

GW - 162

**INSPECTIONS &
DATA**



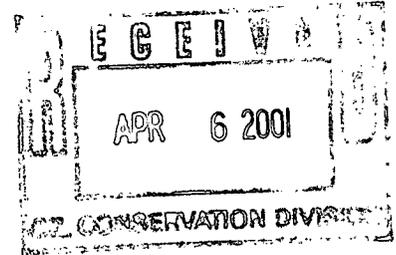
Rudy Quiroz
Process Foreman
Natural Gas & Gas Products

Conoco Inc.
921 W. Sanger
Hobbs, NM 88240
505-393-2153

CERTIFIED MAIL Z 260 102 324
Return Receipt Requested

April 3, 2001

Mr. Wayne Price
Oil Conservation Division
Energy and Minerals Department
1220 South St. Francis Dr.
Santa Fe, NM 87505



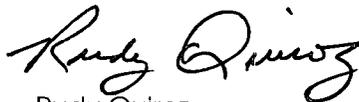
**RE: GW-162 Discharge Plan Underground Water Discharge Lines Testing
And Below Grade Sumps Inspection**

Dear Mr. Price:

In accordance with New Mexico Water Quality Control Commission Regulations the following actions were performed. The Oil Conservation Division in Santa Fe and Hobbs, New Mexico was verbally contacted on March 9, 2001. The Conoco Antelope Ridge Plant gave 72 hour notice that it would be testing the underground discharge line and inspecting below grade sumps. On March 14, 2001 the plant underground wastewater line was tested and the below grade sumps inspected. The results of the pressure test and underground sump inspection are enclosed in this report.

If you have any questions or require additional information, please call me at (505) 393-2153. Thank you for your assistance.

Sincerely,


Rudy Quiroz

CC: Joyce Woodfin
Mark Bishop
File: 215-5-1

State of New Mexico
Energy, Minerals and Natural Resources Department
OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, NM 87501

**DISCHARGE PLAN APPLICATION FOR NATURAL GAS PROCESSING PLANTS,
OIL REFINERIES AND GAS COMPRESSOR STATIONS**
(Refer to OCD Guidelines for assistance in completing the application.)

- I. TYPE: Natural Gas Processing Plant (Renewal GW-162)
- II. OPERATOR: LG&E Natural
ADDRESS: 921 West Sanger, Hobbs, NM 88240
CONTACT PERSON: Ed Sloman PHONE: 505-393-2153
- III. LOCATION: SW/4 SE/4 Section 15 Township 23S Range 34E
Submit large scale topographic map showing exact location.
- IV. Attach the name and address of the landowner(s) of the disposal facility site.
- V. Attach description of the facility with a diagram indicating location of fences, pits, dikes, and tanks on the facility. (See Cover Letter for Changes)
- VI. Attach a description of sources, quantities and quality of effluent and waste solids.
- VII. Attach a description of current liquid and solid waste transfer and storage procedures.
- VIII. Attach a description of current liquid and solid waste disposal procedures.
- IX. Attach a routine inspection and maintenance plan to ensure permit compliance.
- X. Attach a contingency plan for reporting and clean-up of spills or releases.
- XI. Attach geological/hydrological evidence demonstrating that disposal of oil field wastes will not adversely impact fresh water. Depth to and quality of ground water must be included.
- XII. Attach such other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.
- XIII. CERTIFICATION

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: John R. Delaney Title: General Manager

Signature:  Date: 3-13-00

DISTRIBUTION: Original and one copy to Santa Fe with one copy to appropriate Division District Office.

4. **Above Ground Saddle Tanks:** Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.

*Suboil tank pit pattern needs some cleanup
attention - Suboil on concrete pad no containment*

5. **Labeling:** All tanks, drums and containers will be clearly labeled to identify their contents and other emergency notification information.

6. **Below Grade Tanks/Sumps:** All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks must demonstrate integrity on an annual basis. Integrity tests include pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks and/or sumps, or other OCD approved methods. The OCD will be notified at least 72 hours prior to all testing.

7. **Underground Process/Wastewater Lines:** All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity at present and then every 5 years thereafter, or prior to discharge plan renewal. The permittee may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing.

8. **Onsite/Offsite Waste Disposal and Storage Practices:** Are all wastes properly characterized and disposed of correctly? Does the facility have an EPA hazardous waste number? Yes No

ARE ALL WASTE CHARACTERIZED AND DISPOSED OF PROPERLY? YES NO IF NO DETAIL BELOW.

9. **Class V Wells:** Leach fields and other wastewater disposal systems at OCD regulated facilities which inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. All Class V wells that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes will be closed unless it can be demonstrated that groundwater will not be impacted in the reasonably foreseeable future. Closure of Class V wells must be in accordance with a plan approved by the Division's Santa Fe Office. The OCD allows industry to submit closure plans which are protective of human health, the environment and groundwater as defined by the WQCC, and are cost effective. Class V wells that inject domestic waste only must be permitted by the New Mexico Environment Department.

ANY CLASS V WELLS NO YES IF YES DESCRIBE BELOW! Undetermined

10. **Housekeeping:** All systems designed for spill collection/prevention will be inspected weekly and after each storm event to ensure proper operation and to prevent overtopping or system failure. A record of inspections will be retained on site for a period of five years.

11. **Spill Reporting:** All spills/releases will be reported pursuant to OCD Rule 116 and WQCC 1203 to the proper OCD District Office.

12. **Does the facility have any other potential environmental concerns/issues?**

13. **Does the facility have any other environmental permits - i.e. SPCC, Stormwater Plan, etc.?**

14. **ANY WATER WELLS ON SITE ? NO YES IF YES, HOW IS IT BEING USED ?**

Miscellaneous Comments:

*Leaks along base of compressor units need attention
Compressor blowdown stack base needs cleaning*

Number of Photos taken at this site: _____
attachments-

AUGUST 23, 1993

TESTING PROCEDURES FOR SLOP TANK PIPING

DISCONNECTED THE 2" LINE FROM THE 500BBL TANK AND PLUGGED. FROM THE POINT WHERE THE LINE WENT INTO THE GROUND WE BROKE THE UNION AND INSTALLED A TEE WITH A GAUGE AND PRESSURE RECORDER. WE THEN SLOWLY ADDED INSTRUMENT AIR TO LINE UNTIL 5 PSI WAS MET. PRESSURE WAS RECORDED FOR 24 HOURS. UPON REVIEWING THE RECORDER, WE FOUND NO PRESSURE DROP, DURING THE 24 HOUR TEST.

THE SAME PROCEDURE WAS USED IN THE TESTING OF THE 210BBL TANK, WITH SAME RESULTS.

ANTELOPE RIDGE PLANT SUPERVISOR

A handwritten signature in cursive script, reading "Randy Dunaway". The signature is written in black ink and is positioned below the typed name of the supervisor.



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

CHEMICAL ANALYSIS OF WATER

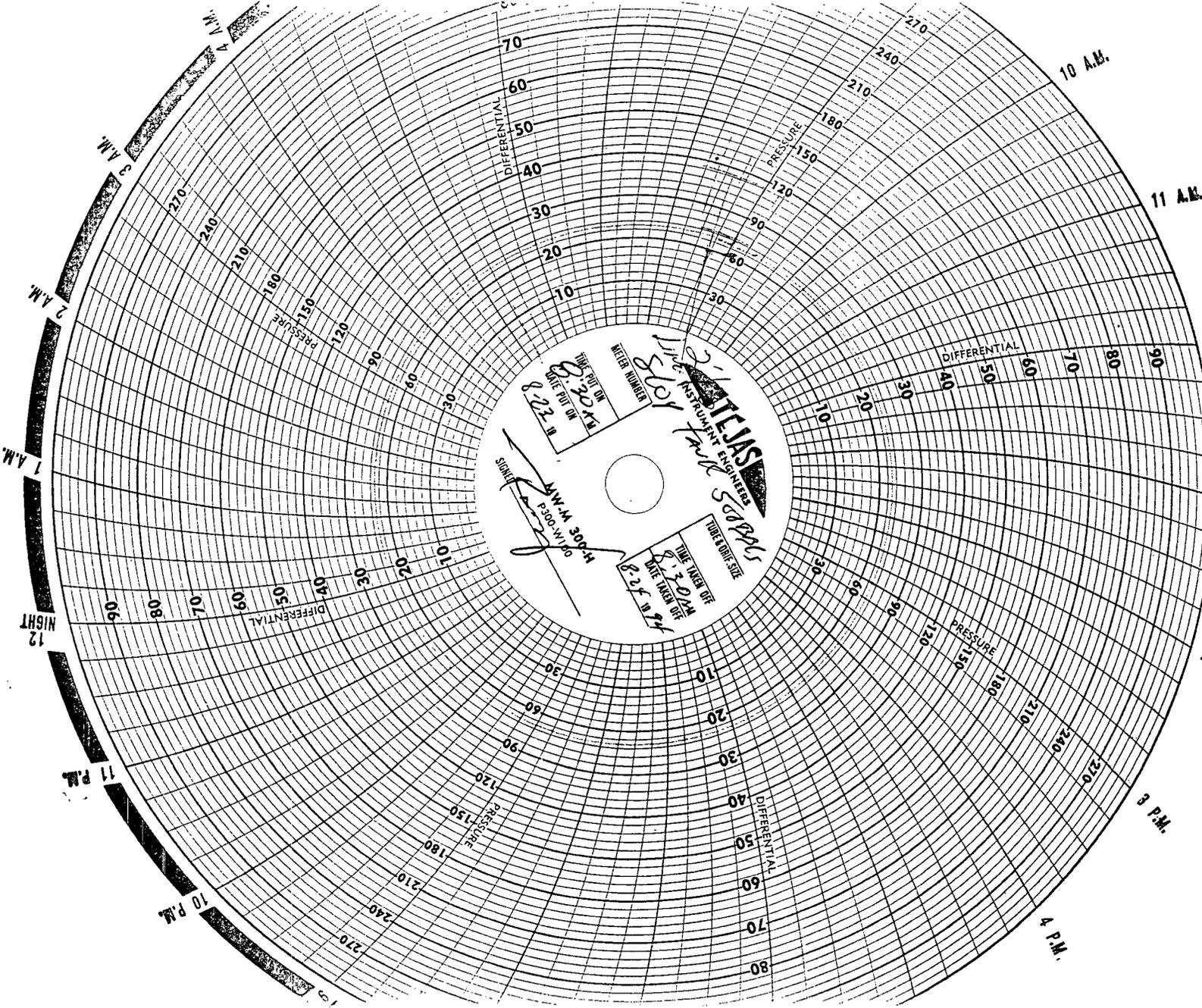
Company : Hadson Gas Gathering
City, St.: 921 W. Sanger
Proj.Name: not supplied
Location : Antelope Ridge Gas Plant
Sample 1 : Produced Water

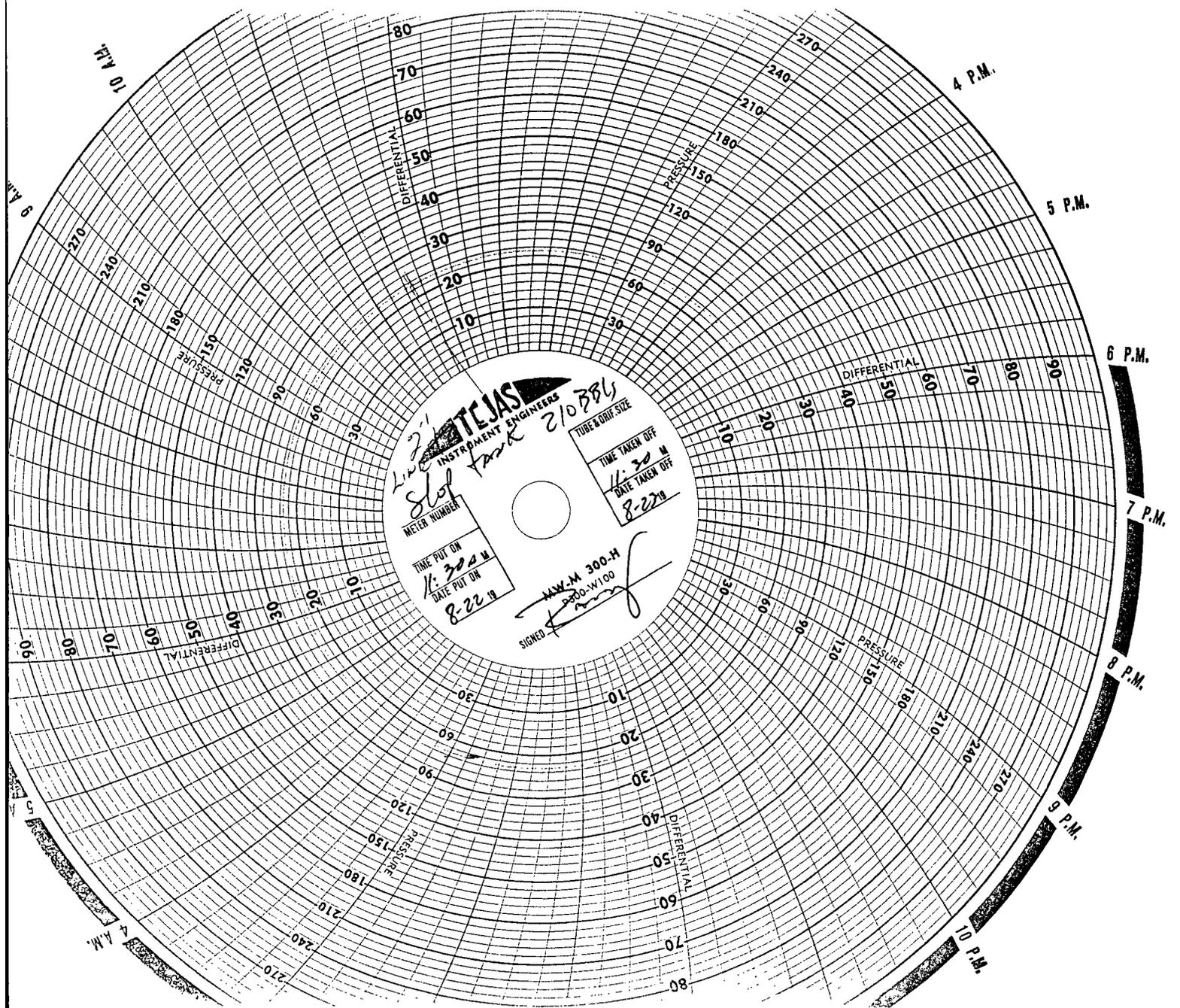
Date : 4/15/94
Lab #: H1612

PARAMETER	RESULT (mg/L) SAMPLE
	1
pH	6.31
Hardness (CaCO ₃)	272
Calcium (CaCO ₃)	92
Magnesium (as CaCO ₃)	180
Sulfate (SO ₄ ⁻)	72.94
Chloride (Cl ⁻)	304
TDS	1960
Carbcnate	nil
Bicarbonate	400
Hydroxide	nil
Conductivity (uS/cm)	1760
Barium	4.32
Strontium	0.96

Michael R. Fowler

Date





~ 3/3/97?

Discharge Plan Application GW - 145
Antelope Ridge Gas Plant

162

1. **TYPE OF OPERATION**

The Antelope Ridge Gas Plant is cryogenic natural gas processing plant. Natural gas comes in from the field via steel pipeline and the free liquid stream is separated out. The gas is then compressed by a gas fired engine driven compressor and dehydrated via a molecular sieve bed. The dry gas is then routed through a series of gas/liquid and gas/gas exchangers, a propane refrigeration unit (cooled by an electric motor driven compressor), a cold separator, an expander turbine and a demethanizer. Liquids that drop out in the exchangers, separator and expander turbine are routed to the demethanizer. Liquid product from the demethanizer is treated by the amine treater and routed to a product (liquid) pipeline. Residue gas from the top of the demethanizer is compressed by a gas fired engine driven compressor and then exits the facility through a gas pipeline.

Total site rated gas fired horsepower is 4008 and total site rated electric horsepower is 660 Hp.

2. **OPERATOR LEGALLY RESPONSIBLE PARTY & LOCAL REPRESENTATIVE**

- a. ConocoPhillips Company Midstream Operations (ConocoPhillips),
Environmental Contact
Joyce Miley
Environmental Consultant
ConocoPhillips Company, Midstream Operations
P.O. Box 2197 – Ponca 2014
Houston, Texas 77252-2197
(281) 293-4498

- b. Site Contact
Kevin Schuster
Plant Foreman
ConocoPhillips Company, Midstream Operations
921 West Sanger
Hobbs, New Mexico 88240
(505) 391-1949

3. **LOCATION OF DISCHARGE FACILITY DESCRIPTION**

The facility is located in SW/4, SE/4, Section 15, Township 23 South, Range 34 East, Lea County, New Mexico. A facility site plan and location map has been included in Appendix A.

4. **LANDOWNERS**

State of New Mexico, Commissioner of Public Lands
P.O. Box 1148
Santa Fe, NM 87504-1148
(505) 827-5760

5. **FACILITY DESCRIPTION**

The facility consists of engine driven gas compressors; a 30 MMscf/day cryogenic gas processing plant, an inlet separator; a mole sieve dehydration unit; an amine unit; liquid handling tanks; measurement equipment; and pipeline valves and appurtenances. Natural gas comes in from the field via steel pipeline and the free liquid stream is separated out. The gas is then compressed and dehydrated via a molecular sieve bed. The dry gas is then routed through a series of gas/liquid and gas/gas exchangers, a cold separator a propane refrigeration unit (cooled by an electric motor driven compressor), an expander turbine and a demethanizer. Some gas is recompressed and rerouted through the cryogenic plant. Liquids that drop out in the exchangers, separator and expander turbine are routed to the demethanizer. Liquid product from the demethanizer is treated by the amine treater and routed to a product (liquid) pipeline. Residue gas from the top of the demethanizer is compressed and then exits the facility through a gas pipeline. .

A site plan and facility map is located in Appendix A.

6. **MATERIALS STORED OR USED at the FACILITY**

Materials	Composition	Inventory	Location	Storage
Compressor Lube Oil	Liquid	1-1000 gallons 1-1500 gallons 2-500 gallons 1-410 gallons 1-330 gallons 1-110 gallons	Yard	4 Steel Tanks 1 Fiberglas Tank 2 Poly Tanks
Natural Gas Condensate	Liquid	1-500 bbls	Yard	Steel Tank
Used Lube Oil	Liquid	1- 700 gallons	Yard	Steel Tank
Oily Waste Water	Liquid	1-210 bbl , 1- 100 bbl, above ground tanks and two sumps (two – 750	Yard	1 Steel Tank, 1 Poly Tank, 2 double wall Fiberglass sumps

		gallons		
Amine	Liquid	1- 750 gallons	Yard	Fiberglas Tank
Engine Coolant	Liquid	2-410 gal, 1-110 gallons	Yard	2 Fiberglas Tanks 1 Poly Tank

7. SOURCES and QUANTITIES of EFFLUENT and WASTE SOLIDS GENERATED at the FACILITY

Major Effluent	Estimated Quantity	Major Additives	Source
Produced water	Currently included with nonexempt fluid estimate and disposed as nonexempt fluid	Condensed water from inlet separator	Separator, Scrubbers
Nonexempt fluid	120 bbls per month	Rain water, wash water, used lube oil, antifreeze drips	Ecology collection system from compressor skid
Used filters	14 per month	Lube oil, Charcoal, dust, air compressor, amine	Compressor Engine, Amine Unit, Mole Sieve, air compressor, turbo expander, product pump charcoal filter
Used lube oil	300 gallons per year	None	Compressors
Exempt Mole Sieve beads	18 cubic yards every 5 years	Natural gas	Solid desiccant dehydration beds
Air compressor desiccant	150 pounds every five years	Air compressor drier	Solid desiccant air compressor drier

Effluent Description

The facility is not a disposal site for waste effluents. The purpose of this site is to compress and process natural gas. There will be produced water and hydrocarbon condensate separated from the natural gas stream. The produced water and natural gas condensate will be stored in a 500 bbl and/or 100 bbl tank. This material will be hauled from location for disposal to a permitted non exempt disposal facility. The used engine lubricants, and engine coolants will be handled by a recycler and reused or disposed of properly. The storage tank levels will be monitored by an operator on a periodic basis. The operator will monitor tank levels and request a truck to haul liquid when necessary. By carefully monitoring liquid levels in the tank, overflows are prevented. However; the tank area is bermed in the event of a leak, spill, or overflow.

Sewage

There is a septic system for the office/control room.

8. DESCRIPTION OF CURRENT LIQUID AND SOLID WASTE COLLECTION / STORAGE / DISPOSAL PROCEDURES

Liquid / Solid Wastes	Storage	Disposal
Nonexempt fluid, condensate and produced water	500 bbl tank, 210 bbl tank, 110 bbl tank in yard	Trucked offsite to OCD permitted nonexempt disposal facility (currently Sundance Services Inc.)
Used filters	Collected at ConocoPhillips Master Station. Drained for 24 hours minimum	Waste hauler trucks offsite to Lea County Landfill (currently Sundance Services Inc.)
Used lube oil	700 gallon tank in yard	Recycled (currently via US Filters in Odessa, TX)
Exempt Mole Sieve beads	Store on plastic in yard	Trucked offsite to permitted disposal location (currently Controlled Recovery Inc in Hobbs)
Air compressor desiccant	Store on plastic in yard	Trucked offsite to permitted disposal location (currently Controlled Recovery Inc in Hobbs)

Drum Storage

All drums are stored on pad and curb type containment

Berms

All tanks that contain materials other than freshwater are bermed to contain one and one-third the capacity of the largest tank within the berm or one and one-third the total capacity of all interconnected tanks.

Above Ground Tanks

All above ground tanks are on impermeable pad and curb type containment.

Pads

All compressor pads have adequate containment to prevent contaminants from running onto the ground surface.

Labeling

All tanks, drums and containers are clearly labeled to identify their contents and other emergency information necessary if the tank were to rupture, spill or ignite.

9. **PROPOSED MODIFICATIONS**

Separation of exempt and non-exempt fluids handling is proposed but waiting on determination of future need of the facility

10. **INSPECTION, MAINTENANCE, and REPORTING**

General Facility

A documented facility inspection is performed by the ConocoPhillips personnel on a monthly basis. Also, ConocoPhillips personnel go to the facility at least twice per week and perform a visual inspection.

Sump Inspections

All sumps at this facility are cleaned and visually inspected annually.

Pressure Testing

All underground piping is tested to demonstrate mechanical integrity every five years.

11. **SPILL / LEAK PREVENTION & REPORTING (CONTINGENCY PLANS)**

This facility will have an operator which will check the operations of the facility on a periodic basis. The operator will report the functioning of the compressor, and a log will be kept of the units. If the operator should locate a problem with any of the equipment then it will be reported to the supervisor. Each operator is equipped with mobile communications that is monitored 24 hours a day. In the event of a "reportable spill", the operator would notify his supervisor immediately of the occurrence. The supervisor would in turn notify his immediate supervisor, and the company contingency plan would be implemented. The compressor unit and dehydration unit will have an "environmental" skid, which will not allow precipitation which has contacted this unit to runoff onto the ground. The unit skid will be piped into an underground sump or "blow casing" which will transfer all fluids to the 210 bbl. above ground storage tank. Conoco personnel will contact the applicable regulatory agency in accordance with OCD Rule 116 and WQCC 1203. All systems designed for spill collection/prevention are inspected to ensure proper operation and to prevent overtopping or system

failure. Spills of any materials will be cleaned up in a timely manner using environmentally sound methods.

12. SITE CHARACTERISTICS – Antelope Ridge Gas Plant

Hydrologic/Geologic Information

Within one mile of the Antelope Ridge Gas Plant (Plant) there are no bodies of water, streams, other watercourses, and no groundwater discharge sites (marshes, springs, seeps, etc.). A review of published literature shows that the Plant lies on the southwestern edge of the San Simon Swale (Topographical maps have been included in the Appendix), a roughly 100 square mile depression, caused by collapse of the underlying Permian salt beds by solution. The San Simon Swale, mostly covered by stabilized dune sand (See Plate 1 in the Appendix), has a layer of Quaternary fill overlying Triassic rocks (Dockum Group). The Quaternary fill is as much as 400 feet thick in the eastern part of the swale near the Sam Simon Sink. Ground water found in the San Simon Swale either comes from Triassic aquifers below the Quaternary fill at depths of 400 feet or more (see Plate 2 which shows circular Triassic aquifer at 3100 feet above mean sea level) or from perched or semi-perched alluvium areas isolated from Tertiary or Quaternary aquifers. Either of these sources could have potable quality groundwater.

There are two wells within one mile of the Plant. The closest is approximately 1000 feet west of the Plant (See well locations on second Topographical map). The second is approximately 0.8 miles southeast of the Plant. Well information (Attachment 1) was obtained from the New Mexico Office of the State Engineer (Report 1).

The well logs from Attachment 1 documents water to be 430 feet below the surface of the well 1000 feet west of the Plant and 265 feet below the surface of the well 0.8 miles southeast of the Plant.

A well approximately three miles NE of the Plant (See well locations on Plate 2 in Appendix) and further into the San Simon Swale documents water to be 137 feet below the surface and of Quaternary alluvium origin. Well information was obtained from Ground-Water Report 6, Geology and Ground-Water Resources of Lea County, New Mexico by the NM Bureau of Mines and Mineral Resources, 1961 (Report 2). No use of this water was documented.

Well logs from Report 2 show two other wells in the western portion of the San Simon Swale, one five mile WNW of the plant and another 8 miles NW of the plant, which receive water from the Triassic aquifer, at depths of greater than 400 feet. Both use the water for stock.

Well logs from Report 2 show another Triassic aquifer well approximately 4 miles SW of the plant. Use of this water is classified as industrial. Chemical

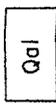
analysis of the water from this well shows 635 ppm total dissolved solids (TDS) and 52 ppm chloride which are below recommended U.S. Public Health Service limits for drinking water (See Point # 48 from Figure 28 in Appendix for well).

The general movement of the ground water in San Simon Swale area is downward and to the south. Pressure contours are toward the swale which indicate that the swale is of collapse origin and that a vertical conduit formed by the collapse provides a relatively permeable zone for the downward discharge of water. The primary aquifer is from Triassic sandstone rocks in the Chinle formation, with ground water available at depths of greater than 400 feet.

Flood Protection

The area of New Mexico in which the Plant is located is classified as semi-arid to arid. The annual precipitation is 12-13". The surrounding topography, annual precipitation history and ConocoPhillip's 39 years experience as an operator show no significant flood potential at this site.

EXPLANATION

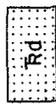


Qal

Alluvium



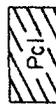
Ogallala formation



Dockum group



Rustler formation east of the Pecos River, Costile and Rustler formations west of the Pecos River.



Carlsbad limestone (Capitan limestone and Bell Canyon formation along reef escarpment. Goat Seep limestone along west escarpment of Guadalupe Mountains.)



Chalk Bluff formation (including upper part of Goat Seep formation in southwest part)



San Andres formation

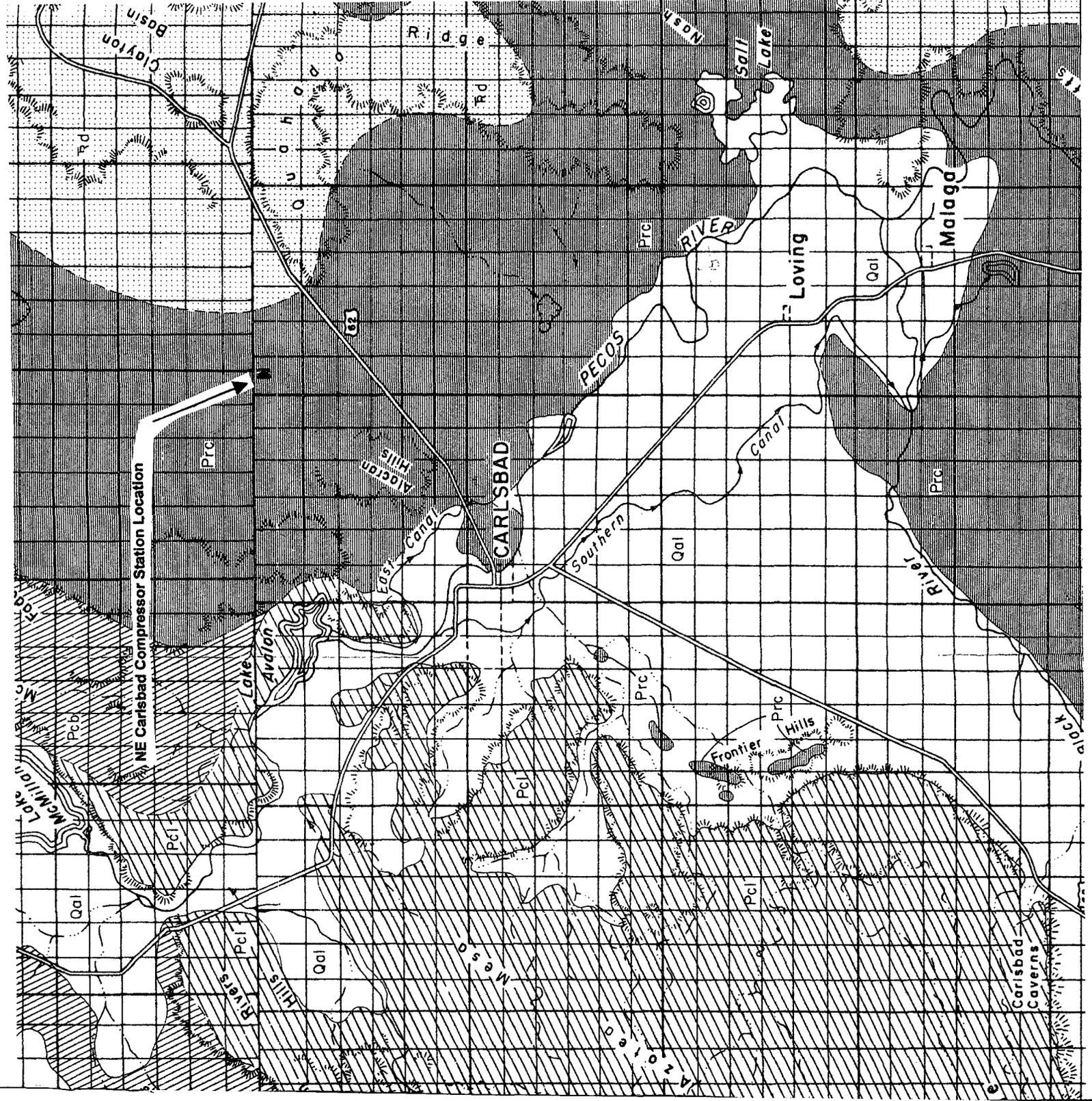
TRIASSIC TERTIARY QUAT.

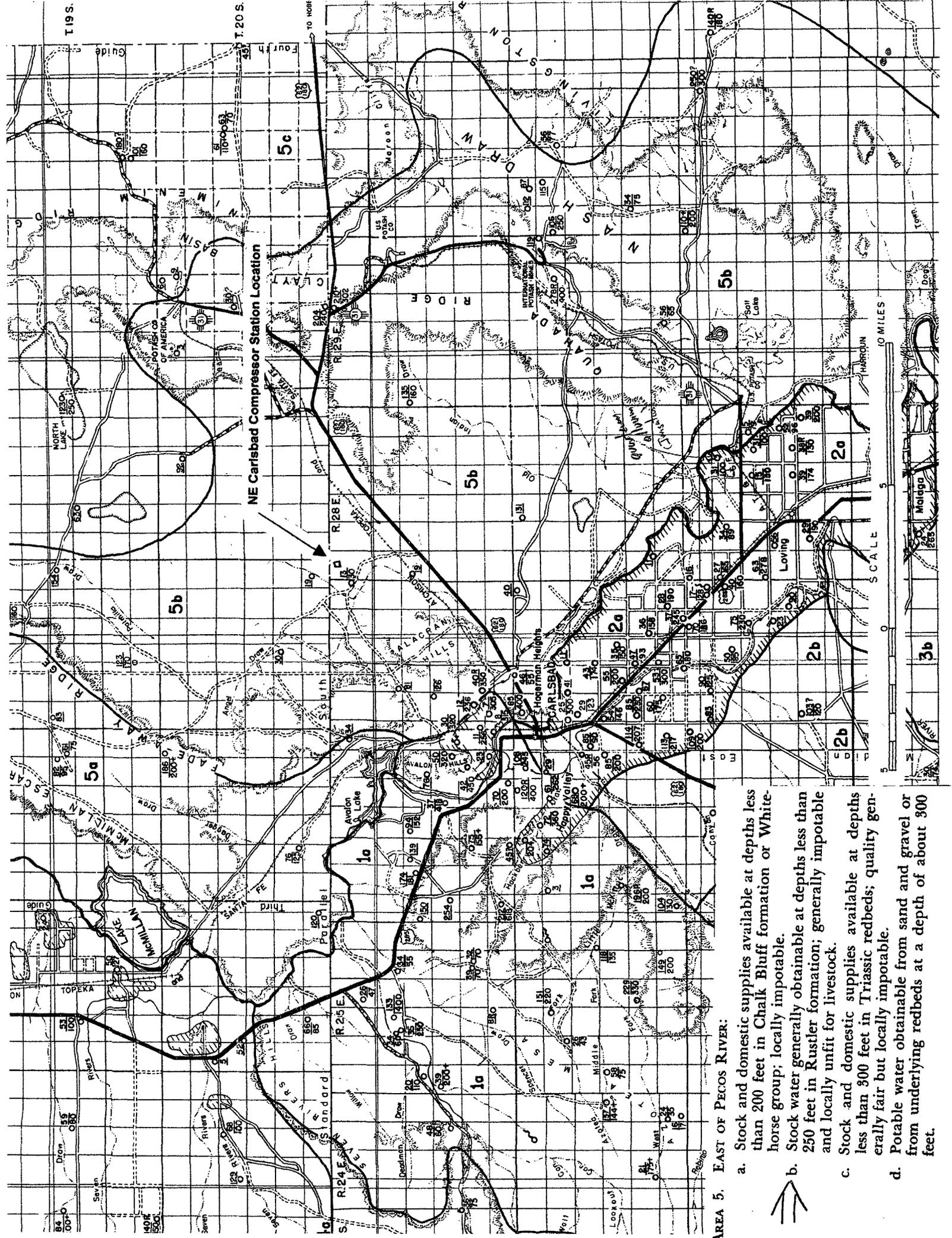
PERMIAN

Ochoa series

Guadalupe series

Leonard series





AREA 5. EAST OF PECOS RIVER:

- a. Stock and domestic supplies available at depths less than 200 feet in Chalk Bluff formation or White horse group; locally impotable.
- b. Stock water generally obtainable at depths less than 250 feet in Rustler formation; generally impotable and locally unfit for livestock.
- c. Stock and domestic supplies available at depths less than 300 feet in Triassic redbeds; quality generally fair but locally impotable.
- d. Potable water obtainable from sand and gravel or from underlying redbeds at a depth of about 300 feet.



TABLE 1. RECORDS OF WELLS IN EDDY COUNTY, NEW MEXICO. (Continued)

LOCATION NUMBER	OWNER OR NAME	DATE COMPLETED	TOPOGRAPHIC SITUATION	ALTITUDE ABOVE SEA LEVEL (feet)	DEPTH OF WELL (feet)	DIAMETER OF WELL (inches)	PRINCIPAL WATER-BEARING BED	
							CHARACTER OF MATERIAL	GEOLOGIC UNIT
20.28.36.140	Dinwitty	--	Scanlon draw	3,210	--	8	Redbeds, gypsum (?)	Rustler (?)
20.29.3.433	--	--	Shallow depression	3,300	--	6	do.	Dockum or Rustler
20.30.3.223	"Clayton Wells"	--	Clayton basin	3,175	--	--	Sand and silt	Quaternary
3.424	do.	--	do.	3,185	--	6 (?)	do.	do.
5.310	"Chimney Well"	--	do.	3,184	--	--	do.	do.
16.420	--	--	do.	3,220	--	6	Redbeds (?)	Dockum (?)
20.120	Wood Ranch	--	do.	3,210	90	6	do.	do.
20.130	do.	--	do.	3,210	60	7	do.	do.
33.440	--	--	Rolling Williams	3,380	240+	9	do.	do.
20.31.13.440	--	--	sink	3,450	--	--	do.	do.
15.130	--	--	do.	3,450	70 (?)	6	do.	do.
16.240	--	--	do.	3,460	110+	6	do.	do.
21.21.7.440	Armstrong	--	--	4,760	1,300	--	--	--
36.213	Frank McWilliams	1941	Draw	4,550	962	6	Limestone	San Andres (?)

See explanation at beginning of table.

WATER LEVEL

LOCATION NUMBER	BELOW LAND SURFACE (feet)	DATE OF MEASUREMENT	YIELD (g.p.m.)	METHOD OF LIFT	USE OF WATER	REMARKS
20.28.36.140	19.1	Dec. 27, 1948	--	W	S	
20.29.3.433	91.9	Dec. 13, 1948	--	W	S	See analysis, Table 3.
20.30.3.223	6.0	Dec. 23, 1948	--	W	S	do.
3.424	8.5	do.	--	W	S	do.
5.310	3.5	do.	--	W	S	
16.420	29.9	May 1, 1950	--	W	S	See analysis, Table 3.
20.120	29.3	Dec. 22, 1948	5 E.	W	D	Depth to water measured while pumping.
20.130	45.3	do.	--	W	D	do. See analysis, Table 3.
33.440	203.8	Dec. 27, 1948	--	W	S	See analysis, Table 3.
20.31.13.440	45	Dec. 22, 1948	4 E.	W	S	do.
15.130	63.1	do.	--	W	S	
16.240	61.2	do.	1 E.	W	S	Depth to water measured while pumping. See analysis, Table 3.
21.21.7.440	1,100	--	--	W	D & S	
36.213	942	--	--	W	S	Driller: T. Hillyer.

See explanation at beginning of table.

TABLE 1. RECORDS OF WELLS IN EDDY COUNTY, NEW MEXICO. (Continued)

LOCATION NUMBER	OWNER OR NAME	DATE COMPLETED	TOPOGRAPHIC SITUATION	ALTITUDE ABOVE SEA LEVEL (feet)	DEPTH OF WELL (feet)	DIAMETER OF WELL (inches)	PRINCIPAL WATER-BEARING BED	
							CHARACTER OF MATERIAL	GEOLOGIC UNIT
21.27.30.442	T. Ives	1941	Terrace	3,115	256	7	Limestone	Carlsbad
30.442a	J. F. Lumsford	1947	do.	3,115	68	12	Alluvium	Quaternary
30.443	G. Wiley	1942 (?)	do.	3,115	-	16	Alluvium (?)	Quaternary (?)
31.111	J. Stagner	-	do.	3,115	-	9	Limestone (?)	Carlsbad
31.130	-	-	do.	3,120	150 (?)	10 (?)	Alluvium (?)	Quaternary (?)
31.211	G. A. Blitch	-	do.	3,115	220	9	Limestone (?)	Carlsbad (?)
31.212	Int. Potash Co.	-	do.	3,120	250	5 3/16	Limestone	Carlsbad
31.212a	do.	1947	do.	3,120	315	18	do.	do.
31.212b	do.	1947 (?)	do.	3,120	315	18	do.	do.
31.214	Denhoff	-	do.	3,112	-	8	Alluvium (?)	Quaternary (?)
32.111	L. E. Loman	-	do.	3,113	70	12	Alluvium	Quaternary
32.112	do.	1947	do.	3,112	305	6	Limestone	Carlsbad
32.112a	S. Tracy	1949	do.	3,112	105	15	Alluvium	Quaternary
21.28.18.130	Bybee	-	Lone Tree draw	3,150	-	7	Alluvium (?)	Quaternary (?)
21.29.3.120	Wayne Cowden	-	-	3,380	302	6	Redbeds (?)	Dockum

See explanation at beginning of table.

2.5 mi south

LOCATION NUMBER	WATER LEVEL		YIELD (g.p.m.)	METHOD OF LIFT	USE OF WATER	REMARKS
	BELOW LAND SURFACE (feet)	DATE OF MEASUREMENT				
21.27.30.442	10.7	Oct. 20, 1947	-	C	D	Driller: Spencer.
30.442a	15.0	Oct. 10, 1947	-	C	-	
30.443	15.5	do.	-	C	I	
31.111	8.4	Oct. 20, 1947	-	C	I	South well of two. North well of two.
31.130	22.7	Nov. 14, 1949	-	T	I	
31.211	11.0	Oct. 10, 1947	-	C	D & I	
31.212	10.4	Oct. 9, 1947	-	C	D & I	
31.212a	7.6	Jan. 17, 1950	1,000 R.	T	PR	
31.212b	-	-	1,000 R.	T	PR	
31.214	15.8	Oct. 10, 1947	-	C	I	
32.111	13.7	Oct. 13, 1947	-	C	I	
32.112	7.5	do.	180 R.	C	D & I	
32.112a	15.0	Jan. 24, 1950	-	T	I	
21.28.18.130	18.9	Jan. 21, 1950	-	W	S	No limestone encountered. Driller: Gentry.
21.29.3.120	210+	Dec. 23, 1948	-	W	S	See analysis, Table 3. Cased to 37 ft.

See explanation at beginning of table.

TABLE 1. RECORDS OF WELLS IN EDDY COUNTY, NEW MEXICO. (Continued)

LOCATION NUMBER	OWNER OR NAME	DATE COMPLETED	TOPOGRAPHIC SITUATION	ALTITUDE ABOVE SEA LEVEL (feet)	DEPTH OF WELL (feet)	DIAMETER OF WELL (inches)	PRINCIPAL WATER-BEARING BED	
							CHARACTER OF MATERIAL	GEOLOGIC UNIT
20.21.26.420	Armstrong	-	-	-	870	8	Limestone	San Andres
20.24.1.100	Foster	-	Gentle E. slope	3,590	140	6	Limestone (?)	Chalk Bluff
22.310	do.	-	do.	3,750	305	6 (?)	Limestone	do.
32.110	do.	-	do.	-	365	6	do.	do.
20.25.15.200	Price	-	do.	3,435	100	6	do.	do.
16.300	-	1949	do.	3,490	-	4	do.	do.
20.26.7.340	-	-	-	-	-	5	Alluvium	Quaternary
17.330	Truitt	-	Valley	3,270	-	6	Limestone, gypsum (?)	Chalk Bluff (?)
32.220	do.	1943	Gentle E. slope	3,280	85	6	Limestone	Carlsbad
36.411	Westerfall	-	-	3,240	-	6	do.	do.
20.27.1.110	-	-	Head of shallow draw	3,367	200+	6	do.	do.
29.440	Westerfall	-	-	3,190	125	5½	do.	do.
20.28.28.200	-	-	Rolling	3,225	-	6	Redbeds, gypsum (?)	Rustler (?)

See explanation at beginning of table.

3.5 mi.
NW
↘

LOCATION NUMBER	WATER LEVEL		YIELD (g.p.m.)	METHOD OF LIFT	USE OF WATER	REMARKS
	BELOW LAND SURFACE (feet)	DATE OF MEASUREMENT				
20.21.26.420	850	-	2 R.	W	D & S	
20.24.1.100	131.9	Jan. 16, 1950	-	N	N	Abandoned stock well.
22.310	300	-	-	W	D & S	
32.110	350	-	-	W	S	
20.25.15.200	67.9	Jan. 16, 1950	-	W	S	
16.300	129.0	do.	-	W	S	
20.26.7.340	5.4	Sept. 13, 1948	-	W	S	
17.330	51.7	Aug. 27, 1948	-	W	S	See analysis, Table 3.
32.220	66.1	do.	-	W	S	
36.411	120.0	Oct. 6, 1948	1½	W	S	
20.27.1.110	186.0	Sept. 7, 1948	1	W	S	Depth to water measured while pumping.
29.440	75.5	Oct. 6, 1948	2½	W	S	
20.28.28.200	30.5	Jan. 20, 1950	-	W	S	See analysis, Table 3.

See explanation at beginning of table.

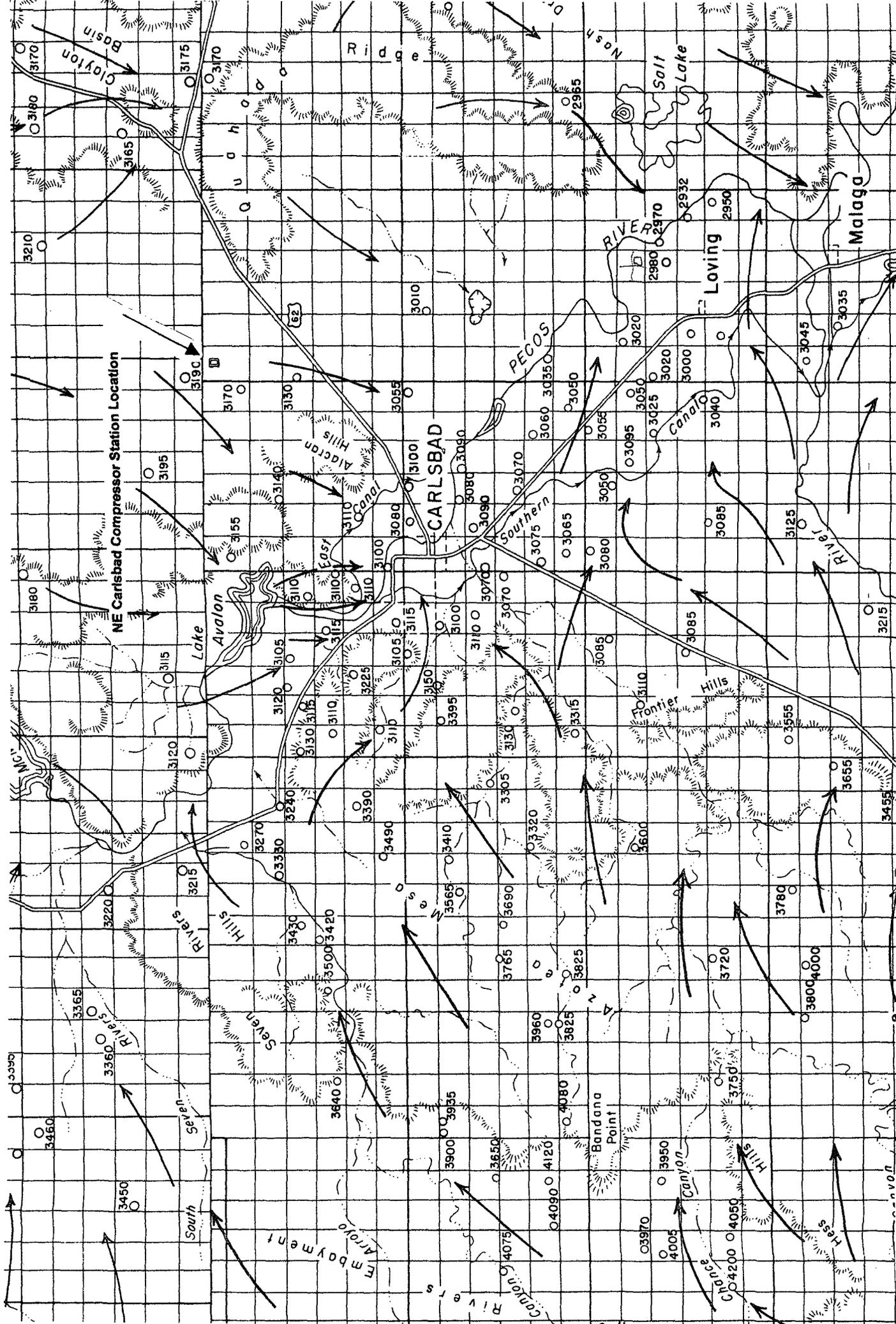
TABLE 1. RECORDS OF WELLS IN EDDY COUNTY, NEW MEXICO. (Continued)

LOCATION NUMBER	OWNER OR NAME	DATE COMPLETED	TOPOGRAPHIC SITUATION	ALTITUDE ABOVE SEA LEVEL (feet)	DEPTH OF WELL (feet)	DIAMETER OF WELL (inches)	PRINCIPAL WATER-BEARING BED	
							CHARACTER OF MATERIAL	GEOLOGIC UNIT
21.26.31.243	Bobbit	-	Happy Valley	3,305	250	6	Limestone	Carlsbad
33.441	-	-	do.	3,240	-	6 (?)	Alluvium (?)	Quaternary (?)
35.122	E. M. Hoose	1932	Hillside	3,190	87.5	-	Limestone	Carlsbad
35.223	U. S. Govt. (?)	-	Terrace above river	3,150	146	8	Conglomerate or limestone	Quaternary or Carlsbad
35.343	C. F. Montgomery	-	E. edge Ocotilla Hills	3,250	200	6	Limestone	Carlsbad
35.441	Blake Spruill	1943	Terrace	3,175	200	12	do.	do.
36.212	-	-	Lakewood Terrace	3,122	-	12	-	-
3/4 mi SW → 21.27.1.420	Dinwitty	-	Draw	3,180	30	6	Redbeds and gypsum, or sand	Rustler or Quaternary
6.140	-	-	Gentle S. W. slope	3,190	-	-	Limestone (?)	Carlsbad (?)
9.330	-	-	Shallow depression	3,220	-	6	Alluvium (?)	Quaternary (?)
19.334	F. R. Dickson	-	Edge of terrace	3,136	320	-	Limestone	Carlsbad

See explanation at beginning of table.

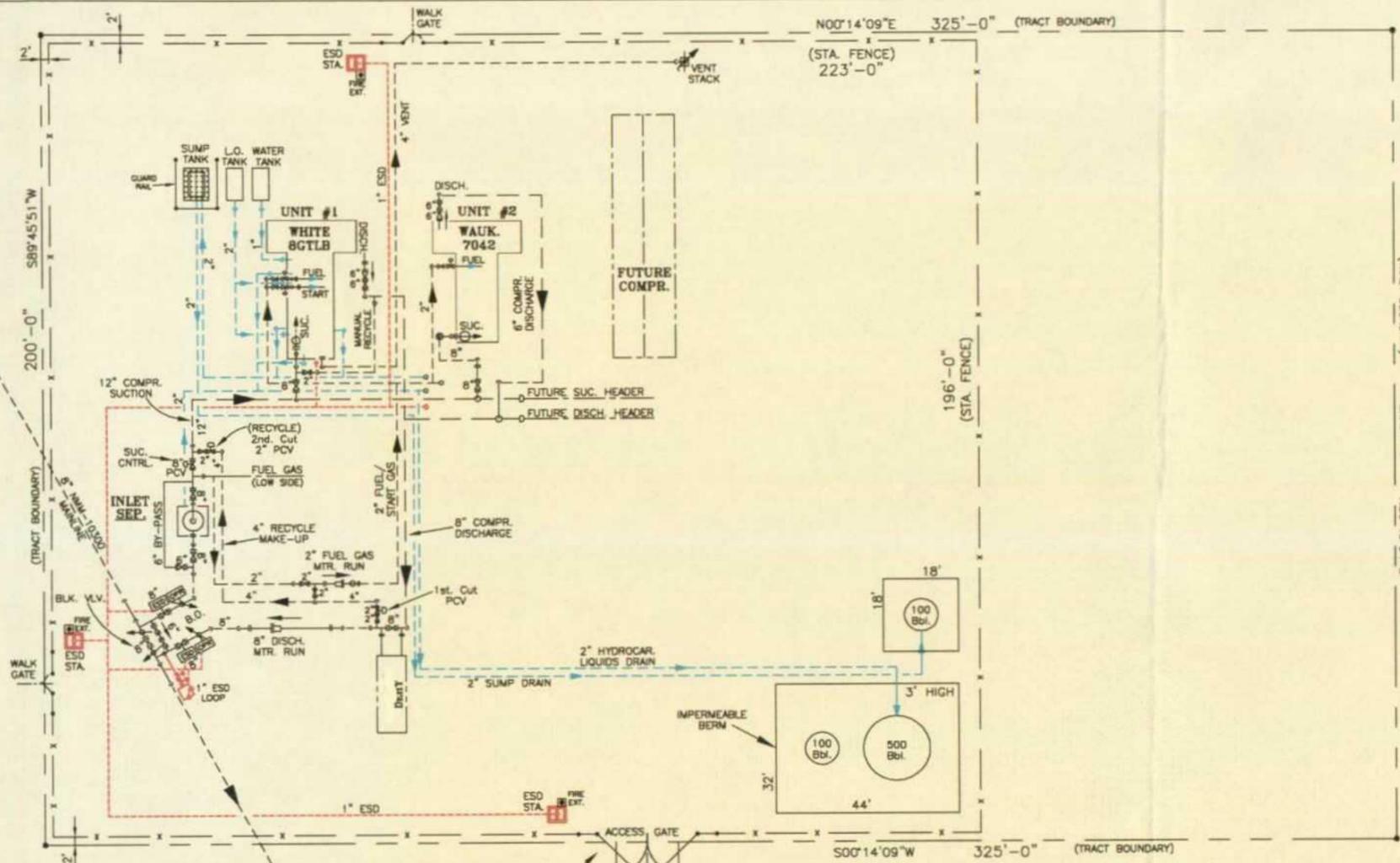
LOCATION NUMBER	WATER LEVEL		YIELD (g.p.m.)	METHOD OF LIFT	USE OF WATER	REMARKS
	BELOW LAND SURFACE (feet)	DATE OF MEASUREMENT				
21.26.31.243	194.0	Nov. 21, 1949	-	W	S	See analysis, Table 3.
33.441	45	do.	-	W	S	
35.122	78.3	Dec. 15, 1947	3 E.	W	D & S	
35.223	52.9	Jan. 23, 1950	-	N	N	Abandoned. See analysis, Table 3.
35.343	135.5	May 22, 1949	1	W	S	Sulfur taste. See analysis, Table 3.
35.441	70.0	Oct. 7, 1948	300	T	P	Supplies 55 families. See analysis, Table 3.
36.212	23.0	Jan. 6, 1948	-	T	I	
→ 21.27.1.420	12.7	Dec. 27, 1948	1 E.	W	S	Depth to water measured while pumping.
6.140	94.1	Sept. 3, 1948	-	W	S	
9.330	81.4	Jan. 25, 1950	2 E.	W	S	See analysis, Table 3.
19.334	30.1	Oct. 10, 1947	1,200 R.	T	I	

See explanation at beginning of table.

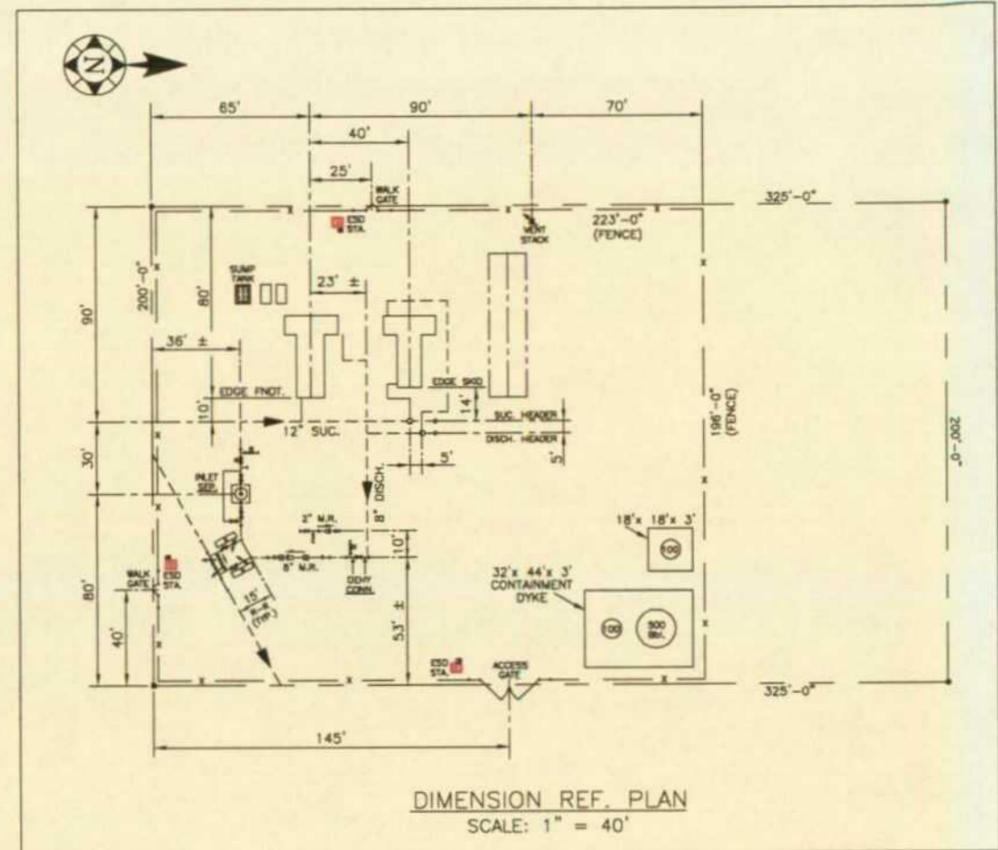


GENERAL DIRECTION OF MOVEMENT OF GROUND WATER
 IN EDDY COUNTY, NEW MEXICO

APPENDIX A – Facility Site Plan and Location Maps
Antelope Ridge Gas Plant



STATION AREA PLAN
SCALE: 1" = 20'



DIMENSION REF. PLAN
SCALE: 1" = 40'

CONTRACTOR NOTES:

1. STATION WORKING SITE AREA IS 200' BY 225'. TO BE ENCLOSED WITH BARBED WIRE FENCE W/ ACCESS GATE OF 2 - 12' WIDE DRIVE GATES, AND A WALK GATE ON THE SOUTH AND ON THE WEST SIDES, AS PER PLAN.
2. CONTRACTOR TO REMOVE EXISTING FENCE AND CONCRETE GUARD SUPPORT AROUND EXISTING MAINLINE BLOCK VALVE ASSEMBLY WITH SITE WORK.
3. CONTRACTOR TO BUILD ACCESS ROAD 145' LONG BY 15' WIDE TO COUNTY ROAD 243 WITH TURN RADIIUSES OF 25' AT COUNTY ROAD TIE-IN, AND INSTALL A 50' CMPC W/ 8' COVER MIN. OVER CMPC, AS PER PLAN.
4. CONTRACTOR TO INSTALL A 32' BY 44' BY 3' IMPERMEABLE BERM TO CONTAIN ONE 500 Bbl. TANK AND ONE 100 Bbl. TANK AS PER PLAN.
5. CONTRACTOR TO INSTALL 2" GUARD RAIL AROUND SUMP TANK AND SUMP TANK SECONDARY CONTAINMENT AS PER LG&E NATURAL INSPECTOR'S DIRECTIONS.
6. ALL ABOVE GROUND APPURTENANCES TO BE PAINTED TO BLM SPECIFICATION. SPEC.: CACTUS PAINT MFG. CO., SANDSTONE TAN ENAMEL NO. IE-720-11. CONTRACTOR TO INSTALL BLM SERIAL NUMBER SIGN NEAR STATION ACCESS GATE AS PER PLAN.

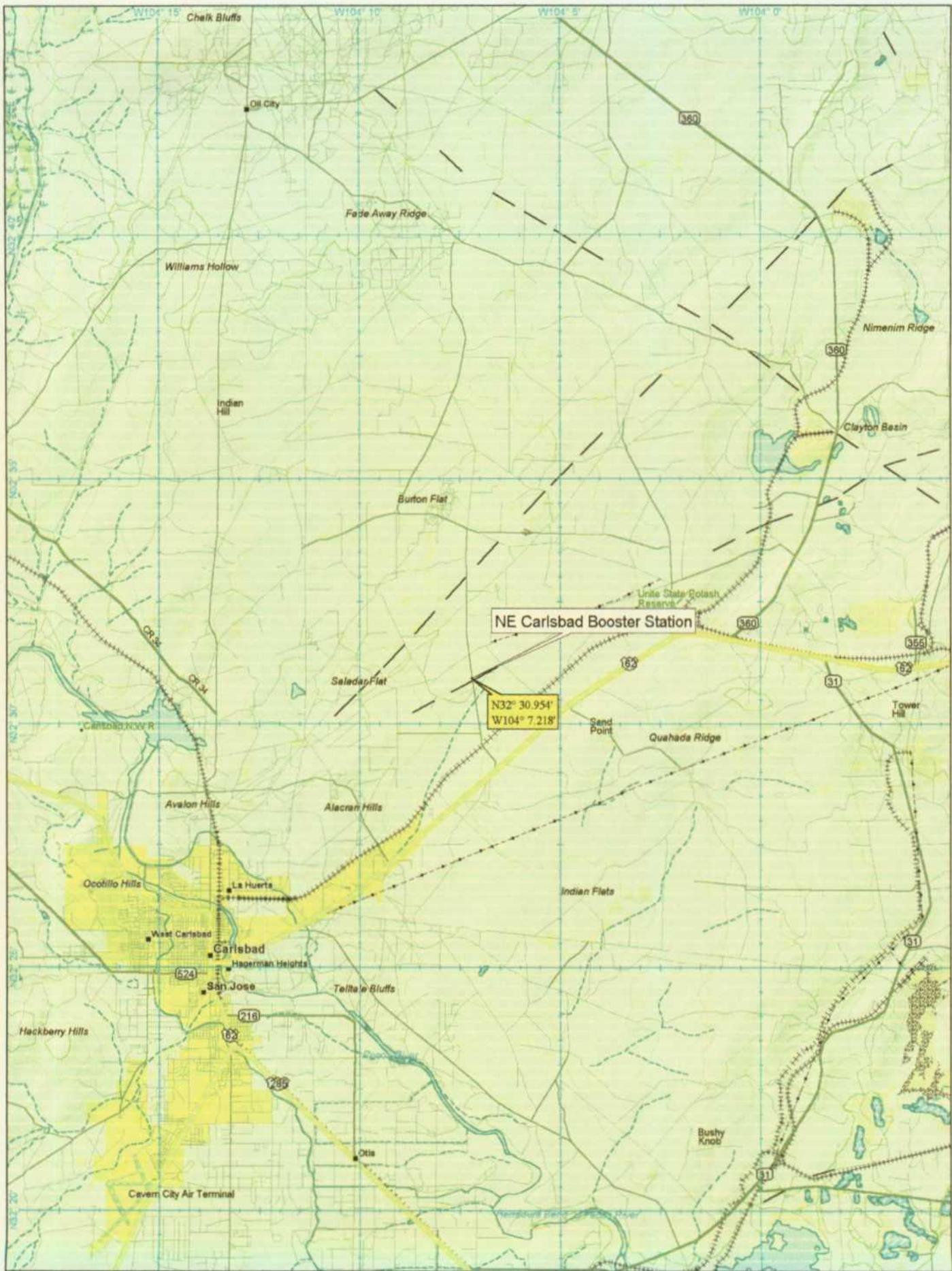
3	UNIT #2 INSTALLATION (PROJ. #1151)	RLS	4-24-98
2	ADDED 100 Bbl. SUMP DRAIN TK. & DYKE EXTENT.	RLS	6-30-97
1	ADDED 6" SEP. BY-PASS (DESIGN PROJ #1035)	RLS	3-17-97
REV. NO.	REVISION	REV. BY	REV. DATE

PIPELINE ENGINEERING DEPARTMENT HOBBS, NEW MEXICO
CONOCO NATURAL GAS & GAS PRODUCTS

STATION AREA LAYOUT PLAN
"NE CARLSBAD" COMPRESSOR STATION
LOT 9, SEC. 6, T21S, R28E
EDDY COUNTY, NEW MEXICO

FILE: 1035STA	DATE	DWN. BY	APPR. BY	PROJ. NO.	SCALE	DRAWING NO.	REV.
	3-3-97	RLS	W.C.	1035	1"=20'	10700-03	2

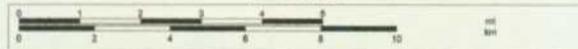
NMM-10300 (COMPR. STA.)



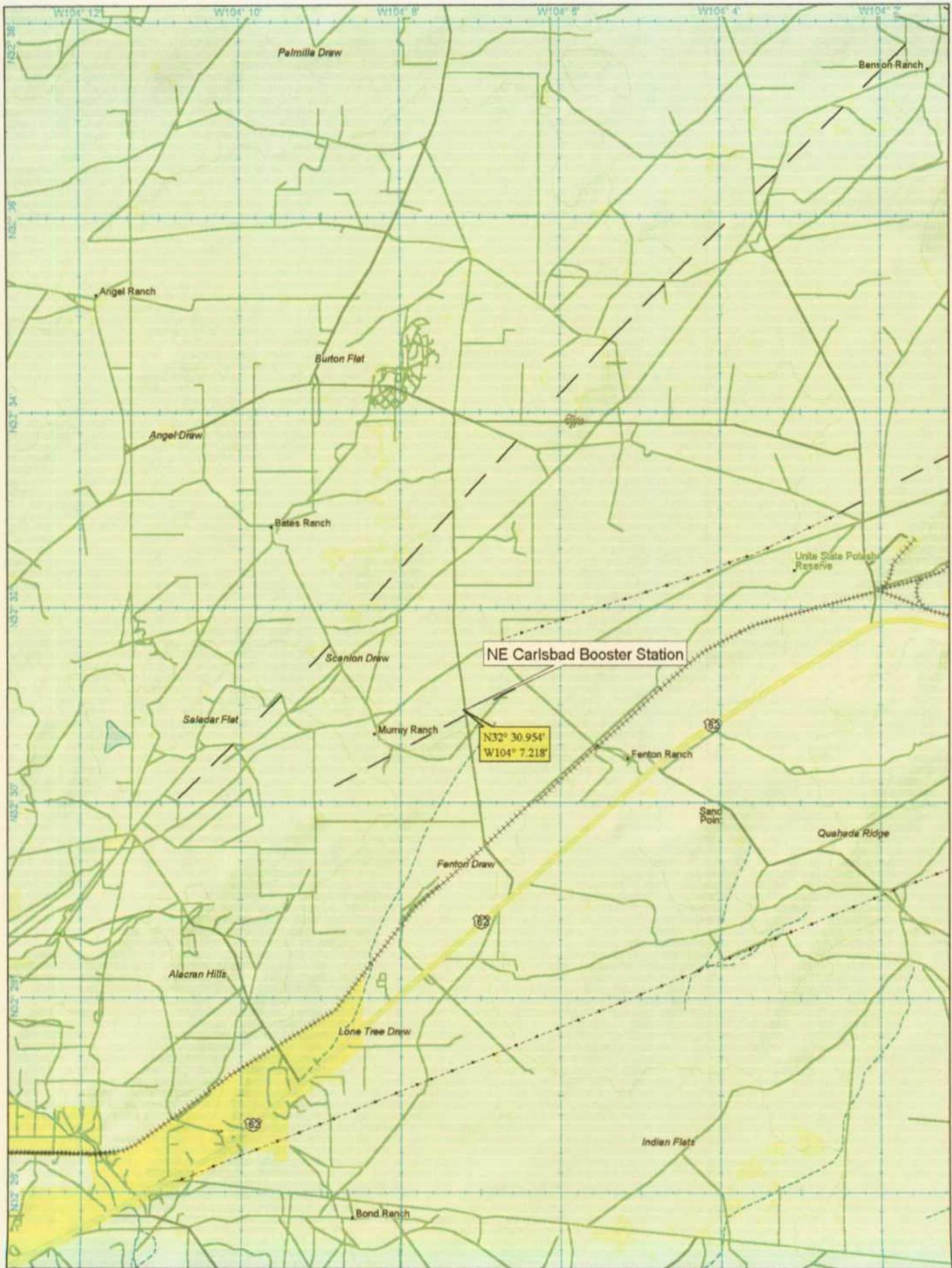
NE Carlsbad Booster Station

N32° 30.954'
W104° 7.218'

Scale 1 : 200,000
1" = 3 mi



© 2001 DeLorme, Map Print Pack
Zoom Level: 10-0 Datum: WGS84



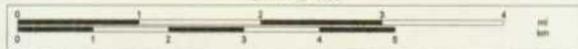
NE Carlsbad Booster Station

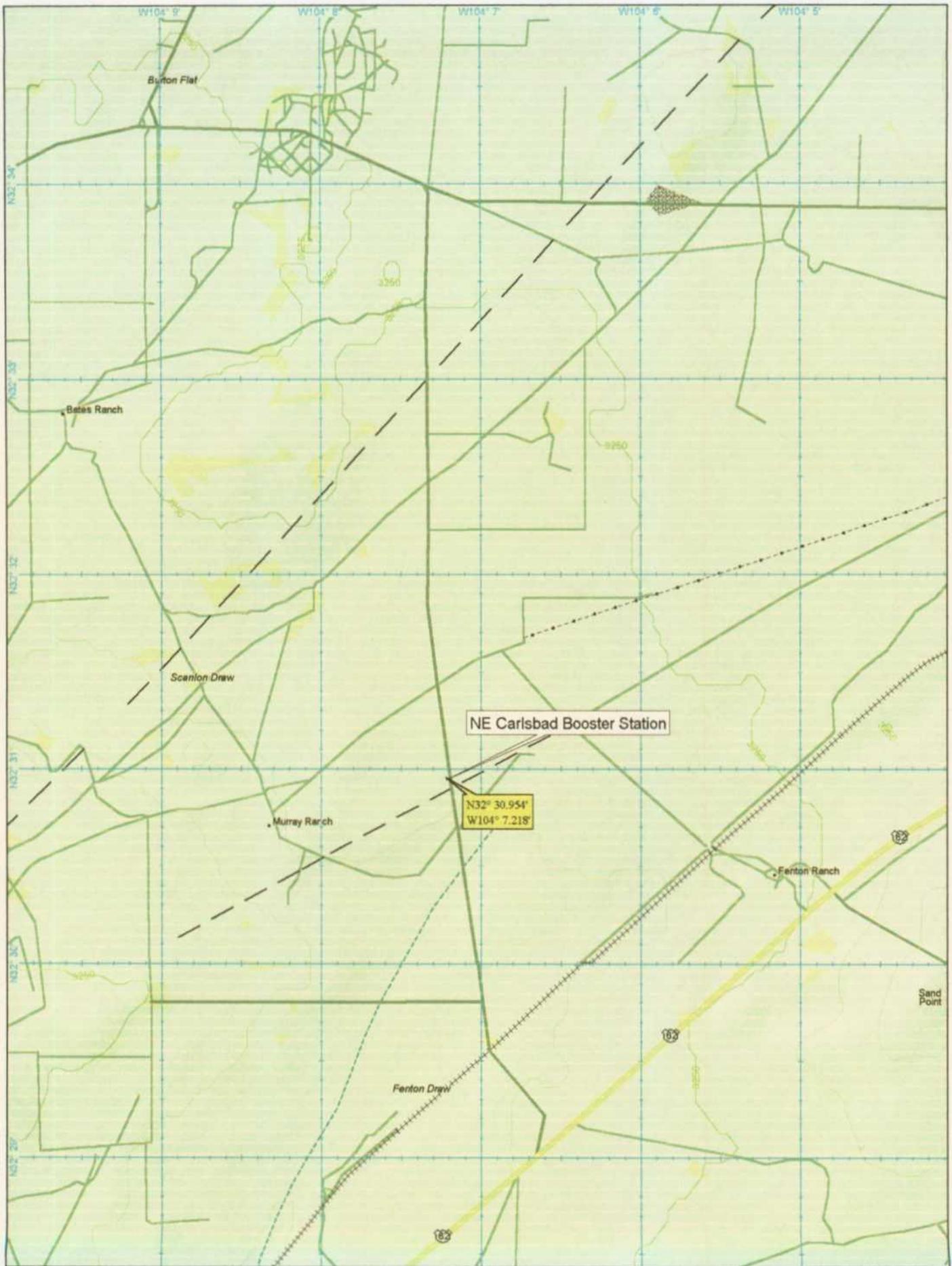
N32° 30' 9.54"
W104° 7' 21.8"

Scale 1 : 100,000
1" = 2 mi



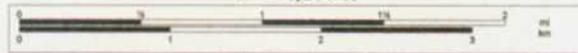
© 2001 DeLorme, Map Print Pack
Zoom Level: 11-0 Datum: WGS84





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 Zoom Level: 12-0 Datum: WGS84

Scale 1 : 50,000
 1" = 4,167 ft



APPENDIX B – Blanket Discharge Permit Documentation and Conditions
Antelope Ridge Gas Plant



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

215-5-1

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

June 16, 1998

Certified Mail
Return Receipt No. Z-357-869-978

Ms. Larissa Forseth
Conoco, Inc.
P.O. Box 2197 - HU 3038
Houston, Texas 77252

Dear Ms Forseth:

The Oil Conservation Division (OCD) has received and reviewed the Conoco, Inc. (Conoco) June 11, 1998 Notice of Intent (NOI) to Discharge for the listed compressor stations in Eddy and Lea Counties, New Mexico. Based on the information provided in NOI, formal Discharge Plans will not be required at this time if the following conditions are followed at each facility:

1. Discharges: There will be **NO** discharges onto or below the ground surface.
2. Drum Storage: All drums containing materials other than fresh water must be stored on an impermeable pad with curbing. All empty drums will be stored on their sides with the bungs in and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets will also be stored on an impermeable pad and curb type containment
3. Process Areas: All process and maintenance areas must be either paved and curbed or have some type of spill collection device incorporated into the design.
4. Above Ground Tanks: All existing above ground tanks that contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new facilities or modifications to existing facilities must place the tank on an impermeable type pad within the berm.

5. Above Ground Saddle Tanks: Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that become gases at atmospheric temperature and pressure.
6. Labeling: All tanks, drums and containers should be clearly labeled to identify their contents and other emergency information necessary if the tank were to rupture, spill, or ignite.
7. Below Grade Tanks/Sumps: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks must demonstrate integrity on an annual basis. Integrity tests include pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks and/or sumps. The OCD will be notified at least 72 hours prior to all testing so that an OCD representative may witness the testing.
8. Underground Process/Wastewater Lines: All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity at present and then every 5 years thereafter. Operators may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing so that an OCD representative may witness the testing.
9. Housekeeping: All systems designed for spill collection/prevention should be inspected to ensure proper operation and to prevent overtopping or system failure.
10. Spill Reporting: All spills/releases shall be reported pursuant to OCD Rule 116 and WQCC 1203 to the OCD Aztec District Office.
11. Waste Disposal: All wastes shall be disposed of at an OCD approved disposal site. Only oilfield exempt wastes shall be disposed of down Class II injection wells. Non-exempt oilfield wastes that are non-hazardous by characteristic may be disposed of at an OCD approved facility upon proper characterization pursuant to 40 CFR Part 261.

Ms. Larissa Forseth

June 16, 1998

Page -3-

All facilities identified in your request will be periodically inspected by an OCD representative to assure compliance. Failure to comply with the above conditions at a facility may result in the requirement to submit a Discharge Plan Application.

If you have any questions, please contact me at (505) 827-7152.



Roger C. Anderson

Environmental Bureau Chief

xc: OCD Aztec District Office



Larissa Forseth
Engineer
Environmental Services

Natural Gas & Gas Products

Conoco Inc.
600 N. Dairy Ashford
P.O. Box 2197-HU 3038
Houston, TX 77252
(281) 293-3149

Certified Mail No. P 365 861 182
Return Receipt Requested

June 11, 1998

Roger Anderson
Oil Conservation Division
New Mexico Energy, Minerals, and Natural Resources Department
2040 South Pacheco St.
Santa Fe, NM 87505

Re: Notice of Intent to Discharge

Dear Mr. Anderson:

This letter is a Notice of Intent to Discharge pursuant to Water Quality Control Commission Regulation 20 NMAC 6.2.1201, on behalf of Conoco Inc.

Conoco operates a number of compressors at various compressor stations within Eddy and Lea Counties, New Mexico. These stations boost gas to Conoco's Maljamar gas processing plant in Maljamar, New Mexico. Conoco has installed 8 compressors of varying sizes—most of them being less than 1,000 hp—at 7 compressor stations. In addition, Conoco will be adding two compressors before the startup of another compressor station, West Turkey Track, in July 1998. I am attaching a list of compressor station locations along with a list of compressors and their sizes. Additional compressors may be added in the future.

Initially, Conoco operates all of the compressors. The sizes and locations of the compressors will change over the next few years, as the reservoir dynamics become better understood.

The compressor installations are similar in design and operation. A typical compressor station consists of a two-phase separator and a skid-mounted in-line compressor with a suction scrubber. From two to five 500 bbl tanks are also installed at most stations to receive produced water. The compressor skids are equipped with catch basins to retain spilled liquids, wash water and rainwater runoff. The liquids from the separator and scrubber are piped via below-grade pipes to the tanks. All tanks are installed inside berms of 1 1/3 tank volume and on gravel bases so that leaks and spills can be visually detected.

Service liquids and wastes are handled as follows.

Service Liquids

Fresh lubricating oil, fresh engine coolant, and wash water are trucked to the stations as needed by the compressor operators. Small reservoirs of makeup compressor lubricating oil may be installed at some stations.

Non-Exempt, Non-Hazardous Wastes

Waste lubricating oil and engine coolant, waste wash water, and small quantities of solid waste are trucked from the stations by the compressor operators for disposal.

Exempt Wastes

Produced water is trucked or piped, as appropriate, to Conoco's injection wells for disposal.

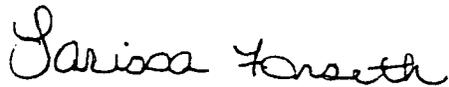
Ordinarily, no hazardous waste is generated at the sites.

Conoco expects the compressor operators to clean up their spills as they occur. Any spills will be reported pursuant to OCD Rule 116. Conoco intends that there be no discharge from the compressor stations to the surface or to groundwater.

As you can see, the sites clearly have minimal environmental impact, and Conoco follows industry recognized best management practices. Please advise Conoco as to additional steps they should take, if any.

Thank you for your assistance.

Sincerely,



Larissa Forseth

cc: ENVE 214-2-21
Jeff Hall, San Angelo

Compressor Station Locations

Compressor Station	Location
Caviness Ranch (a.k.a. Ajax)	Township 18 South, Range 33 East, Section 10, approx. 30 miles west of Hobbs, N.M., Lea County
Anderson Ranch	Township 16 South, Range 32 East, Section 11, approx. 6 miles north of Maljamar, N.M., Lea County
Cedar Lake	Township 18 South, Range 31 East, Section 12, approx. 35 miles west of Hobbs, N.M., Eddy County
Kemnitz	Township 17 South, Range 32 East, Section 14, approx. 5 miles southwest of Maljamar, N.M., Lea County
Lusk	Township 18 South, Range 31 East, Section 16, approx. 8 miles southwest of Maljamar, N.M., Eddy County
Skelly	Township 17 South, Range 31 East, Section 15, approx. 3 miles west of Maljamar, N.M., Eddy County
Turkey Track	Township 18 South, Range 31 East, Section 17, approx. 10 miles southwest of Maljamar, N.M., Lea County
West Turkey Track	Township 19 South, Range 30 East, Section 6, approx. 12 miles southeast of Loco Hills, N.M., Eddy Co.

Compressors

Compressor Station	Compressor(s)	Size (hp)
Caviness Ranch (a.k.a. Ajax)	White 8G825 w/cc	800
Anderson Ranch	White 6G825	600
Cedar Lake	Waukesha L7042 w/cc	900
Kemnitz	Waukesha L7042GSI	1195
	White 8GTLA	1072
Lusk	Clark HRA-6	660
Skelly	Clark HRA-6	660
Turkey Track	Waukesha L7042GSIU	1195
West Turkey Track	Caterpillar G399 TA LCR	730
	Caterpillar G399 TA LCR	730