWER				291.0	hp	KICK TOLERANCE				2.31	lb/gal	T.B.R.		69288	COST INST	77.3	US\$/ft	COST BIT 113.1 US\$/ft						
451	0421	5183.0	45.7	92	104	120	49	2850	529	532	771	5150.1	101	9.89	9.95	104.0	107.8	.577	.900	515	10.4	2.54	1.47	1.40	1.42	9.88	9.69	D
452	0428	5185.0	46.6	96	112	120	50	2830	529	535	728	5154.2	107	9.88	9.97	104.2	107.9	.579	.910	520	10.5	2.56	1.47	1.40	1.42	9.89	9.70	D
453	0434	5190.0	45.6	91	108	120	49	2850	530	536	697	5158.9	80	9.84	9.72	104.2	108.0	.576	.860	525	10.6	2.58	1.46	1.40	1.41	9.91	9.72	D
454	0448	5195.1	46.0	88	103	120	49	2790	519	523	703	5163.4	6	9.80	9.89	107.6	98.7	.597	.790	530	10.7	2.61	1.45	1.38	1.41	9.93	9.75	D
455	0454	5200.1	51.2	83	98	120	50	2780	520	519	714	5163.5	85	9.76	9.67	93.1	107.1	.584	.830	535	10.8	2.63	1.43	1.36	1.41*	9.94	9.79	D
T.V.D. 5195.0 ft				HYDRAULIC POWER				274.4	hp	KICK TOLERANCE				2.26	lb/gal	T.B.R.		73153	COST INST	66.3	US\$/ft	COST BIT 111.4 US\$/ft						
456	0500	5205.0	53.0	82	97	120	49	2760	524	523	722	5166.6	93	9.77	9.68	93.2	106.5	.579	.840	540	10.9	2.65	1.42	1.35	1.40*	9.95	9.83	D
457	0505	521																										

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS MW	lb/gal	TEMP (F)	RES	ohm-m	THIS BIT	EST	DXC	NX	NXB	ECD	NXMI						
		ft	ft/hr	AVG MAX	AVG	AVG	PRES	IN OUT	bbl	DEPTH	unit	IN OUT	IN OUT	IN OUT	IN OUT	ft	hr	TW										
459	0517	5220.1	52.1	80	94	120	49	2780	525	523	677	5179.2	89	9.72	9.65	94.6	105.4	.567	.850	555	11.2	2.71	1.42	1.35	1.39*	9.94	9.93	D
460	0523	5225.1	50.7	79	93	120	49	2790	525	525	684	5183.7	98	9.71	9.61	94.3	105.4	.570	.860	560	11.3	2.73	1.43	1.36	1.39*	9.94	9.97	D
T.V.D. 5219.8 ft				HYDRAULIC POWER 280.7 hp				KICK TOLERANCE 2.26 lb/gal				T.B.R. 76648 COST INST 67.0 US\$/ft				COST BIT 109.5 US\$/ft												
462	0534	5230.0	51.2	79	96	120	48	2880	535	538	705	5189.9	77	9.69	9.61	93.6	105.2	.578	.850	565	11.4	2.75	1.42	1.35	1.38*	9.91	10.0	D
463	0541	5235.0	47.9	73	84	120	49	2860	535	535	720	5193.7	81	9.68	9.69	90.9	104.8	.580	.840	570	11.5	2.77	1.45	1.38	1.38	9.89	10.0	D
464	0546	5240.0	54.3	76	94	119	49	2860	535	532	729	5197.0	133	9.68	9.59	90.9	104.4	.574	.840	575	11.6	2.78	1.42	1.34	1.38*	9.87	10.1	D
465	0551	5245.0	62.9	80	90	115	58	2870	536	540	712	5201.3	114	9.67	9.55	91.3	104.3	.572	.850	580	11.6	2.80	1.45	1.37	1.38	9.86	10.1	D
466	0555	5250.1	70.1	80	91	115	57	2870	538	538	684	5205.3	96	9.65	9.54	91.9	104.2	.575	.830	585	11.7	2.81	1.41	1.33	1.37*	9.85	10.1	D
T.V.D. 5244.6 ft				HYDRAULIC POWER 299.3 hp				KICK TOLERANCE 2.31 lb/gal				T.B.R. 79799 COST INST 48.5 US\$/ft				COST BIT 107.6 US\$/ft												
467	0559	5255.0	74.4	85	95	115	59	2880	536	540	665	5209.0	80	9.63	9.54	93.5	104.2	.568	.830	590	11.8	2.82	1.40	1.33	1.37*	9.84	10.1	D
468	0614	5260.0	58.2	84	104	115	58	2880	538	540	665	5219.1	102	9.78	9.53	99.2	105.4	.578	.820	595	11.9	2.84	1.48	1.40	1.37	9.81	10.1	D
470	0620	5265.0	51.4	81	99	115	60	2880	534	535	665	5224.0	124	9.79	9.55	100.2	105.3	.585	.820	600	12.0	2.86	1.53	1.45	1.38	9.80	10.1	D
471	0626	5270.3	49.7	78	91	115	59	2870	537	539	665	5227.0	90	9.76	9.55	100.7	105.3	.585	.830	605	12.1	2.88	1.54	1.46	1.38	9.81	10.1	D
472	0631	5275.1	58.0	77	89	115	58	2870	536	533	665	5231.2	69	9.74	9.55	101.3	105.7	.580	.820	610	12.2	2.90	1.48	1.40	1.39	9.82	10.1	D
T.V.D. 5269.5 ft				HYDRAULIC POWER 301.7 hp				KICK TOLERANCE 2.32 lb/gal				T.B.R. 82803 COST INST 57.8 US\$/ft				COST BIT 105.7 US\$/ft												
473	0638	5280.0	44.8	77	92	115	59	2860	537	540	663	5236.7	86	9.77	9.54	101.7	106.0	.593	.860	615	12.3	2.92	1.56	1.48	1.39*	9.82	10.0	D
474	0641	5285.0	92.9	77	87	115	58	2870	537	536	663	5239.6	122	9.77	9.51	101.8	106.0	.594	.830	620	12.3	2.93	1.33	1.25	1.39*	9.83	10.1	D
+ Survey @ 5288 ft = 6.07 degrees (S80W);																												
476	0651	5290.0	61.2	80	91	116	58	2860	537	534	661	5247.4	231	9.74	9.55	102.4	106.3	.595	.830	625	12.4	2.94	1.46	1.38	1.39	9.84	10.1	D
477	0657	5295.0	46.7	84	95	117	58	2870	537	537	661	5254.8	129	9.71	9.61	102.6	106.3	.596	.890	630	12.5	2.97	1.55	1.47	1.39	9.84	10.1	D
478	0703	5300.1	49.8	85	98	117	58	2870	537	537	661	5255.9	145	9.72	9.65	102.7	106.3	.601	.880	635	12.6	2.99	1.53	1.45	1.40	9.86	10.0	D
T.V.D. 5294.3 ft				HYDRAULIC POWER 300.3 hp				KICK TOLERANCE 2.28 lb/gal				T.B.R. 85915 COST INST 68.1 US\$/ft				COST BIT 104.1 US\$/ft												
479	0709	5305.1	50.2	88	98	117	58	2870	536	536	660	5260.3	104	9.69	9.67	102.9	106.5	.598	.880	640	12.7	3.00	1.52	1.44	1.40	9.87	10.0	D
480	0716	5310.0	44.7	88	102	117	58	2860	538	536	658	5266.0	102	9.71	9.68	103.1	106.7	.602	.850	645	12.8	3.03	1.55	1.47	1.41	9.88	9.98	D
481	0722	5315.0	47.6	89	102	117	58	2870	538	536	656	5271.2	130	9.69	9.69	103.3	106.9	.600	.860	650	12.9	3.05	1.54	1.45	1.41	9.87	9.96	D
482	0736	5320.0	47.6	89	109	117	57	2880	538	538	654	5278.6	108	9.70	9.68	103.5	106.1	.599	.780	655	13.0	3.06	1.53	1.44	1.41	9.85	9.94	D
483	0743	5325.1	44.5	89	102	117	59	2870	538	544	656	5286.6	336	9.71	9.67	103.6	107.1	.590	.840	660	13.1	3.09	1.57	1.49	1.42	9.84	9.91	D
T.V.D. 5319.2 ft				HYDRAULIC POWER 302.8 hp				KICK TOLERANCE 2.28 lb/gal				T.B.R. 89700 COST INST 76.3 US\$/ft				COST BIT 103.0 US\$/ft												
484	0749	5330.1	44.2	90	104	117	59	2870	538	543	654	5290.5	188	9.72	9.58	103.8	107.2	.588	.860	665	13.3	3.11	1.57	1.49	1.43	9.83	9.87	D
485	0756	5335.0	46.2	92	110	117	58	2870	537	539	653	5295.6	127	9.70	9.60	103.8	107.4	.588	.910	670	13.4	3.13	1.55	1.47	1.43	9.82	9.85	D
486	0801	5340.0	54.0	89	102	117	58	2870	537	542	655	5300.2	183	9.77	9.73	104.0	107.8	.592	.890	675	13.5	3.15	1.51	1.42	1.43	9.81	9.86	D
487	0807	5345.0	50.2	90	104	117	58	2870	538	539	655	5305.2	187	9.77	9.67	104.1	108.0	.595	.860	680	13.6	3.16	1.53	1.44	1.43	9.81	9.85	D
488	0822	5350.1	52.7	88	101	116	57	2880	537	539	651	5314.1	125	9.80	9.72	104.5	109.3	.603	.920	685	13.7	3.18	1.51	1.42	1.43	9.80	9.86	D
T.V.D. 5344.0 ft				HYDRAULIC POWER 304.2 hp				KICK TOLERANCE 2.29 lb/gal				T.B.R. 93351 COST INST 64.4 US\$/ft				COST BIT 102.0 US\$/ft												
489	0828	5355.1	51.7	78	93	116	55	2870	539	536	652	5318.0	120	9.77	9.73	104.5	108.5	.604	.840	690	13.8	3.20	1.49	1.41	1.43	9.81	9.89	D
490	0834	5360.0	50.7	79	92	116	55	2870	538	541	651	5321.6	123	9.84	9.75	104.7	108.4	.608	.820	695	13.9	3.21	1.50	1.41	1.43	9.83	9.90	D
491	0839	5365.0	59.2	84	98	116	55	2870	537	542	651	5325.1	98	9.79	9.77	104.8	108.6	.611	.840	700	13.9	3.23	1.45	1.36	1.43*	9.84	9.94	D
494	0843	5370.0	70.3	86	96	116	55	2870	538	542	650	5327.9	90	9.82	9.77	104.9	108.8	.611	.850	705	14.0	3.24	1.39	1.31	1.42*	9.85	9.98	D
495	0850	5375.1	45.0	87	104	116	55	2870	538	532	649	5332.8	121	9.80	9.77	105.1	108.9	.613	.840	710	14.1	3.26	1.52	1.44	1.42	9.86	9.98	D
T.V.D. 5368.8 ft				HYDRAULIC POWER 303.5 hp				KICK TOLERANCE 2.25 lb/gal				T.B.R. 96560 COST INST 74.5 US\$/ft				COST BIT 100.7 US\$/ft												
496	0854	5380.1	71.7	86	102	116	54	2860	538	544	649	5335.8	160	9.79	9.78	105.3	109.0	.613	.850	715	14.2	3.27	1.37	1.28	1.42*	9.88	10.0	D
497	0909	5385.0	50.1	85	118	116	56	2860	539	538	634	5342.2	137	9.78	9.63	105.4	108.9	.601	.830	720	14.3	3.29	1.50	1.41	1.42	9.88	10.0	D
498	0915	5390.0	43.6	84	97	116	54	2860	537	541	635	5347.4	133	9.81	9.62	105.3	108.9	.596	.810	725	14.4	3.31	1.52	1.43	1.42	9.89	10.0	D
499	0922	5395.0	43.7	85	100	116	53	2870	537	539	635	5348.9	245	9.80	9.70	105.3	109.1	.598	.850	730	14.5	3.32	1.51	1.42	1.42	9.90	10.0	D
500	0927	5400.1	62.4	92	106	116	56	2870	537	540	634	5351.8	109	9.80	9.74	105.3	109.2	.600	.880	735	14.6	3.34	1.43	1.34	1.42*	9.91	10.1	D
T.V.D. 5393.7 ft				HYDRAULIC POWER 303.4 hp				KICK TOLERANCE 2.21 lb/gal				T.B.R. 99889 COST INST 54.4 US\$/ft				COST BIT 99.6 US\$/ft												
501	0930	5405.1	93.4	92	101	116	55	2870	537	538	634	5354.4	174	9.80	9.75	105.4	109.4	.601	.890	740	14.7	3.35	1.30	1.21*	1.42	9.91	10.1	D
502	0936	5410.0	48.6	92	115	116	56	2860	538	534	633	5359.0	288	9.79	9.79	105.4	109.6	.605	.890	745	14.8	3.36	1.50	1.41	1.42	9.92	10.1	D
+ Survey @ 5411 ft = 6.00 degrees (S78W);																												
504	0945	5415.0	52.9	92	110	118	55	2870	538	540	634	5366.0	173	9.80	9.78	105.6	109.7	.601	.860	750	14.9	3.38	1.47	1.33	1.42	9.92	10.1	D

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXW			
		ft	ft/hr	AVG	MAX	AVG	AVG	IN	OUT	dbl	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW							
505	0953	5420.0	66.9	88	105	118	54	2870	537	537	633	5371.4	333	9.81	9.82	105.7	109.8	.599	.890	755	14.9	3.39	1.39	1.30	1.41*	9.92	10.1	D
506	0959	5425.0	48.2	85	98	118	55	2870	537	542	634	5376.5	285	9.81	9.80	105.8	109.7	.601	.870	760	15.0	3.41	1.50	1.41	1.41	9.92	10.1	D
T.V.D. 5418.5 ft				HYDRAULIC POWER 303.8 hp				KICK TOLERANCE 2.20 lb/gal				T.B.R. 102900				COST INST 70.5 US\$/ft				COST BIT 98.4 US\$/ft								
507	1005	5430.1	49.3	88	101	118	54	2850	537	534	636	5381.3	212	9.81	9.80	106.0	109.9	.603	.860	765	15.1	3.43	1.49	1.40	1.41	9.92	10.2	D
508	1012	5435.0	42.4	89	103	118	54	2870	539	541	635	5386.8	144	9.81	9.80	106.1	110.1	.604	.870	770	15.2	3.45	1.53	1.44	1.41	9.92	10.1	D
509	1019	5440.0	40.0	86	97	118	55	2870	538	541	634	5392.0	388	9.81	9.81	106.2	110.2	.594	.880	775	15.4	3.47	1.55	1.46	1.42	9.92	10.1	D
510	1034	5445.0	42.2	84	108	118	55	2880	533	535	631	5402.5	315	9.78	9.76	106.5	110.6	.599	.870	780	15.5	3.49	1.54	1.45	1.42	9.91	10.1	D
511	1041	5450.0	41.2	88	106	118	55	2880	532	527	633	5409.8	360	9.79	9.75	106.5	110.4	.600	.890	785	15.6	3.51	1.55	1.46	1.42	9.91	10.1	D
T.V.D. 5443.3 ft				HYDRAULIC POWER 295.9 hp				KICK TOLERANCE 2.18 lb/gal				T.B.R. 107058				COST INST 82.4 US\$/ft				COST BIT 97.9 US\$/ft								
513	1047	5455.1	49.8	92	105	118	55	2870	531	526	632	5412.5	642	9.78	9.75	106.7	110.5	.601	.890	790	15.7	3.52	1.49	1.39	1.42	9.91	10.1	D
514	1054	5460.1	43.5	92	114	118	56	2880	531	526	632	5419.2	243	9.77	9.76	106.9	110.8	.598	.890	795	15.8	3.54	1.54	1.45	1.42	9.91	10.1	D
515	1100	5465.0	51.7	94	107	118	56	2880	533	537	630	5424.2	280	9.79	9.76	107.2	110.9	.594	.900	800	15.9	3.56	1.49	1.39	1.42	9.91	10.1	D
516	1107	5470.0	42.0	93	103	118	56	2870	531	529	630	5429.8	202	9.77	9.77	107.4	111.0	.592	.900	805	16.0	3.58	1.55	1.45	1.42	9.91	10.1	D
517	1116	5473.2	39.2	92	103	118	56	2870	527	533	628	5435.8	167	9.78	9.83	107.7	111.4	.594	.880	PUMP SPM = 177								
518	1126	5473.2	39.2	92	103	118	56	2870	532	529	633	5439.1	196	9.75	9.88	105.7	110.8	.600	.840	PUMP SPM = 176								
519	1130	5475.0	40.0	88	131	118	56	2880	531	537	636	5441.2	155	9.73	9.82	104.0	112.0	.591	.850	810	16.2	3.60	1.56	1.47	1.43	9.89	10.1	D
T.V.D. 5468.2 ft				HYDRAULIC POWER 292.0 hp				KICK TOLERANCE 2.18 lb/gal				T.B.R. 110991				COST INST 83.7 US\$/ft				COST BIT 97.3 US\$/ft								
520	1138	5480.1	45.0	90	141	115	57	2880	528	532	646	5444.8	245	9.68	9.87	102.3	111.1	.586	.930	815	16.3	3.62	1.60	1.51	1.43	9.89	10.1	D
521	1145	5485.0	16.0	84	155	114	56	2870	531	531	659	5450.1	190	9.76	9.83	97.7	110.9	.580	.910	820	16.6	3.65	1.85	1.75*	1.44	9.87	10.1	D
522	1200	5486.0	10.7	75	155	113	56	2510	493	490	675	5461.3	201	9.62	9.91	95.3	110.4	.570	.890	PUMP SPM = 164								
523	1213	5486.0	10.7	75	155	113	56	2370	478	479	623	5469.8	120	9.62	9.94	94.3	110.6	.567	.860	PUMP SPM = 160								
524	1241	5486.0	10.7	75	155	113	56	2350	480	483	654	5479.7	69	9.61	9.55	95.7	109.9	.574	.830	PUMP SPM = 160								
525	1258	5486.0	10.7	75	155	113	56	1390	264	262	674	5486.0	42	9.56	9.50	97.4	109.5	.572	.950	PUMP SPM = 108								
Circulated 1.0 hr & POOL @ 5486 ft to inspect bit - NB #9 cut 821 ft in 16.7 hrs - graded SN-W1/1-B0/0-G01 (locked);																												
NB #10 Hughes TJI 12.25" Ser.# KM469 IADC 116 Jets 13:13:13:13 - in @ 5486 ft;																												
530	1933	5490.0	40.7	146	167	112	53	2850	522	527	677	5486.0	438	9.97	9.99	93.4	97.6	.603	.840	4.0	.3	.13	1.53	1.52	1.44	9.86	10.0	D
531	1939	5495.1	51.5	159	176	112	52	2830	523	529	723	5486.0	108	9.94	9.95	93.2	98.8	.602	.831	9.1	.4	.23	1.45	1.44	1.44	9.89	10.1	D
532	1944	5500.0	61.8	142	173	112	52	2840	524	530	736	5486.0	39	9.94	9.96	93.0	99.1	.605	.882	14.0	.4	.31	1.38	1.37	1.44*	9.91	10.1	D
T.V.D. 5493.0 ft				HYDRAULIC POWER 286.5 hp				KICK TOLERANCE 2.14 lb/gal				T.B.R. 2959				COST INST 54.9 US\$/ft				COST BIT 1818 US\$/ft								
533	1951	5505.0	45.3	133	151	112	53	2840	525	527	727	5486.0	216	9.78	9.80	92.8	98.2	.606	.950	19.0	.6	.40	1.48	1.47	1.44	9.93	10.1	D
534	2004	5510.0	50.7	126	149	112	52	2850	524	525	729	5486.0	60	9.80	9.81	93.0	98.1	.610	.880	24.0	.7	.48	1.44	1.42	1.44	9.94	10.1	D
535	2011	5515.1	47.4	125	144	112	53	2840	524	530	733	5486.0	141	9.76	9.76	93.3	98.4	.613	.930	29.1	.8	.57	1.47	1.45	1.44	9.95	10.1	D
536	2017	5520.1	48.7	112	131	112	53	2850	524	527	730	5486.0	290	9.80	9.80	93.7	100.0	.617	.980	34.1	.9	.64	1.46	1.44	1.44	9.95	10.1	D
537	2040	5525.0	38.5	92	125	109	51	2880	532	533	723	5486.0	53	9.84	9.85	94.6	99.0	.627	.890	39.0	1.0	.72	1.50	1.48	1.45	9.95	10.1	D
T.V.D. 5517.8 ft				HYDRAULIC POWER 291.0 hp				KICK TOLERANCE 2.13 lb/gal				T.B.R. 6661				COST INST 88.3 US\$/ft				COST BIT 703.6 US\$/ft								
538	2046	5530.0	50.0	90	103	111	51	2850	530	532	727	5489.8	63	9.83	9.86	94.8	99.3	.629	.890	44.0	1.1	.78	1.43	1.40	1.44	9.93	10.1	D
539	2051	5535.0	58.8	92	107	115	51	2870	529	530	728	5494.2	87	9.86	9.87	95.0	99.7	.630	.880	49.0	1.2	.83	1.40	1.37	1.44*	9.92	10.1	D
Survey @ 5538 ft = 6.37 degrees (S77W) ;																												
542	2105	5540.1	50.7	89	102	108	51	2850	530	534	728	5503.4	66	9.97	9.97	95.6	100.1	.631	.850	54.1	1.3	.90	1.42	1.40	1.44	9.90	10.2	D
543	2113	5545.1	39.2	82	102	105	51	2860	529	532	729	5506.7	131	9.98	10.0	96.0	100.4	.630	.890	59.1	1.4	.97	1.49	1.46	1.44	9.91	10.2	D
544	2119	5550.0	46.6	92	109	111	51	2870	529	534	728	5512.0	72	9.75	9.79	96.4	100.9	.628	.910	64.0	1.5	1.04	1.46	1.43	1.44	9.93	10.2	D
T.V.D. 5542.7 ft				HYDRAULIC POWER 289.4 hp				KICK TOLERANCE 2.13 lb/gal				T.B.R. 10202				COST INST 72.9 US\$/ft				COST BIT 458.8 US\$/ft								
545	2125	5555.0	62.5	94	108	82	51	2840	529	532	727	5516.3	89	9.76	9.78	96.7	101.1	.626	.910	69.0	1.6	1.07	1.28	1.26*	1.44	9.93	10.2	D
546	2131	5560.0	52.1	99	112	96	51	2870	529	530	728	5521.1	65	9.72	9.76	97.1	101.5	.623	.910	74.0	1.7	1.11	1.38	1.35	1.43	9.93	10.2	D
547	2137	5565.1	57.3	101	114	97	51	2870	529	529	729	5521.1	91	9.69	9.72	97.3	101.7	.622	.920	79.1	1.8	1.15	1.35	1.33	1.43*	9.93	10.3	D
548	2153	5570.1	46.6	104	117	107	51	2870	530	535	730	5529.4	129	9.71	9.74	97.7	103.0	.623	.890	84.1	1.9	1.18	1.45	1.42	1.43	9.92	10.3	D
549	2200	5575.0	108	90	110	112	51	2850	530	535	731	5535.3	101	9.70	9.74	97.9	102.8	.625	.920	89.0	1.9	1.20	1.21	1.18*	1.43	9.91	10.3	D
T.V.D. 5567.5 ft				HYDRAULIC POWER 289.0 hp				KICK TOLERANCE 2.14 lb/gal				T.B.R. 12424				COST INST 31.5 US\$/ft				COST BIT 345.2 US\$/ft								
550	2206	5580.0	46.0	105	116	112	51	2870	530	536	731	5538.2	64	9.65	9.69	98.1	102.4	.610	.910	94.0	2.0	1.26	1.46	1.43	1.43	9.89	10.3	D

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS MW	lb/gal	TEMP	(F)	RES	ohm-in	THIS BIT	EST	DXC	NX	NXB	ECD	NXMW					
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW								
551	2213	5585.0	44.6	102	116	112	52	2850	528	534	733	5542.0	69	9.66	9.67	98.2	102.7	.588	.910	99.0	2.1	1.32	1.48	1.45	1.43	9.88	10.3	D
553	2220	5590.1	44.5	101	120	112	52	2870	528	533	734	5546.9	107	9.65	9.68	98.5	102.9	.586	.890	104	2.2	1.38	1.49	1.45	1.43	9.85	10.3	D
554	2226	5595.1	46.6	111	144	112	52	2880	528	534	734	5552.2	122	9.69	9.72	98.7	103.1	.587	.890	109	2.4	1.44	1.48	1.44	1.44	9.81	10.3	D
555	2242	5600.0	18.7	94	137	112	52	2880	527	533	736	5565.4	139	9.80	9.82	99.1	103.6	.591	.910	114	2.5	1.53	1.76	1.72*	1.44	9.78	10.3	D
T.V.D. 5592.3 ft				HYDRAULIC POWER 286.6 hp				KICK TOLERANCE 2.19 lb/gal				T.B.R. 17156 COST INST 181.2 US\$/ft				COST BIT 288.4 US\$/ft												
556	2256	5605.0	43.6	101	178	112	51	2900	528	528	737	5568.6	100	9.80	9.80	99.5	104.0	.596	.880	119	2.7	1.58	1.49	1.45	1.44	9.80	10.3	D
557	2303	5610.0	47.9	97	193	116	50	2890	527	534	735	5573.3	128	9.79	9.81	99.6	103.7	.597	.920	124	2.8	1.63	1.46	1.42	1.44	9.81	10.3	D
558	2310	5615.1	40.8	101	128	116	52	2890	527	533	734	5579.1	85	9.79	9.80	99.9	104.0	.582	.870	129	2.9	1.69	1.53	1.48	1.44	9.82	10.3	D
559	2319	5620.1	35.1	103	137	116	53	2880	528	532	734	5585.4	145	9.77	9.81	100.3	104.5	.583	.860	134	3.0	1.77	1.58	1.53	1.45	9.84	10.2	D
560	2326	5625.0	38.5	104	124	116	52	2880	529	529	734	5591.2	124	9.74	9.78	100.6	104.7	.589	.870	139	3.1	1.83	1.55	1.50	1.45	9.85	10.2	D
T.V.D. 5617.2 ft				HYDRAULIC POWER 289.1 hp				KICK TOLERANCE 2.15 lb/gal				T.B.R. 21477 COST INST 88.3 US\$/ft				COST BIT 252.4 US\$/ft												
561	2334	5630.0	38.5	101	153	116	51	2880	529	533	734	5596.7	82	9.77	9.80	100.8	105.4	.595	.870	144	3.3	1.89	1.53	1.48	1.45	9.86	10.2	D
563	2359	5635.1	31.0	93	159	116	51	2880	530	537	733	5600.6	110	9.79	9.79	101.1	106.0	.606	.870	149	3.5	1.97	1.60	1.54	1.46	9.87	10.2	D
Date Mar 31 '86																												
564	0008	5640.1	31.5	95	111	116	51	2880	530	531	733	5607.7	71	9.82	9.82	101.6	106.0	.608	.880	154	3.6	2.04	1.59	1.54	1.47	9.86	10.1	D
565	0018	5645.0	29.7	93	121	116	52	2880	530	532	733	5614.9	55	9.81	9.82	102.0	105.7	.608	.870	159	3.8	2.11	1.62	1.56	1.47*	9.86	10.1	D
566	0028	5650.0	29.7	100	168	116	55	2880	532	537	734	5620.7	90	9.81	9.83	102.4	106.2	.593	.880	164	3.9	2.18	1.65	1.59	1.48*	9.86	10.1	D
T.V.D. 5642.0 ft				HYDRAULIC POWER 292.7 hp				KICK TOLERANCE 2.12 lb/gal				T.B.R. 27014 COST INST 114.4 US\$/ft				COST BIT 231.0 US\$/ft												
567	0038	5655.0	29.6	105	176	116	56	2900	530	533	734	5627.5	117	9.80	9.83	102.7	106.5	.589	.880	169	4.1	2.25	1.66	1.60	1.49*	9.87	10.0	D
568	0049	5660.1	23.8	97	177	116	57	2880	530	534	733	5631.7	104	9.83	9.87	103.1	106.9	.589	.910	174	4.3	2.32	1.67	1.61	1.50*	9.87	9.97	D
+ Survey @ 5662 ft = 5.78 degrees (S86W) ;																												
570	0108	5665.1	31.6	108	180	117	59	2870	528	534	740	5637.8	66	9.82	9.82	103.1	107.7	.596	.890	179	4.5	2.40	1.67	1.60	1.50*	9.89	9.93	D
571	0117	5670.0	34.0	108	133	119	58	2860	529	531	742	5642.1	51	9.84	9.85	102.7	107.2	.606	.890	184	4.6	2.46	1.64	1.57	1.51	9.90	9.90	D
572	0126	5675.0	34.1	109	123	119	58	2870	528	535	742	5646.4	104	9.84	9.86	102.9	107.3	.607	.860	189	4.8	2.52	1.64	1.57	1.52	9.90	9.86	D
T.V.D. 5666.8 ft				HYDRAULIC POWER 291.9 hp				KICK TOLERANCE 2.09 lb/gal				T.B.R. 32801 COST INST 99.4 US\$/ft				COST BIT 215.6 US\$/ft												
573	0135	5680.0	33.5	103	119	119	58	2840	529	533	742	5650.9	108	9.87	9.87	103.4	107.4	.600	.840	194	4.9	2.58	1.65	1.57	1.52	9.91	9.83	D
574	0145	5685.0	30.1	100	115	119	58	2850	531	533	741	5655.7	110	9.87	9.89	104.0	107.7	.598	.850	199	5.1	2.65	1.67	1.60	1.53*	9.91	9.79	D
575	0155	5690.1	28.0	95	115	119	58	2860	530	531	739	5660.6	119	9.87	9.90	104.4	108.1	.598	.860	204	5.3	2.72	1.69	1.61	1.54*	9.92	9.75	D
576	0218	5695.1	31.5	99	155	119	58	2890	531	537	739	5667.0	109	9.87	9.90	104.9	109.8	.598	.850	209	5.4	2.78	1.66	1.58	1.54	9.93	9.72	D
577	0230	5700.0	30.9	95	112	119	59	2860	531	531	740	5674.0	137	9.88	9.90	104.9	109.3	.602	.880	214	5.6	2.84	1.67	1.59	1.55	9.93	9.69	D
T.V.D. 5691.7 ft				HYDRAULIC POWER 295.5 hp				KICK TOLERANCE 2.06 lb/gal				T.B.R. 38692 COST INST 109.8 US\$/ft				COST BIT 203.9 US\$/ft												
578	0239	5705.0	32.5	96	114	119	59	2860	532	532	739	5679.0	78	9.93	9.97	105.3	109.6	.620	.900	219	5.7	2.91	1.66	1.58	1.56	9.94	9.67	D
579	0248	5710.0	35.5	102	121	119	60	2850	531	533	738	5683.5	75	9.89	9.92	105.5	109.0	.612	.880	224	5.9	2.96	1.64	1.55	1.56	9.95	9.67	D
580	0256	5715.1	35.9	105	130	119	59	2880	531	535	737	5687.7	73	9.92	9.95	105.4	109.6	.614	.880	229	6.0	3.02	1.63	1.54	1.56	9.96	9.68	D
581	0315	5720.1	16.3	102	138	119	59	2850	532	534	742	5693.8	58	9.94	9.98	104.5	109.8	.622	.880	234	6.3	3.13	1.86	1.77*	1.56	9.98	9.68	D
582	0409	5725.0	7.4	63	133	118	59	2820	533	537	702	5717.2	3	9.85	9.86	99.3	103.0	.614	.820	239	7.0	3.38	2.11	2.02*	1.56	9.95	9.68	D
T.V.D. 5716.5 ft				HYDRAULIC POWER 298.0 hp				KICK TOLERANCE 2.02 lb/gal				T.B.R. 48965 COST INST 461.0 US\$/ft				COST BIT 203.4 US\$/ft												
583	0439	5730.0	9.3	72	125	117	59	2820	531	536	742	5721.8	65	9.78	9.79	98.4	107.3	.605	.860	244	7.5	3.56	2.03	1.93*	1.56	9.89	9.68	D
584	0459	5735.0	17.3	93	160	117	58	2830	526	529	754	5724.1	65	9.76	9.79	99.8	107.4	.603	.890	249	7.8	3.65	1.85	1.75*	1.56	9.87	9.68	D
585	0524	5740.0	15.3	85	171	118	62	2830	528	532	767	5727.7	61	9.85	9.89	101.4	107.7	.613	.890	254	8.2	3.80	1.93	1.83*	1.56	9.84	9.68	D
+ POOH @ 5740 ft to inspect bit - NB #10 cut 254 ft in 8.2 hrs - graded SN-W1/1-B0/0-G00 (balled up & w/ 1 loose cone);																												
+ NB #11 Security MS33S 12.25" Ser.# 328501 IADC 114 Jets 9:14:14:14 - in @ 5740 ft (reamed 90 ft to bottom in 0.5 hr);																												
590	1157	5745.1	25.8	65	78	115	44	2900	525	524	804	5740.0	55	9.82	9.75	90.5	95.3	.653	.880	5.1	.3	.03	1.57	1.56	1.57	9.83	9.63	D
591	1207	5750.0	28.0	74	83	115	52	2920	525	526	815	5740.0	87	9.93	9.76	90.5	97.3	.636	.930	10.0	.5	.10	1.64	1.63	1.57	9.85	9.64	D
T.V.D. 5741.4 ft				HYDRAULIC POWER 293.9 hp				KICK TOLERANCE 2.07 lb/gal				T.B.R. 3216 COST INST 121.4 US\$/ft				COST BIT 2630 US\$/ft												
593	1219	5755.0	25.3	72	81	115	52	2890	525	523	814	5740.0	67	9.97	9.83	91.5	98.7	.624	.970	15.0	.7	.18	1.66	1.65	1.58*	9.90	9.60	D
594	1246	5760.0	24.9	70	79	115	48	2270	464	474	813	5740.0	183	9.91	9.82	93.4	98.4	.633	.950	20.0	.9	.25	1.62	1.61	1.59	9.94	9.58	D
595	1257	5765.1	29.0	79	107	115	54	2890	529	530	815	5740.0	36	9.92	9.72	93.8	98.7	.639	.920	25.1	1.1	.31	1.63	1.62	1.59	9.96	9.56	D
596	1306	5770.1	32.7	87	94	115	56	2870	527	524	816	5742.2	35	9.91	9.68	94.4	99.5	.646	.930	30.1	1.2	.36	1.61	1.60	1.50	9.98	9.55	D

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS MW	lb/gal	TEMP	(F)	RES	ohm-in	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW				
		ft	ft/hr	AVG	MAX	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW									
597	1315	5775.0	31.3	88	96	115	57	2890	529	526	815	5746.8	48	9.88	9.70	94.9	100.0	.649	.920	35.0	1.4	.41	1.63	1.61	1.60	9.99	9.54	D
	T.V.D.	5766.2	ft					HYDRAULIC POWER	296.9	hp		KICK TOLERANCE	2.00	lb/gal	T.B.R.	9499	COST INST	108.3	US\$/ft	COST BIT	844.3	US\$/ft						
598	1323	5780.0	37.7	88	96	115	57	2880	529	522	815	5750.3	53	9.90	9.69	95.3	100.3	.647	.920	40.0	1.5	.46	1.57	1.56	1.60	10.0	9.55	D
599	1332	5785.0	34.5	89	98	115	57	2880	528	523	815	5754.1	63	9.90	9.70	95.9	100.8	.648	.910	45.0	1.7	.50	1.60	1.58	1.60	10.0	9.56	D
	Survey @ 5789 ft = 5.07 degrees (S78W) ;																											
601	1350	5790.1	31.3	83	96	115	56	2880	530	524	812	5758.2	30	9.90	9.67	96.8	101.3	.645	.900	50.1	1.9	.56	1.63	1.61	1.60	9.98	9.55	D
602	1359	5795.1	33.3	86	91	115	55	2890	529	526	813	5762.5	28	9.88	9.82	97.0	101.5	.644	.930	55.1	2.0	.59	1.60	1.58	1.60	9.98	9.56	D
603	1407	5800.0	35.6	89	95	115	54	2390	530	537	815	5766.9	34	9.92	9.82	97.3	101.8	.645	.930	60.0	2.2	.63	1.56	1.54	1.60	9.98	9.58	D
	T.V.D.	5791.0	ft					HYDRAULIC POWER	300.1	hp		KICK TOLERANCE	2.00	lb/gal	T.B.R.	15023	COST INST	95.3	US\$/ft	COST BIT	538.2	US\$/ft						
605	1416	5805.0	34.3	92	104	115	54	2900	530	515	815	5771.4	36	9.81	9.77	97.5	102.1	.646	.930	65.0	2.3	.66	1.57	1.55	1.60	9.98	9.59	D
606	1425	5810.0	34.7	100	109	115	54	2890	530	531	816	5776.2	47	9.80	9.71	97.9	102.5	.648	.940	70.0	2.4	.70	1.57	1.55	1.59	9.98	9.61	D
607	1434	5815.1	32.8	97	108	115	54	2890	529	537	817	5781.8	57	9.77	9.66	98.2	102.7	.648	.940	75.1	2.6	.73	1.59	1.57	1.59	9.97	9.62	D
608	1455	5820.1	34.4	93	99	115	54	2910	529	531	818	5788.6	47	9.75	9.68	98.4	104.0	.650	.920	80.1	2.8	.77	1.58	1.55	1.59	9.93	9.63	D
609	1501	5825.0	51.2	86	94	115	53	2910	529	526	819	5791.4	51	9.86	9.67	98.6	103.5	.654	.940	85.0	2.9	.79	1.45	1.43	1.59*	9.91	9.67	D
	T.V.D.	5815.9	ft					HYDRAULIC POWER	297.6	hp		KICK TOLERANCE	2.03	lb/gal	T.B.R.	19928	COST INST	66.3	US\$/ft	COST BIT	409.4	US\$/ft						
610	1507	5830.0	47.4	88	96	115	52	2900	529	531	820	5794.8	57	9.86	9.68	98.8	103.3	.655	.940	90.0	3.0	.81	1.47	1.44	1.58*	9.91	9.71	D
611	1515	5835.0	41.1	92	100	115	52	2900	528	531	821	5799.1	60	9.83	9.66	99.1	103.6	.654	.970	95.0	3.1	.84	1.51	1.49	1.58*	9.91	9.75	D
612	1522	5840.1	40.4	96	103	115	53	2890	528	524	820	5803.4	61	9.80	9.65	99.5	103.9	.656	.940	100	3.2	.86	1.53	1.51	1.57	9.90	9.79	D
613	1530	5845.1	36.2	99	106	115	53	2890	529	530	819	5808.3	59	9.78	9.66	99.9	104.1	.656	.950	105	3.4	.89	1.57	1.54	1.57	9.89	9.80	D
614	1540	5850.1	30.9	95	105	115	54	2890	528	527	818	5813.5	52	9.76	9.66	100.4	104.5	.653	.960	110	3.5	.93	1.62	1.59	1.57	9.89	9.80	D
	T.V.D.	5840.7	ft					HYDRAULIC POWER	293.3	hp		KICK TOLERANCE	2.04	lb/gal	T.B.R.	24499	COST INST	109.9	US\$/ft	COST BIT	337.2	US\$/ft						
615	1558	5855.1	32.2	94	102	115	53	2900	528	528	818	5819.6	29	9.77	9.75	100.9	104.9	.650	.930	115	3.7	.96	1.60	1.57	1.58	9.88	9.80	D
616	1607	5860.1	34.7	97	105	115	53	2900	528	531	817	5823.9	28	9.69	9.76	101.1	105.0	.645	.930	120	3.9	.99	1.57	1.54	1.57	9.89	9.82	D
618	1615	5865.0	35.9	98	107	115	53	2880	528	533	816	5830.3	28	9.73	9.75	101.5	105.3	.650	.960	125	4.0	1.02	1.57	1.54	1.57	9.89	9.84	D
619	1624	5870.0	33.6	100	108	115	53	2890	528	525	816	5836.4	50	9.77	9.65	101.7	105.6	.653	.960	130	4.2	1.05	1.59	1.56	1.57	9.87	9.85	D
620	1632	5875.0	34.9	96	105	115	53	2890	528	530	816	5841.9	45	9.76	9.65	102.0	105.8	.654	.970	135	4.3	1.07	1.58	1.55	1.57	9.85	9.86	D
	T.V.D.	5855.6	ft					HYDRAULIC POWER	293.9	hp		KICK TOLERANCE	2.05	lb/gal	T.B.R.	29841	COST INST	97.4	US\$/ft	COST BIT	295.3	US\$/ft						
621	1640	5880.1	37.6	95	104	115	53	2900	528	529	816	5846.4	52	9.60	9.62	102.2	106.1	.655	.950	140	4.4	1.09	1.56	1.53	1.57	9.85	9.88	D
	Survey @ 5882 ft = 5.53 degrees (S80W) ;																											
623	1656	5885.1	41.2	88	99	115	53	2910	529	520	813	5850.5	45	9.59	9.72	102.2	105.8	.655	.920	145	4.6	1.12	1.53	1.50	1.56*	9.84	9.92	D
624	1704	5890.0	37.6	87	99	115	47	2910	529	528	813	5853.3	41	9.73	9.72	102.2	106.3	.658	.950	150	4.7	1.13	1.50	1.47	1.56*	9.82	9.96	D
625	1713	5895.0	31.7	87	95	115	47	2920	525	523	815	5858.7	40	9.76	9.71	102.5	106.5	.629	.940	155	4.9	1.15	1.56	1.53	1.56	9.80	9.98	D
626	1722	5900.0	33.2	87	95	115	48	2930	525	529	816	5863.9	40	9.77	9.68	102.7	106.9	.624	.970	160	5.0	1.17	1.55	1.52	1.55	9.80	10.0	D
	T.V.D.	5890.4	ft					HYDRAULIC POWER	288.5	hp		KICK TOLERANCE	2.08	lb/gal	T.B.R.	34763	COST INST	102.3	US\$/ft	COST BIT	264.8	US\$/ft						
627	1732	5905.1	30.1	86	94	115	48	2930	524	521	815	5869.6	40	9.72	9.72	103.1	107.2	.629	.970	165	5.2	1.20	1.58	1.55	1.55	9.81	10.0	D
628	1742	5910.1	30.0	88	99	115	48	2930	525	518	816	5875.5	51	9.63	9.67	103.5	107.4	.611	.950	170	5.3	1.22	1.58	1.55	1.56	9.81	10.0	D
630	1805	5915.0	29.5	91	99	115	48	2890	526	518	812	5885.0	49	9.54	9.72	104.0	108.1	.637	.970	175	5.6	1.25	1.59	1.55	1.56	9.78	10.0	D
631	1814	5920.0	32.2	94	104	115	47	2900	526	520	813	5890.5	39	9.56	9.73	104.2	108.0	.638	.940	180	5.7	1.27	1.56	1.52	1.55	9.78	10.1	D
632	1824	5925.0	30.2	95	103	115	47	2910	525	529	812	5895.7	45	9.65	9.72	104.5	108.4	.644	.900	185	5.9	1.29	1.57	1.53	1.55	9.77	10.1	D
	T.V.D.	5915.3	ft					HYDRAULIC POWER	284.8	hp		KICK TOLERANCE	2.07	lb/gal	T.B.R.	40658	COST INST	112.5	US\$/ft	COST BIT	245.2	US\$/ft						
633	1844	5930.0	29.5	87	100	115	46	2900	526	531	810	5906.3	47	9.66	9.74	105.1	108.9	.642	.930	190	6.2	1.33	1.58	1.55	1.55	9.72	10.1	D
634	1845	5935.4	29.9	91	95	116	47	2900	526	525	810	5906.6	46	9.66	9.74	105.1	108.9	.642	.910	195	6.2	1.33	1.59	1.55	1.55	9.72	10.1	D
635	1855	5940.0	28.3	86	96	116	47	2920	525	529	810	5911.5	49	9.81	9.72	105.4	109.2	.645	.910	200	6.4	1.35	1.60	1.57	1.56	9.70	10.1	D
636	1914	5945.0	28.6	79	89	116	46	2920	526	528	803	5914.8	46	9.71	9.73	105.8	109.4	.645	.910	205	6.6	1.37	1.59	1.55	1.56	9.71	10.1	D
637	1925	5950.0	27.7	72	81	116	46	2900	526	523	806	5920.6	27	9.73	9.78	105.8	109.4	.646	.950	210	6.7	1.39	1.60	1.56	1.56	9.73	10.1	D
	T.V.D.	5940.0	ft					HYDRAULIC POWER	289.5	hp		KICK TOLERANCE	2.09	lb/gal	T.B.R.	46728	COST INST	122.5	US\$/ft	COST BIT	230.5	US\$/ft						
638	1937	5955.1	26.0	67	74	116	45	2930	524	538	804	5926.4	25	9.69	9.77	106.0	109.7	.635	.950	215	6.9	1.42	1.60	1.56	1.56	9.76	10.1	D
639	1948	5960.1	27.3	68	75	116	45	2910	525	523	802	5931.8	24	9.70	9.77	106.2	109.9	.635	.940	220	7.1	1.44	1.59	1.55	1.56	9.78	10.1	D
640	1959	5965.0	25.4	66	72	116	45	2920	525	527	802	5937.4	36	9.69	9.74	106.3	110.3	.642	.960	225	7.3	1.46	1.60	1.56	1.56	9.79	10.1	D
641	2011	5970.0	25.6	67	77	116	45	2920	526	522	802	5942.7	42	9.73	9.72	106.7	110.6	.636	.960	230	7.5	1.48	1.60	1.56	1.56	9.80	10.1	D

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS BIT	EST	DXC	NX	NXB	ECD	NXMW					
		ft	ft/hr	AVG	MAX	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW									
642	2033	5975.0	22.8	70	79	116	46	2930	526	520	793	5949.1	34	9.61	9.76	107.1	110.5	.640	.920	235	7.8	1.51	1.64	1.60	1.56	9.78	10.1	D
T.V.D. 5964.9 ft				HYDRAULIC POWER 287.0 hp				KICK TOLERANCE				2.05 lb/gal		T.B.R.		53782	COST INST	148.9	US\$/ft	COST BIT	221.0	US\$/ft						
Survey @ 5976 ft = 5.28 degrees (S84W);																												
645	2045	5980.1	25.2	65	74	116	50	2910	525	509	795	5954.4	44	9.59	9.79	107.2	111.7	.649	.930	240	8.0	1.54	1.66	1.62	1.57	9.78	10.1	D
646	2057	5985.1	23.8	63	73	116	51	2920	524	529	797	5960.3	41	9.57	9.75	107.6	111.9	.644	.950	245	8.2	1.56	1.69	1.64	1.57	9.76	10.0	D
647	2109	5990.0	25.4	62	73	116	51	2920	525	521	797	5965.0	37	9.73	9.79	107.8	111.6	.648	.940	250	8.4	1.59	1.67	1.63	1.58	9.75	10.0	D
648	2120	5995.0	26.0	62	70	116	50	2930	525	531	795	5969.9	37	9.71	9.79	108.0	112.1	.649	.950	255	8.6	1.61	1.66	1.62	1.58	9.74	10.0	D
649	2132	6000.0	25.9	59	70	116	50	2930	525	496	796	5974.4	42	9.75	9.79	108.1	111.9	.652	.950	260	8.7	1.63	1.66	1.61	1.59	9.74	9.99	D
T.V.D. 5989.7 ft				HYDRAULIC POWER 287.1 hp				KICK TOLERANCE				2.06 lb/gal		T.B.R.		60667	COST INST	131.2	US\$/ft	COST BIT	213.0	US\$/ft						
650	2144	6005.1	25.8	60	68	116	50	2930	526	523	797	5977.2	37	9.84	9.76	108.1	112.1	.630	.970	265	8.9	1.66	1.66	1.61	1.59	9.75	9.98	D
651	2223	6010.0	26.6	60	63	116	50	2940	526	523	752	5981.5	13	9.72	9.83	107.2	109.0	.637	.760	270	9.0	1.66	1.65	1.61	1.59	9.74	9.97	D
652	2249	6015.0	28.3	49	58	116	49	2930	525	533	758	5990.1	38	9.84	9.82	106.3	111.6	.620	.950	275	9.3	1.69	1.61	1.56	1.59	9.81	9.98	D
653	2303	6020.0	26.5	53	61	116	48	2930	523	526	754	5995.9	43	9.88	9.83	106.6	111.5	.625	.940	280	9.5	1.72	1.61	1.57	1.59	9.84	9.99	D
654	2314	6025.0	27.2	60	70	116	48	2930	525	532	757	6000.6	46	9.85	9.85	106.8	111.2	.641	.960	285	9.7	1.74	1.59	1.55	1.59	9.87	10.0	D
T.V.D. 6014.5 ft				HYDRAULIC POWER 291.4 hp				KICK TOLERANCE				1.98 lb/gal		T.B.R.		67113	COST INST	124.8	US\$/ft	COST BIT	205.7	US\$/ft						
655	2323	6030.1	32.0	65	74	116	47	2920	524	525	756	6004.7	50	9.86	9.89	106.9	111.4	.645	.930	290	9.8	1.75	1.54	1.49	1.58*	9.90	10.1	D
656	2334	6035.1	29.3	66	73	116	47	2920	524	525	755	6009.5	38	9.86	9.94	107.1	111.4	.651	.940	295	10.0	1.77	1.56	1.52	1.58	9.93	10.1	D
657	2357	6040.1	27.8	66	77	116	47	2940	525	519	750	6015.0	42	9.84	9.76	107.4	112.5	.659	.940	300	10.2	1.79	1.57	1.53	1.58	9.95	10.1	D
Date Apr 1 '86																												
658	0000	6045.1	30.1	71	83	116	47	2930	524	531	751	6018.3	44	9.85	9.75	107.6	111.7	.656	.940	305	10.3	1.80	1.50	1.45	1.57*	9.96	10.2	D
659	0014	6050.0	35.4	71	83	116	48	2930	525	529	750	6021.4	39	9.83	9.79	107.8	111.9	.645	.940	310	10.5	1.82	1.51	1.46	1.57*	9.97	10.2	D
T.V.D. 6039.4 ft				HYDRAULIC POWER 296.3 hp				KICK TOLERANCE				1.92 lb/gal		T.B.R.		72609	COST INST	95.8	US\$/ft	COST BIT	198.0	US\$/ft						
660	0024	6055.0	30.0	67	82	116	48	2920	527	521	750	6025.3	41	9.84	9.76	108.1	112.2	.643	.960	315	10.6	1.83	1.55	1.51	1.56*	9.98	10.2	D
661	0032	6060.1	38.4	69	84	116	43	2930	527	513	749	6028.8	40	9.80	9.75	108.2	112.3	.641	.990	320	10.8	1.85	1.48	1.43	1.56*	9.99	10.3	D
662	0041	6065.1	32.4	62	76	116	48	2930	527	517	747	6032.9	40	9.79	9.73	108.3	112.8	.643	.980	325	10.9	1.86	1.53	1.48	1.55*	9.99	10.3	D
Survey @ 6070 ft = 5.00 degrees (S83W);																												
664	0103	6070.1	38.1	63	75	116	46	2910	528	538	743	6037.6	34	9.63	9.77	108.9	112.9	.649	.960	330	11.1	1.88	1.47	1.42	1.55*	10.0	10.4	D
665	0112	6075.1	32.1	69	79	116	47	2930	528	519	744	6041.1	178	9.68	9.77	108.9	112.6	.654	.948	335	11.2	1.89	1.52	1.47	1.54*	10.0	10.4	D
T.V.D. 6064.3 ft				HYDRAULIC POWER 291.3 hp				KICK TOLERANCE				1.90 lb/gal		T.B.R.		77773	COST INST	105.9	US\$/ft	COST BIT	191.0	US\$/ft						
666	0120	6080.0	36.4	69	77	116	47	2900	528	522	743	6046.4	97	9.68	9.78	109.0	112.9	.650	.954	340	11.4	1.90	1.49	1.44	1.54*	9.99	10.4	D
667	0130	6085.0	30.1	70	78	116	48	2930	527	528	743	6051.5	243	9.67	9.77	109.0	112.9	.656	.950	345	11.5	1.92	1.56	1.51	1.54	9.97	10.5	D
668	0141	6090.0	27.8	70	78	116	49	2930	526	525	743	6057.8	144	9.64	9.75	109.2	113.0	.650	.970	350	11.7	1.94	1.60	1.55	1.54	9.92	10.5	D
670	0150	6095.1	34.4	74	81	116	49	2930	527	519	742	6062.0	276	9.56	9.78	109.4	113.4	.653	.958	355	11.8	1.95	1.54	1.49	1.53*	9.88	10.5	D
671	0154	6100.1	65.4	72	82	116	48	2930	525	524	741	6065.3	306	9.53	9.75	109.4	113.4	.654	.990	360	11.9	1.96	1.35	1.29*	1.53	9.86	10.5	D
T.V.D. 6089.1 ft				HYDRAULIC POWER 282.7 hp				KICK TOLERANCE				1.97 lb/gal		T.B.R.		82670	COST INST	51.9	US\$/ft	COST BIT	184.7	US\$/ft						
672	0211	6105.0	33.2	68	80	116	48	2930	525	533	737	6069.6	74	9.58	9.78	109.0	113.5	.658	.980	365	12.1	1.98	1.56	1.50	1.53	9.79	10.5	D
673	0219	6110.0	34.9	69	77	116	48	2930	525	518	727	6073.7	201	9.65	9.77	109.8	113.5	.647	.966	370	12.2	1.99	1.54	1.49	1.53*	9.76	10.6	D
674	0228	6115.0	36.4	70	78	116	48	2930	524	523	667	6078.5	94	9.75	9.80	109.8	113.7	.632	.990	375	12.4	2.00	1.54	1.49	1.52*	9.73	10.6	D
675	0235	6120.1	38.5	68	76	116	49	2930	523	531	660	6082.7	179	9.73	9.78	109.8	113.9	.625	.990	380	12.5	2.02	1.53	1.48	1.52*	9.72	10.7	D
676	0245	6125.1	29.8	67	75	116	49	2920	522	534	661	6087.3	50	9.72	9.77	109.8	114.1	.621	.990	385	12.7	2.03	1.61	1.55	1.52	9.72	10.6	D
T.V.D. 6113.9 ft				HYDRAULIC POWER 282.9 hp				KICK TOLERANCE				2.04 lb/gal		T.B.R.		87755	COST INST	114.0	US\$/ft	COST BIT	179.4	US\$/ft						
677	0254	6130.0	35.9	67	76	116	48	2920	522	523	660	6091.2	269	9.72	9.79	109.9	114.1	.629	.980	390	12.8	2.05	1.55	1.49	1.52	9.73	10.7	D
678	0309	6135.0	41.3	67	78	116	49	2930	521	522	659	6100.5	36	9.70	9.90	110.2	114.3	.637	.958	395	12.9	2.06	1.51	1.46	1.51*	9.73	10.7	D
679	0317	6140.0	35.7	66	75	116	50	2940	521	526	657	6102.8	60	9.75	9.93	110.3	114.3	.624	.966	400	13.1	2.08	1.56	1.51	1.51	9.75	10.7	D
680	0328	6145.1	29.5	69	79	116	51	2930	520	533	659	6108.1	54	9.78	9.95	110.1	114.4	.633	.960	405	13.3	2.09	1.63	1.57	1.52	9.77	10.7	D
681	0339	6150.1	26.0	70	82	116	51	2930	520	520	662	6115.1	71	9.77	9.96	109.9	114.8	.629	.950	410	13.4	2.11	1.66	1.60	1.52	9.79	10.7	D
T.V.D. 6138.8 ft				HYDRAULIC POWER 280.4 hp				KICK TOLERANCE				1.99 lb/gal		T.B.R.		93282	COST INST	133.7	US\$/ft	COST BIT	175.2	US\$/ft						
683	0349	6155.0	31.3	72	82	116	51	2930	520	523	663	6121.2	56	9.76	9.92	109.9	114.8	.628	.960	415	13.6	2.13	1.60	1.54	1.52	9.82	10.7	D
684	0400	6160.0	25.9	72	81	116	51	2940	520	527	665	6127.4	52	9.78	9.87	110.1	115.0	.635	.950	420	13.8	2.15	1.65	1.60	1.53	9.82	10.6	D
Survey @ 6162 ft = 4.09 degrees (S72W);																												

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-in	THIS BIT	EST	DXC	NX	NXB	ECD	NXMW				
		ft	ft/hr	AVG	MAX	AVG	AVG	IN	OUT	bbt	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW							
686	0420	6165.0	30.9	70	82	116	51	2940	520	517	666	6134.7	54	9.78	9.95	110.3	115.3	.619	.942	425	14.0	2.17	1.60	1.54	1.53	9.82	10.6	D
687	0433	6170.0	29.3	66	84	116	50	2940	520	522	668	6140.6	41	9.81	9.95	110.3	115.7	.616	.954	430	14.2	2.19	1.61	1.55	1.53	9.83	10.6	D
688	0440	6175.1	31.4	65	76	116	50	2920	520	522	600	6145.2	39	9.69	9.94	110.5	115.2	.616	.949	435	14.3	2.20	1.58	1.52	1.53	9.84	10.6	D
T.V.D. 6163.6 ft				HYDRAULIC POWER				278.7 hp	KICK TOLERANCE				1.95 lb/gal		T.B.R.		99477	COST INST		108.1 US\$/ft	COST BIT		172.3 US\$/ft					
689	0453	6180.1	22.0	66	82	116	50	2930	521	523	590	6151.2	48	9.82	9.94	110.8	115.8	.623	.948	440	14.6	2.22	1.67	1.61	1.54	9.86	10.6	D
690	0504	6185.0	27.0	72	82	116	52	2930	522	531	591	6156.8	46	9.75	9.92	111.0	115.7	.624	.910	445	14.7	2.24	1.65	1.59	1.54	9.85	10.6	D
691	0515	6190.1	27.3	75	85	116	58	2920	522	529	593	6161.0	40	9.68	9.93	111.3	115.7	.631	.950	450	14.9	2.26	1.71	1.64	1.55*	9.85	10.6	D
692	0539	6195.0	24.1	73	83	116	58	2890	518	523	601	6168.3	49	9.69	9.92	108.8	116.5	.623	.930	455	15.2	2.29	1.75	1.68	1.56*	9.84	10.5	D
694	0551	6200.1	24.7	69	77	116	59	2870	519	517	610	6174.3	35	9.72	9.95	106.6	115.5	.610	.930	460	15.4	2.31	1.76	1.69	1.57*	9.83	10.5	D
T.V.D. 6188.5 ft				HYDRAULIC POWER				275.8 hp	KICK TOLERANCE				1.95 lb/gal		T.B.R.		106649	COST INST		137.4 US\$/ft	COST BIT		170.8 US\$/ft					
695	0603	6205.1	25.4	66	77	116	59	2900	518	512	620	6178.4	33	9.83	9.93	106.2	115.2	.613	.960	465	15.6	2.34	1.74	1.68	1.57*	9.81	10.4	D
696	0615	6210.0	25.1	64	72	116	58	2900	519	512	627	6183.6	31	9.91	9.92	107.2	115.0	.614	.960	470	15.8	2.36	1.75	1.68	1.58*	9.80	10.4	D
697	0627	6215.0	25.0	64	72	116	59	2860	519	523	633	6189.1	36	9.90	9.83	108.1	115.2	.618	.950	475	16.0	2.38	1.75	1.69	1.59*	9.80	10.4	D
698	0638	6220.0	25.9	65	75	116	58	2880	520	521	638	6193.6	31	9.90	9.85	108.8	115.2	.630	.930	480	16.2	2.40	1.74	1.67	1.60*	9.81	10.3	D
699	0657	6225.1	27.2	67	76	116	59	2910	520	523	644	6197.9	36	9.91	9.83	108.3	115.5	.615	.930	485	16.4	2.43	1.71	1.65	1.60	9.86	10.3	D
T.V.D. 6213.3 ft				HYDRAULIC POWER				283.3 hp	KICK TOLERANCE				1.92 lb/gal		T.B.R.		113656	COST INST		124.8 US\$/ft	COST BIT		169.2 US\$/ft					
700	0709	6230.1	26.1	64	74	123	58	2890	521	522	655	6202.5	40	9.90	9.81	106.8	115.2	.612	.940	490	16.6	2.45	1.74	1.67	1.61	9.89	10.2	D
701	0719	6235.0	28.7	63	74	125	59	2910	521	519	662	6206.9	36	9.87	9.76	106.4	115.0	.609	.960	495	16.8	2.48	1.71	1.64	1.61	9.92	10.2	D
702	0731	6240.0	26.3	57	66	125	59	2890	521	529	669	6211.7	40	9.82	9.75	107.5	115.0	.615	.970	500	16.9	2.50	1.73	1.66	1.62	9.95	10.2	D
703	0741	6245.0	28.1	64	74	125	59	2910	522	523	674	6216.3	45	9.79	9.77	108.4	115.1	.623	.980	505	17.1	2.52	1.71	1.64	1.62	9.98	10.2	D
704	0752	6250.1	28.8	53	62	125	59	2910	522	521	677	6220.8	42	9.82	9.81	109.0	115.3	.628	.960	510	17.3	2.55	1.71	1.63	1.62	9.97	10.2	D
T.V.D. 6238.2 ft				HYDRAULIC POWER				284.2 hp	KICK TOLERANCE				1.86 lb/gal		T.B.R.		120431	COST INST		117.9 US\$/ft	COST BIT		167.1 US\$/ft					
705	0804	6255.1	24.8	52	64	125	58	2910	522	518	683	6225.0	42	9.76	9.82	108.9	115.4	.629	.950	515	17.5	2.57	1.75	1.67	1.63	9.96	10.2	D
706	0825	6260.1	28.9	49	58	123	59	2890	523	523	689	6231.6	34	9.86	9.84	109.2	115.9	.616	.950	520	17.7	2.59	1.70	1.63	1.63	9.93	10.2	D
708	0835	6265.1	28.1	53	61	123	59	2910	522	526	692	6236.6	48	9.80	9.81	109.3	115.6	.615	.970	525	17.8	2.62	1.72	1.64	1.63	9.91	10.1	D
709	0847	6270.0	26.5	54	61	123	59	2910	520	519	703	6241.9	62	9.80	9.80	108.4	115.8	.615	.970	530	18.0	2.64	1.73	1.66	1.64	9.90	10.1	D
710	0857	6275.0	28.3	50	57	123	59	2920	520	517	723	6247.3	58	9.74	9.81	103.3	115.3	.597	.980	535	18.2	2.66	1.72	1.64	1.64	9.89	10.1	D
T.V.D. 6262.9 ft				HYDRAULIC POWER				279.1 hp	KICK TOLERANCE				1.89 lb/gal		T.B.R.		127225	COST INST		120.1 US\$/ft	COST BIT		165.3 US\$/ft					
711	0907	6280.0	30.5	49	56	123	58	2920	520	522	730	6251.7	56	9.68	9.83	106.4	115.0	.592	.980	540	18.4	2.68	1.69	1.61	1.64	9.88	10.1	D
712	0917	6285.1	31.5	48	54	123	59	2920	521	522	742	6255.3	55	9.73	9.83	106.1	115.0	.609	.990	545	18.5	2.70	1.68	1.61	1.64	9.88	10.2	D
+ Survey @ 6268 ft = 4.71 degrees (S73W) ;																												
715	0934	6290.1	32.8	45	53	123	56	2910	523	527	738	6257.2	38	9.95	9.87	110.6	115.1	.636	.940	550	18.7	2.72	1.65	1.57	1.64	9.88	10.2	D
716	0943	6295.0	32.7	44	51	123	53	2910	523	523	738	6261.4	39	9.90	9.89	111.3	115.3	.641	.950	555	18.8	2.73	1.61	1.54	1.63	9.87	10.2	D
717	0950	6300.0	39.5	48	54	123	53	2920	522	522	738	6265.0	37	9.88	9.88	111.6	115.5	.645	.950	560	19.0	2.74	1.56	1.48	1.63*	9.87	10.3	D
T.V.D. 6287.8 ft				HYDRAULIC POWER				287.3 hp	KICK TOLERANCE				1.90 lb/gal		T.B.R.		132819	COST INST		86.0 US\$/ft	COST BIT		162.7 US\$/ft					
718	0957	6305.0	42.7	47	55	123	53	2920	523	525	737	6268.1	36	9.83	9.88	111.9	115.8	.647	.940	565	19.1	2.76	1.54	1.46	1.62*	9.87	10.3	D
719	1012	6310.1	21.5	45	54	123	53	2920	522	524	733	6274.8	42	9.91	9.81	112.4	116.2	.647	.930	570	19.3	2.78	1.74	1.67	1.63	9.89	10.3	D
720	1032	6315.1	16.2	45	57	123	44	2920	521	530	731	6285.5	46	9.87	9.82	112.8	116.7	.633	.970	575	19.6	2.80	1.71	1.64	1.63	9.89	10.3	D
721	1055	6320.0	21.0	50	59	123	53	2910	520	524	719	6293.5	117	10.0	9.88	113.0	117.0	.617	.960	580	19.9	2.83	1.73	1.65	1.63	9.95	10.3	D
722	1110	6325.0	20.0	49	60	120	54	2900	520	527	719	6303.3	77	9.85	9.86	113.1	117.1	.614	.990	585	20.1	2.85	1.75	1.67	1.64	9.96	10.2	D
T.V.D. 6312.6 ft				HYDRAULIC POWER				285.5 hp	KICK TOLERANCE				1.83 lb/gal		T.B.R.		141341	COST INST		169.5 US\$/ft	COST BIT		162.6 US\$/ft					
723	1124	6330.0	20.7	46	54	120	54	2930	520	512	719	6308.9	55	9.82	9.84	113.2	117.3	.615	.970	590	20.4	2.87	1.73	1.66	1.64	9.97	10.2	D
724	1140	6335.1	19.8	47	55	120	54	2920	521	516	724	6312.4	50	9.90	9.81	113.4	117.6	.619	.960	595	20.6	2.90	1.75	1.67	1.64	9.99	10.2	D
725	1155	6340.1	19.2	50	59	120	52	2910	521	526	724	6317.1	54	9.92	9.79	113.7	117.9	.621	.950	600	20.9	2.92	1.74	1.67	1.65	9.97	10.2	D
726	1210	6345.0	19.7	49	58	120	52	2920	522	525	728	6320.8	43	9.86	9.81	113.9	118.0	.633	.950	605	21.1	2.94	1.73	1.66	1.65	9.96	10.2	D
727	1227	6350.0	18.3	42	52	120	51	2910	524	524	726	6326.2	57	9.89	9.80	114.1	118.2	.640	.940	610	21.4	2.97	1.75	1.67	1.65	9.95	10.2	D
T.V.D. 6337.4 ft				HYDRAULIC POWER				288.1 hp	KICK TOLERANCE				1.83 lb/gal		T.B.R.		150561	COST INST		186.0 US\$/ft	COST BIT		163.1 US\$/ft					
+ Survey @ 6352 ft = 4.54 degrees (S72W) ;																												
729	1302	6355.0	19.8	37	46	120	52	2920	523	527	722	6334.7	51	9.89	9.82	113.9	118.1	.616	.950	615	21.6	2.99	1.74	1.66	1.65	9.92	10.2	D
730	1317	6360.1	20.2	39	47	120	52	2920	524	519	729	6339.7																

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS BIT	EST	DXC	NX	NXB	ECD	NXMW						
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW									
731	1334	6365.1	17.8	38	47	120	52	2920	523	523	727	6345.0	41	9.94	9.74	114.3	118.6	.647	.960	625	22.2	3.03	1.76	1.68	1.66	9.96	10.2	D	
733	1350	6370.1	19.2	40	51	120	52	2920	522	521	725	6349.5	35	9.88	9.76	113.9	118.6	.651	.960	630	22.4	3.05	1.74	1.66	1.66	9.97	10.2	D	
734	1407	6375.0	17.3	38	56	120	52	2920	522	536	722	6352.0	38	9.85	9.74	113.9	118.4	.647	.950	635	22.7	3.07	1.76	1.68	1.66	9.99	10.2	D	
T.V.D. 6362.3 ft				HYDRAULIC POWER 287.2 hp				KICK TOLERANCE				1.81 lb/gal T.B.R. 160125				COST INST 195.8 US\$/ft				COST BIT 163.9 US\$/ft									
735	1424	6380.0	17.5	39	46	120	52	2910	522	522	719	6357.5	43	9.90	9.78	114.4	118.6	.643	.940	640	23.0	3.09	1.76	1.68	1.67	9.99	10.2	D	
+ POOL @ 6383 ft to inspect bit - NB #11 cut 642 ft in 23.1 hrs - graded SN-W1/2-B1/0-G00;																													
+ NB #12 Security MS33S 12.25" Ser.# 337525 1ADC 114 Jets 10:14:14:14 - in @ 6383 ft (washed 60 ft to bottom in 0.5 hr);																													
740	2029	6385.0	16.0	124	137	119	48	2480	537	537	607	6383.0	48	9.91	9.90	96.9	103.7	.676	.970	2.0	.1	.02	1.73	1.72	1.67	9.99	10.1	D	
741	2040	6390.1	16.0	123	136	119	48	2500	537	538	604	6383.0	70	9.91	9.95	96.6	105.3	.670	.980	7.1	.3	.12	1.74	1.73	1.68	10.0	10.1	D	
742	2105	6395.0	15.9	126	139	115	47	2480	543	538	598	6383.0	70	9.86	9.89	98.7	108.9	.672	1.170	12.0	.7	.22	1.72	1.71	1.68	10.0	10.1	D	
743	2136	6400.0	15.2	119	133	111	47	2500	537	538	599	6383.0	12	9.86	9.87	101.8	108.0	.636	.980	17.0	1.0	.31	1.74	1.73	1.69	9.94	10.1	D	
T.V.D. 6387.1 ft				HYDRAULIC POWER 269.2 hp				KICK TOLERANCE				1.82 lb/gal T.B.R. 6824				COST INST 223.9 US\$/ft				COST BIT 1785 US\$/ft									
744	2157	6405.0	14.7	119	135	111	50	2490	540	544	615	6383.0	50	9.84	9.79	100.0	109.0	.643	.980	22.0	1.3	.40	1.78	1.76	1.70*	9.95	10.0	D	
745	2214	6410.1	17.1	122	134	111	50	2490	537	535	651	6384.0	46	9.77	9.84	95.8	108.5	.605	1.000	27.1	1.6	.47	1.74	1.72	1.70	9.92	9.99	D	
+ Survey @ 6413 ft = 4.57 degrees (S79W);																													
747	2241	6415.1	17.2	126	142	111	52	2470	540	544	652	6385.9	59	9.83	9.85	102.1	108.7	.609	1.000	32.1	1.9	.54	1.76	1.74	1.71	9.90	9.97	D	
748	2259	6420.0	15.9	123	140	111	57	2470	540	537	656	6390.4	49	9.86	9.78	104.9	110.2	.635	.970	37.0	2.2	.62	1.84	1.82	1.72*	9.89	9.93	D	
749	2318	6425.0	16.6	126	141	111	56	2450	540	536	671	6395.2	43	9.82	9.66	102.5	110.8	.645	.950	42.0	2.5	.70	1.82	1.80	1.73*	9.88	9.89	D	
T.V.D. 6412.0 ft				HYDRAULIC POWER 283.8 hp				KICK TOLERANCE				1.86 lb/gal T.B.R. 17165				COST INST 205.1 US\$/ft				COST BIT 850.7 US\$/ft									
750	2336	6430.0	15.8	125	142	111	54	2480	540	541	695	6400.6	40	9.82	9.82	100.2	110.8	.624	.940	47.0	2.9	.76	1.80	1.78	1.73*	9.91	9.85	D	
751	2353	6435.1	18.7	126	137	111	51	2460	537	540	711	6407.6	43	9.83	9.90	101.1	110.7	.609	.960	52.1	3.1	.82	1.72	1.70	1.73	9.91	9.86	D	
Date Apr 2 '86																													
752	0008	6440.1	19.4	130	142	111	51	2470	540	540	725	6411.1	45	9.80	9.95	101.9	110.8	.601	.980	57.1	3.4	.86	1.72	1.69	1.73	9.91	9.87	D	
753	0024	6445.0	18.5	131	144	111	52	2470	540	535	741	6414.8	42	9.79	9.91	102.0	111.0	.601	.970	62.0	3.7	.91	1.73	1.71	1.73	9.90	9.88	D	
755	0048	6450.0	21.2	134	148	111	55	2470	537	533	751	6419.2	40	9.84	9.72	104.6	111.4	.613	.950	67.0	3.9	.96	1.74	1.71	1.73	9.89	9.89	D	
T.V.D. 6436.8 ft				HYDRAULIC POWER 282.7 hp				KICK TOLERANCE				1.85 lb/gal T.B.R. 26233				COST INST 160.4 US\$/ft				COST BIT 603.6 US\$/ft									
756	0103	6455.0	19.7	138	147	111	58	2460	546	541	753	6423.6	36	9.88	9.71	106.3	111.8	.625	.940	72.0	4.2	1.01	1.79	1.76	1.74	9.89	9.87	D	
757	0120	6460.1	17.7	136	155	112	58	2470	543	548	755	6429.1	38	9.92	9.69	107.5	112.5	.629	.930	77.1	4.4	1.06	1.82	1.79	1.75	9.91	9.83	D	
758	0136	6465.1	18.5	133	150	113	58	2460	537	542	757	6434.0	37	9.88	9.69	108.0	113.0	.634	.940	82.1	4.7	1.11	1.81	1.78	1.75	9.93	9.81	D	
759	0152	6470.1	18.9	130	145	113	58	2470	540	540	725	6437.8	32	9.84	9.74	108.3	113.4	.640	.920	87.1	5.0	1.16	1.79	1.76	1.75	9.95	9.81	D	
760	0208	6475.0	18.9	123	134	113	58	2470	540	545	679	6443.0	32	9.83	9.73	108.5	113.7	.642	.960	92.0	5.2	1.20	1.80	1.76	1.76	9.95	9.80	D	
T.V.D. 6461.6 ft				HYDRAULIC POWER 280.8 hp				KICK TOLERANCE				1.81 lb/gal T.B.R. 35231				COST INST 179.4 US\$/ft				COST BIT 489.8 US\$/ft									
761	0213	6476.0	15.4	123	134	113	59	2470	540	546	680	6444.6	29	9.82	9.73	108.5	113.7	.647	.940	PUMP SPM = 172								P	
762	0222	6476.0	15.4	123	134	113	59	2470	540	534	676	6446.5	30	9.84	9.76	108.7	113.9	.646	.960	PUMP SPM = 172								P	
763	0234	6480.0	19.6	126	137	113	60	2460	543	548	683	6450.0	33	9.82	9.71	108.9	114.4	.643	.930	97.0	5.5	1.25	1.81	1.77	1.76	9.94	9.79	D	
764	0250	6485.1	20.0	127	138	113	60	2460	537	543	616	6454.7	31	9.78	9.68	104.4	114.5	.634	.970	102	5.8	1.30	1.81	1.77	1.76	9.92	9.78	D	
765	0304	6490.1	20.9	134	144	113	60	2450	540	536	644	6459.2	30	9.68	9.66	99.6	113.7	.615	.960	107	6.0	1.34	1.79	1.75	1.76	9.90	9.79	D	
766	0318	6495.1	21.4	137	149	113	59	2470	543	536	669	6463.5	31	9.67	9.68	98.4	113.0	.604	.950	112	6.2	1.38	1.78	1.74	1.76	9.89	9.79	D	
767	0332	6500.0	21.2	134	149	113	59	2470	543	548	685	6466.2	37	9.71	9.68	100.1	112.5	.597	.970	117	6.5	1.41	1.79	1.75	1.76	9.86	9.80	D	
T.V.D. 6486.5 ft				HYDRAULIC POWER 276.2 hp				KICK TOLERANCE				1.85 lb/gal T.B.R. 43494				COST INST 160.4 US\$/ft				COST BIT 421.3 US\$/ft									
768	0345	6505.0	23.0	139	152	113	58	2450	540	541	699	6469.6	29	9.78	9.71	101.6	112.5	.603	.960	122	6.7	1.45	1.76	1.71	1.76	9.85	9.81	D	
769	0358	6506.8	21.4	140	151	113	58	2450	537	538	707	6472.7	26	9.82	9.74	101.9	112.2	.604	.950	PUMP SPM = 171								P	
+ Survey @ 6506 ft = 4.14 degrees (S77W);																													
771	0408	6510.1	24.3	139	151	113	58	2450	546	543	722	6476.1	27	9.82	9.68	100.9	112.4	.611	.930	127	6.9	1.49	1.74	1.70	1.76	9.83	9.83	D	
772	0420	6515.1	25.2	135	145	113	58	2440	546	549	739	6480.2	30	9.80	9.76	99.5	111.9	.610	.920	132	7.1	1.52	1.73	1.68	1.76	9.83	9.86	D	
773	0432	6520.1	25.5	134	146	113	58	2460	546	550	750	6484.5	30	9.82	9.80	101.4	111.9	.611	.900	137	7.3	1.55	1.72	1.67	1.75	9.85	9.89	D	
774	0444	6525.0	24.6	137	146	113	58	2460	540	535	756	6488.8	31	9.84	9.80	103.5	112.0	.618	.920	142	7.5	1.58	1.73	1.68	1.75	9.87	9.92	D	
T.V.D. 6511.5 ft				HYDRAULIC POWER 282.0 hp				KICK TOLERANCE				1.84 lb/gal T.B.R. 50763				COST INST 137.9 US\$/ft				COST BIT 373.3 US\$/ft									
775	0457	6530.0	23.0	135	153	113	58	2430	540	542	756	6493.5	35	9.82	9.82	106.2	112.4	.629	.920	147	7.7	1.61	1.74	1.69	1.75	9.89	9.94	D	

F#	TIME	DEPTH	ROP	TORQUE		RPM	WOB	PUMP	MUD	FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW		
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW							
776	0509	6535.0	23.4	138	151	116	58	2470	540	539	754	6497.1	38	9.86	9.86	107.9	113.0	.626	.920	152	8.0	1.64	1.75	1.70	1.75	9.91	9.96	D	
777	0519	6537.9	19.9	134	141	116	58	2450	537	541	752	6500.0	32	9.88	9.87	108.4	113.4	.619	.910	PUMP SPM = 171								P	
779	0531	6540.1	21.1	131	142	117	58	2440	543	544	748	6503.5	34	9.87	9.85	109.0	113.6	.607	.920	157	8.2	1.68	1.78	1.73	1.75	9.92	9.97	D	
780	0543	6545.1	23.6	132	145	117	58	2460	540	544	744	6509.0	30	9.85	9.84	109.3	113.9	.602	.920	162	8.4	1.71	1.75	1.70	1.74	9.93	9.99	D	
781	0557	6550.0	22.2	135	146	117	58	2450	543	545	742	6514.5	30	9.75	9.82	109.6	114.3	.607	.920	167	8.6	1.74	1.76	1.71	1.74	9.94	10.0	D	
T.V.D.		6536.2	ft	HYDRAULIC POWER				280.1	hp	KICK TOLERANCE				1.80		lb/gal	T.B.R.		58539	COST INST		152.8	US\$/ft	COST BIT		340.7	US\$/ft		
782	0610	6555.0	22.5	136	147	117	58	2440	546	540	738	6519.8	30	9.67	9.81	109.8	114.4	.611	.933	172	8.9	1.78	1.75	1.70	1.74	9.94	10.0	D	
783	0623	6560.0	23.5	133	143	117	57	2430	540	544	736	6524.8	40	9.78	9.83	109.9	114.8	.623	.940	177	9.1	1.81	1.73	1.68	1.74	9.92	10.1	D	
784	0636	6565.1	23.6	131	143	117	57	2450	543	539	735	6528.3	39	9.75	9.86	110.3	115.0	.632	.930	182	9.3	1.83	1.73	1.68	1.73	9.90	10.1	D	
785	0651	6568.2	25.3	132	142	117	57	2440	543	547	716	6532.3	36	9.73	9.87	110.7	115.4	.636	.930	PUMP SPM = 173								P	
Survey @		6568	ft =	3.92 degrees (S73W) ;																									
787	0702	6570.1	25.1	133	148	117	57	2460	543	547	653	6534.2	35	9.75	9.84	110.8	116.0	.642	.910	187	9.5	1.86	1.73	1.66	1.73*	9.93	10.1	D	
788	0714	6575.0	23.5	137	148	117	58	2440	546	551	652	6538.9	31	9.73	9.84	110.8	115.6	.643	.930	192	9.7	1.89	1.77	1.69	1.73	9.90	10.2	D	
T.V.D.		6561.0	ft	HYDRAULIC POWER				260.5	hp	KICK TOLERANCE				1.86		lb/gal	T.B.R.		66090	COST INST		144.5	US\$/ft	COST BIT		315.8	US\$/ft		
789	0728	6580.0	21.9	139	152	117	57	2450	540	541	650	6543.9	30	9.76	9.84	111.1	115.9	.643	.930	197	9.9	1.92	1.79	1.72	1.73	9.86	10.2	D	
790	0742	6585.0	21.5	136	152	117	58	2450	546	545	648	6549.2	26	9.72	9.83	111.3	116.2	.642	.940	202	10.2	1.96	1.80	1.73	1.73	9.84	10.2	D	
791	0756	6590.1	21.2	130	139	117	57	2450	543	542	647	6554.9	42	9.74	9.89	111.7	116.4	.646	.960	207	10.4	1.99	1.80	1.73	1.73	9.83	10.2	D	
792	0810	6595.1	21.1	130	142	117	57	2440	540	540	653	6559.5	44	9.77	9.86	109.2	116.6	.624	.970	212	10.7	2.02	1.80	1.73	1.73	9.83	10.2	D	
793	0824	6600.0	21.8	130	143	117	58	2460	540	546	669	6564.3	34	9.74	9.88	105.7	116.2	.594	.960	217	10.9	2.05	1.80	1.72	1.73	9.83	10.2	D	
T.V.D.		6585.8	ft	HYDRAULIC POWER				272.6	hp	KICK TOLERANCE				1.89		lb/gal	T.B.R.		74272	COST INST		155.9	US\$/ft	COST BIT		298.0	US\$/ft		
795	0841	6605.1	24.5	130	145	117	53	2460	537	535	696	6569.4	23	9.77	9.88	98.9	115.5	.566	.920	222	11.1	2.07	1.76	1.69	1.73	9.83	10.2	D	
796	0853	6610.1	25.7	134	148	117	57	2470	540	538	724	6573.7	28	9.73	9.91	96.5	114.3	.537	.940	227	11.2	2.09	1.75	1.67	1.72*	9.83	10.2	D	
797	0905	6615.0	24.7	131	148	118	56	2480	540	543	744	6578.1	27	9.75	9.88	98.7	113.7	.543	.930	232	11.4	2.12	1.76	1.68	1.72	9.81	10.3	D	
798	0918	6620.0	23.4	129	140	120	56	2460	546	551	762	6582.9	26	9.78	9.87	101.0	113.5	.560	.950	237	11.7	2.15	1.78	1.70	1.72	9.80	10.3	D	
799	0931	6625.0	23.7	130	143	120	57	2440	540	542	758	6587.5	28	9.75	9.85	109.3	114.0	.608	.900	242	11.9	2.17	1.78	1.70	1.72	9.79	10.3	D	
T.V.D.		6610.6	ft	HYDRAULIC POWER				274.1	hp	KICK TOLERANCE				1.90		lb/gal	T.B.R.		81276	COST INST		143.6	US\$/ft	COST BIT		281.5	US\$/ft		
800	0945	6630.1	21.0	127	140	120	56	2450	546	550	754	6592.5	36	9.75	9.85	109.4	114.8	.631	.890	247	12.1	2.21	1.81	1.73	1.72	9.79	10.3	D	
801	1000	6634.1	21.7	132	150	120	57	2440	550	544	747	6596.7	27	9.74	9.81	109.6	115.1	.635	.860	PUMP SPM = 175								P	
Survey @		6634	ft =	3.38 degrees (S70W) ;																									
803	1005	6635.1	23.0	135	150	120	56	2450	540	540	747	6599.0	26	9.78	9.77	109.8	115.2	.637	.850	252	12.3	2.23	1.78	1.70	1.72	9.79	10.3	D	
804	1020	6640.0	20.6	135	151	120	54	2450	540	536	745	6605.1	25	9.78	9.79	110.3	115.5	.632	.850	257	12.6	2.26	1.79	1.71	1.72	9.80	10.3	D	
805	1034	6645.0	21.3	135	150	120	54	2460	543	539	744	6610.7	26	9.75	9.80	110.7	115.7	.625	.870	262	12.8	2.28	1.77	1.69	1.72	9.80	10.3	D	
806	1049	6650.0	19.0	130	143	120	54	2460	540	540	738	6616.7	28	9.73	9.86	111.2	116.2	.616	.920	267	13.1	2.31	1.81	1.75	1.72	9.82	10.3	D	
T.V.D.		6635.5	ft	HYDRAULIC POWER				276.5	hp	KICK TOLERANCE				1.88		lb/gal	T.B.R.		89986	COST INST		178.6	US\$/ft	COST BIT		270.8	US\$/ft		
807	1104	6655.1	20.7	131	144	120	54	2460	543	544	734	6621.9	33	9.76	9.85	111.6	116.6	.608	.940	272	13.3	2.33	1.77	1.69	1.72	9.84	10.4	D	
808	1118	6660.1	21.8	133	144	120	54	2440	537	540	730	6625.5	32	9.72	9.85	112.3	117.0	.616	.930	277	13.6	2.36	1.76	1.68	1.71	9.85	10.4	D	
809	1139	6664.8	20.4	139	158	120	53	2430	518	523	725	6631.4	21	9.77	9.84	113.0	117.5	.597	.910	PUMP SPM = 165								P	
810	1143	6665.0	20.7	140	158	120	53	2460	537	535	722	6632.0	26	9.76	9.85	113.1	117.4	.598	.910	282	13.8	2.38	1.77	1.68	1.71	9.85	10.4	D	
811	1157	6670.0	21.0	140	153	120	53	2460	540	537	720	6637.7	23	9.75	9.82	113.5	117.7	.612	.900	287	14.0	2.41	1.76	1.68	1.70	9.84	10.4	D	
812	1211	6675.0	22.3	144	157	120	53	2440	540	539	716	6641.8	27	9.76	9.82	113.7	118.0	.621	.910	292	14.3	2.43	1.75	1.66	1.70*	9.83	10.5	D	
T.V.D.		6660.3	ft	HYDRAULIC POWER				275.9	hp	KICK TOLERANCE				1.87		lb/gal	T.B.R.		98549	COST INST		152.5	US\$/ft	COST BIT		261.7	US\$/ft		
813	1222	6680.1	25.9	147	161	120	52	2460	540	540	712	6646.1	26	9.75	9.81	113.9	118.2	.626	.900	297	14.5	2.45	1.70	1.62	1.69*	9.82	10.5	D	
814	1235	6685.1	24.0	149	159	120	53	2460	537	535	709	6650.6	32	9.77	9.83	114.3	118.6	.625	.930	302	14.7	2.47	1.73	1.64	1.69*	9.80	10.6	D	
815	1248	6690.0	23.1	145	161	120	53	2460	543	545	705	6655.0	37	9.77	9.86	114.5	118.8	.628	.920	307	14.9	2.49	1.74	1.66	1.69*	9.80	10.6	D	
816	1301	6695.0	23.2	142	162	120	54	2460	540	534	701	6657.1	24	9.75	9.87	114.8	119.0	.629	.910	312	15.1	2.51	1.74	1.66	1.68*	9.84	10.6	D	
817	1306	6696.0	20.0	141	145	120	54	2460	540	544	699	6658.9	26	9.78	9.86	114.8	119.1	.629	.920	PUMP SPM = 172								P	
818	1332	6700.0	23.8	126	145	120	54	2850	584	579	695	6666.1	24	9.80	9.85	115.0	119.4	.628	.930	317	15.4	2.53	1.73	1.64	1.68*	9.89	10.7	D	
T.V.D.		6690.8	ft	HYDRAULIC POWER				342.8	hp	KICK TOLERANCE				1.83		lb/gal	T.B.R.		106422	COST INST		142.9	US\$/ft	COST BIT		253.1	US\$/ft		
820	1341	6705.0	24.7	132	143	120	54	2690	565	566	693	6671.4	23	9.80	9.85	115.2	119.7	.629	.920	322	15.6	2.55	1.71	1.63	1.67*	9.91	10.7	D	
821	1357	6710.0	22.8	131	146	120	54	2730	568	566	698	6676.8	24	9.82	9.85	115.4	1												

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD	FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-in	THIS	BIT	EST	DXC	NX	NXB	ECD	NXPW		
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	IN	ft	hr	TW							
822	1409	6715.0	23.9	127	144	121	54	2680	565	562	682	6682.0	23	9.76	9.76	115.2	120.2	.642	.930	332	15.9	2.58	1.71	1.64	1.67*	9.92	10.8	D
823	1422	6720.0	21.4	125	140	118	55	2320	522	525	674	6686.7	24	9.72	9.90	115.6	120.3	.632	.930	337	16.0	2.59	1.74	1.67	1.67	9.95	10.8	D
824	1441	6725.0	21.6	125	140	120	55	2300	520	518	671	6692.4	25	9.77	9.90	115.8	120.5	.632	.930	342	16.2	2.60	1.74	1.67	1.67	9.95	10.8	D
T.V.D. 6715.2 ft				HYDRAULIC POWER				317.2 hp	KICK TOLERANCE				1.73 lb/gal		T.B.R.		112386	COST INST		157.0 US\$/ft	COST BIT		243.1 US\$/ft					
Survey @ 6729 ft = 3.08 degrees (S70W);																												
826	1453	6730.0	22.3	123	140	119	54	2310	521	516	671	6698.2	22	9.87	9.86	115.8	120.7	.631	.940	347	16.4	2.60	1.72	1.65	1.67	9.96	10.8	D
827	1506	6735.0	23.1	122	132	114	53	2310	521	519	670	6703.0	22	9.82	9.87	116.6	120.7	.629	.930	352	16.6	2.61	1.68	1.62	1.66*	9.96	10.9	D
828	1521	6740.1	23.9	128	143	120	53	2450	540	536	665	6738.8	23	9.80	9.83	117.0	120.9	.613	.930	357	16.8	2.63	1.69	1.62	1.66*	9.96	10.9	D
829	1534	6745.1	22.7	130	147	120	52	2460	543	545	661	6713.7	25	9.84	9.82	116.8	121.2	.615	.950	362	17.0	2.65	1.69	1.62	1.65*	9.95	10.9	D
830	1547	6750.0	22.8	129	141	120	52	2460	536	536	658	6719.2	26	9.86	9.83	117.0	121.5	.628	.950	367	17.3	2.67	1.69	1.62	1.65*	9.95	11.0	D
T.V.D. 6740.7 ft				HYDRAULIC POWER				302.3 hp	KICK TOLERANCE				1.75 lb/gal		T.B.R.		119940	COST INST		148.9 US\$/ft	COST BIT		236.5 US\$/ft					
831	1600	6755.0	22.1	131	142	120	52	2460	539	542	654	6725.1	24	9.88	9.84	117.2	121.6	.635	.940	372	17.5	2.69	1.70	1.63	1.64	9.91	11.0	D
833	1635	6765.1	21.9	129	143	120	53	2450	536	541	645	6735.3	26	9.82	9.86	117.6	121.8	.638	.940	382	17.9	2.74	1.72	1.64	1.65	9.93	11.0	D
834	1648	6770.1	22.4	131	145	120	52	2450	530	533	642	6740.9	22	9.71	9.86	117.7	122.0	.641	.930	387	18.2	2.76	1.70	1.62	1.64*	9.93	11.1	D
835	1732	6775.0	21.5	133	150	120	52	2450	539	544	639	6746.2	24	9.85	9.85	117.5	122.2	.638	.950	392	18.4	2.73	1.72	1.65	1.64	9.91	11.1	D
836	1716	6780.0	22.0	133	152	120	52	2450	533	530	594	6751.2	29	9.91	9.86	117.7	122.4	.638	.950	397	18.6	2.80	1.71	1.64	1.64	9.90	11.1	D
T.V.D. 6770.7 ft				HYDRAULIC POWER				313.4 hp	KICK TOLERANCE				1.75 lb/gal		T.B.R.		129821	COST INST		154.5 US\$/ft	COST BIT		230.7 US\$/ft					
837	1729	6785.0	21.4	137	154	120	52	2450	539	541	585	6756.5	28	9.79	9.90	113.5	122.5	.634	.940	402	18.8	2.82	1.72	1.65	1.64	9.90	11.1	D
838	1743	6790.1	21.7	139	170	120	53	2470	530	533	627	6760.5	22	9.68	9.88	104.3	120.7	.559	.970	407	19.1	2.84	1.73	1.65	1.65	9.89	11.1	D
839	1752	6790.5	15.6	138	145	120	53	2470	493	496	626	6761.6	18	9.66	9.89	105.9	120.4	.563	.950	PUMP SPM = 157								P
840	1803	6795.1	24.2	127	145	120	54	2470	536	541	631	6765.6	23	9.73	9.87	109.7	120.0	.590	.950	412	19.3	2.86	1.71	1.63	1.64	9.86	11.1	D
841	1815	6800.0	24.0	134	150	120	55	2460	533	535	636	6770.2	27	9.72	9.87	110.8	120.2	.600	.960	417	19.5	2.88	1.72	1.64	1.64	9.85	11.1	D
842	1829	6805.0	21.9	134	157	119	54	2470	533	533	640	6775.5	29	9.86	9.87	111.5	120.2	.597	.966	422	19.7	2.90	1.74	1.66	1.65	9.86	11.1	D
T.V.D. 6795.6 ft				HYDRAULIC POWER				308.0 hp	KICK TOLERANCE				1.76 lb/gal		T.B.R.		137743	COST INST		154.9 US\$/ft	COST BIT		226.1 US\$/ft					
843	1843	6810.0	21.5	130	153	119	53	2450	539	538	643	6781.1	35	9.83	9.86	112.7	120.4	.612	.967	427	20.0	2.92	1.73	1.65	1.65	9.87	11.1	D
844	1857	6815.1	21.5	129	149	119	52	2460	536	536	650	6786.9	42	9.85	9.80	112.2	120.6	.615	.905	432	20.2	2.94	1.72	1.65	1.65	9.88	11.1	D
845	1911	6820.1	20.9	128	146	119	54	2470	536	536	660	6792.6	40	9.86	9.81	110.5	120.6	.613	.924	437	20.4	2.96	1.75	1.67	1.65	9.89	11.1	D
847	1925	6821.9	19.1	129	148	119	54	2480	536	541	661	6797.0	31	9.93	9.80	112.6	120.4	.612	.937	PUMP SPM = 171								P
848	1928	6821.9	19.1	129	148	119	54	2470	533	530	661	6798.2	29	9.93	9.81	113.0	121.5	.615	.930	PUMP SPM = 170								P
849	1937	6825.0	22.6	135	155	119	55	2470	539	544	661	6801.6	36	9.89	9.81	114.0	121.3	.621	.942	442	20.7	2.99	1.73	1.65	1.65	9.91	11.1	D
850	1949	6830.0	23.9	134	149	120	55	2470	536	535	657	6806.1	27	9.81	9.83	115.3	121.2	.627	.935	447	20.9	3.01	1.71	1.63	1.65	9.93	11.1	D
T.V.D. 6820.6 ft				HYDRAULIC POWER				311.4 hp	KICK TOLERANCE				1.72 lb/gal		T.B.R.		146004	COST INST		142.3 US\$/ft	COST BIT		222.4 US\$/ft					
851	2002	6835.0	23.7	128	144	119	54	2470	536	540	639	6810.7	29	9.86	9.84	116.3	121.5	.635	.932	452	21.1	3.03	1.71	1.63	1.64	9.92	11.2	D
852	2015	6840.1	23.1	120	138	120	55	2470	542	543	575	6815.4	26	9.92	9.84	116.8	121.8	.637	.932	457	21.3	3.05	1.72	1.64	1.64	9.92	11.2	D
853	2028	6845.1	22.3	103	118	120	55	2470	536	542	574	6820.0	33	9.72	9.88	116.8	122.0	.638	.933	462	21.5	3.07	1.73	1.65	1.65	9.92	11.2	D
854	2042	6850.0	27.3	89	106	119	55	2470	542	546	573	6821.8	29	9.89	9.85	110.7	122.0	.642	.931	467	21.7	3.09	1.68	1.60	1.64*	9.91	11.2	D
855	2056	6853.0	22.1	84	92	119	56	2470	539	534	566	6825.7	-3	9.87	9.84	117.1	122.1	.642	.939	PUMP SPM = 172								P
Survey @ 6853 ft = 2.70 degrees (S58W);																												
857	2104	6855.0	22.4	84	100	119	55	2470	539	543	569	6828.7	26	9.85	9.80	117.2	122.0	.639	.936	472	22.0	3.11	1.74	1.66	1.64	9.90	11.2	D
T.V.D. 6845.5 ft				HYDRAULIC POWER				315.5 hp	KICK TOLERANCE				1.72 lb/gal		T.B.R.		153851	COST INST		151.9 US\$/ft	COST BIT		218.7 US\$/ft					
858	2117	6860.0	21.8	86	103	120	53	2460	533	535	565	6834.2	29	9.83	9.80	117.7	122.3	.639	.940	477	22.2	3.13	1.72	1.64	1.64	9.90	11.2	D
859	2132	6865.1	21.3	86	100	120	52	2470	536	530	562	6839.6	27	9.72	9.79	117.9	122.5	.635	.934	482	22.4	3.15	1.72	1.64	1.64	9.90	11.2	D
860	2147	6870.1	19.8	80	97	119	51	2470	536	537	560	6845.4	25	9.86	9.82	118.2	122.9	.642	.942	487	22.7	3.17	1.73	1.65	1.64	9.88	11.2	D
861	2200	6875.0	22.0	80	93	120	52	2460	539	538	566	6850.3	30	9.76	9.83	114.6	122.7	.587	.964	492	22.9	3.19	1.70	1.62	1.64*	9.90	11.3	D
862	2214	6880.0	21.1	79	90	120	52	2470	533	536	563	6853.7	31	9.68	9.81	114.9	122.0	.579	.957	497	23.2	3.21	1.72	1.64	1.64	9.88	11.3	D
T.V.D. 6870.5 ft				HYDRAULIC POWER				305.9 hp	KICK TOLERANCE				1.73 lb/gal		T.B.R.		162281	COST INST		160.6 US\$/ft	COST BIT		215.9 US\$/ft					
864	2239	6884.0	25.2	79	88	120	52	2490	533	530	597	6861.1	25	9.69	9.86	115.7	123.1	.592	.936	PUMP SPM = 170								P
865	2243	6885.0	25.7	77	88	120	51	2480	539	540	602	6862.7	26	9.69	9.86	115.7	123.1	.592	.954	502	23.4	3.23	1.66	1.58	1.64*	9.85	11.3	D
866	2259	6890.1	18.5	65	74	119	48	2470	539	536	612	6868.3	24	9.95	9.84	113.7	122.0	.575	.949	507	23.7	3.25	1.72	1.64	1.64	9.85	11.3	D

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW			
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW								
867	2313	6895.1	21.9	64	76	119	49	2480	539	540	622	6873.1	21	9.94	9.82	113.6	121.6	.572	.922	512	23.9	3.27	1.68	1.59	1.63*	9.88	11.4	D
868	2327	6900.0	21.3	60	69	119	61	2480	536	541	534	6878.0	19	9.95	9.79	114.1	121.6	.576	.882	517	24.1	3.29	1.82	1.73	1.64	9.90	11.3	D
870	2342	6905.0	19.5	62	73	120	62	2470	539	543	550	6883.8	19	9.97	9.79	112.7	121.3	.561	.870	522	24.4	3.33	1.85	1.76	1.65*	9.94	11.3	D
T.V.D. 695.5 ft				HYDRAULIC POWER				317.0 hp	KICK TOLERANCE				1.69 lb/gal	T.B.R. 171114				COST INST 174.5 US\$/ft				COST BIT 213.7 US\$/ft						
871	2357	6910.0	20.4	66	79	120	62	2470	536	540	561	6885.0	19	9.91	9.80	113.2	121.1	.549	.879	527	24.6	3.36	1.83	1.73	1.65	9.98	11.3	D
Date Apr 3 '86																												
872	0013	6915.1	19.1	91	118	120	61	2480	533	534	563	6889.8	20	9.82	9.73	115.8	121.1	.564	.889	532	24.9	3.39	1.83	1.74	1.66	10.0	11.2	D
873	0032	6920.1	23.1	106	116	119	61	2460	539	539	559	6896.0	20	9.78	9.73	117.5	121.6	.602	.886	537	25.1	3.42	1.78	1.68	1.66	9.99	11.2	D
874	0046	6925.1	21.3	104	115	119	63	2470	539	540	559	6900.7	24	9.71	9.70	117.9	122.1	.609	.890	542	25.4	3.45	1.82	1.73	1.67	9.97	11.2	D
875	0101	6930.0	20.1	103	114	119	63	2470	542	548	556	6905.9	21	9.71	9.71	118.0	122.4	.612	.874	547	25.6	3.48	1.86	1.76	1.67	9.92	11.1	D
T.V.D. 6920.4 ft				HYDRAULIC POWER				312.2 hp	KICK TOLERANCE				1.70 lb/gal	T.B.R. 179952				COST INST 168.6 US\$/ft				COST BIT 211.7 US\$/ft						
876	0116	6935.0	20.1	104	112	120	63	2470	549	552	560	6910.0	20	9.80	9.70	118.0	122.5	.606	.846	552	25.9	3.51	1.85	1.76	1.68	9.88	11.1	D
877	0132	6940.1	18.8	102	117	120	61	2470	545	551	561	6915.2	23	9.73	9.69	118.0	122.6	.588	.879	557	26.1	3.54	1.87	1.77	1.69*	9.85	11.1	D
878	0149	6945.1	17.4	97	107	119	61	2450	542	539	561	6921.1	21	9.74	9.71	117.9	122.7	.590	.894	562	26.4	3.57	1.89	1.79	1.70*	9.83	11.0	D
879	0156	6946.0	16.6	96	106	119	61	2440	545	540	561	6923.3	17	9.71	9.72	117.9	123.0	.597	.887	PUMP SPM = 174								P
880	0214	6950.1	17.1	91	106	119	61	2470	545	549	563	6928.8	19	9.70	9.72	117.7	122.6	.610	.908	567	26.7	3.61	1.91	1.81	1.70*	9.81	11.0	D
882	0232	6955.0	16.7	88	106	120	61	2480	542	543	565	6934.9	20	9.85	9.65	117.7	122.7	.620	.895	572	27.0	3.64	1.91	1.81	1.71*	9.80	10.9	D
T.V.D. 6945.4 ft				HYDRAULIC POWER				324.7 hp	KICK TOLERANCE				1.74 lb/gal	T.B.R. 190008				COST INST 202.9 US\$/ft				COST BIT 211.0 US\$/ft						
883	0249	6960.0	17.8	87	99	120	61	2470	545	548	567	6940.2	22	9.66	9.65	117.9	122.7	.625	.874	577	27.3	3.67	1.90	1.80	1.72*	9.79	10.9	D
884	0306	6965.0	17.3	85	93	120	61	2470	539	537	566	6945.1	28	9.76	9.67	117.8	122.7	.621	.881	582	27.6	3.71	1.91	1.80	1.73*	9.80	10.9	D
Circulated 10 minutes to check pumps @ 6965 ft;																												
886	0336	6970.1	18.2	104	265	119	61	2460	545	551	571	6951.1	22	9.85	9.74	117.4	122.9	.610	.904	587	27.9	3.74	1.88	1.78	1.73	9.79	10.8	D
887	0352	6975.1	18.3	155	166	119	61	2460	545	540	573	6955.8	21	9.81	9.75	118.0	122.9	.613	.919	592	28.1	3.77	1.88	1.78	1.74	9.81	10.8	D
Survey @ 6978 ft = 2.96 degrees (S52W);																												
889	0414	6977.9	16.4	154	168	119	61	2470	542	543	565	6960.2	14	9.86	9.80	118.4	122.4	.622	.928	PUMP SPM = 173								P
890	0423	6980.0	16.7	137	168	119	61	2460	549	549	575	6962.7	21	9.84	9.76	117.7	122.7	.630	.919	597	28.5	3.81	1.91	1.80	1.75	9.82	10.8	D
T.V.D. 6970.3 ft				HYDRAULIC POWER				327.1 hp	KICK TOLERANCE				1.73 lb/gal	T.B.R. 200502				COST INST 203.1 US\$/ft				COST BIT 210.6 US\$/ft						
891	0440	6985.0	17.1	139	150	119	61	2460	549	545	578	6965.4	13	9.87	9.76	118.0	122.7	.627	.903	602	28.8	3.84	1.90	1.79	1.75	9.85	10.7	D
892	0458	6990.0	16.0	131	148	119	61	2460	545	541	603	6970.4	26	9.85	9.75	112.7	122.1	.560	.898	607	29.1	3.87	1.90	1.80	1.76	9.88	10.7	D
893	0515	6995.1	17.9	143	163	120	61	2460	542	545	621	6975.5	33	9.86	9.75	112.7	121.3	.543	.906	612	29.3	3.90	1.88	1.77	1.76	9.89	10.7	D
894	0531	7000.1	19.7	161	173	119	61	2450	539	537	640	6978.0	29	9.83	9.80	112.1	120.9	.544	.920	617	29.6	3.93	1.84	1.73	1.76	9.90	10.7	D
896	0546	7005.0	20.0	164	176	120	61	2460	539	538	658	6982.3	20	9.80	9.75	111.1	120.6	.542	.933	622	29.8	3.96	1.84	1.73	1.76	9.91	10.8	D
T.V.D. 6995.3 ft				HYDRAULIC POWER				297.8 hp	KICK TOLERANCE				1.68 lb/gal	T.B.R. 210254				COST INST 170.1 US\$/ft				COST BIT 209.7 US\$/ft						
897	0600	7008.6	18.7	167	178	120	62	2470	536	533	680	6987.3	14	9.76	9.83	111.1	120.1	.560	.880	PUMP SPM = 171								P
898	0613	7010.0	19.6	165	178	120	62	2470	542	545	689	6988.8	18	9.75	9.74	110.9	121.3	.563	.859	627	30.1	3.99	1.85	1.74	1.76	9.90	10.8	D
899	0629	7015.0	19.2	168	186	120	61	2460	539	541	725	6993.3	18	9.85	9.73	111.9	123.0	.579	.837	632	30.4	4.01	1.86	1.75	1.76	9.88	10.8	D
900	0643	7020.0	21.0	173	198	119	61	2460	545	543	713	6997.7	17	9.86	9.72	112.6	119.8	.582	.843	637	30.6	4.04	1.83	1.72	1.75	9.87	10.8	D
901	0658	7025.1	19.9	161	175	120	61	2450	536	541	716	7002.9	20	9.91	9.72	114.3	120.0	.594	.834	642	30.8	4.07	1.84	1.73	1.75	9.87	10.8	D
902	0713	7030.1	20.1	155	171	120	61	2460	545	540	817	7008.0	24	9.83	9.72	114.8	120.3	.585	.837	647	31.1	4.10	1.84	1.72	1.75	9.87	10.8	D
T.V.D. 7020.3 ft				HYDRAULIC POWER				300.0 hp	KICK TOLERANCE				1.69 lb/gal	T.B.R. 219175				COST INST 169.0 US\$/ft				COST BIT 208.2 US\$/ft						
903	0728	7035.0	20.4	145	156	120	61	2450	539	542	817	7010.1	22	9.75	9.72	114.8	120.4	.589	.841	652	31.3	4.12	1.83	1.72	1.75	9.89	10.9	D
Survey @ 7035 ft = 2.05 degrees (S64W);																												
905	0744	7040.0	18.6	144	157	119	61	2460	542	545	755	7015.2	22	9.83	9.74	115.0	120.4	.589	.869	657	31.6	4.15	1.86	1.74	1.75	9.90	10.9	D
906	0752	7040.0	18.8	144	134	119	61	2460	558	561	728	7017.0	17	9.71	9.76	115.3	120.7	.592	.883	PUMP SPM = 178								P
907	0807	7045.0	19.8	118	134	119	60	2460	542	544	721	7022.1	20	9.80	9.72	115.1	120.6	.595	.882	662	31.9	4.18	1.83	1.71	1.75	9.90	10.9	D
908	0821	7050.1	18.2	120	130	119	60	2460	542	536	726	7026.8	17	9.84	9.75	115.7	120.7	.597	.833	667	32.1	4.20	1.86	1.74	1.75	9.90	10.9	D
909	0838	7055.1	15.6	127	140	119	60	2440	542	541	725	7032.9	17	9.90	9.74	116.4	121.1	.602	.872	672	32.4	4.23	1.90	1.79	1.75	9.88	10.9	D
T.V.D. 7045.2 ft				HYDRAULIC POWER				300.0 hp	KICK TOLERANCE				1.68 lb/gal	T.B.R. 228562				COST INST 217.0 US\$/ft				COST BIT 207.2 US\$/ft						
910	0853	7057.0	15.0	130	147	120	60	2460	539	535	722	7038.0	21	9.73	9.76	116.4	121.6	.605	.860	PUMP SPM = 172								P

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-in	THIS BIT	EST	DXC	NX	NXB	ECD	NXMW				
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW								
911	0856	7057.0	15.6	130	147	120	60	2460	545	541	721	7039.0	21	9.71	9.76	116.4	122.2	.607	.870	PUMP SPM =	174							
912	0859	7057.0	15.6	130	147	120	60	2450	539	538	719	7040.0	18	9.73	9.75	116.4	122.5	.605	.877	PUMP SPM =	172							
Circulated 0.2 hr & POOH @ 7057 ft to inspect bit - NB #12 cut 674 ft in 32.6 hrs - graded SN-W2/4-B0/2-G00;																												
NB #13 Smith SDGHC 12.25" Ser.# XE8882 IADC 135 Jets 9:11:11:11 - in @ 7057 feet (reamed 90 ft to bottom in 0.5 hr);																												
Stuck pipe on last stand of trip in, rotated with slips to free pipe;																												
3	2227	7060.0	19.9	71	86	121	40	2910	389	383	601	7057.0	43	9.83	9.75	88.8	95.5	.634	.872	3.0	.4	.12	1.61	1.60*	1.98	9.83	9.64	D
5	2243	7065.1	16.3	82	105	119	51	3090	393	393	542	7057.0	41	9.86	9.78	88.8	96.8	.622	.894	8.1	.7	.24	1.80	1.79	1.98	9.84	9.64	D
6	2313	7070.0	14.1	74	91	115	49	3020	395	401	522	7057.0	65	9.85	9.83	38.7	98.5	.625	.918	13.0	1.0	.35	1.30	1.79	1.97	9.86	9.68	D
7	2344	7075.0	14.2	72	89	118	50	3070	404	399	527	7057.0	173	9.85	9.78	93.5	100.2	.630	1.010	18.0	1.4	.45	1.81	1.80	1.97*	9.87	9.72	D
Date Apr 4 '86																												
8	0004	7080.0	14.9	73	83	119	59	3100	401	397	527	7057.0	73	9.90	9.80	96.6	131.0	.654	.931	23.0	1.7	.56	1.91	1.89	1.97	9.90	9.75	D
T.V.D. 7070.1 ft				HYDRAULIC POWER 300.3 hp				KICK TOLERANCE				1.66 lb/gal				T.B.R. 12182 COST INST 234.1 US\$/ft				COST BIT 1539 US\$/ft								
9	0022	7085.1	17.0	81	92	118	60	3080	401	403	530	7060.7	11	9.89	9.82	97.5	102.7	.671	.903	28.1	2.0	.65	1.83	1.85	1.96	9.90	9.78	D
10	0043	7090.1	14.0	77	90	119	60	3090	401	407	534	7065.3	10	9.84	9.86	98.5	103.7	.660	.891	33.1	2.4	.76	1.94	1.91	1.96	9.91	9.79	D
11	0102	7095.0	15.3	78	90	120	61	3070	404	403	563	7070.1	34	9.78	9.79	91.6	103.4	.596	.884	38.0	2.7	.85	1.92	1.89	1.96	9.91	9.82	D
Survey @ 7095 ft = 2.90 degrees (S64W);																												
13	0122	7100.0	15.4	80	95	120	60	3060	401	397	586	7073.6	39	9.68	9.78	94.1	103.4	.593	.909	43.0	3.0	.93	1.91	1.88	1.95	9.90	9.84	D
14	0139	7103.6	15.3	79	92	120	60	3070	404	407	600	7077.8	38	9.76	9.78	95.7	104.1	.600	.914	PUMP SPM =	129							
15	0153	7105.0	15.9	77	92	120	60	3040	395	392	611	7080.3	38	9.69	9.78	95.3	105.3	.600	.942	48.0	3.4	1.01	1.90	1.87	1.95	9.87	9.87	D
T.V.D. 7095.1 ft				HYDRAULIC POWER 287.4 hp				KICK TOLERANCE				1.67 lb/gal				T.B.R. 23847 COST INST 218.3 US\$/ft				COST BIT 852.7 US\$/ft								
16	0212	7110.1	15.7	72	85	121	59	3100	404	405	629	7085.7	39	9.73	9.78	96.2	104.5	.603	.964	53.1	3.7	1.08	1.91	1.87	1.95	9.84	9.90	D
18	0234	7115.1	13.8	68	81	122	60	3110	398	397	651	7091.0	33	9.85	9.78	96.6	104.7	.614	.932	58.1	4.0	1.16	1.96	1.92	1.95	9.82	9.91	D
19	0254	7120.0	14.5	72	82	122	59	3120	401	397	664	7096.4	26	9.82	9.78	98.6	105.2	.629	.865	63.0	4.4	1.24	1.94	1.90	1.94	9.83	9.93	D
20	0315	7125.0	14.2	70	80	122	59	3100	401	404	670	7102.0	29	10.1	9.98	100.0	105.9	.640	.871	68.0	4.7	1.31	1.94	1.90	1.94	9.84	9.95	D
21	0343	7130.0	14.3	57	71	122	59	3050	386	380	673	7106.2	27	10.0	10.1	101.7	106.8	.629	.872	73.0	5.1	1.38	1.92	1.88	1.94	9.92	9.97	D
T.V.D. 7120.0 ft				HYDRAULIC POWER 275.2 hp				KICK TOLERANCE				1.64 lb/gal				T.B.R. 36453 COST INST 236.7 US\$/ft				COST BIT 642.1 US\$/ft								
22	0402	7135.1	15.7	65	78	121	60	3070	389	388	674	7110.9	24	9.99	10.1	102.2	107.4	.621	.867	78.1	5.4	1.44	1.90	1.85	1.93	9.97	10.0	D
Survey @ 7137 ft = 2.20 degrees (S62W);																												
24	0442	7140.1	14.4	64	80	120	60	3030	389	384	677	7118.1	26	10.0	10.1	103.4	108.0	.614	.896	83.1	5.8	1.51	1.91	1.86	1.93	10.0	10.0	D
25	0502	7145.0	15.0	74	86	121	61	3030	395	401	679	7122.7	28	10.1	10.1	104.6	109.2	.618	.914	88.0	6.1	1.58	1.90	1.85	1.92*	10.1	10.1	D
26	0516	7150.0	19.9	74	86	121	61	3030	395	401	678	7125.6	31	10.0	10.1	105.2	109.7	.618	.914	93.0	6.3	1.60	1.90	1.76	1.92*	10.1	10.1	D
27	0532	7155.0	19.5	101	112	123	59	3050	395	398	681	7128.8	32	10.1	10.1	105.7	110.0	.633	.930	98.0	6.6	1.66	1.80	1.75	1.91*	10.1	10.2	D
T.V.D. 7145.0 ft				HYDRAULIC POWER 293.4 hp				KICK TOLERANCE				1.56 lb/gal				T.B.R. 47632 COST INST 171.4 US\$/ft				COST BIT 532.4 US\$/ft								
28	0545	7160.1	23.1	109	129	122	59	3050	398	397	684	7132.3	31	10.1	10.1	106.1	110.3	.637	.906	103	6.9	1.70	1.75	1.70*	1.91	10.1	10.2	D
30	0557	7165.1	23.5	116	186	122	60	3060	398	400	685	7135.6	24	9.94	10.1	106.5	110.7	.642	.908	108	7.1	1.74	1.74	1.69*	1.91	10.1	10.2	D
31	0625	7170.0	17.2	84	165	122	60	2990	395	392	686	7138.6	24	10.0	10.1	107.0	111.0	.643	.896	113	7.4	1.79	1.83	1.73	1.90	10.1	10.2	D
32	0648	7175.0	15.3	72	146	122	60	2990	398	399	676	7144.4	27	9.97	10.1	107.1	111.6	.641	.904	118	7.7	1.85	1.87	1.82	1.89*	10.1	10.3	D
33	0705	7178.2	15.4	68	157	123	60	3060	399	387	676	7149.8	31	9.97	10.1	107.2	111.8	.638	.917	PUMP SPM =	124							
34	0713	7180.0	14.7	71	157	122	60	3050	392	389	677	7152.4	31	9.96	10.2	107.4	111.9	.637	.935	123	8.1	1.90	1.89	1.84	1.89	10.1	10.3	D
T.V.D. 7170.0 ft				HYDRAULIC POWER 279.5 hp				KICK TOLERANCE				1.56 lb/gal				T.B.R. 58528 COST INST 241.4 US\$/ft				COST BIT 465.9 US\$/ft								
35	0721	7181.0	11.1	71	146	122	60	3040	389	387	677	7154.9	33	9.96	10.2	107.5	112.1	.638	.924	PUMP SPM =	124							
36	0725	7181.0	11.1	71	146	122	60	3030	395	396	677	7156.5	21	9.99	10.2	107.6	112.4	.638	.934	PUMP SPM =	126							
37	0733	7181.0	11.1	71	146	122	60	3030	395	393	677	7159.4	23	9.98	10.2	107.7	112.9	.639	.944	PUMP SPM =	126							
38	0744	7181.0	11.1	71	146	122	60	3020	395	397	677	7164.0	10	10.0	10.2	108.0	113.4	.639	.944	PUMP SPM =	126							
Circulated 0.3 hr & POOH @ 7181 ft to inspect bit - NB #13 cut 124 ft in 3.3 hrs - graded SN-W1/2-B1/2-G00 (balled up & w/ 1 plugged jet);																												
NB #14 Smith SDGH 12.25" Ser.# XD5381 IADC 135 Jets 13:13:13 - in @ 7181 ft (reamed 60 ft to bottom in 0.3 hr);																												
43	1558	7185.1	14.0	16	21	122	41	2680	477	471	718	7181.0	13	10.1	10.1	90.8	100.1	.633	.942	4.1	.5	.18	1.69	1.68*	1.89	10.0	10.3	D

AMOCO Production Co. UCS Y-J302 #1 Mars Prospect

Data Printed at time 18:45 Date Apr 11 '86
Data Recorded at time 16:17 Date Apr 4 '86

F#	TIME	DEPTH	ROP	TORQUE		RPM	WOB	PUMP	MUD FLOW		PVT	RETURNS	GAS	MW	lb/gal	TEMP (F)		RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW	
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW						
45	1625	7190.1	10.9	41	69	120	51	2700	477	472	723	7181.0	432	9.99	10.0	93.7	102.4	.668	1.004	9.1	1.0	.44	1.89	1.87	1.89	10.0	10.3	D
46	1652	7195.0	11.2	65	77	120	58	2700	477	480	695	7181.0	102	9.98	10.2	97.5	104.5	.668	1.036	14.0	1.4	.69	1.95	1.93	1.89	10.0	10.3	D
47	1719	7200.0	10.9	67	74	120	59	2700	477	475	652	7183.8	14	9.97	9.97	100.5	106.9	.680	.954	19.0	1.9	.92	1.97	1.94	1.90	10.1	10.3	D
48	1743	7205.0	20.0	75	86	118	60	2700	480	481	602	7187.5	11	10.0	9.97	102.0	108.2	.686	.967	24.0	2.1	1.03	1.78	1.75	1.89*	10.0	10.4	D
T.V.D. 7194.9 ft				HYDRAULIC POWER				388.3 hp	KICK TOLERANCE				1.56 lb/gal		T.B.R.		15382	COST INST		169.9 US\$/ft	COST BIT		1548 US\$/ft					
49	1758	7210.1	20.7	73	86	119	60	2680	477	478	607	7189.9	14	9.99	9.98	103.3	109.0	.684	.962	29.1	2.4	1.14	1.79	1.75	1.89*	10.0	10.4	D
50	1813	7215.1	19.1	70	82	119	60	2680	477	474	609	7192.8	17	10.0	9.98	104.3	109.8	.674	.945	34.1	2.6	1.25	1.81	1.77	1.88*	10.0	10.4	D
51	1834	7220.0	16.9	66	76	121	60	2680	486	490	616	7196.8	18	9.97	10.0	105.8	111.0	.663	.966	39.0	2.9	1.38	1.85	1.81	1.87*	10.0	10.5	D
53	1851	7225.0	17.5	62	69	123	60	2700	477	471	580	7199.8	14	9.97	10.0	107.2	111.7	.661	.963	44.0	3.2	1.50	1.85	1.81	1.87*	10.1	10.5	D
54	1903	7230.0	17.3	62	76	123	60	2680	477	473	550	7203.6	40	9.97	10.0	105.6	112.3	.644	.983	49.0	3.5	1.61	1.85	1.80	1.86*	10.1	10.6	D
T.V.D. 7219.9 ft				HYDRAULIC POWER				386.2 hp	KICK TOLERANCE				1.56 lb/gal		T.B.R.		25346	COST INST		196.3 US\$/ft	COST BIT		853.7 US\$/ft					
55	1940	7235.1	20.2	58	69	122	61	2710	483	431	559	7211.0	16	10.0	10.0	106.9	111.9	.660	.983	54.1	3.8	1.73	1.81	1.76	1.86*	10.0	10.6	D
56	1957	7240.1	18.5	66	82	121	61	2700	477	477	560	7215.8	15	10.0	10.0	106.3	112.5	.681	.979	59.1	4.1	1.83	1.84	1.79	1.85*	10.0	10.6	D
57	2019	7245.0	16.0	72	83	121	63	2690	477	471	577	7220.8	16	9.96	10.0	105.6	113.1	.650	.983	64.0	4.4	1.94	1.83	1.82	1.85	10.0	10.7	D
58	2039	7250.0	14.9	77	98	122	59	2690	477	473	583	7226.7	19	10.0	10.0	107.9	113.5	.661	.964	69.0	4.7	2.04	1.88	1.82	1.84	10.0	10.7	D
59	2057	7255.0	16.0	80	97	121	58	2680	480	479	586	7231.6	18	10.0	10.0	109.6	114.1	.670	.946	74.0	5.0	2.14	1.85	1.79	1.84*	10.0	10.7	D
T.V.D. 7244.8 ft				HYDRAULIC POWER				391.8 hp	KICK TOLERANCE				1.56 lb/gal		T.B.R.		36571	COST INST		213.7 US\$/ft	COST BIT		637.0 US\$/ft					
60	2116	7260.1	16.0	80	94	121	59	2690	480	483	592	7237.6	27	9.96	9.99	109.2	114.6	.658	.975	79.1	5.4	2.23	1.84	1.78	1.83*	10.1	10.8	D
62	2130	7261.0	15.4	76	89	121	59	2690	480	476	593	7241.0	29	9.94	10.0	108.7	114.8	.654	.968	PUMP SPM = 153								
63	2147	7265.1	15.4	64	89	121	59	2690	477	477	607	7244.4	16	9.94	9.98	103.1	114.8	.647	.968	84.1	5.8	2.35	1.87	1.81	1.83	10.0	10.8	D
64	2205	7270.1	16.6	63	74	122	59	2690	483	480	616	7248.6	18	9.99	9.95	107.9	114.8	.654	.975	89.1	6.1	2.44	1.85	1.78	1.83*	10.0	10.9	D
65	2224	7275.0	15.9	63	77	120	58	2700	480	480	623	7253.2	22	9.94	9.97	107.7	115.2	.650	.981	94.0	6.4	2.52	1.86	1.79	1.82*	10.0	10.9	D
66	2241	7280.0	17.4	59	70	121	58	2690	483	478	628	7257.6	26	9.98	9.99	108.0	115.5	.651	.969	99.0	6.7	2.59	1.83	1.76	1.82*	10.0	10.9	D
T.V.D. 7269.8 ft				HYDRAULIC POWER				386.6 hp	KICK TOLERANCE				1.57 lb/gal		T.B.R.		48501	COST INST		201.9 US\$/ft	COST BIT		533.2 US\$/ft					
67	2259	7285.0	16.3	60	75	120	58	2690	480	483	633	7261.7	28	9.96	10.0	108.9	115.9	.655	.963	104	7.0	2.67	1.85	1.77	1.81*	10.0	11.0	D
68	2317	7290.1	17.0	61	75	121	58	2690	480	479	640	7266.1	43	9.95	10.0	109.2	116.2	.655	.956	109	7.3	2.75	1.84	1.76	1.81*	10.0	11.0	D
69	2339	7295.1	17.1	59	75	120	58	2600	470	476	644	7271.4	26	10.0	10.1	110.1	116.6	.658	.976	114	7.6	2.82	1.84	1.76	1.80*	10.0	11.1	D
70	2357	7300.0	16.8	59	74	121	58	2610	470	469	650	7276.0	31	10.0	10.1	110.5	116.8	.657	.978	119	7.9	2.88	1.84	1.76	1.80*	10.0	11.1	D
Date Apr 5 '86																												
71	0014	7305.0	17.9	62	80	120	59	2590	473	479	654	7280.6	26	10.0	10.0	111.2	117.0	.662	.968	124	8.2	2.95	1.82	1.74	1.79*	10.0	11.1	D
T.V.D. 7294.8 ft				HYDRAULIC POWER				368.3 hp	KICK TOLERANCE				1.55 lb/gal		T.B.R.		59160	COST INST		187.3 US\$/ft	COST BIT		466.7 US\$/ft					
72	0030	7310.0	18.1	64	84	121	58	2600	467	469	658	7285.1	26	10.0	10.0	111.4	117.3	.665	.990	129	8.4	3.01	1.82	1.73	1.79*	10.1	11.2	D
74	0047	7315.1	18.6	62	83	123	58	2600	470	467	667	7289.6	25	10.1	10.0	110.5	117.2	.663	.976	134	8.7	3.07	1.80	1.72	1.78*	10.1	11.2	D
75	0101	7320.1	20.5	61	89	123	58	2610	467	470	674	7293.0	31	9.97	10.1	110.5	117.1	.661	.976	139	9.0	3.12	1.77	1.68	1.78*	10.1	11.3	D
76	0130	7325.0	17.3	56	80	123	58	2550	464	461	682	7299.2	28	9.99	10.0	111.6	117.0	.674	.951	144	9.3	3.19	1.82	1.74	1.77*	10.1	11.3	D
77	0149	7330.0	15.2	59	82	121	60	2560	464	461	690	7304.8	29	9.97	10.0	111.0	117.0	.674	.973	149	9.6	3.27	1.88	1.79	1.77	10.1	11.3	D
T.V.D. 7319.7 ft				HYDRAULIC POWER				355.4 hp	KICK TOLERANCE				1.53 lb/gal		T.B.R.		69707	COST INST		223.0 US\$/ft	COST BIT		421.8 US\$/ft					
78	0207	7335.0	16.0	64	107	121	60	2560	464	463	694	7310.3	28	9.98	10.0	112.0	117.4	.679	.974	154	9.9	3.33	1.85	1.76	1.77	10.1	11.3	D
79	0223	7340.1	19.6	79	105	120	59	2540	464	467	695	7315.0	27	9.98	10.0	113.0	117.6	.687	.974	159	10.2	3.39	1.80	1.71	1.76*	10.1	11.4	D
80	0238	7345.1	19.8	85	130	120	60	2560	464	468	697	7320.0	21	10.1	10.0	113.4	117.9	.690	.968	164	10.4	3.44	1.80	1.71	1.76*	10.0	11.4	D
81	0258	7350.0	14.8	79	151	120	59	2690	480	476	698	7324.5	23	10.1	10.1	113.7	118.2	.694	1.000	169	10.8	3.51	1.88	1.79	1.76	10.1	11.4	D
82	0310	7354.2	25.0	85	169	120	59	2720	477	470	698	7327.5	16	10.1	10.1	114.1	118.6	.686	.982	PUMP SPM = 152								
83	0318	7355.0	27.2	85	169	120	59	2710	480	474	694	7328.0	17	10.0	10.1	114.3	118.7	.685	.961	174	11.0	3.55	1.69	1.60	1.76*	10.1	11.4	D
T.V.D. 7344.7 ft				HYDRAULIC POWER				390.5 hp	KICK TOLERANCE				1.52 lb/gal		T.B.R.		79448	COST INST		123.5 US\$/ft	COST BIT		388.1 US\$/ft					
84	0327	7360.0	32.2	76	85	121	59	2690	477	479	699	7331.4	17	10.0	10.0	114.0	118.9	.683	.972	179	11.1	3.59	1.64	1.55*	1.76	10.1	11.4	D
86	0338	7365.0	27.5	75	83	120	59	2690	477	482	701	7334.5	16	10.0	10.0	114.8	119.1	.679	.992	184	11.3	3.62	1.69	1.59	1.75*	10.1	11.5	D
87	0347	7370.1	34.1	79	91	120	59	2690	477	471	701	7337.5	16	10.0	10.0	115.0	119.3	.680	.989	189	11.4	3.65	1.62	1.52*	1.75	10.1	11.5	D
88	0355	7375.1	39.5	82	101	120	59	2690	477	473	702	7340.1	18	10.0	10.1	115.0	119.3	.681	1.010	194	11.6	3.68	1.57	1.47*	1.75	10.1	11.5	D

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS BIT	EST	DXC	NX	NXB	ECD	NXMW				
		ft	ft/hr	AVG	MAX	AVG	AVG	IN	OUT	bb1	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW							
90	0403	7378.2	36.9	82	92	119	59	2690	477	472	701	7342.6	30	10.0	10.1	115.2	119.6	.675	.988	PUMP SPM = 152								
91	0409	7380.0	35.7	83	176	120	58	2700	480	476	701	7344.6	18	10.0	10.1	115.3	119.9	.676	1.021	199	11.7	3.71	1.60	1.50*	1.75	10.1	11.5	D
T.V.D. 7369.6 ft				HYDRAULIC POWER 389.5 hp				KICK TOLERANCE 1.51 lb/gal				T.B.R. 84942 COST INST 107.4 US\$/ft				COST BIT 352.9 US\$/ft												
92	0424	7384.4	33.7	92	118	121	57	2690	477	479	696	7347.4	28	10.0	10.1	115.4	119.8	.677	.961	PUMP SPM = 152								
93	0425	7385.0	36.3	93	118	121	57	2700	483	487	699	7347.6	21	9.99	10.1	115.6	119.3	.679	.951	204	11.9	3.74	1.58	1.48*	1.76	10.1	11.5	D
94	0437	7386.9	42.9	94	195	112	48	2700	430	476	697	7350.9	25	9.97	10.1	115.5	120.3	.685	1.006	PUMP SPM = 153								
+ Survey @ 7387 ft = 1.77 degrees (S64W);																												
96	0441	7390.0	55.7	96	195	95	29	2700	480	504	699	7352.6	135	9.94	10.1	115.5	120.9	.688	1.036	209	12.0	3.74	1.12	1.05*	1.76	10.1	11.5	D
97	0446	7395.1	57.7	92	181	94	43	2700	477	481	697	7354.4	3830	10.0	10.0	115.5	120.6	.692	1.048	214	12.1	3.75	1.25	1.17*	1.76	10.1	11.5	D
+ Flow check @ 7397 ft : negative;																												
99	0453	7397.0	33.5	90	123	94	43	1790	336	368	695	7354.7	2790	10.0	10.0	115.5	120.6	.694	1.027	PUMP SPM = 123								
100	0457	7397.0	33.5	90	123	94	43	1790	382	388	692	7356.0	3310	10.0	9.99	115.5	120.1	.696	1.021	PUMP SPM = 122								
101	0501	7397.0	33.5	90	123	94	43	1780	382	382	692	7357.7	2170	9.98	10.0	115.5	122.0	.697	1.042	PUMP SPM = 122								
102	0505	7397.0	33.5	90	123	94	43	1780	379	380	692	7359.5	1120	9.98	10.0	115.5	122.8	.699	.999	PUMP SPM = 121								
103	0510	7397.0	33.5	90	123	94	43	1770	382	380	691	7361.1	600	9.99	10.0	115.6	123.3	.700	1.007	PUMP SPM = 122								
104	0514	7397.0	33.5	90	123	94	43	1750	376	378	692	7362.5	430	10.0	10.0	115.7	123.7	.701	1.004	PUMP SPM = 120								
105	0534	7397.0	33.5	90	123	94	43	1980	401	405	691	7371.5	320	10.0	10.1	116.1	125.6	.682	1.037	PUMP SPM = 128								
106	0542	7397.0	33.5	90	123	94	43	1970	404	410	693	7375.8	211	10.1	10.1	116.4	125.7	.674	.980	PUMP SPM = 129								
107	0550	7397.0	33.5	90	123	94	43	1970	404	402	693	7378.6	164	10.1	10.1	116.8	126.1	.676	1.001	PUMP SPM = 129								
108	0601	7397.0	33.5	90	123	94	43	1980	398	395	693	7382.5	105	10.0	10.1	117.5	126.5	.670	1.003	PUMP SPM = 127								
109	0613	7397.0	33.5	90	123	94	43	1980	401	397	685	7386.2	60	10.1	10.1	118.2	127.1	.660	.999	PUMP SPM = 128								
110	0620	7397.0	33.5	90	123	94	43	1980	401	397	684	7392.0	44	10.1	10.0	118.9	127.1	.662	1.001	PUMP SPM = 128								
111	0630	7397.0	33.5	90	123	94	43	1980	401	399	684	7397.0	44	10.1	10.0	118.9	127.1	.662	1.001	PUMP SPM = 128								
+ Circulated returns & POOH @ 7397 ft to inspect bit - NB #14 cut 216 ft in 12.1 hrs - graded SN-W4/4-B0/0-G04;																												
+ NB #15 Smith Fl 12.25" Ser.# FDC941 IADC 437 Jets 13:13:13 - in @ 7397 ft (reamed 100 ft to bottom in 1.3 hrs to obtain MWD data);																												
116	1504	7400.0	37.7	17	138	72	26	2690	483	481	674	7282.3	13	10.0	10.1	105.3	110.6	.697	1.000	3.0	1.6	.18	1.00	1.01*	1.76	10.2	11.5	D
117	1512	7405.0	35.6	38	107	83	26	2710	477	476	674	7297.2	11	10.1	10.1	106.2	111.5	.700	1.000	8.0	1.7	.20	1.15	1.15*	1.76	10.2	11.5	D
T.V.D. 7394.0 ft				HYDRAULIC POWER 386.9 hp				KICK TOLERANCE 1.51 lb/gal				T.B.R. 7095 COST INST 94.9 US\$/ft				COST BIT 4931 US\$/ft												
118	1520	7410.1	39.5	42	85	83	28	2690	473	478	657	7308.8	11	10.0	10.0	106.7	112.1	.701	1.000	13.1	1.9	.20	1.15	1.15*	1.76	10.2	11.5	D
119	1528	7415.1	35.9	42	77	84	27	2710	477	472	641	7398.5	10	10.1	10.1	107.2	112.5	.704	.990	18.1	2.0	.20	1.17	1.17*	1.76	10.1	11.5	D
120	1552	7420.0	22.7	38	61	82	32	2720	473	473	612	7402.5	24	9.99	10.1	108.8	113.8	.653	1.030	23.0	2.4	.23	1.35	1.35*	1.77	10.1	11.5	D
121	1636	7425.0	8.9	35	50	73	38	2670	473	470	612	7409.4	45	9.99	10.1	111.3	115.7	.647	1.010	28.0	3.0	.30	1.65	1.65	1.75	10.1	11.8	D
122	1703	7430.0	13.2	37	51	77	39	2690	480	481	610	7419.7	36	9.99	10.0	112.5	116.4	.654	1.010	33.0	3.4	.30	1.56	1.56	1.72*	10.0	11.8	D
T.V.D. 7419.5 ft				HYDRAULIC POWER 382.5 hp				KICK TOLERANCE 1.51 lb/gal				T.B.R. 14599 COST INST 257.0 US\$/ft				COST BIT 1372 US\$/ft												
123	1714	7435.1	29.7	43	57	77	34	2680	477	479	609	7420.7	16	9.99	10.0	112.8	116.6	.650	1.020	38.1	3.6	.30	1.28	1.23*	1.72	10.0	11.8	D
125	1720	7440.1	49.1	44	60	77	34	2680	480	482	609	7421.7	20	9.98	9.96	113.0	117.0	.646	.970	43.1	3.7	.30	1.16	1.16*	1.73	10.0	11.8	D
126	1737	7445.0	16.9	38	88	77	34	2690	473	475	608	7424.3	15	9.95	9.98	113.4	117.9	.648	.950	48.0	4.0	.30	1.42	1.42*	1.73	10.0	11.8	D
127	1754	7450.0	39.8	40	54	63	35	2710	477	473	605	7424.7	13	9.92	9.97	113.5	118.3	.649	.890	53.0	4.1	.30	1.17	1.17*	1.73	10.0	11.8	D
128	1804	7455.0	29.6	39	87	67	38	2700	477	481	609	7425.0	15	9.98	9.98	113.5	119.9	.659	.950	58.0	4.3	.30	1.30	1.30*	1.73	10.0	11.8	D
T.V.D. 7444.0 ft				HYDRAULIC POWER 378.8 hp				KICK TOLERANCE 1.52 lb/gal				T.B.R. 18395 COST INST 114.8 US\$/ft				COST BIT 833.0 US\$/ft												
129	1813	7460.1	35.0	39	56	67	37	2680	480	476	611	7425.2	11	9.98	9.99	114.0	120.2	.667	.960	63.1	4.4	.31	1.25	1.25*	1.73	10.0	11.8	D
130	1820	7465.1	42.6	41	73	66	34	2690	473	470	611	7426.2	18	9.97	10.0	114.4	120.4	.665	.950	68.1	4.6	.31	1.16	1.16*	1.73	10.0	11.8	D
131	1836	7470.0	18.0	37	58	67	37	2690	477	481	611	7429.2	74	9.98	10.0	115.4	121.0	.639	.970	73.0	4.6	.31	1.42	1.42*	1.74	10.0	11.8	D
132	1851	7475.0	20.1	36	60	67	36	2690	480	477	612	7436.1	116	9.84	10.0	116.8	121.5	.646	.960	78.0	5.1	.31	1.37	1.37*	1.74	10.0	11.8	D
133	1907	7480.0	32.7	35	76	66	35	2700	473	488	605	7442.6	72	10.0	10.0	117.6	121.7	.651	.940	83.0	5.2	.31	1.24	1.24*	1.74	10.0	11.8	D
T.V.D. 7469.4 ft				HYDRAULIC POWER 384.7 hp				KICK TOLERANCE 1.53 lb/gal				T.B.R. 22159 COST INST 194.0 US\$/ft				COST BIT 621.7 US\$/ft												
135	1922	7485.1	20.6	38	71	67	37	2710	477	479	611	7447.4	64	10.0	10.0	118.0	122.3	.657	.970	88.1	5.5	.31	1.38	1.33*	1.74	10.0	11.8	D

F#	TIME	DEPTH	ROP	TORQUE		RPM	WOB	PUMP	MUD	FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-m	THIS	BIT	EST	DXC	NX	NXB	ECD	NXMW	
		ft	ft/hr	AVG	MAX	AVG	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	IN	OUT	ft	hr	TW						
136	1936	7490.1	21.0	33	53	68	37	2680	483	485	611	7453.8	83	10.0	10.0	118.5	122.2	.661	.970	93.1	5.7	.31	1.38	1.38*	1.74	10.0	11.8	D
137	1949	7495.0	22.7	34	62	67	37	2690	477	478	610	7461.4	90	10.0	10.0	118.9	121.8	.660	.970	98.0	5.9	.31	1.35	1.35*	1.74	10.0	11.8	D
138	2004	7530.0	20.3	42	72	66	36	2690	477	476	607	7467.5	39	10.0	10.0	119.1	121.7	.664	.950	103	6.2	.31	1.37	1.37*	1.74	10.1	11.8	D
139	2011	7505.0	38.1	48	112	66	36	2700	477	478	608	7470.2	43	9.95	10.0	118.9	122.3	.666	.950	108	6.3	.31	1.20	1.21*	1.75	10.1	11.8	D
T.V.D. 7494.4 ft				HYDRAULIC POWER				380.6 hp	KICK TOLERANCE				1.50 lb/gal		T.B.R.		26479		COST INST		89.0 US\$/ft		COST BIT		512.4 US\$/ft			
140	2027	7510.1	31.7	37	81	66	37	2700	477	481	603	7474.7	77	10.0	10.0	118.6	122.4	.661	.910	113	6.5	.31	1.25	1.26*	1.75	10.1	11.8	D
+ Survey @ 7513 ft = 2.24 degrees (S78W);																												
142	2038	7515.1	27.6	32	66	65	37	2700	473	473	606	7479.0	65	9.99	10.0	118.2	123.6	.649	.950	118	6.7	.31	1.28	1.29*	1.75	10.1	11.8	D
143	2050	7520.0	25.2	34	73	66	37	2700	480	479	608	7483.4	68	10.0	10.0	118.4	123.6	.645	.960	123	6.9	.31	1.32	1.32*	1.75	10.1	11.8	D
145	2102	7525.0	25.2	75	152	66	38	2690	477	478	607	7487.0	67	10.0	10.0	119.1	123.8	.649	.960	128	7.1	.31	1.32	1.33*	1.75	10.1	11.8	D
146	2116	7530.0	21.1	75	125	66	37	2690	477	476	608	7492.3	70	10.0	10.0	119.7	124.2	.656	.980	133	7.3	.31	1.36	1.37*	1.75	10.1	11.8	D
T.V.D. 7519.4 ft				HYDRAULIC POWER				384.2 hp	KICK TOLERANCE				1.40 lb/gal		T.B.R.		30342		COST INST		160.6 US\$/ft		COST BIT		441.8 US\$/ft			
147	2130	7535.1	21.7	73	108	66	37	2700	477	477	609	7496.9	89	10.1	10.2	120.2	124.4	.661	.990	138	7.5	.31	1.35	1.36*	1.76	10.1	11.8	D
148	2148	7540.1	16.0	76	124	67	37	2680	480	475	608	7506.4	172	10.1	10.1	120.6	124.7	.662	.990	143	7.3	.32	1.42	1.43*	1.76	10.1	11.8	D
149	2209	7545.0	39.8	82	123	68	37	2730	473	471	615	7512.9	115	10.1	10.1	116.0	124.8	.643	.960	148	8.0	.32	1.21	1.21*	1.76	10.1	11.8	D
150	2235	7550.0	11.3	71	124	65	38	2710	473	474	631	7523.7	55	10.1	10.1	116.6	123.8	.632	.950	153	8.4	.32	1.53	1.53*	1.76	10.1	11.8	D
151	2253	7555.0	16.2	78	121	63	39	2710	480	477	635	7530.4	62	10.1	10.1	117.6	124.3	.642	.950	158	8.7	.32	1.44	1.44*	1.76	10.1	11.8	D
T.V.D. 7545.0 ft				HYDRAULIC POWER				384.1 hp	KICK TOLERANCE				1.46 lb/gal		T.B.R.		35805		COST INST		209.6 US\$/ft		COST BIT		402.7 US\$/ft			
152	2340	7560.0	7.0	67	122	60	38	1490	345	407	655	7543.0	93	10.1	10.1	117.2	124.6	.638	.990	163	9.4	.32	1.63	1.64	1.72	10.1	12.2	D
Date Apr 6 '86																												
154	0013	7565.1	9.4	53	101	52	37	1480	345	343	666	7549.2	28	10.2	10.1	115.9	122.9	.632	.970	168	9.9	.32	1.51	1.52*	1.72	10.1	12.2	D
155	0040	7570.1	11.8	75	161	50	37	2690	470	469	680	7554.6	30	10.2	10.1	115.2	122.4	.632	.930	173	10.4	.32	1.44	1.45*	1.72	10.1	12.2	D
156	0107	7575.0	19.6	82	148	58	38	2670	470	470	681	7557.2	23	10.1	10.1	115.3	122.3	.630	.900	178	10.7	.32	1.35	1.35*	1.72	10.2	12.2	D
157	0123	7580.0	17.7	88	122	61	38	2660	470	468	690	7558.9	22	10.2	10.1	115.5	122.0	.634	.920	183	11.0	.32	1.38	1.39*	1.72	10.2	12.2	D
T.V.D. 7570.0 ft				HYDRAULIC POWER				382.4 hp	KICK TOLERANCE				1.42 lb/gal		T.B.R.		43462		COST INST		191.5 US\$/ft		COST BIT		389.9 US\$/ft			
158	0143	7585.0	15.5	93	200	65	38	2640	475	471	699	7562.1	24	10.2	10.1	115.9	122.5	.634	.950	188	11.3	.33	1.43	1.43*	1.72	10.2	12.2	D
159	0158	7590.1	20.3	100	125	72	38	2670	473	467	702	7566.6	47	10.2	10.1	116.1	121.9	.636	.950	193	11.5	.33	1.39	1.39*	1.72	10.2	12.2	D
160	0218	7595.0	15.6	103	131	73	38	2660	477	479	713	7570.7	53	10.2	10.1	116.2	122.0	.635	.930	198	11.9	.33	1.45	1.45*	1.73	10.2	12.2	D
161	0250	7600.0	10.0	91	163	66	39	2610	464	470	719	7578.3	45	10.3	10.1	116.6	122.5	.652	.932	203	12.4	.33	1.55	1.56	1.68*	10.2	12.5	D
162	0317	7605.0	13.6	84	128	66	37	2700	477	482	723	7584.7	51	10.2	10.1	117.0	121.9	.654	.911	208	12.8	.33	1.45	1.45*	1.68	10.3	12.5	D
T.V.D. 7595.0 ft				HYDRAULIC POWER				377.6 hp	KICK TOLERANCE				1.39 lb/gal		T.B.R.		50839		COST INST		249.1 US\$/ft		COST BIT		373.2 US\$/ft			
+ Survey @ 7605 ft = 1.97 degrees (S81W);																												
164	0336	7610.1	16.8	99	136	62	38	2670	477	477	732	7590.8	104	10.2	10.1	117.0	122.4	.651	.948	213	13.1	.33	1.39	1.40*	1.69	10.3	12.5	D
166	0359	7615.1	12.6	90	151	65	39	2680	477	477	740	7596.5	64	10.1	10.1	116.8	122.4	.631	.942	218	13.5	.33	1.49	1.49*	1.69	10.3	12.5	D
167	0435	7620.1	8.3	90	163	58	39	2670	480	485	755	7602.4	77	10.1	10.1	117.1	123.4	.649	.969	223	14.1	.33	1.57	1.58	1.67*	10.2	12.6	D
168	0515	7625.0	7.5	95	157	59	37	2670	477	479	764	7611.4	58	10.1	10.1	117.0	123.1	.653	.948	228	14.7	.34	1.60	1.60	1.66*	10.2	12.7	D
169	0549	7630.0	8.8	76	143	57	39	2660	480	476	770	7617.8	79	10.1	10.0	119.1	124.0	.672	.932	233	15.3	.34	1.57	1.58	1.66*	10.1	12.7	D
T.V.D. 7620.0 ft				HYDRAULIC POWER				390.4 hp	KICK TOLERANCE				1.45 lb/gal		T.B.R.		59821		COST INST		383.8 US\$/ft		COST BIT		370.4 US\$/ft			
170	0619	7635.1	10.1	96	158	60	52	2660	483	485	761	7621.6	62	10.2	10.0	119.7	123.7	.645	.943	238	15.8	.34	1.70	1.71	1.66	10.1	12.7	D
171	0705	7640.1	10.2	88	156	61	52	2670	477	473	717	7626.3	50	10.1	10.0	119.1	123.4	.653	.954	243	16.3	.34	1.70	1.71	1.67	10.1	12.7	D
172	0744	7645.1	3.2	87	143	53	53	2670	477	475	698	7632.6	67	10.2	10.0	118.6	123.6	.660	.977	248	17.0	.34	1.75	1.76	1.67	10.2	12.6	D
+ POOL @ 7647 ft to inspect bit - NB #15 cut 250 ft in 17.3 hrs - graded SY-10/3-B5/1-G00;																												
+ NB #16 Smith F2 12.25" Ser.# EV3569 IADC 517 Jets 13:13:13 - in @ 7647 ft (reamed 30 ft to bottom in 0.2 hr);																												
177	1523	7650.1	9.7	95	121	53	27	2690	473	470	782	7647.0	64	10.2	10.1	96.8	108.7	.686	.982	3.1	.4	.00	1.37	1.38*	1.67	10.1	12.6	D
179	1557	7655.1	8.9	113	143	59	36	2690	473	472	704	7647.0	195	10.2	10.2	98.1	109.5	.677	1.003	8.1	.9	.00	1.54	1.55	1.67*	10.2	12.7	D
T.V.D. 7645.0 ft				HYDRAULIC POWER				388.1 hp	KICK TOLERANCE				1.40 lb/gal		T.B.R.		3204		COST INST		386.2 US\$/ft		COST BIT		4717 US\$/ft			
180	1634	7660.0	8.2	157	161	55	41	2690	475	476	747	7647.1	45	10.2	10.1	103.5	112.0	.690	1.007	13.0	1.5	.00	1.59	1.61	1.66*	10.2	12.8	D
181	1652	7665.0	16.3	148	202	57	43	2690	477	471	749	7649.8	34	10.2	10.2	105.0	113.5	.704	.975	18.0	1.9	.01	1.44	1.45*	1.66	10.3	12.8	D
182	1709	7670.1	44.0	127	232	57	45	2700	473	470	729	7651.2	36	10.2	10.2	105.3	113.4	.699	.951	23.1	2.0	.01	1.18	1.20*	1.67	10.3	12.8	D

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS	MW	lb/gal	TEMP	(F)	RES	ohm-in	THIS	BIT	EST	DXC	NX	NXB	ECD	NXW			
		ft	ft/hr	AVG	MAX	AVG	PRES	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	IN	ft	hr	Tw								
183	1722	7675.1	23.1	126	143	57	45	2630	480	484	710	7652.9	46	10.2	10.2	105.2	113.7	.683	.966	28.1	2.2	.01	1.35	1.37*	1.67	10.3	12.8	D
184	1742	7680.0	14.4	131	174	59	44	2680	473	476	686	7655.7	54	10.2	10.2	105.4	114.1	.662	.975	33.3	2.6	.01	1.49	1.50	1.65*	10.3	12.9	D
185	1749	7685.0	47.2	149	205	61	43	2680	473	*472	689	7656.6	59	10.2	10.2	105.6	114.4	.658	.963	38.0	2.7	.01	1.16	1.18*	1.65	10.3	12.9	D
186	1756	7690.0	43.6	143	180	63	40	2680	477	472	692	7657.5	63	10.2	10.2	105.9	114.4	.656	.977	43.0	2.8	.01	1.16	1.18*	1.65	10.3	12.9	D
T.V.D. 7680.0 ft				HYDRAULIC POWER				392.4 hp	KICK TOLERANCE				1.37 lb/gal		T.B.R.		9583	COST INST		78.4 US\$/ft		COST BIT		1026 US\$/ft				
187	1807	7695.8	56.0	123	147	62	19	2680	473	477	696	7658.7	67	10.2	10.2	106.5	115.0	.653	.975	48.8	3.0	.01	1.39	.90*	1.65	10.3	12.9	D
188	1823	7700.1	25.1	130	151	56	39	2690	477	472	703	7665.7	73	10.1	10.2	106.7	115.5	.649	.993	53.1	3.1	.01	1.27	1.28*	1.65	10.3	12.9	D
189	1841	7705.0	16.9	141	164	59	45	2680	477	432	706	7672.3	263	10.2	10.2	108.9	115.4	.661	1.027	58.0	3.4	.01	1.45	1.46*	1.65	10.3	12.9	D
190	1905	7710.0	12.3	145	177	60	45	2680	477	475	715	7679.5	73	10.2	10.2	108.6	115.7	.694	1.022	63.0	3.8	.01	1.54	1.56	1.63*	10.3	13.2	D
192	1921	7715.0	19.0	148	235	59	45	2680	480	484	721	7685.3	225	10.2	10.1	108.5	115.8	.709	.997	68.0	4.1	.01	1.41	1.43*	1.63	10.3	13.2	D
T.V.D. 7704.9 ft				HYDRAULIC POWER				390.8 hp	KICK TOLERANCE				1.37 lb/gal		T.B.R.		14197	COST INST		183.1 US\$/ft		COST BIT		714.1 US\$/ft				
193	1942	7720.1	14.3	166	212	59	49	2660	480	432	724	7696.6	152	10.1	10.2	108.9	116.1	.719	.984	73.1	4.4	.01	1.54	1.56	1.62*	10.2	13.2	D
194	2006	7725.1	12.4	178	233	59	54	2670	480	477	725	7702.7	107	10.1	10.2	110.4	116.8	.710	.974	78.1	4.9	.02	1.65	1.66	1.62	10.2	13.2	D
195	2032	7730.0	14.9	189	215	58	55	2670	477	473	717	7708.2	81	10.2	10.2	112.3	117.5	.692	.979	83.0	5.2	.02	1.60	1.61	1.62*	10.2	13.3	D
197	2100	7735.0	10.7	190	219	60	55	2670	477	475	737	7716.3	160	10.1	10.3	108.0	117.1	.726	1.027	88.0	5.7	.02	1.70	1.72	1.63*	10.2	13.2	D
198	2139	7740.0	9.6	143	271	58	53	2670	477	482	761	7724.8	122	10.0	10.2	108.0	117.0	.732	1.036	93.0	6.2	.02	1.71	1.72	1.63*	10.2	13.2	D
T.V.D. 7729.9 ft				HYDRAULIC POWER				386.8 hp	KICK TOLERANCE				1.40 lb/gal		T.B.R.		21762	COST INST		362.9 US\$/ft		COST BIT		601.2 US\$/ft				
199	2221	7745.1	7.4	89	194	61	52	2660	483	487	774	7733.4	94	10.0	10.2	109.2	117.5	.674	1.017	98.1	6.9	.02	1.80	1.81	1.64*	10.1	13.2	D
200	2257	7750.1	8.2	92	139	54	52	2660	477	473	788	7737.5	65	10.1	10.2	109.6	118.2	.661	1.001	103	7.5	.03	1.72	1.74	1.64*	10.1	13.1	D
+ Survey @ 7751 ft = 1.45 degrees (N89W);																												
202	2328	7755.0	9.7	115	246	64	48	2660	480	485	789	7742.1	68	10.0	10.1	110.7	118.3	.665	1.031	108	8.0	.03	1.68	1.70	1.65	10.1	13.1	D
203	2350	7760.0	18.2	126	201	67	48	2620	477	474	795	7744.6	67	10.1	10.1	111.4	118.0	.669	1.009	113	8.3	.03	1.52	1.53	1.65*	10.1	13.1	D
Date Apr 7 '86																												
204	2004	7765.0	21.7	116	213	69	46	2610	473	471	804	7746.3	61	10.1	10.1	111.5	118.2	.669	1.005	118	8.6	.03	1.47	1.48	1.64*	10.1	13.2	D
T.V.D. 7754.9 ft				HYDRAULIC POWER				381.0 hp	KICK TOLERANCE				1.43 lb/gal		T.B.R.		30206	COST INST		158.6 US\$/ft		COST BIT		541.5 US\$/ft				
205	0028	7770.1	13.5	119	250	67	46	2610	477	479	823	7749.5	75	10.1	10.1	109.2	117.9	.660	.984	123	8.9	.03	1.59	1.60	1.64*	10.1	13.2	D
206	0053	7775.1	12.0	115	270	67	47	2600	473	468	759	7753.1	73	10.3	10.1	112.7	117.7	.683	.982	128	9.4	.03	1.62	1.63	1.64	10.1	13.2	D
207	0110	7780.0	16.9	131	240	66	40	2600	470	469	747	7757.2	85	10.3	10.1	113.7	118.2	.691	1.005	133	9.7	.03	1.44	1.45*	1.64	10.2	13.2	D
+ began losing circulation to formation @ 7780 ft, circulated @ 780 psi w/ 42 spm, mixed 20 bbl LCM pill & pumped same;																												
Total time drilling interrupted = 1.8 hrs - total mud lost to formation = 65 bbls;																												
209	0318	7785.0	15.9	107	263	63	36	2170	414	420	663	7770.2	71	10.1	10.1	110.8	115.3	.688	1.000	138	10.0	.04	1.40	1.41*	1.64	10.2	13.2	D
210	0346	7790.0	10.7	67	163	61	35	2190	411	413	660	7774.9	116	10.2	10.1	110.5	115.5	.700	1.010	143	10.4	.04	1.47	1.48	1.63*	10.2	13.3	D
T.V.D. 7779.8 ft				HYDRAULIC POWER				252.8 hp	KICK TOLERANCE				1.36 lb/gal		T.B.R.		37424	COST INST		329.4 US\$/ft		COST BIT		492.0 US\$/ft				
212	0420	7795.1	12.3	67	83	67	48	2210	429	426	658	7781.0	108	10.2	10.1	109.4	115.0	.690	1.001	148	10.9	.04	1.62	1.63	1.63	10.2	13.4	D
213	0445	7800.1	11.8	82	210	67	53	2210	429	430	653	7781.0	65	10.2	10.1	110.2	115.0	.693	1.001	153	11.3	.04	1.68	1.69	1.63	10.2	13.3	D
214	0506	7805.1	14.0	80	219	66	52	2210	433	432	645	7784.9	97	10.2	10.1	110.2	115.2	.646	.997	158	11.7	.04	1.62	1.63	1.63	10.2	13.3	D
215	0528	7810.0	13.4	69	159	70	48	2200	436	436	644	7788.7	86	10.2	10.2	109.9	115.2	.645	1.005	163	12.0	.04	1.60	1.61	1.63*	10.2	13.4	D
216	0547	7815.0	15.9	72	180	69	49	2200	433	437	646	7791.7	100	10.2	10.1	109.8	115.2	.646	1.029	168	12.3	.05	1.56	1.57	1.63*	10.2	13.4	D
T.V.D. 7804.8 ft				HYDRAULIC POWER				294.4 hp	KICK TOLERANCE				1.36 lb/gal		T.B.R.		45055	COST INST		222.1 US\$/ft		COST BIT		458.1 US\$/ft				
217	0604	7820.1	18.2	74	96	69	50	2190	433	432	646	7795.4	77	10.2	10.1	110.1	115.2	.641	1.033	173	12.6	.05	1.53	1.54	1.62*	10.2	13.5	D
218	0628	7825.1	22.7	86	117	70	48	2530	467	463	646	7798.7	61	10.2	10.1	109.9	114.8	.668	1.010	178	12.8	.05	1.45	1.46	1.62*	10.2	13.5	D
220	0643	7830.1	20.2	107	129	72	54	2530	470	473	649	7802.4	197	10.2	10.0	109.9	115.2	.672	1.009	183	13.1	.05	1.55	1.56	1.61*	10.2	13.5	D
221	0700	7835.0	17.2	94	125	72	53	2550	473	471	656	7806.4	198	10.1	10.0	108.0	115.4	.660	.990	188	13.4	.05	1.59	1.59	1.61*	10.2	13.6	D
222	0716	7840.0	18.5	103	143	73	52	2560	464	463	674	7810.4	136	10.1	10.0	105.9	115.3	.651	.963	193	13.6	.05	1.56	1.57	1.61*	10.2	13.6	D
T.V.D. 7829.8 ft				HYDRAULIC POWER				370.0 hp	KICK TOLERANCE				1.35 lb/gal		T.B.R.		50614	COST INST		200.6 US\$/ft		COST BIT		421.3 US\$/ft				
223	0736	7845.0	15.1	106	158	69	48	2550	470	473	682	7816.6	140	10.1	10.1	106.0	115.2	.615	.954	198	14.0	.05	1.57	1.58	1.61*	10.2	13.7	D
224	0759	7850.1	13.2	94	142	74	54	2550	473	478	694	7823.5	113	10.1	10.0	107.7	115.4	.633	.955	203	14.4	.06	1.69	1.69	1.61	10.2	13.6	D
+ Survey @ 7854 ft = 1.00 degree (N89W);																												
226	0831	7855.1	11.9	105	149	66	53	2350	446	452	725	7832.9	139	10.1	10.0	105.5	115.0	.617	.978	203	14.8	.06	1.68	1.70	1.62	10.2	13.6	D

F#	TIME	DEPTH	ROP	TORQUE	RPM	WOB	PUMP	MUD FLOW	PVT	RETURNS	GAS MW	lb/gal	TEMP	(F)	RES	ohm-in	THIS BIT	EST	DXC	NX	NXB	ECD	NXMW					
		ft	ft/hr	AVG	MAX	AVG	AVG	IN	OUT	bbl	DEPTH	unit	IN	OUT	IN	OUT	ft	hr	TW									
227	0855	7860.1	15.4	97	166	66	53	2380	451	446	765	7839.7	121	10.0	9.95	102.2	114.8	.613	.971	213	15.2	.06	1.66	1.67	1.62	10.1	13.6	D
228	0908	7865.1	22.5	92	124	72	50	2370	451	452	776	7843.2	137	10.1	9.97	104.8	114.3	.625	.952	218	15.4	.06	1.50	1.51	1.62*	10.1	13.6	D
229	0941	7870.0	12.2	90	223	70	50	2350	455	454	798	7850.1	89	10.0	9.97	107.7	115.0	.641	.939	223	15.9	.06	1.67	1.68	1.62	10.1	13.6	D
230	1016	7875.0	10.2	84	162	76	44	2620	483	475	809	7856.4	64	9.98	9.93	110.4	115.9	.642	.926	228	16.4	.07	1.67	1.68	1.63	10.1	13.5	D
231	1044	7880.0	13.7	111	126	75	51	2620	483	484	816	7864.9	64	10.0	9.88	110.9	116.5	.638	.939	233	16.9	.07	1.74	1.75	1.63*	10.1	13.5	D
T.V.D. 7869.9 ft		HYDRAULIC POWER 431.7 hp				KICK TOLERANCE				1.42 lb/gal T.B.R.				64298 COST INST 318.1 US\$/ft				COST BIT 397.4 US\$/ft										
+ SH: RD, BRN, BLK, PLTY, HD																												
233	1120	7885.0	10.5	114	172	70	47	2630	483	478	820	7868.5	25	9.99	10.0	112.3	117.4	.639	.948	238	17.4	.07	1.69	1.70	1.64	10.0	13.5	D
234	1159	7890.0	9.3	102	208	72	43	2630	489	494	824	7875.8	41	9.96	10.0	113.5	118.2	.642	.967	243	18.1	.07	1.69	1.70	1.64	9.97	13.4	D
235	1232	7895.0	10.1	102	116	65	45	1270	323	327	825	7880.4	125	9.92	9.93	113.7	118.0	.641	.951	248	18.6	.08	1.66	1.67	1.65	9.97	13.4	D
236	1258	7900.1	11.5	92	105	66	52	1260	323	321	827	7883.5	87	10.2	9.92	113.7	117.3	.646	.949	253	19.0	.08	1.72	1.73	1.65*	9.97	13.4	D
237	1327	7905.1	10.3	91	108	60	51	1250	323	329	829	7886.5	89	9.85	9.87	113.2	117.1	.654	.955	258	19.5	.08	1.71	1.72	1.66	9.93	13.4	D
T.V.D. 7894.8 ft		HYDRAULIC POWER 119.4 hp				KICK TOLERANCE				1.33 lb/gal T.B.R.				74665 COST INST 330.6 US\$/ft				COST BIT 393.1 US\$/ft										
238	1359	7910.0	9.4	90	110	64	52	1270	323	323	799	7888.8	43	9.83	9.86	104.3	115.0	.686	.956	263	20.8	.08	1.77	1.78	1.67*	9.92	13.3	D
+ QZT: MH, CLR, TRANS, BLK MIN INCL BLKY-ANG FRAGS, FRAC, REXLXD SKEL QZT, TR BLK-BRN STN IN FRAC, FMT FLOR, STRMG DUL YEL CT																												
240	1429	7915.0	10.0	90	110	69	53	1270	323	325	749	7892.5	77	9.82	9.90	103.1	114.2	.634	.973	268	20.5	.08	1.79	1.80	1.67*	9.90	13.3	D
241	1522	7920.1	10.1	126	155	68	56	2620	480	486	639	7902.8	37	9.83	9.96	107.4	115.3	.670	.936	273	21.3	.09	1.82	1.83	1.68*	9.89	13.2	D
242	1552	7925.1	9.9	146	162	68	55	2620	477	478	658	7909.5	117	9.85	9.80	103.4	115.9	.675	1.014	278	21.8	.09	1.82	1.83	1.69*	9.86	13.2	D
243	1621	7930.0	10.2	142	151	67	56	2620	483	483	673	7914.2	47	9.86	9.74	109.1	116.0	.663	.998	283	22.3	.09	1.82	1.83	1.69*	9.87	13.2	D
T.V.D. 7919.8 ft		HYDRAULIC POWER 367.3 hp				KICK TOLERANCE				1.49 lb/gal T.B.R.				85945 COST INST 332.7 US\$/ft				COST BIT 392.3 US\$/ft										
+ Survey @ 7932 ft = 1.36 degrees (S87W);																												
245	1648	7935.0	11.1	169	193	67	55	2630	477	471	690	7918.7	48	9.86	9.75	108.7	117.0	.680	.999	288	22.7	.10	1.78	1.79	1.70*	9.88	13.1	D
246	1710	7940.1	14.0	171	181	66	55	2630	473	471	699	7922.3	47	9.80	9.76	111.2	117.3	.684	1.002	293	23.1	.10	1.70	1.71	1.70	9.89	13.1	D
247	1742	7945.1	12.3	151	171	64	55	1420	345	346	706	7926.4	25	9.91	9.81	109.8	117.3	.711	.993	298	23.5	.10	1.74	1.75	1.71	9.88	13.1	D
248	1807	7950.1	18.3	152	170	64	53	1410	339	341	716	7929.2	21	9.81	9.81	109.0	116.5	.702	1.008	303	23.8	.10	1.59	1.60	1.70*	9.89	13.1	D
+ ARG: RD, RST, BRN, ROTT, SHIST, HD																												
250	1835	7955.0	12.5	201	237	62	56	2610	480	479	729	7933.6	21	9.94	9.90	110.6	117.2	.698	1.001	308	24.2	.10	1.73	1.74	1.71	9.90	13.1	D
T.V.D. 7944.7 ft		HYDRAULIC POWER 389.1 hp				KICK TOLERANCE				1.48 lb/gal T.B.R.				93524 COST INST 243.3 US\$/ft				COST BIT 382.2 US\$/ft										
251	1857	7960.0	13.1	241	270	65	56	2610	477	479	734	7938.7	22	9.94	9.87	112.6	117.7	.688	1.028	313	24.6	.10	1.72	1.73	1.71	9.91	13.1	D
252	1921	7965.0	12.8	235	254	66	55	2610	480	477	736	7943.7	20	9.95	9.89	113.7	118.6	.690	1.020	318	25.0	.11	1.72	1.73	1.72	9.95	13.1	D
253	1949	7970.1	10.7	265	284	65	55	2610	483	486	659	7950.3	18	9.95	9.95	114.4	119.2	.695	1.012	323	25.5	.11	1.77	1.78	1.72*	9.97	13.0	D
254	2014	7975.1	11.9	285	293	65	56	2610	480	478	666	7955.7	14	9.95	9.92	114.8	119.7	.697	1.022	328	25.9	.11	1.74	1.75	1.73	9.99	13.0	D
255	2034	7976.0	8.8	286	293	64	56	2610	483	487	667	7960.1	19	9.88	9.92	115.5	120.9	.658	1.018	PUMP SPM = 154						P		
256	2057	7976.0	8.8	286	293	64	56	2620	480	477	670	7965.3	19	9.84	9.91	116.2	122.4	.681	1.013	PUMP SPM = 153						P		
257	2127	7976.0	8.8	286	293	64	56	2610	483	480	675	7970.1	14	9.86	9.89	117.5	123.3	.696	1.022	PUMP SPM = 154						P		
258	2151	7976.0	8.8	286	293	64	56	2610	483	481	687	7976.0	17	9.81	9.87	116.7	124.3	.689	1.023	PUMP SPM = 154						P		
+ Reached total depth of 7976 ft @ 2027 hrs, April 7, 1986 & circulated returns;																												
+ Attempted short trip to 13.375" casing shoe, hole tight @ dogleg @ approximately 4500 ft, worked & pumped out 9 singles & completed trip to surface;																												
+ NB #16 cut 329 ft in 26.1 hrs - graded SY-11/1-B0/0-G02;																												
+ Ran back to bottom w/ NB #17 & modified BHA (reamed 4396 - 4771 ft & 7679 - 7976 ft), circulated bottoms up & POOH to run E-logs;																												
+ Strapped pipe during trip in & corrected total depth to 7982 ft;																												
+ Ran E-logs @ 7982 ft : DIFL-GR-SP, BHC Sonic-GR-SP-Cal, CNL-CDL, TEMP, FMT, SWS, RFT & Seismic spot check survey;																												
+ Ran 211 joints of 9.025 in, 53.5 lb/ft, L-80 casing to 7976 ft. Washed the last 1.5 joints to bottom.																												
+ Pumped a 60 bbl freshwater spacer mixed with 15 gal/bbl CA-7 at 4 to 5 bbl/min. Cemented with 1000 sxs class "G" cement mixed with 3% KCl, 1% D-GO, 0.2% D-133 and 0.2 D-46. The first 200 sxs were mixed to 14.0 ppg density and the last 800 sxs to 15.8 ppg density. Rig pumps displaced the cement at 10 bbl/min, bumped plug and held 900 psi until bled off.																												

Data Printed at time 08:20 Date Apr 13 '86
Data Recorded at time 21:54 Date Apr 7 '86

Cement was clean from the casing and Dresser Atlas ran a CBL. Testing was commenced on 14/4/86.

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ANCHORAGE, ALASKA