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REPORTS

DATE:

NOV 2002

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Betty Rivera
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

November 13, 2002

Mr. Jon R. Tully
City Administrator
City of Carlsbad
P.O. Box 1569
Carlsbad, New Mexico 88221-1569

RE: MONITOR WELL #3 INVESTIGATIONS
SHEEP DRAW WELLFIELD
CARLSBAD, NEW MEXICO

Dear Mr. Tully:

Attached is a copy of the New Mexico Oil Conservation Division's (OCD) preliminary investigation report of the brine water that the City of Carlsbad discovered in monitor well MW#3 which was installed in the Sheep Draw Wellfield.

The OCD would like to meet with you after the city has an opportunity to review the report and discuss the results of the report and potential future actions at the site. Please contact me at your convenience so that we can set a meeting date.

If you have any questions, please contact me at (505) 476-3491.

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

cc w/attachment: Tim Gum, OCD Artesia District Supervisor

NEW MEXICO OIL CONSERVATION DIVISION

PRELIMINARY

INVESTIGATION REPORT

OF

THE

CITY OF CARLSBAD

SHEEP DRAW WELLFIELD

November 13, 2002

By:

William C. Olson, Hydrologist

Bryan G. Arrant, Petroleum Engineering Specialist

Mike Stubblefield, Environmental Engineering Specialist

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INTRODUCTION

On December 12, 2001, the New Mexico Oil Conservation Division (OCD) contacted the City of Carlsbad, New Mexico regarding information that the OCD had received on ground water contamination discovered during recent drilling a monitoring well within the city municipal water well field southeast of the City of Carlsbad for the purpose of monitoring the quantity and quality of ground water within the well field. Carlsbad informed the OCD that the city had encountered brine water during the drilling of ground water monitoring well MW-3 adjacent to the city water well field. They reported that a 2-foot void was encountered during drilling of the monitor well at a depth of 116 feet from the surface and that water flowed into the borehole. The city took a sample of the water and continued drilling. Preliminary testing by the city showed that hydrogen sulfide gas at a concentration of 600 ppm was present in the headspace of water samples and that the water salinity was off the scale of the field equipment.

Subsequently, the city received the results of the water analyses from Cardinal Laboratories which showed that the water had a specific conductivity of 95,000 micromhos/cm and contained 123,000 mg/l of chloride and non-detectable levels of TPH (GRO & DRO using modified EPA method 8015). These analytical results were verbally transmitted to the OCD and need to be verified with the actual laboratory analyses since it is not possible for a sample to have a specific conductivity higher than an individual chemical constituent.

At that time, the drilling ceased at a depth of 320 feet to prevent creation of a vertical conduit for migration of the brine water to deeper depths. The borehole was cemented back to 140 feet from the surface and a bentonite plug was then placed from 140 feet to 124 feet. The borehole is completed with approximately 80 feet of 6 inch surface casing. The remainder of the hole from 80 to 124 feet is uncased open hole. On December 20, 2001, the measured depth to ground water was 72.49 feet below the top of the casing.

Further water quality sampling by the city showed that the water also contained 0.005 mg/l of benzene and 0.005 mg/l of toluene. Based upon the water quality analyses, the city theorized that the ground water may be contaminated as a result of oil and gas operations and noted that a 1940's era oil and gas plug and abandonment (P&A) marker was located hydrologically upgradient approximately one-quarter to one-third of a mile west of monitor well MW-3.

SCOPE OF WORK

This report presents the results of a preliminary investigation into the origin of brine water discovered in MW-3, the possibility that the source of this water was oilfield activities in the area and the potential that these waters could impact the City of Carlsbad water well field .

Because the initial city water quality samples were taken from an undeveloped borehole during drilling, on January 28, 2002, the OCD issued a scope of work to AMEC Earth and Environmental (AMEC) to develop MW-3 and conduct additional water quality sampling of monitor well MW-3. AMEC submitted a work plan to the OCD on February 1, 2002 outlining the scope of the services to be performed and an estimate of the project costs. The OCD approved the work plan on February 6, 2002. The work plan was implemented between February 7, 2002 and March 5, 2002 and a report on the water quality sampling was received by the OCD on April 29, 2002.

At the same time, the OCD began to compile information on the geology of the site based upon the drilling logs of oil and gas production wells, the monitor well MW-3 drilling log and published reports on the area.

The OCD also reviewed well file records on the completion of oil and gas production wells and plugging of abandoned wells within the City of Carlsbad Wellhead Protection Area.

SITE DESCRIPTION

Monitor well MW-3 is located approximately 6 miles southwest of Carlsbad, New Mexico in the SE/4 SE/4 of Section 12, Township 23 South, Range 25 East, Eddy County, New Mexico (figure 1). The site lies within the oil and gas production area of the Sheep Draw Wellfield which occurs on a mix of federal, state and private lands. Nine municipal water wells for the public water supply for the City of Carlsbad are located west of the site within three-quarters of a mile of MW-3. Several oil and gas production wells are located within one mile of the site. The P&A marker noted by the city is the site of the Turner and Devito #1 well which was drilled and plugged and abandoned in 1940 without reaching an oil or gas production horizon. The Turner and Devito #1 well is located in the SW/4 SE/4 of Section 12, Township 23 South, Range 25 East, Eddy County, New Mexico.

GENERAL GEOLOGY

The site, within the Sheep Draw Wellfield, lies in the geologic area where the Guadalupian Series Permian Basin reef complex and Delaware Basin prograde into each other. The city water wells are found on the eastern fringe of the Guadalupe Ridge, which is made up of the massive Permian reef complex containing the Carlsbad and Capitan limestones. The Guadalupe Ridge defines the western margin of the Delaware Basin, which is a sedimentary and evaporite basin ringed by this limestone reef complex. The Guadalupe Stratigraphy Insert (figure 2) shows the general geological relationship of the reef complex to the Delaware Basin.

The Carlsbad limestone is a medium to thin bedded gray to buff limestone and dolomite but has some interbedded buff to pink siltstone. Its maximum thickness is about 1000 feet. The formation thins to the northwest as it grades into redbeds and evaporites of the Chalk Bluff formation. It also thins to the southeast as it interfingers with and overlaps the Capitan limestone and is the source of water for the City of Carlsbad's municipal wells.

The Capitan Limestone crops out along the front of the reef escarpment and in the canyon walls in Guadalupe Ridge in the southern part of Eddy County. It interfingers to the southeast with the Bell Canyon formation of the Delaware Mountain group and to the northwest with the Carlsbad limestone. The Capitan is a massive gray to buff limestone 1,000 to 2,000 feet thick containing solution cavities ranging in size from slight enlargements of joints and bedding planes to the huge caverns of Carlsbad Caverns National Park.

The upper portion of the Delaware basin consists of the Delaware Mountain group overlain by the Castile, Salado and Rustler formations. The Delaware Mountain group contains the basinal sandstones of the Bell Canyon, Cherry Canyon and Brushy Canyon formations interspersed with some thin limestone beds. The total thickness of the Delaware Mountain group ranges from approximately 2,670 feet to 3,040 feet.

Overlying the sedimentary rocks of the Delaware Mountain group in the Delaware Basin is the Castile formation, consisting of 1,300 to 2000 feet of anhydrite and gypsum with small amounts of halite, dolomite and sandstone. Although the Castile is composed predominately of anhydrite, it contains thick beds of halite under the Carlsbad alluvial basin which pinch out toward the west. The Castile

formation thins to the northwest along the base of the reef escarpment and thickens to the southeast toward the lower part of the basin. The Castile formation acts as a barrier to movement of ground water in the Capitan limestone. Water in the Castile formation is high in sulfate and is undesirable for human consumption.

The Salado formation consisting of halite and small amounts of anhydrite, polyhalite and other potassium salts, and red sandy shale, overlies the Castile formation in the area east of the Pecos River. West of the river most of it has been removed by solution. The Salado formation is not water bearing.

The Rustler formation unconformably overlies the Salado formation. It consists of anhydrite, gypsum, interbedded red and green sandy clay and some beds of dolomite. The Rustler formation ranges in thickness from about 200 feet in northern Eddy County to about 500 feet southeast of Carlsbad. In its outcrop areas the Rustler yields water to stock wells and some domestic wells. The water from the Rustler generally is not desirable for domestic use because of its high chloride and sulfate content. In certain areas wells penetrating the lower part of the Rustler yield a concentrated brine derived from the underlying Salado formation.

The surface geology consists of Quaternary alluvium which occurs along the drainages of Dark Canyon and Sheep Draw and drainages originating from Azotea Mesa and the Guadalupe Ridge. The alluvium consists of clay, silt, sand, gravel, caliche and conglomerate. Locally the conglomerate is so well cemented that it is reported as limestone by well drillers (G.E Hendrickson and R.S. Jones)(L.J. Bjorklund and W.S. Motts).

SITE INVESTIGATION RESULTS

Hydrogeology

Appendix A contains a circular published by the New Mexico Bureau of Mines and Mineral Resources which describes the geology from oil and gas wells drilled in the area. The abstract includes an east-west stratigraphic cross section relating how each borehole and its location ties in with the geology of the Permian Reef complex and the Delaware Basin in the vicinity of monitor well MW-3. One of the wells used in the cross section is the plugged and abandoned Turner and Devito #1 well. The Turner & Devito #1 well is shown to be located east of the limits of the Carlsbad and Capitan formations and out in the Delaware Basin It penetrates a thin layer of alluvium, then approximately 1000 feet of anhydrite in the Castile

formation, and terminates in the Bell Canyon formation of the Delaware Mountain group. Monitor well MW-3 is approximately 1,600 feet east of the Turner and Devito #1 well, placing MW-3 farther into the sedimentary units of the Delaware Basin and away from the reef complex.

Figure #3 is an east-west stratigraphic section, developed by the OCD, that transverses that area and includes the well logs from area oil and gas wells and the Turner & Devito #1 well. Beginning with the westward portion of the section, the Exxon Mary Federal #5 in Section 11 of Township 23 South, Range 25 East shows Permian carbonate reef lithology to a depth of 1620 feet where the operator set the first string of well casing to ensure protection of fresh water in the reef. The fourth well on this cross-section shows the Turner & Devito #1 well, approximately 1,600 feet west of MW-3. The strip log for the Turner & Devito #1 again shows anhydrite lithology from approximately 50 feet from the surface to a depth of 1,065 feet. The eastern-most well on the cross-section, the Cities Services Federal N Com #1 in section 5 of Township 23 South, Range 26 East, also shows lithology of the Delaware Mountain group and overlying salt sections of the Castile formation consistent with the cross-sectional stratigraphic representations presented in Appendix A by the New Mexico Bureau of Mines and Mineral Resources.

There is additional evidence of the lack of Capitan reef stratigraphy at the site in documents published by the United States Geological Survey (USGS). Figures 4 and 5 show that the basinal edge of the Capitan reef complex is west of the site and that the site is within the western margin of alluvial deposits where shallow ground water can be found.

The observations of the driller during the drilling of MW-3 appear to contradict the geologic stratigraphy discussed above. The drillers notes provided by the City of Carlsbad (figure 6) indicate that the surface is underlain by approximately 36 feet of alluvial sands, silts and clays containing some caliche and cobbles. From 36 feet to a total depth of 320 feet the drillers notes indicate that a continuous consolidated limestone section was encountered. The limestone was listed as fractured and weathered at the 36–47 foot interval and in the 92-118 foot interval where brine water was encountered. However, the well record (Appendix B) filed with the New Mexico Office of the State Engineer (OSE) lists the monitor well as being completed in "shallow alluvium/basin fill". In subsequent discussions with the driller of the well, it was not evident why this discrepancy occurred. The driller stated that there were no cores taken and no geologist on site logging the lithology of the monitor well during drilling. The lithologies provided in figure 6

were descriptions made by the driller based upon cuttings blown out of the borehole during air drilling of the well. He stated that the cuttings from the sections that he described as limestone were a fine white to gray powder and that drilling of the final 200 feet of this section to total depth occurred in a relatively short period of time. Based upon the relative ease of drilling and the lack of geologic logging of the well, it is possible that the interval being drilled below the surface alluvium is actually the anhydrite section of the Castile.

Ground water is found in the Carlsbad limestone at approximately the 400 foot depth in city water wells west of the site. Ground water flow within the Capitan reef complex is to the northeast along the arc of the reef (figure 4). Ground water depths in the shallow alluvium varies from approximately 20 – 200 feet. The direction of regional round water flow in the shallow alluvial aquifer is toward the east (figure 5) and away from the city well field. A City of Carlsbad produced ground water potentiometric map from water wells in the sections surrounding MW-3 also shows that the localized shallow ground water flow is to the east (figure 1).

Ground Water Quality

Regionally, the quality of ground water in the alluvial aquifers within T22S, R26E and T22S, R25E varies from 712–1680 mg/l of total dissolved solids (TDS) and 2-172 mg/l of chloride. Several alluvial ground water wells are located within two miles of monitor well MW-3, but no water samples taken from them during this investigation.

A description of the procedures and results of OCD's water quality sampling of MW-3 are found in Appendix C. Ground water in MW-3 was found to be at 77.10 feet from the top of the casing in the monitor well and the total measured depth of the well was 125.80 feet from the top of casing.

Table #1 lists the benzene, toluene, ethylbenzene and xylene (BTEX), chloride, sulfate and total dissolved solids (TDS) results of samples taken from monitor well MW-3. The samples listed from Trace Analysis, Inc. and Pinnacle Laboratories, Inc. are split samples from the same sampling event submitted to separate laboratories.

The results for chlorides, sulfates and TDS show good correlation between the different sampling events and laboratories. These samples show the water from

MW-3 is a saturated brine containing high levels of chloride (117,000 – 123,000 mg/l), sulfate (25,000 – 29,300 mg/l) and TDS (224,000 – 271,000 mg/l).

The BTEX results however are conflicting. Benzene and toluene were detected in the Carlsbad samples near the laboratory detection limit. Benzene was detected in OCD's Trace Analysis samples at the laboratory detection limit, but toluene, ethylbenzene and xylene were not observed. While no benzene was detected in OCD's Pinnacle Laboratories sample at a detection limit below those of the other samples, low levels of toluene, ethylbenzene and xylene were observed.

Produced Water Quality

Information on the quality of produced water in the Delaware Formation was reviewed to determine if the source of the chloride and TDS in ground water in MW-3 could be a result of leakage from the Turner and Devito #1 well.

Figure 7 shows the locations and chloride concentrations of water samples taken from Delaware formation wells. The chloride concentrations in Delaware formation waters east of the site in T22S, R27E; T23S, R26E; T23S, R27E; T24S, R26E; and T24S, R27E range from 59,000 mg/l to 190,000 mg/l. The Delaware well closest to MW-3, approximately 4 miles east, has formation water with a chloride concentration of 110,000 mg/l.

Table 2 contains a USGS tabulation of water quality parameters from Delaware Formation water in the central portion of the Delaware Basin in T25S, R32E; T26S, R32E; and T26S, R33E. The chloride concentrations in Delaware formation water in this area range from 130,000 to 190,000 mg/l; total dissolved solids (TDS) concentrations range from 220,000 to 290,000 mg/l; and sulfate concentrations range from 210 to 1800 mg/l.

Well File Review

The OCD reviewed the well files of all oil and gas wells located within the City of Carlsbad Critical Area Wellhead Protection Area (figure #8) and within one mile of MW-3 which included the area within Section 18, Township 23 South, Range 26 East. This involved reviewing:

- the setting depth of all casing strings (surface, intermediate and production) on all wells;

- well cementing records on volumes and quality of cement used and cementing intervals;

- history of water flows or other problems encountered during drilling, production and plugging operations; and

- plugging procedures, volumes of cement used in cement plugs, intervals of all isolation plugs, and tagging of cement plugs to verify plugged intervals.

Oil and gas drilling began in the area as early as 1940 with wells being drilled by cable tool. A listing of the oil and gas wells drilled within the surveyed area can be found in Table #3. Records relating to the OCD's review can be found in Appendix D.

The review found most of the cementing operations were witnessed by OCD and/or BLM personnel, cement was circulated to the surface or staged to the surface on the surface and intermediate casing strings of all wells in the area of review, casing and top of cement requirements for production strings were within regulatory requirements, and plugged wells in the area of review were plugged according to current rules and guidelines for plugging and abandonment with the exception of the Turner and Devito #1 and Ramuz #1 wells.

The Turner and Devito #1 well is a 1940 cable tool drilled well located approximately 1,600 west of monitor well MW-3. Sulfur water flows were reported at 755 and 880 feet from the surface during the drilling of the Turner and Devito #1 well. Water flows were also reported in the Turner & Devito #1 at a depth of 1,456 feet. At the termination of drilling at 1,758 feet, 1,200 feet of sulfur water was reported in the hole. The hole was constructed with 451 feet of 10-inch surface casing cemented with 5 sacks of cement and 1,533 feet of 7-inch casing that was not cemented. The amount of water in the hole prevented further drilling and the hole was abandoned without reaching a hydrocarbon zone. There is no record as to how this well was plugged.

The Ramuz #1 well is a 1940 cable tool drilled well located approximately 2,000 feet southeast of monitor well MW-3. A salt water flow was reported during the drilling of the Ramuz #1 at a depth of 1,808 feet. Water came up approximately 1,500 feet in the hole and the well was abandoned without reaching a hydrocarbon

zone. The bottom of the hole was plugged with cement from approximately 1,808 feet to 1,730 feet. From approximately 1,660 to 1,425 feet, 235 feet of cemented 7-inch casing was left in the hole. The hole was filled with mud from 1730 feet to 225 feet. A cement plug was placed on top of the mud from approximately 225 to 150 feet. The remainder of the hole was filled with mud from 150 feet to the surface through the 100 feet of 8 ¼ inch surface pipe and a cement cap of unknown thickness was placed at the surface. This well plugging does not meet OCD's current plugging guidelines.

CONCLUSIONS

The geology of the site shows that it is located outside the Capitan reef complex that contains the public water supply wells for the City of Carlsbad and that monitor well MW-3 is most likely completed in the Castile Formation. Since the Castile formation acts as a barrier to movement of ground water in the Capitan reef complex and shallow ground water flow is to the east, away from the Carlsbad city water supply system, the brine water in the shallow ground water at MW-3 should not pose a threat to the city water system.

The quality of ground water in MW-3 is high in sulfate, as would be expected of water in the Castile formation. The water also contains high levels of chloride and TDS, and low levels of BTEX. The concentrations of chloride and TDS in ground water from MW-3 are similar in concentration to waters produced from the Delaware formation.

The Turner and Devito #1 and Ramuz #1, 1940's oil and gas exploratory wells, were identified as not meeting the OCD's current regulatory casing, cementing and plugging requirements and/or guidelines. It is possible that the brine waters could be a result of leakage from these exploratory wells. Both wells were drilled into the Delaware Formation but were plugged without reaching an oil or gas production horizon.

The Turner and Devito #1 is located hydrologically upgradient of MW-3 and encountered a pressurized water zone in the Delaware formation that caused cable tool drilling to cease and the well to be plugged. While there is no record of whether this well was plugged to prevent migration of the waters encountered during drilling, water only rose 1,200 feet in the 1758 foot hole. Therefore, the static water level in the Turner and Devito #1 well would be 558 feet below the ground surface which is well below the level at which ground water was

discovered in MW-3 (116 feet below ground surface). Unless the water zones in the Turner and Devito #1 increased in pressure since it was plugged, these deep waters should not reach the elevation at which ground water was discovered in MW-3.

The Ramuz #1 also encountered pressurized water in the Delaware formation that caused cable tool drilling to cease and the well to be plugged. However, this well is located approximately 2,000 feet downgradient of monitor well MW-3 and would be less likely to be the cause of the brine water observed in MW-3. At this site the well was plugged for protection of shallow ground waters, but not according to current requirements. Water pressure also caused water to rise in the hole during drilling, in this case, 1,500 feet in a 1,808-foot hole. The static water level in the Ramuz #1 well would be 308 feet below the ground surface which is also well below the level at which ground water was discovered in MW-3. Again, as in the case of the Turner and Devito #1, unless the water zones in the Ramuz #1 increased in pressure over time since plugging, these deep waters should not reach the elevation at which ground water was found in MW-3.

As a result, with the available information, the source of the brine water in monitor well MW-3 cannot be conclusively determined at this time.

RECOMMENDATIONS

Since the Turner and Devito #1 and Ramuz #1 wells are located within the wellhead protection areas of the City of Carlsbad, they should be re-entered and plugged according to current guidelines for protection of ground water. During reentry, if possible, a water sample should be obtained from each well and analyzed for BTEX, major cations and anions, and heavy metals in order to determine if deep waters from these wells are similar in composition to the shallow waters found in monitor well MW-3.

If pressurized or flowing waters are discovered during the replugging of these wells and the composition of the waters is similar in composition to the ground water in MW-3, additional monitor wells may be needed to determine if there has been migration of fluids from the Turner and Devito #1 and Ramuz #1 wells.

REFERENCES

G.E. Hendrickson and R.S. Jones, 1952, "Geology and Ground-Water Resources of Eddy County, New Mexico", Ground Water Report 3, State Bureau of Mines and Mineral Resources, New Mexico Institute of Mining & Technology, Campus Station, Socorro, New Mexico.

L.J. Bjorklund and W.S. Motts, December 1959, "Geology and Water Resources of the Carlsbad Area, Eddy County, New Mexico", Open File Report, United States Department of the Interior Geological Survey.

Peter Scholle, May 19, 2000, "An Introduction and Virtual Geologic Field Trip to the Permian Reef Complex, Guadalupe and Delaware Mountains, New Mexico-West Texas", Available at: http://geoinfo.nmt.edu/staff/scholle/guadalupe.html.

Steven F. Richey, Jane G. Wells, and Kathleen T. Stephens, 1985, "Geohydrology of the Delaware Basin and Vicinity, Texas and New Mexico", Water Resources Investigation Report 84-4077, U.S. Geological Survey.

Willis W. Tyrell, Jr., Donald H. Lokke, George A, Sanderson, George J. Verville, 1978, "Late Guadalupian Correlations Permian Reef Complex, West Texas and New Mexico", Circular 159, New Mexico Bureau of Mines and Mineral Resources.

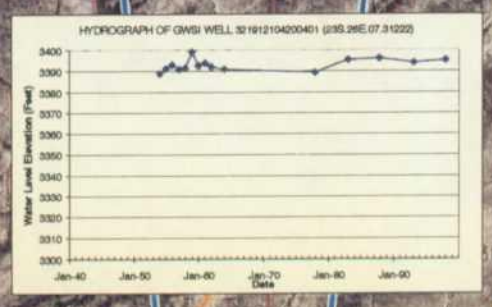
W.L. Hiss, November 1975, "Water-quality Data From Oil and Gas Wells in Part of the Permian Basin Southeastern New Mexico and Western Texas", Open File Report 75-579, United States Department of the Interior Geological Survey.

FIGURES

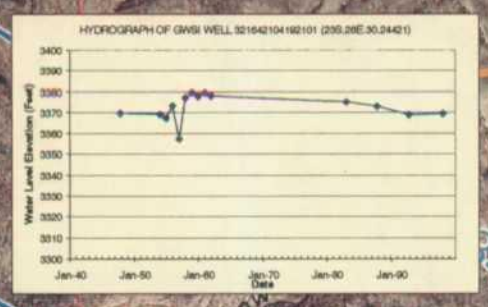
City of Carlsbad Wells

Contour Control Points (USGS GWSI and BGW Field Data)

Shallow Water Level Contours (feet)



WELL 1
WELL 2
WELL 3
WELL 4
WELL5
WELL 6
WELL 7
WELL 8
WELL 9
RANCH
01/14/1998 - 3395.1
12/20/2001 - 3385.6
2-28-85
MW3
12/20/2001 - 3360.7
EXON - 91
10/20/1987 - 3271
01/16/1998 - 3369.4
12/14/2001 GPS Data



0 1,000 2,000 3,000 4,000 5,000 Feet

N W E S

1:24,000

MAP PROJECTION: UTM ZONE 13N, NAD83

CARLSBAD / WELLFIELD PLANNING

CITY OF CARLSBAD MW-3 LOCALITY MAP

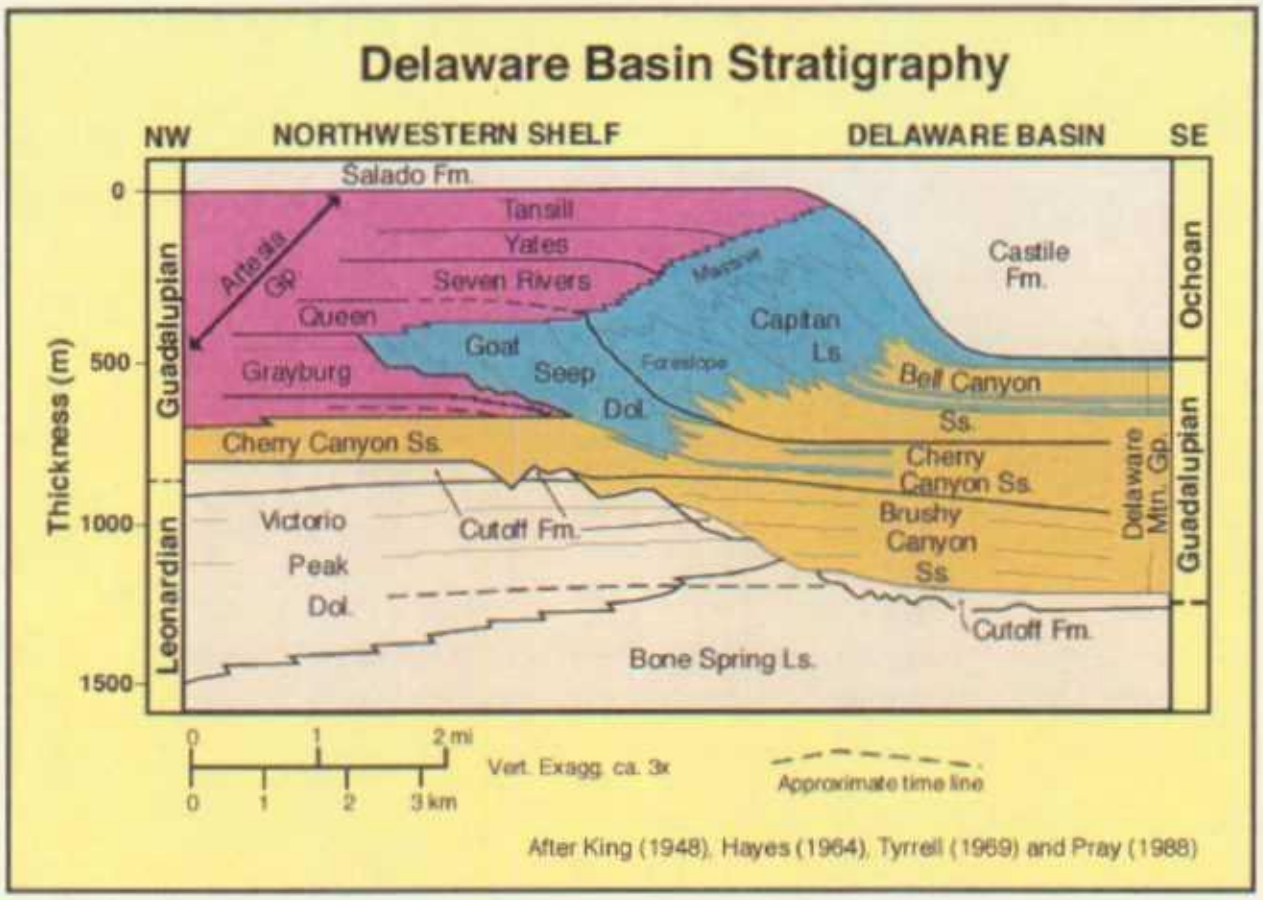
DATE:	12/20/2001
PRODUCED BY:	SES
CHECKED BY:	RW
FILE NAME:	LOCALITY.MXD

FIGURE 1

BGW

BALLEAU GROUNDWATER, INC.

GUADALUPE STRATIGRAPHY INSERT



Standard stratigraphic nomenclature of the Permian strata exposed in the Guadalupe Mountains. Modified from many sources including King (1948), Hayes (1964), Tyrrell (1969) and Pray (1988a).

Guadalupe Mtns. geology —— Scholle home page —— NM Bureau staff page —— NM Bureau main page

FIGURE 2

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
U.S. ENVIRONMENTAL PROTECTION AGENCY

PLATE 5
DELAWARE BASIN, TEXAS AND NEW MEXICO
WATER-RESOURCES INVESTIGATIONS REPORT 84-4077

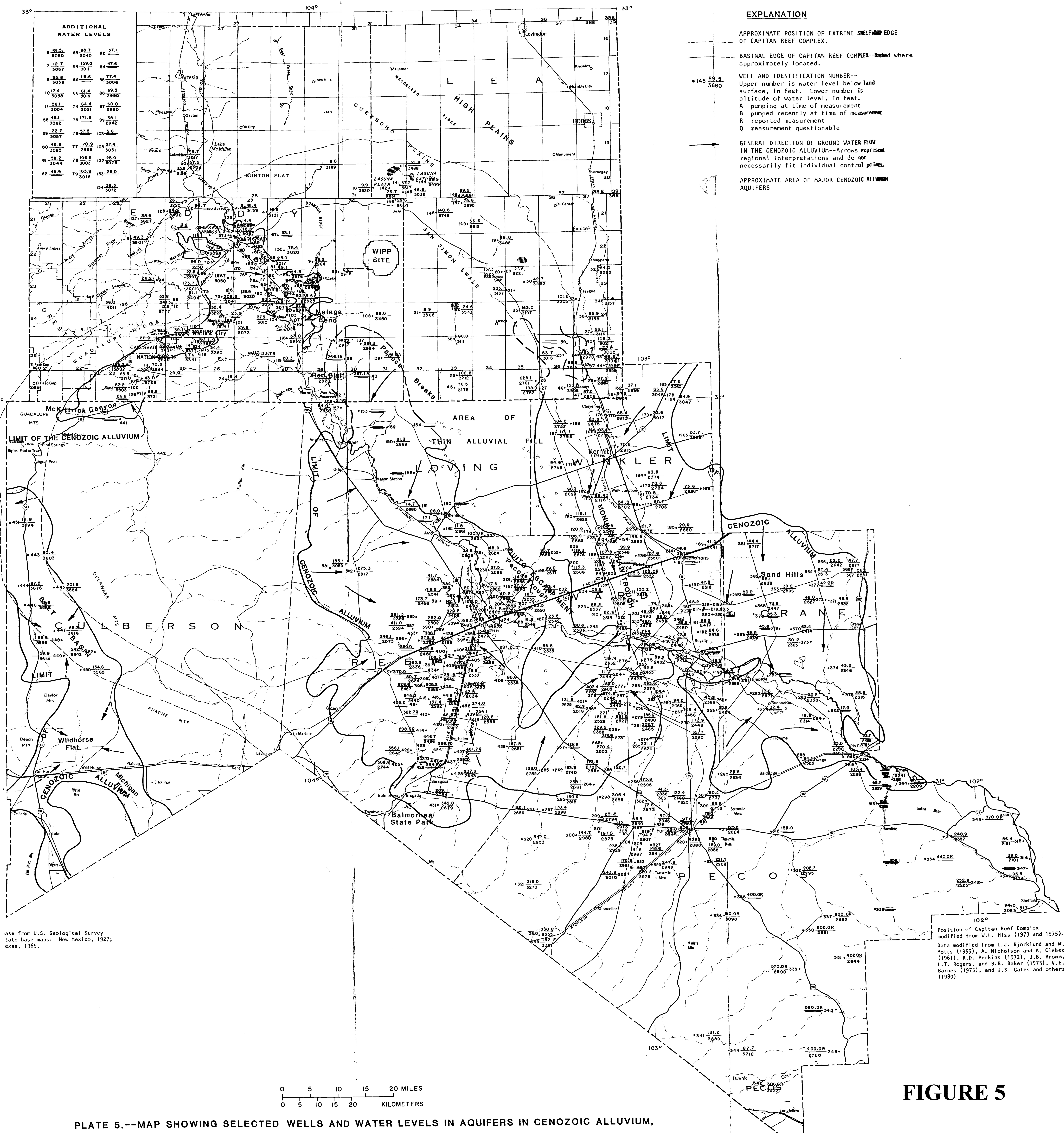


PLATE 5.--MAP SHOWING SELECTED WELLS AND WATER LEVELS IN AQUIFERS IN CENOZOIC ALLUVIUM, TEXAS AND NEW MEXICO.

FIGURE 5

IITED STATES
PARTMENT OF THE INTERIOR
OLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
U.S. ENVIRONMENTAL PROTECTION AGENCY

PLATE 2
DELAWARE BASIN, TEXAS AND NEW MEXICO
WATER-RESOURCES INVESTIGATIONS REPORT 84-4077

EXPLANATION

- APPROXIMATE POSITION OF EXTREME SHELFWARD EDGE OF CAPITAN REEF COMPLEX.
- BASINAL EDGE OF CAPITAN REEF COMPLEX--Dashed where approximately located.
- 15 — LINE OF EQUAL THICKNESS OF THE CAPITAN AQUIFER, IN HUNDREDS OF FEET--Dashed where approximately located. Interval is 500 feet. (From Hiss, 1975).
- • 616 1138.0/2579 WELL AND IDENTIFICATION NUMBER-- Upper number is water level below or above (+) land surface, in feet. Lower number is altitude of water level, in feet. R indicates reported measurement. Datum is sea level.
- GENERAL DIRECTION OF GROUND-WATER FLOW IN THE CAPITAN REEF--Arrows represent regional interpretations and do not necessarily fit individual control points.

0 5 10 15 20 MILES
0 5 10 15 20 KILOMETERS

Position of Capitan Reef Complex modified from W.L. Hiss (1973 and 1975).

: from U.S. Geological Survey
e base maps: New Mexico, 1927;
s, 1965.

PLATE 2.--MAP SHOWING SELECTED WELLS, WATER LEVELS IN, AND THICKNESS OF THE CAPITAN AQUIFER, TEXAS AND NEW MEXICO.

FIGURE 4

FIGURE 3

1

30015253780000
EXXON CORPORATION
MARY FEDERAL 5
023.0S 025.0E 011
TD 10731.0 ft
G
3860.0 ft KB

2

30015250460000
EXXON CORPORATION
MARY FEDERAL 3-Y
023.0S 025.0E 011
TD 5195.0 ft
D&A
3739.0 ft KB

3

30015209990000
HANAGAN PET CORP
SQUAW 1
023.0S 025.0E 012
TD 11460.0 ft
G
3540.0 ft KB

4

30015001360000
TURNER-DEVITO
DEVITO 1
023.0S 025.0E 012
TD 1758.0 ft
D&A-G
3446.0 ft ES

5

30015214770000
HANAGAN PET CORP
NEWMAN COM 1
023.0S 026.0E 007
TD 11626.0 ft
AG
3454.0 ft KB

6

30015235380000
CITIES SERV OIL CO
FEDERAL /N/COM 1
023.0S 026.0E 005
TD 11750.0 ft
AG
3345.0 ft KB

0.9mi

0.8mi

1.8mi

71728.2.1

71730.2.1

71759.2.1

Descr by RON
7/21/87

Plotted by SWI
7/22/87

Delaware

T.D. 1728'

1.0 miles

STRATIGRAPHIC SECTION SHEEP DRAW AREA DATUM TOP DELAWARE

S, to #3

6" Surface Casing +1.5' @ -80'

0-1.5' pad
1.5-3' SM- Sand with Silt, light brn, dry
3'-8' SC- Sand with Clay, (Caliche) tan-white, dry
8'-36' CL- Clay, with sand and cobbles, red brn
Sli-moist-moist
36'-47' Fractured-weathered Limestone light grey
47'-~~48~~ 92 Consolidated LS light grey - grey
92-118 Fractured/weathered LS.
116-118 Brine/dark wet
118-320 Dry Limestone, grey to dark grey
TD 320

2nd hole hit Perched brine at 98'
6" Surface Casing +1.5' to 120

FIGURE 6

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1975

Prepared by
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
In cooperation with
NEW MEXICO STATE ENGINEER

RESOURCE MAP 4

This map was prepared to assist potential users of industrial and agricultural water in the general area of the Capitan reef located in southeastern New Mexico. It depicts the varying quality that may be available from aquifers in the Guadalupian Series of Permian age. Water containing relatively high concentrations of chloride ions (10,000 to more than 150,000 milligrams per litre) is found in rocks of the Guadalupian Series on the Northwest Shelf northwest of Hobbs, New Mexico, on the Central Basin platform, and in the Delaware basin. Conversely, water containing relatively low chloride-ion concentrations (less than 10,000 milligrams per litre) is associated with the Capitan aquifer, the San Andres Limestone, and the Artesia Group along the margins of the Delaware basin and at the north and south ends of the Central Basin platform. Fingers of the best quality of water extend into the Capitan aquifer to the north and east from the Guadalupe Mountains, New Mexico, and to the north away from the Glass Mountains, Texas.

The quality of ground water found in rocks of the Guadalupian Series in the western part of the Permian basin is controlled primarily by hydraulic conductivity of the aquifer and the proximity to the outcrop which is present in the western and southern part of the basin. Leaching of soluble minerals from the Guadalupian Series at the surface has enhanced the hydraulic conductivity where these rocks are exposed west of the Pecos River on the Northwestern shelf and in the Guadalupe Mountains. Fresh water enters the Guadalupian Series at outcrops in the Guadalupe, Delaware, Apache, and Glass Mountains, and at other exposures along the western and southern edges of the Permian basin. The fresh water has replaced saline water in the aquifer in amounts proportional to the hydraulic conductivity of the aquifers that have been developed by leaching of the strata. Relatively fresh water may be found resting upon saline water, as in the general case west of the Pecos River between Artesia and Carlsbad, or it may be encountered in situations where it is overlain and (or) surrounded by more saline water as, for example, in the vicinity of Carlsbad and in the San Andres Limestone and Grayburg Formation south of Hobbs, New Mexico. Throughout the area, water with a relatively low salinity can be found inter-fingering with water that is relatively high in salinity. This relationship has been shown to be a dependable qualitative indicator of the relative differences in hydraulic conductivity of the rocks.

The data were obtained from many sources including various exploration, production, and service companies within the petroleum industry and State and Federal agencies. The analyses represent samples of water collected over a period of approximately 45 years from 1926 to 1971 but are believed to accurately depict, on a regional basis, the water now present in the Permian (Guadalupian) age sedimentary rocks.

The two examples below illustrate use of the map. Water containing less than 5,000 milligrams per litre chloride is available near Carlsbad, in an arcuate strip parallel to the Capitan aquifer, and in narrow bands at either end of the Central Basin platform. By closer examination of the data points, the individual aquifers that would contain water of this quality can be identified from the plotted data points. On the other hand, an exploration for concentrated brines would be restricted to areas where the Guadalupian rocks are known to contain nearly saturated brines, as in the Delaware Mountain Group in eastern Loving County, Texas.

EXPLANATION

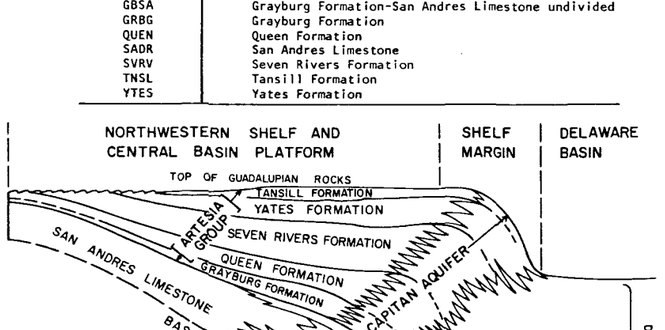
Position of Capitan aquifer — Approximate position of extreme shelfward edge; Approximate position of basinal edge

50 — Line of equal chloride-ion concentration, in thousands of milligrams per litre. Dashed where inferred. Based on lowest concentration shown or interpreted to be present. Within any area delineated by two lines, ground water having a chloride-ion concentration indicated by the line values is probably present in at least one water-bearing zone; ground water having a higher chloride-ion concentration than that indicated by the contour values is generally present also.

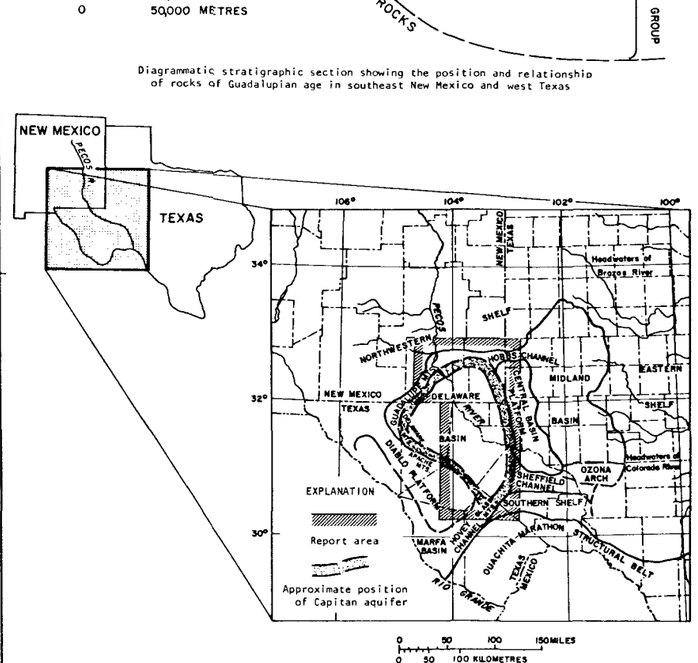
Stratigraphic code representing name of the formation from which water sample has been collected. The stratigraphic codes are listed in order of stratigraphic position, youngest first — Well penetrating rocks of Permian (Guadalupian) age

Multiple sample taken from same formation — CPAQ 7600 + 12,000 & DLWR 170,000 — Chloride-ion concentration in mg/l

Code	Stratigraphic Codes: Name (all units are of Permian age)
CPAQ	Capitan aquifer
DLWR	Delaware Mountain Group
GBSA	Grayburg Formation-San Andres Limestone undivided
GRBG	Grayburg Formation
QUEN	Queen Formation
SADR	San Andres Limestone
SVRV	Seven Rivers Formation
TNSL	Tansill Formation
YTES	Yates Formation



Diagrammatic stratigraphic section showing the position and relationship of rocks of Guadalupian age in southeast New Mexico and west Texas



Location of report area and tectonic elements in the Permian basin of west Texas and southeast New Mexico (modified after fig. 7, Oriel, Meyers, and Crosby, 1967, West Texas Permian basin region, in McKee, E. D., and Oriel, S. S., eds., Paleotectonic investigations of the Permian System in the United States: U.S. Geological Survey Professional Paper 515, p. 17-60).

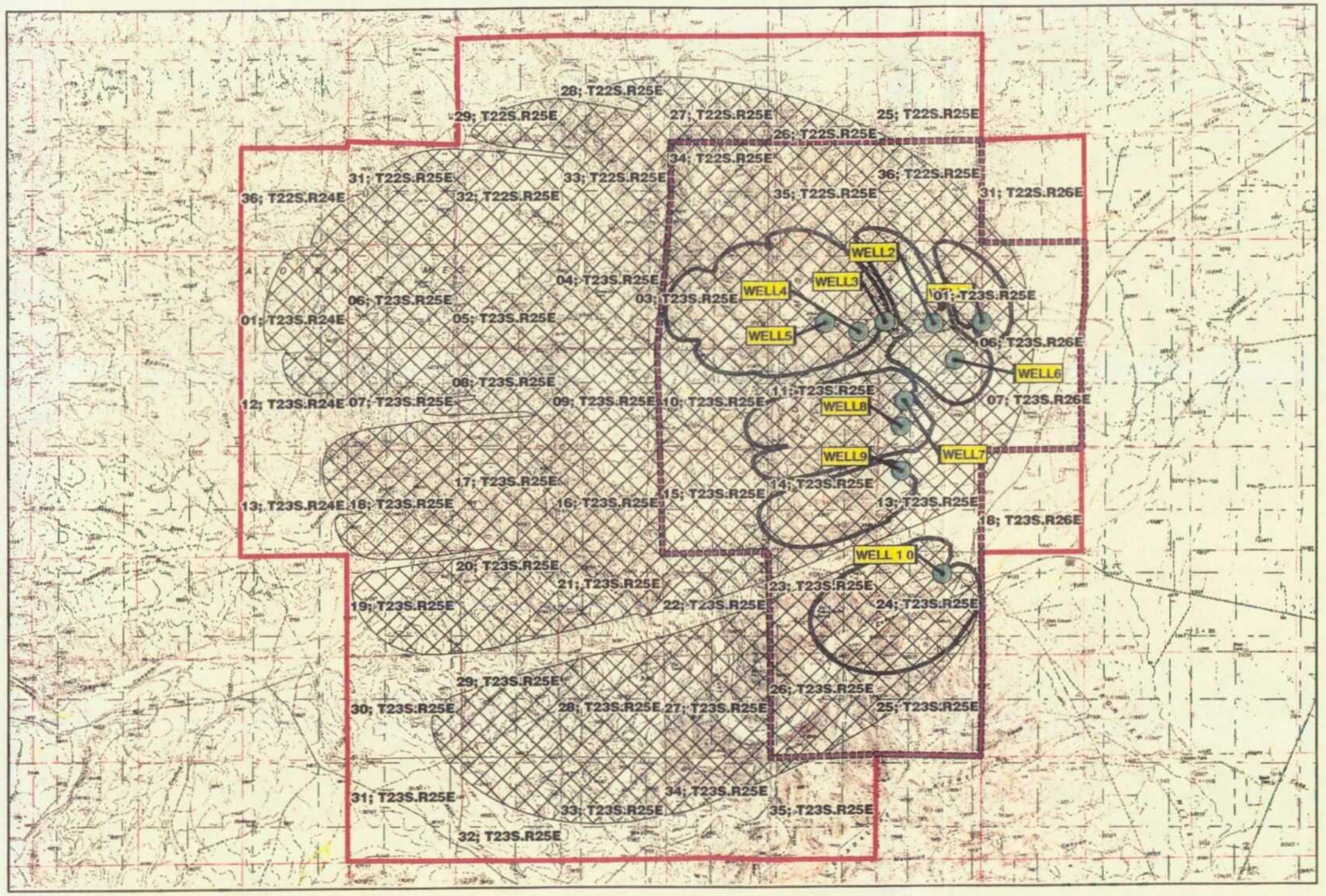
New Mexico base from U.S. Geological Survey, Branch of Oil and Gas Operations, Roswell 9 South 1 inch = 2 miles (1963). Texas base from Midland Map Co. BM-2 (1969), BM-3 (1966), BM-4 (1961), BM-11 (1956), BM-12 (1956), BM-13 (1961), BM-17 (1955), and BM-18 (1955) 1 inch = 5,000 feet, used with permission of Midland Map Co.

CHLORIDE-ION CONCENTRATION IN GROUND WATER IN PERMIAN GUADALUPIAN ROCKS, SOUTHEAST NEW MEXICO AND WEST TEXAS

by W. L. HISS

FIGURE 7

CITY OF CARLSBAD SHEEP DRAW WELLFIELD WELLHEAD PROTECTION AREAS



SHEEP DRAW WELLFIELD WELLHEAD PROTECTION AREA			
	TOWNSHIP	RANGE	SECTION
2 YEAR PROTECTION AREA	T22S	R25E	36
	T22S	R25E	35
	T22S	R25E	34
Critical Impact Area	T23S	R25E	2
	T23S	R25E	1
	T23S	R26E	6
	T23S	R25E	3
	T23S	R26E	7
	T23S	R25E	11
	T23S	R25E	12
	T23S	R25E	10
	T23S	R25E	14
	T23S	R25E	13
	T23S	R25E	15
	T23S	R25E	23
	T23S	R25E	24
	T23S	R25E	26
	T23S	R25E	25
10 YEAR PROTECTION AREA	T22S	R24E	36
	T22S	R25E	25
	T22S	R25E	26
Significant Impact Area	T22S	R25E	27
	T22S	R25E	28
	T22S	R25E	29
	T22S	R25E	31
	T22S	R25E	32
	T22S	R25E	33
	T22S	R25E	34
	T22S	R25E	35
	T22S	R25E	36
	T22S	R26E	31
	T23S	R24E	1
	T23S	R24E	12
	T23S	R24E	13
	T23S	R25E	1
	T23S	R25E	2
	T23S	R25E	3
	T23S	R25E	4
	T23S	R25E	5
	T23S	R25E	6
	T23S	R25E	7
	T23S	R25E	8
	T23S	R25E	9
	T23S	R25E	10
	T23S	R25E	11
	T23S	R25E	12
	T23S	R25E	13
	T23S	R25E	14
	T23S	R25E	15
	T23S	R25E	16
	T23S	R25E	17
	T23S	R25E	18
	T23S	R25E	19
	T23S	R25E	20
	T23S	R25E	21
	T23S	R25E	22
	T23S	R25E	23
	T23S	R25E	24
	T23S	R25E	25
	T23S	R25E	26
	T23S	R25E	27
	T23S	R25E	28
	T23S	R25E	29
	T23S	R25E	30
	T23S	R25E	31
	T23S	R25E	32
	T23S	R25E	33
	T23S	R25E	34
	T23S	R25E	35
	T23S	R26E	6

0 0.5 1 2 Miles

N

PROJECTION: NEW MEXICO STATEPLANE EAST ZONE, NAD27

Legend

- 2 YEAR WELLHEAD PROTECTION AREA BOUNDARY
- 2 YEAR WELL CAPTURE ZONE
- 10 YEAR WELLHEAD PROTECTION AREA BOUNDARY
- 10 YEAR WELL CAPTURE ZONE

FIGURE 8

DATA SOURCE: USGS 1:24,000 DRGS, "WHPA VERSION 2.2", 1993, HYDROLOGIC, INC., DEVELOPED FOR THE USEPA OFFICE OF GROUNDWATER PROTECTION.

BALLEAU GROUNDWATER, INC.

TABLES

Parameter	Carlsbad City Samples (12/20/01)	OCD Samples Trace Analysis (3/5/02)	OCD Samples Pinnacle Labs (3/5/02)
Benzene	0.005	0.02	ND
Toluene	0.005	ND	0.015
Ethylbenzene	ND	ND	0.0039
Xylene	ND	ND	0.0084
Chloride	123,000**	117,000	120,000
Sulfate	NA	29,300	25,000
Total Dissolved Solids	NA	271,000	224,000

ND - not detected
NA - not analyzed
** - verbal report from City of Carlsbad

Table 1 – Ground Water Quality in MW-3 (mg/l)

TABLE 2 – Delaware Formation Water Quality (W.L. Hiss –1975)

LEA COUNTY

LOCATION SEC.	T.	R.	DATE OF COLLECTION	DEPTH FROM	TO	FORMATION	SAMP-LING METHOD	SILICA (SIO2) (MG/L)	IRON (FE) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM + POTASSIUM AS NA (MG/L)	BICAR-BONATE + CARBONATE (MG/L)	SULFATE (SO4) (MG/L)	HYDROGEN SULFIDE (H2S) (MG/L)	CHLORIDE (CL) (MG/L)	FLUO-RIDE (F) (MG/L)	NIT-RATE (NO3) (MG/L)	DENSITY OF WATER AT 20C (GM/ML)	DISSOLVED SOLIDS (SUM) (MG/L)	(CA+MG)/ (NA+K)	SPECIFIC CONDUCT-ANCE (UMHOS AT 25C)	SPECIFIC CONDUCT-ANCE CALC (UMHOS AT 18C)	RESIS-TIVITY MEAS. (OHM-M)	AT DEG.C	AI TI (A
24	21	34	01-01-65	3,900-	4,998	453CPRF	WH	-	-	870.	400.	2,900.	317.	2,700.	310.	5,000.			1.010	13,000. *	.606	-	15,000.	-		
24	21	34	01-08-65	3,900-	4,998	453CPRF	WH	-	-	860.	390.	2,900.	317.	2,700.	320.	5,000.			1.010	13,000. *	.588	-	15,000.	-		
24	21	34	01-09-65	3,900-	4,998	453CPRF	WH	-	-	850.	400.	2,900.	366.	2,600.	300.	5,000.			1.010	12,000. *	.605	-	14,700.	-		
24	21	34	01-10-65	3,900-	4,998	453CPRF	WH	-	-	840.	400.	2,900.	317.	2,800.	320.	5,000.			1.010	13,000. *	.590	-	15,000.	-		
24	21	34	01-11-65	3,900-	4,998	453CPRF	WH	-	-	870.	390.	2,600.	122.	2,400.	470.	4,900.			1.010	12,000. *	.666	-	14,100.	-		
24	21	34	01-11-65	3,900-	4,998	453CPRF	WH	-	-	860.	400.	2,900.	244.	2,700.	390.	5,000.			1.010	12,000. *	.605	-	14,800.	-		
5	22	33	03-00-62	3,609-	3,678	453CPRF	SB	-	-	-	-	16,000. *	-	-	-	25,000.			1.014 *	-	-	-	-	-		
5	22	33	03-00-62	3,784-	3,794	453CPRF	SB	-	-	-	-	17,000. *	-	-	-	27,000.			1.014 *	-	-	-	-	-		
12	22	35	10-23-62	-		453CPRF		-	0.0	730.	-	1,800. *	-	-	HV	2,800.			1.010	-	.455	-	-	-		
14	22	35	07-30-62	4,155-	4,663	453CPRF	PG	4.0	0.0	620. *	250. *	1,700. *	1,040. *	1,500.	880.	2,700.			1.006	7,800. *	.679	-	9,060.	1.420	16.0	
14	22	35	09-30-64	4,160-	4,663	453CPRF	WH	-	0.0	520.	220.	1,200. *	665.	1,500.	TR	2,000.			1.007	6,100. *	.822	-	7,130.	-		
14	22	35	04-26-65	4,160-	4,663	453CPRF	WH	-	0.0	620.	240.	1,300. *	958.	1,500.	1,100.	2,100.			1.007	7,800. *	.903	-	7,660.	1.900		
14	22	35	04-26-65	4,160-	4,663	453CPRF	WH	-	0.0	620.	230.	1,300. *	958.	1,500.	1,100.	2,100.			1.007	7,800. *	.883	-	7,700.	1.950		
14	22	35	04-26-65	4,160-	4,663	453CPRF	WH	-	-	620.	240.	1,300. *	958.	1,400.	960.	2,200.			1.007	7,700. *	.896	-	7,710.	1.800		
14	22	35	04-26-65	4,160-	4,663	453CPRF	WH	-	-	650.	240.	1,300. *	935.	1,500.	1,200.	2,200.			1.008	8,000. *	.920	-	7,780.	1.800		
14	22	35	07-14-66	4,160-	4,663	453CPRF	WH	21.	-	720.	260.	1,200.	719.	2,000.	-	1,900.	2.0	0.0	1.007	6,500. *	1.080	9,130.	7,590.	-		
28	23	35	11-14-66	-	4,470	453CPRF		-	-	1,500.	1,300.	11,000. *	488.	960.	-	24,000.			1.034	39,000. *	.363	-	50,300.	.245	26.0	
7	23	36	10-07-71	3,935-	5,300	453CPRF	DT	-	-	1,400.	550.	15,000.	573.	3,800.	-	23,000.			1.030	44,000. *	.180	-	54,500.	-		
09	24	36	10-27-67	3,890-	4,500	453CPRF		-	TR	540.	210.	4,500. *	902.	2,400.	-	6,200.			1.005	15,000. *	.228	-	18,500.	-		
20	24	36	11-04-66	4,278-	4,285	453CPRF	BR	-	-	-	-	100,000. *	-	-	-	160,000.			1.177	-	-	219,000.	-	-		
20	24	36	11-04-66	4,278-	4,285	453CPRF	BR	-	-	-	-	100,000. *	-	-	-	160,000.			1.176	-	-	219,000.	-	-		
20	24	36	11-04-66	4,278-	4,285	453CPRF	BR	-	-	-	-	88,000. *	-	-	-	140,000.			1.179	-	-	220,000.	-	-		
20	24	36	01-12-67	4,278-	4,285	453CPRF	BR	-	-	-	-	100,000. *	-	-	-	160,000.			1.173	-	-	215,000.	-	-		
34	24	36	03-20-52	-	3,515	453CPRF		-	-	140.	140.	3,400. *	140.	220.	-	5,700.			1.007	5,000. *	.125	-	14,000.	1.400	16.0	
5	26	36	04-00-60	3,363-	3,386	453CPRF	DT	-	10.	780.	250.	2,000. *	160.	2,400.	-	3,300.			1.007	8,900. *	.681	-	10,900.	.780	21.0	
23	21	34	10-25-66	4,169-	4,187	453CPTN	SB	-	-	1,000.	300.	3,200. *	480.	2,800.	-	5,300.			1.008	13,000. *	.553	18,300.	16,100.	-		
28	23	35	10-12-66	4,470-	4,507	453CPTN	BR	-	-	-	-	15,000. *	118.	-	-	23,000.			1.029	-	-	59,500.	-	-		
								-	-	-	-	-	-	-	-	-			-	-	-	-	-	-		
								-	-	-	-	-	-	-	-	-			-	-	-	-	-	-		
4	26	36	06-10-66	4,199-	4,695	453CPTN	SB	-	-	-	-	75,000. *	-	-	-	120,000.			1.125	-	-	200,000.	-	-		
4	26	36	06-13-66	4,199-	4,695	453CPTN	SB	-	-	-	-	61,000. *	-	-	-	94,000.			1.100	-	-	177,000.	-	-		
4	26	36	06-14-66	4,199-	4,695	453CPTN	SB	-	-	-	-	59,000. *	-	-	-	91,000.			1.106	-	-	168,000.	-	-		
21	26	33	05-00-58	-	4,980	453DLLM	BR	-	-	-	-	75,000. *	-	-	-	120,000. *			1.125 *	-	-	-	-	.045	24.0	
21	19	34	10-19-61	7,856-	7,906	453DLRM	DT	-	0.0	16,000.	2,500.	65,000. *	134.	800.	0.0	140,000.			1.145	220,000. *	.356	-	184,000.	.048		
9	24	35	00-00-00	5,310-	5,350	453DLSD	DT	-	TR	40,000.	4,700.	61,000. *	161.	650.	0.0	180,000.			1.203	280,000. *	.903	-	192,000.	.046	22.0	
28	25	32	04-23-62	4,626-		453DLSD	SB	-	TR	-	-	100,000. *	-	-	-	160,000.			1.150	-	-	-	-	-		
25	26	32	12-23-59	4,594-		453DLSD		-	-	27,000.	5,200.	59,000. *	88.	220.	-	150,000.			1.172	240,000. *	.694	-	187,000.	-		
26	26	32	04-00-64	-		453DLSD		-	-	26,000.	6,000.	60,000. *	976.	370.	-	160,000.			1.170	250,000. *	.698	-	187,000.	-		
35	26	32	01-00-60	4,500-		453DLSD	ST	-	85.	32,000.	5,400.	64,000. *	50.	600.	TR	170,000.			1.164	330,000. *	.739	-	193,000.	.046	22.0	
30	26	33	12-23-59	-		453DLSD		-	-	29,000.	5,200.	61,000. *	80.	210.	-	160,000.			1.181	250,000. *	.713	-	189,000.	-		
								-	-	-	-	-	-	-	-	-			-	-	-	-	-	-		
33	19	32	01-16-69	4,840-	4,860	453DLWR	WH	-	-	32,000.	11,000.	47,000. *	488.	430.	TR	160,000.			1.185	250,000. *	1.224	-	181,000.	-		
36	20	32	07-10-59	5,320-	5,420	453DLWR	DT	-	-	1,500.	30.	8,000. *	510.	3,000.	-	13,000.			1.046 *	26,000. *	.228	-	32,200.	.240		
36	20	32	07-29-59	-		453DLWR	DT	-	0.0	130.	18.	4,300. *	-	5,800.	0.0	2,500.			1.037	-	.043	-	-	.580	24.0	
31	20	33	09-23-61	5,404-	5,581	453DLWR	DT	-	0.0	21,000.	2,500.	50,000. *	142.	1,300.	0.0	120,000.			1.140	200,000. *	.563	-	171,000.	.051		
12	20	34	02-13-60	7,855-	7,955	453DLWR	DT	-	MD	21,000.	4,100.	55,000. *	208.	1,800.	0.0	130,000.			1.135	210,000. *	.578	-	179,000.	.055	22.0	
19	23	3	06-19-62	-		453DLWR		-	-	24,000.	3,300.	63,000. *	127.	160.	-	150,000.			1.152	240,000. *	.535	-	189,000.	-		
1	24	32	02-21-62	-		453DLWR		-	TR	23,000.	3,500.	97,000. *	-	-	TR	150,000.		0.0	1.167	-	.335	-	-	-		
1	24	32	02-21-62	-		453DLWR		-	TR	22,000.	3,400.	96,000. *	-	-	TR	150,000.		0.0	1.161	-	.326	-	-	-		
15	24	32	04-25-61	4,902-	4,908	453DLWR	WH	-	-	19,000.	3,000.	65,000. *	168.	490.	-	140,000.			1.156	230,000. *	.419	-	187,000.	-		
15	24	32	00-00-64	-		453DLWR		-	-	19,000.	3,000.	65,000. *	168.	490.	-	140,000.			1.156	230,000. *	.418	-	187,000.	-		
27	24	32	03-27-62	4,904-		453DLWR		-	0.0	27,000.	-	89,000. *	-	-	0.0	140,000.			1.145 *	-	.348	-	-	-		
1	25	32	03-21-62	4,793-		453DLWR		-	TR	22,000.	3,300.	68,000. *	102.	160.	-	150,000.			1.165	250,000. *	.467	-	191,000.	-		

TABLE 2 – Delaware Formation Water Quality - continued
(W.L. Hiss –1975)

LEA COUNTY

LEA COUNTY

LOCATION SEC.	T.	R.	DATE OF COLLECTION	DEPTH FROM	TO	FORMATION	SAMPLING METHOD	SILICA (SIO2) (MG/L)	IRON (FE) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM + POTASSIUM AS NA (MG/L)	BICARBONATE + CARBONATE (MG/L)	SULFATE (SO4) (MG/L)	HYDROGEN SULFIDE (H2S) (MG/L)	CHLORIDE (CL) (MG/L)	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DENSITY OF WATER AT 20C (GM/ML)	DISSOLVED SOLIDS (SUM) (MG/L)	(CA+MG)/ (NA+K)	SPECIFIC CONDUCTANCE (UMHOS AT 25C)	SPECIFIC CONDUCTANCE CALC (UMHOS AT 18C)	RESISTIVITY MEAS. (OHM-M)	AT DEG.C	RESISTIVITY CALC. (OHM-M AT 18C)
10	25	32	01-26-61	4,728-	4,734	453DLWR	SB	-	-	24,000.	3,300.	65,000. *	112.	440.	-	150,000.			1.179	250,000. *	.521	-	190,000.	.064	12.0	.053
15	25	32	09-08-60	4,694-	4,620	453DLWR	DT	-	50.	4,000.	720.	120,000. *	-	1,800.	-	190,000.			1.195	-	.052	-	-	.038	25.0	-
15	25	32	09-08-60	4,694-	4,620	453DLWR	DT	-	50.	3,600.	600.	120,000. *	-	1,760.	-	190,000.			1.193	-	.045	-	-	.036	25.0	-
16	25	32	04-26-61	4,656-	4,679	453DLWR		-	-	19,000.	3,200.	63,000. *	139.	460.	-	140,000.			1.155	220,000. *	.433	-	184,000.	-		.054
16	25	32	00-00-64	4,700-		453DLWR		-	-	19,000.	3,200.	63,000. *	139.	460.	-	140,000.			1.155	220,000. *	.433	-	184,000.	-		.054
22	25	32	11-10-60	4,732-	4,740	453DLWR		-	MD	26,000.	1,700.	78,000. *	198.	550.	0.0	170,000.			1.160	280,000. *	.430	-	200,000.	-		.050
27	25	32	03-30-62	4,647-	4,654	453DLWR	SB	-	-	22,000.	3,300.	66,000. *	64.	910.	-	150,000.			1.164	240,000. *	.475	-	188,000.	-		.053
22	25	36	00-00-00	5,260-	5,330	453DLWR	DT	-	-	28,000.	3,600.	73,000. *	260.	280.	-	170,000.			1.012 *	280,000. *	.534	-	195,000.	.043	24.0	.051
8	26	32	04-19-62	4,460-		453DLWR		-	MD	27,000.	3,300.	50,000. *	198.	1,000.	0.0	130,000.			1.160	220,000. *	.753	-	178,000.	.046	27.0	.056
26	26	32	04-03-64	-		453DLWR		-	-	27,000.	5,400.	62,000. *	85.	-	-	160,000.			1.170	-	.672	-	-	-		-
35	26	32	04-03-64	-		453DLWR	PG	-	HV	27,000.	5,600.	62,000. *	85.	310.	-	160,000.			1.168	260,000. *	.673	-	190,000.	-		.053
10	26	33	04-03-64	-		453DLWR	ST	-	-	32,000.	5,900.	72,000. *	85.	210.	-	180,000.			1.202	290,000. *	.668	-	196,000.	-		.051
31	26	33	04-03-64	-		453DLWR	ST	-	-	28,000.	6,200.	62,000. *	61.	250.	-	160,000.			1.174	260,000. *	.699	-	190,000.	-		.053
32	19	37	02-29-59	3,869-	3,872	453GRRG	PD	-	RV	-	-	24,000. *	-	-	TR	38,000.			1.044 *	-	-	-	-	-		-
30	26	37	06-27-63	3,721-	3,801	453GBRG	DT	-	TR	480.	220.	1,000. *	1,020.	1,800.	HV	1,200.			1.010	5,800. *	.937	-	6,030.	.860	26.0	1.65
								-	-	-	-	-	-	-	-	-										
15	17	32	09-30-65	-		453GBSA		-	140.	7,400.	1,300.	40,000. *	219.	750.	-	78,000.			1.080	130,000. *	.276	-	135,000.	-		.07
17	17	32	02-00-67	-		453GBSA	TB	-	-	-	-	30,000. *	-	-	-	47,000.			1.056	-	-	106,000.	-	-		-
								-	-	-	-	-	-	-	-	-										
22	17	32	08-02-66	-		453GBSA	WH	-	31.	2,000.	690.	84,000. *	341.	6,200.	-	130,000.			1.135	220,000. *	.043	-	189,000.	-		.05
25	17	32	07-18-64	3,900-	4,260	453GBSA	WH	-	25.	3,600.	2,000.	64,000. *	669.	4,000.	1.0	110,000.			1.115	180,000. *	.124	-	168,000.	.058	23.0	.06
18	17	33	07-10-63	-		453GBSA		-	MD	1,300.	6,200.	59,000. *	535.	1,700.	0.0	130,000.			1.154	200,000. *	.223	-	162,000.	.046	26.0	.06
19	17	33	04-26-63	4,200-		453GBSA		-	0.0	1,400.	1,100.	8,600. *	338.	7,600.	MD	13,000.			1.025	32,000. *	.418	-	36,700.	.220	24.0	.27
26	17	33	00-00-00	4,542-	4,695	453GBSA		-	0.0	2,000.	410.	27,000. *	1,200.	2,500.	0.0	44,000.			1.058	77,000. *	.116	-	89,000.	.101	19.0	.11
28	17	33	08-11-37	-	3,852	453GBSA		-	-	10,000.	7,300.	19,000. *	282.	1,200.	0.0	67,000.			1.074	105,000.	1.365	-	113,000.	-		.08
								-	-	-	-	-	-	-	-	-										
25	17	34	10-12-59	4,097-	4,680	453GBSA	ST	-	-	14,000.	9,500.	34,000. *	625.	2,300.	-	110,000.			1.137	170,000. *	1.001	-	149,000.	-		.06
29	17	34	07-05-61	4,436-	4,729	453GBSA		-	-	-	-	77,000. *	-	-	0.0	120,000.			1.140	-	-	-	-	-		-
32	17	35	06-11-60	4,600-		453GBSA		-	17.	2,900.	810.	47,000. *	370.	3,100.	47.	78,000.			1.090	130,000. *	.102	-	137,000.	.063	25.0	.07
7	17	36	08-01-52	-	5,100	453GBSA	WH	-	-	6,200.	3,600.	78,000. *	61.	140.	-	140,000.			1.132	230,000. *	.179	-	192,000.	.042	30.0	.05
12	18	37	03-04-58	-	4,352	453GBSA	TB	-	-	3,800.	2,000.	11,000. *	191.	2,100.	-	27,000.			1.036	46,000. *	.783	-	57,800.	-		.17
13	18	37	06-01-57	-		453GBSA	WH	-	-	-	290.	5,000. *	1,100.	2,700.	-	7,800.			1.013	18,000. *	.108	-	-	.400	27.0	
25	18	37	08-19-59	3,970-	4,206	453GBSA		-	2.0	1,900.	0.0	2,900. *	1,390.	2,400.	-	5,300.			1.005	14,100. *	.761	-	16,900.	-		.5
18	18	38	09-12-58	-		453GBSA	ST	-	TR	880.	250.	2,500. *	930.	1,500.	-	4,500.			1.006 *	11,000. *	.589	-	13,200.	-		.7
28	18	38	10-01-59	-		453GBSA	WH	-	-	720.	340.	2,500. *	748.	3,600.	HV	7,600.			1.011	19,000. *	.268	-	22,600.	-		.4
28	18	38	10-02-59	-		453GBSA	WH	-	-	550.	340.	5,900. *	315.	3,500.	-	8,200.			1.015	19,000. *	.216	-	23,500.	-		.4
29	18	38	11-07-30	4,228-	4,247	453GBSA	TB	-	-	1,300.	300.	4,400. *	1,950.	2,800.	190.	6,700.			1.011	17,400.	.464	-	20,500.	-		.4
30	18	38	05-22-52	3,852-	4,208	453GBSA		-	-	250.	75.	290. *	58.	330.	-	830.			1.001 *	1,800. *	1.453	-	2,340.	-		4.2
34	18	38	04-23-56	-		453GBSA	PT	-	-	110.	54.	8,000. *	2,240.	-	-	11,000.			1.010	-	.029	-	-	-		-
17	19	37	07-10-62	3,869-	4,011	453GBSA	PG	-	-	1,100.	1,100.	3,000. *	1,100.	-	5.0	9,600.			1.008 *	16,000. *	1.232	-	22,200.	-		.4
17	19	37	01-31-63	3,855-	4,005	453GBSA	PG	-	-	390.	200.	2,300. *	1,950.	-	-	3,700.			1.001 *	-	.364	-	-	-		-
18	19	37	06-06-58	-		453GBSA		-	0.0	3,000.	310.	2,600. *	2,090.	1,800.	HV	7,700.			1.015	18,000. *	1.540	-	20,800.	-		.4
32	19	37	11-28-47	3,763-	3,914	453GBSA	ST	-	0.0	290.	200.	1,600. *	1,240.	68.	MD	2,700.			1.001 *	5,540.	.456	-	7,910.	.895	20.0	1.2
33	19	37	09-25-62	3,760-	3,910	453GBSA	WH	-	-	480.	200.	2,700. *	517.	650.	-	4,500.			1.005	9,100. *	.343	-	12,000.	-		.8
33	19	37	00-00-64	-		453GBSA		-	-	410.	250.	2,300. *	1,820.	160.	TR	3,800.			1.004	8,700. *	.420	-	10,900.	-		.9
3	19	38	07-20-55	4,220-	4,280	453GBSA	DT	-	0.0	3,400.	1,200.	4,200. *	580.	1,700.	20.	14,000.			1.018	25,000. *	1.489	-	32,900.	.254	10.0	.3
3	19	38	04-23-56	-		453GBSA	PT	-	-	180.	16.	1,400. *	2,250.	-	-	1,200.			1.006 *	-	.174	-	-	-		-
3	19	38	01-03-64	4,220-	4,280	453GBSA	DT	-	0.0	2,000.	700.	4,700. *	760.	3,000.	340.	10,000.			1.015	22,000. *	.772	-	26,200.	-		.3
4	19	38	10-14-30	-		453GBSA		-	-	2,200.	890.	0.0 *	1,460.	1,600.	570.	2,400.			1.008	7,080.	-	-	-	-		-
								-	-	-	-	-	-	-	-	-										
4	19	38	08-25-47	-		453GBSA		30.	-	-	-	1,300. *	1,630.	-	1,000.	2,000.			1.003 *	-	-	-	-	-		-
4	19	38	09-25-47	-		453GBSA		20.	-	-	-	1,500. *	2,180.	-	1,000.	2,300.			1.004 *	-	-	-	-	-		-
5	19	38	04-25-47	3,960-	4,175	453GBSA	WH	40.	TR	-	-	1,400. *	2,500. *	0.0	-	2,100.			1.003 *	-	-	-	-	-		-

TABLE 4A.--WATER-QUALITY DATA FOR EDDY AND LEA COUNTIES, NEW MEXICO, ARRANGED BY BOTH

TABLE 3 - OIL & GAS WELLS WITHIN CARLSBAD CRITICAL IMPACT WELLHEAD PROTECTION AREA AND SECTION 8, TOWNSHIP 23 SOUTH, RANGE 26 EAST

API NUMBER	LOCATION	COMPANY	WELL NAME	STATUS
30-015-25379	K-01-T23S-R25E	Louis Dreyfus Natural Gas Corporation	Squaw Federal #3	Active
30-015-23106	A-10-T23S-R25E	Enron Oil & Gas	Rock Tank 10 State #1	P&A
30-015-20785	H-11-T23S-R25E	Mineral Technologies	Mary Federal #1	Active
30-015-24942	H-11-T23S-R25E	Exxon Corporation	Mary Federal #3	P&A
30-015-25378	N-11-T23S-R25E	Pinon Petroleum Inc.	Mary Federal #5	Shut In
30-015-25046	H-11-T23S-R25E	Exxon Corporation	Mary Federal #3Y	P&A
30-015-20999	F-12-T23S-R25E	Louis Dreyfus Natural Gas Corporation	Squaw Federal #1	P&A
30-015-00136	O-12-T23S-R25E	Turner & Devito	Devito #1	P&A
30-015-24701	G-13-T23S-R25E	Exxon Corporation	Squaw Federal #2	P&A
30-015-22430	J-15-T23S-R25E	Gulf Oil Corporation	Shearn D Federal Com #1	P&A
30-015-25135	H-24-T23S-R25E	Exxon Corporation	Mary Federal #4	P&A
30-015-26975	J-26-T23S-R25E	Collins & Ware Inc.	Muley Federal #1	P&A
30-015-21362	K-06-T23S-R26E	Corinne Grace	Cueva Unit #1	Active
30-015-21477	O-07-T23S-R26E	Exxon Corporation	Newman #1	P&A
30-015-31466	G-18-T23S-R26E	Oxy USA WTP Limited Partners	Oxy Honest John State #1	Active
30-015-24641	N-18-T23S-R26E	Mayne & Mertz	Blue Water Federal #1	P&A
30-015-00375	C-18-T23S-R26E	E. Paul Moran	Ramuz #1	P&A

APPENDIX A

New Mexico Bureau of Mines & Mineral Resources Circular 159

LATE GUADALUPIAN CORRELATIONS, PERMIAN REEF COMPLEX, WEST TEXAS AND NEW MEXICO

by Willis W. Tyrrell, Jr., *Amoco International Oil Company, Chicago, Illinois,*
Donald H. Lokke, *Southern Methodist University, Dallas, Texas,*
George A. Sanderson, *Amoco Production Company, Tulsa, Oklahoma* and
George J. Verville, *Amoco Production Company, Denver, Colorado*

Abstract

The Tansill Formation (shelf deposit), upper Capitan Formation (shelf margin deposit), and Lamar Limestone (basinal deposit) are the uppermost carbonate units of the Permian Reef Complex. The Lamar Limestone Member of the Bell Canyon Formation is separated from the overlying Castile Formation by the "post-Lamar beds" consisting of Capitan debris at the margin of the Delaware Basin and a thin sandstone unit further basinward. The generally accepted correlation of the middle and lower Tansill with the Lamar (Tyrrell, 1969) has been questioned by Achauer (1969) and Kelly (1971), who correlate the Lamar with the Seven Rivers Formation. Their correlations contradict the exceptionally fine fusulinid zonation first established by Skinner and Wilde (1954, 1955) for the Lamar.

Fig. 1 shows the location and stratigraphic relationship of two Amoco Research core holes and a section measured along the north wall of Dark Canyon. The Amoco No. 2 Dark Canyon cored 399 ft of the Tansill Formation and the upper 70 ft of the underlying Yates Formation. The Ocotillo Silt Member is present from 86-118 ft. Fusulinid occurrences in this core include (from top to bottom):

Fusulinid	Depth (in ft)
Poorly preserved *Paraboultonia*(?)	15-80
Reichelina	106-232
Paradoxiella	242-324
Codonofusiella	332-469 (total depth)
Yabeina texana	391 (one bed)

In the Amoco No. 1 Dark Canyon core hole, the upper 220 ft consists mostly of Tansill lithology with a few units of Capitan lithology; the section from 220-290 ft is transitional with alternating Tansill and Capitan lithologies; and the section from 290 ft to total depth (400 ft) is massive Capitan. *Paraboultonia* is common from 40-394 ft, and no *Reichelina* were found.

The small Tethyan fusulinid genera in the two core holes and in measured sections and well cuttings of Tansill and Lamar between Dark Canyon and McKittrick Canyon reconfirm: 1) *Paraboultonia* is restricted to the Ocotillo Silt Member and the overlying upper Tansill beds, as well as to the uppermost Capitan, uppermost Lamar and post-Lamar beds; 2) *Reichelina* slightly overlaps the lower part of the *Paraboultonia* zone, but otherwise is restricted to the middle Tansill and to all except the lower Lamar; 3) *Paradoxiella* is present in the middle Tansill and middle and lower Lamar; 4) *Yabeina texana* is restricted to the lowermost Tansill and lowermost Lamar; 5) *Codonofusiella* ranges as high as the lower Tansill and lower Lamar; 6) *Polydiexodina,* the large fusulinid characteristic of the upper Guadalupian in west Texas, does not range as high as the Tansill or Lamar.

References

Achauer, C. W., 1969, Origin of the Capitan Formation, Guadalupe Mountains, New Mexico and Texas: American Association of Petroleum Geologists, Bull., v. 53, p. 2314-2323

Kelley, V. C., 1971, Geology of the Pecos Country, southeastern New Mexico: New Mexico Bureau of Mines and Mineral Resources, Mem. 24, 75 p.

Skinner, J. W., and Wilde, G. L., 1954, The fusulinid subfamily Boultoniinae: Journal of Paleontology, v. 28, p. 434-444

———, 1955, New fusulinids from the Permian of west Texas: Journal of Paleontology, v. 29, p. 927-940

Tyrrell, W. W., Jr., 1969, Criteria useful in interpreting environments of unlike but time-equivalent carbonate units (Tansill-Capitan-Lamar), Capitan Reef Complex, west Texas and New Mexico: Society of Economic Paleontologists and Mineralogists, Spec. Pub. No. 14, p. 8-97

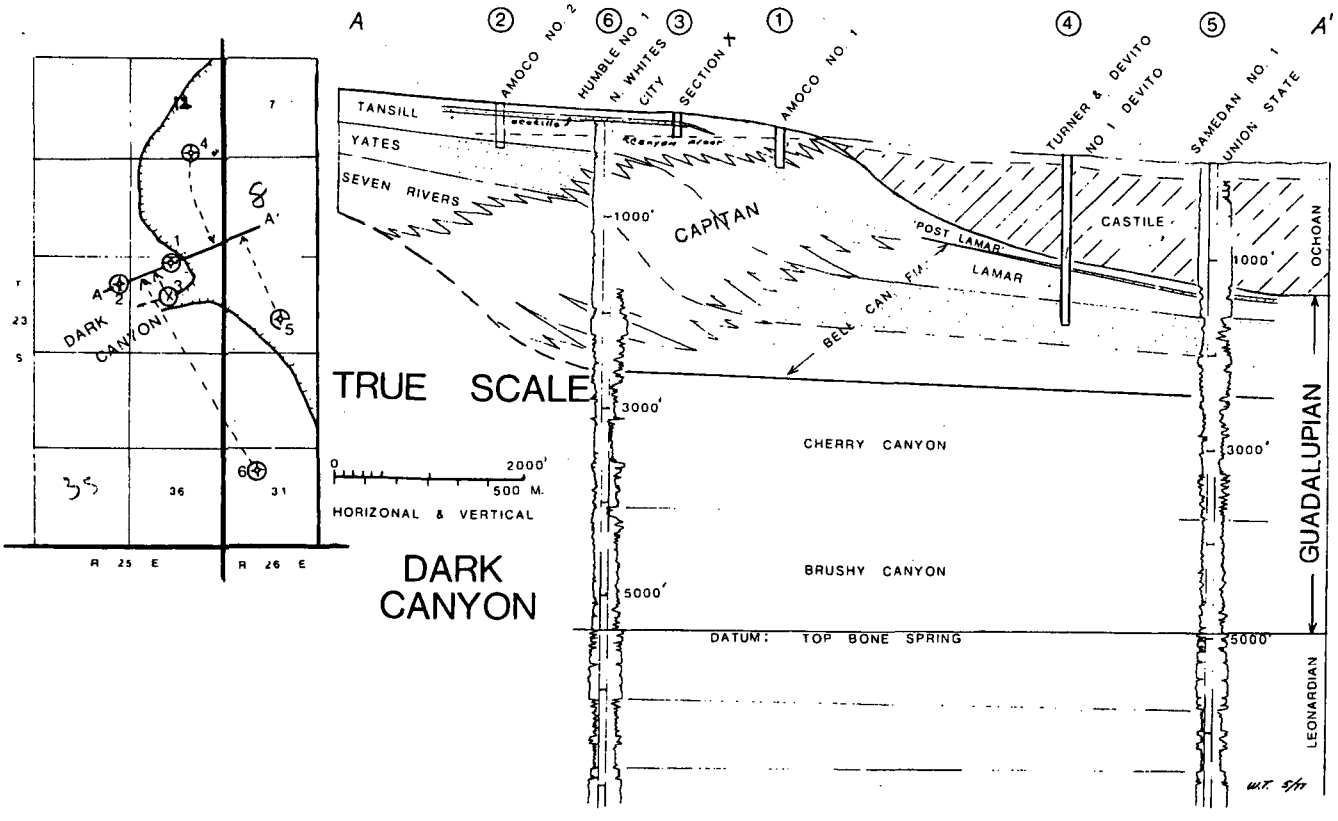


FIGURE 1—TRUE-SCALE STRATIGRAPHIC SECTION SHOWING RELATIONSHIPS OF AMOCO CORE HOLES TO NEARBY WELL CONTROL IN DARK CANYON, GUADALUPE MOUNTAINS, EDDY COUNTY, NEW MEXICO.

APPENDIX B

New Mexico State Engineer
MW-3
Well Records

New Mexico Office of the State Engineer
Point of Diversion Summary

Back

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are biggest to smallest)

POD Number	Tws	Rng	Sec	q	q	q	Zone	X	Y
C 02878	23S	25E	12	4	4	4			

Driller Licence: 1472 HYDROGEOLOGIC SERVICES, INC.
Driller Name: WHALEY, BILL W. **Source:** Shallow
Drill Start Date: 10/21/2001 **Drill Finish Date:** 10/22/2001
Log File Date: 07/01/2002 **PCW Received Date:**
Pump Type: **Pipe Discharge Size:**
Casing Size: 7 **Estimated Yield:**
Depth Well: 320 **Depth Water:** 90

Water Bearing Stratifications:	Top	Bottom	Description
	90	110	Shallow Alluvium/Basin Fill

Casing Perforations:	Top	Bottom
	102	110

New Mexico Office of the State Engineer
Water Right Summary

Back

DB File Nbr: C 02878
Primary Purpose: STK 72-12-1 LIVESTOCK WATERING
Primary Status: PMT Permit
Total Acres:
Total Diversion: 3
Owner: CITY OF CARLSBAD **Contact:** LUIS CAMERO

Documents on File

Doc	File/Act	Status 1 2 3	Trans_Desc	From/To	Acres	Diversion	Co
72121	12/17/2001	PMT LOG PRC	C 02878	T		3	

(qtr are 1=NW 2=NE 3=SW 4=SE)

Point of Diversion POD Number	(qtr are biggest to smallest) Source	Tws	Rng	Sec	q	q	q	X Y are in Feet Zone	X	Y	UTM a UTM_Z
C 02878	Shallow	23S	25E	12	4	4	4				13

New Mexico Office of the State Engineer
Well Reports and Downloads

Township: 23S Range: 25E Sections: 12

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) ○ Non-Domestic ○ Domestic
◉ All

Well / Surface Data Report | Avg Depth to Water Report
Water Column Report
Clear Form | WATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 08/29/2002

							(Depth Water in Feet)		
Bsn	**Tws**	**Rng**	**Sec**	**Zone**	**X**	**Y**	**Wells**	**Min**	**Max**	**Avg**
C	23S	25E	12				1	90	90	90

Record Count: 1

New Mexico Office of the State Engineer
Transaction Summary

Back

72121 All Applications Under Statute 72-12-1

Trn_nbr: 220692 **Trn_desc:** C 02878 **File Date:** 12/17/2001

Primary status: PMT Permit
Secondary status: LOG Well Log Received
Person assigned: ********
Applicant: CITY OF CARLSBAD **Contact:** LUIS CAMERO

Events

Date	Type	Description	Comment
12/17/2001	APP	Application Received	
12/17/2001	FIN	Final Action on application	
12/17/2001	ART	Artesian Approval Letter sent	
07/01/2002	LOG	Well Log Received	

DB_File_Nbr	Acres	Diversion	Consumptive	Purpose of Use
C 02878			3	STK 72-12-1 LIVESTOCK WATERIN

Point of Diversion

C 02878 23S 25E 12 SE SE SE in Eddy County

Remarks

Well will be used for monitoring the groundwater for the Carlsbad Well Field.

Conditions

2 : The well shall be constructed to artesian well specifications and the State Engineer shall be notified before casing is landed or cemented.

Action of the State Engineer

Approval Code: A Approved
Action Date: 12/17/2001
Log Due Date: 12/17/2002
State Engineer: Thomas C. Turney
By:

APPENDIX C

MW-3
Water Quality Sampling Reports

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
CITY OF CARLSBAD
P.O. BOX 1569
CARLSBAD, NM 88220
FAX TO: (505) 885-0385

Receiving Date: 12/20/01
Reporting Date: 12/20/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Sampling Date: 12/20/01
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		12/20/01	12/20/01	12/20/01	12/20/01
h6363-1	MONITOR WELL #3	0.005	0.005	<0.002	<0.006
Quality Control		0.099	0.099	0.099	0.286
True Value QC		0.100	0.100	0.100	0.300
% Recovery		99.1	99.4	99.1	95.2
Relative Percent Difference		1.0	2.0	2.2	2.9

METHOD: EPA SW-846 8260
NOTE: The analysis was extended and the following compounds were tentatively identified:
Diethyl sulfide, Methyl ethyl sulfide, Acetone, Methoxypropene.

Chemist

12/20/01
Date

April 26, 2002
AMEC Job No. 2-517-000008

Energy, Minerals and Natural Resources Department
New Mexico Oil Conservation Division
1220 St Francis Drive
Santa Fe, New Mexico 87505

Attention: Mr. Bill Olson

RE: MONITORING WELL SAMPLING
CITY OF CARLSBAD WELL FIELD
CARLSBAD, NEW MEXICO

This letter report presents the results of AMEC Earth and Environmental's (AMEC) ground water sampling from MW-3 in the City of Carlsbad Well Field southwest of Carlsbad, New Mexico. AMEC submitted a work plan to the New Mexico Oil Conservation Division (OCD) dated February 1, 2002 outlining the scope of services to be performed for the investigation. The project was authorized by the OCD in correspondence to AMEC dated February 6, 2002. The project followed the terms and conditions of AMEC's Site Maintenance and Monitoring Contract (PA No. 00-805-09-17658) awarded to AMEC by the State of New Mexico, General Services Department.

The study consisted of developing and purging water from the existing monitor well MW-3, obtaining and submitting ground water samples for laboratory analysis, and disposing of purged water at an OCD approved facility. This report includes a summary of the field activities, presents the laboratory reports, and provides documentation for the purged water disposal.

Field Program

On February 7 and 8, 2002, AMEC personnel traveled to the site and attempted to develop monitor well MW-3 with a Grunfos submersible pump. Depth to ground water was measured at 77.10 feet below the top of casing (toc); the total depth of the well was measured at 125.80 feet below toc. IW, Inc. Vacuum Truck Service was on standby at the site to transport purged water to a disposal facility. After numerous attempts to purge the well, it was determined the pump would not function due to the high density (i.e. high total dissolved solids content) of the ground water.

AMEC personnel returned to the site on March 4, 2002 to develop the well. Geomechanics Southwest provided a drilling rig with a wire line and a clean, PVC bailer to develop the well. The well was developed and purged until the water temperature, pH, and conductivity stabilized. Purged water was containerized for later disposal. Twenty-four hours after development, on March 5, 2002, AMEC personnel returned to the site and purged the well with the rig mounted bailer until water temperature, pH, and conductivity stabilized. Purged water was containerized for later disposal. Ground water samples were obtained from the well with the PVC bailer at that time.

The ground water samples obtained were placed in containers supplied by the laboratory and placed in a cooler with ice. The samples were shipped to Trace Analysis of Lubbock, Texas for chemical analysis by EPA methods listed in the attachments. Each ground water sample was collected, containerized, and preserved according to standard laboratory protocol. Field notes are presented in the attachments.

New Mexico Oil Conservation Division
Monitoring Well Development and Sampling
City of Carlsbad Well Field, Carlsbad, New Mexico
AMEC Project No. 2-517-000008
April 26, 2002

The water samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021 and for gasoline range total petroleum hydrocarbons (GRO-TPH) and diesel range total petroleum hydrocarbons (DRO-TPH) by EPA Method 8015B. In addition, the samples were tested for pH, alkalinity, specific conductance, chloride, total dissolved solids, fluoride, nitrate, sulfate, calcium, magnesium, potassium, sodium, and a list of 16 metals by approved EPA methods. Copies of the chain-of-custodies and chemical analyses reports for ground water samples are provided in with the laboratory reports in the attachments.

No BTEX or TPH were detected in the water samples. Of note, total dissolved solids were 271,000 mg/L and chlorides were 117,000 mg/L.

The containerized purge water was transported to Controlled Recovery of Hobbs, New Mexico. The waste manifests are included in the attachments.

We appreciate the opportunity to provide environmental services to the Oil Conservation Division for this project. If you have any questions regarding this report, please give me a call at (505) 821-1801.

Respectfully submitted,

AMEC Earth & Environmental, Inc.

Bob Wilcox, P.G.
Senior Project Manager

BW:rrg

Attachments

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Telephone: 505/821-1801
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Summary Report

Bob Wilcox
AMEC
8519 Jefferson NE
Albuquerqe, NM 87113

Report Date: April 25, 2002

Order ID Number: A02030711

Project Number: 2517000008
Project Name: Carlsbad Well Development & Sampling
Project Location: Carsbad-City Well

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
192304	MW-3	Water	3/5/02	:	3/7/02

0 This report consists of a total of 2 page(s) and is intended only as a summary of results for the sample(s) listed above.

	BTEX						TPH DRO	TPH GRO
Sample - Field Code	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	M,P,O-Xylene (ppm)	Total BTEX (ppm)	Total BTEX (ppm)	DRO (ppm)	GRO (ppm)
192304 - MW-3	0.020	<0.020	<0.020	<0.020	0.020	0.020	<5	< 2

Sample: 192304 - MW-3

Param	Flag	Result	Units
Hydroxide Alkalinity		<1.0	mg/L as CaCo3
Carbonate Alkalinity		<1.0	mg/L as CaCo3
Bicarbonate Alkalinity		1518	mg/L as CaCo3
Total Alkalinity		1518	mg/L as CaCo3
Specific Conductance		158000	µMHOS/cm
Fluoride		1.60	mg/L
Total Mercury		<0.0002	mg/L
Chloride	[1]	117000	mg/L
Nitrate-N	[2]	<10.0	mg/L
Sulfate	[3]	29300	mg/L
Dissolved Calcium		226	mg/L
Dissolved Magnesium		8650	mg/L
Dissolved Potassium		2540	mg/L
Dissolved Sodium		78700	mg/L
Total Dissolved Solids		271000	mg/L
Total Aluminum		<1.00	mg/L
Total Arsenic		1.86	mg/L
Total Barium		<1.00	mg/L
Total Boron		1020	mg/L

Continued on next page ...

[1]Chloride was re-ran on IC030802-2.sch (PB18141; QC18713). ICV %IA = 90; CCV %IA = 97; matrix spikes RPD = 0, %EA = 91; LCS spikes RPD = 1, %EA = 93.

[2]Sample ran out of hold time for NO3. Sample came in on the last day of the hold time, but could not be put on the IC before the hold time had expired. Sample was ran the day it was received.

[3]Sulfate was re-ran on IC030802-2.sch (PB18141; QC18713). ICV %IA = 93; CCV %IA = 97; matrix spikes RPD = 0, %EA = 91; LCS spikes RPD = 2, %EA = 94.

This is only a summary. Please, refer to the complete report package for quality control data.

Sample 192304 continued ...

Param	Flag	Result	Units
Total Cadmium		<0.050	mg/L
Total Chromium		<0.100	mg/L
Total Cobalt		<0.250	mg/L
Total Copper		<0.125	mg/L
Total Iron		19.5	mg/L
Total Lead		<0.100	mg/L
Total Manganese		0.344	mg/L
Total Molybdenum		<0.500	mg/L
Total Nickel		<0.250	mg/L
Total Selenium		<0.500	mg/L
Total Silica		2.53	mg/L
Total Silver		<0.125	mg/L
Total Zinc		<0.250	mg/L
pH	[4]	6.9	s.u.

[4]Sample was received out of holding time. pH should be tested in the field. Sample was tested the day it was received.

Analytical and Quality Control Report

Bob Wilcox
AMEC
8519 Jefferson NE
Albuquerqe, NM 87113

Report Date: April 25, 2002

Order ID Number: A02030711

Project Number: 2517000008
Project Name: Carlsbad Well Development & Sampling
Project Location: Carsbad-City Well

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
192304	MW-3	Water	3/5/02	:	3/7/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.

This report consists of a total of 17 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

for
Dr. Blair Leftwich, Director

Analytical Report

Sample: 192304 - MW-3

Analysis:	Alkalinity	Analytical Method:	E 310.1	QC Batch:	QC18844	Date Analyzed:	3/12/02
Analyst:	RS	Preparation Method:	N/A	Prep Batch:	PB18253	Date Prepared:	3/12/02

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1	1
Bicarbonate Alkalinity		1518	mg/L as CaCo3	1	1
Total Alkalinity		1518	mg/L as CaCo3	1	1

Sample: 192304 - MW-3

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC18692	Date Analyzed:	3/7/02
Analyst:	CG	Preparation Method:	S 5030B	Prep Batch:	PB18126	Date Prepared:	3/7/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		0.020	mg/L	20	0.001
Toluene		<0.020	mg/L	20	0.001
Ethylbenzene		<0.020	mg/L	20	0.001
M,P,O-Xylene		<0.020	mg/L	20	0.001
Total BTEX		0.020	mg/L	1	0.001
Total BTEX		0.020	mg/L	20	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.103	mg/L	20	0.10	103	70 - 130
4-BFB		0.083	mg/L	20	0.10	83	70 - 130

Sample: 192304 - MW-3

Analysis:	Conductivity	Analytical Method:	SM 2510B	QC Batch:	QC18833	Date Analyzed:	3/12/02
Analyst:	JS	Preparation Method:	N/A	Prep Batch:	PB18247	Date Prepared:	3/12/02

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		158000	μMHOS/cm	1	

Sample: 192304 - MW-3

Analysis:	Fl	Analytical Method:	E 340.2	QC Batch:	QC18821	Date Analyzed:	3/13/02
Analyst:	JS	Preparation Method:	N/A	Prep Batch:	PB18232	Date Prepared:	3/13/02

Param	Flag	Result	Units	Dilution	RDL
Fluoride		1.60	mg/L	2	0.10

Sample: 192304 - MW-3

Analysis: Hg, Total | Analytical Method: S 7470A | QC Batch: QC18737 | Date Analyzed: 3/11/02
Analyst: BC | Preparation Method: N/A | Prep Batch: PB18160 | Date Prepared: 3/9/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.0002	mg/L	1	0.0002

Sample: 192304 - MW-3

Analysis: Ion Chromatography (IC) | Analytical Method: E 300.0 | QC Batch: QC18711 | Date Analyzed: 3/7/02
Analyst: JS | Preparation Method: N/A | Prep Batch: PB18140 | Date Prepared: 3/7/02

Param	Flag	Result	Units	Dilution	RDL
Chloride	[1]	117000	mg/L	5000	0.50
Nitrate-N	[2]	<10.0	mg/L	50	0.20
Sulfate	[3]	29300	mg/L	5000	0.50

Sample: 192304 - MW-3

Analysis: Salts | Analytical Method: E 200.7 | QC Batch: QC18859 | Date Analyzed: 3/15/02
Analyst: RR | Preparation Method: S 3005A | Prep Batch: PB18182 | Date Prepared: 3/12/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		226	mg/L	11	0.50
Dissolved Magnesium		8650	mg/L	1000	0.50
Dissolved Potassium		2540	mg/L	110	0.50
Dissolved Sodium		78700	mg/L	10000	0.50

Sample: 192304 - MW-3

Analysis: TDS | Analytical Method: E 160.1 | QC Batch: QC18681 | Date Analyzed: 3/8/02
Analyst: JS | Preparation Method: N/A | Prep Batch: PB18126 | Date Prepared: 3/7/02

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		271000	mg/L	500	10

Sample: 192304 - MW-3

Analysis: TPH DRO | Analytical Method: Mod. 8015B | QC Batch: QC18742 | Date Analyzed: 3/10/02
Analyst: MM | Preparation Method: 3510C - Mod. | Prep Batch: PB18157 | Date Prepared: 3/10/02

Param	Flag	Result	Units	Dilution	RDL
DRO		<5	mg/L	1	50

[1]Chloride was re-ran on IC030802-2.sch (PB18141; QC18713). ICV %IA = 90; CCV %IA = 97; matrix spikes RPD = 0, %EA = 91; LCS spikes RPD = 1, %EA = 93.

[2]Sample ran out of hold time for NO3. Sample came in on the last day of the hold time, but could not be put on the IC before the hold time had expired. Sample was ran the day it was received.

[3]Sulfate was re-ran on IC030802-2.sch (PB18141; QC18713). ICV %IA = 93; CCV %IA = 97; matrix spikes RPD = 0, %EA = 91; LCS spikes RPD = 2, %EA = 94.

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		12.2	mg/L	0.10	150	81	70 - 130

Sample: 192304 - MW-3

Analysis:	TPH GRO	Analytical Method:	8015B	QC Batch:	QC18694	Date Analyzed:	3/7/02
Analyst:	CG	Preparation Method:	5030	Prep Batch:	PB18126	Date Prepared:	3/7/02

Param	Flag	Result	Units	Dilution	RDL
GRO		< 2	mg/L	20	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.117	mg/L	20	0.10	117	70 - 130
4-BFB		0.087	mg/L	20	0.10	87	70 - 130

Sample: 192304 - MW-3

Analysis:	Total Metals	Analytical Method:	S 6010B	QC Batch:	QC18772	Date Analyzed:	3/12/02
Analyst:	RR	Preparation Method:	S 3010A	Prep Batch:	PB18163	Date Prepared:	3/11/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		<1.00	mg/L	10	0.10
Total Arsenic		1.86	mg/L	10	0.05
Total Barium		<1.00	mg/L	10	0.10
Total Boron		1020	mg/L	10000	0.005
Total Cadmium		<0.050	mg/L	10	0.005
Total Chromium		<0.100	mg/L	10	0.01
Total Cobalt		<0.250	mg/L	10	0.02
Total Copper		<0.125	mg/L	10	0.01
Total Iron		19.5	mg/L	10	0.05
Total Lead		<0.100	mg/L	10	0.01
Total Manganese		0.344	mg/L	10	0.02
Total Molybdenum		<0.500	mg/L	10	0.05
Total Nickel		<0.250	mg/L	10	0.02
Total Selenium		<0.500	mg/L	10	0.05
Total Silica		2.53	mg/L	10	0.05
Total Silver		<0.125	mg/L	10	0.01
Total Zinc		<0.250	mg/L	10	0.02

Sample: 192304 - MW-3

Analysis:	pH	Analytical Method:	E 150.1	QC Batch:	QC18745	Date Analyzed:	3/7/02
Analyst:	RS	Preparation Method:	N/A	Prep Batch:	PB18169	Date Prepared:	3/7/02

Param	Flag	Result	Units	Dilution	RDL
pH	[4]	6.9	s.u.	1	1

[4]Sample was received out of holding time. pH should be tested in the field. Sample was tested the day it was received.

Quality Control Report
Method Blank

Method Blank

QCBatch: QC18681

Param	Flag	Results	Units	Reporting Limit
Total Dissolved Solids		<10	mg/L	10

Method Blank

QCBatch: QC18692

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.001	mg/L	0.001
Toluene		<0.001	mg/L	0.001
Ethylbenzene		<0.001	mg/L	0.001
M,P,O-Xylene		<0.001	mg/L	0.001
Total BTEX		<0.001	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.094	mg/L	1	0.10	93	70 - 130
4-BFB		0.083	mg/L	1	0.10	83	70 - 130

Method Blank

QCBatch: QC18694

Param	Flag	Results	Units	Reporting Limit
GRO		<0.1	mg/L	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.095	mg/L	1	0.10	95	70 - 130
4-BFB		0.085	mg/L	1	0.10	85	70 - 130

Method Blank

QCBatch: QC18711

Param	Flag	Results	Units	Reporting Limit
Chloride		<2.0	mg/L	0.50
Nitrate-N		<0.2	mg/L	0.20
Sulfate		<2.0	mg/L	0.50

Method Blank

QCBatch: QC18737

Param	Flag	Results	Units	Reporting Limit
Total Mercury		<0.0002	mg/L	0.0002

Method Blank

QCBatch: QC18742

Param	Flag	Results	Units	Reporting Limit
DRO		<5	mg/L	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		12	mg/L	0.10	150	80	70 - 130

Method Blank

QCBatch: QC18772

Param	Flag	Results	Units	Reporting Limit
Total Aluminum		<0.100	mg/L	0.10
Total Arsenic		<0.050	mg/L	0.05
Total Barium		<0.100	mg/L	0.10
Total Boron		0.00608	mg/L	0.005
Total Cadmium		<0.005	mg/L	0.005
Total Chromium		<0.010	mg/L	0.01
Total Cobalt		<0.025	mg/L	0.02
Total Copper		<0.0125	mg/L	0.01
Total Iron		<0.050	mg/L	0.05
Total Lead		<0.010	mg/L	0.01
Total Manganese		<0.025	mg/L	0.02
Total Molybdenum		<0.050	mg/L	0.05
Total Nickel		<0.025	mg/L	0.02
Total Selenium		<0.050	mg/L	0.05
Total Silica		<0.050	mg/L	0.05
Total Silver		<0.0125	mg/L	0.01
Total Zinc		<0.025	mg/L	0.02

Method Blank

QCBatch: QC18821

Param	Flag	Results	Units	Reporting Limit
Fluoride		<0.1	mg/L	0.10

Method Blank

QCBatch: QC18833

Param	Flag	Results	Units	Reporting Limit
Specific Conductance		7.75	µMHOS/cm	

Method Blank QCBatch: QC18844

Param	Flag	Results	Units	Reporting Limit
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1
Bicarbonate Alkalinity		<4.0	mg/L as CaCo3	1
Total Alkalinity		<4.0	mg/L as CaCo3	1

Method Blank QCBatch: QC18859

Param	Flag	Results	Units	Reporting Limit
Dissolved Calcium		<0.500	mg/L	0.50
Dissolved Magnesium		<0.500	mg/L	0.50
Dissolved Potassium		<0.500	mg/L	0.50
Dissolved Sodium		<0.500	mg/L	0.50

Quality Control Report
Duplicate Samples

Duplicate QCBatch: QC18681

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids		368	363	mg/L	1	1	9.7

Duplicate QCBatch: QC18745

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH		9.1	9.1	s.u.	1	0	0

Duplicate QCBatch: QC18833

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Specific Conductance		98856	99400	µMHOS/cm	1	0	3.5

Duplicate

QCBatch: QC18844

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity		<1.0	<1.0	mg/L as CaCo3	1	0	6.6
Carbonate Alkalinity		<1.0	<1.0	mg/L as CaCo3	1	0	6.6
Bicarbonate Alkalinity		52	50	mg/L as CaCo3	1	3	6.6
Total Alkalinity		52	50	mg/L as CaCo3	1	3	6.6

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC18692

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
MTBE	0.092	0.091	mg/L	1	0.10	<0.001	92	1	70 - 130	20
Benzene	0.1	0.1	mg/L	1	0.10	<0.001	100	0	70 - 130	20
Toluene	0.101	0.101	mg/L	1	0.10	<0.001	101	0	70 - 130	20
Ethylbenzene	0.102	0.102	mg/L	1	0.10	<0.001	102	0	70 - 130	20
M,P,O-Xylene	0.311	0.311	mg/L	1	0.30	<0.001	103	0	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.0944	0.0965	mg/L	1	0.10	94	96	70 - 130
4-BFB	0.0938	0.0945	mg/L	1	0.10	93	94	70 - 130

Laboratory Control Spikes

QCBatch: QC18694

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
GRO	0.866	0.861	mg/L	1	1	<0.1	86	0	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.103	0.103	mg/L	1	0.10	103	103	70 - 130
4-BFB	0.096	0.095	mg/L	1	0.10	96	95	70 - 130

Laboratory Control Spikes

QCBatch: QC18711

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	11.24	11.21	mg/L	1	12.50	<2.0	89	0	90 - 110	20

Continued ...

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Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Fluoride	2.28	2.34	mg/L	1	2.50	<0.2	91	2	90 - 110	20
Nitrate-N	2.31	2.31	mg/L	1	2.50	<0.2	92	0	90 - 110	20
Sulfate	11.46	11.50	mg/L	1	12.50	<2.0	91	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC18737

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	0.00115	0.00115	mg/L	1	0.001	<0.0002	115	0	87 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC18742

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
DRO	24.8	23.5	mg/L	0.10	250	<5	99	5	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
n-Triacontane	11.8	11.7	mg/L	0.10	150	78	78	70 - 130

Laboratory Control Spikes

QCBatch: QC18772

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	0.919	0.887	mg/L	1	1	<0.100	91	3	75 - 125	20
Total Arsenic	0.469	0.456	mg/L	1	0.50	<0.050	93	2	75 - 125	20
Total Barium	1.01	0.983	mg/L	1	1	<0.100	101	2	75 - 125	20
Total Boron	0.0497	0.0472	mg/L	1	0.05	0.00608	99	5	75 - 125	20
Total Cadmium	0.232	0.226	mg/L	1	0.25	<0.005	92	2	75 - 125	20
Total Chromium	0.101	0.0988	mg/L	1	0.10	<0.010	101	2	75 - 125	20
Total Cobalt	0.248	0.241	mg/L	1	0.25	<0.025	99	2	75 - 125	20
Total Copper	0.122	0.121	mg/L	1	0.12	<0.0125	97	0	75 - 125	20
Total Iron	0.502	0.712	mg/L	1	0.50	<0.050	100	34	75 - 125	20
Total Lead	0.473	0.461	mg/L	1	0.50	<0.010	94	2	75 - 125	20
Total Manganese	0.253	0.248	mg/L	1	0.25	<0.025	101	1	75 - 125	20
Total Molybdenum	0.509	0.499	mg/L	1	0.50	<0.050	101	1	75 - 125	20
Total Nickel	0.245	0.240	mg/L	1	0.25	<0.025	98	2	75 - 125	20
Total Selenium	0.405	0.393	mg/L	1	0.50	<0.050	81	3	75 - 125	20
Total Silica	0.480	0.467	mg/L	1	0.50	<0.050	96	2	75 - 125	20
Total Silver	0.122	0.120	mg/L	1	0.12	<0.0125	97	1	75 - 125	20
Total Zinc	0.237	0.232	mg/L	1	0.25	<0.025	94	2	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC18821

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Fluoride	0.956	0.956	mg/L	1	1	<0.1	95	0	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC18859

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Calcium	96.5	98.3	mg/L	4	100	<0.500	96	1	75 - 125	20
Dissolved Magnesium	111	114	mg/L	4	100	<0.500	111	2	75 - 125	20
Dissolved Potassium	109	112	mg/L	4	100	<0.500	109	2	75 - 125	20
Dissolved Sodium	111	114	mg/L	4	100	<0.500	111	2	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report
Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC18711

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	83.77	83.41	mg/L	1	62.50	27.3	90	0	48 - 127	20
Nitrate-N	15.16	15.05	mg/L	1	12.50	3.45	93	1	87 - 100	20
Sulfate	96.09	95.78	mg/L	1	62.50	39.4	90	0	59 - 121	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC18737

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	0.00087	[5] 0.00056	mg/L	1	0.001	<0.0002	87	43	40 - 177	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC18772

[5]msd recovery invalid due to spiking error, use lcs/lcsd to demonstrate the run is under control.

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	12.5	12.7	mg/L	10	10	<1.00	125	1	75 - 125	20
Total Arsenic	5.95	5.88	mg/L	10	5	1.86	81	1	75 - 125	20
Total Barium	[6] 6.38	6.34	mg/L	10	10	<1.00	63	0	75 - 125	20
Total Boron	[7] 1170	1130	mg/L	10000	0.05	1020	30	4	75 - 125	20
Total Cadmium	[8] 1.37	1.36	mg/L	10	2.50	<0.050	54	0	75 - 125	20
Total Chromium	[9] 0.622	0.618	mg/L	10	1	<0.100	62	0	75 - 125	20
Total Cobalt	[10] 1.38	1.38	mg/L	10	2.50	<0.250	55	0	75 - 125	20
Total Copper	1.09	1.08	mg/L	10	1.25	<0.125	87	0	75 - 125	20
Total Iron	[11] 22.8	23.8	mg/L	10	5	19.5	66	26	75 - 125	20
Total Lead	[12] 2.31	2.30	mg/L	10	5	<0.100	46	0	75 - 125	20
Total Manganese	[13] 1.91	1.92	mg/L	10	2.50	0.344	62	0	75 - 125	20
Total Molybdenum	[14] 3.18	3.15	mg/L	10	5	<0.500	63	0	75 - 125	20
Total Nickel	[15] 1.26	1.25	mg/L	10	2.50	<0.250	50	0	75 - 125	20
Total Selenium	4.33	4.35	mg/L	10	5	<0.500	86	0	75 - 125	20
Total Silica	6.75	6.90	mg/L	10	5	2.53	84	3	75 - 125	20
Total Silver	1.29	1.30	mg/L	10	1.25	<0.125	103	0	75 - 125	20
Total Zinc	[16] 1.64	1.66	mg/L	10	2.50	<0.250	65	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC18821

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Fluoride	3.11	3.14	mg/L	1	2	1.42	84	1	60 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC18859

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Calcium	333	337	mg/L	10	100	129	89	4	75 - 125	20
Dissolved Magnesium	143	148	mg/L	10	100	23.1	112	4	75 - 125	20
Dissolved Potassium	116	120	mg/L	10	100	4.24	108	3	75 - 125	20
Dissolved Sodium	163	167	mg/L	10	100	48.5	110	3	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

[6] Matrix spike recovery low due to matrix effects. LCS demonstrates process under control.
[7] Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.
[8] Matrix spike recovery low due to matrix effects. LCS demonstrates process under control.
[9] Matrix spike recovery low due to matrix effects. LCS demonstrates process under control.
[10] Matrix spike recovery low due to matrix effects. LCS demonstrates process under control.
[11] Matrix spike recovery low due to matrix effects. LCS demonstrates process under control.
[12] Matrix spike recovery low due to matrix effects. LCS demonstrates process under control.
[13] Matrix spike recovery low due to matrix effects. LCS demonstrates process under control.
[14] Matrix spike recovery low due to matrix effects. LCS demonstrates process under control.
[15] Matrix spike recovery low due to matrix effects. LCS demonstrates process under control.
[16] Matrix spike recovery low due to matrix effects. LCS demonstrates process under control.

Quality Control Report
Continuing Calibration Verification Standards

CCV (1) QCBatch: QC18681

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1007	100	90 - 110	3/8/02

ICV (1) QCBatch: QC18681

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1005	100	90 - 110	3/8/02

CCV (1) QCBatch: QC18692

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.095	95	85 - 115	3/7/02
Benzene		mg/L	0.10	0.099	99	85 - 115	3/7/02
Toluene		mg/L	0.10	0.1	100	85 - 115	3/7/02
Ethylbenzene		mg/L	0.10	0.101	101	85 - 115	3/7/02
M,P,O-Xylene		mg/L	0.30	0.308	102	85 - 115	3/7/02

ICV (1) QCBatch: QC18692

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.092	92	85 - 115	3/7/02
Benzene		mg/L	0.10	0.1	100	85 - 115	3/7/02
Toluene		mg/L	0.10	0.102	102	85 - 115	3/7/02
Ethylbenzene		mg/L	0.10	0.102	102	85 - 115	3/7/02
M,P,O-Xylene		mg/L	0.30	0.313	104	85 - 115	3/7/02

CCV (1) QCBatch: QC18694

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1	0.946	94	75 - 125	3/7/02

ICV (1) QCBatch: QC18694

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1	0.887	88	75 - 125	3/7/02

CCV (1) QCBatch: QC18711

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.26	90	90 - 110	3/7/02
Fluoride		mg/L	2.50	2.29	91	90 - 110	3/7/02
Nitrate-N		mg/L	2.50	2.33	93	90 - 110	3/7/02
Sulfate		mg/L	12.50	11.43	91	90 - 110	3/7/02

ICV (1) QCBatch: QC18711

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.27	90	90 - 110	3/7/02
Fluoride		mg/L	2.50	2.28	91	90 - 110	3/7/02
Nitrate-N		mg/L	2.50	2.30	92	90 - 110	3/7/02
Sulfate		mg/L	12.50	11.43	91	90 - 110	3/7/02

CCV (1) QCBatch: QC18737

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.001	0.00102	102	80 - 120	3/11/02

ICV (1) QCBatch: QC18737

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.001	0.00103	103	80 - 120	3/11/02

CCV (1) QCBatch: QC18742

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/L	250	250	100	85 - 115	3/10/02

ICV (1) QCBatch: QC18742

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/L	250	241	96	85 - 115	3/10/02

CCV (1) QCBatch: QC18745

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	7.0	100	-0.1 s.u. - +0.1 s.u.	3/7/02

ICV (1) QCBatch: QC18745

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	7.0	100	-0.1 s.u. - +0.1 s.u.	3/7/02

CCV (1) QCBatch: QC18772

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/L	2	1.91	95	90 - 110	3/12/02
Total Arsenic		mg/L	1	0.956	95	90 - 110	3/12/02
Total Barium		mg/L	2	1.97	98	90 - 110	3/12/02
Total Boron		mg/L	0.10	0.106	106	90 - 110	3/12/02
Total Cadmium		mg/L	0.50	0.492	98	90 - 110	3/12/02
Total Chromium		mg/L	0.20	0.199	99	90 - 110	3/12/02

Continued ...

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Cobalt		mg/L	0.50	0.494	98	90 - 110	3/12/02
Total Copper		mg/L	0.25	0.249	99	90 - 110	3/12/02
Total Iron		mg/L	1	1.03	103	90 - 110	3/12/02
Total Lead		mg/L	1	0.982	98	90 - 110	3/12/02
Total Manganese		mg/L	0.50	0.499	99	90 - 110	3/12/02
Total Molybdenum		mg/L	1	0.979	97	90 - 110	3/12/02
Total Nickel		mg/L	0.50	0.494	98	90 - 110	3/12/02
Total Selenium		mg/L	1	0.994	99	90 - 110	3/12/02
Total Silica		mg/L	1	1.01	101	90 - 110	3/12/02
Total Silver		mg/L	0.25	0.244	97	90 - 110	3/12/02
Total Zinc		mg/L	0.50	0.498	99	90 - 110	3/12/02

ICV (1) QCBatch: QC18772

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/L	2	1.99	99	90 - 110	3/12/02
Total Arsenic		mg/L	1	1.00	100	90 - 110	3/12/02
Total Barium		mg/L	2	1.98	99	90 - 110	3/12/02
Total Boron		mg/L	0.10	0.103	103	90 - 110	3/12/02
Total Cadmium		mg/L	0.50	0.504	100	90 - 110	3/12/02
Total Chromium		mg/L	0.20	0.201	100	90 - 110	3/12/02
Total Cobalt		mg/L	0.50	0.500	100	90 - 110	3/12/02
Total Copper		mg/L	0.25	0.259	103	90 - 110	3/12/02
Total Iron		mg/L	1	1.01	101	90 - 110	3/12/02
Total Lead		mg/L	1	1.00	100	90 - 110	3/12/02
Total Manganese		mg/L	0.50	0.506	101	90 - 110	3/12/02
Total Molybdenum		mg/L	1	1.00	100	90 - 110	3/12/02
Total Nickel		mg/L	0.50	0.500	100	90 - 110	3/12/02
Total Selenium		mg/L	1	0.999	99	90 - 110	3/12/02
Total Silica		mg/L	1	1.01	101	90 - 110	3/12/02
Total Silver		mg/L	0.25	0.256	102	90 - 110	3/12/02
Total Zinc		mg/L	0.50	0.502	100	90 - 110	3/12/02

CCV (1) QCBatch: QC18821

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Fluoride		mg/L	1	0.964	96	85 - 115	3/13/02

ICV (1) QCBatch: QC18821

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Fluoride		mg/L	1	0.927	92	85 - 115	3/13/02

CCV (1) QCBatch: QC18833

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		µMHOS/cm	97097	96765	99	90 - 110	3/12/02

ICV (1) QCBatch: QC18833

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		µMHOS/cm	111900	106860	95	90 - 110	3/12/02

CCV (1) QCBatch: QC18844

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0	4.0	0	90 - 110	3/12/02
Carbonate Alkalinity		mg/L as CaCo3	0	240	0	90 - 110	3/12/02
Bicarbonate Alkalinity		mg/L as CaCo3	0	<1.0	0	90 - 110	3/12/02
Total Alkalinity		mg/L as CaCo3	250	244	97	90 - 110	3/12/02

ICV (1) QCBatch: QC18844

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0	<1.0	0	90 - 110	3/12/02
Carbonate Alkalinity		mg/L as CaCo3	0	232	0	90 - 110	3/12/02
Bicarbonate Alkalinity		mg/L as CaCo3	0	10	0	90 - 110	3/12/02
Total Alkalinity		mg/L as CaCo3	250	242	96	90 - 110	3/12/02

CCV (1) QCBatch: QC18859

Continued ...

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25	25.3	101	90 - 110	3/15/02
Dissolved Magnesium		mg/L	25	24.6	98	90 - 110	3/15/02
Dissolved Potassium		mg/L	25	23.7	94	90 - 110	3/15/02
Dissolved Sodium		mg/L	25	24.1	96	90 - 110	3/15/02

ICV (1) QCBatch: QC18859

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25	24.8	99	95 - 105	3/15/02
Dissolved Magnesium		mg/L	25	25.8	103	95 - 105	3/15/02
Dissolved Potassium		mg/L	25	26.0	104	95 - 105	3/15/02
Dissolved Sodium		mg/L	25	25.9	103	95 - 105	3/15/02

GROUND-WATER SAMPLING LOG

amec

PROJECT NUMBER: 2517000008 LOCATION: CARLSBAD (CITY WELL FIELD) ~ 3/4 MILE E" OF MOUTH OF DARK CANYON WELL: MW-3

TIME	TEMP (C)	pH	CONDUCT. TURB (NTU)	COND. (uS/cm)	ORP (mV)	DO (ppm)	flow rate (ml/min)	draw down (ft)	COMMENTS
MW-3	SE-SE	SECT. 12	23" S	25" E					COORDIN.
WARM, MODERATE W" WIND, CLEAR									
14:05	3 POINT CALIBR				#7 = 7.02				
					#4 = 4.06				
					#10 = 9.98				
14:30	H_2O LEVEL =				79.10 (tenth)				
14:40	WELL DEPTH =				125.8				
15:35	START BAILING				PIC #5	H_2O QUALITY (FIRS 20gal)			
15:45	18.9°C	7.46	144.3 (mS)			1) HEAVY SULFUR ODOR			
16:30	18.3	7.39	143.0			2) CHLORIDES & SALT CRYSTALIZING IN 5MIN.			
16:45	18.4	7.30	141.9			OR LESS WHEN EXPOSED TO SUN/AIR.			
17:00	18.0	7.26	142.0						
17:15	18.0	7.24	139.2						
17:30	18.0	7.24	136.2						
17:40	H_2O LEVEL =				83 4/2				
17:45	17.7	7.27	123.0 ?						
18:00	17.4	7.32	139.2						

RECOVERY RATE:

18:00	83.1 (tenth)
18:02	82.9
18:03	82.8
18:04	82.7
18:05	82.6
18:06	N. Recovered
18:07	N. -11-
18:09	84.4/2

USED PVC BAILER (SCH.80)
ϕ 3½" L = 9'6"

ϕ 6" BOREHOLE = 1.47 LINEAR FT. (VOL-GAL)

125.8
- 79.10
45.10 ft. H_2O
X 1.47
66.3 gal = 1 WELL VOLUME
X 3
198.9 GAL

200 GAL = 3 WELL VOLU.

30.

05-3-02

Page 1 of 1

GROUND-WATER SAMPLING LOG

amec

PROJECT NUMBER: 25170000008 LOCATION: CARLSBAD WELL: MW-3

TIME	TEMP (C)	pH	COND. TURB (NTU)	COND. (uS/cm)	ORP (mV)	DO (ppm)	flow rate (ml/min)	draw down (ft)	COMMENTS
12:00	1 POINT CALIBR				#7 = 7.01				V. WARM, LT WIND (VARIOUS)
12:30	H_2O LEVEL = 80.1 BGS								CLEAR
13:00	19.8°C	7.28	1461	mS					
13:15	20.1	7.23	1478						
13:30	19.7	7.22	1468						
13:45	19.8	7.15	1467						
14:00	19.5	7.14	1465		PICT #12 (AVERAGE AMOUNT OF SEDIMENT				
14:15	19.4	7.13	1456		GENERATED FROM EACH BAILER)				
14:30	19.3	7.11	1451						
14:35	LOST TUC BAILER								
14:40	COLLECT H_2O SAMPLE (SPLIT WITH DCD WOLSEN)								
~15:10	RETRIVED LOST BAILER								

gal
0.0
5.0
5.0
0.0
0.0

30.

CONTROLLED RECOVERY, INC.

P.O. Box 388 • Hobbs, New Mexico 88241-0388
(505) 393-1079

Billed To AMEC

Address

Company/Generator NM Oil Conservation Division

Lease Name MW3 City of Carlsbad Well Field

Trucking Company GSI | Vehicle Number 53 | Driver (Print) Jerry Nacmon

Date 3 5 02 | Time 530 a.m. / p.m.

Type of Material

- ☐ Exempt
- ☐ Non-Exempt
- C138 _____
- ☐ Tank Bottoms
- C117 _____
- ☐ Soils
- E10 C
- ☐ Fluids
- ☐ Other Material
- List Description Below

DESCRIPTION # 1745

Non Hazardous Purged Ground Water

Volume of Material ☐ Bbls. _____ ☐ Yard _____ ☐ Gallons 200 & 30 pal.

☐ Wash Out ☐ Call Out ☐ After Hours ☐ Debris Charge

This statement applicable to exempt waste only.
I represent and warrant that the wastes are: generated from oil and gas exploration and production operations: exempt from Resource Conservation and Recover Act (RCRA) Subtitle C Regulations; and not mixed with non-exempt wastes.

Agent _____ (Signature)

CRI Representative _____ (Signature)

TANK BOTTOMS

	Feet	Inches				
1st Gauge			BBLS Received		BS&W	%
2nd Gauge			Free Water			
Received			Total Received			

No 39213

White - CRI | Canary - CRI Accounting | Pink - CRI Plant | Gold - Transporter

SUPERIOR PRINTING SERVICE, INC.

CONTROLLED RECOVERY, INC.

P.O. Box 388 • Hobbs, New Mexico 88241-0388
(505) 393-1079

Bill to Amec

Address

Company/Generator Geo Machines Southwest Inc

Lease Name well # MW3

Trucking Company GSI | Vehicle Number 53 | Driver (Print) Jerry Noonan

Date 3 5 02 | Time 1000 (a.m.) / p.m.

Type of Material

- ☐ Exempt
- ☐ Non-Exempt
- C138 _____
- ☐ Tank Bottoms
- C117 _____
- ☐ Soils E10 C
- ☒ Fluids
- ☐ Other Material
- List Description Below

DESCRIPTION # 1744

Non Hazardous Purged Ground Water

Volume of Material ☐ Bbls. _____ ☐ Yard _____ ☒ Gallons 200

☐ Wash Out ☐ Call Out ☐ After Hours ☐ Debris Charge

This statement applicable to exempt waste only.
I represent and warrant that the wastes are: generated from oil and gas exploration and production operations: exempt from Resource Conservation and Recover Act (RCRA) Subtitle C Regulations; and not mixed with non-exempt wastes.

Agent _____ (Signature)

CRI Representative _____ (Signature)

TANK BOTTOMS

	Feet	Inches				
1st Gauge			BBLS Received		BS&W	%
2nd Gauge			Free Water			
Received			Total Received			

№ 39185

White - CRI | Canary - CRI Accounting | Pink - CRI Plant | Gold - Transporter

SUPERIOR PRINTING SERVICE, INC.

NON-HAZARDOUS WASTE MANIFEST

No. 1744

PART I: Generator NM Oil Conservation Division
Address 1220 St. Francis Dr.
City/State Santa Fe, NM 87505
(505) 476-3491 Telephone No.

ORGINATION OF WASTE:

Operations Center MW-3 Permit No. _____

Property Name City of Carlsbad Well Field
(Well,Tank Battery,Plant,Facility)

WASTE IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU.FT.,LBS., UNITS, ETC.)					
Drilling Fluids	_____	Tank Bottoms	_____	Exempt Fluids	_____
Completion Fluids	_____	Gas Plant Waste	_____	C117 No.	_____
Contaminated Soil	_____	Other Material	200 G	Pit No.	_____

DESCRIPTION / NOTES

Non Hazardous Purged Groundwater

CERTIFICATION: The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify the the foregoing is true and correct to the best of my knowledge.

[signature] Signature of Generator's Authorized Agent

3/5/02 Date and time of Shipment

PART II: TRANSPORTER: (To be completed in full by Transporter)

Name Geo Mechanics Southwest Inc 505 345 5594
Address 416 B Menaul Blvd NW
City/State Alb NM 87107
Telephone No.
53 Truck No.

CERTIFICATION: I certify that the waste in quantity above was received by me for shipment to the destination below.

[signature] Signature of Transporter's Agent

3 402 6:30 P Date and time of Received

PART III: DISPOSAL OR RECLAMATION SITE:

Name Controlled Recovery, Inc. (505)393-1079
Address P.O. Box 388
City/State Hobbs, N.M. 88241-0388
Telephone No.

CERTIFICATION: I certify that the waste described in Part I was received by me via the transporter described in Part II.

[signature] Signature of Facility Agent

3 502 1000 A Date and time of Received

B-27958

NON-HAZARDOUS WASTE MANIFEST

No. 1745

PART I: Generator NM Oil Conservation Div. (505) 476-3491
Address 1220 St. Francis Dr. Telephone No.
City/State Santa Fe, NM 87505

ORGINATION OF WASTE:

Operations Center MW-3 Permit No. _____

Property Name City of Carlsbad Well Field
(Well, Tank Battery, Plant, Facility)

WASTE IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU.FT., LBS., UNITS, ETC.)					
Drilling Fluids	_____	Tank Bottoms	_____	Exempt Fluids	_____
Completion Fluids	_____	Gas Plant Waste	_____	C117 No.	_____
Contaminated Soil	_____	Other Material	200 G	Pit No.	_____

DESCRIPTION / NOTES
Non Hazardous Purged Ground Water

CERTIFICATION: The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify the the foregoing is true and correct to the best of my knowledge.

Will Olson — Signature of Generator's Authorized Agent
3/5/02 — Date and time of Shipment

PART II: TRANSPORTER: (To be completed in full by Transporter)

Name GeoMechanics Southwest Inc 505 345 5594
Address 4160 B Menaul Blvd NW Telephone No.
City/State Alb NM 87107 53
Truck No.

CERTIFICATION: I certify that the waste in quantity above was received by me for shipment to the destination below.

_____ — Signature of Transporter's Agent
_____ — Date and time of Received

PART III: DISPOSAL OR RECLAMATION SITE:

Name Controlled Recovery, Inc. (505)393-1079
Address P.O. Box 388 Telephone No.
City/State Hobbs, N.M. 88241-0388

CERTIFICATION: I certify that the waste described in Part I was received by me via the transporter described in Part II.

_____ — Signature of Facility Agent
3 5 02 530 P — Date and time of Received

B-27958

PINNACLE LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number **203018**
March 29, 2002

NMOCD
1220 ST.FRANCIS DRIVE
SANTA FE, NM 87505

Project Name CARLSBAD WELL FIELD
Project Number (NONE)

Attention: BILL OLSON

On 03/06/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8021 analyses were performed by Pinnacle Laboratories, Inc. Albuquerque, NM.

All other analyses were performed by EnviroTest Laboratories, LLC. Casper, WY.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure

PINNACLE LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

IENT	: NMOCD	PINNACLE ID	: 203018
OJECT #	: (NONE)	DATE RECEIVED	: 03/06/02
OJECT NAME	: CARLSBAD WELL FIELD	REPORT DATE	: 03/29/02

INACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
3018 - 01	0203051440 (MW-3)	AQUEOUS	03/05/02

PINNACLE LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

ST : EPA 8021 MODIFIED
IENT : NMOCD
OJECT # : (NONE)
OJECT NAME : CARLSBAD WELL FIELD

PINNACLE I.D.: 203018

MPLE #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR	
	0203051440 (MW-3)	AQUEOUS	03/05/02	NA	03/06/02	5	*

RAMETER	DET. LIMIT	UNITS	0203051440 (MW-3)
NZENE	0.5	UG/L	< 2.5
LUENE	0.5	**UG/L**	**15**
HYLBENZENE	0.5	**UG/L**	**3.9**
TAL XYLENES	1.0	**UG/L**	**8.4**

RROGATE:
[redacted]FLUOROBENZENE (%) 90
RROGATE LIMITS (80 - 120)

EMIST NOTES:
ilution was due to matrix interference.

PINNACLE LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

ST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 203018
NK I. D.	: 030602	DATE EXTRACTED	: N/A
ENT	: NMOCD	DATE ANALYZED	: 03/06/02
OJECT #	: (NONE)	SAMPLE MATRIX	: AQUEOUS
OJECT NAME	: CARLSBAD WELL FIELD		

RAMETER	UNITS	
NZENE	UG/L	<0.5
LUENE	UG/L	<0.5
HYLBENZENE	UG/L	<0.5
TAL XYLENES	UG/L	<1.0

RROGATE:
OMOFLUOROBENZENE (%) 95
RROGATE LIMITS: (80 - 120)
EMIST NOTES:

PINNACLE LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

ST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 203018
TCH #	: 030602	DATE EXTRACTED	: N/A
ENT	: NMOCD	DATE ANALYZED	: 03/06/02
OJECT #	: (NONE)	SAMPLE MATRIX	: AQUEOUS
OJECT NAME	: CARLSBAD WELL FIELD	UNITS	: UG/L

RAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
NZENE	<0.5	20.0	18.6	93	19.7	99	6	(80 - 120)	20
LUENE	<0.5	20.0	18.2	91	19.4	97	6	(80 - 120)	20
HYLBENZENE	<0.5	20.0	17.8	89	18.9	95	6	(80 - 120)	20
TAL XYLENES	<1.0	60.0	55.1	92	58.3	97	6	(80 - 120)	20

ENT NOTES:

$$\text{Recovery} = \frac{\text{(Spike Sample Result - Sample Result)}}{\text{Spike Concentration}} \times 100$$

$$\text{D (Relative Percent Difference)} = \frac{\text{(Sample Result - Duplicate Result)}}{\text{Average Result}} \times 100$$

Enviro-Test Laboratories LLC.

Chemical Analysis Report

PINNACLE LABORATORIES, INC
Attn: PROJECT MANAGER
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Date: 27 MAR 2002

Lab Work Order #: L4741
Project P.O. #: 203018
Project Reference: NMOCD
Comments:

Date Received: 07 MAR 2002

APPROVED BY: _____

Project Manager

ETL Enviro • Test LABORATORIES LLC.
420 West 1st Street Casper, Wyoming 82601
Phone: (307) 235-5741 Fax:(307) 266-167E
Toll Free 1(800)666-030

Date: March 27, 2002
Client: Pinnacle Laboratories, Inc
Job Number: L4741

SAMPLE DELIVERY GROUP NARRATIVE

The following information is relevant to the interpretation of the data for the above job:

METALS

The samples are digested with trace metals grade acid and, depending on the batch of acid, different metals will be present to some extent above the detection limit of the ICP/MS. In this case this is true for aluminum, barium, chromium, calcium, iron, potassium, magnesium, sodium and zinc. This should be taken into consideration when interpreting the data.

The RPD's for arsenic, boron, chromium, copper, potassium, sodium, selenium and vanadium were all above the acceptance criteria. This was due to a large amount of sediment present in the bottom of the sample. Frequently this causes the duplicate to be above the acceptance criteria due to non-homogeneous matrix. This is normal and to be expected. All attempts were made to homogenize the sample before taking the sample and duplicate aliquots. All other QC was acceptable and the data was reported.

The sample chosen for the matrix spike in the trace metals run had levels of magnesium that were very high (greater than 10 times the amount of spike added), causing the % recovery to be outside acceptance limits. This is to be expected and does not compromise the quality of the data. All other QC for magnesium was acceptable and the data was reported

The dilution factor for beryllium, boron and sodium does not print on the report due to space constraints. The dilution used for each element was 10,000.

If you have any questions regarding this analysis, please call the lab at (307) 235-5741 or (800) 666-0306.

Michelle Puder
Project Manager

Enviro • Test
LABORATORIES LLC.

Cation-Anion Balance

Sample Id	Cations				Anions			Balance
		mg/L	meq/L			mg/L	meq/L	%RPD
L4741-1	Sodium	64200	2792.52	**EC**	Chloride	120000	3385.05	9.8%
	Potassium	1240	31.71	192000	Sulfate	25000	520.51	
	Calcium	300	14.97		Bicarbonate	1620	26.55	
	Magnesium	8820	725.93		Carbonate	0	0.00	
	Iron	39.6	1.42					
	Total		**3566.55**		**Total**		**3932.11**	
				TDS				
			Measured	224000	**Calculated**	220397		
	Sodium	0	0.00	**EC**	Chloride	0	0.00	#DIV/0!
	Potassium	0	0.00	0	Sulfate	0	0.00	
	Calcium	0	0.00		Bicarbonate	0	0.00	
	Magnesium	0	0.00		Carbonate	0	0.00	
	Iron	0	0.00					
	Total		**0.00**		**Total**		**0.00**	
				TDS				
			Measured	0	**Calculated**	0		
	Sodium	0	0.00	**EC**	Chloride	0	0.00	#DIV/0!
	Potassium	0	0.00	0	Sulfate	0	0.00	
	Calcium	0	0.00		Bicarbonate	0	0.00	
	Magnesium	0	0.00		Carbonate	0	0.00	
	Iron	0	0.00					
	Total		**0.00**		**Total**		**0.00**	
				TDS				
			Measured	0	**Calculated**	0		
	Sodium	0	0.00	**EC**	Chloride	0	0.00	#DIV/0!
	Potassium	0	0.00	0	Sulfate	0	0.00	
	Calcium	0	0.00		Bicarbonate	0	0.00	
	Magnesium	0	0.00		Carbonate	0	0.00	
	Iron	0	0.00					
	Total		**0.00**		**Total**		**0.00**	
				TDS				
			Measured	0	**Calculated**	0		
	Sodium	0	0.00	**EC**	Chloride	0	0.00	#DIV/0!
	Potassium	0	0.00	0	Sulfate	0	0.00	
	Calcium	0	0.00		Bicarbonate	0	0.00	
	Magnesium	0	0.00		Carbonate	0	0.00	
	Iron	0	0.00					
	Total		**0.00**		**Total**		**0.00**	
				TDS				
			Measured	0	**Calculated**	0		

Chemical Analysis Report

PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107
ATTN: PROJECT MANAGER

Project: NMOCD
Purchase Order: 203018

Report Date: 27-MAR-02
Work Order: L4741
Lab Sample ID: L4741-1
Client Sample ID: 0203051440(MW-3)/203018-01
Date Collected: 05-MAR-02
Sampled By: CLIENT
Date Received: 07-MAR-02
Matrix: WATER

Misc

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Alkalinity, Total	1620		5	5	mg/L		R16429	07-MAR-02 13:00	AM
Aluminum (Al) Total	1.80		0.01		mg/L	100	R16668	19-MAR-02 08:20	GC
Antimony (Sb) Total	0.028		0.005		mg/L	100	R16668	19-MAR-02 08:20	GC
Arsenic (As) Total	4.37		0.004		mg/L	100	R16668	19-MAR-02 08:20	GC
Barium (Ba) Total	0.026		0.003		mg/L	100	R16668	19-MAR-02 08:20	GC
Beryllium (Be) Total	<1		1		mg/L	****	R16668	19-MAR-02 08:20	GC
Boron (B) Total	1240		0.2		mg/L	****	R16668	19-MAR-02 08:20	GC
Cadmium (Cd) Total	<0.004		0.004		mg/L	100	R16668	19-MAR-02 08:20	GC
Calcium (Ca) Total	300		0.5		mg/L	100	R16668	19-MAR-02 08:20	GC
Chromium (Cr) Total	0.23		0.01		mg/L	100	R16668	19-MAR-02 08:20	GC
Cobalt (Co) Total	<0.003		0.003		mg/L	100	R16668	19-MAR-02 08:20	GC
Copper (Cu) Total	0.769		0.009		mg/L	100	R16668	19-MAR-02 08:20	GC
Iron (Fe) Total	39.6		0.5		mg/L	100	R16668	19-MAR-02 08:20	GC
Lead (Pb) Total	0.309		0.004		mg/L	100	R16668	19-MAR-02 08:20	GC
Magnesium (Mg) Total	8820		0.06		mg/L	100	R16668	19-MAR-02 08:20	GC
Manganese (Mn) Total	0.706		0.004		mg/L	100	R16668	19-MAR-02 08:20	GC
Molybdenum (Mo) Total	0.983		0.008		mg/L	100	R16668	19-MAR-02 08:20	GC
Nickel (Ni) Total	0.028		0.007		mg/L	100	R16668	19-MAR-02 08:20	GC
Potassium (K) Total	1240		0.2		mg/L	100	R16668	19-MAR-02 08:20	GC
Selenium (Se) Total	1.27		0.01		mg/L	100	R16668	19-MAR-02 08:20	GC
Silicon (Si) Total	7		6		mg/L	100	R16668	19-MAR-02 08:20	GC
Silver (Ag) Total	0.009		0.006		mg/L	100	R16668	19-MAR-02 08:20	GC
Sodium (Na) Total	64200		0.08		mg/L	****	R16668	19-MAR-02 08:20	GC
Thallium (Tl) Total	<0.004		0.004		mg/L	100	R16668	19-MAR-02 08:20	GC
Vanadium (V) Total	0.362		0.005		mg/L	100	R16668	19-MAR-02 08:20	GC
Zinc (Zn) Total	2.22		0.03		mg/L	100	R16668	19-MAR-02 08:20	GC
Anion-Cation Balance	90.2		0	0	%		R16761	19-MAR-02 00:00	GC
Bicarbonate (as CaCO3)	1620		2	2	mg/L		R16429	07-MAR-02 13:00	AM
Bromide	1270		10		mg/L	50	R16533	12-MAR-02 11:05	ML
Carbonate (as CaCO3)	<2		2	2	mg/L		R16429	07-MAR-02 13:00	AM
Chloride (Cl)	120000		200		mg/L	2000	R16533	12-MAR-02 11:05	ML
Conductivity (EC)	192000		1		umho/cm		R16508	12-MAR-02 08:30	AM
Fluoride (F)	<1		1.25		mg/L	25	R16533	12-MAR-02 11:05	ML
Sulfate (SO4)	25000		200		mg/L	1000	R16533	12-MAR-02 11:05	ML
Total Dissolved Solids	224000		5		mg/L		R16560	13-MAR-02 16:15	AM
pH	7.12		0.01		pH		R16430	07-MAR-02 13:00	AM

Enviro • Test LABORATORIES LLC.
420 West 1st Street Casper, Wyoming 82601
Phone: (307) 235-5741 Fax:(307) 266-167(
Toll Free 1(800)666-030(

Chemical Analysis Report

PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMOCD
Purchase Order: 203018

Report Date: 27-MAR-02
Work Order: L4741
Lab Sample ID: L4741-1
Client Sample ID: 0203051440(MW-3)/203018-01
Date Collected: 05-MAR-02
Sampled By: CLIENT
Date Received: 07-MAR-02
Matrix: WATER

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By

ETL Enviro • Test LABORATORIES LLC
420 West 1st Street Casper, Wyoming 82601
Phone: (307) 235-5741 Fax:(307) 266-167(
Toll Free 1(800)666-030(

Reference Information

Report Date: 27-MAR-02
Work Order: L4741

The following is the Description of sample Qualifiers where applicable:

The following Preparation/Extraction Methods were performed:

ETL Test Code and Matrix		Test Description	Methodology Reference (Based On)
AG-TOT-LOW-CA	Water	Silver (Ag)-Total	SW846 3010A
AL-TOT-LOW-CA	Water	Aluminum (Al)-Total	SW846 3010A
AS-TOT-LOW-CA	Water	Arsenic (As)-Total	SW846 3010A
B-TOT-LOW-CA	Water	Boron (B)-Total	SW846 3010A
BA-TOT-LOW-CA	Water	Barium (Ba)-Total	SW846 3010A
BE-TOT-LOW-CA	Water	Beryllium (Be)-Total	SW846 3010A
CA-TOT-LOW-CA	Water	Calcium (Ca)-Total	SW846 3010A
CD-TOT-LOW-CA	Water	Cadmium (Cd)-Total	SW846 3010A
CO-TOT-LOW-CA	Water	Cobalt (Co)-Total	SW846 3010A
CR-TOT-LOW-CA	Water	Chromium (Cr)-Total	SW846 3010A
CU-TOT-LOW-CA	Water	Copper (Cu)-Total	SW846 3010A
FE-TOT-LOW-CA	Water	Iron (Fe)-Total	SW846 3010A
K-TOT-LOW-CA	Water	Potassium (K)-Total	SW846 3010A
MG-TOT-LOW-CA	Water	Magnesium (Mg)-Total	SW846 3010A
MN-TOT-LOW-CA	Water	Manganese (Mn)-Total	SW846 3010A
MO-TOT-LOW-CA	Water	Molybdenum (Mo)-Total	SW846 3010A
NA-TOT-LOW-CA	Water	Sodium (Na)-Total	SW846 3010A
NI-TOT-LOW-CA	Water	Nickel (Ni)-Total	SW846 3010A
PB-TOT-LOW-CA	Water	Lead (Pb),-Total	SW846 3010A
SB-TOT-LOW-CA	Water	Antimony (Sb)-Total	SW846 3010A
SE-TOT-LOW-CA	Water	Selenium (Se)-Total	SW846 3010A
SI-TOT-CA	Water	Silicon (Si)-Total	SW846 3010A
TL-TOT-LOW-CA	Water	Thallium (Tl)-Total	SW846 3010A
V-TOT-LOW-CA	Water	Vanadium (V)-Total	SW846 3010A
ZN-TOT-LOW-CA	Water	Zinc (Zn)-Total	SW846 3010A
AG-TOT-LOW-CA	Water	Silver (Ag)-Total	
AL-TOT-LOW-CA	Water	Aluminum (Al)-Total	
ALK-CO3-CA	Water	Carbonate (as CaCO3)	
ALK-HCO3-CA	Water	Bicarbonate (as CaCO3)	
ALK-TOT-CA	Water	Alkalinity, Total	
AS-TOT-LOW-CA	Water	Arsenic (As)-Total	
B-TOT-LOW-CA	Water	Boron (B)-Total	
BA-TOT-LOW-CA	Water	Barium (Ba)-Total	
BAL-PCNT-CALC-CA	Water	Anion-Cation Balance	
BE-TOT-LOW-CA	Water	Beryllium (Be)-Total	
BR-CA	Water	Bromide by IC	
CA-TOT-LOW-CA	Water	Calcium (Ca)-Total	
CD-TOT-LOW-CA	Water	Cadmium (Cd)-Total	
CL-IC-CA	Water	Chloride by IC	
CO-TOT-LOW-CA	Water	Cobalt (Co)-Total	
CR-TOT-LOW-CA	Water	Chromium (Cr)-Total	
CU-TOT-LOW-CA	Water	Copper (Cu)-Total	
EC-CA	Water	Conductivity (EC)	
F-IC-CA	Water	Fluoride by IC	
FE-TOT-LOW-CA	Water	Iron (Fe)-Total	
K-TOT-LOW-CA	Water	Potassium (K)-Total	

MN-TOT-LOW-CA	Water	Manganese (Mn)-Total
MO-TOT-LOW-CA	Water	Molybdenum (Mo)-Total
NA-TOT-LOW-CA	Water	Sodium (Na)-Total
NI-TOT-LOW-CA	Water	Nickel (Ni)-Total
PB-TOT-LOW-CA	Water	Lead (Pb),-Total
PH-CA	Water	pH
SB-TOT-LOW-CA	Water	Antimony (Sb)-Total
SE-TOT-LOW-CA	Water	Selenium (Se)-Total
SI-TOT-CA	Water	Silicon (Si)-Total
SO4-IC-CA	Water	Sulfate by IC
SOLIDS-TDS-CA	Water	Total Dissolved Solids
TL-TOT-LOW-CA	Water	Thallium (Tl)-Total
V-TOT-LOW-CA	Water	Vanadium (V)-Total
ZN-TOT-LOW-CA	Water	Zinc (Zn)-Total

The following Analytical Methods were performed:

ETL Test Code and Matrix		Test Description	Methodology Reference (Based On)
AG-TOT-LOW-CA	Water	Silver (Ag)-Total	SM 3125-ICP-MS
AL-TOT-LOW-CA	Water	Aluminum (Al)-Total	SM 3125-ICP-MS
ALK-CO3-CA	Water	Carbonate (as CaCO3)	SM 2320 B-Pot. Titration
ALK-HCO3-CA	Water	Bicarbonate (as CaCO3)	SM 2320 B-Pot. Titration
ALK-TOT-CA	Water	Alkalinity, Total	SM 2320 B-Pot. Titration
AS-TOT-LOW-CA	Water	Arsenic (As)-Total	SM 3125-ICP-MS
B-TOT-LOW-CA	Water	Boron (B)-Total	SM 3125-ICP-MS
BA-TOT-LOW-CA	Water	Barium (Ba)-Total	SM 3125-ICP-MS
BAL-PCNT-CALC-CA	Water	Anion-Cation Balance	SM 1030 F-Calculation
BE-TOT-LOW-CA	Water	Beryllium (Be)-Total	SM 3125-ICP-MS
BR-CA	Water	Bromide by IC	SW846 9056
CA-TOT-LOW-CA	Water	Calcium (Ca)-Total	SM 3125-ICP-MS
CD-TOT-LOW-CA	Water	Cadmium (Cd)-Total	SM 3125-ICP-MS
CL-IC-CA	Water	Chloride by IC	EPA 300.1
CO-TOT-LOW-CA	Water	Cobalt (Co)-Total	SM 3125-ICP-MS
CR-TOT-LOW-CA	Water	Chromium (Cr)-Total	SM 3125-ICP-MS
CU-TOT-LOW-CA	Water	Copper (Cu)-Total	SM 3125-ICP-MS
EC-CA	Water	Conductivity (EC)	SM 2510 B-electrode
F-IC-CA	Water	Fluoride by IC	EPA 300.1
FE-TOT-LOW-CA	Water	Iron (Fe)-Total	SM 3125-ICP-MS
K-TOT-LOW-CA	Water	Potassium (K)-Total	SM 3125-ICP-MS
MG-TOT-LOW-CA	Water	Magnesium (Mg)-Total	SM 3125-ICP-MS
MN-TOT-LOW-CA	Water	Manganese (Mn)-Total	SM 3125-ICP-MS
MO-TOT-LOW-CA	Water	Molybdenum (Mo)-Total	SM 3125-ICP-MS
NA-TOT-LOW-CA	Water	Sodium (Na)-Total	SM 3125-ICP-MS
NI-TOT-LOW-CA	Water	Nickel (Ni)-Total	SM 3125-ICP-MS
PB-TOT-LOW-CA	Water	Lead (Pb)-Total	SM 3125-ICP-MS
PH-CA	Water	pH	SM 4500 H-Electrode
SB-TOT-LOW-CA	Water	Antimony (Sb)-Total	SM 3125-ICP-MS

SI-TOT-CA	Water	Silicon (Si)-Total	SM 3120 B-ICP-OES
SO4-IC-CA	Water	Sulfate by IC	EPA 300.1
SOLIDS-TDS-CA	Water	Total Dissolved Solids	SM 2540 C
TL-TOT-LOW-CA	Water	Thallium (Tl)-Total	SM 3125-ICP-MS
V-TOT-LOW-CA	Water	Vanadium (V)-Total	SM 3125-ICP-MS
ZN-TOT-LOW-CA	Water	Zinc (Zn)-Total	SM 3125-ICP-MS

ENVIRO-TEST QC REPORT

Client: PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Contact: PROJECT MANAGER

Report Date: Mar. 27, 2002
Workorder: L4741

Test	Matrix	Reference	Result	Qualifier	Units	Limit		Analyzed
AG-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Silver (Ag)			<0.0006		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Silver (Ag)		0.009	0.009	RPD	mg/L	0	20	19-MAR-02
WG12845-2 LCS						Amount		
Silver (Ag)			104		%	0.1	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
Silver (Ag)			75		%	2	75-125	19-MAR-02
AL-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Aluminum (Al)			0.005		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Aluminum (Al)		1.80	2.18	RPD	mg/L	19	20	19-MAR-02
WG12845-2 LCS						Amount		
Aluminum (Al)			107		%	0.1	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
uminum (Al)			80		%	2	75-125	19-MAR-02
ALK-HCO3-CA	Water							
Batch R16429								
WG12793-1 BLANK								
Bicarbonate (as CaCO3)			<2		mg/L			07-MAR-02
ALK-TOT-CA	Water							
Batch R16429								
WG12793-1 BLANK								
Alkalinity, Total			<5		mg/L			07-MAR-02
WG12793-3 DUP		L4741-1				RPD		
Alkalinity, Total		1620	1640	RPD	mg/L	1.2	20	07-MAR-02
WG12793-2 LCS						Amount		
Alkalinity, Total			98		%	2500	80-120	07-MAR-02
AS-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Arsenic (As)			<0.0004		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Arsenic (As)		4.37	5.48	RPD	mg/L	22	20	19-MAR-02
WG12845-2 LCS						Amount		
Arsenic (As)			95		%	0.1	80-120	19-MAR-02

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ENVIRO-TEST QC REPORT

Client: PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Contact: PROJECT MANAGER

Report Date: Mar. 27, 2002
Workorder: L4741

Test	Matrix	Reference	Result	Qualifier	Units		Limit	Analyzed
AS-TOT-LOW-CA	Water							
Batch R16668								
WG12845-4 MS		L4741-1				Amount		
Arsenic (As)			93		%	2	75-125	19-MAR-02
B-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Boron (B)			<0.02		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Boron (B)		1240	1550	RPD	mg/L	22	20	19-MAR-02
WG12845-2 LCS						Amount		
Boron (B)			102		%	0.5	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
Boron (B)			90		%	1000	75-125	19-MAR-02
BA-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Barium (Ba)			0.0012		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Barium (Ba)		0.026	0.027	RPD	mg/L	4.5	20	19-MAR-02
WG12845-2 LCS						Amount		
Barium (Ba)			101		%	0.1	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
Barium (Ba)			99		%	2	75-125	19-MAR-02
BE-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Beryllium (Be)			<0.001		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Beryllium (Be)		<1	<1	RPD-NA	mg/L	1000	20	19-MAR-02
WG12845-2 LCS						Amount		
Beryllium (Be)			101		%	0.1	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
Beryllium (Be)			89		%	200	75-125	19-MAR-02
BR-CA	Water							
Batch R16533								
WG12863-1 BLANK								
Bromide			<0.2		mg/L			12-MAR-02
WG12863-2 LCS						Amount		
Bromide			103		%	10	90-110	12-MAR-02

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Test	Matrix	Reference	Result	Qualifier	Units		Limit	Analyzed
CA-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Calcium (Ca)			0.11		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Calcium (Ca)		300	359	RPD	mg/L	18	20	19-MAR-02
WG12845-2 LCS						Amount		
Calcium (Ca)			101		%	5	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
Calcium (Ca)			81		%	100	75-125	19-MAR-02
CD-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Cadmium (Cd)			<0.0004		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Cadmium (Cd)		<0.004	<0.004	RPD-NA	mg/L	29	20	19-MAR-02
WG12845-2 LCS						Amount		
Cadmium (Cd)			103		%	0.1	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
Cadmium (Cd)			75		%	2	75-125	19-MAR-02
CL-IC-CA	Water							
Batch R16533								
WG12863-1 BLANK								
Chloride (Cl)			<0.1		mg/L			12-MAR-02
WG12863-2 LCS						Amount		
Chloride (Cl)			98		%	50	90-110	12-MAR-02
CO-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Cobalt (Co)			<0.0003		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Cobalt (Co)		<0.003	<0.003	RPD	mg/L	0	20	19-MAR-02
WG12845-2 LCS						Amount		
Cobalt (Co)			96		%	0.1	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
Cobalt (Co)			91		%	2	75-125	19-MAR-02
CR-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Chromium (Cr)			0.002		mg/L			19-MAR-02
						RPD		

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Test	Matrix	Reference	Result	Qualifier	Units		Limit	Analyzed
CR-TOT-LOW-CA	Water							
Batch R16668								
WG12845-3 DUP		L4741-1				RPD		
Chromium (Cr)		0.23	0.13	RPD	mg/L	57	20	19-MAR-02
WG12845-2 LCS						Amount		
Chromium (Cr)			113		%	0.1	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
Chromium (Cr)			119		%	2	75-125	19-MAR-02
CU-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Copper (Cu)			<0.0009		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Copper (Cu)		0.769	0.959	RPD	mg/L	22	20	19-MAR-02
WG12845-2 LCS						Amount		
Copper (Cu)			98		%	0.1	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
Copper (Cu)			82		%	2	75-125	19-MAR-02
EC-CA	Water							
[redacted] R16508								
WG12836-1 BLANK								
Conductivity (EC)			<1		umho/cm			12-MAR-02
WG12836-3 DUP		L4741-1				RPD		
Conductivity (EC)		192000	194000	RPD	umho/cm	0.8	20	12-MAR-02
WG12836-2 LCS						Amount		
Conductivity (EC)			96		%	10000	80-120	12-MAR-02
F-IC-CA	Water							
Batch R16533								
WG12863-1 BLANK								
Fluoride (F)			<0.05		mg/L			12-MAR-02
WG12863-2 LCS						Amount		
Fluoride (F)			98		%	4	90-110	12-MAR-02
FE-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Iron (Fe)			0.10		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Iron (Fe)		39.6	45.3	RPD	mg/L	13	20	19-MAR-02
WG12845-2 LCS						Amount		
Iron (Fe)			112		%	5	80-120	19-MAR-02
						Amount		

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Test	Matrix	Reference	Result	Qualifier	Units	Limit	Analyzed
FE-TOT-LOW-CA	Water						
Batch R16668							
WG12845-4 MS		L4741-1				Amount	
Iron (Fe)			97		%	100	75-125 19-MAR-02
K-TOT-LOW-CA	Water						
Batch R16668							
WG12845-1 BLANK							
Potassium (K)			0.04		mg/L		19-MAR-02
WG12845-3 DUP		L4741-1				RPD	
Potassium (K)		1240	1560	RPD	mg/L	23	20 19-MAR-02
WG12845-2 LCS						Amount	
Potassium (K)			99		%	5	80-120 19-MAR-02
WG12845-4 MS		L4741-1				Amount	
Potassium (K)			84		%	100	75-125 19-MAR-02
MG-TOT-LOW-CA	Water						
Batch R16668							
WG12845-1 BLANK							
Magnesium (Mg)			0.008		mg/L		19-MAR-02
WG12845-3 DUP		L4741-1				RPD	
Magnesium (Mg)		8820	10700	RPD	mg/L	19	20 19-MAR-02
WG12845-2 LCS						Amount	
Magnesium (Mg)			103		%	5	80-120 19-MAR-02
WG12845-4 MS		L4741-1				Amount	
Magnesium (Mg)			3905		%	100	75-125 19-MAR-02
MN-TOT-LOW-CA	Water						
Batch R16668							
WG12845-1 BLANK							
Manganese (Mn)			<0.0004		mg/L		19-MAR-02
WG12845-3 DUP		L4741-1				RPD	
Manganese (Mn)		0.706	0.825	RPD	mg/L	16	20 19-MAR-02
WG12845-2 LCS						Amount	
Manganese (Mn)			96		%	0.1	80-120 19-MAR-02
WG12845-4 MS		L4741-1				Amount	
Manganese (Mn)			93		%	2	75-125 19-MAR-02
MO-TOT-LOW-CA	Water						
Batch R16668							
WG12845-1 BLANK							
Molybdenum (Mo)			<0.0008		mg/L		19-MAR-02
WG12845-3 DUP		L4741-1				RPD	
Molybdenum (Mo)		0.983	1.19	RPD	mg/L	19	20 19-MAR-02

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Test	Matrix	Reference	Result	Qualifier	Units	Limit		Analyzed
MO-TOT-LOW-CA	Water							
Batch R16668								
WG12845-2 LCS						Amount		
Molybdenum (Mo)			105		%	0.1	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
Molybdenum (Mo)			107		%	2	75-125	19-MAR-02
NA-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Sodium (Na)			0.081		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Sodium (Na)		64200	80800	RPD	mg/L	23	20	19-MAR-02
WG12845-2 LCS						Amount		
Sodium (Na)			106		%	5	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
Sodium (Na)			117		%	10000	75-125	19-MAR-02
NI-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Nickel (Ni)			<0.0007		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Nickel (Ni)		0.028	0.030	RPD	mg/L	5.9	20	19-MAR-02
WG12845-2 LCS						Amount		
Nickel (Ni)			97		%	0.1	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
Nickel (Ni)			92		%	2	75-125	19-MAR-02
PB-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Lead (Pb)			<0.0004		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Lead (Pb)		0.309	0.252	RPD	mg/L	20	20	19-MAR-02
WG12845-2 LCS						Amount		
Lead (Pb)			114		%	0.1	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
Lead (Pb)			108		%	2	75-125	19-MAR-02
PH-CA	Water							
Batch R16430								
WG12794-2 DUP		L4741-1				RPD		
pH		7.12	7.10	RPD	pH	0.3	20	07-MAR-02

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Test	Matrix	Reference	Result	Qualifier	Units		Limit	Analyzed
PH-CA	Water							
Batch R16430								
WG12794-1 ICV								
pH			100		%		80-120	07-MAR-02
SB-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Antimony (Sb)			<0.0005		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Antimony (Sb)		0.028	0.027	RPD	mg/L	4.0	20	19-MAR-02
WG12845-2 LCS						Amount		
Antimony (Sb)			103		%	0.1	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
Antimony (Sb)			115		%	2	75-125	19-MAR-02
SE-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Selenium (Se)			<0.001		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Selenium (Se)		1.27	2.17	RPD	mg/L	52	20	19-MAR-02
WG12845-2 LCS						Amount		
Selenium (Se)			99		%	0.1	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
Selenium (Se)			96		%	2	75-125	19-MAR-02
SI-TOT-CA	Water							
Batch R16668								
WG12845-1 BLANK								
Silicon (Si)			<0.6		mg/L			19-MAR-02
WG12845-3 DUP		L4741-1				RPD		
Silicon (Si)		7	9	RPD	mg/L	16	20	19-MAR-02
WG12845-2 LCS						Amount		
Silicon (Si)			107		%	0.5	80-120	19-MAR-02
WG12845-4 MS		L4741-1				Amount		
Silicon (Si)			94		%	10	75-125	19-MAR-02
SO4-IC-CA	Water							
Batch R16533								
WG12863-1 BLANK								
Sulfate (SO4)			<0.2		mg/L			12-MAR-02
WG12863-3 DUP		L4703-1				RPD		
Sulfate (SO4)		36.4	36.6	RPD	mg/L	0.5	20	12-MAR-02

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SO4-IC-CA	Water							
Batch R16533								
WG12863-2 LCS Sulfate (SO4)			97		%	Amount 50	90-110	12-MAR-02
WG12863-4 MS Sulfate (SO4)		L4703-2	97		%	Amount 20	75-125	12-MAR-02
SOLIDS-TDS-CA	Water							
Batch R16560								
WG12874-1 BLANK Total Dissolved Solids			<5		mg/L			13-MAR-02
WG12874-3 DUP Total Dissolved Solids		L4741-1 224000	230000	RPD	mg/L	RPD 3.4	20	13-MAR-02
WG12874-2 LCS Total Dissolved Solids			93		%	Amount 4000	80-120	13-MAR-02
TL-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK Thallium (Tl)			<0.0004		mg/L			19-MAR-02
WG12845-3 DUP Thallium (Tl)		L4741-1 <0.004	<0.004	RPD-NA	mg/L	RPD -30	20	19-MAR-02
WG12845-2 LCS Thallium (Tl)			101		%	Amount 0.1	80-120	19-MAR-02
WG12845-4 MS Thallium (Tl)		L4741-1	100		%	Amount 2	75-125	19-MAR-02
V-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK Vanadium (V)			<0.0005		mg/L			19-MAR-02
WG12845-3 DUP Vanadium (V)		L4741-1 0.362	0.618	RPD	mg/L	RPD 52	20	19-MAR-02
WG12845-2 LCS Vanadium (V)			107		%	Amount 0.1	80-120	19-MAR-02
WG12845-4 MS Vanadium (V)		L4741-1	102		%	Amount 2	75-125	19-MAR-02
ZN-TOT-LOW-CA	Water							
Batch R16668								
WG12845-1 BLANK Zinc (Zn)			0.015		mg/L			19-MAR-02
WG12845-3 DUP Zinc (Zn)		L4741-1 2.22	2.72	RPD	mg/L	RPD 20	20	19-MAR-02
						Amount		

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ZN-TOT-LOW-CA	Water						
Batch R16668							
WG12845-2 LCS					Amount		
Zinc (Zn)			113		%	0.1 80-120	19-MAR-02
WG12845-4 MS		L4741-1			Amount		
Zinc (Zn)			82		%	2 75-125	19-MAR-02

Product - Batch and Sample Number Relations:

AG-TOT-LOW-CA	1	
	R16668	L4741-1
AL-TOT-LOW-CA	1	
	R16668	L4741-1
ALK-CO3-CA	1	
	R16429	L4741-1
ALK-HCO3-CA	1	
	R16429	L4741-1
ALK-TOT-CA	1	
	R16429	L4741-1
AS-TOT-LOW-CA	1	
	R16668	L4741-1
B-TOT-LOW-CA	1	
	R16668	L4741-1
BA-TOT-LOW-CA	1	
	R16668	L4741-1
BAL-PCNT-CALC-CA	1	
	R16761	L4741-1
[redacted]T-LOW-CA	1	
	R16668	L4741-1
BR-CA	1	
	R16533	L4741-1
CA-TOT-LOW-CA	1	
	R16668	L4741-1
CD-TOT-LOW-CA	1	
	R16668	L4741-1
CL-IC-CA	1	
	R16533	L4741-1
CO-TOT-LOW-CA	1	
	R16668	L4741-1
CR-TOT-LOW-CA	1	
	R16668	L4741-1
CU-TOT-LOW-CA	1	
	R16668	L4741-1
EC-CA	1	
	R16508	L4741-1
F-IC-CA	1	
	R16533	L4741-1
FE-TOT-LOW-CA	1	
	R16668	L4741-1
K-TOT-LOW-CA	1	
	R16668	L4741-1
MG-TOT-LOW-CA	1	
	R16668	L4741-1
MN-TOT-LOW-CA	1	
	R16668	L4741-1
MO-TOT-LOW-CA	1	
	R16668	L4741-1
NA-TOT-LOW-CA	1	
	R16668	L4741-1

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Test	Matrix	Reference	Result	Qualifier	Units	Limit	Analyzed

Product - Batch and Sample Number Relations:

NI-TOT-LOW-CA		1	
	R16668		L4741-1
PB-TOT-LOW-CA		1	
	R16668		L4741-1
PH-CA		1	
	R16430		L4741-1
SB-TOT-LOW-CA		1	
	R16668		L4741-1
SE-TOT-LOW-CA		1	
	R16668		L4741-1
SI-TOT-CA		1	
	R16668		L4741-1
SO4-IC-CA		1	
	R16533		L4741-1
SOLIDS-TDS-CA		1	
	R16560		L4741-1
TL-TOT-LOW-CA		1	
	R16668		L4741-1
V-TOT-LOW-CA		1	
	R16668		L4741-1
ZN-TOT-LOW-CA		1	
	R16668		L4741-1

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Reference Information

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The following is a description of Sample types that where applicable:

BLANK	Laboratory Blank
DUP	Duplicate
ICV	Instrument Calibration Verification
LCS	Laboratory Control Spike
MS	Matrix Spike

The following is a description of sample Qualifiers that where applicable:

RPD-NA	Relative Percent Difference Not Available due to DL

ETL Enviro • Test LABORATORIES LLC.

Sample Receipt ~~Checklist~~

Client	Pinnacle	Job Number	L4741

Samples Shipped	(UPS)	Federal Express	Airborn:
Samples Hand Delivered	Client	ETL Lab Courier	Other:

*Air Bill # 1Z878168014319 7115	# of Packages Received: 1

	Yes	No	N\A	Comments
1. Chain - of - Custody present?	X			If no, please fill one out.
2. Are the COC and sample labels legible?	X			
3. Custody Seal on shipping container?		X		
If yes, intact on shipping container?				
4. Custody seals on sample containers?		X		
If yes, intact on sample container?				
5. Samples chilled?	X			
Is temperature of cooler: 4 ± 2°C ?	X			*Record temp: 4 °C
6. Samples received intact (good condition)?	X			
If volatiles required, any with headspace?				
7. Adequate sample volume provided?	X			
8. Samples preserved correctly?	X			$Na_2S_2O_3$, ZnAc, (HNO_3), HCl
Circle preservative types in shipment				H_2SO_4, NaOH, (Plain), Other
9. Correct containers used?	X			
10. Samples received within holding time?	X			
11. Agreement between COC and sample labels?	X			
12. Gamma Screen µR/Hr @ surface within Bkg?	X			FOR INTERNAL USE ONLY @ BKg
13. Samples OK to release to Lab/Screening?	X			

Additional Comments: _____

Sample Container (size/material): 1) 1LP 1) 500P

Received and inspected by: JRS Date/Time: 3/7/02 1000

* = for multiple packages, see attached page(s) for shipping numbers and temperatures.

Pinnacle Laboratories, Inc. — **Interlab Chain of Custody** — Date: 3/6/02 Page: 1 of 1

Network Project Manager: Jacinta A. Tenorio

Pinnacle Laboratories, Inc.
2709-D Pan American Freeway, NE
Albuquerque, New Mexico 87107
(505) 344-3777 Fax (505) 344-4413

Saturated brine water

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL (23 METALS)	ICP METALS	CATIONS/ANIONS	Gen Chemistry:	Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8082)	Herbicides (615/8151)	PNA (8310)/8270 SIMS	8240 (TCLP 1311) ZHE		Base/Neutral Acid Compounds GC/MS (625/8270)	URANIUM (ICP-MS)	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS
0203051440 (MW-3)									X	X																
203018-01	3/5/02	1440	AQ						Line Item 49	Line Item 31																

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO:	
PROJECT #:	203018	Total Number of Containers		PENSACOLA - STL-FL	
PROJ. NAME:	NMOCD	Chain of Custody Seals		ESL - OR	
QC LEVEL:	(STD) IV	Received Intact?		STL - CT	
QC REQUIRED:	(MS) MSD BLANK	Received Good Cond./Cold		ATEL - AZ	
TAT:	(STANDARD) RUSH!!	LAB NUMBER:		ATEL - MARION	
				ATEL - MELMORE	
DUE DATE:	3/20	COMMENTS:		BARRINGER	
RUSH SURCHARGE:	—			ENVIRO TEST LABS	X
CLIENT DISCOUNT:	—			WCAS	
SPECIAL CERTIFICATION REQUIRED:	YES (NO)			WOHL	

RELINQUISED BY: 1	RELINQUISED BY: 2
Signature: Francine Tonivio Time: 1700	Signature: Time:
Printed Name: Francine Tonivio Date: 3/6/02	Printed Name: Date:
Company: Pinnacle Laboratories, Inc.	Company
RECEIVED BY: 1	**RECEIVED BY: 2**
Signature: Tammie Sbeetz Time: 1000	Signature: Time:
Printed Name: Tammie Sbeetz Date: 3/7	Printed Name: Date:
Company ETL 3/7/02	Company

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 3/6/02 PAGE: 1 OF 1

PLI Accession #: 203018

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: Bill Olson

COMPANY: NM Oil Conservation Division

ADDRESS: 1220 St. Francis Dr.
Santa Fe, NM 87505

PHONE: (505) 476-3491

FAX: (505) 476-3462

BILL TO: Same

COMPANY:

ADDRESS:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline) MTBE	8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB ☐ / DBCP ☐	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310/8270-SIMS)	General Chemistry: Cations/Anions Line item 51	Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals: ICP Metals Line 49	NUMBER OF CONTAINERS
020305 1440 (MW-3)	3/5/02	1440	water	01					2														1					1	4

PROJECT INFORMATION

PROJ. NO.:

PROJ. NAME: Carlsbad Well Field

P.O. NO.:

SHIPPED VIA:

SAMPLE RECEIPT

NO. CONTAINERS	4
CUSTODY SEALS	Y / N (NA)
RECEIVED INTACT	Y (N)
BLUE ICE/ICE	2.1 c

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

Saturated brine water

RELINQUISHED BY: 1.

Signature: Bill Olson Time: 1135

Printed Name: William Olson Date: 3/6/02

Company: NMOCD

See reverse side (Force Majeure)

RECEIVED BY: 1.

Signature: Time:

Printed Name: Date:

Company:

RELINQUISHED BY: 2.

Signature: Time:

Printed Name: Date:

Company:

RECEIVED BY: (LAB) 2.

Signature: Francine Tarlvio Time: 1135

Printed Name: Francine Tarlvio Date: 3/6/02

Pinnacle Laboratories Inc.

APPENDIX D

Oil Conservation Division
Oil & Gas Well Records

Form 3160-5
(November 1983)
Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED BY
OCT - 1 1985
O. C. D.
ARTESIA

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR: Exxon Corporation

3. ADDRESS OF OPERATOR: P. O. Box 1600, Midland, TX 79702

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 2479' FSL & 1880' FWL of Sec. (N SW)

5. LEASE DESIGNATION AND SERIAL NO.: NM

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: --

7. UNIT AGREEMENT NAME: --

8. FARM OR LEASE NAME: Squaw Federal

9. WELL NO.: 3

10. FIELD AND POOL, OR WILDCAT: Undes. Sheep Draw-Morrow Gas

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 1, T23S, R25E

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3695' GR

12. COUNTY OR PARISH: Eddy

13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANE	☐	(Other) Spud/Casing Report			☒
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Spud 26" hole on 9-14-85. Ran 20", 94# conductor pipe to 85'. Cemented w/250 sx C1C and circulated w/no returns. Left 15' cement in conductor. Had good cement 34' from surface. Received approval from BLM to order pea gravel and ready mix. WOC 9 hours before drill out. Lost returns at 203'. Dumped pea gravel down backside of conductor. Obtained approval to use Gear Gum to build visc. pills. Found parted csg. Pulled csg. & left 20' in hole - tagged at 65'. Pumped 100 bbls. 250 visc. pill before running wireline survey. Resumed drilling & lost returns at 544'. Pumped 50 bbls. 150 visc. - no returns. Drilled w/no returns. Set 13-3/8", 54.5# K55 STC at 1510'. Preflushed w/100 sx. C1C. Cemented w/1600 sx Lite C & 300 sx C1C. This was approved by Jim Wright, State Engineer. Notified BLM of temp. survey on 9-21-85. Ran survey & found cement at 950'. Ran 1" tbg. Tagged at 710'. Pumped 150 sx C1C. Pulled tbg. & WOC. Ran 1" tbg. Tagged at 627'. Pumped 3 yards pea gravel & 100 sx C1C. Pulled tbg. & WOC. Ran 1" tbg. Tagged at 610'. Added 3 yards pea gravel and 100 sx C1C. Pulled tbg. & WOC. Ran 1" tbg. Tagged at 610'. Pumped 4 yards pea gravel and 100 sx C1C. Pulled tbg. & WOC. Ran 1" tbg. Tagged at 480'. Pumped 5 yards pea gravel and 100 sx C1C. Pulled 1" tbg. Left 275' in hole. WOC. Ran 1" tbg. Tagged at 480'. Pumped 2-1/2 yards gravel & 100 sx C1C. Pull tbg. & WOC. Ran 1" tbg. Tagged at 60'. Pumped 75 sx C1C - no returns. Pumped 2-1/2 yards pea gravel & 10 sx cmt. Tagged cmt at 1430'. Art Mason from State Engineer's office came by and approved 1" procedure. Resumed drilling.

18. I hereby certify that the foregoing is true and correct

SIGNED Melba Rupley TITLE Unit Head DATE 9-19-85

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

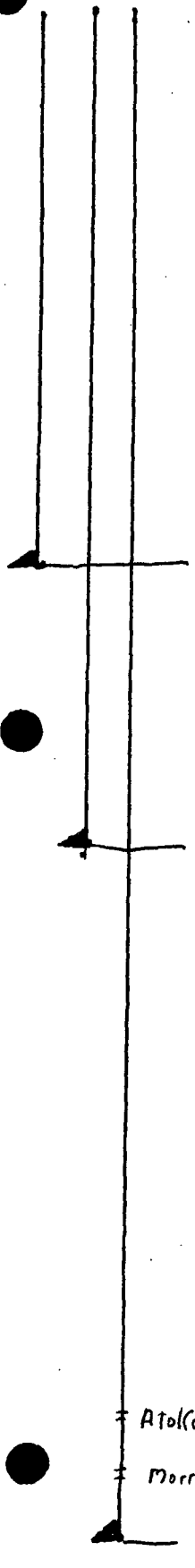
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Operator Enron Oil & Gas Co.
Well Rock Tank 10 St. #1
Unit A Section 10 Township 23s Range 25e
API # 30—015 -- 23106

TOPS

Yates
T. Salt
B. Salt
Glorieta
Bone Sp. 4735'
Abo
Wolfcamp 8403'
Morrow 10,481'
Devonian
Fusselman
Other T. Delaware 2492'



History

Well was spudded & Drilled 2/11/1980.

Well was Plugged 12/3/1980'

Operator Minerals Tech. Inc.
Well Mary Fed. #1
Unit H Section 11 Township 23S Range 25E
API # 30—0____-_____

TOPS

Yates_____
T. Salt_____
B. Salt_____
Glorieta_____
Bone Sp. 4952'
Abo_____
Wolfcamp 8542'
Morrow 10710'
Devonian_____
Fusselman_____
Other T. Delaware - 2300'

16" Conductor casing set @ 100'. Circ w/ 150sxs cement.

9 5/8" 32.30# casing set @ 2430' w/ 1000sxs cement. T.o.c. 600'. 1" To Surface. Circ.

Perfs 9850
Perfs - 10268'-92'
Perfs - 11363'-
5 1/2" 17# & 20# casing set @ 11570' w/ 350sx cement. T.o.c. - 10,100' Reperforated 9830' w/ 250sx. cement.

History

Well was spud & Drilled 1/20/1973.
Well TDed 11,570'. Plugged & Aban. 3/5/1973.
8/4/1973 Well Drilled out.
5 1/2" casing set @ 11,570'.

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: NM 0426782

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1. OIL WELL ☐ GAS WELL ☒ OTHER

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Hanagan Petroleum Corporation

8. FARM OR LEASE NAME: Sheep Draw

3. ADDRESS OF OPERATOR: P. O. Box 1737 - Roswell, New Mexico 88201

9. WELL NO.: #1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FNL and 660' FEL

RECEIVED
FEB 2 1973
O. C. C.

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 11-23S-25E NMPM

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3724' GR

12. COUNTY OR PARISH: Eddy

13. STATE: New Mexi

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☒	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Spud			☒
(Other)			☐	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

20-73 Spud 12:30 a.m. Moranco Contractor.

1-21-73 TD 100' - 20" hole. Ran 3 jts 16" 42# csg set w/150 sx Class C ¼# flocele & 2% CaCl, plug down 10:45 a.m., cement circulated. 1.32 slurry vol cu ft/sx 750° temp. Slurry mixed est fm temp @ 750° compressive strength 565#, drilled plug 10:45 p.m. 1-21-73 WOC 12 hr press up 600# for 30 min, no press drop.

1-25-73 TD 2430' (14 3/4" & 12 1/4" hole) Ran 80 jts 32.30# H-40 9 5/8" cs set at 2430', cmt w/850 sx Howco light 5# gilsonite 1/4# flocele & 2% CaCl & 150 sx Class "c" ¼# flocele & 2% CaCl, plug down 1:10 p.m. 1-25-73. Did not circulate. Ran Howco temp survey top cement @ 600'. Ran 1" tbg to 600'.

Plug #1 - 35 sx Class "c" 4% CaCl. Top cement @ 625'.
#2 - 35 sx Class "c" 4% CaCl.
#3 - 50 sx Class "c" 4% CaCl. Top cement @ 610'.
#4 - 35 sx Class "c" 4% CaCl. Top cement @ 610'.
#5 - 35 sx Howco Special Thixomix
#6 - 35 sx Class "c" 4% CaCl. Top cement @ 395'. Pump 110 bbl mud, no returns.
#7 - 35 sx Class "c" 4% CaCl. Top cement 330'
#8 - 30 sx Class "c" 4% CaCl. Top cement 270'. No fluid in hole.

(continued over)

18. I hereby certify that the foregoing is true and correct

SIGNED M. L. Southerland TITLE Agent DATE Jan. 29, 1973

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVED
FEB - 1 1973
R. L. BEEKMAN
ACTING DISTRICT ENGINEER

*See Instructions on Reverse Side

eral: This form is designed for submitting proposals to perform certain well operations, and reports of such operations when completed, as indicated, on Federal and Indian lands pursuant to applicable Federal law and regulations. Consult applicable State law and regulations. State laws and regulations should be followed in preparing this report and any supplemental records. Consult local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult State or Federal office for specific instructions.

Item 17: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by local Federal and/or State office. In addition, such proposals and reports should include reasons for the abandonment; depths (top and bottom) and method of placement or present productive zones, or other zones with present significant fluid contents not sealed off by cement or otherwise; data on any former or present information as is required by local Federal and/or State office. above plugs; amount, size, method of parting or any casing, liner or tubing pulled and the depth to top of any left in the hole; method of closing top of well; and date well site conditioned for final inspection looking to approval of the abandonment.

Instructions

U.S. GOVERNMENT PRINTING OFFICE: 1963—O-685229

847-485

Ran 14 yards Ready Mix, circ., completed @ 10:00 p.m. 1-26-73.

1-27-73 Drilled plug @ 3:00 p.m. 1-27-73 - WOC 50 hours press up 2000# 30 min. No press drop.

Operator Exxon Corp.
Well Mary Fed. #3
Unit H Section 11 Township 23S Range 25E
API # 30—015 – 24942

Yates
T. Salt
B. Salt
Glorieta
Bone Sp.
Abo
Wolfcamp
Morrow
Devonian
Fusselman
Other

8 5/8" 24# CSG SET @ 1432'.
W/ 836 SKS CEMENT, 1" TO SURFACE. W/ 300 SX.

History

Well was spudded + Drilled 8/14/1984.
Well Plugged 8/19/1984. TD. 1750'.

(Formerly 9-331) DEPARTMENT OF THE INTERIOR (verse side)
BUREAU OF LAND MANAGEMENT

5. LEASE DESIGNATION AND SERIAL NO.: NM-0426782

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED BY
SEP 24 1984
O. C. D.
ARTESIA, OFFICE

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: --

7. UNIT AGREEMENT NAME: --

OIL WELL ☐ GAS WELL ☐ OTHER P & A - Fish In Hole

2. NAME OF OPERATOR: Exxon Corporation

8. FARM OR LEASE NAME: Mary Federal

3. ADDRESS OF OPERATOR: P. O. Box 1600, Midland, TX 79702

9. WELL NO.: 3

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1925' FNL and 810' FEL of Section (SE/NE)

10. FIELD AND POOL, OR WILDCAT: Wildcat - Delaware

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 11 - 23S - 25E

14. PERMIT NO.	15. ELEVATIONS (Show whether DF, RT, GR, etc.)	12. COUNTY OR PARISH	13. STATE
30-015-24242	3738.4'GR	Eddy	New Mexico

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	X	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

8-8-84 Spud 12-1/4" hole @ 1130 hrs.

8-14-84 Set 34 jts. 8-5/8"/K55/24# csg. @ 1432'. Cement w/ 836 sx Pacesetter lite. Did not circ. to surface. Ran 1" to 440'. Cement w/ 300 sx C1C. Circ. to surface. WOC. 58 hrs. before drill out. Test casing to 1000 psi for 30 min. Held OK.

8-19-84 Set lost circ. plug @ 1750' w/ 300 sx C1H and @ 1640' w/ 200 sx C1C. Could not pull all of the drill pipe.

Fish in hole consists of 468' of drill pipe @ 1169 - 1638. Wash over fish. RU wireline. Fire two rattle shots @ 1355 - 1453 and 1255 - 1355. Rec. 2 jts. TOF @ 1233. Milling. Set plug @ 1183' - 1233' w/40 sx C1C and 0 - 50' w/ 40 sx C1C on 8-25-84. Will skid rig 15' NW to Mary Federal 3Y.

18. I hereby certify that the foregoing is true and correct

SIGNED Melba Knipling TITLE Unit Head DATE 9-11-84

(This space for Federal or State office use)

APPROVED BY _____ TITLE AREA MANAGER CARLSBAD RESOURCE AREA DATE 9-21-84

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Formerly 9-331) DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NM-0426782

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED BY SEP 24 1984 O. C. D. ARTESIA, OFFICE

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: --

7. UNIT AGREEMENT NAME: --

OIL WELL ☐ GAS WELL ☐ OTHER P & A - Fish In Hole

2. NAME OF OPERATOR: Exxon Corporation

8. FARM OR LEASE NAME: Mary Federal

3. ADDRESS OF OPERATOR: P. O. Box 1600, Midland, TX 79702

9. WELL NO.: 3

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1925' FNL and 810' FEL of Section (SE/NE)

10. FIELD AND POOL, OR WILDCAT: Wildcat – Delaware

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-23S-25E

14. PERMIT NO.	15. ELEVATIONS (Show whether DF, RT, GR, etc.)	12. COUNTY OR PARISH	13. STATE
30-015-24242	3738.4' GR	Eddy	New Mexico

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	X
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

The above well was plugged and abandoned 8-25-84 as follows:

1183 - 1233' w/ 40 sx C1C

0 - 50' w/ 40 sx C1C

This well was plugged because of a fish consisting of 468' of drill pipe was stuck in the hole. The rig was skidded 15' NW to the Mary Federal #3Y.

TD-1891

Post ID-2
9-28-84
P&A

18. I hereby certify that the foregoing is true and correct

SIGNED Melba Knipling TITLE Unit Head DATE 9-11-84

(This space for Federal or State office use)

APPROVED BY _____ TITLE AREA MANAGER CARLSBAD RESOURCE AREA DATE 9-21-84

CONDITIONS OF APPROVAL, IF ANY:

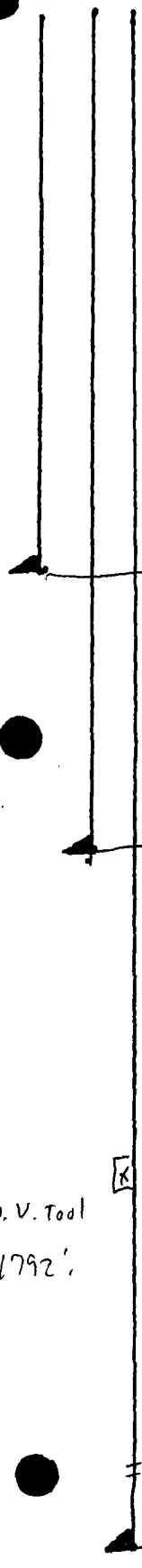
*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Operator Mineral Technologies Inc.
Well Mary Fed #5
Unit N Section 11 Township 23s Range 25e
API # 30—0____--_____

TOPS

Yates_____
T. Salt_____
B. Salt_____
Glorieta_____
Bone Sp. 4966'
Abo_____
Wolfcamp 8749'
Morrow_____
Devonian_____
Fusselman_____
Other T. Delaware 1400'



13 3/8" 54.5# casing set @ 1613'
- w/ 2000 sxs cement, Circ.

9 5/8" 40# casing set @ 2600'
w/ 775 sxs cement. Circ.

D.V. Tool
4792'.

Perfs 9747'-9852'.

7" casing set @ 10,395'.
w/ 1st stage 745 sxs cement
2nd stage 805 sxs ... T. ... D.V. T. ... Circ.

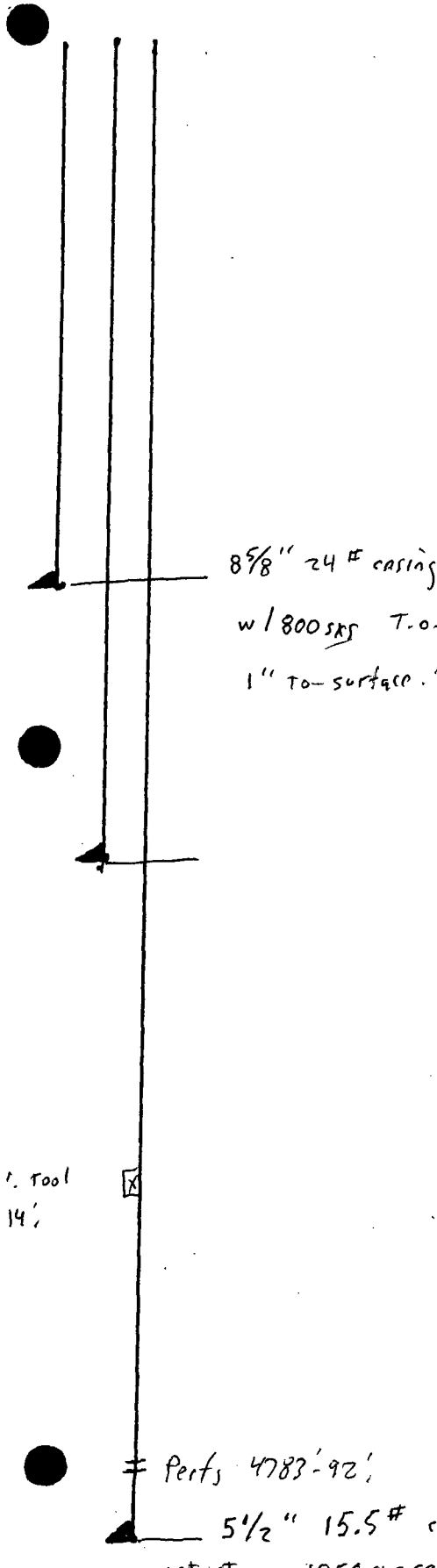
History

Well was spudded & Drilled 9/12/1985
Dear Dum used as Hole swipe -
Lost Circ. Plugs set @ 305-250', 250'-131'
Total 400 sxs cement.

Operator Exxon Corp.
Well Mary Fed. #34
Unit H Section 11 Township 23S Range 25E
API # 30—015 -- 25046

TOPS

Yates
T. Salt
B. Salt
Glorieta
Bone Sp.
Abo
Wolfcamp
Morrow
Devonian
Fusselman
Other



History

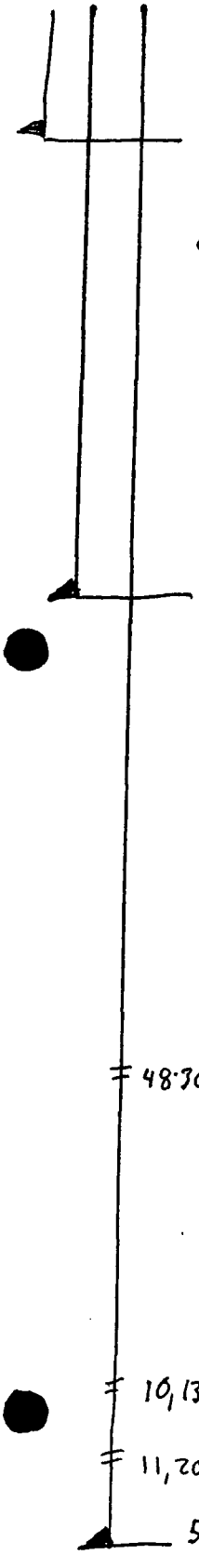
Well was spudded & Drilled. 8/29/1984

Well was Plugged 1/7/1985.

Operator Louis Dreyfus Natural Gas Corp.
Well Squaw Fed. #1
Unit F Section 12 Township 23-S Range 25-E
API # 30—015 – 20999

TOPS

Yates
T. Salt
B. Salt
Glorieta
Bone Sp.
Abo
Wolfcamp 8410'
Morrow 10579'
Devonian
Fusselman
Other



16" 65# Conductor set @ 100'
w/225 sxs Cl. C.
circ.

9 5/8" 36# casing set @ 2660'
w/1000 sxs Howco Litc, 200 sxs Cl. C.
T.o.c. 650' By Temp. Survey
1" To surface 5 stages 944' to surface.
Total 535 sxs, circ.

48'30'-50' 3/99

10,138'-160'

11,203'-09'. Morrow Perfs.

5½" 20# casing set @ 11,460'
w/700 sxs Cl. H. T.o.c.-8200', by Temp. Survey.

History

Well was spudded & Drilled 10/31/1973'
C.T. 0-105'. & Rotary to TD.

Form 3160-5
(December 1989)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
SEP 0 4 1992
O. C. D.
ARTESIA, OFFICE

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: September 30, 1990

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT--" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.
NM-0453201

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
SQUAW FEDERAL
1

2. Name of Operator
EXXON CORPORATION ATTN: REGULATORY AFFAIRS ✓

9. API Well No.
3001520999

3. Address and Telephone No.
P. O. BOX 1600 MIDLAND, TX 79702 (915) 688-7532

10. Field and Pool, or Exploratory Area
SHEEP DRAW STRAWN

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SE4 NW4, 1980' FNL & 1980' FWL, SEC 12,T23S R25E

11. County or Parish, State
EDDY NM

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☒ Notice of Intent	☐ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other CONTINUE WELL IN SI STATUS	

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

WELL HAS BEEN SI SINCE JANUARY, 1992 BUT IS STILL CAPABLE OF PRODUCING IN PAYING QUANTITIES AND CAN BE RETURNED TO BENEFICIAL USE. IT IS REQUESTED THAT WELL REMAIN SI. JIM AMOS, CARLSBAD BLM, ADVISED THIS DATE THAT WE WOULD NOT HAVE TO COMPLY WITH BLM LETTER DATED 7-24-92 REQUIRING WELL TO BE TA. (COPY OF LETTER IS ATTACHED) THIS SN IS SUBMITTED TO CONFIRM MY DISCUSSION ON THE ABOVE WITH JIM AMOS AND TO AVOID THE ISSUANCE OF AN INCIDENT OF NONCOMPLIANCE.

RECEIVED
AUG 7 10 59 AM '92
CARLSBAD AREA OFFICE
BUREAU OF LAND MANAGEMENT

APPROVED FOR 5 MONTH PERIOD
ENDING 12/31/92

14. I hereby certify that the foregoing is true and correct
Signed Alex M. Correa Title Administrative Specialist Date 08/05/92

(This space for Federal or State office use)
Approved by _____ Title _____ Date 8/20/92
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or represent as to any matter within its jurisdiction.

*See Instructions on Reverse Side

N. M. Oil Cons. Division
811 S. 1ST ST.
ARTESIA, NM 88210-2834

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator
Louis Dreyfus Natural Gas Corp.

3. Address and Telephone No.
14000 Quail Sprgs. Pkwy., Oklahoma City, OK 73134 (405) 749-1300

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1980' FNL & 1980' FWL, Sec. 12, T-23-S, R-25-E

5. Lease Designation and Serial No.
NMNM 0453201

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.
Squaw Federal #1

9. API Well No.
30-015-20999

10. Field and Pool, or Exploratory Area
Sheep Draw Strawn

11. County or Parish, State
Eddy County, NM

12 CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☒ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

(1) Set 5-1/2" CIBP @9630', dumpbailer 4 sx cmt. 35'on 6-25-01.
(2) 6-25-01 Circulation w/ mud gel.
(3) 6-26-01 Cut 5-1/2" casing @ 8047', spot 35 sx cmt. from 8100' to 7950', WOC & tag @ 7942'.
(4) 6-27-01 Spot 35 sx cmt. from 6550' - 6400', no tag.
(5) 6-27-01 Spot 40 sx cmt. from 4810' - 4670', WOC & tag @ 4694'.
(6) 6-27-01 Spot 40 sx cmt. from 2710' - 2601', WOC & tag @ 2573'.
(7) 6-28-01 Spot 40 sx cmt. from 230' - 121', no tag.
(8) 6-28-01 Spot 20 sx cmt. from 50' to surface.

Post PKA

APPROVED
JUL 13 2001
GARY GOURLEY
PETROLEUM ENGINEER

JUL 2001
RECEIVED
OCD - ARTESIA

14. I hereby certify that the foregoing is true and correct
Signed Randall Mires Title Agent Date 06/29/01

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NM CONS COMMISSION
Drawer DD
Artesia, NM 88210

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

5. Lease Designation and Serial No.
NM 0453201

6. If Indian, Allottee or Tribe Name

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designation

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
Squaw Fed #1

2. Name of Operator
Louis Dreyfus Natural Gas, Corp.

9. API Well No.
30-015-20999

3. Address and Telephone No. 14000 Quail Springs Pkwy., Suite 600
Oklahoma City, OK 73134

10. Field and Pool, or Exploratory Area
Sheep Draw Strawn

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1980' FNL & 1980' FWL
Sec 12, T-23S, R-25E

11. County or Parish, State
Eddy NM

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other H2S Report	☐ Dispose Water

(Note: Report results of multiple completion on Completion or Recompletion Report and Log fo

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally d give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

In compliance with Onshore Order No 6
This well produces no Hydrogen Sulfide

AR

6

14. I hereby certify that the foregoing is true and correct

Signed Tony W. Cullum Title Environmental & Safety Director Date 2-2-95

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent sta or representations as to any matter within its jurisdiction.

ER

*See Instruction on Reverse Side

c15

Form 3160-5
(December 1989)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
OCT - 9 1992
O. C. D.
ARTESIA, OFFICE

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: September 30, 1990

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT--" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.
NM 0453201

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
SQUAW FEDERAL 1

2. Name of Operator
EXXON CORPORATION ATTN: REGULATORY AFFAIRS

9. API Well No.
3001520999

3. Address and Telephone No.
P. O. BOX 1600 MIDLAND, TX 79702 (915) 688-7532

10. Field and Pool, or Exploratory Area
SHEEP DRAW STRAWN

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SE4 NW4, 1980' FNL & 1980' FWL, SEC 12,T23S R25E

11. County or Parish, State
EDDY NM

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☒ Notice of Intent	☐ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other CONTINUE WELL IN SI STATUS	

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

PROVIDE ADDITIONAL INFO. AS REQUESTED BY DUNCAN WHITLOCK ON 8-31-92. PROVIDING THIS INFO. SHOULD CAUSE THE INCIDENCE OF NONCOMPLIANCE TO BE WITHDRAWN.

THIS WELL IS SHUTIN DUE TO HIGH H2S CONTENT. (SI IN JAN., 1992)
THIS WELL IS CAPABLE OF PRODUCING IN PAYING QUANTIES AND IS EXPECTED TO BE RETURNED TO PRODUCTION BEFORE THE END OF 1992.
WE BELIEVE THE MECHANICAL INTEGRITY OF THE WELL TO BE AS GOOD AS WHEN IT WAS SI.
WE DISCUSSED N.M. RULE 201-B-3 AS THE BASIS TO REQUEST THAT THIS WELL BE ALLOWED TO BE SI AND THAT THE INCIDENCE OF NONCOMPLIANCE BE WITHDRAWN.

SI/TA STATUS APPROVED
ON 8/28/92 (SEE SUNDRY DATED 8/5/92).
AR

14. I hereby certify that the foregoing is true and correct
Signed Alex M. Correa Title Administrative Specialist Date 09/04/92

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: NM-0453201

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: ---

1. OIL WELL ☐ GAS WELL ☒ OTHER

7. UNIT AGREEMENT NAME: ---

2. NAME OF OPERATOR: Hanagan Petroleum Corporation

NOV 30 1973

8. FARM OR LEASE NAME: Squaw

3. ADDRESS OF OPERATOR: P. O. Box 1737, Roswell, New Mexico 88201

O. C. C.

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FNL & FWL

10. FIELD AND POOL, OR WILDCAT: Undesignated

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 12-23S-25E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3540'KB

12. COUNTY OR PARISH: Eddy

13. STATE: N.M.

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☒	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Spud			
(Other)	☐			(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

10/31/73: Moved in cable tools, spud @ 12:00 PM.
11/4/73: TD 105', moved in rotary rig, began drlg. operations w/rotary @ 11:15
1/17/73: TD 425' lm., reamed out 20" hole 0 to 100', drld. 14-3/4" hole from 10
to 425', no loss circulation to this point, ran 3jts. 16" ST&C 65# csg. (meas.
110') set @ 100' & cem. w/225 sx Class C 2% CaCl, plug down 6:30 AM 11/17/73,
cmt. circ. w/75 sx. excess, 1.32 slurry vol. cu. ft./sx. 75° temp. when slurry
mixed, est. fm. temp. 75°, compressive strength 565#, tested csg. 500#/30", no
press. drop, drld. plug 6:30 PM 11/17/73, WOC 12 hrs.
1/20/73: TD 2660' sd. & lm (14-3/4" & 12-1/4" hole), Ran 59 jts. 9-5/8" K55 ST&
36# csg. set @ 2660' & cmt. w/1000 sx. Howco Light 5# gilsonite, 1/4# flocel 2
CaCl + 200 sx. Clss C 1/4# flocel 2% CaCl, plug down 12:45 AM 11/21/73, did no
circ. Ran temp. survey T/cmt. 650', w/1" tbg. tag top cmt. @ 744' and circ. cm
as follows, all cmt. used Class C 4%CaCl:
1st batch @ 744' w/25 sx (32' fill), 2nd @ 712' w/100 sx (128' fill), 3rd @ 584
w/100 sx (143' fill), 4th @ 441' w/100 sx (160' fill), 5th @ 281' w/210 sx.
(circ. est 60 sx. excess) cmt. circ., job completed @ 8:00 PM (11/21/73). Pres
up csg. 1500#/30", no press. drop. Began making new hole @ 11:30 AM 11/22/73.

RECEIVED
NOV 28 1973
U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

18. I hereby certify that the foregoing is true and correct

SIGNED Hugh E. Hanagan TITLE Vice President DATE 11/27/73

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVED
NOV 29 1973
T. L. BEEKMAN
ACTING DISTRICT ENGINEER

*See Instructions on Reverse Side

N. M. Oil Cons. Division
811 S. 1ST ST.
ARTESIA, NM 88210-2834

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: NMNM 0453201

6. If Indian, Allottee or Tribe Name:

7. If Unit or CA, Agreement Designation:

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.: Squaw Federal #1

2. Name of Operator: Louis Dreyfus Natural Gas Corp.

9. API Well No.: 30-015-20999

3. Address and Telephone No.: 14000 Quail Sprgs. Pkwy., Oklahoma City, OK 73134 (405) 749-1300

10. Field and Pool, or Exploratory Area: Sheep Draw Strawn

4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 1980' FNL & 1980' FWL, Sec. 12, T-23-S, R-25-E

11. County or Parish, State: Eddy County, NM

12 CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☒ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

(1) Set 5-1/2" CIBP @9630', dumpbailer 4 sx cmt. 35'on 6-25-01.
(2) 6-25-01 Circulation w/ mud gel.
(3) 6-26-01 Cut 5-1/2" casing @ 8047', spot 35 sx cmt. from 8100' to 7950', WOC & tag @ 7942'
(4) 6-27-01 Spot 35 sx cmt. from 6550' - 6400', no tag.
(5) 6-27-01 Spot 40 sx cmt. from 4810' - 4670', WOC & tag @ 4694'.
(6) 6-27-01 Spot 40 sx cmt. from 2710' - 2601', WOC & tag @ 2573'.
(7) 6-28-01 Spot 40 sx cmt. from 230' - 121', no tag.
(8) 6-28-01 Spot 20 sx cmt. from 50' to surface.

Post PLT

APPROVED
JUL 13 2001
GARY GOURLEY
PETROLEUM ENGINEER

JUL 2001
RECEIVED
OCD - ARTESIA

14. I hereby certify that the foregoing is true and correct

Signed Randall Mires Title Agent Date 06/29/01

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Form 3160-5
(December 1989)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
OCT - 9 1992
O. C. D.
ARTESIA, OFFICE

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: September 30, 1990

SUNDRY NOTICES AND REPORTS ON WELLS

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Use "APPLICATION FOR PERMIT--" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.
NM 0453201

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
SQUAW FEDERAL
1

2. Name of Operator
EXXON CORPORATION ATTN: REGULATORY AFFAIRS

9. API Well No.
3001520999

3. Address and Telephone No.
P. O. BOX 1600 MIDLAND, TX 79702 (915) 688-7532

10. Field and Pool, or Exploratory Area
SHEEP DRAW STRAWN

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SE4 NW4, 1980' FNL & 1980' FWL, SEC 12,T23S R25E

11. County or Parish, State
EDDY NM

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

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☐ Subsequent Report	☐ Recompletion	☐ New Construction
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	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other CONTINUE WELL IN SI STATUS	

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

PROVIDE ADDITIONAL INFO. AS REQUESTED BY DUNCAN WHITLOCK ON 8-31-92. PROVIDING THIS INFO. SHOULD CAUSE THE INCIDENCE OF NONCOMPLIANCE TO BE WITHDRAWN.

THIS WELL IS SHUTIN DUE TO HIGH H2S CONTENT. (SI IN JAN., 1992)
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WE DISCUSSED N.M. RULE 201-B-3 AS THE BASIS TO REQUEST THAT THIS WELL BE ALLOWED TO BE SI AND THAT THE INCIDENCE OF NONCOMPLIANCE BE WITHDRAWN.

SI/TA STATUS APPROVED
ON 8/28/92 (SEE SUNDRY DATED 8/5/92).
AR

14. I hereby certify that the foregoing is true and correct
Signed Alex M. Correa. Title Administrative Specialist Date 09/04/92

(This space for Federal or State office use)
Approved by AR Title Date
Conditions of approval, if any:
OCT 7 1992

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED
NOV 30 1973
O. C. C.
ARTESIA, OFFICE

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR
Hanagan Petroleum Corporation

3. ADDRESS OF OPERATOR
P. O. Box 1737, Roswell, New Mexico 88201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.)
At surface
1980' FNL & FWL

5. LEASE DESIGNATION AND SERIAL NO.
NM-045320 1

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
---

7. UNIT AGREEMENT NAME
---

8. FARM OR LEASE NAME
Squaw

9. WELL NO.
1

10. FIELD AND POOL, OR WILDCAT
Undesignated

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
12-23S-25E

12. COUNTY OR PARISH
Eddy

13. STATE
N.M.

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
3540'KB

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	X	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Spud			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

/31/73: Moved in cable tools, spud @ 12:00 PM.
/ /73: TD 105', moved in rotary rig, began drlg. operations w/rotary @ 11:15
/17/73: TD 425' lm., reamed out 20" hole 0 to 100', drld. 14-3/4" hole from 10
to 425', no loss circulation to this point, ran 3jts. 16" ST&C 65# csg. (meas.
110') set @ 100' & cem. w/225 sx Class C 2% CaCl, plug down 6:30 AM 11/17/73,
cmt. circ. w/75 sx. excess, 1.32 slurry vol. cu. ft./sx. 75° temp. when slurry
mixed, est. fm. temp. 75°, compressive strength 565#, tested csg. 500#/30", no
press. drop, drld. plug 6:30 PM 11/17/73, WOC 12 hrs.
/20/73: TD 2660' sd. & lm (14-3/4" & 12-1/4" hole), Ran 59 jts. 9-5/8" K55 ST&
36# csg. set @ 2660' & cmt. w/1000 sx. Howco Light 5# gilsonite, 1/4# flocel 2
CaCl + 200 sx. Clss C 1/4# flocel 2% CaCl, plug down 12:45 AM 11/21/73, did no
circ. Ran temp. survey T/cmt. 650', w/1" tbg. tag top cmt. @ 744' and circ.cm
as follows, all cmt. used Class C 4%CaCl:
1st batch @ 744' w/25 sx (32' fill), 2nd @ 712' w/100 sx (128' fill), 3rd @ 58
w/100 sx (143' fill), 4th @ 441' w/100 sx (160' fill), 5th @ 281' w/210 sx.
(circ. est 60 sx. excess) cmt. circ., job completed @ 8:00 PM (11/21/73). Pres
up csg. 1500#/30", no press. drop. Began making new hole @ 11:30 AM 11/22/73

RECEIVED
NOV 28 1973
U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

18. I hereby certify that the foregoing is true and correct

SIGNED Hugh C. Hanagan TITLE Vice President DATE 11/27/73

(This space for Federal or State office use)

APPROVED
NOV 29 1973
R. L. BEEKMAN
ACTING DISTRICT ENGINEER

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

NO. OF COPIES RECEIVED		
DISTRIBUTION		
SANTA FE	✓	
FILE	✓	✓
U.S.G.S.		
LAND OFFICE		
TRANSPORTER OIL	✓	
TRANSPORTER GAS	✓	
OPERATOR	✓	
PRORATION OFFICE		

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

RECEIVED
SEP 21 1984
O. C. D.
ARTESIA, OFFICE

Form C-104
Revised 10-1-7

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

I.

Operator: EXXON CORPORATION

Address: BOX 1600 MIDLAND TEXAS 79702

Reason(s) for filing (Check proper box)

- New Well [ ]
- Recompletion [X]
- Change in Ownership [ ]
- Change in Transporter of: Oil [ ] Dry Gas [ ] Casinghead Gas [ ] Condensate [ ]

Other (Please explain): PLUG BACK - RECOMPLETE IN STRAWN 10,138-10160'

If change of ownership give name and address of previous owner: _____

II. DESCRIPTION OF WELL AND LEASE

Sheep Draw Strawn

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease No.
SOLAR FEDERAL	1	~~UNDESIGNATED SOUTH CARLSBAD STRAWN~~	State, Federal or Fee NM 045 3201	

Location

Unit Letter F : 1980 Feet From The NORTH Line and 1980 Feet From The WEST

Line of Section 12 Township 23-S Range 25-E , NMPM, EDDY C

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil [ ] or Condensate [X]	Address (Give address to which approved copy of this form is to be sent)
NAVAJO CRUDE OIL PURCHASING CO.	P.O. BOX 159, ARTESIA NM 88210
Name of Authorized Transporter of Casinghead Gas [ ] or Dry Gas [ ]	Address (Give address to which approved copy of this form is to be sent)
TRANSWESTERN PIPE LINE CO.	P.O. BOX 2521 HOUSTON, TEXAS 77001

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When
	F	12	23-S	25-E	YES	8-24-84

If this production is commingled with that from any other lease or pool, give commingling order number: _____

IV. COMPLETION DATA

Designate Type of Completion – (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v.	Diff.
		✓				✓		

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
10-31-73	8-31-84	11460	10350
Elevations (DF, RKB, RT, GR, etc.)	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
3524 GR	STRAWN	10,138	10003
Perforations			**Depth Casing Shoe**
10138-10160			

TUBING, CASING, AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
20	16" 65#	100	225
14 3/4, 12 1/4	9 5/8 36#	2660	1335
8 1/2	5 1/2 17-20#	11460	700
	2 7/8" TBG	10003	

V. TEST DATA AND REQUEST FOR ALLOWABLE

(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

OIL WELL

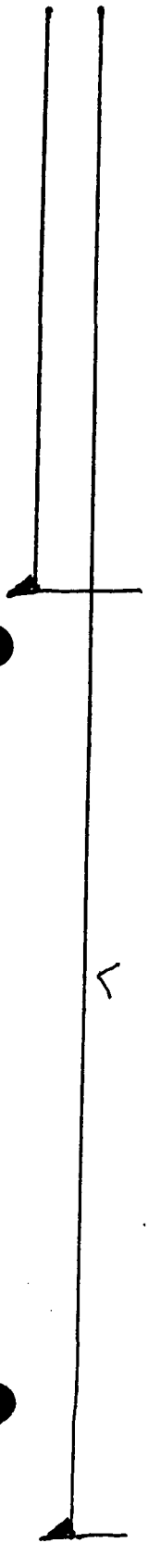
Date First New Oil Run To Tanks	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
Actual Prod. During Test	**Oil - Bbls.**	**Water - Bbls.**	**Gas - MCF**
			Post FD-2 9-24-84 Strawn Comp.

GAS WELL SEE BACK

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate

Operator Turner & DeVito
Well DeVito #1
Unit O Section 12 Township 23-S Range 25-E
API # 30—015 - 00136

TOPS
Yates
T. Salt
B. Salt
Glorieta
Bone Sp.
Abo
Wolfcamp
Morrow
Devonian
Fusselman
Other



10" casing set @ 451'
w/ 5 sks cement
Pos. cut & Pulled.

650'
Hole Full of Sul. Water. 755' - 880'.
& Salt Water.

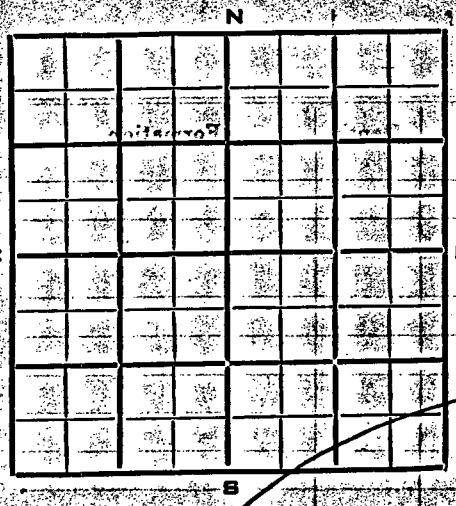
7" casing set @ 1533', Mudded.

T.D. - 1758'.

WILD CAT

SCOUT REPORT
NEW MEXICO
OIL CONSERVATION COMMISSION

9-A



Company Turner and De Vito

Farm Name De Vito Well No. 1

Land Classification Government

Sec. 12 Twp. 23 Range 25 County Eddy

Feet from Line: N. 330 S. 1650 E.

Elevation Method Mec

Contractor Scout

Spudded 10-18-40 Completed 12-10-40 Initial Production

Bond Status

Amount

Casing and Cementing Record

Size	Feet	Inches	Sax Cement
10	451		5
7"	1533		Mud

Tubing Record

ACID RECORD

Gals.

Top Pay TD

TA
TS
BS
TBS 1533
TBL
TWL

SHOOTING RECORD

No. of Quarts	Shot at		Feet
No. of Quarts	Shot at		Feet
S/0 1100-05-G	S/0		S/0
S/0	S/0		S/0

DATE		DATE	
	10-9-40 RUN		
10-15	@ 175 G		
10-29	@ 890 G		
	1 Blr Sul W PH - 755-60 Gyp		
	Lime & W - 840-45		
	H.F. Sul W @ 880 - A		
11-6	@ 1165 S		
11-13	@ 1330 L		
11-20	T.D. 1530 L		
	Bag @ 1430		
	H.F.W 1056-58 Sul		
11-26	T.D. 1590 S		
	50 Rotary		
12-4	T.D. 1670 L		
	50 Rotary		
	400 Sul W 1 Hour		
	1642-47 Sand		
12-11	T.D. 1758 S		
	D & A		
	1200 Sul W 1 H		

NEW MEXICO OIL CONSERVATION COMMISSION

SCOUT REPORT

WILD CAT

Company Gulf or and De Vito

Depth	Formation	Depth	Formation
3560	G		
3785	G r A		
411	G		
930	A r G		
7555	A		
8500	G		
880	V A		

Sec. 12 Twp. 22 Range 25

Depth Cleaned

Elevation

Contractor

Drilling Started

Drilling Finished

Total Depth

Initial Production

Gas

Top Pay

No. of Quarts

No. of Quarts

Shot at

Shot at

Shot at

Depth Cleaned

Elevation

Contractor

Drilling Started

Drilling Finished

Total Depth

Initial Production

Gas

Top Pay

No. of Quarts

No. of Quarts

Shot at

Shot at

Shot at

DATE	
	10-3-10

Casing and Cementing Record

Size	Feet	Sacks Cement	Amount
8	423	Mex. R	

Tubing Record

OIL RECORD

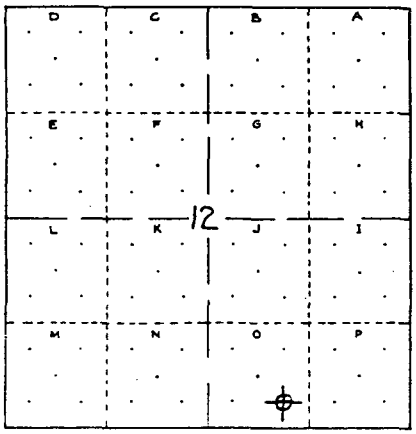
GAS RECORD

COUNTY, N. M.

T. 23 S., R. 25 E., Sec. 12

330 fr SL ; 1650 fr EL Unit O

SAMPLE LOG 0' TO 1755' PLOTTED



OPERATOR TURNER, FRED

LEASE DeVito (Federal) WELL NO. 1

Spud Comp. T. D.

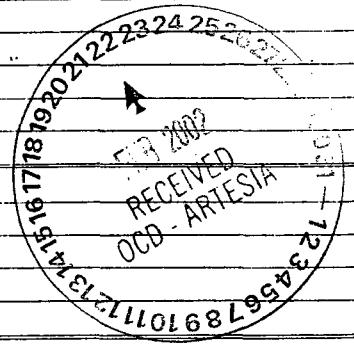
Tools Cable

I. P. ABANDONED After

Producing Zone:

DRILL STEM TESTS

DATE	FROM — TO	OPEN	RESULTS



CASING RECORD

SIZE	DEPTH	CEMENT

Shows: HF Sul Wtr (Castile) 840
WTR 1450-59 (Lamar)
" 1640-47 (Del sd)

ELEVATION BY L-S 3446

FORMATION	DEPTH	DATUM	INFO.
Top Rustler			
Base Rustler Lime			
Top Salt	None		SL
Base Salt	"		SL
Top Tansil			
Top Yates			
Base 2nd Yates Sand			
Top Seven Rivers (Capitan)			
Base Anhydrite			
Top Queen			
Top Penrose			
Top Grayburg			
Top San Andreas			
Top Glorietta			
Top Yeso			
Top Drinkard Zone			
Top Fullerton Zone			
Top Abo			
Top Wolfcamp (Hueco)			
Top Bursum			
DELAWARE BASIN			
Top Lamar	1078	+2368	SL
Top Del. Sand	1528	+1918	SL
Top Bone Springs			

GEOLOGICAL RECORD

FORMATION	DEPTH	DATUM	INFO.
Top Pennsylvanian (Cisco)			
Top Canyon			
Top Strawn			
Top Bond (Atoka)			
Top Mississippian (Chester)			
Top Miss. Lime			
Top Devonian (Woodford)			
Top Devonian Lime			
Top Silurian (Fusselman)			
Top Ordovician (Montoya)			
Top Simpson			
Top Ellenburger			
Top Cambrian (Bliss)			
Top Pre-Cambrian			
INTV'L. T.A. — B.R.L.			
B.R.L. — B.S.			
T.A. — B.S. (Salado)			
B.S. — T.T. (Fletcher)			
T.T. — T.Y. (Tansil)			
T.Y. — T.S.R.L. (Yates)			
B.S. — B.A. (Gradational)			
B.S — T.D.L. (Castile)			
T.D.L. — T.D.S. (Lamar)		450	SL
T.D.S. — T.B.S.L. (Delaware)			
TDL - Fluids (Wtr)		562	SL-OP

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION

Sec. 36
T. 20S
R. 28E
N. M. P. M.
Ref. No. 2

INDIVIDUAL WELL RECORD

PUBLIC LAND:

Land office Las Cruces — State New Mexico

Serial No. 057035 — County Eddy

Permittee or Lessee DeFlin — Field Dark Canyon

Operator Turner and DeFlin — District Roswell

Well No. 1 — Subdivision SW. Cor. SW. ¼ SE. ¼ Sec.

Location 330 feet from N. S. line and 1650 feet from E. W. line of N. ¼ Sec.

Drilling approved Oct. 11, 1940 — Well elevation 3446 (ung) feet

Drilling commenced Oct. 18, 1940 — Total depth 1755 feet

Drilling ceased Dec. 9, 1940 — Initial production None

Plugged and abandoned March 5, 1941 — Gravity A. P. I.

Abandonment approved ..., 19... — Initial R. P.

Geologic Formations		Productive Horizons		
Surface	*Lowest tested*	*Name*	*Depths*	*Contents*
Tertiary	Permian			

WELL STATUS

Year	Jan	Feb	Mar	Apr.	May	June	July	Aug	Sept.	Oct.	Nov	Dec.
1940										Drg	Drg	Drg
1941	Drg	Drg	P&A									

Remarks Water found at 837-40', 1156-58' and 1645-47'.

This sheet to replace one previously submitted.

[redacted]

Operator Exxon Corp.
Well Squaw Fed. #2
Unit G Section 13 Township 23-S Range 25-E
API # 30—015 -- 24701

TOPS

Yates
T. Salt
B. Salt
Glorieta
Bone Sp.
Abo
Wolfcamp
Morrow
Devonian
Fusselman
Other

History

Well was spudded & Drilled 12/22/1983
Rotary.
Well is P & A. 12/4/91.

RECEIVED
DEC 23 1991
O. C. D.
ARTESIA, OFFICE

C15F

Form 3160-5
(December 1989)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: September 30, 1990

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT--" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.
NM-0453201

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
SQUAW FEDERAL 2

2. Name of Operator
EXXON CORPORATION ✓ ATTN: REGULATORY AFFAIRS

9. API Well No.
3001524701

3. Address and Telephone No.
P. O. BOX 1600 MIDLAND, TX 79702 (915) 688-7546

10. Field and Pool, or Exploratory Area
W. Burton Canyon Delaware
~~DELAWARE CANYON~~

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
2310' FNL AND 2240' FEL SECTION 13, T23S, R25E
W. G

11. County or Parish, State
EDDY NM

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☒ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other	

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

12-2-91 8:00 AM - NOTIFIED BLM THAT PLUGGING OPERATIONS WOULD BEGIN.
12-3-91 TAGGED CIBP AT 4620'. PLUG 1 - 25 SX CEMENT PLUG FROM 4362 - 4616'. DISPLACED CSG W/10# BRINE GEL.
PLUG 2 - 25 SX CEMENT PLUG FROM 2827 - 3080'.
PLUG 3 - 25 SX CEMENT PLUG FROM 1122 - 1375'. DISPLACED CSG W/10# BRINE GEL.
PLUG 4 - 10 SX CEMENT PLUG FROM 100' - SURFACE.
ALL PLUGS - CLASS C NEAT.
12-4-91 CUT OFF WELLHEAD. CIRCULATED 15 SX CL C NEAT 100' TO SURFACE IN 5-1/2 X 8-5/8 ANNULUS. WELDED ON DRY HOLE MARKER. CLEANED LOCATION.

Post ID-2
1-10-92
P+A

Above ground marker must be installed in well bore. Lease and well number must be legibly inscribed on the marker which must be maintained until surface reclamation is completed.

14. I hereby certify that the foregoing is true and correct
Signed Judy Bagwell Title Judy Bagwell Sr Staff Office Assistant Date 12/10/91

(This space for Federal or State office use)
Approved by _____ Title _____ Date 1-10-92
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or represent as to any matter within its jurisdiction.

*See Instructions on Reverse Side

OIL CONSERVATION COMMISSION
Drawer DD
Artesia, NM 88210

RECEIVED
MAR 29 1985
O. C. D.
ARTESIA, OFFICE

Form 9-331
Dec. 1973

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well [X] gas well [ ] other

2. NAME OF OPERATOR
Exxon Corporation

3. ADDRESS OF OPERATOR
P.O. Box 1600, Midland, Texas 79702

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 2310' FNL & 2240' FEL of Section
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
NM-0453201

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
--

7. UNIT AGREEMENT NAME
--

8. FARM OR LEASE NAME
Squaw Federal

9. WELL NO.
2

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 13-23S-25E

12. COUNTY OR PARISH
Eddy

13. STATE
New Mexico

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
3482' GR

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	[ ]		[ ]
FRACTURE TREAT	[ ]		[ ]
SHOOT OR ACIDIZE	[ ]		[ ]
REPAIR WELL	[ ]		[ ]
PULL OR ALTER CASING	[ ]		[ ]
MULTIPLE COMPLETE	[ ]		[ ]
CHANGE ZONES	[ ]		[ ]
ABANDON*	[ ]		[ ]
(other) Status Report			

EXPIRED

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

RECEIVED
JAN 26 11 31 AM '84
BUREAU OF LAND MANAGEMENT
ROSWELL, NEW MEXICO

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

1-11-84 Perf 5 1/2" csg @ 4732-4774 w/52 shots.

1-12-84 Acdz w/2000 gals 15% HCl.

1-17-84 Frac w/32,000 gals 75% foam, 18,000# 20-40 sand, 16,000# 10-20 sand. Testing.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Melba Knipling TITLE Unit Head DATE January 24, 1984

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

ACCEPTED FOR RECORD
MAR 28 1985
NEW MEXICO

*See Instructions on Reverse Side

Form 9-331
Dec. 1973

Form Approved.
Budget Bureau No. 42-R1424

NM OIL CONS. COMMISSION
Drawer DD
Artesia, NM 88210

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED
JAN 19 10 17 AM '84
BUREAU OF LAND MGMT
ROSWELL DISTRICT

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well ☒ gas well ☐ other

2. NAME OF OPERATOR
Exxon Corporation

3. ADDRESS OF OPERATOR
P.O. Box 1600, Midland, Texas 79702

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.) 2310' FNL & 2240' FEL of Sec.
AT SURFACE:
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
NM-0453201

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
--

7. UNIT AGREEMENT NAME
--

8. FARM OR LEASE NAME
Squaw Federal

9. WELL NO.
2

10. FIELD OR WILDCAT NAME
Wildcat Delaware

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 13-23S-25E

12. COUNTY OR PARISH
Eddy

13. STATE
New Mexico

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
3482' GR

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other) Set casing			

RECEIVED BY
MAY 11 1984
O. C. D.
ARTESIA, OFFICE

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

1-7-84 Ran 5 1/2" 17# K-55 csg., set @ 5172'. DV tool @ 3020'. Cement 1st stage w/550 sx Class C & 2nd stage w/900 sx Class C. 1st stage circ., 2nd stage did not circ. Ran Temp. survey - TOC 1050'. Surface csg. set @ 1326'. WOC, csg. to be tested before completion begins.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Melba Knipling TITLE Unit Head DATE January 17, 1984

ACCEPTED FOR RECORD

(This space for Federal or State office use)

APPROVED BY GWO TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:
MAY 9 1984

NEW MEXICO

*See Instructions on Reverse Side

Dec. 1973

Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

NM OIL CONS. COMMISSION
Drawer DD
Artesia, NM 88210

RECEIVED
JAN 3 11 28 AM '84

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

BUREAU OF LAND MGMT
ROSWELL DISTRICT
JAN 12 1984
OIL & GAS
ROSWELL, NEW MEXICO OFFICE

1. oil well [XX] gas well [ ] other

2. NAME OF OPERATOR
Exxon Corporation

3. ADDRESS OF OPERATOR
P.O. Box 1600, Midland, Texas 79702

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
2310' FNL & 2240' FEL of Section
AT SURFACE:
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
NM-0453201

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
--

7. UNIT AGREEMENT NAME
--

8. FARM OR LEASE NAME
Squaw Federal

9. WELL NO.
2

10. FIELD OR WILDCAT NAME
Wildcat Delaware

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 13-23S-25E

12. COUNTY OR PARISH
Eddy

13. STATE
New Mexico

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
3482' GR

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	[ ]		[ ]
FRACTURE TREAT	[ ]		[ ]
SHOOT OR ACIDIZE	[ ]		[ ]
REPAIR WELL	[ ]		[ ]
PULL OR ALTER CASING	[ ]		[ ]
MULTIPLE COMPLETE	[ ]		[ ]
CHANGE ZONES	[ ]		[ ]
ABANDON*	[ ]		[ ]
(other) Set casing			

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

12-22-83 Spud 12 1/4" hole @ 10:30 P.M.

12-27-83 Set 30 jts. 8 5/8", 24#, K-55 csg. @ 1325' w/700 sx C1B5; tailed w/550 sx C1C. Cmt. circulated. Test csg. to 2000# for 30 min. WOC 23 hrs.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Melba Knipling TITLE Unit Head DATE 12-30-83

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

ACCEPTED FOR RECORD
JAN 9 1984
ROSWELL, NEW MEXICO

*See Instructions on Reverse Side

RECEIVED

DEC 23 1991

O. C. D.
ARTESIA, OFFICE

Form 3160-5
(December 1989)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: September 30, 1990

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT--" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator
EXXON CORPORATION ATTN: REGULATORY AFFAIRS

3. Address and Telephone No.
P. O. BOX 1600 MIDLAND, TX 79702 (915) 688-7546

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
2310' FNL AND 2240' FEL SECTION 13, T23S, R25E

W. G

5. Lease Designation and Serial No.
NM-0453201

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.
SQUAW FEDERAL 2

9. API Well No.
3001524701

10. Field and Pool, or Exploratory Area
W. Dark Canyon Delaware
~~DELAWARE CANYON~~

11. County or Parish, State
EDDY NM

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☒ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other	

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

12-2-91 8:00 AM - NOTIFIED BLM THAT PLUGGING OPERATIONS WOULD BEGIN.
12-3-91 TAGGED CIBP AT 4620'. PLUG 1 - 25 SX CEMENT PLUG FROM 4362 - 4616'. DISPLACED CSG W/10# BRINE GEL.
PLUG 2 - 25 SX CEMENT PLUG FROM 2827 - 3080'.
PLUG 3 - 25 SX CEMENT PLUG FROM 1122 - 1375'. DISPLACED CSG W/10# BRINE GEL.
PLUG 4 - 10 SX CEMENT PLUG FROM 100' - SURFACE.
ALL PLUGS - CLASS C NEAT.
12-4-91 CUT OFF WELLHEAD. CIRCULATED 15 SX CL C NEAT 100' TO SURFACE IN 5-1/2 X 8-5/8 ANNULUS. WELDED ON DRY HOLE MARKER. CLEANED LOCATION.

Post ID-2
1-10-92
P+A

Approved as to plugging of the well bore.
Liability under bond is retained until
surface restoration is completed.

14. I hereby certify that the foregoing is true and correct
Signed Judy Bagwell Title Judy Bagwell Sr Staff Office Assistant Date 12/10/91

(This space for Federal or State office use)
Approved by Title PETROLEUM ENGINEER Date 12-26-91
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or represent as to any matter within its jurisdiction.

*See Instructions on Reverse Side

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

NO. OF COPIES RECEIVED		
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SANTA FE	✓	
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U.S.G.S.		
LAND OFFICE		
TRANSPORTER: OIL	✓	
TRANSPORTER: GAS		
OPERATOR	✓	
PRORATION OFFICE		

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

RECEIVED BY
FEB 28 1984
O. C. D.
ARTESIA, OFFICE

Form C-104
Revised 10-1-78

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

I.

Operator
Exxon Corporation

Address
P. O. Box 1600, Midland, TX 79702

Reason(s) for filing (Check proper box)
New Well [X]
Recompletion [ ]
Change in Ownership [ ]
Change in Transporter of: Oil [ ] Dry Gas [ ] Casinghead Gas [ ] Condensate [ ]

Other (Please explain)
CASINGHEAD GAS MUST NOT BE FLARED AFTER 4-12-84 UNLESS AN EXCEPTION FROM THE B. L. M. IS OBTAINED

If change of ownership give name and address of previous owner _____

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease
Squaw Federal	2	~~Wildcat~~ - Delaware - W. W. Drinkard Commun	~~XXXX~~ Federal or ~~XXX~~	NM-04532

Location
Unit Letter G : 2310 Feet From The North Line and 2240 Feet From The East

Line of Section 13 Township 23S Range 25E , NMPM, Eddy Co

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil [X] or Condensate [ ]	Address (Give address to which approved copy of this form is to be sent)
Navajo Crude Oil Purchasing Co.	P. O. Box 159, Artesia, NM 88210
Name of Authorized Transporter of Casinghead Gas [ ] or Dry Gas [ ]	Address (Give address to which approved copy of this form is to be sent)

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When
	G	13	23S	25E	Flared	

If this production is commingled with that from any other lease or pool, give commingling order number _____

IV. COMPLETION DATA

Designate Type of Completion – (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Resv.	Diff. Res.
	X		X					

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
12-22-83	2-2-84	5172	
Elevations (DF, RKB, RT, GR, etc.)	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
GR 3482'	Delaware	4732	4690
Perforations			**Depth Casing Shoe**
4732-4774			

TUBING, CASING, AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
12 1/4"	8 5/8"	1325	1250
7 7/8"	5 1/2"	5172	1450
	2 7/8"	4690	

V. TEST DATA AND REQUEST FOR ALLOWABLE (Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

OIL WELL

Date First New Oil Run To Tanks	Date of Test	Producing Method (Flow, pump, gas lift, etc.)
1-19-84	2-11-84	Pump
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
24 Hr.			
Actual Prod. During Test	**Oil - Bbls.**	**Water - Bbls.**	**Gas - MCF**
	23	130	111

Pool TD-2 3-16-84

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate

Form 9-331
Dec. 1973

NM OIL CONS. COMMISSION
Drawer DD
Artesia, NM 88210

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED
JAN 19 10 17 AM '84
BUR OF LAND MGMT
ROSWELL DISTRICT

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well ☒ gas well ☐ other

2. NAME OF OPERATOR
Exxon Corporation

3. ADDRESS OF OPERATOR
P.O. Box 1600, Midland, Texas 79702

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.) 2310' FNL & 2240' FEL of Sec.
AT SURFACE:
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
NM-0453201

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
--

7. UNIT AGREEMENT NAME
--

8. FARM OR LEASE NAME
Squaw Federal

9. WELL NO.
2

10. FIELD OR WILDCAT NAME
Wildcat Delaware

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 13-23S-25E

12. COUNTY OR PARISH
Eddy

13. STATE
New Mexico

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
3482' GR

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other) Set casing			

RECEIVED BY
MAY 11 1984
O. C. D.
ARTESIA, OFFICE

NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

1-7-84 Ran 5 1/2" 17# K-55 csg., set @ 5172'. DV tool @ 3020'. Cement 1st stage w/550 sx Class C & 2nd stage w/900 sx Class C. 1st stage circ., 2nd stage did not circ. Ran Temp. survey - TOC 1050'. Surface csg. set @ 1326'. WOC, csg. to be tested before completion begins.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Melba Knipling TITLE Unit Head DATE January 17, 1984

ACCEPTED FOR RECORD

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

MAY 9 1984

Carlsbad, NEW MEXICO

*See Instructions on Reverse Side

NM Oil Cons. Commission
Drawer DD
Artesia, NM 88210

Form 9-331
Dec. 1973

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED
MAY 14 1984
O. C. D.
ARTESIA, OFFICE

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well [XX] gas well [ ] other

2. NAME OF OPERATOR
Exxon Corporation

3. ADDRESS OF OPERATOR
P.O. Box 1600, Midland, Texas 79702

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.) 2310' FNL & 2240' FEL of Section
AT SURFACE:
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
NM-0453201

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
--

7. UNIT AGREEMENT NAME
--

8. FARM OR LEASE NAME
Squaw Federal

9. WELL NO.
1

10. FIELD OR WILDCAT NAME
Wildcat Delaware

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 13-23S-25E

12. COUNTY OR PARISH
Eddy

13. STATE
New Mexico

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
3482' GR

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	[ ]		[ ]
FRACTURE TREAT	[ ]		[ ]
SHOOT OR ACIDIZE	[ ]		[ ]
REPAIR WELL	[ ]		[ ]
PULL OR ALTER CASING	[ ]		[ ]
MULTIPLE COMPLETE	[ ]		[ ]
CHANGE ZONES	[ ]		[ ]
ABANDON*	[ ]		[ ]
(other) Change casing program			

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

RECEIVED
JAN 12 10 15 AM '84
BUR. OF LAND MGMT
ROSWELL, DISTRICT

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Please amend the casing and cementing program to show that 8 5/8", 24# csg. will be set @ 1325' w/1250 sx cmt.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Melba Knipling TITLE Unit Head DATE January 10, 1984

ACCEPTED FOR RECORD
(This space for Federal or State office use)

APPROVED BY GWQ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:
MAY 10 1984

Carlsbad NEW MEXICO

*See Instructions on Reverse Side

Dec. 1973

Budget Bureau No. 42-R1424

NM OIL CONS. COMMISSION
Drawer DD
Artesia, NM 88210

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED
JAN 3 10 28 AM '84

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

BUR. OF LAND MGMT
ROSWELL DISTRICT
JAN 12 1984
O. C. D.
ARTESIA, OFFICE

1. oil well ☒ gas well ☐ other

2. NAME OF OPERATOR
Exxon Corporation

3. ADDRESS OF OPERATOR
P.O. Box 1600, Midland, Texas 79702

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.) 2310' FNL & 2240' FEL of Section
AT SURFACE:
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
NM-0453201

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
--

7. UNIT AGREEMENT NAME
--

8. FARM OR LEASE NAME
Squaw Federal

9. WELL NO.
2

10. FIELD OR WILDCAT NAME
Wildcat Delaware

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 13-23S-25E

12. COUNTY OR PARISH
Eddy

13. STATE
New Mexico

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
3482' GR

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other) Set casing			

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

12-22-83 Spud 12 1/4" hole @ 10:30 P.M.

12-27-83 Set 30 jts. 8 5/8", 24#, K-55 csg. @ 1325' w/700 sx C1B5; tailed w/550 sx C1C. Cmt. circulated. Test csg. to 2000# for 30 min. WOC 23 hrs.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Melba Knipling TITLE Unit Head DATE 12-30-83

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

ACCEPTED FOR RECORD
JAN 9 1984

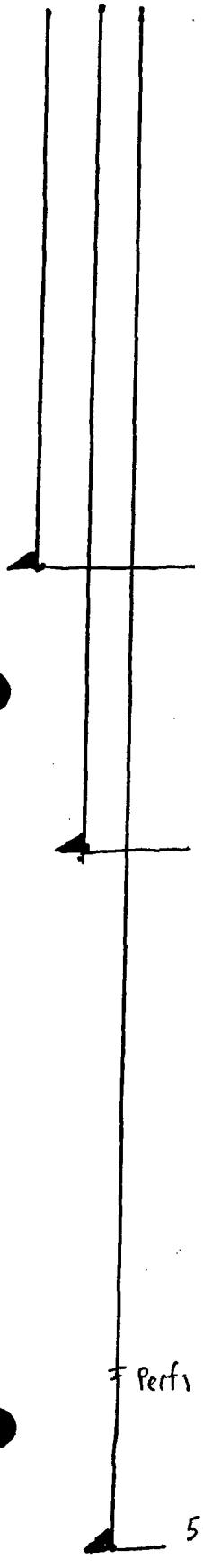
*See Instructions on Reverse Side

ROSWELL, NEW MEXICO

Operator Gulf Oil Corp.
Well Shearn D Fed. Com. #1
Unit J Section 15 Township 23-S Range 25-E
API # 30—015 -- 22430

TOPS

Yates
T. Salt
B. Salt
Glorieta
Bone Sp.
Abo
Wolfcamp 8357'
Morrow 10850'
Devonian
Fusselman
Other



13 3/8" 48# casing set @ 375'.
w/400 sxs Cl. H,

9 5/8" 40# casing set @ 2596'
w/1200 sxs cement.
1" to surface total 600 sxs cement.

Perfs 9796' - 9913'

5 1/2" 17# casing set @ 11,350'.
w/875 sxs Cl-H. T.o.c. 8610' by Temp. Survey.

History

Well was spudded & Drilled 2/19/1978
Well P&A - 7/12/1979.

N.M.O.C.D. COPY

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.
NM-6034

RECEIVED

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

APR 28 198

7. UNIT AGREEMENT NAME

O. C. D.

8. FARM OR LEASE NAME ARTESIA, OFFICE
Shearn "D" Federal Com

9. WELL NO.
1

10. FIELD AND POOL, OR WILDCAT
Undes. Strawn

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 15-T23S-R25E

12. COUNTY OR PARISH
Eddy

13. STATE
NM

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR
GULF OIL CORPORATION

3. ADDRESS OF OPERATOR
P.O. Box 670, Hobbs, NM 88240

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
1980' FSL & 1980' FEL

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
3754' GL

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☒
REPAIR WELL	☐	CHANGE PLANS	☐				
(Other)				(Other)			

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

11,350' TD. 10,105' PB. Set CIBP @ 9000'. Capped w/25 sx cmt (225'). Circ hole w/abandonment mud. Cut csg @ 7603' & pulled. Spotted 158' plug (40 sx cmt) @ 7678' to 7520'. Spotted 45 sx cmt f/6950' to 6800'; 45 sx f/5450'-5300'; 45 sx f/4000'-3850'; 50 sx f/2700'-2550' across 9-5/8" shoe jt. WOC. Tagged cmt plug @ 2658' - spotted 35 sx cmt from 2658' to 2550'. Spotted 45 sx cmt from 650' to 550'. Spot 25' plug @ surf. Install dry hole marker.

Will notify when location is ready for inspection.

Work performed 7-6-79 thru 7-12-79.

Posted
I D 2
5-2-80
P+A

RECEIVED
JUL 17 1979
U.S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

18. I hereby certify that the foregoing is true and correct

SIGNED N. B. Sikes, Jr. TITLE Area Engineer DATE 7-16-79

(This space for Federal or State office use)

APPROVED BY (Orig. Sgd.) GEORGE H. STEWART TITLE _____ DATE APR 30 1980

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Copy to NM

OCC COPY

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: NM-6034

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1. OIL WELL ☐ GAS WELL ☒ OTHER

RECEIVED
APR 26 1978
O. C. C.
ARTESIA, OFFICE

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Gulf Oil Corporation

8. FARM OR LEASE NAME: Shearn "D" Federal Com

3. ADDRESS OF OPERATOR: P. O. Box 670, Hobbs, NM 88240

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FSL, 1980' FEL, Sec 15, T23S-R25E

10. FIELD AND POOL, OR WILDCAT: Undes Strawn

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 15, T23S-R25E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3754' GL

12. COUNTY OR PARISH: Eddy

13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☒	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐				
(Other)				(Other)			

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Reached TD of 8 3/4" hole at 11,350' at 5:30 PM 3-28-78. Ran 52 jts 5 1/2" 17# N-80 LT & C (2184.56'), 160 jst 5 1/2" 17# K-55 LT & C (6670.39'), 57 jts and 1 cut jt 5 1/2" 17# N-80 LT & C (2398.50'). Total 11,333.45', set at 11,350' Cement with 875 sacks Class H .75% CFR-2, 5#/sack KCL. Cement did not circulate. WOC 6 hours. TSITOC 8610'. WOC over 24 hours. Tested 5 1/2" casing to 3000# for 30 min OK.

Piped valves above ground level on all casing strings, approved by Bill Grisset, OCC Artesia, NM.

RECEIVED
APR 19 1978
U.S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

18. I hereby certify that the foregoing is true and correct

SIGNED W. E. Sikes, Jr. TITLE Area Engineer DATE 4-17-78

(This space for Federal or State office use)

APPROVED BY Joe G. Lara TITLE ACTING DISTRICT ENGINEER DATE APR 25 1978

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

NMOCC COPY

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.: NM-6034

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

RECEIVED
MAR 14 1978
O. C. C.
ARTESIA, OFFICE

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Gulf Oil Corporation

8. FARM OR LEASE NAME: Shearn "D" Federal C

3. ADDRESS OF OPERATOR: P. O. Box 670, Hobbs, NM 88240

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.)
At surface
1980' FSL, & 1980' FEL, Sec 15, T23S, R25E

10. FIELD AND POOL, OR WILDCAT: Undes Strawn

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 15, T23S-R25E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3754' GL

12. COUNTY OR PARISH: Eddy

13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	XX	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Reached TD of 12 1/4" hole at 2610' at 10:15 AM 2-27-78. Ran 63 jts and 1 cut jt 9 5/8" 40# S-95 LT & C and 36# K-55 ST & C (28 jts 1236.22', 40#), (35 jts and 1 cut jt 1360.11', 36#) total 2596', set at 2610'. Cement with 300 sacks Thickset with 10#/sack Gilsonite, 1/4# flocele, 2% CaC12, plug 600 sxs Howco lite and 200 sacks Class C with 2% CaC12. Cement did not circulate. WOC 6 hrs. Cement thru 1" pipe with 600 sacks Class C with 4% CaC12, thickset, 5#/sack gilsonite, 1/4# flocele, 3% CaC12. Cement with 120 sacks Thickset. Cement circulated. WOC over 24 hours. Tested 9 5/8" casing to 3000# for 30 min OK.

Started drilling a 8 3/4" hole at 2610' at 1:45 PM 3-2-78.

RECEIVED
MAR 9 - 1978
U.S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

18. I hereby certify that the foregoing is true and correct

SIGNED M. B. Sikes Jr. TITLE Area Engineer DATE 3-3-78

(This space for Federal or State office use)

APPROVED BY Joe D. Ramey TITLE ACTING DISTRICT ENGINEER DATE MAR 13 1978

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

NMOCC Copy

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: NM-6034

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1. OIL WELL ☐ GAS WELL ☒ OTHER

RECEIVED

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Gulf Oil Corporation

FEB 28 1978

8. FARM OR LEASE NAME: Shearn "D" Federal Com

3. ADDRESS OF OPERATOR: P. O. Box 670, Hobbs, NM 88240

O. C. C.
ARTESIA, OFFICE

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FSL & 1980' FEL, Section 15, T-23-S, R-25-E

10. FIELD AND POOL, OR WILDCAT: Undes Strawn

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 15, T23S-R25E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3754' GL

12. COUNTY OR PARISH: Eddy

13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	XX	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

McVay Drilling Co. spudded a 17 1/2" hole at 3:30 PM 2-19-78. Reached TD of 17 1/2" hole at 375' at 6 AM 2-21-78. Ran 10 jts 13 3/8" 48# H-40 ST & C (357') Set at 375'. Cemented with 200 sacks Class H lite weight and 200 sacks Class H with 2% CaC12. Cement did not circulate. Ran 4 1/2 yards of ready mix to surface. WOC 18 hrs. Tested 13 3/8" casing 500# for 30 min - OK.

Started drilling a 12 1/4" hole at 375' at 3 AM 2-22-78.

RECEIVED
FEB 24 1978
U.S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

18. I hereby certify that the foregoing is true and correct

SIGNED M. D. Duke Jr. TITLE Area Engineer DATE 2-23-78

(This space for Federal or State office use)

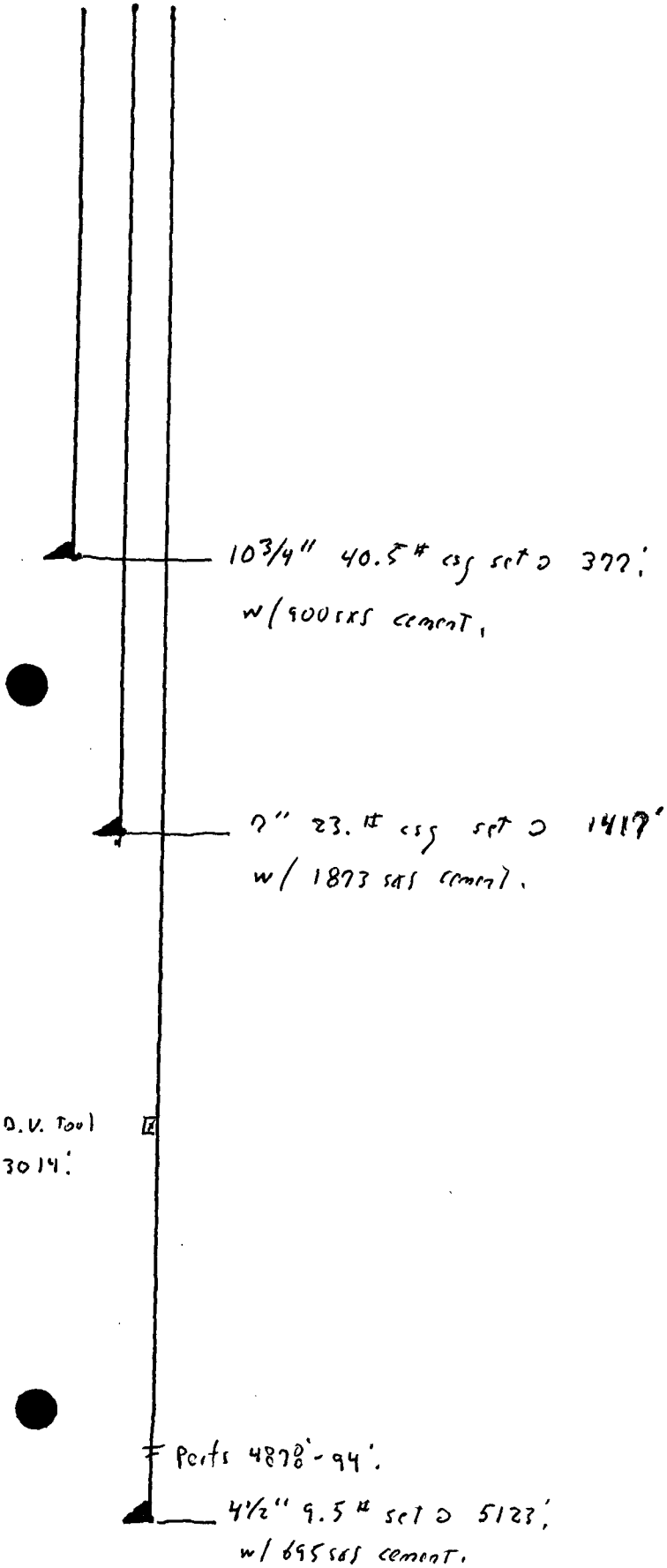
APPROVED BY Joe D. Ramey TITLE ACTING DISTRICT ENGINEER DATE FEB 27 1978

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Operator Exxon Corp.
Well Mary Fed. #4
Unit H Section 24 Township 23S Range 25E
API # 30—0 15 -- 25135

TOPS
Yates
T. Salt
B. Salt
Glorieta
Bone Sp. 4821'
Abo
Wolfcamp
Morrow
Devonian
Fusselman
Other T. Delaware 1456'



History

Well was spud & Drilled 1/20/1985.

Well was Plugged 12/6/1985.

Drawer DD
Artesia, NM 88210

Form 3160-5
November 1983)
Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: NM-0426782

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED BY
MAY 12 1986
O. C. D.
ARTESIA, OFFICE

1. OIL WELL ☐ GAS WELL ☐ OTHER Dry

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Exxon Corporation ✓

8. FARM OR LEASE NAME: Mary Federal

3. ADDRESS OF OPERATOR: P. O. Box 1600, Midland, TX 79702

9. WELL NO.: 4

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.) At surface

10. FIELD AND POOL, OR WILDCAT: West Dark Canyon-Delawa

1565' FNL & 200' FEL of Sec. (SE NE)

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 24, T23S, R25E

14. PERMIT NO.: 30-015-25135

15. ELEVATIONS (Show whether DF, RT, GR, etc.): KB-3448, DF-3447, GL-3435

12. COUNTY OR PARISH: Eddy

13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	X
REPAIR WELL	☐	CHANGE PLANE	☐	(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

The above well was plugged and abandoned as follows:

CIBP was set at 4808' w/ 35' cmt. on 4-24-85. On 12-6-85 plugs were set at 3067' w/ 25 sx cmt., 1516' w/ 25 sx cmt. & 610' w/ 25 sx cmt. Perf 4½" csg. at 150' w/ 4 shots and again at 100'. Could not get circulation. Tagged plug at 390' & circulated cmt. to surface on both sides of csg. P & A 12-6-85.

RECEIVED
MAY 02 1986
DIST. 4 N.M.
Carlsbad, New Mexico

18. I hereby certify that the foregoing is true and correct

SIGNED Melba Knipling TITLE Section Head DATE 04/30/86

(This space for Federal or State office use)

APPROVED BY Acting Area Manager TITLE _____ DATE 5-7-86

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form 3160-5
November 1983)
Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: NM-0426782

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: --

7. UNIT AGREEMENT NAME: --

8. FARM OR LEASE NAME: Mary Federal

9. WELL NO.: 4

10. FIELD AND POOL, OR WILDCAT: West Dark Canyon - Delaware

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 24, T23S, R25E

12. COUNTY OR PARISH: Eddy

13. STATE: NM

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED BY
JAN 8 1986
O. C. D.
ARTESIA, OFFICE

1. OIL WELL ☐ GAS WELL ☒ OTHER Dry

2. NAME OF OPERATOR: Exxon Corporation

3. ADDRESS OF OPERATOR: P. O. Box 1600, Midland, TX 79702

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1565' FNL & 200' FEL of Sec. (SE/NE)

14. PERMIT NO.: 30-015-25135

15. ELEVATIONS (Show whether DF, RT, GR, etc.): KB-3448, DF-3447, GL-3435

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☒
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

The above well was plugged and abandoned as follows:

Set plug at 3067' w/ 25 sx cmt.
Set plug at 1516' w/ 25 sx cmt.
Perf 4 1/2" csg. at 150' w/ 4 shots.
Perf'd again at 100'. Tagged plug at 390' and circulated cmt. to surface.
Cut off wellhead and installed dry hole marker.
P & A 12-6-85.

Post ID-2
1-24-86
MA

18. I hereby certify that the foregoing is true and correct

SIGNED Melba Knipling TITLE Unit Head DATE 1-3-86

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Form 3160-4
(November 1983)
(formerly 9-330)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0137
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: NM-0426782

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Mary Federal

9. WELL NO.: #4

10. FIELD AND POOL, OR WILDCAT: West Dark Canyon-Delaw

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 24, 23S, 25E

12. COUNTY OR PARISH: Eddy

13. STATE: NM

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☒ Other

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

2. NAME OF OPERATOR: Exxon Corporation

3. ADDRESS OF OPERATOR: P. O. Box 1600, Midland, TX 79702

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 1565' FNL & 200' FEL of Section
At top prod. interval reported below
At total depth

RECEIVED BLM JAN 6 1986 Roswell, New Mexico
RECEIVED JAN 8 1986 O C D ARTESIA, OFFICE
ACCEPTED FOR RECORD JAN 6 1986 CARLSBAD, NEW MEXICO

14. PERMIT NO.: 30-015-25135 DATE ISSUED: 12-11-84

15. DATE SPUDDED: 1-20-85
16. DATE T.D. REACHED: 3-13-85
17. DATE COMPL. (*Ready to prod.*): 3-24-85
18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*: KB-3448, DF-3447, GL-~~3435~~ 3446
19. ELEV. CASINGHEAD:
20. TOTAL DEPTH, MD & TVD: 5125
21. PLUG, BACK T.D., MD & TVD: P&A 12-6-85
22. IF MULTIPLE COMPL., HOW MANY*:
23. INTERVALS DRILLED BY: → ROTARY TOOLS: X CABLE TOOLS:

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*:

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: LDT-CNL; DLL-MSFL

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
10 3/4	40.5	377	12 1/4	900 sx C1C	
7	23	1417	9 7/8	870 sx PSL & 1003 sx C1C	
4 1/2	9.5	5123	6 1/4	695 sx C1C	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (*Interval, size and number*)
4878-4894 w/ 33 shots. acdz. w/ 2000 gals. 15% HCl. Frac w/ 20,000 gals. cross gel and CO_2 & 30000# 20-40 sd. Set CIBP at 4808' w/ 35' cmt.

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
100-48	200 sx C1C Set to contain
48-0	200 sx C1C hole & prevent
525-852	280 sx C1H cave-in.
624-945	400 sx C1C-set due to lost returns-See reverse.

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
3-24-85	200 bbls. testing allowable only	

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS
P&A 12-6-85

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Melba Knipling TITLE Unit Head DATE 1-3-86

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
			Set plugs at 346-453 w/ 200 sx C1C, 318-346 w/ 170 sx C1C, 318' w/ 200 sx C1C & 240-318' w/ 250 sx C1C. Set plugs below with 250 sx C1H each: 762-890, 689-762, 596-689, 390-596, 325-390, 272-325, 242-272, 240-242 & 2 at 240'. P&A Information Set plug at 3067' w/ 25 sx cmt. Set plug at 1516' w/ 25 sx cmt. Perf 4 1/2" csg. at 150' w/ 4 shots. Perf'd again at 100'. Tagged plug at 390' and circulated cmt. to surface. Cut off wellhead and installed dry hole marker. P&A 12-6-85.

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPT
Delaware	1456	
Cherry Canyon	2304	
Bone Spring	4821	

Form 3160-5 (November 1983) (Formerly 9-331)

NM OIL CONS. COMMISSION
ARTESIA, NM

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: NM-0426782

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: --

7. UNIT AGREEMENT NAME: --

8. FARM OR LEASE NAME: Mary Federal

9. WELL NO.: 4

10. FIELD AND POOL, OR WILDCAT: West Dark Canyon-Delaware

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 24, T23S, R25E

12. COUNTY OR PARISH: Eddy

13. STATE: New Mexico

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

O. C. D. ARTESIA, OFFICE

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: Exxon Corporation

3. ADDRESS OF OPERATOR: P. O. Box 1600, Midland, TX 79702

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1565' FNL and 200' FEL of Sec. 24 *SE/NE)

14. PERMIT NO.: 30-015-25135

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3446' GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other) Status Report			[ ]
(Other)			[ ]	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

The plugs shown on the previous report were set to contain the hole and keep it from caving in.

1-29-85 Drlg @ 979' in 12 1/4" hole. Set plug @ 642-945' w/400 sx Cl C. Plugs set because of lost returns.

2- 5-85 Set plug @ 346-453' w/200 sx Cl C.
318-346' w/170 sx Cl C

2- 6-85 318' w/200 sx Cl C. No fill.
240-318' w/250 sx Cl C. Drill out.

2-12-85 Drlg @ 1280'. Twisted off. Fish consists of Bit, B.S., 8" DC, XO, 6½" DC, XO, 4" DP, DP too jt pen end. Top of fish @ 536'. Try to recover fish. Could not.

2-17-85 Drlg @ 992'. Pipe stuck. Fish consists of bit, bs, 8" DC, XO. Tof of fish @ 925 Wash and Ream.

2-20-85 Set plugs @ 762-890' w/250 sx Cl H
689-762' w/250 sx Cl H
596-689' w/250 sx Cl H
390-596' w/250 sx Cl H
325-390' w/250 sx Cl H
272-325' w/250 sx Cl H

2-21-85 242-272' w/250 sx Cl H
240-242' w/250 sx Cl H
240' w/250 sx Cl H No fill
240' w/250 sx Cl H No fill

(OVER)

18. I hereby certify that the foregoing is true and correct

SIGNED Melba Knipling TITLE Unit Head DATE 3-11-85

(This space for Federal or State office use)

APPROVED BY ACCEPTED FOR RECORD TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

APR 2 1985

CARLSBAD, NEW MEXICO

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Form 3160-5 BY
November 1983)
Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.
NM-0426782

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
--

7. UNIT AGREEMENT NAME
--

8. FARM OR LEASE NAME
Mary Federal

9. WELL NO.
4

10. FIELD AND POOL, OR WILDCAT
West Dark Canyon-Delaware

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 24 - T23S, R25E

12. COUNTY OR PARISH
Eddy

13. STATE
New Mexico

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

ARTESIA, OFFICE

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR
Exxon Corporation

3. ADDRESS OF OPERATOR
P. O. Box 1600, Midland, TX 79702

JAN 31 1985

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface

1565' FNL and 200' FEL of Sec. 24 (SE/NE)

14. PERMIT NO.
30-015-25135

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
3446' GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other) Status Report			[ ]
(Other)			[ ]	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

1-20-85 Spud 12-1/4" hole @ 0615.
Hole caving in.

1-22-85 Set plug @ 100 - 48 w/ 200 sx C1C
Set plug @ 48 - 0 w/ 200 sx C1C

1-24-85 Set plug @ 525 - 852 w/ 280 sx C1H

18. I hereby certify that the foregoing is true and correct

SIGNED Melba Kripling TITLE Unit Head DATE 30 January 1985

(This space for Federal or State office use)

APPROVED BY ACCEPTED FOR RECORD TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

APR 2 1985

*See Instructions on Reverse Side

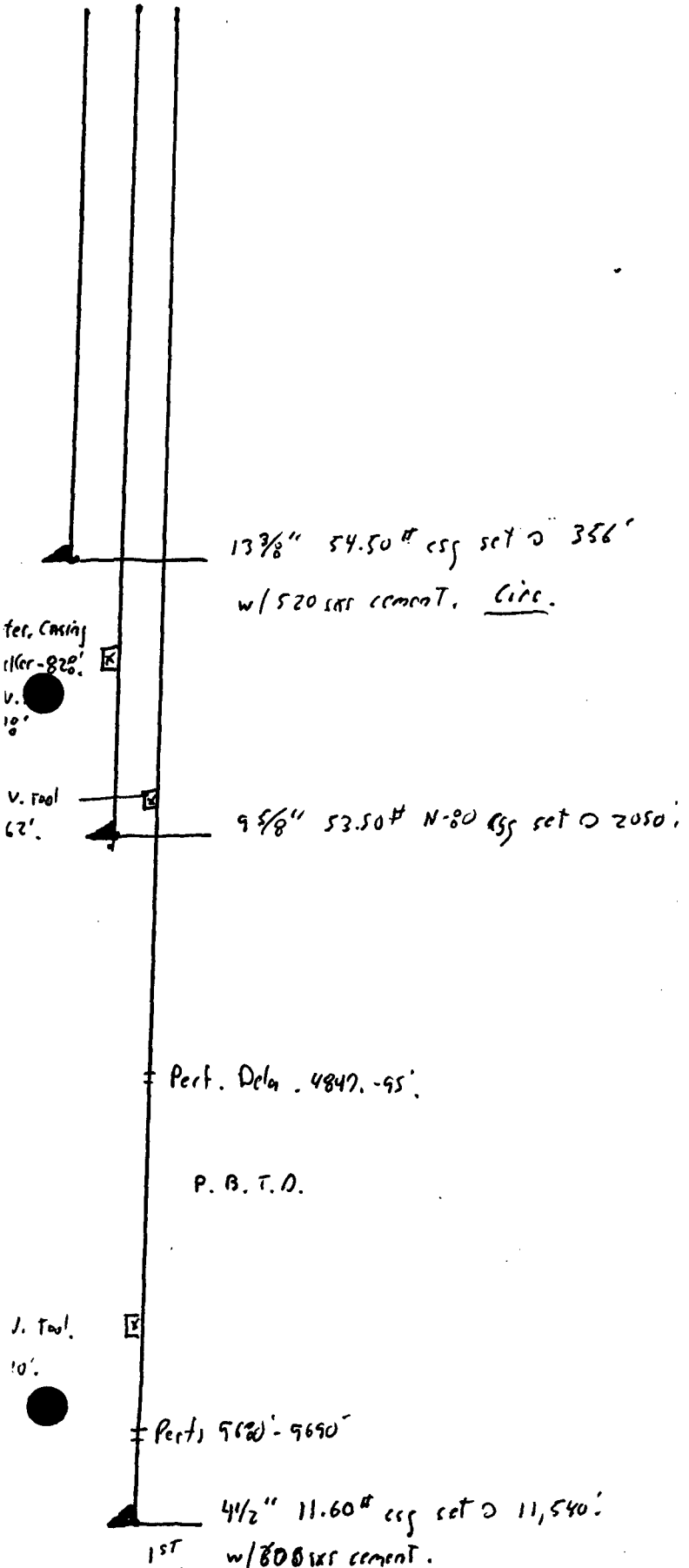
CARLSBAD, NEW MEXICO

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Operator Collins & Ware, Inc.
Well Muley Fed. 61 #1
Unit J Section 26 Township 23s Range 25e
API # 30—015 -- 26975.

TOPS

Yates
T. Salt
B. Salt
Glorieta
Bone Sp. 4904'
Abo
Wolfcamp
Morrow
Devonian
Fusselman
Other T. Delaware - 2098'



History

Well was Spud & Drilled 5/30/1992.

Well was Plugged 9/10/1993.

RECEIVED
SEP 13 8 15 AM '93
CARL
ARE

...NS. COMMISSION
...D
Artesia, NM 88210
...CEIVED
SEP 30 1993

c15F

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: NM 51073

6. If Indian, Allottee or Tribe Name:

7. If Unit or CA, Agreement Designation: NMNM 87873X

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.: Muley Fed. #1

2. Name of Operator: Collins & Ware. Inc.

9. API Well No.: 30-015-26975

3. Address and Telephone No.: 303 W.Wall. Ste. 2200 Midland TX 79701

10. Field and Pool, or Exploratory Area: Dark Canyon Up Penn

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
J. Sec. 26. T23S. R25E
1433' FSL & 1459' FEL

11. County or Parish, State: Eddy NM

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other P&A	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

9-9-93: Spot 25 sx. cement plug from 5200-5000'. GIH w/ CIBP and set @ 4825'.
9-10-93: Pressure test CIBP to 500#. Circ. hole w/9.5 PPG mud and spot 7 sx.(35') on CIBP. PU and spot 40 sx. cement plug from 2050-1850. 50 sx. cement plug from 356-106, 10 sx. cement plug @ surface. ND BOP, dig out cellar and cutoff wellhead. Weld on dryhole marker.

Final report: well P & A.

Approved as to plugging of the well bore.
Liability under bond is retained until
surface restoration is completed.

Post ID-2
10-15-93
P&A

14. I hereby certify that the foregoing is true and correct

Signed [signature] Max Guerry Title Regulatory Mgr. Date 9-10-93

(This space for Federal or State office use)

Approved by (ORIG. SGD.) ... Title Petroleum Engineer Date 9/28/93

Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statement or representations as to any matter within its jurisdiction.

RECEIVED

JUN 19 1992

O. C. D.

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: NM 51073

6. If Indian, Allottee or Tribe Name:

7. If Unit or CA, Agreement Designation:

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.: Muley Federal

2. Name of Operator: Collins & Ware, Inc.

9. API Well No.: 1

3. Address and Telephone No.: 303 W. Wall, Suite 2200, Midland, Texas 79701

10. Field and Pool, or Exploratory Area: Horseshoe Bend (Strat

4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 1433' FSL & 1459' FEL of Sec. 26, T-23-S, R-25-E

11. County or Parish, State: Morro Eddy, New Mexico

12 CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other Intermediate Casing	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

A 12.25" hole was drilled to 2050' K.B. on 6/3/92. Full returns were lost while drilling at 920' K.B. The hole was dry drilled to 2050'. A caliper log was run prior to running casing to determine the best possible setting depth for the external casing packer (a copy of Cardinal Wireline field print is enclosed). 9.625" 43.50, 47, and 53.50#/ft., N-80 and S-95 Buttress casing was run and set at 2050' K.B. Top of external casing packer at 828.41' from surface. Top of D.V. tool at 778.08' from surface. Cemented first stage: 475 sacks Hallaiburton Lite with 1/2#/sk., flocele, 2% CACL2, and 10# Cal-Seal. (2.01 cu.ft./sk. yield, 12.7#/gallon), tailed in with 200 sacks Premium Plus with 2% CALC2, (1.32 cu.ft./sk., 14.8#/gallon weight). Dropped bomb and waited 6 hours, cement did not circulate. Cemented Second Stage: with 275 sacks Halliburton Lite with 1/4# flocele/sk., 4% CACL2, and 6# Gilsonite, (1.84 cu.ft./sk. yield, 12.7#/gallon). Tailed in with 100 sacks Premium Plus with 4% CACL2 and 6# gilsonite (1.32 cu.ft./sk., 14.8#/gallon). Cement did not circulate Waited on cement for 3.5 hours and ran remperature survey, no cement top. Rig up to one-inch. Ran one inch 10 times with 35 sacks cement each run. Top of cement 686' after tenth run. Cemented with 255 sacks cement, circulated cement to surface. Set slips and nippled up, test to 2400 psig with rig pump. Cemented with a total of 570 sacks cement. Tested BOP, stack, safety valve to 5000 psig, tested hydrill 2000 psig.

NOTE: A cement Bond Log will be conducted on the 9.625" casing prior to running the next casing string.

Witnessed by the BLM

ACCEPTED FOR RECORD

14. I hereby certify that the foregoing is true and correct

Signed [signature] Title Agent for Collins & Ware, Inc Date 6/8/92

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

CARLSBAD, NEW MEXICO

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements

C15

RECEIVED

JUN 1 1 1992

O. C. D.
ARTESIA, OFFICE

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: NM 51073

6. If Indian, Allottee or Tribe Name:

7. If Unit or CA, Agreement Designation:

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.: Muley Federal

2. Name of Operator: Collins & Ware, Inc. ✓

9. API Well No.: 1

3. Address and Telephone No.: 303 W. Wall, Suite 2200, Midland, Texas 79701

10. Field and Pool, or Exploratory Area: Horseshoe Bend (Stra

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1433' FSL & 1459' FEL of Sec. 26, T-23-S, R-25-E

11. County or Parish, State: Mori
Eddy, New Mexico

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other Spud & Surface Casing	☐ Dispose Water

(Note: Report results of multiple completion on We
Completion or Recompletion Report and Log form

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally dril
give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

McVay Rig No. 10 spudded a 17.5" hole at 7:45 AM May 30, 1992. The 17.5" hole was drilled to a depth of 356' K.B. 13.375" 68, 61, and 54.50#/ft., K55 ST&C casing was run and set at 356' K.B. Cemented with 370 sacks Premium Plus with 2% CACL2 (1.32 cu.ft./sk. yield, 14.8#/gallon). Tailed in with 150 sacks Premium Plus cement with 4% CACL2 (1.32 cu.ft./sk. yield, 14.8#/gallon). Plug down at 7:15 AM May 31, 1992. Circulated 140 sacks cement to reserve pit. Waited on cement 25 hours. Tested well head to 500 psig, and casing to 500 psig, O.K.

Witnessed by the BLM.

14. I hereby certify that the foregoing is true and correct

Signed J. E. Brunham Title Agent for Collins & Ware, Inc. Date 6/8/92

(This space for Federal or State office use)

Approved by ACCEPTED FOR RECORD Title _____ Date _____

Conditions of approval, if any:

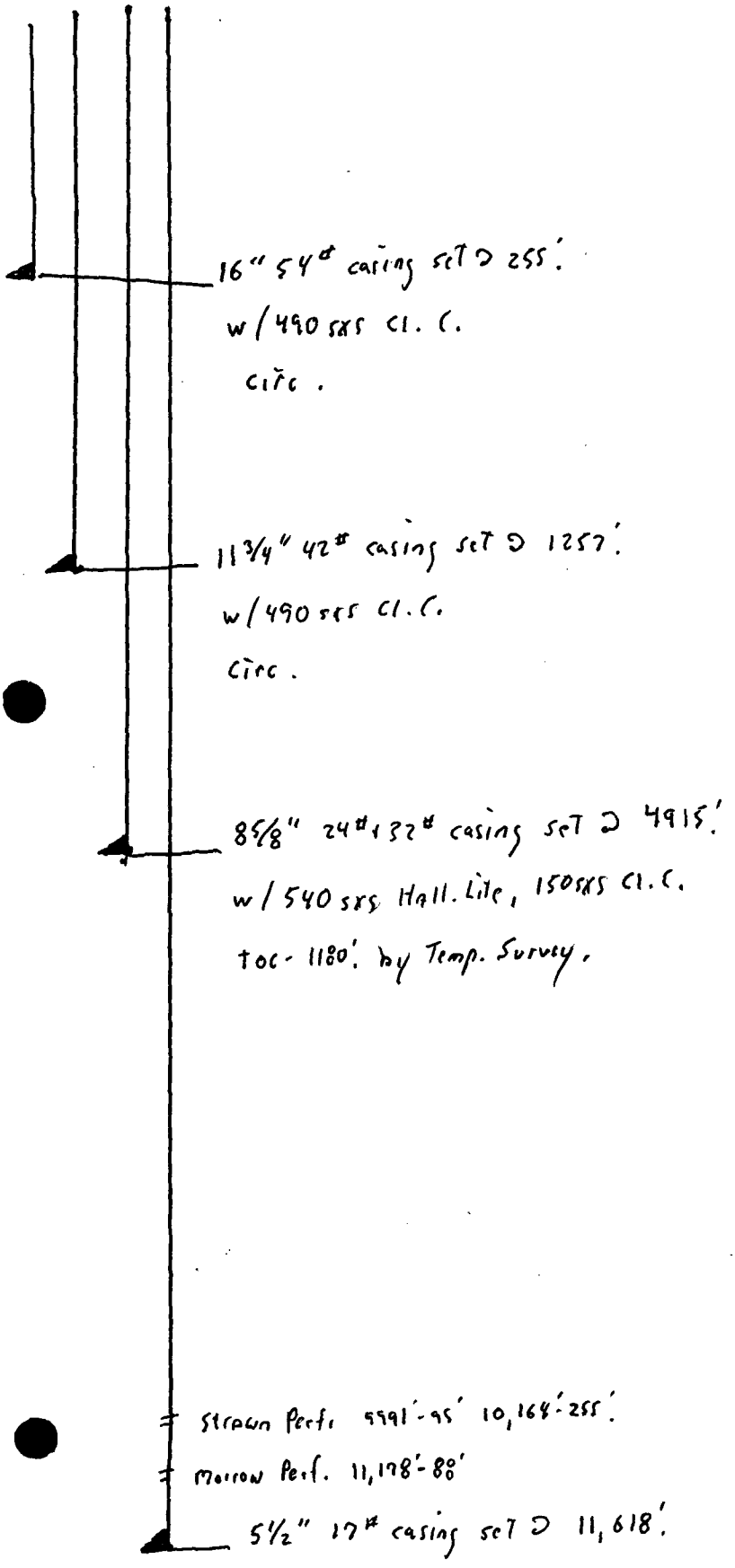
JUN 9 1992

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statemen

Operator Corinne Grace
Well Cueva Unit #1
Unit K Section 6 Township 23-S Range 26-E
API # 30-015-21362

TOPS

Yates
T. Salt
B. Salt
Glorieta
Bone Sp.
Abo
Wolfcamp 8470'
Morrow 10,900'
Devonian
Fusselman
Other



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FILE	1	✓
U.S.G.S.		
LAND OFFICE		
OPERATOR	1	

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103
Supersedes Old C-102 and C-103
Effective 1-1-65

RECEIVED
DEC 26 1974
O. C. C.
ARTESIA, OFFICE

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: K-4535

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL [ ] GAS WELL [X] OTHER-

7. Unit Agreement Name: Cueva Unit

2. Name of Operator: Corinne Grace ✓

8. Farm or Lease Name: Cueva Unit

3. Address of Operator: P. O. Box 1418, Carlsbad, New Mexico

9. Well No.: 1

4. Location of Well
UNIT LETTER K, 1980 FEET FROM THE South LINE AND 1980 FEET FROM THE West LINE, SECTION 6 TOWNSHIP 23S RANGE 26E NMPM.

10. Field and Pool, or Wildcat: Wildcat

15. Elevation *(Show whether DF, RT, GR, etc.)*

12. County: Eddy

6. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK [ ]	PLUG AND ABANDON [ ]	REMEDIAL WORK [ ]	ALTERING CASING [ ]
TEMPORARILY ABANDON [ ]		COMMENCE DRILLING OPNS. [ ]	PLUG AND ABANDONMENT [ ]
PULL OR ALTER CASING [ ]	CHANGE PLANS [ ]	CASING TEST AND CEMENT JOB [X]	
OTHER [ ]		OTHER [ ]	

7. Describe Proposed or Completed Operations *(Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work)* SEE RULE 1103.

11/26/74 Cemented 255' of 16" 54# surface casing with 490 sacks Class "C" w/2% Cal. Cl. circulated to surface. Pumped 16" wooden plug down at 8:38 a.m. W.O.C. 24 hours

8. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED Jeanette L. Jones TITLE Agent DATE 12/20/74

APPROVED BY W. A. Gressett TITLE SUPERVISOR, DISTRICT II DATE JAN 16 1975

NO. OF COPIES RECEIVED	3
DISTRIBUTION	
SANTA FE	1
[redacted]	1 ✓
U.S.G.S.	
LAND OFFICE	
OPERATOR	1

NEW MEXICO OIL CONSERVATION COMMISSION

RECEIVED

JUN 16 1975

O. C. C.
ARTESIA, OFFICE

Form C-103
Supersedes Old C-102 and C-103
Effective 1-1-65

5a. Indicate Type of Lease: State [XX] Fee [ ]

5. State Oil & Gas Lease No.: K-4535

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL [ ] GAS WELL [XX] OTHER-

7. Unit Agreement Name: Cueva Unit

2. Name of Operator: Corinne Grace

8. Farm or Lease Name: Cueva Unit

3. Address of Operator: P. O. Box 1418, Carlsbad, New Mexico 88220

9. Well No.: 1

4. Location of Well: UNIT LETTER X, 1980 FEET FROM THE South LINE AND 1980 FEET FROM THE West LINE, SECTION 6 TOWNSHIP 23S RANGE 26E NMPM.

10. Field and Pool, or Wildcat: ~~Wildcat~~ Undesig.

15. Elevation (*Show whether DF, RT, GR, etc.*): 3418.7

12. County: Eddy

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK [ ]	PLUG AND ABANDON [ ]	REMEDIAL WORK [ ]	ALTERING CASING [ ]
TEMPORARILY ABANDON [ ]		COMMENCE DRILLING OPNS. [ ]	PLUG AND ABANDONMENT [ ]
PULL OR ALTER CASING [ ]	CHANGE PLANS [ ]	CASING TEST AND CEMENT JOB [XX]	
OTHER [ ]		OTHER [ ]	

17. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

Ran and set 11 3/4" 42#/ft. H-40 ST&C Casing Range 3 at 1257'
Cemented with 515 sks. Class "C" cement, 11 sks. CaCl.
Set first plug @ 788 ft. w/50 sacks, Second plug @ 788' w/50 sks, third plug @ 788' w/50 s
Set Fourth plug @ 608' w/50 sks, set Plug 5 @ 400 ft. w/50 sks, Set Plug #6 @ 355 ft. 50 s
Set last plug @ 355 to surface 150 sks. Rec. full returns (circulated). WOC 24 hrs.

NOTE: Cemented water flow and ~~?~~ boulders prior to running 11 3/4" casing by displacing 5 ceme plugs from 402' to 230'. Tested below 16" casing at 270' with 250 psi. Drilled out cement plugs, lost circulation. Plugs held.

See attached Field Report.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED Juanita L. Jones TITLE Agent DATE 6/13/75

APPROVED BY W. A. Gressett TITLE SUPERVISOR, DISTRICT II DATE JUN 18 1975

CONDITIONS OF APPROVAL, IF ANY:

RECEIVED

OCT 9 1974

O. C. C.
ARTESIA, OFFICE

CUEVA UNIT # 1
SECTION 6, T23S, R26E
EDDY COUNTY, NEW MEXICO

September 14, 1974	Spudded at 9:00 a.m. with Abbott Bros. Rat hole and drilled to a depth of 30'-24" hole. Abbott Bros. Drilling Co. on location and ready to set up at 1:30 p.m. Abbott Bros. rigged up and set conductor pipe to a depth of 30'.
September 15, 1974	Drilling out from under pipe.
September 16, 1974	Mudding hole and drill to 32'.
September 17, 1974	Drilled from 32' to 40'.
September 18, 1974	Drilled from 40' to 50' in clay.
September 19, 1974	Drilled from 50' to 60' in clay. 16" hole.
September 20, 1974	Drilled from 60' to 64' in clay. 16" hole.
September 21, 1974	Drilled from 64' to 67' in clay. " "
September 22, 1974	Drilled from 67' to 70 ' in clay." "
September 23, 1974	Rained out.
September 24, 1974	Tried to get into location and could not due to rain.
September 25, 1974	Tried to get into location and got stuck.
September 26, 1974	Drilled from 70' to 73' in red clay.
September 27, 1974	Drilled from 73' to 78' in red clay.
September 28, 1974	Drilled from 78' to 83' in red clay.
September 29, 1974	Drilled from 83' to 88' in red clay.
September 30, 1974	Drilled from 88' to 95' in red clay.
October 1, 1974	Drilled from 95' to 105' in red clay.
October 2, 1974	Drilled from 105' to 115' in red clay.
October 3, 1974	Drilled from 115' to 120' in limestone.
October 4, 1974	Drilled from 120' to 125' in limestone.
October 5, 1974	Drilled from 125' to 130 in clay.
October 6, 1974	Drilled from 130' to 135' in limestone.

CUEVA UNIT # 1
SECTION 6, T23S, R26E
EDDY COUNTY, NEW MEXICO

October 7, 1974 — Drilled from 135' to 142' in limestone.

October 8, 1974 — Drilled from 142' to 157' in limestone.

October 9, 1974 — Drilled from 157' to 166' in limestone.

October 10, 1974 — Drilled from 166' to 175' in limestone.

October 11, 1974 — Drilled from 175' to 182' in limestone.

October 12, 1974 — Drilled from 182' to 192' in limestone.

October 13, 1974 — Drilled from 192' to 201' in limestone.

October 14, 1974 — Couldn't get into location due to rain.

October 15, 1974 — Drilled from 201' to 212' in limestone.

October 16, 1974 — Move rig off to finish location.

October 17, 1974 — Building location.

October 18, 1974 — Still building location.

October 19, 1974 — Still building location.

October 20, 1974 — Still building location.

October 21, 1974 — Finish building location.

October 22, 1974 — Couldn't get into location.

October 23, 1974 — Couldn't get into location.

October 24, 1974 — Couldn't get into location.

October 25, 1974 — Couldn't get into location.

October 26, 1974 — Move rig back on location and started drilling and drilled to 221'.

October 27, 1974 — Drilled from 221' to 230'.

October 28, 1974 — Drilled from 230' to 235' in limestone,

October 29, 1974 — Drilled from 235' to 245' in limestone. 16" hole.

October 30, 1974 — Drilled from 245' to 254' in limestone. 16" hole.

October 31, 1974 — Drilled from 254' to 265' in limestone.

November 1, 1974 — Hole caving in and cleaning out.

November 2, 1974 — Cleaning out and drilled from 265' to 267' in rock.

November 3, 1974 — Cleaning out and drilled from 267' to 268' in rock.

QUEVA UNIT # 1
SECTION 6, T23S, R26E
EDDY COUNTY, NEW MEXICO

November 30, 1974 — Drilled 260' to 265' in lime, 15½" hole.

December 1, 1974 — Drilled 265' to270' in lime.

December 2, 1974 — Drilled 270' to 275' im lime.

December 3, 1974 — Drilled 275' to 281' in lime.

December 4, 1974 — Drilled 281' to 285' in lime.

December 5, 1974 — Drilled 285' to 289' in lime.

December 6, 1974 — Drilled 289' to 29¼' in lime

December 7, 1974 — Drilled 29¼' to 296' in lime.

December 8, 1974 — Drilled 296' to 300' in lime.

December 9, 1974 — Drilled 300' to 305' in lime ingub.

December 10, 1974 — Drilled 305' to 306' in lime and gyp

December 11, 1974 — Drilled 306' to 309' in lime and gyp

December 12, 1974 — Drilled 309' to 312' 16½ inch hole.

December 13, 1974 — Drilled 312' to 316' in lime and gyp.

December 14, 1974 — Drilled 316' to 320' in lime and gyp.

December 15, 1974 — Drilled 320' to 325' in lime and gyp.

December 16, 1974 — Drilled 325' to 330' in lime and gyp.

December 17, 1974 — Drilled from 330' to 334' in lime and gyp.

December 18, 1974 — Drilled from 334' to 339' in lime and gyp.

December 19, 1974 — Drilled from 339' to 345' lime in gyp.

December 20, 1974 — 345' to 350' lime in gyp.

December 21, 1974 — Drilled from 350' to 355 lime in anahydrite.

December 22, 1974 — Drilled from 355' to 360' lime in anahdrite.

December 23, 1974 — Drilled from 360' to 365' lime in anahdrite.

December 24, 1974 — Drilled from 365' to 371' lime in anahydrite.

December 25, 1974 — Shut down.

December 26, 1974 — Drilled from 371' to 375' lime in anahydrite.

GUEVA UNIT #1
SECTION 6, T23S, R26E
Eddy County, New Mexico

December 27, 1974	Drilled from 375' to 378' lime and anahydrite.
December 28, 1974	Drilled from 378' to 380' lime and anahydrite.
December 29, 1974	Drilled from 380' to 382' lime and anahydrite.
December 30, 1974	Drilled from 382' to 385' lime and anahydrite.
December 31, 1974	Drilled from 385' to 387' lime and anahydrite.
January 1, 1975	Drilled from 387' to 390' lime and anahydrite.
January 2, 1975	Drilled from 390'to 393' lime and anahydrite.
January 3, 1975	Drilled from 393' to 395' lime and gyp. (problems with hole caving.)
January 4, 1975	Drilled from 395' to 397' lime and gyp. (problems with hole caving.)
January 5, 1975	Drilled from 397' to 400' lime and gyp. (problems with hole caving.)
January 6, 1975	Drilled from 400' to 403' lime and gyp.
January 7, 1975	Drilled from 403' to 406' lime and gyp.
January 8, 1975	Cleaning out.
January 9, 1975	Cleaning out.
January 10, 1975	Drilled from 406' to 408' lime and gyp.
January 11, 1975	Drilled from 408' to 410' lime and gyp.
January 12, 1975	Drilled from 410' to 412' lime and gyp.
January 13, 1975	Drilled from 412' to 414' lime and gyp.
January 14, 1975	Drilled from 414' to 417' lime and gyp.
January 15, 1975	Drilled from 417' to 420' lime and gyp.
January 16, 1975	Drilled from 420' to 423' lime and gyp.
January 17, 1975	Cleaning out.
January 18, 1975	Cleaning out.
January 19, 1975	Cleaning out.
January 20, 1975	Cleaning out.
January 21, 1975	Cleaning out.
January 22, 1975	Cleaning out.
January 23, 1975	Cleaning out.

CUEVA UNIT #1
SECTION 6, T23S, R26E
EDDY COUNTY, NEW MEXICO

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JUN 11 1975
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May 30, 1975 — From 230 to 384 Cement 2 hrs. W.O.C. tagged top of Cement @250 6 hrs. drlg cement From 384 to 1020 3½ hrs. Drlg cement & samd bridge 2 hrs. Trip F/DC 2½ hrs. Drlg & Wash down 800' to 102 From 1020' to 1171' Dept. 1130' Dev. 2° 3¼ hr. finish wast to bottom 6 hrs. drlg ¼ hr. Survey 3¼ hr. drlg ¼ hr. pull out to mix mud.

May 31, 1975 — From 1171 to 1201 3½ hrs. mixing mud trip in hole ½ hr. drlg ¼ hr. pull out to mix mud 3¼ hrs. mix mud & trip in hole ½ hr. From 1201 to 1257 ¼ hr. Pull 3sks D.P. 2½ hrs. Mix mud & Trip in hole 3 3/4 hrs. drlg 1½ hrs. circ. From 1257 Dept. 1257 Dev Pump Mud slug in hole 3/4 hrs. 3/4 hrs. trip out to run csng 4½ hrs. rig up & run Csng ½ hr. rig up Halliburton & break circ. 3/4 hrs. cementing CSNG 3/4 hr. W.O.C. Plug down @ 10:15 p.m.

June 1, 1975 — From 1257 8 hrs. W.O.C. & Ran temp. survey
3 hrs. W.O.C. 5 hrs. Work 1¼" pipe by 11 3/4 CSG
3 hrs. working 1¼" pipeby CSNG ½ hr. Break circ. & cementing
3 hrs. WOC ½ hr. cementing 1 hr. WOC

June 2, 1975 — From 1257 3 hrs. WOC ½ hr. pump cement down Plug down 2:30 2 hrs. WOC ½ hr. Pump cement plug down 2 hrs. WOC 1 hr. WOC ½ hr. Pump Cement down 1¼ pipe 3 hrs. WOC ½ hr. Pump Cement 3 hrs. WOC 4 hrs. Finish cementing 4 hrs. WOC cut pipe off weld head start to put B.O.P. on.

June 3, 1975 — From1257' Finish nippling up Go in hole W/5 DC & DP to drill Plu Test 11 3/4 CSG W/900 lbs. OK Drill Cement Plug & shoe joint From 1257' to 1335' in anhy. & Lime 2 hrs. Drlg Cement & Shoe Jr. ½ hr. Drlg 1 3/4 hrs. Trip Fl D.C. & Two stb 3 3/4 hrs. Drlg 2 hrs. Co time W/DP
From 1335' to 1476' in anhy & lime 4 hrs. Drlg. 1 hr. tighten unions & Swivl & hose 3 hrs. drlg.

June 4, 1975 — From 1476' to 1630' in anhy. & lime 8 hrs. drlg
From 1630' to 1780' in lime Depth. 1650' Dev. 1½° 3/4 hrs. Drlg ½ hr. totco 6¾ hrs. Drlg. From 1780' to 1876 in lime Depth. 1870 Dev. 1° 4 hrs. drlg 3½ hrs. trip lay down reamers change 1 barrel ½ hrs. drlg

June 5, 1975 — From 1876 to 2072' in lime 8 hrs. Drilling
From 2072 to 2202 in lime 1 hr. drilling 2 hrs. Repair air line & Relined M+r Clutch 5 hrs. Drilling
From 2202 to 2415 in lime Depth. 2353' Dev. 3/4°
7½ hrs. drilling ¼ hr. Survey ½ hr. drilling.

June 6, 1975 — From 2415 to 2694 in lime 8 hrs. drilling
From 2694 to 2970 in lime 5½ hrs. drilling ½ hr. Totco 2 hrs. Dri
From 2970 to 3270 in lime 8 hrs. drilling.

June 7, 1975 — From 3270 to 3517 Depth 3335 Dev. 3/4° 2 hrs. drilling ½ hr. Dev Survey on W.H. 5½ hrs. drilling From 3517 to 3711 in lime 8 hrs. From 3711 to 3887 in lime Depth 3905 Dev. ½° 6½ hrs. drilling ¼ hr. survey 2¼ hrs. drilling

NEW MEXICO OIL CONSERVATION COMMISSION
DRAWER DD
ARTESIA, NEW MEXICO

FIELD REPORT FOR CEMENTING OF WELLS

Operator	Lease	Well #
Cosmo Grace	Cuevo Unit	1

Location of Well	Unit	Section	Township	Range	County
1980 S & W	K	6	23	26	Eddy

Drilling Contractor	Type of Equipment
	Cable Tool Rotary CT

APPROVED CASING PROGRAM

Size of Hole	Size of Casing	Weight Per Foot	New or Used	Depth	Sacks Cement
20"	16"	65		100	200
12¼"	9⅝"	36		7660	1735 circ.
8½"	5½"	15.5.17		11800	700

Casing Data: K.B. to G.L. 18 FT.

~~Surface~~ INTER 54 joints of 11 3/4 inch 42 # Grade H-40. STRC, NEW API
RANGE 3 (Approved) (~~Rejected~~)

Inspected by Leon Bergstrom date 5-31-75

Cementing Program

Size of hole 14 3/4 Size of Casing 11 3/4 Sacks cement required 545 CU/FT

Type of Shoe used GUIDE Float collar used INSERT Btm 2 jts welded YES

TD of hole 1257 KB Set ____ Feet of 11 3/4 Inch 42 # Grade H-40. STRC. NEW API R-3

New-used csg. @ 1257 KB with 100 sacks neat cement around shoe 2% CA Cl2

DCH (50) + 415 sax 5# GILS additives 2% CA Cl2

Plug down @ 10:15 (~~AM~~) (PM) Date 5-31-75

Cement circulated NO No. of Sacks 0

Cemented by Howco Witnessed by Leon Bergstrom

Temp. Survey ran @ 4:25 (AM) (~~PM~~) Date 6-1-75 top cement @ 1000'

Casing test @ ____ (AM) (PM) Date ____

Method Used ____ Witnessed by ____

Checked for shut off @ ____ (AM) (PM) Date ____

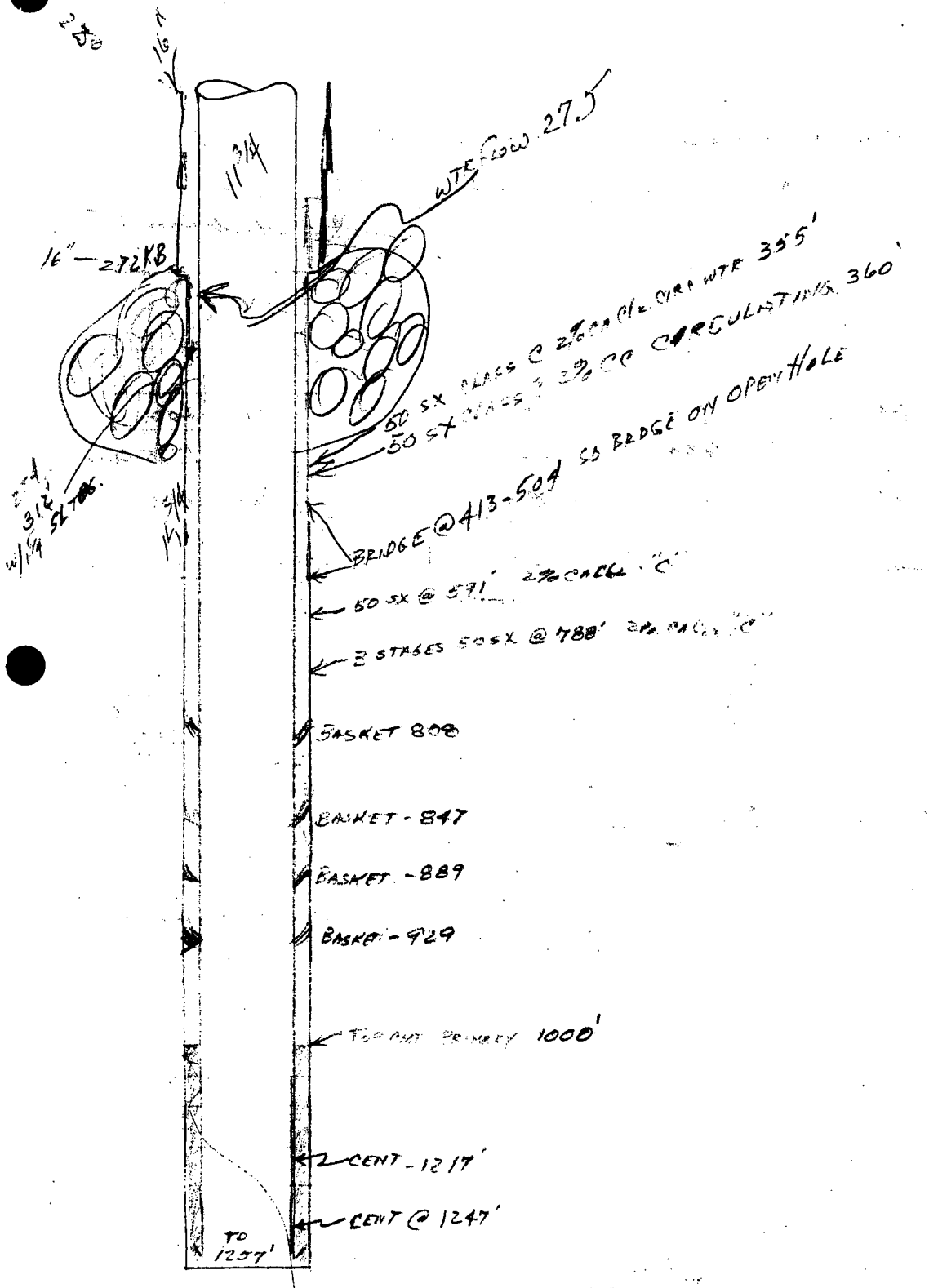
Method used ____ Witnessed by ____

Remarks: 16" x 65# SET @ 272 K.B. CMTD TO SURFACE

11 3/4" CEMT @ 1247' & 1217 - BASKETS @ 929, 889, 847 & 808'

TAG BOTTOM W/ TEMP BOMB @ 1189' @ 5:10 AM 6-1-75
STAGE CEMENT DOWN 1.9 TBG IN 11 3/4 x 14 3/4 ANNULUS AS FOLLOWS

#1 - 50 SX CLASS C 2% CaCl2 @ 788'. IN PLACE @ 6:20 PM 6-1-75
#2 - 50 SX " " " @ 788' " 10:10 PM 6-1-75
#3 - 50 SX " 4% CaCl2 @ 591' " 2:30 AM 6-2-75 (PRECEDED W/ 10 BBLS LCM PILL)
#4 - 50 SX " 4% CaCl2 @ 360' " 5:30 AM 6-2-75 (" " " ")
#5 - 50 SX " " " @ 355' " 8:30 AM 6-2-75 (HAD WTR RETURNS TO SURF)
#6 - 50 SX " " " @ 322' " 11:50 AM 6-2-75 (" " " ")
#7 - 120 SX " CMT DROPPING SLOWLY AFTER STOPPING PUMPS " 3:15 PM 6-2-75 (3 SX CMT TO FIT)


11 3/4
WTR flow 27.5
16" — 272 KB
50 SX
50 SX
BRIDGE @ 413-504
50 BRIDGE ON OPEN HOLE
BRIDGE @ 571'
50 SX @ 571'
3 STAGES 50 SX @ 788'
BASKET 808
BASKET - 847
BASKET - 889
BASKET - 929
TOP OF PERFS 1000'
CENT - 1217'
CENT @ 1247'
TD 1257'

INSPECTION	CLASSIFICATION	FACILITY	HOURS	QUARTER HOURS

NEW MEXICO OIL CONSERVATION COMMISSION
FIELD TRIP REPORT

Name B. W. Weaver Date 2-25-85 Miles _____ District II

Time of Departure _____ Time of Return _____ Car No. 659

In the space below indicate the purpose of the trip and the duties performed, listing wells or leases visited and any action taken.

Signature _____

1 well O-7-23-26 EXXON Corp Newman #1 (P&A) Set Cast Iron Bridge Plug @ 4200 Test Casing to 1000 PSI Would Not Hold Ran 2nd CIBP set at 4168 and Test to 1000 PSI Would Not Hold Put 10 SX Cement on Top of Bridge Plug Let Set

2-26-85

Test Casing to 1000 PSI Would Not Test Ran Packer and Found Hole @ 3495 Squeezed With 50 SX Class C 2% CC

2-27-85

Pressured up on Squeeze Job Test to 1000 PSI O.K Pulled Packer Perforated Casing @ 2535 Tryed to Circulate Could Not Set 20 SX Class C 2% CC Tagged @ 2304 Perforated @ 1320 Circulated With Mud to Surface With Mud and Spotted 30 SX Class C 3% CC, Perfora @ 50 Ft and Circ Cement to Surface

Mileage		Per Diem		Hours	
UIC	_____	UIC	_____	UIC	_____
RFA	_____	RFA	_____	RFA	_____
Other	_____	Other	_____	Other	_____

TYPE INSPECTION PERFORMED

H = Housekeeping
P = Plugging
C = Plugging Cleanup
T = Well Test
R = Repair/Workover
F = Waterflow
M = Mishap or Spill
W = Water Contamination
O = Other

INSPECTION CLASSIFICATION

U = Underground Injection Control - Any inspection of or related to injection project, facility, or well or resulting from injection into any well. (SWD, 2ndry injection and production wells, water flows or pressure tests, surface injection equipment, plugging, etc.)
R = Inspections relating to Reclamation Fund Activity
O = Other - Inspections not related to injection or The Reclamation Fund
E = Indicates some form of enforcement action taken in the field (show immediately below the letter U, R or O)

NATURE OF SPECIFIC WELL OR FACILITY INSPECTED

D = Drilling
P = Production
I = Injection
C = Combined prod. inj. operations
S = SWD
U = Underground Storage
G = General Operation
F = Facility or location
M = Meeting
O = Other

DISTRIBUTION			
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PRORATION OFFICE			

NEW MEXICO OIL CONSERVATION COMMISSION

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

Form C-104
Supersedes Old C-104 and Effective 1-1-65

RECEIVED
MAR - 1 1978
O. C. C.
ARTESIA, OFFICE

I. Operator

Hanagan Petroleum Corporation ✓

Address

P.O. Box 1737, Roswell, New Mexico 88201

Reason(s) for filing *(Check proper box)*

New Well ☐
Recompletion ☒
Change in Ownership ☐

Change in Transporter of:
Oil ☐ Dry Gas ☐
Casinghead Gas ☐ Condensate ☐

Other *(Please explain)*

If change of ownership give name and address of previous owner

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease No.
Newman	1	BrynesTank-Middle Delaware Gas	State, Federal or Fee State	K 4761-

Location

Unit Letter O ; 2300 Feet From The East Line and 660' Feet From The South

Line of Section 7 Township 23 South Range 26 East, NMPM, Eddy County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil ☐ or Condensate ☒	Address *(Give address to which approved copy of this form is to be sent)*
Navajo Crude Oil Purchasing Company	P.O. Box 175, Artesia, New Mexico 88210
Name of Authorized Transporter of Casinghead Gas ☐ or Dry Gas ☒	Address *(Give address to which approved copy of this form is to be sent)*
Transwestern Pipeline Company	P.O. Box 2521, Houston, Texas 77001

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When
	O	7	23S	26E	Yes	3-31-78

If this production is commingled with that from any other lease or pool, give commingling order number:

IV. COMPLETION DATA

Designate Type of Completion – (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v.	Diff. Res'v.
		X		X		X		X

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
2/15/75	5/23/77	11,625'	4620 (Temp.)
Elevations *(DF, RKB, RT, GR, etc.)*	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
3454 KB	Middle Delaware	4247	4098
Perforations			**Depth Casing Shoe**
4247-56			4920

TUBING, CASING, AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
20"	16"	96	180
14 3/4" & 12 ¼"	9 5/8"	2480	1050
8½"	4½"	4920	675
	2 3/8"	4098	

V. TEST DATA AND REQUEST FOR ALLOWABLE

(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

OIL WELL

Date First New Oil Run To Tanks	Date of Test	Producing Method *(Flow, pump, gas lift, etc.)*	
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
			Posted ND-3 4/14/78 Add GT-TWP
Actual Prod. During Test	**Oil-Bbls.**	**Water-Bbls.**	**Gas-MCF**

GAS WELL

Actual Prod. Test-MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
CAOF 4044.4	4 hrs.		

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OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

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JUL 27 1984
O. C. D.
ARTESIA, OFFICE

Form C-103
Revised 10-1-

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: K 4761-3

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL [X] GAS WELL [ ] OTHER-

7. Unit Agreement Name:

2. Name of Operator: EXXON CORPORATION

8. Farm or Lease Name: NEWMAN ~~STATE~~

3. Address of Operator: BOX 1600, MIDLAND, TEXAS 79702

9. Well No.: 1

4. Location of Well: UNIT LETTER O, 2300 FEET FROM THE EAST LINE AND 660 FEET FROM THE SOUTH LINE, SECTION 7 TOWNSHIP 23S RANGE 26E NMPM.

10. Field and Pool, or Wildcat: BRYNES TANK DELAWA

15. Elevation (Show whether DF, RT, GR, etc.): 3438 GR

12. County: EDDY

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK [ ]	PLUG AND ABANDON [X]	REMEDIAL WORK [ ]	ALTERING CASING [ ]
TEMPORARILY ABANDON [ ]		COMMENCE DRILLING OPNS. [ ]	PLUG AND ABANDONMENT [ ]
PULL OR ALTER CASING [ ]	CHANGE PLANS [ ]	CASING TEST AND CEMENT JOB [ ]	
OTHER [ ]		OTHER [ ]	

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

95/8 @ 2500'

1. PULL RODS AND PUMP. TEST BOP TO 2000 PSI. PULL TBG.
2. SET CIBP AT 4200' - CAP W/100' CMT. PRESSURE TEST CSG TO 1000 PSI.
3. PERF CSG @ 2535' W/4 SPF. RIH W/OPEN ENDED TBG TO PBTD (4100'). CIRC 4½" CSG AND 4½ x 9⅝" ANNULUS W/9.5 PPG (MIN) BRINE WATER CONTAINING 25-100 LB SACK SALT GEL PER 100 BBL. (APPROX VOL IS 200 BBL.)
4. PULL TBG TO 2535'. ESTABLISH CIRC THROUGH TBG ANNULUS & CSG x CSG ANNULUS. SPOT A 30 SX PLUG OF CMT (CLASS C, 3% CACL2) BY BALANCED PLUG METHOD. WOC. PRESSURE TEST PLUG TO 500 PSI.
5. PERF CSG @ 1320' AND @ 50' W/4 SPF. RIH W/OPENED TBG TO TAG TOC ON FIRST PLUG (SHOULD BE 2435' MIN. OTHERWISE SPOT CMT TO MAKE UP THE DIFFERENCE) PULL TBG TO 1320' AND SPOT A 30 SX PLUG OF CLASS C, 3% CACL2. BY BALANCED PLUG METHOD. KEEP BOTH ANNULI OPEN. PULL TBG TO 50' AND CIRC CMT TO SURFACE FOR FINAL PLUG.
6. CUT WELLHEAD OFF AND INSTALL PERMANENT DRY HOLE MARKER. CLEAN AND LEVEL LOCATION.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED D. F. Lowe TITLE SR ADMIN. DATE 7-26-84

APPROVED BY ORIGINAL SIGNED BY LARRY BROOKS GEOLOGIST - NMOCD TITLE JUL 31 1984 DATE JUL 31 1984

CONDITIONS OF APPROVAL, IF ANY:

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NEW MEXICO OIL CONSERVATION COMMISSION

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JUL 8 1975

O. C. C.
ARTESIA, OFFICE

Form C-103
Supersedes Old C-102 and C-103
Effective 1-1-65

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: K-4761-3

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL [ ] GAS WELL [X] OTHER-

7. Unit Agreement Name: ---

2. Name of Operator: HANAGAN PETROLEUM CORPORATION ✓

8. Farm or Lease Name: Newman-Com

3. Address of Operator: P. O. Box 1737, Roswell, New Mexico 88201

9. Well No.: 1

4. Location of Well: UNIT LETTER O, 2300 FEET FROM THE East LINE AND 660 FEET FROM THE South LINE, SECTION 7 TOWNSHIP 23 South RANGE 26 East NMPM.

10. Field and Pool, or Wildcat: Wildcat

15. Elevation (*Show whether DF, RT, GR, etc.*): 3438' GR, 3454' KB

12. County: Eddy

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK [ ]	PLUG AND ABANDON [ ]	REMEDIAL WORK [ ]	ALTERING CASING [ ]
TEMPORARILY ABANDON [ ]		COMMENCE DRILLING OPNS. [ ]	PLUG AND ABANDONMENT [ ]
PULL OR ALTER CASING [ ]	CHANGE PLANS [ ]	CASING TEST AND CEMENT JOB [X]	
OTHER [ ]		OTHER PB-Treatment - Testing [X]	

17. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

6/13/75: TD 11625

6/16/75: PBTD 4920 - Set 35 sx Class "H" plugs w/hvy. drlg. mud between plugs as verbally approved by Mr. Gressett: 11000-11100', 10000-10100', 8500-8600', 6100-6200', and 55 sx plug 4910-5040', went in & dressed off top plug to 4920'.

6/18/75: Ran 122 jts. of 4½" 11.60# N80 LT&C csg. set @ 4920', cmtd. w/675 sx 50/50 posmix 3% KCL/sx., plug down @ 4:50 AM, 6/18/75.

6/27/75: MI workover unit, OTD 11625, PB 4920, NPB 4859, perf. 2 SPF Delaware 4781-90, ran 2-3/8" tbg., broke perfs. w/100 gals. acetic acid, swbd. dry w/small flare gas, 9 hr SITP 700#, swb. tr oil & small flare gas, swb. dry - A/2000 gals. MA acid w/500 MCF N_2/bbl., avg. press. 3350# @ 7.2 BPM, flowed & swb. back load w/small amt. oil & gas, swb. dry, 23½ hr. SITP 1500# - Frac 13,000 gals. Wes Foam + 10,200# sd., inj. rate 12 BPM, Avg. treat. press. 5550#, flowed back most load w/good show oil & gas.

7/4/75: Rigged up test equipment.

7/5 to 7/7/75: Testing well, well F/38½ BO + 37 BW/8½ hrs., 16/64" ck., FTP 950#.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED Hugh C. Hanagan TITLE Vice President DATE 7/7/75

APPROVED BY W. A. Gressett TITLE SUPERVISOR, DISTRICT II DATE JUL 10 1975

CONDITIONS OF APPROVAL, IF ANY:

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NEW MEXICO OIL CONSERVATION COMMISSION
MAY 20 1975
O. C. C.
ARTESIA, OFFICE

Form C-103
Supersedes Old C-102 and C-103
Effective 1-1-65

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: K-4761-3

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL [ ] GAS WELL [X] OTHER-

7. Unit Agreement Name: ----------

2. Name of Operator: Hanagan Petroleum Corporation ✓

8. Farm or Lease Name: Newman-Com

3. Address of Operator: P. O. Box 1737 Roswell, New Mexico 88201

9. Well No.: 1

4. Location of Well: UNIT LETTER 0 , 2300 FEET FROM THE East LINE AND 660 FEET FROM THE South LINE, SECTION 7 TOWNSHIP 23S RANGE 26E NMPM.

10. Field and Pool, or Wildcat: Wildcat

15. Elevation (*Show whether DF, RT, GR, etc.*): 3438 GR

12. County: Eddy

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	[ ]	PLUG AND ABANDON	[ ]	REMEDIAL WORK	[X]	ALTERING CASING	[ ]
TEMPORARILY ABANDON	[ ]			COMMENCE DRILLING OPNS.	[ ]	PLUG AND ABANDONMENT	[ ]
PULL OR ALTER CASING	[ ]	CHANGE PLANS	[ ]	CASING TEST AND CEMENT JOB	[X]		
OTHER	[ ]			OTHER	[ ]		

17. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any propose work*) SEE RULE 1103.

5/12/75: Started drilling operations w/Rotary Moranco Contractor, 5/12/75 T.D. Ream 6" hole to 20" hole to 96' ran 3 Jts. 16' 65# Casing, set @ 96' w/180 sx. Class "C" + 2% Ca CL. Plug down @ 3:10 PM 5/12/75 cement circ., w/80 sx. excess, 1.32 Slurry Vol. cu. ft./sx. 75° temp. when Slurry mixed, est. fm. temp. 65°, compressive strenght 565#, tested csg. w/500# 30", no press drop, drlg. Plug 3:00 AM 5/13/75 WOC 12 hrs.

5/17/75: T.D. 2480' sd. & lm. (14-3/4" & 12¼" hole), Ran 60 jts. 9-5/8" 40# ST&C & 36# LT&C csg. set @ 2480' & cmt. w/900 sx. Howco Light ¼# flocel 2% Ca Cl + 150 sx. Class "C w/2% Ca Cl, plug down 4:15 AM 5/17/75. Cement circ. w/65 sx. excess, 5/17/75 11:00 PM press up csg. 1800#/30", no press drop. Began making new hole @ 12:00 PM 5/17/75.

Witnessed by Leon Bergstrom
Field Supervisor

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED M. L. Southerland TITLE Agent DATE 5/19/75

APPROVED BY Leon Bergstrom TITLE SUPERVISOR, DISTRICT II DATE MAY 20 1975

CONDITIONS OF APPROVAL, IF ANY:

15' K.B TO G.L.

NEW MEXICO OIL CONSERVATION COMMISSION
DRAWER DD
ARTESIA, NEW MEXICO

FIELD REPORT FOR CEMENTING OF WELLS

Operator	Lease	Well #
Hanagan Petr. Corp.	Newman Com.	1

Location of Well	Unit	Section	Township	Range	County
1650 2300 E	O	7	23	26	Eddy

Drilling Contractor	Type of Equipment
Gibbell - Moranco	CT + Rotary

* Witness

APPROVED CASING PROGRAM to start approx. 2-13-75

Size of Hole	Size of Casing	Weight Per Foot	New or Used	Depth	Sacks Cement
20	16"	65#		100	225 circ.
* 14¾" + 12¼"	9 5/8"	36 + 40		2500	800 circ.
8½" + 7⅞"	5½"	17 + 20		11700	500

Casing Data: 15.00 FT K.B TO G.L.

~~Surface~~ INTER 8 — joints of 52 — 9 5/8 inch 36 40 # Grade K-55 NEW 8 RT STEC

RANGE 3 (Approved) (~~Rejected~~) LONE STAR

Inspected by Leon Bergstrom date 5-16-75

Cementing Program

Size of hole 14¾ - 1055 / 12¼ - 2480 Size of Casing 9 5/8" Sacks cement required

Type of Shoe used GUIDE Float collar used INSERT Btm 3 jts welded YES

TD of hole 2480 KB Set 2489 Feet of 9 5/8 Inch 36 & 40 # Grade K-55 NEW STEC

New-used csg. @ 2480 KB with 150 sacks neat cement around shoe + 2% CA Cl 2

+ 900 sax HOWCO LITE additives ¼ FLOCELE + 2% CA Cl 2

Plug down @ 4:15 (AM) (~~PM~~) Date 5-17-75

Cement circulated YES No. of Sacks 65 SX CIR TO PIT

Cemented by HALLIBURTON Witnessed by Leon Bergstrom

Temp. Survey ran @ ____ (AM) (PM) Date ____ top cement @ ____

Casing test @ ____ (AM) (PM) Date ____

Method Used ____ Witnessed by ____

Checked for shut off @ ____ (AM) (PM) Date ____

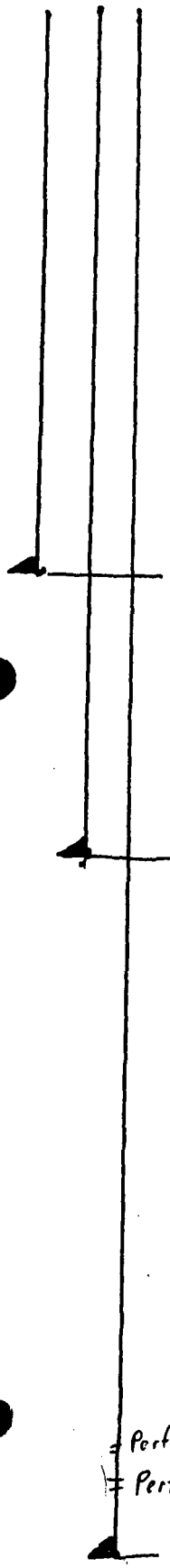
Method used ____ Witnessed by ____

Remarks: ____

Operator Exxon Corp.
Well Newman #1
Unit O Section 9 Township 23-S Range 26-E
API # 30—015 -- 21477

TOPS

Yates
T. Salt
B. Salt
Glorieta
Bone Sp. 4908'
Abo
Wolfcamp 8554'
Morrow 11,053'
Devonian
Fusselman
Other Delaware - 1320'



16' 65# casing set @ 96'
w/180 sx Cl. C,
circ.

9 5/8" 40# casing set @ 2480'
w/900sx Howco Lite, 150sks Cl. C.
circ. 65 sx cement. witnessed O.C.D.

Perf 4247'-56' Delaware.
Perf 4781'-90' Delaware.
4 1/2" 11.60# casing set @ 4920'. w/
w/675 sks 50/50 poz
TD - 11625'. PB TD - 4920'.

History

Well was spudded + Drilled. 2/13/1975
Clyde Tidwell cable tools.
C.T. + Rotary Rigs used.
Well is P & A.

ENERGY AND MINERALS DEPARTMENT

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LAND OFFICE		
OPERATOR	✓	

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

RECEIVED
JUL 27 1984
O. C. D.
ARTESIA, OFFICE

Form C-103
Revised 10-1

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: K 4761-3

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL [X] GAS WELL [ ] OTHER-

7. Unit Agreement Name:

2. Name of Operator: EXXON CORPORATION ✓

8. Farm or Lease Name: NEWMAN ~~STATE~~

3. Address of Operator: BOX 1600, MIDLAND, TEXAS 79702

9. Well No.: 1

4. Location of Well: UNIT LETTER O, 2300 FEET FROM THE EAST LINE AND 660 FEET FROM THE SOUTH LINE, SECTION 7 TOWNSHIP 23S RANGE 26E NMPM.

10. Field and Pool, or Wildcat: BRYNES TANK DELAW

15. Elevation (Show whether DF, RT, GR, etc.): 3438 GR

12. County: EDDY

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK [ ]	PLUG AND ABANDON [X]	REMEDIAL WORK [ ]	ALTERING CASING [ ]
TEMPORARILY ABANDON [ ]		COMMENCE DRILLING OPNS. [ ]	PLUG AND ABANDONMENT [ ]
PULL OR ALTER CASING [ ]	CHANGE PLANS [ ]	CASING TEST AND CEMENT JOB [ ]	
OTHER [ ]		OTHER	

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

95/8 @ 2500'

1. PULL RODS AND PUMP. TEST BOP TO 2000 PSI. PULL TBG.
2. SET CIBP AT 4200' - CAP W/100' CMT. PRESSURE TEST CSG TO 1000 PSI.
3. PERF CSG @ 2535' W/4 SPF. RIH W/OPEN ENDED TBG TO PBTD (4100'). CIRC 4½" CSG AND 4½" x 9 5/8" ANNULUS W/9.5 PPG (MIN) BRINE WATER CONTAINING 25-100 LB SACK SALT GEL PER 100 BBL. (APPROX VOL IS 200 BBL.)
4. PULL TBG TO 2535'. ESTABLISH CIRC THROUGH TBG ANNULUS & CSG x CSG ANNULUS. SPOT A 30 SX PLUG OF CMT (CLASS C, 3% CACL2) BY BALANCED PLUG METHOD. WOC. PRESSURE TEST PLUG TO 500 PSI.
5. PERF CSG @ 1320' AND @ 50' W/4 SPF. RIH W/OPENED TBG TO TAG TOC ON FIRST PLUG (SHOULD BE 2435' MIN. OTHERWISE SPOT CMT TO MAKE UP THE DIFFERENCE) PULL TBG TO 1320' AND SPOT A 30 SX PLUG OF CLASS C, 3% CACL2, BY BALANCED PLUG METHOD. KEEP BOTH ANNULI OPEN. PULL TBG TO 50' AND CIRC CMT TO SURFACE FOR FINAL PLUG.
6. CUT WELLHEAD OFF AND INSTALL PERMANENT DRY HOLE MARKER. CLEAN AND LEVEL LOCATION.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED D. F. Lowe TITLE SR ADMIN. DATE 7-26-84

APPROVED BY ORIGINAL SIGNED BY LARRY BROOKS GEOLOGIST - NMOCD TITLE JUL 31 1984 DATE JUL 31 1984

CONDITIONS OF APPROVAL, IF ANY:

NEW MEXICO OIL CONSERVATION COMMISSION
FIELD TRIP RE[illegible]

INSPECTION	CLASSIFICATION	FACILITY	HOURS	QUARTER HOURS

Name B. W. Weaver Date 2-25-85 Miles _____ District _____

Time of Departure _____ Time of Return _____ Car No. 6[illegible]

In the space below indicate the purpose of the trip and the duties performed, listing wells or leases visited and any action taken.

Signature _____

1 well O-7-23-26 EXXON Corp Newman #1 (P&A) Set Cast Iron Bridge Plug @ 4200 Test Casing to 1000 PSI Would Not Hold Ran 2nd CIBP set at 4168 and Test to 1000 PSI Would Not Hold Put 10 SX Cement on Top of Bridge Plug Let Set

2-26-85

Test Casing to 1000 PSI Would Not Test Ran Packer and Found Hole @ 3445 Squeezed With 50 SX Class C 2% CC

2-27-85

Pressured up on Squeeze Job Test to 1000 PSI O.K Pulled Packer Perforated Casing @ 2535 Tryed to Circulate Could Not Set 20 SX Class C 2% CC Tagged @ 2304 Perforated @ 1320 Circulated With Mud to Surface With mud and Spotted 30 SX Class C 3% CC. Perfor @ 50 Ft and Circ Cement to Surface

Mileage	Per Diem	Hours
UIC _____	UIC _____	UIC _____
RFA _____	RFA _____	RFA _____
Other _____	Other _____	Other _____

TYPE INSPECTION PERFORMED

H = Housekeeping
P = Plugging
C = Plugging Cleanup
T = Well Test
R = Repair/Workover
F = Waterflow
M = Mishap or Spill
W = Water Contamination
O = Other

INSPECTION CLASSIFICATION

U = Underground Injection Control - Any inspection of or related to injection project, facility, or well or resulting from injection into any well. (SWD, 2ndry injection and production wells, water flows or pressure tests, surface injection equipment, plugging, etc.)
R = Inspections relating to Reclamation Fund Activity
O = Other - Inspections not related to injection or The Reclamation Fund

E = Indicates some form of enforcement action taken in the field (show immediately below the letter U, R or O)

NATURE OF SPECIFIC WELL OR FACILITY INSPECTED

D = Drilling
P = Production
I = Injection
C = Combined prod. inj. operations
S = SWD
U = Underground Storage
G = General Operation
F = Facility or location
M = Meeting
O = Other

15' K.B. to G.L.

NEW MEXICO OIL CONSERVATION COMMISSION
DRAWER DD
ARTESIA, NEW MEXICO

FIELD REPORT FOR CEMENTING OF WELLS

Operator	Lease	Well #
Hanagan Pet. Corp.	Newman Com.	1

Location of Well	Unit	Section	Township	Range	County
1650 2300 E	O	7	23	26	Eddy

Drilling Contractor	Type of Equipment
Sidwell & Monnco	CT & Rotary

* Witness

APPROVED CASING PROGRAM Estimated approval 2-13-75

Size of Hole	Size of Casing	Weight Per Foot	New or Used	Depth	Sacks Cement
20	16"	65#		100	225 circ.
14¾"+12¼"	9⅝"	36+40		2500	800 circ.
8½"+7⅞"	5½"	17+20		11700	500

Casing Data: 15.00 FT K.B TO G.L.

~~Surface~~ INTER 82 joints of 9⅝ inch 40 36 # Grade K-55 NEW 8RT STC

RANGE 3 (Approved) (~~Rejected~~) LONE STAR

Inspected by Leon Bergstrom date 5-16-75

Cementing Program

Size of hole 14¾-1055 12¼-2480 Size of Casing 9⅝ Sacks cement required

Type of Shoe used GUIDE Float collar used INSERT Btm 3 jts welded YES

of hole 2480 KB Set 2480 Feet of 9⅝ Inch 36&40# Grade K-55 new 8rd STC

New-used csg. @ 2480 KB with 150 sacks neat cement around shoe 2% CA Cl2

+ 900 sax Howco Lite additives ¼ Flocele +2% CA Cl2

Plug down @ 4:15 (AM) (■) Date 5-17-75

Cement circulated YES No. of Sacks 65 SX CIR TO PIT

Cemented by HALLIBURTON Witnessed by Leon Bergstrom

Temp. Survey ran @ (AM) (PM) Date top cement @

Casing test @ (AM) (PM) Date

Method Used Witnessed by

Checked for shut off @ (AM) (PM) Date

Method used Witnessed by

Remarks:

NOTE: FULL RETURNS THROUGHOUT DRILLING & CEMENTING OPERATIONS. CMT FELL 2FT IN 10MIN AFTER PLUG DN ON INTERMEDIATE CSG. NO SIGNIFICANT "RATE OF PENETRATION" CHANGE FROM SURFACE TO 2480'

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LAND OFFICE		
OPERATOR	/	

RECEIVED
NEW MEXICO OIL CONSERVATION COMMISSION
MAY 20 1975
O. C. C.
ARTESIA, OFFICE

Form C-103
Supersedes Old C-102 and C-103
Effective 1-1-65

5a. Indicate Type of Lease State [X] Fee [ ]

5. State Oil & Gas Lease No. K-4761-3

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL [ ] GAS WELL [X] OTHER-

7. Unit Agreement Name ----------

2. Name of Operator: Hanagan Petroleum Corporation ✓

8. Farm or Lease Name: Newman-Com

3. Address of Operator: P. O. Box 1737 Roswell, New Mexico 88201

9. Well No. 1

4. Location of Well: UNIT LETTER O, 2300 FEET FROM THE East LINE AND 660 FEET FROM THE South LINE, SECTION 7 TOWNSHIP 23S RANGE 26E NMPM.

10. Field and Pool, or Wildcat: Wildcat

15. Elevation *(Show whether DF, RT, GR, etc.)*: 3438 GR

12. County: Eddy

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	[ ]	PLUG AND ABANDON	[ ]	REMEDIAL WORK	[X]	ALTERING CASING	[ ]
TEMPORARILY ABANDON	[ ]			COMMENCE DRILLING OPNS.	[ ]	PLUG AND ABANDONMENT	[ ]
PULL OR ALTER CASING	[ ]	CHANGE PLANS	[ ]	CASING TEST AND CEMENT JOB	[X]		
OTHER	[ ]			OTHER	[ ]		

17. Describe Proposed or Completed Operations *(Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any propose work)* SEE RULE 1103.

5/12/75: Started drilling operations w/Rotary Moranco Contractor, 5/12/75 T.D. Ream 6" hole to 20" hole to 96' ran 3 Jts. 16' 65# Casing, set @ 96' w/180 sx. Class "C" + 2% Ca CL. Plug down @ 3:10 PM 5/12/75 cement circ., w/80 sx. excess, 1.32 Slurry Vol. cu. ft./sx. 75° temp. when Slurry mixed, est. fm. temp. 65°, compressive strenght 565#, tested csg. w/500# 30", no press drop, drlg. Plug 3:00 AM 5/13/75 WOC 12 hrs.

5/17/75: T.D. 2480' sd. & lm. (14-3/4" & 12¼" hole), Ran 60 jts. 9-5/8" 40# ST&C & 36# LT&C csg. set @ 2480' & cmt. w/900 sx. Howco Light ¼# flocel 2% Ca Cl + 150 sx. Class "C w/2% Ca Cl, plug down 4:15 AM 5/17/75. Cement circ. w/65 sx. excess, 5/17/75 11:00 PM press up csg. 1800#/30", no press drop. Began making new hole @ 12:00 PM 5/17/75.

Witnessed by Leon Bergstrom
Field Supervisor

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED M. L. Southerland TITLE Agent DATE 5/19/75

APPROVED BY Leon Bergstrom TITLE SUPERVISOR, DISTRICT II DATE MAY 20 1975

CONDITIONS OF APPROVAL, IF ANY:

Submit to Appropriate
District Office
State Lease - 6 copies
Fee Lease - 5 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
2040 Pacheco St.
Santa Fe, NM 87505

Form C-105
Revised 1-1-89

WELL API NO. 30-015-31466

5. Indicate Type Of Lease STATE [X] FEE [ ]

6. State Oil & Gas Lease No. VB464

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well: OIL WELL [ ] GAS WELL [X] DRY [ ] OTHER

b. Type of Completion: NEW WELL [X] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF RESVR. [ ] OTHER

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7. Lease Name or Unit Agreement Name: OXY Honest John State

2. Name of Operator: OXY USA WTP Limited Partnership

8. Well No. #1

3. Address of Operator: P.O. Box 50250 Midland, TX 79710-0250

9. Pool name or Wildcat: Undesignated Carlsbad Morrow, S.

4. Well Location
Unit Letter G : 1980 Feet From The north Line and 1700 Feet From The east Line
Section 18 Township 23S Range 26E NMPM Eddy County

10. Date Spudded	11. Date T.D. Reached	12. Date Compl. (Ready to Prod.)	13. Elevations (DF & RKB, RT, GR, etc.)	14. Elev. Casinghead
3/14/01	4/28/01	7/10/01	3484'	

15. Total Depth	16. Plug Back T.D.	17. If Multiple Compl. How Many Zones?	18. Intervals Drilled By	Rotary Tools	Cable Tools
11780'	11726'			R	

19. Producing Interval(s), of this completion - Top, Bottom, Name
11612-11618'

20. Was Directional Survey Made
No

21. Type Electric and Other Logs Run
DLL/MLL/CZDL/CNL/GRL

22. Was Well Cored
No

23. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	48#	718'	17-1/2"	1016sx-surface	N/A
9-5/8"	36#	2807'	12-1/4"	980sx - circulate	N/A
7"	26#	9470'	8-3/4"	725sx-CBL-3260'	N/A

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN
4-1/2"	8933'	11780'	400sx	

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-3/8"	11260'	11260'

26. Perforation record (interval, size, and number)
4SPF @ 11612-11618' Total 24 holes

27. ACID, SHOT, FRACTURE, CEMENT, SQEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
11612-11618'	1500gal 7-1/2% NEFE HCl Acid
11612-11618'	7350g 70Q foam w/ 25040# sand

28. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)	Well Status (Prod. or Shut-in)
7/22/01	Flwg	Prod

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio
8/22/01	24	21/64		0	1842	9	

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API -(Corr.)
557			0	1842	9	

29. Disposition of Gas (Sold, used for fuel, vented, etc.)
Sold

Test Witnessed By
G. Henrich

30. List Attachments
C-103, C-104, Dev Svy, Logs (1set)

31. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature _____ Printed Name David Stewart Title Sr. Reg Analyst Date 9/5/01

Submit 3 Copies To Appropriate District Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-103
Revised March 25, 1999

WELL API NO. 30-015-31466
5. Indicate Type of Lease STATE ☒ FEE ☐
6. State Oil & Gas Lease No. VB 464

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: OXY Honest John State

1. Type of Well: Oil Well ☐ Gas Well ☒ Other
2. Name of Operator: OXY USA WTP Limited Partnership 192463
8. Well No. 1
3. Address of Operator: P.O. BOX 50250 MIDLAND, TX 79710-0250
9. Pool name or Wildcat: Undsg. Carlsbad Morrow, South
4. Well Location
Unit Letter G : 1980 feet from the NORTH line and 1700 feet from the EAST line
Section 18 Township 23S Range 26E NMPM County Eddy
10. Elevation (Show whether DR, RKB, RT, GR, etc.) 3484

11. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☒	PLUG AND ABANDONMENT ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPLETION ☐	CASING TEST AND CEMENT JOB ☒	
OTHER: ☐		OTHER: ☐	

12. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompilation.

See other side

MAR 2001
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OCD - ARTESIA

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE [signature] TITLE REGULATORY ANALYST DATE 3/23/01

Type or print name DAVID STEWART Telephone No. 915-685-5717

(This space for State use)

APPPROVED BY ORIGINAL SIGNED BY TIM W. GUM DISTRICT II SUPERVISOR TITLE DATE MAR 27 20

Conditions of approval, if any:

NOTIFIED NMOCD 3/13/01 OF SPUD. MIRU UTI 207, SPUD WELL @ 1400hrs MST 3/14/01. DRILL 17-1/2" HOLE TO 156' & LOST RETURNS, DRY DRILL TO TD @ 719', 3/15/01, PUMP SWEEP. RIH W/ 13-3/8" 48# H40 CSG, SET @ 718'. M&P 200sx CL H W/ 10% A10B + 10# LCM-1 + .25#/sx CELLOFLAKES + 1% $CaCl_2$ FOLLOWED BY 366sx 65/35 C/POZ W/ 6% BENTONITE + 2% $CaCl_2$ + 5#/sx LCM-1 FOLLOWED BY 200sx CL C W/ 2% $CaCl_2$, DISP W/ FW, PLUG DOWN 3/16/01, CEMENT DID NOT CIRC, WOC-5hrs, NMOCD NOTIFIED BUT DID NOT WITNESS. RIH W/ TEMP SVY, TOC @ 116'. RIH W/ 1" TO 155', M&P 50sx CL C W/ 5% $CaCl_2$, POOH, WOC-2hr. RIH & TAG @ 108', M&P 50sx CL C W/ 5% $CaCl_2$, POOH, WOC-2hr. RIH & TAG @ 90', M&P 150sx CL C W/ 2% $CaCl_2$, CIRC 20sx CMT TO PIT, NMOCD NOTIFIED BUT DID NOT WITNESS. CUT OFF CASING, WELD ON WELL HEAD, TEST TO 500#, OK. NU BOP & TEST BOP & CASING TO 500#, OK. TEST PIPE RAMS & HYDRIL TO 500#, OK. RIH & TAG, DRILL OUT & DRILL AHEAD 3/17/01.

DRILL 12-1/4" HOLE TO TD @ 2807', 3/20/01, CHC. RIH W/ 9-5/8" 36# CSG & SET @ 2807'. M&P 780sx 35/65 POZ/C W/ 6% BENTONITE + 2% $CaCl_2$ + 5#/LCM-1 FOLLOWED BY 200sx Cl C CMT W/ 2% $CaCl_2$, DISP W/ FW, PLUG DOWN 3/20/01, CIRC 194sx TO PIT, WOC-6hrs. NMOCD NOTIFIED BUT DID NOT WITNESS. CUT OFF CSG & INSTALL B SEC, TEST TO 1500#, OK. NU BOP & CHOKE MANIFOLD, TEST BLIND RAMS, PIPE RAMS, CHOKE LINES, CHOKE MANIFOLD AND SAFETY VALVES TO 5000#, OK. TEST HYDRIL, MUD LINES AND CSG TO 2500#, OK. TOTAL WOC-18hrs. RIH, DO CMT & SHOE, DRILL NEW FORMATION, TEST CSG, OK. DRILL AHEAD 3/21/01.

Form 3160-5 Attachment
Mayne & Mertz, Inc.
Bluewater-Federal No. 1
January 31, 1986

Plugged and abandoned as follows:

1.) Displaced hole w/ 10 ppg brine water.

2.) Set cmt plugs from 4785' to 4585' and 3662' to 3562'.

3.) Cut off 4-1/2" csg @ 2600'(w/ acid cutter) and pulled.

4.) Set cmt plug across csg-cut from 2650' to 2525', tagged cmt top @ 2525'.

5.) Set cmt plug across 8-5/8" csg shoe from 1650' to 1550', tagged cmt top @ 1550', pumped 15 sacks cmt on top of plug.

6.) Set 50' cmt plug at surface.

7.) Set 8-5/8" dry hole marker, cut anchors off below ground level, filled pits and cleaned location.

Date plugging operations began:	1/17/86
Date plugging operations completed:	1/22/86
Date plugging procedure approved:	12/11/85
Casing remaining in hole:	2456' of 4-1/2" 1596' of 8-5/8" 281' of 13-3/8"

Form 3160-5
(November 1983)
(Formerly 9-331C)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Budget Bureau No. 1004-0135
Expires August 31, 1985

NM OIL CONS. COMMISSION
Drawer DD
Artesia, NM 88210

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: NM-19422
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT AGREEMENT NAME:

OIL WELL ☐ GAS WELL ☒ OTHER Dry

2. NAME OF OPERATOR: Mayne & Mertz, Inc.
8. FARM OR LEASE NAME: Bluewater-Federal
3. ADDRESS OF OPERATOR: P. O. Box 183, Midland, TX 79702
9. WELL NO.: 1
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1673' FWL & 660' FSL of Sec.
10. FIELD AND POOL, OR WILDCAT: Wildcat West Dark Canyon Delaware
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 18, T-23-S, R-26-E

RECEIVED BY
MAR 18 1986
O. C. D.
ARTESIA, OFFICE

30-015-24641

14. PERMIT NO.: Unknown
15. ELEVATIONS (Show whether DF, RT, GR, etc.): KDB: 3424'
12. COUNTY OR PARISH: Eddy
13. STATE: New Mexico

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☒	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

See Attachment

BUREAU OF LAND MANAGEMENT
RECEIVED
FEB 13 1986
DIST. 6 N.M.
Carlsbad, New Mexico

18. I hereby certify that the foregoing is true and correct

SIGNED Taylor Mayne TITLE President DATE 2/3/86

(This space for Federal or State office use)

APPROVED BY Orig. Sgd. Charles S. Dahlen TITLE _____ DATE 3-18-86

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Form 3160-4
(November 1983)
(formerly 9-330)

NM OIL CONS. COMMISSION
Drawer DD
Artesia, NM 88210

Form approved.
Budget Bureau No. 1004-0137
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

5. LEASE DESIGNATION AND SERIAL NO.: NM-19422

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Bluewater-Federal

9. WELL NO.: 1

10. FIELD AND POOL, OR WILDCAT: Wildcat ~~West Dark Canyon~~ Delaware

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 18, T-23-S, R-26-E

12. COUNTY OR PARISH: Eddy

13. STATE: New Mexico

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

RECEIVED BY
FEB 17 1986
BUREAU OF LAND MANAGEMENT
CARLSBAD, OFFICE

RECEIVED
FEB 13 1986
DIST. 6 N.M.
Carlsbad, New Mexico

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☒ Other

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other Plugged & Abandoned

2. NAME OF OPERATOR: Mayne & Mertz, Inc.

3. ADDRESS OF OPERATOR: P. O. Box 183, Midland, TX 79702

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements.*)
At surface: 1673' FWL & 660' FSL
At top prod. interval reported below: same
At total depth: same

14. PERMIT NO.: Unknown — DATE ISSUED: 10/14/83

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
10/26/83	11/8/83	12/30/83	RKB 3425' (datum)	3411'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
5057'	plugged		→	0 - TD	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: none - plugged & abandoned

25. WAS DIRECTIONAL SURVEY MADE: Totco

26. TYPE ELECTRIC AND OTHER LOGS RUN: CNL/GR/ DLL

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	54.5	281'	17-1/2"	500 sks	none
8-5/8"	28.0	1596'	12-1/4"	580 sks	none
4-1/2"	10.5	5056'	7-7/8"	850 sks	2600'

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (*Interval, size and number*)

4926' - 4944', 18 shots @ 1 spf
4795' - 4851', 15 shots @ 1 spf
4684' - 4756', 18 shots @ 1 spf

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
4926' - 4944'	2000 gals 7-1/2% NEFE
4795' - 4851'	2000 gals 7-1/2% NEFE, 40,000 gals & 44,000# sd
4684' - 4756'	3000 gals 7-1/2% NEFE, 35,000 gals & 35,000# sd

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
never produced		plugged & abandoned

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
							Post IP-2

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
						2-21-86

ACCEPTED FOR RECORD
FEB 13 1986
CARLSBAD, NEW MEXICO

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY: Y+A

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Jay Lee Mayne TITLE President DATE 2/7/86

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the

Form 9-331
Dec. 1973

NM OIL CONS. COMMISSION
Drawer DD
Artesia, NM 88210

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED
JAN 19 10 24 AM '84
BUR. OF LAND MGMT
ROSWELL DISTRICT

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well ☑ gas well ☐ other

2. NAME OF OPERATOR
Mayne & Mertz, Inc.

3. ADDRESS OF OPERATOR
P. O. Box 183, Midland, TX 79702

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1673' FWL & 660' FSL of Sec.
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
NM-19422

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Bluewater - Federal

9. WELL NO.
1

10. FIELD OR WILDCAT NAME
~~West Dark Canyon~~ Delaware

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 18, T-23-S, R-26-E

12. COUNTY OR PARISH
Eddy

13. STATE
New Mexico

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
KDB: 3424'

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other) Casing & cementing Report			

RECEIVED BY
MAY 11 1984
O. C. D.
ARTESIA, OFFICE

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

O.K. per A. Lopez

CASING: 281' of 13-3/8" / 54.5# / J-55 / STC
Date set - 10/28/83

CEMENTING: Lead - 100 sks Halliburton Lite
Tail - 400 sks Class "C" w/2% $CaCl_2$
Top of cement @ surface

PRESSURE TEST: 1000 psi held 30 mins with no pressure drop.

Subsurface Safety Valve: Manu. and Type Halliburton Insert Float Valve Set @ 240 Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED [signature] TITLE President DATE 11/12/84

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

ACCEPTED FOR RECORD
MAY 10 1984

*See Instructions on Reverse Side

NEW MEXICO

Form 9-331
Dec. 1973

NM OIL CONS. COMMISSION
Drawer DD
Artesia, NM

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED
JAN 19
ROSWELL, NEW MEXICO

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

MAY 14 1984
O. C. D.
ARTESIA, OFFICE

1. oil well ☑ gas well ☐ other

2. NAME OF OPERATOR
Mayne & Mertz, Inc.

3. ADDRESS OF OPERATOR
P. O. Box 183, Midland, TX 79702

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1673' FWL & FSL of Sec.
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
882[illegible]

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Bluewater - Federal

9. WELL NO.
1

10. FIELD OR WILDCAT NAME W/C
~~West Dark Canyon~~ Delaware

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 18, T-23-S, R-26-E

12. COUNTY OR PARISH
Eddy

13. STATE
New Mexico

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
KDB: 3424'

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other) Casing & cementing Report			

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

CASING: 1596' of 8-5/8" / 28# / J-55/ STC
Date set - 11/2/83

CEMENTING: 580 sks class "C" w/ 2% $CaCl_2$
Top of cement @ surface

PRESSURE TEST: 1000 psi held 30 mins with no pressure drop

Subsurface Safety Valve: Manu. and Type Halliburton float collar Set @ 1555 Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED [signature] TITLE President DATE 1/12/84

(This space for Federal or State office use)

APPROVED BY [signature] TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

ACCEPTED FOR RECORD
MAY 10 1984
Carlsbad NEW MEXICO

*See Instructions on Reverse Side

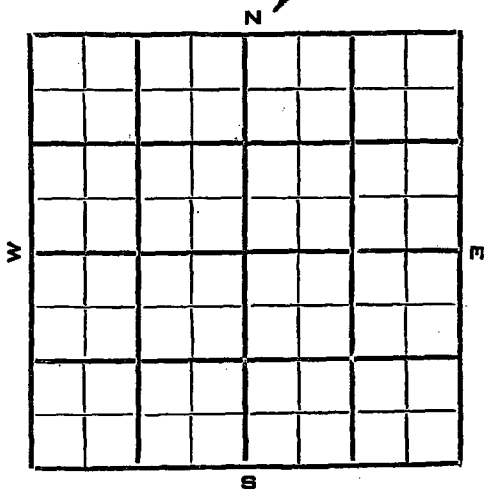
WILDCAT

SCOUT REPORT

NEW MEXICO

OIL CONSERVATION COMMISSION

30-015-00375



Company E. P. Moran

Farm Name Ramuz Well No. 1

Land Classification State

Sec. 18 Twp. 23 Range 26 County Eddy

Feet from Line: 660 N. S. E. 1980 W.

Elevation Method

Contractor Moran Drilling Company Scout

Spudded 1-18-40 Completed 8-17-40 Initial Production

Bond Status

Amount Casing and Cementing Record

Size	Feet	Inches	Sax Cement

Tubing Record

ACID RECORD

Gals.

Top Pay TD

TA	
TS	
BS	
TRS	
TBL	
TWD	

SHOOTING RECORD

No. of Quarts	Shot at	Feet
No. of Quarts	Shot at	Feet
S/O	S/O 1559	S/O
S/O	S/O	S/O

DATE	
	Spudded
JAN 31 '40	✓
FEB 7 '40	TD 3455 (Salt found)
FEB 14 '40	✓
FEB 21 '40	✓
FEB 28 '40	✓
MAR 6 – '40	✓
MAR 13 '40	✓
MAR 20 '40	✓
MAR 27 '40	✓
APR 3	✓
APR 10	✓
APR 17	✓
APR 24	✓
MAY 1	✓
MAY 8	
MAY 15	
MAY 22	
MAY 29	
JUN 5	
JUN 12	
JUN 18	
JUN 26	
JUL 2	TD 1660 s/o

DATE	
JUL 10	TD 1660 & prep for 7" csg
JUL 17	
JUL 24	
JUL 31	S.O.O.
AUG 7	
AUG 14	
AUG 21	T.D. 1808 S
	P & A
	H & W 1780

Form C-102

DUPLICATE

NEW MEXICO OIL CONSERVATION COMMISSION

Santa, Fe, New Mexico

RECEIVED AUG 14 1940 OBBS OFFICE

MISCELLANEOUS NOTICES

Submit this notice in triplicate to the Oil Conservation Commission or its proper agent before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of notice by checking below:

NOTICE OF INTENTION TO TEST CASING SHUT-OFF		NOTICE OF INTENTION TO SHOOT OR CHEMICALLY TREAT WELL	
NOTICE OF INTENTION TO CHANGE PLANS		NOTICE OF INTENTION TO PULL OR OTHERWISE ALTER CASING	X
NOTICE OF INTENTION TO REPAIR WELL			
NOTICE OF INTENTION TO DEEPEN WELL		NOTICE OF INTENTION TO PLUG WELL	X

Carlsbad, New Mexico (Place) August 9 1940 (Date)

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

Gentlemen:

Following is a notice of intention to do certain work as described below at the

E Paul Moran (Company or Operator) #1 Ramuz (Lease) Well No. 1 in NE¼NW¼

of Sec. 18, T. 23 S, R. 26 E, N. M. P. M., Wildcat Field,

Eddy County.

FULL DETAILS OF PROPOSED PLAN OF WORK

FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS OF THE COMMISSION

Struck water(salt) at 1808' and came up aproximately 1500' in the hole. We are cementing this water with 10 sacks of cement. Will leave in the hole between 200 and 250' of cemented pipe which we ran to shut off water encountered at 1565'. After balance of pipe is pulled willfill hole with mud up to 250ft from the surface and cement with 10 sacks of cement to protect whatever surface waters there may be above, then will mud hole up to near the surface and palce a cement cap with regulation 4" pipe as marker for this well

Approved AUG 14 1940, 19

except as follows:

E Paul Moran
Company or Operator

By

Position

Send communications regarding well to

Name

Address

OIL CONSERVATION COMMISSION,

By Roy Yarbrough

Title OIL & GAS INSPECTOR

DUPLICATE

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

NOTICE OF INTENTION TO DRILL

RECEIVED
MAY 31 1940
HOBBS OFFICE

Notice must be given to the Oil Conservation Commission or its proper agent and approval obtained before drilling begins. If changes in the proposed plan are considered advisable, a copy of this notice showing such changes will be returned to the sender. Submit this notice in triplicate. One copy will be returned following approval. See additional instructions in Rules and Regulations of the Commission.

CARLSBAD, N. M. (Place) Jan. 10, 1940 (Date)

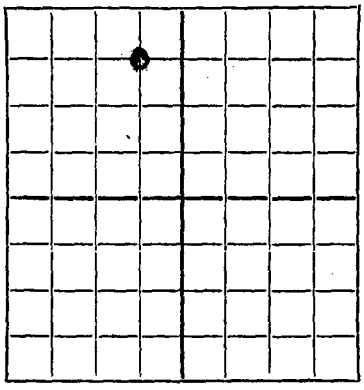
OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico

Gentlemen:

You are hereby notified that it is our intention to commence the drilling of a well to be known as

RAMUZ (Company or Operator) Well No. 1 in (Lease)

of Sec. 18, T. 23 S, R. 26E, N. M. P. M., Dark Canyon Field, Eddy County.



AREA 640 ACRES
LOCATE WELL CORRECTLY

The well is 660 ft feet [N.] [S.] of the North line and 1980 ft feet [E.] [W.] of the West line of Sec 18 Twp. 23 S Rnge. 26 E.

(Give location from section or other legal subdivision lines. Cross out wrong directions.)

If state land the oil and gas lease is No. _____ Assignment No. _____

If patented land the owner is Ramuz, Carlsbad, N. M.

Address _____

If government land the permittee is _____

Address _____

The lessee is D. C. DeVito

Address Scharbauer Hotel, Midland, Texas

We propose to drill well with drilling equipment as follows:

Model Super D Forth Worth spudder

The status of a bond for this well in conformance with Rule 39 of the General Rules and Regulations of the Commission is as follows: Appld for American Emp. Ins. Co.

We propose to use the following strings of casing and to land or cement them as indicated:

Size of Hole	Size of Casing	Weight Per Foot	New or Second Hand	Depth	Landed or Cemented	Sacks Cement
10 "	8¼ "	30#	S. H.	Approx 150'	Cmt.	25 Sx.
8 "	7 "	20#	New	1350'	Cmt. 100 sx. if it is neccessary to use this pipe	

If changes in the above plan become advisable we will notify you before cementing or landing casing. We estimate that the first productive oil or gas sand should occur at a depth of about 1500 feet.

Additional information:

Although the salt section should not be found on this location it will be protected according to the rules and regulations if it should be encountered.

MAY 31 1940

Approved _____, 19____
except as follows:

Sincerely yours,
E. Paul Moran
E. Paul Moran
Company or Operator

By Self.

Position Owner

Send communication regarding well to

Name E. Paul Moran P.O.B. 409

Address Carlsbad, N. M.

OIL CONSERVATION COMMISSION,
By Ray Yarbrough
Title OIL & GAS INSPECTOR

Form C-102

DUPLICATE

NEW MEXICO OIL CONSERVATION COMMISSION

Santa, Fe, New Mexico

RECEIVED
JUL 12 1940
HOBBS OFFICE

MISCELLANEOUS NOTICES

Submit this notice in triplicate to the Oil Conservation Commission or its proper agent before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of notice by checking below:

NOTICE OF INTENTION TO TEST CASING SHUT-OFF	X	NOTICE OF INTENTION TO SHOOT OR CHEMICALLY TREAT WELL	
NOTICE OF INTENTION TO CHANGE PLANS		NOTICE OF INTENTION TO PULL OR OTHERWISE ALTER CASING	
NOTICE OF INTENTION TO REPAIR WELL		NOTICE OF INTENTION TO PLUG WELL	
NOTICE OF INTENTION TO DEEPEN WELL			

Carlsbad, New Mexico. July 7 1940
Place Date

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

Gentlemen:

Following is a notice of intention to do certain work as described below at the

E. Paul Moran, Company or Operator — Ramuz, Lease — Well No. 1 in NE¼NW¼

of Sec. 18, T. 23 south R. 26 east, N. M. P. M., Wildcat Field,

Eddy County.

FULL DETAILS OF PROPOSED PLAN OF WORK

FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS OF THE COMMISSION

Running 7 inch O.D. to shut-off water. Halliburton doing the cementing job, on~~kkk~~ Tuesday, July 9th. Will drill cement plug on friday, July 12th., and test for shut-off.

Estimated to use 14 sacks of cement.

JUL 12 1940

Approved _____, 19___
except as follows:

OIL CONSERVATION COMMISSION,
By Roy Yarbrough
Title OIL & GAS INSPECTOR

E. Paul Moran,
Company or Operator
By E. Paul Moran
Position _____
Send communications regarding well to
Name E.Paul Moran
Address Carlsbad, New Mexico.

FORM C-103

DUPLICATE

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

RECEIVED
AUG 8 - 1940
HOBBS OFFICE

MISCELLANEOUS REPORTS ON WELL

Submit this report in triplicate to the Oil Conservation Commission or its proper agent within ten days after the work specified is completed. It should be signed and sworn to before a notary public for reports on beginning drilling operations, results of shooting well, results of test of casing shut-offs, result of plugging of well and other important operations, even though the work was witnessed by an agent of the commission. Reports on minor operations need not be signed and sworn to before a notary public. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of report by checking below:

REPORT ON BEGINNING DRILLING OPERATIONS		REPORT ON REPAIRING WELL	
REPORT ON RESULT OF SHOOTING OR CHEMICAL TREATMENT OF WELL		REPORT ON PULLING OR OTHERWISE ALTERING CASING	
REPORT ON RESULT OF TEST OF CASING SHUT-OFF	X	REPORT ON DEEPENING WELL	
REPORT ON RESULT OF PLUGGING OF WELL			

Carlsbad, New Mexico. (Place) August 1 1940 (Date)

OIL CONSERVATION COMMISSION
Santa Fe, New Mexico.
Gentlemen:

Following is a report on the work done and the results obtained under the heading noted above at the

E. Paul Moran (Company or Operator) Ramuz (Lease) Well No. 1 in the NE¼ NW¼ of Sec. 18, T. 23 south, R. 26 east, N. M. P. M., Wildcat Field, Eddy County

The dates of this work were as follows: July 23-25

Notice of intention to do the work was ~~(was not)~~ submitted on Form C-102 on July 7 1940 19..... and approval of the proposed plan was ~~(was not)~~ obtained. (Cross out incorrect words.)

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

After drilling plug, 2 bailers of water came in per hour, prepared well for Halliburton to test for shut off. Halliburton placed 600 lbs. pressure at the casing head and declared it to be a perfect shutoff. Water coming in is what water was absorbed by the open formation . Now bailing and water exhausting.

Witnessed by D. C. De Vito (Name) Independent (Company) (Title)

Subscribed and sworn to before me this 1st day of August, 1940

Notary Public

My Commission expires August 5, 1941

I hereby swear or affirm that the information given above is true and correct.

Name E. Paul Moran

Position Owner

Representing (Company or Operator)

Address

Remarks:

Roy Yarbrough
Name
OIL & GAS INSPECTOR

PLICATE

FORM C-103

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

RECEIVED
NOV 18 1940
HOBBS OFFICE

MISCELLANEOUS REPORTS ON WELL

Submit this report in triplicate to the Oil Conservation Commission or its proper agent within ten days after the work specified is completed. It should be signed and sworn to before a notary public for reports on beginning drilling operations, results of shooting well, results of test of casing shut-offs, result of plugging of well, and other important operations, even though the work was witnessed by an agent of the commission. Reports on minor operations need not be signed and sworn to before a notary public. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of report by checking below:

REPORT ON BEGINNING DRILLING OPERATIONS		REPORT ON REPAIRING WELL	
REPORT ON RESULT OF SHOOTING OR CHEMICAL TREATMENT OF WELL		REPORT ON PULLING OR OTHERWISE ALTERING CASING	
REPORT ON RESULT OF TEST OF CASING SHUT-OFF		REPORT ON DEEPENING WELL	
REPORT ON RESULT OF PLUGGING OF WELL	X		

Carlsbad, New Mexico (Place) Nov 7 1940 (Date)

OIL CONSERVATION COMMISSION
Santa Fe, New Mexico.
Gentlemen:

Following is a report on the work done and the results obtained under the heading noted above at the

E. Paul Moran (Company or Operator) Ramuz (Lease) Well No. 1 in the

Center NE¼NW¼ of Sec. 18, T. 23 south, R. 26 east, N. M. P. M.,

Wildcat Field, Eddy County

The dates of this work were as follows: August 10-15th., Nov.5-6th.,1940

Notice of intention to do the work was (~~was not~~) submitted on Form C-102 on August 9 19 40 and approval of the proposed plan was (~~was not~~) obtained. (Cross out incorrect words.)

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

Cemented bottom water at 1808 feet with 10 sacks. Left 235 feet of 7 inch which was cemented to shut off water encountered at 1563-66' Filled hole with mud up to 225 feet from the surface and cemented with 10 sacks of cement in order to protect any surface waters. Left 100 feet of 8¼ inch surface pipe. Filled hole up with mud and placed a cement cap with regulation 4" pipe as marker.

Witnessed by D.C.De Vito and George Roundey, Independent Operators.
Name Company Title

Subscribed and sworn to before me this 13th day of November, 1940

Notary Public

My Commission expires August 5, 1941

I hereby swear or affirm that the information given above is true and correct.

Name E. Paul Moran

Position Owner

Representing
Company or Operator

Address Carlsbad, New Mexico.

Remarks:

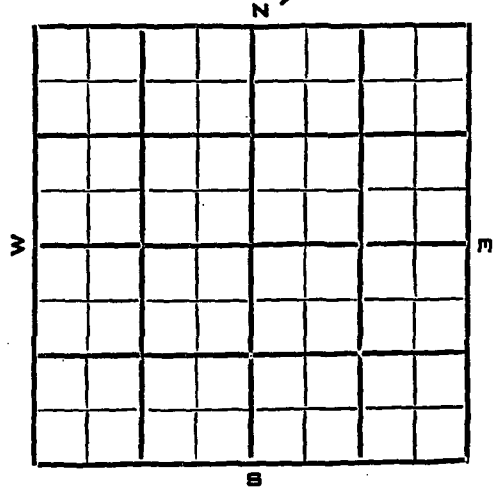
R. O. Yarbrough R. M.
Name

OIL & GAS INSPECTOR
Title

WILDCAT

SCOUT REPORT
NEW MEXICO
OIL CONSERVATION COMMISSION

30-015-00375



Company E. P. [redacted] Moran

Farm Name Ramuz Well No. 1

Land Classification State

Sec. 18 Twp. 23 Range 26 County Eddy

Feet from Line: 660 N. S. E. 1980 W.

Elevation Method

Contractor Moran Drilling Company Scout

Spudded 1-18-40 Completed 8-12-40 Initial Production

Bond Status

Amount Casing and Cementing Record

Size	Feet	Inches	Sax Cement

Tubing Record

ACID RECORD

Gals.

Top Pay TD

TA

TS

BS

TRS

TBL

TWD

SHOOTING RECORD

No. of Quarts Shot at Feet

No. of Quarts Shot at Feet

S/O 46 1563-L L S/O 1559 S/O

S/O S/O S/O

DATE		DATE	
1-14	Spudded	JUL 10	TD 1660 L prepare 7" csg
JAN 31 '40	✓	JUL 17	TD 1660 Ld & C
FEB 7 '40	TD 375 S (SD Lmd)	JUL 24	TD 1660 Ld [illegible]
FEB 14 '40	✓	JUL 31	T.D. 1730 S
FEB 21 '40	✓		S.D.O.
FEB 28 '40	✓	AUG 7	T.D. 1730 S
MAR 6 – '40	✓		[illegible]
MAR 13 '40	✓		[illegible]
MAR 20 '40	✓ to commence drlg [illegible]	AUG 14	✓
MAR 27 '40	✓	AUG 21	T.D. 1808 S
APR 3	✓		
APR 10	✓		P & A
APR 17	✓		
APR 24	✓		
MAY 1	✓		
MAY 8	Ø 551 A		HEXW 1780
MAY 15	Ø 800 A		
MAY 22	TD 1210 A SDO		
MAY 29	Ø 1160 A & L		
JUN 5	TD 1333 L Running		
JUN 12	Ø 1460 L		
JUN 18	Ø 1570 L		
JUN 26	TD 1650 L SD for csg.		

OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

MAY 31 1940

HOBBS, OFFICE

NOTICE OF INTENTION TO DRILL

Notice must be given to the Oil Conservation Commission or its proper agent and approval obtained before drilling begins. If changes in the proposed plan are considered advisable, a copy of this notice showing such changes will be returned to the sender. Submit this notice in triplicate. One copy will be returned holding approval. See additional instructions in Rules and Regulations of the Commission.

CARLSBAD, N. M. (Place) Jan. 10, 1940 (Date)

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico

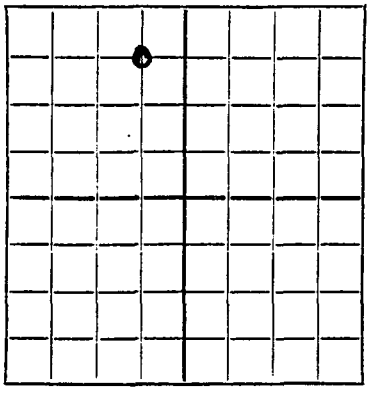
Gentlemen:

You are hereby notified that it is our intention to commence the drilling of a well to be known as

RAMUZ (Company or Operator) Well No. 1 in

of Sec. 18, T. 23 S, R. 26E, N. M. P. M., Dark Canyon (Lease) Field, Eddy County.

N.



AREA 640 ACRES
LOCATE WELL CORRECTLY

The well is 660 ft feet [N.] [S.] of the North line and 1980 ft feet [E.] [W.] of the West line of Sec 18 Twp. 23 S Rnge. 26 E.

(Give location from section or other legal subdivision lines. Cross out wrong directions.)

If state land the oil and gas lease is No. _____ Assignment No. _____

If patented land the owner is Ramuz, Carlsbad, N. M.

Address _____

If government land the permittee is _____

Address _____

The lessee is D. C. DeVito

Address Scharbauer Hotel, Midland, Texas

We propose to drill well with drilling equipment as follows:

Model Super D Forth North Spudder

The status of a bond for this well in conformance with Rule 39 of the General Rules and Regulations of the Commission is as follows: Appld for American Emp. Ins. Co.

We propose to use the following strings of casing and to land or cement them as indicated:

Size of Hole	Size of Casing	Weight Per Foot	New or Second Hand	Depth	Landed or Cemented	Sacks Cement
10 "	8¼ "	30#	S. H.	Approx 150'	Cmt.	25 Sx.
8 "	7 "	20#	New	1350'	Cmt.	100 sx. if it is neccessary to use this pipe.

If changes in the above plan become advisable we will notify you before cementing or landing casing. We estimate that the first productive oil or gas sand should occur at a depth of about 1500 feet.

Additional information:

Although the salt section should not be found on this location it will be protected according to the rules and regulations if it should be encountered.

MAY 31 1940

Approved _____, 19____
Except as follows:

Sincerely yours,
E. Paul Moran
E. Paul Moran
Company or Operator

By Self.

Position Owner

Send communication regarding well to

Name E. Paul Moran P.O.B. 499

Address Carlsbad, N. M.

OIL CONSERVATION COMMISSION,
By Roy Yarbrough
Title OIL & GAS INSPECTOR

DUPLICATE

Form C-102

NEW MEXICO OIL CONSERVATION COMMISSION

Santa, Fe, New Mexico

RECEIVED
JUL 12 1940
HOBBS OFFICE

MISCELLANEOUS NOTICES

Submit this notice in triplicate to the Oil Conservation Commission or its proper agent before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of notice by checking below:

NOTICE OF INTENTION TO TEST CASING SHUT-OFF	X	NOTICE OF INTENTION TO SHOOT OR CHEMICALLY TREAT WELL	
NOTICE OF INTENTION TO CHANGE PLANS		NOTICE OF INTENTION TO PULL OR OTHERWISE ALTER CASING	
NOTICE OF INTENTION TO REPAIR WELL		NOTICE OF INTENTION TO PLUG WELL	
NOTICE OF INTENTION TO DEEPEN WELL			

Carlsbad, New Mexico. July 7 1940
Place Date

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

Gentlemen:

Following is a notice of intention to do certain work as described below at the

E. Paul Moran, Company or Operator — Ramuz, Lease — Well No. 1 in NE¼NW¼

of Sec. 18, T. 23 south R. 26 east, N. M. P. M., Wildcat Field,

Eddy County.

FULL DETAILS OF PROPOSED PLAN OF WORK

FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS OF THE COMMISSION

Running 7 inch O.D. to shut-off water. Halliburton doing the cementing job, on~~this~~ Tuesday, July 9th. Will drill cement plug on friday, July 12th., and test for shut-off.

Estimated to use 14 sacks of cement.

JUL 12 1940

Approved _____, 19___
except as follows:

E. Paul Moran,
Company or Operator

By E. Paul Moran

Position _____

Send communications regarding well to

Name E.Paul Moran

Address Carlsbad, New Mexico.

OIL CONSERVATION COMMISSION,

By Roy Yarbrough

Title OIL & GAS INSPECTOR

FORM C-103

DUPLICATE

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

RECEIVED
AUG 8 - 1940
HOBBS OFFICE

MISCELLANEOUS REPORTS ON WELL

Submit this report in triplicate to the Oil Conservation Commission or its proper agent within ten days after the work specified is completed. It should be signed and sworn to before a notary public for reports on beginning drilling operations, results of shooting well, results of test of casing shut-offs, result of plugging of well, and other important operations, even though the work was witnessed by an agent of the commission. Reports on minor operations need not be signed and sworn to before a notary public. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of report by checking below:

REPORT ON BEGINNING DRILLING OPERATIONS		REPORT ON REPAIRING WELL	
REPORT ON RESULT OF SHOOTING OR CHEMICAL TREATMENT OF WELL		REPORT ON PULLING OR OTHERWISE ALTERING CASING	
REPORT ON RESULT OF TEST OF CASING SHUT-OFF	X	REPORT ON DEEPENING WELL	
REPORT ON RESULT OF PLUGGING OF WELL			

Carlsbad, New Mexico. (Place) August 1 1940 (Date)

OIL CONSERVATION COMMISSION
Santa Fe, New Mexico.
Gentlemen:

Following is a report on the work done and the results obtained under the heading noted above at the

E. Paul Moran (Company or Operator) Ramuz (Lease) Well No. 1 in the

NE¼ NW¼ of Sec. 18, T. 23 south, R. 26 east, N. M. P. M.,

Wildcat Field, Eddy County

The dates of this work were as follows: July 23-25

Notice of intention to do the work was ~~(was not)~~ submitted on Form C-102 on July 7 1940 19.....
and approval of the proposed plan was ~~(was not)~~ obtained. (Cross out incorrect words.)

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

After drilling plug, 2 bailers of water came in per hour, prepared well for Halliburton to test for shut off. Halliburton placed 600 lbs.pressure at the casing head and declared it to be a perfect shutoff. Water coming in is what water was absorbed by the open formation . Now bailing and water exhausting.

Witnessed by D. C. De Vito (Name) Independent (Company) (Title)

Subscribed and sworn to before me this 1st day of August, 1940

Nellie M. Montgomery
Notary Public

My Commission expires August 5, 1941

I hereby swear or affirm that the information given above is true and correct.

Name E. Paul Moran

Position Owner

Representing .....
Company or Operator

Address .....

Remarks:

Roy Yarbrough
Name
OIL & GAS INSPECTOR

Form C-102

DUPLICATE

NEW MEXICO OIL CONSERVATION COMMISSION

Santa, Fe, New Mexico

AUG 14 1940

ROSWELL, NEW MEXICO

MISCELLANEOUS NOTICES

Submit this notice in triplicate to the Oil Conservation Commission or its proper agent before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of notice by checking below:

NOTICE OF INTENTION TO TEST CASING SHUT-OFF		NOTICE OF INTENTION TO SHOOT OR CHEMICALLY TREAT WELL	
NOTICE OF INTENTION TO CHANGE PLANS		NOTICE OF INTENTION TO PULL OR OTHERWISE ALTER CASING	X
NOTICE OF INTENTION TO REPAIR WELL			
NOTICE OF INTENTION TO DEEPEN WELL		NOTICE OF INTENTION TO PLUG WELL	X

Carlsbad, New Mexico (Place) August 9 1940 (Date)

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

Gentlemen:

Following is a notice of intention to do certain work as described below at the

E Paul Moran (Company or Operator) #1 Ramuz (Lease) Well No. 1 in NE¼NW¼

of Sec. 18, T. 23 S, R. 26 E, N. M. P. M., Wildcat Field,

Eddy County.

FULL DETAILS OF PROPOSED PLAN OF WORK

FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS OF THE COMMISSION

Struck water(salt) at 1808' and came up aproximately 1500' in the hole. We are cementing this water with 10 sacks of cement. Will leave in the hole between 200 and 250' of cemented pipe which we ran to shut off water encountered at 1563'. After balance of pipe is pulled willfill hole with mud up to 250' from the surface and cement with 10 sacks of cement to protect whatever surface waters there may be above, then will mud hole up to near the surface and palce a cement cap with regulation 4" pipe as marker for this well

Approved AUG 14 1940, 19

except as follows:

E. Paul Moran.
Company or Operator

By

Position

Send communications regarding well to

Name

Address

OIL CONSERVATION COMMISSION,

By Roy Yarbrough

Title OIL & GAS INSPECTOR

FORM C-103

DUPLICATE

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

NOV 18 1940
RECEIVED
HOBBS OFFICE

MISCELLANEOUS REPORTS ON WELL

Submit this report in triplicate to the Oil Conservation Commission or its proper agent within ten days after the work specified is completed. It should be signed and sworn to before a notary public for reports on beginning drilling operations, results of shooting well, results of test of casing shut-offs, result of plugging of well, and other important operations, even though the work was witnessed by an agent of the commission. Reports on minor operations need not be signed and sworn to before a notary public. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of report by checking below:

REPORT ON BEGINNING DRILLING OPERATIONS		REPORT ON REPAIRING WELL	
REPORT ON RESULT OF SHOOTING OR CHEMICAL TREATMENT OF WELL		REPORT ON PULLING OR OTHERWISE ALTERING CASING	
REPORT ON RESULT OF TEST OF CASING SHUT-OFF		REPORT ON DEEPENING WELL	
REPORT ON RESULT OF PLUGGING OF WELL	X		

Carlsbad, New Mexico (Place) Nov 7 1940 (Date)

OIL CONSERVATION COMMISSION
Santa Fe, New Mexico.
Gentlemen:

Following is a report on the work done and the results obtained under the heading noted above at the

E. Paul Moran (Company or Operator) Ramuz (Lease) Well No. 1 in the

Center NE¼NW¼ of Sec. 18, T. 23 south, R. 26 east, N. M. P. M.,

Wildcat Field, Eddy County

The dates of this work were as follows: August 10-15th., Nov.5-6th.,1940

Notice of intention to do the work was (~~was not~~) submitted on Form C-102 on August 9 19 40 and approval of the proposed plan was (~~was not~~) obtained. (Cross out incorrect words.)

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

Cemented bottom water at 1808 feet with 10 sacks. Left 235 feet of 7 inch which was cemented to shut off water encountered at 1563-66' Filled hole with mud up to 225 feet from the surface and cemented with 10 sacks of cement in order to protect any surface waters. Left 100 feet of 8¼ inch surface pipe. Filled hole up with mud and placed a cement cap with regulation 4" pipe as marker.

Witnessed by D.C.De Vito and George Roundey. Independent Operators.
(Name) (Company) (Title)

Subscribed and sworn to before me this 13th day of November, 1940

Notary Public

My Commission expires August 5, 1941

I hereby swear or affirm that the information given above is true and correct.

Name E. Paul Moran

Position Owner

Representing (Company or Operator)

Address Carlsbad, New Mexico.

Remarks:

R. O. Yarbrough R. M.
Name

OIL & GAS INSPECTOR
Title