

# COLORADO PLATEAU GEOLOGICAL SERVICES, INC.

SUITE 2E

413 WEST MAIN STREET

FARMINGTON, NEW MEXICO 87401

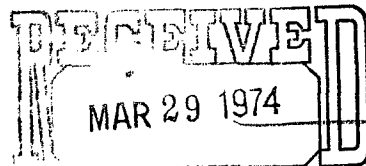
P. O. Box 537

(505) 325-9671

- ☆ Surface & Sub-Surface Studies
- ☆ Well Site Supervision
- ☆ Exploration Program Planning & Supervision
- ☆ Property Development and Management

March 26, 1974

NSL-654  
3 wells



R-2282

OIL CONSERVATION COMM.  
Santa Fe

*See upon receipt of plat from  
Operator, there are no off-set operators*

Mr. A. L. Porter, Jr.

New Mexico Oil & Gas Commission

P. O. Box 2088

Santa Fe, New Mexico 87501

Dear Mr. Porter:

In accordance with Oil & Gas Commission R-2282, we request your approval of three nonstandard locations for new producing wells in the Red Mountain oil field in sections 20 and 29 of T. 20 N., R. 9 W., McKinley County, New Mexico. These locations are requested as infill producing wells in order to obtain maximum drainage and conservation of the hydrocarbons in these bypassed locations. No correlative rights of other individuals will be impaired by these locations.

*Santa Fe RR Well #34 95' FNL & 3600' FEL  
of Sec. 29, 20N-9W,  
Santa Fe RR Well #35 - 160' FNL & 2135' FEL  
of Sec. 29, 20N-9W, and  
Santa Fe RR Well #36 265' FNL & 2150' FEL  
of Sec. 20, 20N-9W, all in the Red Mountain-  
Menefee Pool,  
McKinley County,  
NM*

Accordingly, we are enclosing for your consideration of approval our C-101's and C-102's for these three locations.

Thank you for your consideration.

Sincerely,

*Bruce A. Black*

Bruce A. Black,  
President Colorado Plateau  
Geological Services & Manag-  
ing Agent for Chaco Oil Co.

BAB:no

cc: Mr. Al Kendrick  
New Mexico Oil & Gas Commission  
Aztec, New Mexico

3/29  
Called Black 9:10 AM  
Not in office  
asked to return call

Returned call 4/3  
will forward requested  
plat

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# NEW MEXICO OIL CONSERVATION COMMISSION

Form C-101  
Revised 1-1-65

5A. Indicate Type of Lease	
STATE <input type="checkbox"/>	FEE <input checked="" type="checkbox"/>
5. State Oil & Gas Lease No.	

## APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

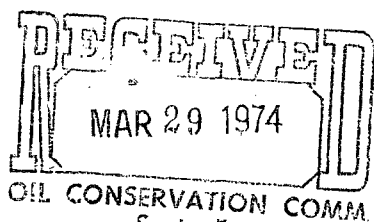
1a. Type of Work			7. Unit Agreement Name		
b. Type of Well OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/> DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> SINGLE ZONE <input type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>			8. Farm or Lease Name Santa Fe RR		
2. Name of Operator Chaco Oil Company			9. Well No. 36		
3. Address of Operator c/o P. O. Box 537, Farmington, New Mexico 87401			10. Field and Pool, or Wildcat Red Mtn. Menefee		
4. Location of Well UNIT LETTER 0 LOCATED 265 FEET FROM THE South LINE AND 2150 FEET FROM THE East LINE OF SEC. 20 TWP. 20N RGE. 9W NMPM					
			12. County McKinley		
19. Proposed Depth 475'		19A. Formation Menefee		20. Rotary or C.T. Rotary	
21. Elevations (Show whether DF, RT, etc.) 6464 GR		21A. Kind & Status Plug, Bond Blanket		21B. Drilling Contractor Own Rig	
				22. Approx. Date Work will start 4/2/74	

23.

### PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
6 1/4"	4 1/2"	9.5	425'	50	surface

We propose to drill a 6 1/4" hole to 475'. We will then run 425' + of 4 1/2" casing to the top of the Red Mountain pay and circulate cement to surface using cement basket. We will then drill out plug, run tubing rods and pump and produce open hole. This well is designed to infill a previously undrained area in the Red Mountain oil field by utilizing a modified five-spot pattern in this area.



IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Signed Bruce A. Black Title Managing Agent Date 3/25/74  
(This space for State Use)

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:

**NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT**

Form C-102  
Supersedes C-128  
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

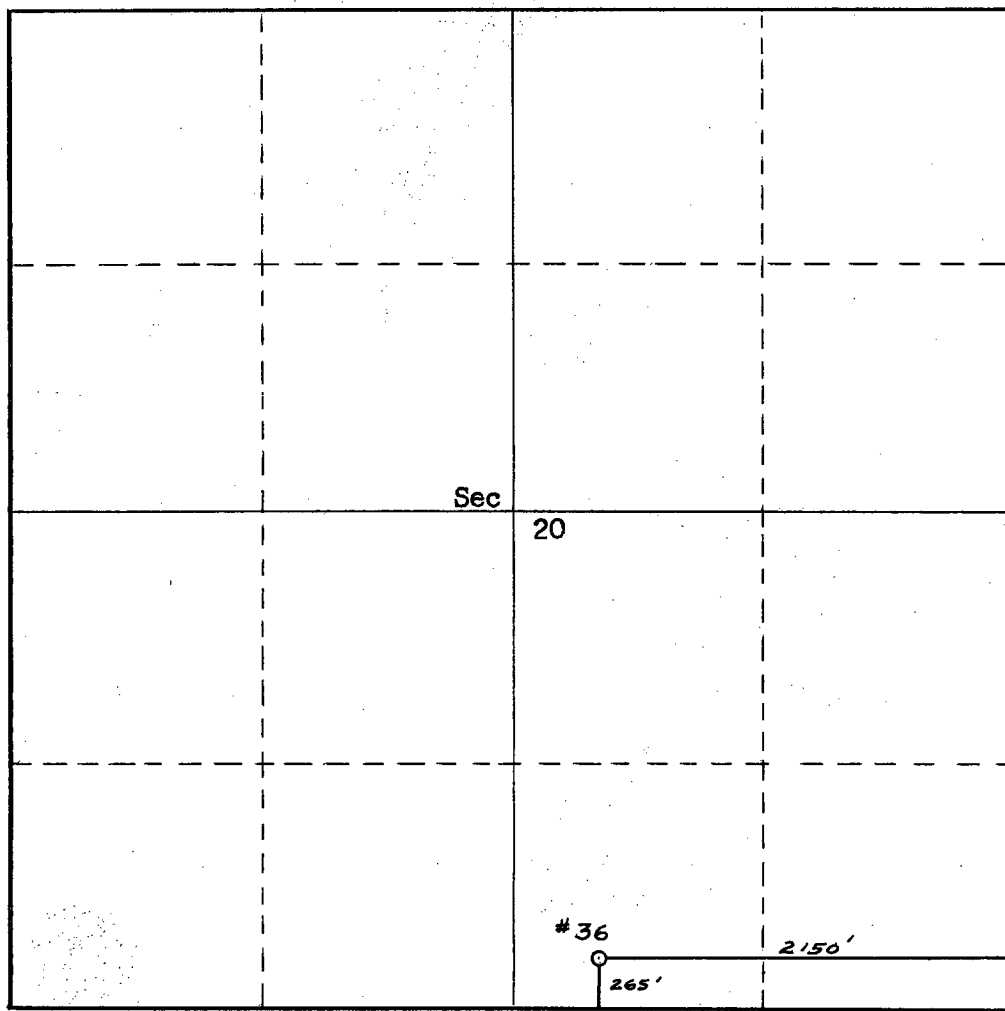
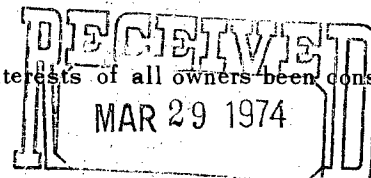
Operator <b>Chaco Oil Company</b>			Lease <b>Santa Fe RR</b>		Well No. <b>36</b>
Unit Letter <b>0</b>	Section <b>20</b>	Township <b>20N</b>	Range <b>9W</b>	County <b>McKinley</b>	
Actual Footage Location of Well: <b>265</b> feet from the <b>South</b> line and <b>2150</b> feet from the <b>East</b> line					
Ground Level Elev. <b>6464</b>	Producing Formation <b>Menefee</b>		Pool <b>Red Mountain Menefee</b>		Dedicated Acreage:  Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes    ☐ No    If answer is "yes," type of consolidation \_\_\_\_\_

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



**CERTIFICATION**

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name Bruce L. Blair  
 Position Managing Agent  
 Company Chaco Oil Company  
 Date 3/26/74

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed March 26, 1974  
 Registered Professional Engineer and/or Land Surveyor  
Fred B. Kerr  
 Certificate No. 3950

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OPERATOR	

# NEW MEXICO OIL CONSERVATION COMMISSION

Form C-101  
Revised 1-1-65

5A. Indicate Type of Lease	
STATE <input type="checkbox"/>	FEE <input checked="" type="checkbox"/>

5. State Oil & Gas Lease No.

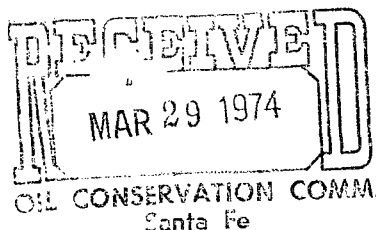
## APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work		7. Unit Agreement Name	
b. Type of Well OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/>		8. Farm or Lease Name Santa Fe RR	
2. Name of Operator Chaco Oil Company		9. Well No. 34	
3. Address of Operator c/o P. O. Box 537, Farmington, New Mexico		10. Field and Pool, or Wildcat Red Mountain Menefee	
4. Location of Well UNIT LETTER B LOCATED 95 FEET FROM THE North LINE AND 2600 FEET FROM THE East LINE OF SEC. 29 TWP. 20N RGE. 9W NMPM		12. County McKinley	
19. Proposed Depth 495'		19A. Formation Menefee	
20. Rotary or C.T. Rotary		21. Elevations (Show whether DF, RT, etc.) GR 6501	
21A. Kind & Status Plug. Bond Blanket		21B. Drilling Contractor Own Rig	
22. Approx. Date Work will start 3/26/74			

## PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
6 1/2"	4 1/2"	9.5	465'	50	Surface

We propose to drill a 6 1/2" hole to 495'. We will then run 465' + of 4 1/2" casing to the top of the Red Mountain pay and circulate cement to surface using cement basket. We will then drill out plug, run tubing rods, and pump and produce open hole. This well is designed to infill a previously undrained area in the Red Mountain Oil Field by utilizing a modified five-spot pattern in this area.



IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM; IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Signed Bruce G. Blom Title Managing Agent Date 3/25/74

(This space for State Use)

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:

**NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT**

Form C-102  
Supersedes C-128  
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

Operator <b>Chaco Oil Company</b>			Lease <b>Santa Fe Pacific RR</b>		Well No. <b>34</b>
Unit Letter <b>B</b>	Section <b>29</b>	Township <b>20N</b>	Range <b>9W</b>	County <b>McKinley</b>	
Actual Footage Location of Well: <b>95</b> feet from the <b>North</b> line and <b>2600</b> feet from the <b>East</b> line					
Ground Level Elev. <b>6501</b>	Producing Formation <b>Menefee</b>		Pool <b>Red Mountain Menefee</b>		Dedicated Acreage:  Acres

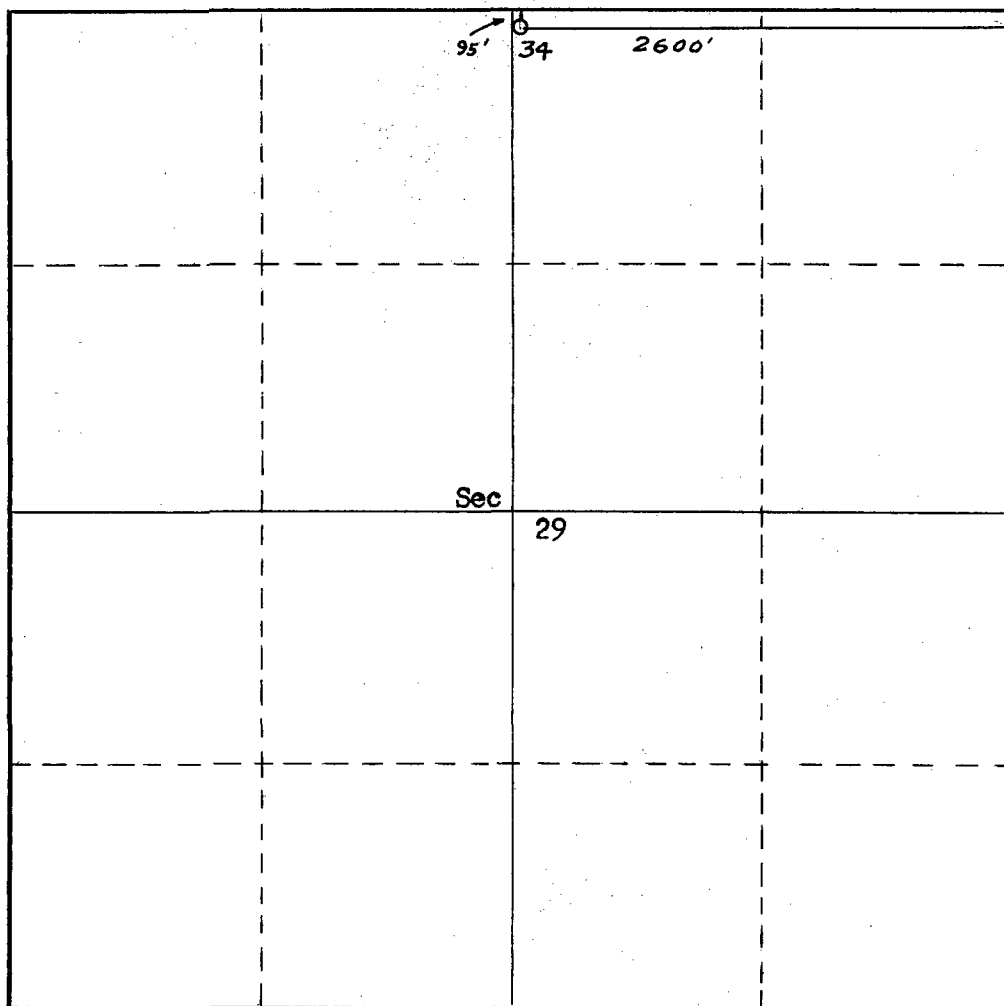
1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes    ☐ No    If answer is "yes," type of consolidation \_\_\_\_\_

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.

**RECEIVED**  
**MAR 29 1974**  
**OIL CONSERVATION COMM**



**CERTIFICATION**

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name Bruce G. Block  
 Position Managing Agent  
 Company Chaco Oil Company  
 Date 3/26/74

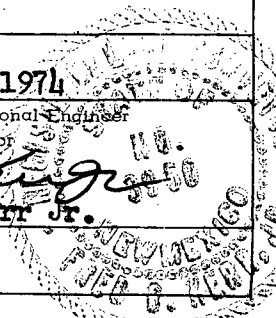
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed  
**March 26, 1974**

Registered Professional Engineer and/or Land Surveyor

Fred B. Kerr Jr.  
Fred B. Kerr Jr.

Certificate No.  
**3950**



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LAND OFFICE	
OPERATOR	

# NEW MEXICO OIL CONSERVATION COMMISSION

Form C-101  
Revised 1-1-65

5A. Indicate Type of Lease	
STATE <input type="checkbox"/>	FEE <input checked="" type="checkbox"/>

5. State Oil & Gas Lease No.

## APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work		7. Unit Agreement Name	
b. Type of Well OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>		8. Farm or Lease Name Santa Fe RR	
2. Name of Operator Chaco Oil Company		9. Well No. 35	
3. Address of Operator c/o P. O. Box 537, Farmington, New Mexico		10. Field and Pool, or Wildcat Red Mountain Menefee	
4. Location of Well UNIT LETTER B LOCATED 160 FEET FROM THE North LINE AND 2135 FEET FROM THE East LINE OF SEC. 29 TWP. 20N RGE. 9W NMPM		12. County McKinley	
19. Proposed Depth 480		19A. Formation Menefee	20. Rotary or C.T. Rotary
21. Elevations (Show whether DF, RT, etc.) 6478 GR	21A. Kind & Status Plug. Bond Blanket	21B. Drilling Contractor Own Rig	22. Approx. Date Work will start 3/30/74

23.

PROPOSED CASING AND CEMENT PROGRAM					
SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
6 1/2" MAR 29 1974 4 1/2"		9.5	450'	50	Surface
OIL CONSERVATION COMMISSION Santa Fe					

We propose to drill a 6 1/2" hole to 480'. We will then run 450' ± of 4 1/2" casing to the top of the Red Mountain pay and circulate cement to surface using cement basket. We will then drill out plug, run tubing rods, and pump and produce open hole. This well is designed to infill a previously undrained area in the Red Mountain Oil Field by utilizing a modified five-spot pattern in this area.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Signed Bruce A. Black Title Managing Agent Date 3/25/74  
(This space for State Use)

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

**NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT**

Form C-102  
Supersedes C-128  
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

Operator <b>Chaco Oil Company</b>			Lease <b>Santa Fe RR</b>		Well No. <b>35</b>
Unit Letter <b>B</b>	Section <b>29</b>	Township <b>20N</b>	Range <b>9W</b>	County <b>McKinley</b>	
Actual Footage Location of Well: <b>160</b> feet from the <b>North</b> line and <b>2135</b> feet from the <b>East</b> line					
Ground Level Elev. <b>6478</b>	Producing Formation <b>Menefee</b>		Pool <b>Red Mountain Menefee</b>		Dedicated Acreage:  Acres

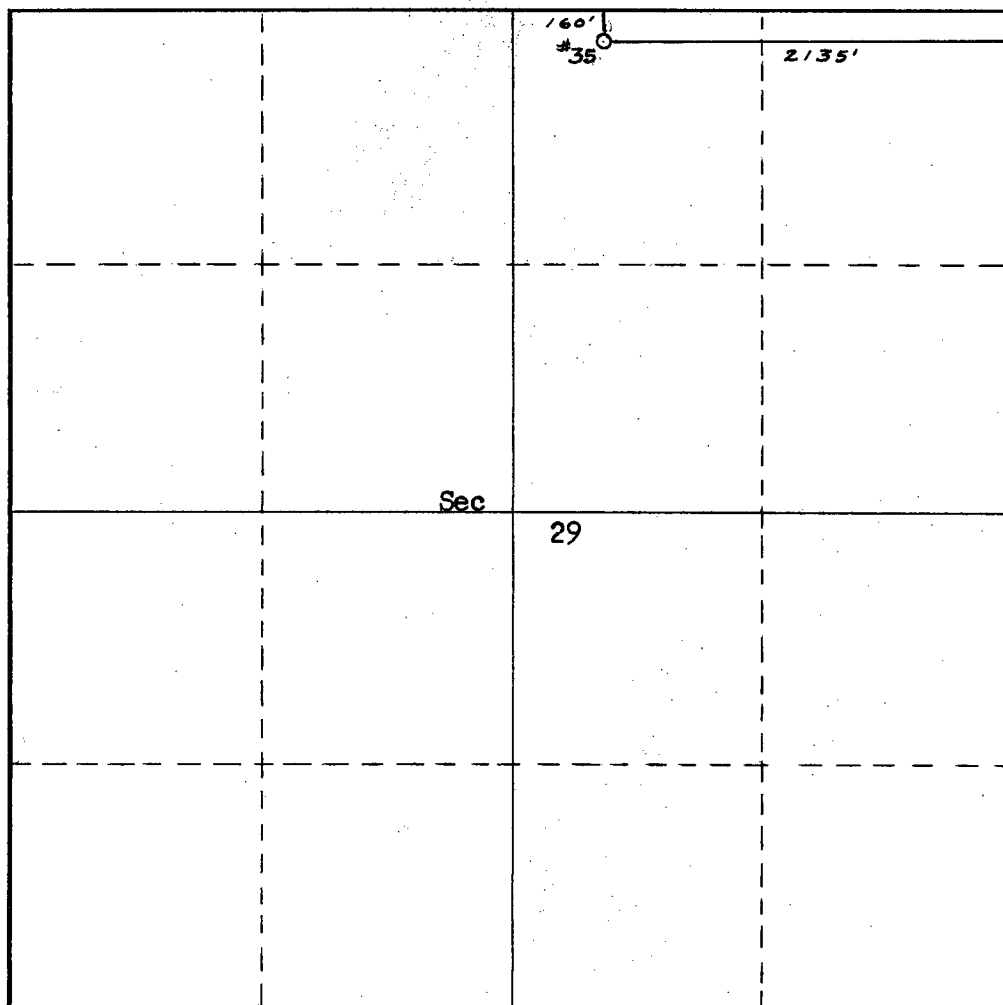
1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
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3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes    ☐ No    If answer is "yes," type of consolidation \_\_\_\_\_

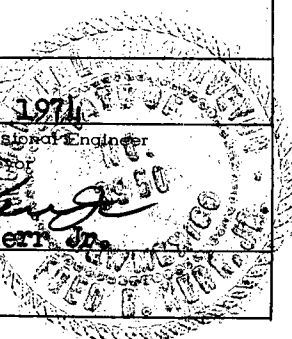
If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

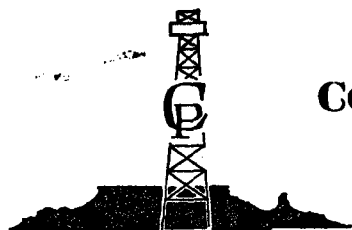
No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.

**RECEIVED  
MAR 28 1974  
OIL CONSERVATION COMMISSION**



<b>CERTIFICATION</b>	
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.	
Name	<i>Bruce G. Blood</i>
Position	<b>Managing Agent</b>
Company	<b>Chaco Oil Company</b>
Date	<b>3/26/74</b>
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.	
Date Surveyed	<b>March 26, 1974</b>
Registered Professional Engineer and/or Land Surveyor <i>Fred B. Kerr Jr.</i> <b>Fred B. Kerr Jr.</b>	
Certificate No.	<b>3950</b>





# COLORADO PLATEAU GEOLOGICAL SERVICES, INC.

SUITE 2E

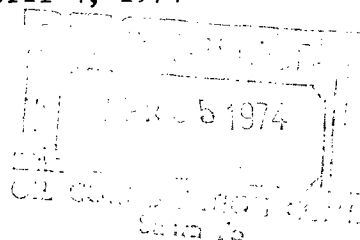
413 WEST MAIN STREET  
FARMINGTON, NEW MEXICO 87401

P. O. Box 537

(505) 325-9671

- ☆ Surface & Sub-Surface Studies
- ☆ Well Site Supervision
- ☆ Exploration Program Planning & Supervision
- ☆ Property Development and Management

April 4, 1974



Mr. Kapteina  
District Supervisor  
New Mexico Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Dear Mr. Kapteina:

In accordance with your telephone request on April 2, 1974, I am enclosing a number of maps which should clarify our recent C-101 requests.

Enclosure No. 1 shows the present lands surrounding the Red Mountain oil field which are operated by Chaco Oil Company. These lands are outlined in green. The oil field is outlined in red and as you can see there are no outside owners involved in the field. The wells for which we are requesting approval are circled in red for your identification.

Enclosure No. 2 is a larger scale location map showing the wells in the field and our requested locations are in red. As noted on Enclosure No. 2 the I-14 and I-3 wells are presently being plugged and abandoned because of holes in 2" tubing which was originally used as casing by Mr. Birdseye.

Enclosure No. 3 is a work map which will give you an idea of the structural configuration of the Red Mountain pay, and is on the same scale as Enclosure No. 2. Again our locations are marked in red. Oil is known to exist at least as far downdip as the 5940' contour.

Enclosure No. 4 is a map of the resistivities as determined from previous wells in the field. The known oil productive interval is encompassed within the 50 ohm and greater resistivities.

Enclosure No. 5 is a modified isopach map of the net pay in the Red Mountain field as shown by the dashed red line. We believe there is a sand pinch-out on the west side of the field. This belief is based on our own correlations of logs in this area and does not agree with Mr. Birdseye's original interpretation of thicker sands to the west. However this is not a point of contention with regard to our requested nonstandard locations. As you can see from Enclosure No. 5 we expect 15' to 20' of oil sand in all of these locations.



Enclosure No. 6 shows the possible field limits of the Red Mountain oil field as determined by the ohm resistivities on the northwest and the east side of the field, and as determined by the 5940' structural contour (which is probably near the oil-water contact on the original accumulation) on the north and south and last of all by the sand pinch out of this channel on the southwest. As you can see our proposed locations are well within the field limits. The sweep pattern as depicted on Enclosure No. 6 has been determined by the calculated volume of water injected into each injection well and by using these volumes for areas of sweep which we believe have been effectively swept by Mr. Birdseye's original flood. These are shown in blue.

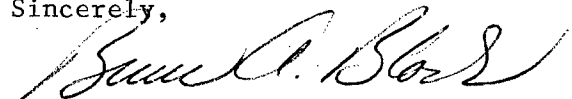
Enclosure No. 7 depicts the minimum area which has not been effectively produced or swept by previous flooding. In the Red Mountain field this area is shown in green. In addition Enclosure No. 7 also shows the existing water lines which have been laid and now exist within the field area. The water supply well is shown by the blue circle to the northeast of the field. Our proposed locations are designed to adequately test three apparently unswept areas within the field limits. They will also replace wells which are presently planned for plugging because of holes in tubing which was previously mentioned. These wells were also designed to facilitate a five-spot water flood pattern if the core analysis from these wells indicate recoverable reserves sufficient to warrant additional flooding of these previous unproduced areas.

As mentioned to you on the phone, we have presented this geologic picture to Mr. Emery Arnold and Mr. Al Kenrick of the Aztec office of the New Mexico Oil Conservation Commission. In order to expedite our operations based on rig availability and other prime considerations we obtained, on March 26, 1974, from Mr. Kendrick, verbal approval to proceed on well No. 34 contingent upon your final approval. Because there is no contiguous land ownership situations which endanger correlative rights, we respectfully ask your soonest approval of our recent requests.

If we can answer additional questions please feel free to call us at 325-9671 and we will be glad to provide any additional data which you may require.

Thank you very much for your consideration.

Sincerely,



Dr. Bruce A. Black, President  
Colorado Plateau Geological Services  
Consulting Petroleum Geologist  
AIPG No. 2392

BAB:no

cc: Emery Arnold  
New Mexico Oil Conservation Commission  
Aztec, New Mexico