



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE
1000 RIO BRAZOS ROAD
AZTEC NM 87410
(505) 334-6170 FAX: (505) 334-6170
[http://nemnrd.state.nm.us/ocd/District II/3ddistrict.htm](http://nemnrd.state.nm.us/ocd/District%20II/3ddistrict.htm)

GARY E. JOHNSON
GOVERNOR

Jennifer A. Salisbury
CABINET SECRETARY

June 26, 1998

Ms Kay Maddox
Conoco, Inc.
10 Desta Dr Ste 100W
Midland TX 79705-4500

Re: Primo #1, K-06-31N-10W, API 30-045-11019

Dear Ms Maddox:

Your application to directionally drill the proposed referenced well at a surface location of 1650' FSL, 1650' FWL and a proposed bottom hole location of 1611' FSL, 790' FWL is hereby approved. If after the well is side tracked, the bottom hole location is closer than 790' to the drill tract boundary, this approval will be of no effect.

If you have any questions, please contact me.

Yours truly,

Ernie Busch
District Geologist/Deputy O&G Inspector

EB/mk

Xc: Farmington BLM-Duane Spencer
NMOCD(Santa Fe)-Michael Stogner

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

CONOCO INC.

3. Address and Telephone No

10 DESTA DR. STE. 100W, MIDLAND, TX. 79705-4500 (915) 686-5424

4. Location of Well (Footage, Sec., T., R., M. or Survey Description)

Section 6, T-31-N R-10-W, K
1650' FSL & 1650' FWL

5. Lease Designation and Serial No

SF 078215B

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No

Primo #1

9. API Well No

30-045-11019

10. Field and Pool, or Exploratory Area

Blanco Mesaverde

11. County or Parish, State

San Juan, NM

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

TYPE OF SUBMISSION

- ☒ Notice of Intent
☐ Subsequent Repon
☐ Final Abandonment Notice

TYPE OF ACTION

- ☐ Abandonment
☐ Recompletion
☐ Plugging Back
☐ Casing Repair
☐ Altering Casing
☒ Other

Sidetrack

- ☐ Change of Plans
☐ New Construction
☐ Non-Routine Fracrunng
☐ Water Shut-Off
☐ Conversion to Injection
☐ Dispose Water

(Note: Repon results of multiple completion 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.)*

It is proposed to sidetrack this well according to the attached procedure.

RECEIVED
JUN 1 1998

OIL CON. DIV.
DIST. 3

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

Signed

Kay Maddox

Kay Maddox

Title

Regulatory Agent

Date

March 26, 1998

(This space for Federal or State office use)

Approved by

Title

Date

Conditions of approval if any

BLM(6), NMOCD(1), SHEAR, PONCA, COST ASST, FILE ROOM

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

NMOCD

Conoco Primo #1 Sidetrack Geologic Justification

The Conoco Primo #1 is a vertically drilled well currently producing in commercial quantities from The Mesa Verde. The well is under performing compared to offset wells in the area. The Primo #1 is located in proximity to and on trend with a fault system, identified on 3-D seismic that has provided fracture enhanced production in the Chacra in the nearby Primo #1A well in the same section. Seismic attributes suggest potential for an open fracture system in the Mesa Verde adjacent to the existing well-bore that could be accessed utilizing a high angle sidetrack (30 –45 degrees) through the Mesa Verde interval to improve the chances of intersecting open fractures.

Primo 1

TD @ BHL = 5150' TVD (784' above S.L.)
BHL 790' FWL; 1611' FSL; Sec 6

PRIMO 1 SIDETRACK PROCEDURE

API # 30-45-11019

April, 1998

AFE # -- 8331

Authorized amount: \$450,000

Current status: MV producer (approx 150 MCF/D).

Objective: Test 7" casing/run CBL to ensure integrity, cementing window area (2900') if necessary. Plug back MV, set CIBP/whipstock @ 2900', and mill 7" and mist drill 6 1/4" sidetrack hole (approx 773' East extension, w/ max angle of 23 degrees). Total measured depth of 5301' (equiv vertical of 5150'). Set 4 1/2", 11.60#, J-55 casing to surface, cementing up through window (allowing upper 4 1/2" casing to be backed-off after completion). Stimulate & complete.

Attachments: Wellview wellbore diagram and group well history information; Sperry Sun directional program; BJ stimulation procedure.

Location: T 31 N, R 10 W, Sec 6, Unit K, San Juan County, NM

Drilled: 1953

KB: 5935' Grd: 5927'

CASING: 10 3/4", 32# @ 214'. 175 sxs to surface.

7", 20 & 23# , 8rd J-55 @ 4353'. 225 sxs to surface, TOC @ 3085'.

NOTE: cmt sqzd @ 4109'-4280'; 1970'-2117'.

5" liner, 15#, J-55, 4.41" ID from 4259'-5112'. 225 sxs, to liner top (6" hole)

TUBING: 2 3/8", 4.7#, J-55 tbg to 4983'

CURRENT PERFS: 4914'-5073' OA ---- MV

TOPS--vertical: PC---2697'; MVCLH---4425'; MVPLO---4930';

Measured depth (in proposed hole): MVCLH---4510', MVPLO---5061',

PREPARATION WORK / DAYLIGHT RIG

1. Check location to ensure adequate size for sidetrack rig operations. If pad extension necessary, obtain necessary approvals from BLM, etc.
2. Install and test anchors. MIRU.
3. Blow down well & kill if necessary. NDWH. NUBOPS.
4. TOOH w/ tbg. .
5. RU wireline. RIH w/ CBL, GR, CCL and log in 7" from TOL @ 4259' to 2600'.
6. Assuming no cement @ proposed window @ 2900, perforate squeeze holes 100' above and below, and perform suicide squeeze across interval. POOH & WOC. Drillout next day and pressure test above 3100' to 2000 psi. If good pressure test, relog 2700'-3100' interval .
7. TIH w/ 4 1/2" cement retainer and set @ 4880'.. Proceed to pump 100 sxs Class B neat cement through retainer into MV interval. Sting out, and spot 5 sxs on top of retainer. Also spot 75 sxs balanced plug @ 4200' and below, across overlap area. Circulate hole above w/ inhibited brine. POOH. RIH w/ 7" CIBP on wireline and set @ 2900' (ensure not in collar).
8. Pressure test plug/ casing to 2000 psi.

IF WHIPSTOCK AVAILABLE, PROCEED W/ NEXT STEPS. OTHERWISE, RIG DOWN & PREPARE SITE FOR DRILLING RIG.

9. RIH w/ whipstock (hinge type; 3 degree) and set on CIBP.
10. Mill out casing window, and drill 1'-3' of open hole. POOH.
11. RD. Prepare location for drilling rig.

DRILLING ----

Goal: 6 days

1. MIRU. RIH w/ 6 1/4" bit, 6 point reamer, drill collars, and drill pipe & drill preliminary sidetrack
2. RIH w/ bit, air motor, float, non-magnetic drilling collars (MWD inside collars), drilling collars, drill pipe. (Note: no stabilizer used).
3. Proceed to drill w/ mist, w/ EM tool survey every 30' (every connection). Add wrap every joint to drilling to avoid backoff problems. Geolograph and wildcat auto driller to be used.
4. Note flow tests at every connection. If highly fractured MV hit, flow tests will indicate.
5. After reaching TD (5301' measured depth), pull up in casing and perform final flow test, running temp & GR open hole log (to identify location of specific crack features).

CASING ----

NOTE: Minimize fluid on formation during this operation! Also, notify BLM prior to cementing.

1. IF excellent flow tests obtained, above 4 MMCF/D, indicating highly fractured MV encountered, 4 1/2", 11.60#, J-55 casing to be run to TD, w/ ECP above MV (and diverting tool above ECP). After casing run, set plug and inflate ECP. Test. If OK, proceed to cement above ECP to just above window.
2. If flow test less than 4 MMCF/D, proceed to run 4 1/2", 11.6#, J-55 casing WITHOUT ECP to TD. Circulate light slurry cement w/ fluid loss additive up across window.
(may elect to back-off 4 1/2" casing above window after completion).

Slurry design to be following:

50/50 poz class B + 4% gel + .3% CD-32 + .3% FL-52 + 2% KCl + 6.25pps Gilsonite + 0.25pps Celloflake. @ 13.2 ppg, FL= 580 cc, yield = 1.45, TT = 3:45, FW = 0.3 cc. 24 hr = 2600 psi, 48 hr = 3500 psi.

Total cement est volume, from TD (5301') to 2800', 285sx(incl. 40% excess)

COMPLETION ---

Goal: 6 days

1. RU completion rig, and RIH w/ 4 1/2" bit and scrapper and cleanout to PBTD.
2. Run GR/CBL/CCL from TD to TOC.
3. Perforate MV (@ crack features, based on temp log). Based on cemented completion, proceed to acidize/breakdown, and frac stimulate as per attached BJ procedure.
4. Clean out using gas or air; unload well; land 2 3/8", 4.7#, J-55 w/ SN @ mid-perf, and put to production.

MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DECLARATION

Form No. 1
Supersedes
Form No. 1

ACREAGE CORRECTION

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

Lessee			Primo	
Pudco Petroleum Corporation				
Section	Range	Township	Range	
K	6	3 North	10 West	
Well Location (Location of well)				
1650	feet from the	South	1650	
5925	Producing Formation			
	Mesaverde		Blanco	

San Juan

est

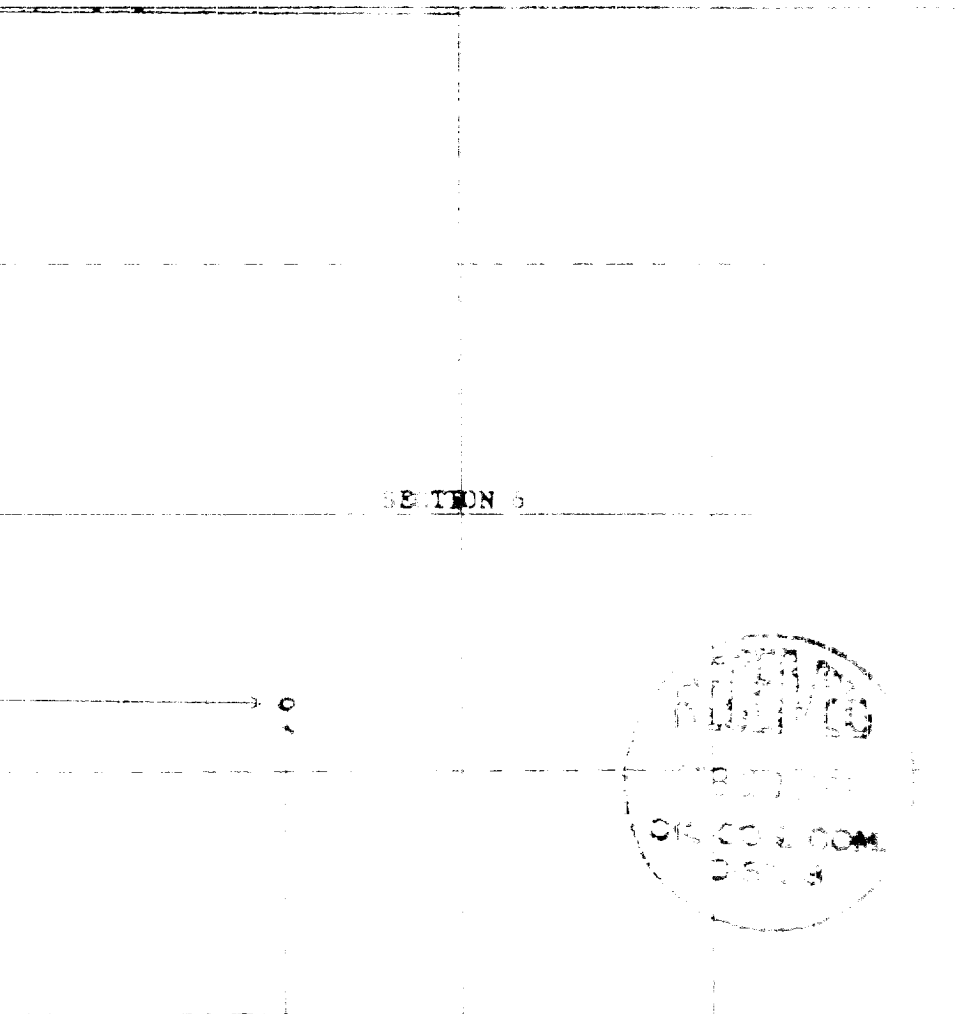
Estimated Acreage **311.32**

- Outline the acreage dedicated to the subject well by ordered priority.
- If more than one lease is dedicated to the well, outline each well's interest and royalty.
- If more than one lease of title or ownership is dedicated to the well, outline each well's interest by communitization, unitization, force-pooling, etc.

☒ Yes ☐ No If answer is "yes" type of communitization or unitization

If answer is "No," list the order and to or descriptions, where to be made, as from the owner.

If answer is "Yes," well until all interests have been communitized, unitized, force-pooled, or otherwise combined in a non-standard unit, including, etc.



communitization

Order of title: 1. Reverse

2. Communitization, unitization, force-pooling, etc.

Signature

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

Charles E. Ramsey
Signature

Charles E. Ramsey, Jr.
Title

Area Production Manager
Company

Pudco Petroleum Corporation
Title

February 27, 1968

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

Witnessed: President and Secretary
of the Commission

Form No. 1

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED Budget Bureau No 1004-0135 Expires March 31, 1993
5 Lease Designation and Serial No SF 078215B
6 If Indian, Allottee or Tribe Name
7 If Unit or CA, Agreement Designation
8 Well Name and No Primo #1
9 API Well No. 30-045-11019
10 Field and Pool, or Exploratory Area Blanco Mesaverde
11 County or Parish, State San Juan, NM

SUNDRY NOTICES AND REPORTS ON WELLS

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Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1 Type of Well <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other
2 Name of Operator CONOCO INC.
3 Address and Telephone No. 10 DESTA DR. STE. 100W, MIDLAND, TX. 79705-4500 (915) 686-5424
4 Location of Well (Footage, Sec., T. R. M. or Survey Description) Section 6, T-31-N R-10-W, K 1650' FSL & 1650' FWL

CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA		
TYPE OF SUBMISSION	TYPE OF ACTION	
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment	<input type="checkbox"/> Change of Plans
<input type="checkbox"/> Subsequent Repon	<input type="checkbox"/> Recompletion	<input type="checkbox"/> New Construction
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back	<input type="checkbox"/> Non-Routine Fracuring
	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> Water Shut-Off
	<input checked="" type="checkbox"/> Altering Casing	<input type="checkbox"/> Conversion to Injection
	<input checked="" type="checkbox"/> Other Sidetrack	<input type="checkbox"/> Dispose Water

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.)*

It is proposed to sidetrack this well according to the attached procedure.

RECEIVED
JUN 1 1998
OIL CON. DIV.
DIST. 3

RECEIVED
BLM
MAR 31 PM 12:49
070 BLM DISTRICT 3 NM

14 I hereby certify that the foregoing is true and correct		
Signed <u>Kay Maddox</u>	Title <u>Regulatory Agent</u>	Date <u>March 26, 1998</u>
(This space for Federal or State office use)		
Approved by _____	Title _____	Date _____
Conditions of approval if any _____		

BLM(6), NMOCD(1), SHEAR, PONCA, COST ASST, FILE ROOM

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*See Instruction on Reverse Side

NMOCD

Conoco Primo #1 Sidetrack Geologic Justification

The Conoco Primo #1 is a vertically drilled well currently producing in commercial quantities from The Mesa Verde. The well is under performing compared to offset wells in the area. The Primo #1 Is located in proximity to and on trend with a fault system, identified on 3-D seismic that has provided fracture enhanced production in the Chacra in the nearby Primo #1A well in the same section. Seismic attributes suggest potential for an open fracture system in the Mesa Verde adjacent to the existing well-bore that could be accessed utilizing a high angle sidetrack (30 –45 degrees) through the Mesa Verde interval to improve the chances of intersecting open fractures.

Primo 1

TD @ BHL = 5150' TVD (784' above S.L.)
BHL 790' FWL; 1611' FSL; Sec 6

AFE : Primo 1 Sidetrack

COST:

Total gross: \$450M

Breakdown:	Drilling rig cost ---	\$180M
	Directional company--	\$80M
	Cementing ---	\$40M
	Logging ---	\$30M
	Perforating --	\$20M
	Day rig (prep/compl)	\$50M
	Frac stimulation	\$50M

JUSTIFICATION & ECONOMICS:

The Primo 1 well is currently an under-performing MesaVerde well, producing at a rate less than 150 MCFPD. The #1 well has 7" casing from surface to 4361', w/ cement squeezes @ 4109' and 1970' (6/59). Top of 5" liner is @ 4259' (Refer to attached Wellview skematic for mechanical history/ wellbore diagram.)

Based on 3 D seismic analysis, the Primo 1 is adjacent to a highly fractured MV fairway, which can be accessed by drilling a high angle sidetrack. It is therefore recommended to plug-back the well, using a daylight rig, then move a drilling rig in and high angle sidetrack.

Gross funds requested for this project is \$450M. Economics are based on an incremental IP of 300 MCFPD over existing completion rate.

(Refer to geological justification for more details)

(Refer to economic case for details)

SIDETRACK PROCEDURE:

PREPARATION WORK -- DAYLIGHT RIG

1. Check location to ensure adequate size for sidetrack rig operations. If pad extension necessary, obtain necessary approvals from BLM, etc.
2. Install and test anchors. MIRU.
3. Blow down well & kill if necessary. NDWH. NUBOPS.
4. TOO H w/ tbg. . RIH w/ bit and scrapper & gage inside 7" to TOL.
5. RU wireline. RIH w/ CBL, GR, CCL and log in 7" from TOL for min reqd interval. POOH. Run directional survey (gyro). If necessary, perform remedial cementing.
6. TIH w/ tbg and 4 1/2" packer and set in TOL. Pressure test backside to ensure pressure integrity of 7", squeeze perfs, and liner top. If OK, circulate inhibited brine & POOH.
7. RIH w/ CIBP on wireline and set @ window target, a min of 5' above or 20' below collar. (Note: plug may be integral w/ whipstock; if so, can skip this step)
8. Pressure test plug/ casing to 1500 psi.
9. RIH w/ oriented whipstock (hinge type; 3 degree) and set on CIBP.
10. Mill out casing window, and drill 1'-3' of open hole. POOH.
11. RD. Prepare location for drilling rig.

DRILLING ----

1. RIH w/ bit, 6 point reamer, drill collars, and drill pipe & drill preliminary sidetrack, taking TOTCO surveys every 300', holding angle at 3 degrees. Drill until 100' above directional kick off point. POOH.

2. RIH w/ bit, air motor, float, non-magnetic drilling collars (MWD inside collars), drilling collars, drill pipe. (Note: no stabilizer used).
3. Proceed to drill w/ mist, w/ EM tool survey every 30' (every connection). Add wrap every joint to drilling to avoid backoff problems. Geolograph and wildcat auto driller to be used.
4. Note flow tests at every connection. If highly fractured MV hit, flow tests will indicate.
5. After TD, pull up in casing and perform final flow test, running temp & GR open hole log (to identify specific crack depth).

CASING ----

NOTE: Minimize fluid on formation during this operation!

1. Based on flow tests highly fractured MV is encountered (ie, flow test 4 MMCF/D or above), 4 1/2" casing to be run to TD, w/ ECP above MV (and diverting tool above ECP). After casing run, set plug and inflate ECP. Test. If OK, proceed to cement above ECP to just above window.
2. If flow test less than 4 MMCF/D, proceed to run 4 1/2" casing WITHOUT ECP to TD. Circulate light slurry cement (or foam cement) to cover to across window. (may elect to back-off 4 1/2 " casing above window after completion).

COMPLETION ---

1. RU completion rig, and RIH w/ bit and scrapper and cleanout to PBTD.
2. If ECP completion, only GR/CCL log required. If standard completion, run TDT log for correlation.
3. Perforate MV. If standard completion, proceed to fracture stimulate, as per BJ procedure.
4. Clean out ; unload well; and put to production.

MEXICO OIL CONSERVATION BOARD WELL LOCATION AND ACREAGE DEDICATION

Perm.
Superior
Bureau

ACREAGE CORRECTION

Well locations must be from the outer boundary of the well.

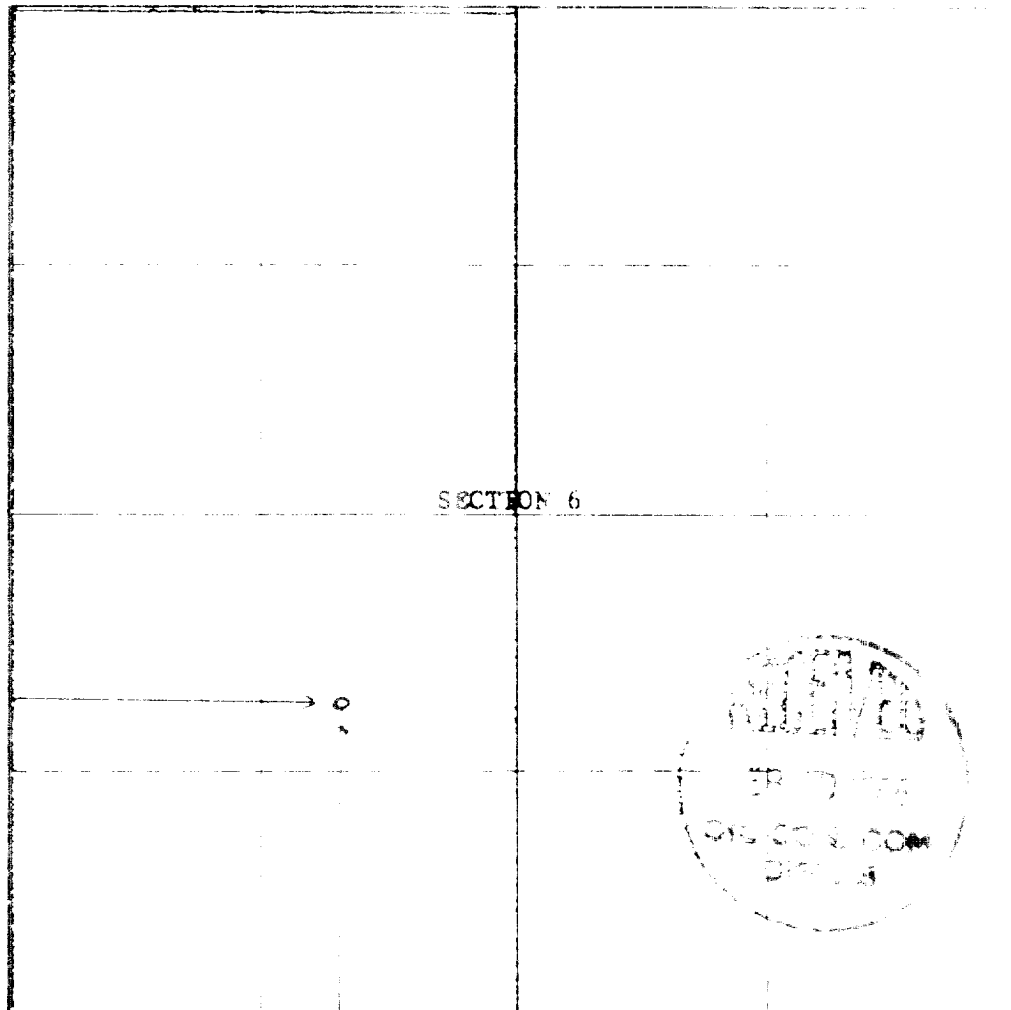
Operator Public Petroleum Corporation		Lease Prim		Section San Juan	
Section K	Section 6	Line 31 North	Range 10 West		
Section 1650		Section 1650		Section West	
Section 5925		Section Mesaverto		Section Blanco	
				Section 311.32	

1. Out of the acreage dedicated to the subject well by the operator.
2. If more than one lease is dedicated to the well, out of each interest.
3. If more than one lease of title or ownership is dedicated to the well, out of each interest.

☒ Yes ☐ No If answer is "yes" type of consolidation **Consolidation**

If answer is "no," list the names and tract descriptions who have a right of interest in the well.

No allowance will be assigned to the well until all interests have been assigned by communication, or otherwise, or until a non-standard unit is eliminated.



CERTIFICATION

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

Charles E. Ramsey, Jr.

Charles E. Ramsey, Jr.

Area Production Manager

Public Petroleum Corporation

February 27, 1963

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

Consolidation

Consolidation

Consolidation