

Corrected

NOV 10 2008

OCD-ARTESIA

S

Form 3160-3  
(April 2004)UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

Oil Cons.

N.M. Div-Dist 2

1301 W. Grand Avenue, NM 88210

FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 2007

Lease Serial No.

112249

If Indian, Allottee or Tribe Name

## APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		7 If Unit or CA Agreement, Name and No	
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		8 Lease Name and Well No. <b>Silver Charm 1525-17 Fed Com #2H</b>	
2 Name of Operator <b>Parallel Petroleum Corporation</b>		9 API Well No. <b>30.005.64076</b>	
3a. Address <b>1004 North Big Spring, Suite 400 Midland, Texas</b>	3b. Phone No. (include area code) <b>432/684-3727</b>	10. Field and Pool, or Exploratory <b>Walnut Creek Wolfcamp Gas Pool</b>	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface <b>SHL 1880' FNL AND 208' FEL Sec 17, T-15S-R25E</b> At proposed prod. zone <b>BHL 1887' FNL AND 660' FWL Sec 17, T-15-S-R25E</b>		11. Sec. T R. M. or Blk and Survey or Area <b>17, T15S, R25E</b>	
14 Distance in miles and direction from nearest town or post office* <b>5 miles North of Artesia, New Mexico</b>		12 County or Parish <b>Chaves</b>	13 State <b>NM</b>
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) <b>208'</b>	16 No. of acres in lease <b>2435.41</b>	17 Spacing Unit dedicated to this well <b>320 total, 160 acres federal from this lease</b>	
18 Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft <b>1120'</b>	19 Proposed Depth <b>5500'</b>	20. BLM/BIA Bond No on file <b>NMB000265</b>	
21 Elevations (Show whether DF, KDB, RT, GL, etc.) <b>GL 3508'</b>	22 Approximate date work will start* <b>12/15/2008</b>	23. Estimated duration <b>30 days</b>	

## 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No 1, shall be attached to this form.

- |  |   |
|--|---|
| 1 Well plat certified by a registered surveyor   | 4 Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).    |
| 2 A Drilling Plan  | 5 Operator certification  |
| 3 A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office). | 6 Such other site specific information and/or plans as may be required by the authorized officer. |

25 Signature <i>Deane Durham</i>	Name (Printed/Typed) <b>Deane Durham</b>	Date <b>9-18-08</b>
Title <b>Engineer, Parallel Petroleum Corporation</b>		

Approved by (Signature) <i>/s/ Jerry Dutchover</i>	Name (Printed/Typed) <b>/s/ Jerry Dutchover</b>	Date <b>NOV 05 2008</b>
Title <b>Acting Assistant Field Manager, Lands And Minerals</b>	Office <b>ROSWELL FIELD OFFICE</b>	<b>APPROVED FOR 2 YEARS</b>

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

Title 18 USC Section 1001 and Title 43 U.S.C Section 1212, make 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

\*(Instructions on page 2)

Engineering O.K.: 10-03-2008: P.A.B.

DECLARED WATER BASIN

CEMENT BEHIND THE **85"**  
CASING MUST BE **CIRCULATED**

WITNESS

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS ATTACHED

N.M. Oil Cons. DIV-Dist. 2  
1301 W. Grand Avenue  
Artesia, NM 88210

NOV 10 2008

OCD-ARTESIA

Form 3160-3  
(April 2004)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER


1a Type of work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5 Lease Serial No. NM NM 112249
1b. Type of Well. <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6 If Indian, Allottee or Tribe Name
2 Name of Operator Parallel Petroleum Corporation		7 If Unit or CA Agreement, Name and No
3a Address 1004 North Big Spring, Suite 400 Midland, Texas	3b Phone No. (include area code) 432/684-3727	8 Lease Name and Well No. Silver Charm 1525-17 Fed Com #2H
4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface SHL 1880' FSL AND 208' FEL Sec 17, T-15S-R25E At proposed prod zone BHL 1887' FSL AND 660' FWL Sec 17, T-15-S-R25E		9 API Well No. 30-005-64076
10 Field and Pool, or Exploratory (97631) Walnut Creek Wolfcamp Gas Pool		11 Sec, T R M or Blk and Survey or Area 17, T15S, R25E
14 Distance in miles and direction from nearest town or post office* 5 miles North of Artesia, New Mexico		12 County or Parish Chaves
13 State NM		
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drg unit line, if any) 208'	16 No of acres in lease 2435.41	17 Spacing Unit dedicated to this well 320 total, 160 acres federal from this lease
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 1120'	19 Proposed Depth 5500'	20 BLM/BIA Bond No. on file NMB000265
21 Elevations (Show whether DF, KDB, RT, GL, etc) GL 3508'	22 Approximate date work will start* 12/15/2008	23 Estimated duration 30 days

24. Attachments

ROSWELL CONTROLLED WATER BASIN

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form

- |  |  |
|--|--|
| 1. Well plat certified by a registered surveyor.   | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)     |
| 2. A Drilling Plan   | 5. Operator certification  |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office) | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25 Signature 	Name (Printed/Typed) Deane Durham	Date 9-12-08
Title Engineer, Parallel Petroleum Corporation		

Approved by (Signature)	Name (Printed/Typed) Assistant Field Manager, Lands And Minerals	Date
Title Assistant Field Manager, Lands And Minerals		Office ROSWELL FIELD OFFICE
APPROVED FOR 2 YEARS		

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\*(Instructions on page 2)

DECLARED WATER BASIN

CEMENT BEHIND THE 85" WITNESS  
CASING MUST BE CIRCULATED

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS ATTACHED



DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II  
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Artec, NM 87410

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION  
1220 South St. Frances Dr.  
Santa Fe, NM 87505

Form C-102  
Revised October 12, 2005  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>30-005-64074</b>	Pool Code <b>97631</b>	Pool Name <b>Walnut Creek Wellcamp (Gas)</b>
Property Code <b>36501</b>	Property Name <b>SILVER CHARM 1525-17 FED. COM.</b>	Well Number <b>2H</b>
OGRID No. <b>230381</b>	Operator Name <b>PARALLEL PETROLEUM CORPORATION</b>	Elevation <b>3508'</b>

Surface Location

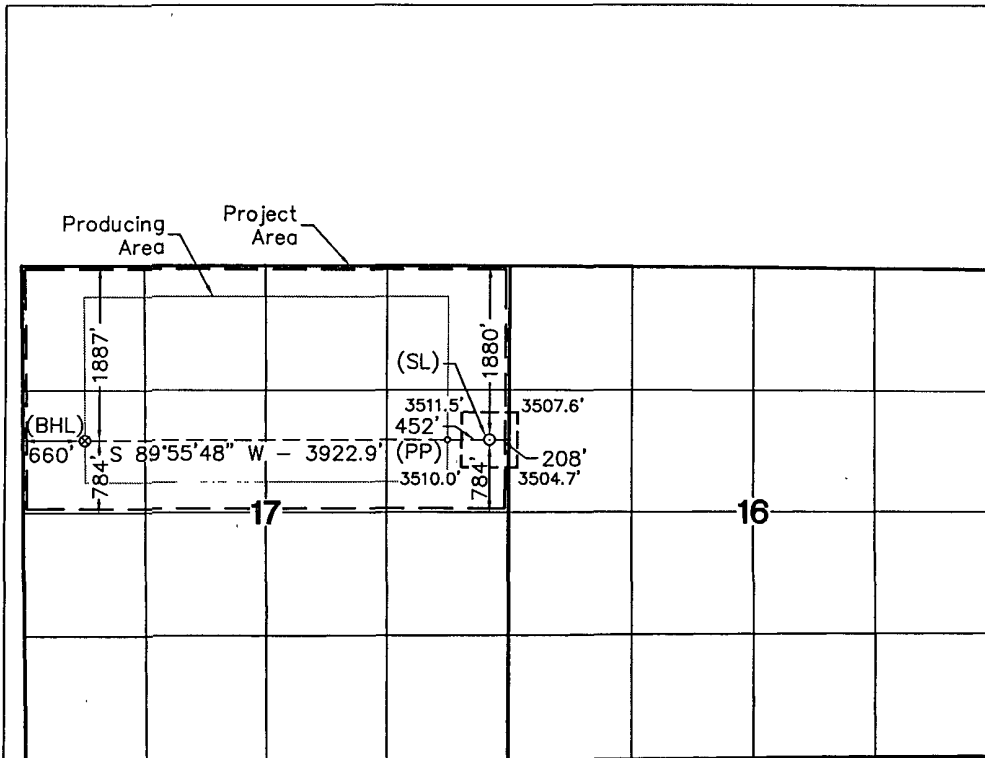
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	17	15 S	25 E		1880	NORTH	208	EAST	CHAVES

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	17	15 S	25 E		1887	NORTH	660	WEST	CHAVES

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



Bottom Hole Location  
Plane Coordinate  
X = 457,793.6  
Y = 733,830.1  
Geodetic Coordinate  
Lat. 33°01'02.24\" N  
Long. 104°28'15.70\" W  
(NAD '27)

Penetration Point  
Plane Coordinate  
X = 461,715.5  
Y = 733,834.8  
Geodetic Coordinate  
Lat. 33°01'02.33\" N  
Long. 104°27'29.64\" W  
(NAD '27)

Surface Location  
Plane Coordinate  
X = 462,167.4  
Y = 733,835.4  
Geodetic Coordinate  
Lat. 33°01'02.34\" N  
Long. 104°27'24.33\" W  
(NAD '27)

OPERATOR CERTIFICATION

I hereby certify the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

*Deane Durham* 9-12-08  
Signature Date  
**Deane Durham**  
Printed Name

SURVEYOR CERTIFICATION

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 belief

Date of Survey **9/12/08**  
Signature & Seal of Professional Surveyor  
**NEW MEXICO**  
**12185**  
W.O. **12185**  
Certificate No. **MACON McDONALD** 12185

## **SURFACE USE AND OPERATING PLAN**

### **1. Existing & Proposed Access Roads**

- A. The well site survey and elevation plat for the proposed well is shown in Exhibit #1. It was staked by West Company of Midland, Inc., Midland, Texas.
- B. All roads to the location are shown on the topographic map (Exhibit #2). The existing lease roads are illustrated and are adequate for travel during drilling and production operations. Upgrading existing roads prior to drilling the well will be done where necessary.
- C. Directions to Location: From the intersection of U.S. Highway 380 and Highway 285 in Roswell, New Mexico go south on Highway 285 for 27 miles to a point where an access road begins on the west (right) side of Highway 285, then go west on access road 0.3 mile, then go south for 242 feet to an access road on west (right) side of road, then go west and southwest on access road 0.7 mile to a point where the road turns south, then go south on access road 0.2 mile to the well pad for the proposed location. See Vicinity Map, Exhibit #3
- D. Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease.

### **2. Proposed Access Road:**

Exhibit #4 shows that no new road will be required for this location. Any road that is required it will be constructed as follows:

- A. The maximum width of the running surface will be 14'. The road will be crowned, ditched and constructed of 6" rolled and compacted caliche. Ditches will be at 3:1 slope and 4 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns.
- B. The average grade will be less than 1%.
- C. No turnouts are planned.
- D. The road has already been constructed and no additional culverts or cattleguards will be installed

- E. Surfacing material will consist of native caliche. Caliche will be obtained from the nearest BLM approved caliche pit or reserve pit area.

### **3. Location of Existing Wells:**

Exhibit #5 shows all existing wells within a one-mile radius of this well. As shown on this plat there are several wells in this area operated by Parallel Petroleum Corporation (Parallel).

### **4. Location of Existing and/or Proposed Facilities:**

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- A. Parallel currently operates a well and production facility on this lease, however, a separate production facility will be required for this location.
- B. If the well is productive, contemplated facilities will be as follows:
  - 1) Production will be sent to an onsite tank battery.
  - 2) The tank battery and facilities including any piping will be installed according to API specifications.
  - 3) Any additional caliche will be obtained from a BLM approved caliche pit or from a private source. Any additional construction materials will be purchased from contractors.
  - 4) No flow lines will be needed as this is a gas well. The gas pipeline will be permitted and constructed by the gas purchaser.
  - 5) No electric power will be require on this well location.

### **5. Location and Type of Water Supply:**

The well will be drilled with a combination brine and fresh water mud system as outlined in the drilling program. The water will be obtained from commercial water stations in the area and hauled to location by transport truck over the existing and proposed access roads shown in Exhibit #2. If a commercial fresh water source is nearby, fast line may be laid along existing road ROW's and fresh water pumped to the well. No water well will be drilled on the location.

**6. Source of Construction Materials:**

All caliche required for construction of the drill pad and proposed new access road (approximately 5,000 cubic yards) will be obtained from a BLM approved caliche pit or from a private source.

**7. Methods of Handling Water Disposal:**

- A. The well will be drilled utilizing a closed loop mud system. Drill cuttings will be held in rolloff style mud boxes and taken to an NMOCD approved disposal site and no-drying pad will be utilized.
- B. Drilling fluids will be contained in steel mud pits.
- C. Water produced from the well during completion will be held temporally in steel tanks and then taken to an NMOCD approved commercial disposal facility.
- D. Garbage and trash produced during drilling or completion operations will be collected in a trash bin and hauled to an approved landfill. No toxic waste or hazardous chemicals will be produced by this operation.
- E. After the rig is moved out and the well is either completed or abandoned, all waste materials will be cleaned up within 30 days. In the event of a dry hole, only a dry hole marker will remain.

**8. Ancillary Facilities:**

No airstrip, campsite or other facilities will be built as a result of the operation on this well.

**9. Well Site Layout:**

- A. The drill pad layout, with elevations staked by West Company of Midland, Inc., is shown in Exhibit #4. Dimensions of the pad are shown on Exhibit #6. Topsoil, if available, will be stockpiled per BLM specifications. Because the pad is almost level, no major cuts will be required.
- B. Exhibit #6 also shows the proposed orientation of closed loop mud system, and access road. No permanent living facilities are planned; however, a temporary foreman/toolpusher and crew quarters trailers will be on location during the drilling operations.

**10. Plans for Restoration of the Surface:**

- A. If the well is found to be non-commercial upon completion of the drilling and/or completion operations, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations in the area. The road will be reclaimed as directed by the BLM.

The original top soil will be returned to the pad and contoured, as close as possible to the original topography, and reseeded as per BLM specifications.

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**10. Surface Ownership:**

- A. The surface at this location is Fee and is owned by George Denton, 405 S. 15<sup>th</sup> Street, Artesia, New Mexico 88210, 505-746-2517. The surface has multiple uses which are primarily grazing of livestock and the production of oil and gas.
- B. The proposed road routes and surface location will be restored as directed by the BLM.

**11. Other Information:**

- A. The area around the well site is grassland and the topsoil is sandy. The vegetation is moderately sparse with native prairie grasses, some mesquite and shinnery oak. No wildlife was observed but it is likely that mule deer, rabbits coyotes and rodents traverse the area.
- B. Walnut Creek is located 2.25 miles south of this site. There is no other permanent or live water in the immediate area.
- C. There are two dwellings within 3 miles of this location and both belong to Mr. Jackson.
- D. A Cultural Resources Examination is being prepared by Southern New Mexico Archaeological Services, Inc., P.O. Box 1, Bent, New Mexico 88314 Phone 505-671-4797, and the results will be forwarded to your office in the near future.

**13. Bond Coverage:**

Bond Coverage is Nationwide Bond # NMB000265.

**14. Lessee's and Operator's Representative:**

The Parallel Petroleum Corporation representative responsible for assuring compliance with the surface use plan is as follows:

Deane Durham, Engineer, Parallel Petroleum Corporation  
Office: (432) 684-3727      Cell: (432) 413-9701

**15. Operator's Certification:**

I hereby certify that I, or persons under my direct supervision, have inspected the drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or Parallel Petroleum Corporation, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 15th day of May, 2008.

Signed: 

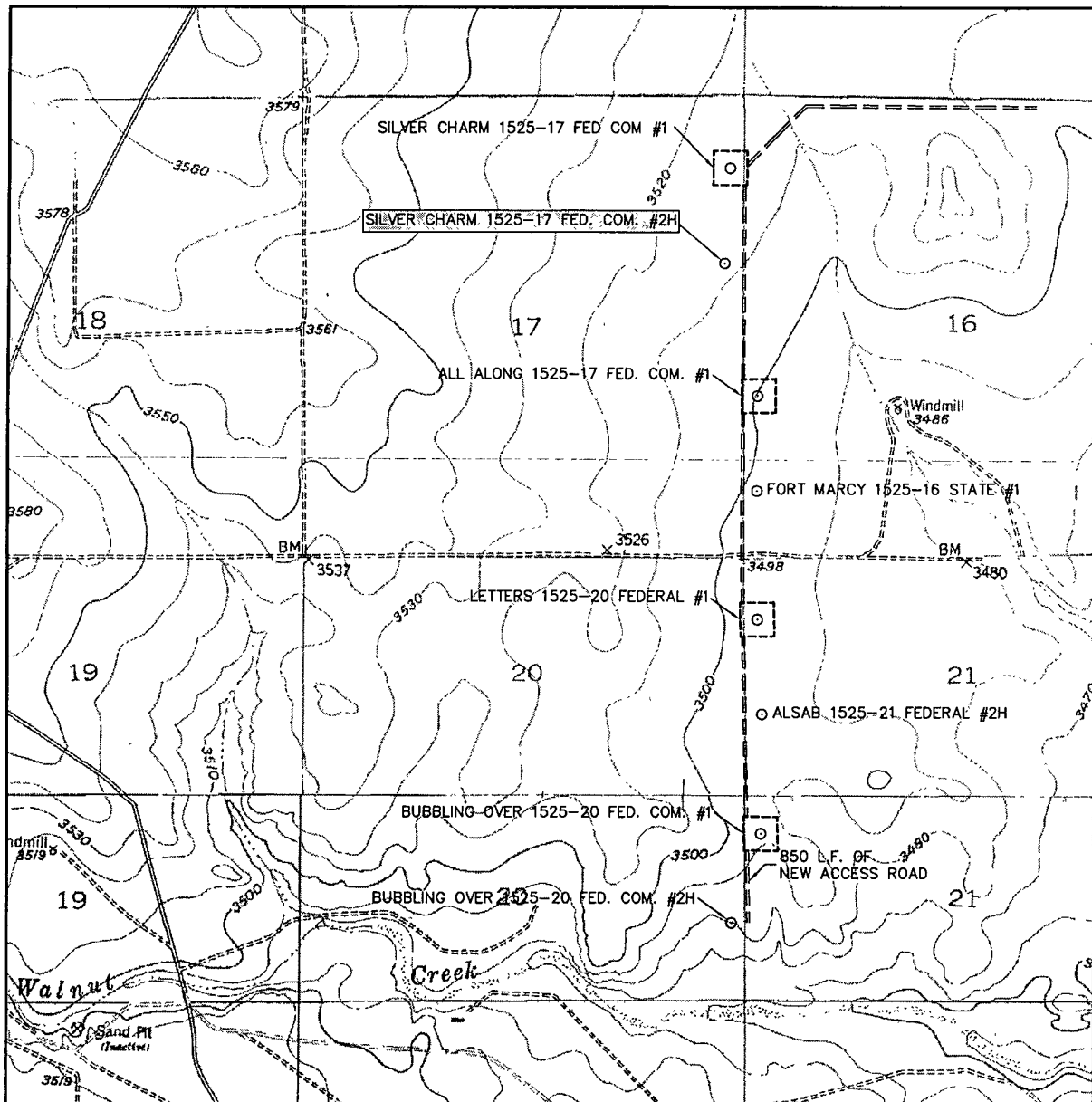
Printed Name: Deane Durham  
Position: Drilling Engineer  
Address: 1004 North Big Spring Street, Suite 400  
Midland, Texas 79701  
Telephone: (432) 684-3727  
Field Representative (if not above signatory): Not yet determined  
E-mail: ddurham@plll.com



**Exhibits:**

- Exhibit #1**    **Wellsite and Elevation Plat**  
**Form C-102 Well location and acreage dedication plat**
- Exhibit #2**    **Topographic Map (West)**
- Exhibit #3**    **Vicinity Map and area roads (West)**
- Exhibit #4**    **Elevation Plat (West)**
- Exhibit #5**    **Ownership map showing well location and other wells in the area.**
- Exhibit #6**    **Pad Layout and orientation**
- Exhibit #7**    **BOP and Choke diagrams**
- Exhibit #9**    **Form C-144 NMOCD pit permit application**

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
HAGERMAN SW - 10'

SEC. 17 TWP. 15-S RGE. 25-E

SURVEY \_\_\_\_\_ N.M.P.M.

COUNTY CHAVES

DESCRIPTION 1880' FNL & 208' FEL

ELEVATION 3508'

OPERATOR PARALLEL PETROLEUM CORPORATION

LEASE SILVER CHARM 1525-17 FED. COM.

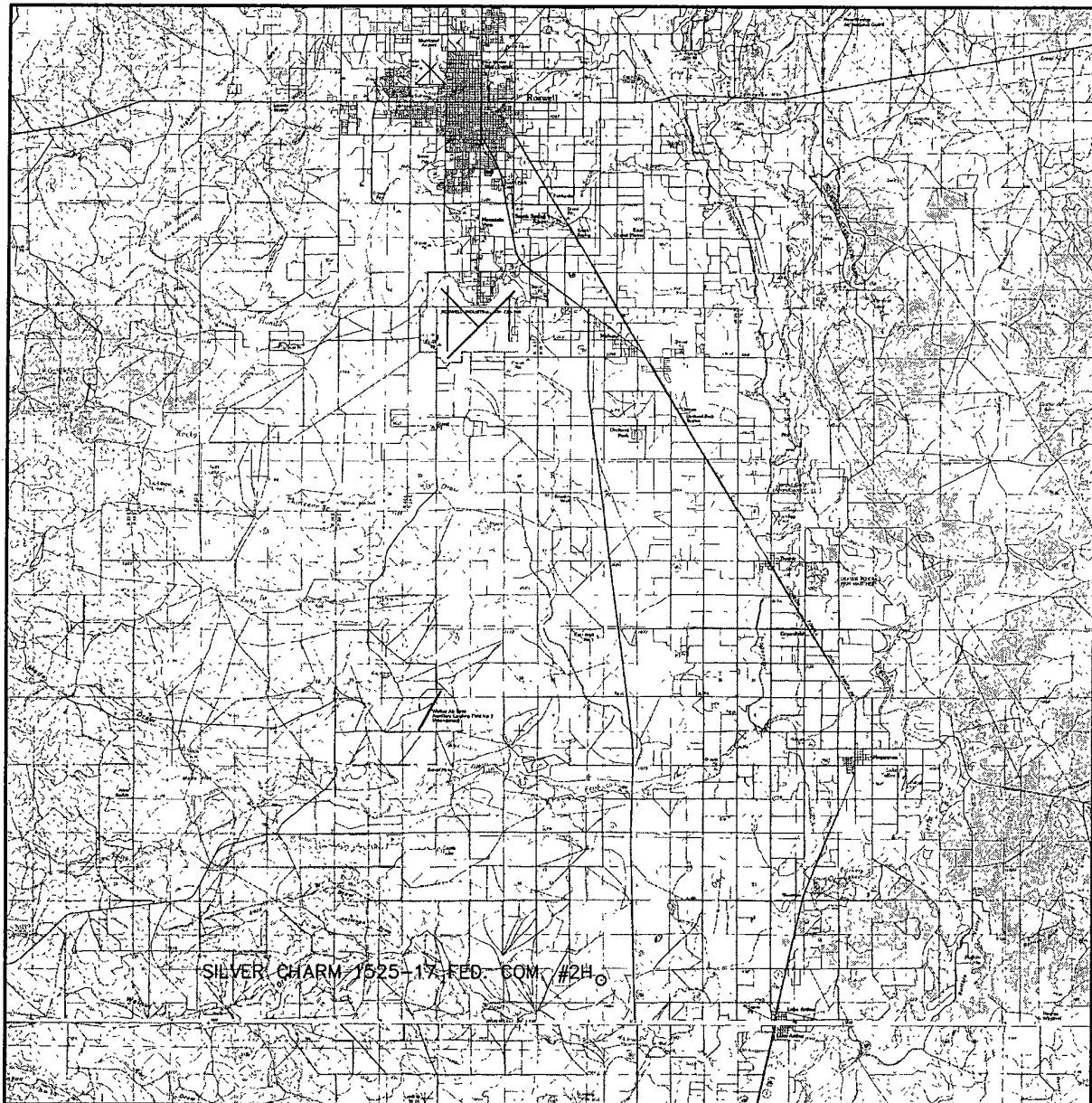
U.S.G.S. TOPOGRAPHIC MAP  
HAGERMAN SW



**WEST**  
**COMPANY**  
of Midland, Inc.

110 W. LOUISIANA, STE. 110  
MIDLAND TEXAS, 79701  
(432) 687-0865 - (432) 687-0868 FAX

# VICINITY MAP



SCALE: 1" = 5 MILES

SEC. 17 TWP. 15-S RGE. 25-E

SURVEY N.M.P.M.

COUNTY CHAVES

DESCRIPTION 1880' FNL & 208' FEL

ELEVATION 3508'

OPERATOR PARALLEL PETROLEUM CORPORATION

LEASE SILVER CHARM 1525-17 FED. COM.



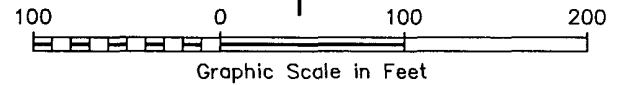
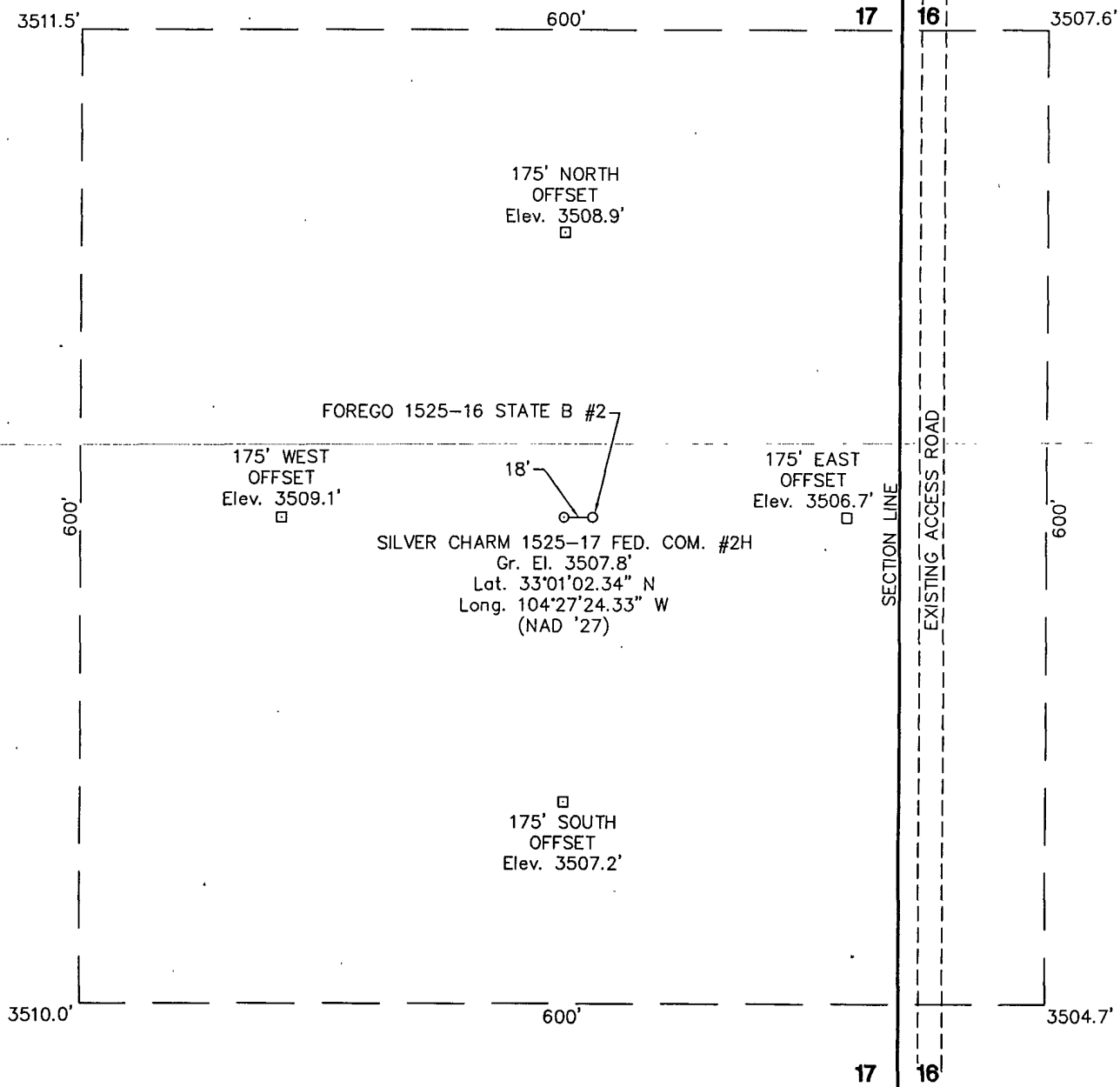
110 W. LOUISIANA, STE. 110  
MIDLAND TEXAS, 79701  
(432) 687-0865 - (432) 687-0868 FAX

# SECTION 17, TOWNSHIP 15 SOUTH, RANGE 25 EAST, N.M.P.M.

CHAVES COUNTY

NEW MEXICO

L-2008-0734-A



## DRIVING DIRECTIONS

FROM THE INTERSECTION OF U.S. HIGHWAY 380 and 285 IN ROSWELL, NM GO SOUTH ON SAID U. S. HIGHWAY 285 ABOUT 27 MILES TO A POINT WHERE AN ACCESS ROAD BEGINS ON THE WEST (RIGHT) SIDE OF SAID HIGHWAY 285, THEN GO WEST ON SAID ACCESS ROAD 0.3 MILES TO A POINT, THEN SOUTH 77 FEET TO AN ACCESS ROAD ON WEST (RIGHT) SIDE OF ROAD, THEN GO WEST AND SOUTHWEST ON SAID ACCESS ROAD 0.7 MILE TO A POINT WHERE ROAD TURNS SOUTH, THEN GO SOUTH ON SAID ACCESS ROAD 0.2 MILE TO THE PROPOSED LOCATION.

## PARALLEL PETROLEUM CORPORATION

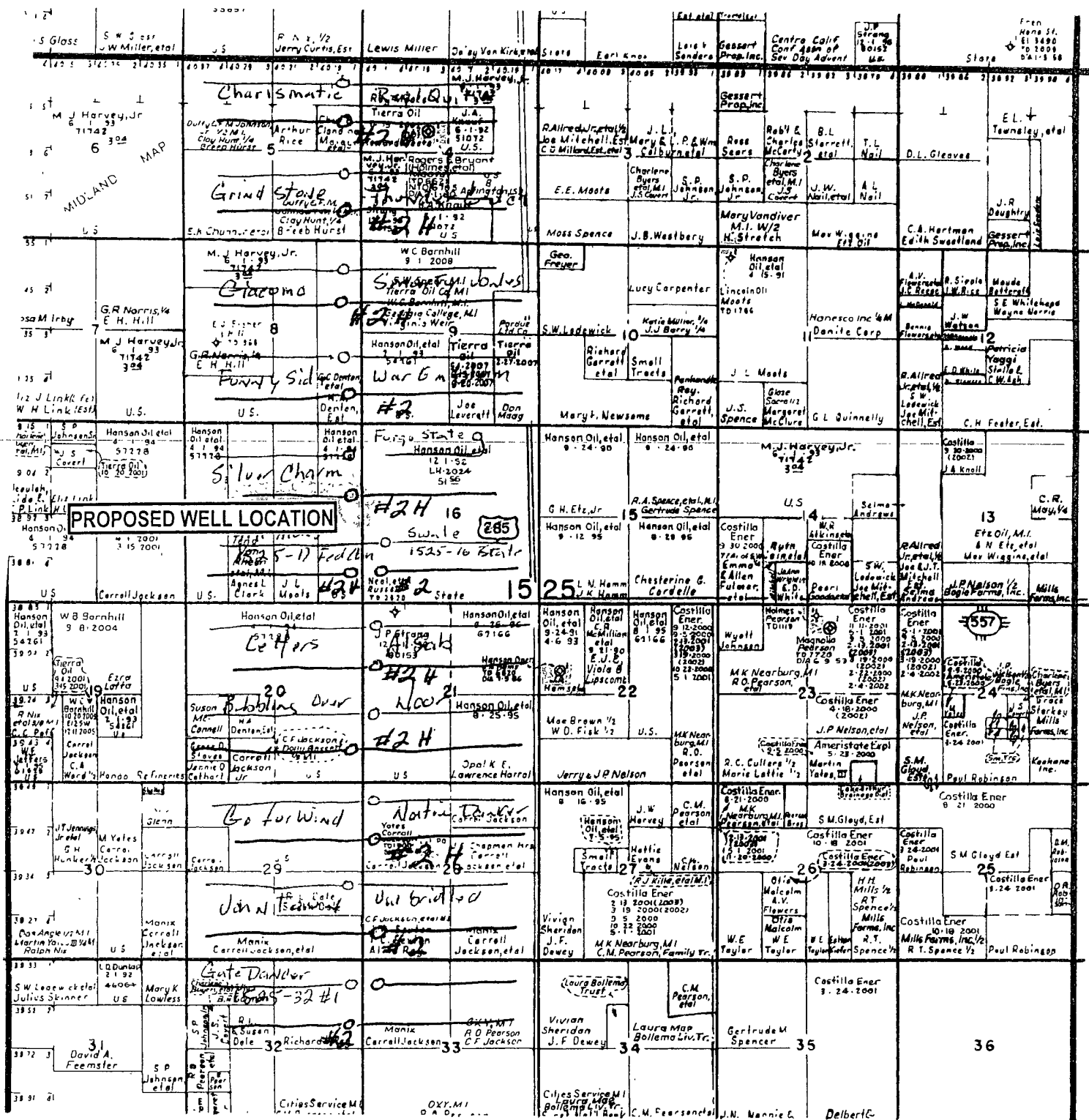
### SILVER CHARM 1525-17 FED. COM. #2H

Located 1880' FNL & 208' FEL, Section 17  
Township 15 South, Range 25 East, N.M.P.M.  
Chaves County, New Mexico

Drawn By: LVA	Date: September 2, 2008
Scale: 1"=100'	Field Book: 365 / 61-69
Revision Date:	Quadrangle: Hagerman SW
W.O. No: 2008-0734	Dwg. No.: L-2008-0734-A



110 W. LOUISIANA, STE. 110  
MIDLAND TEXAS, 79701  
(432) 687-0865 - (432) 687-0868 FAX



**Exhibit "5"**  
**AREA PRODUCTION MAP**  
**PARALLEL PETROLEUM CORPORATION**  
**SILVER CHARM 1525-17 FED. COM. #2H**  
**SHL: 1880' FSL AND 208' FEL, SEC 17, T15S, 25E**  
**CHAVES COUNTY, NEW MEXICO**

# CLOSED MUD SYSTEM LAYOUT & EQUIPMENT

1. RIG SHAKER
2. RIG MUD PIT
3. AUGER PIT
4. ELEVATED CENTRAFUGE -2
5. CUTTINGS PIT - OPEN ON ONE END
6. CEMENT RETURNS PIT
7. GENERATOR
8. ELECTRICAL PANEL
9. CUTTINGS BOXES
10. 500 BBL FLOW TANKS (FOR EMERGENCY USE)

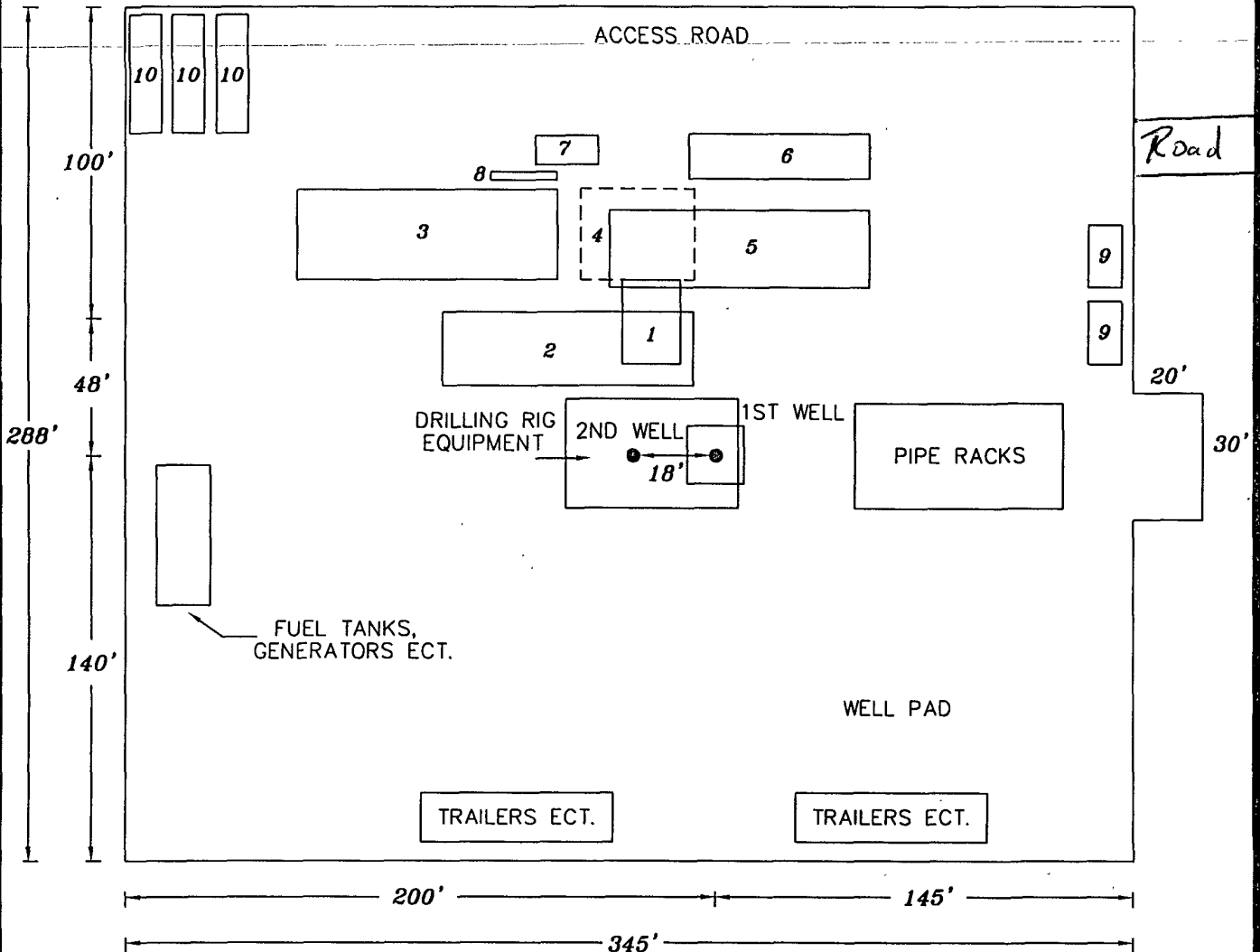


EXHIBIT 6

PARALLEL PETROLEUM  
DRILLING RIG LAYOUT  
DUAL WELL LOCATIONS

TETRA TECH  
MIDLAND, TEXAS

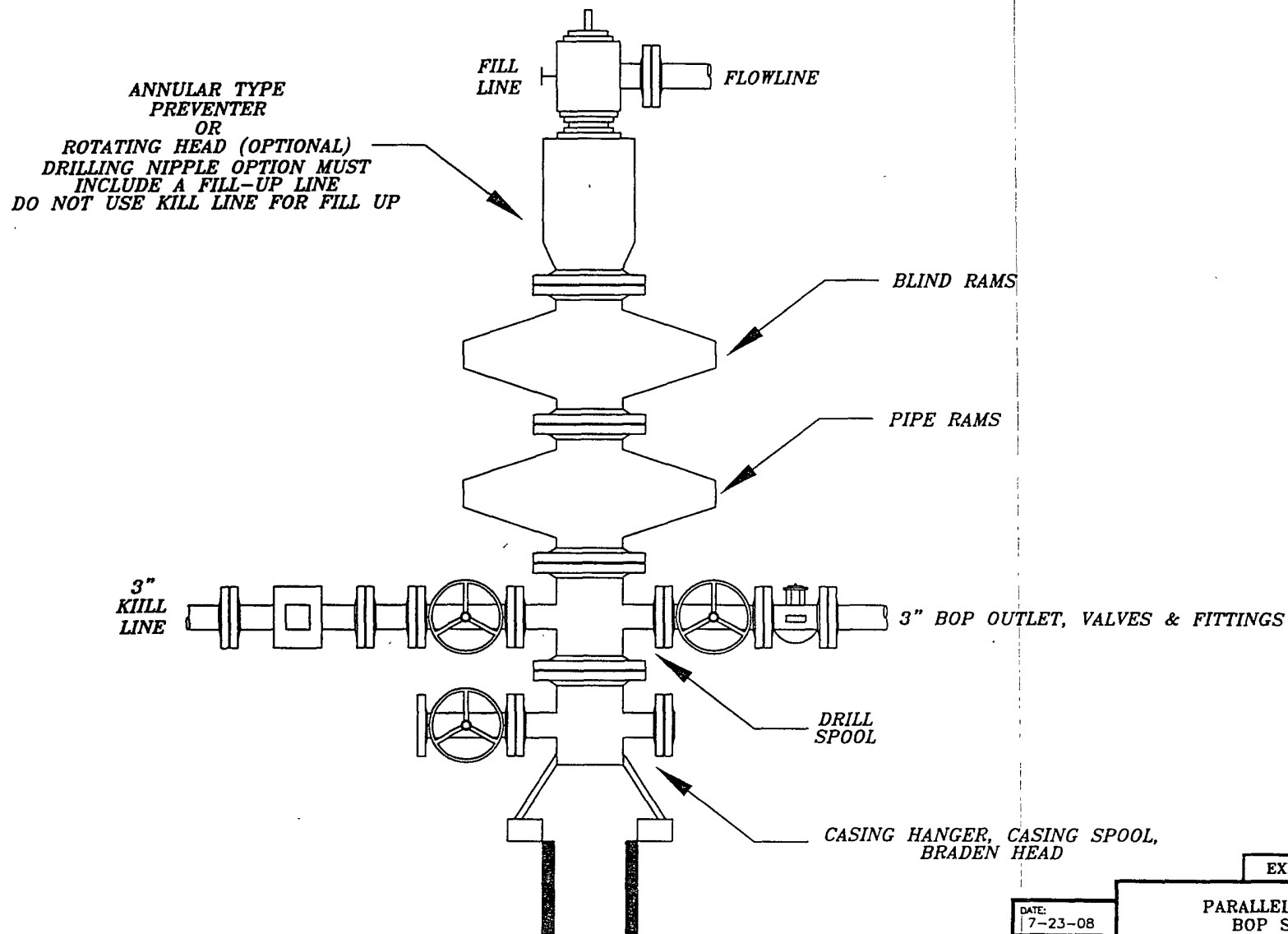
DATE:  
7/21/08

DWN. BY:  
RC

FILE:  
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DRILLING RIG LAYOUT-2

NOT TO SCALE

# MINIMUM BOP SCHEMATIC 3M SERVICE MINIMUM



NOT TO SCALE

EXHIBIT 7

PARALLEL PETROLEUM  
BOP SCHEMATIC

TETRA TECH  
MIDLAND, TEXAS

DATE:  
7-23-08

DWN. BY:  
RC

FILE:  
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# *CHOKE MANIFOLD* *3M SERVICE MINIMUM*

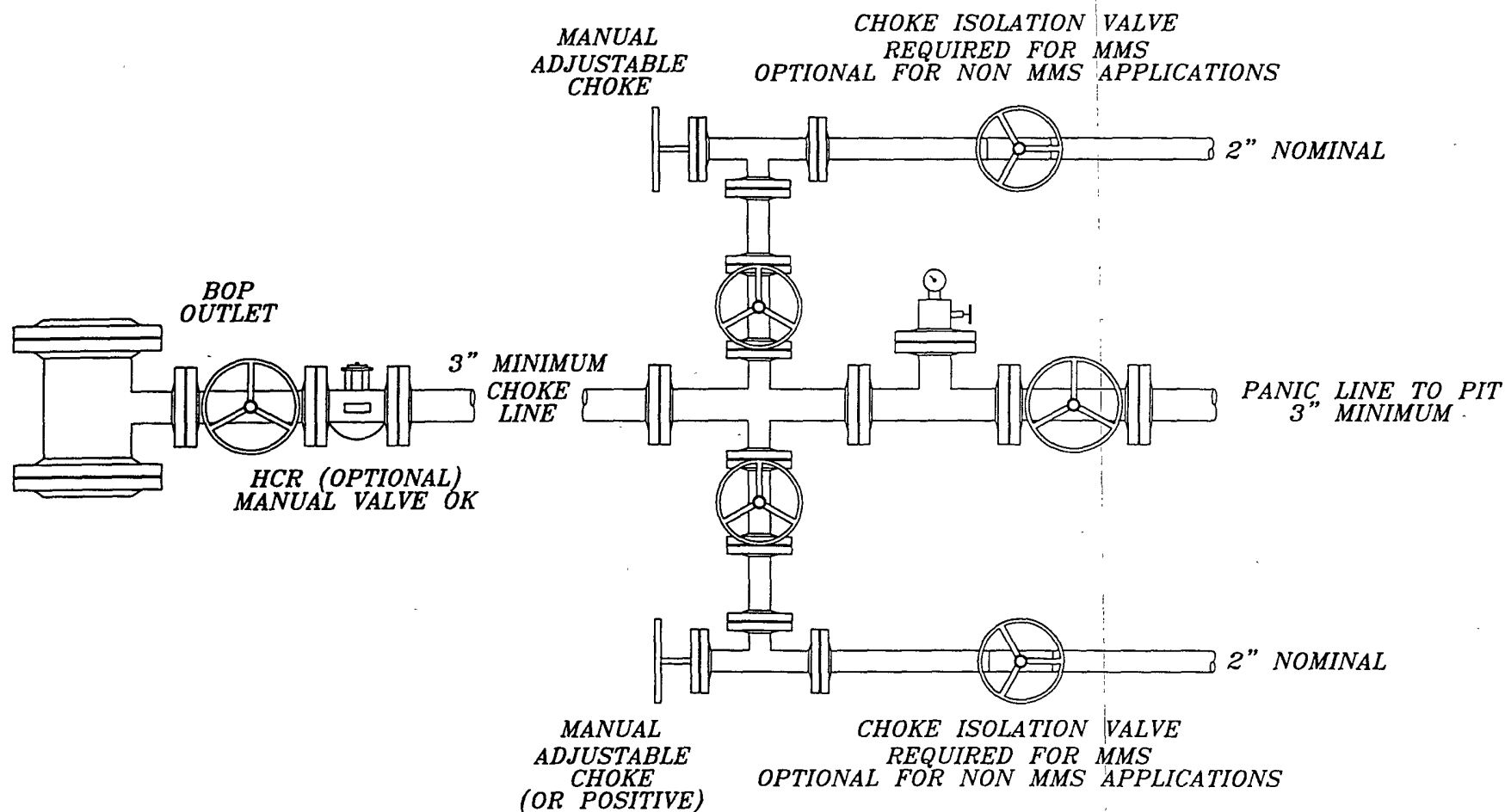


EXHIBIT 7A

PARALLEL PETROLEUM  
 CHOKE MANIFOLD

TETRA TECH  
 MIDLAND, TEXAS

DATE:  
 7-23-08  
 DWN. BY:  
 RC  
 FILE:  
 C:\PARALLEL\2429\1  
 CHOKE MANIFOLD

NOT TO SCALE



# **PARALLEL** SURVEY CALCULATION PROGRAM PETROLEUM CORPORATION

OPERATOR:	Parallel Petroleum Corporation	Supervisors:	
WELL:	Silver Charm 1525-17 Fed Com #2H		
LOCATION:	N/2 Sec. 17 T-15-S R-25-E		
API NUMBER:			
COMMENTS:			
		MAG DEC.(-/+)	
		GRID CORR.(-/+)	
		TOTAL CORR.(-/+)	0.0
DATE: 09/09/08		TIME: 4:13 PM	TRUE TO GRID <input type="checkbox"/>

MINIMUM CURVATURE CALCULATIONS(SPE-3362)									PROPOSED DIRECTION		270.0	TARGET TRACKING TO CENTER	
SVY	MD	INC	GRID	TVD	VERT	N-S	E-W	DLS/				ABOVE(+)	RIGHT(+)
NUM			AZM		SECT			100				BELOW(-)	LEFT(-)
TIE	0	0.0	0.0	0.0	0.0	0.0	0.0						
1	4280	0.0	0.0	4280.0	0.0	0.0	0.0	0.0				470.0	0.0
2	4290	1.2	270.0	4290.0	0.1	0.0	-0.1	12.2				460.0	0.0
3	4300	2.4	270.0	4300.0	0.4	0.0	-0.4	12.2				450.0	0.0
4	5018	90.0	270.0	4750.0	470.0	0.0	-470.0	12.2				0.0	0.0
5	8920	90.0	270.0	4750.0	4371.7	0.0	-4371.7	0.0				0.0	0.0

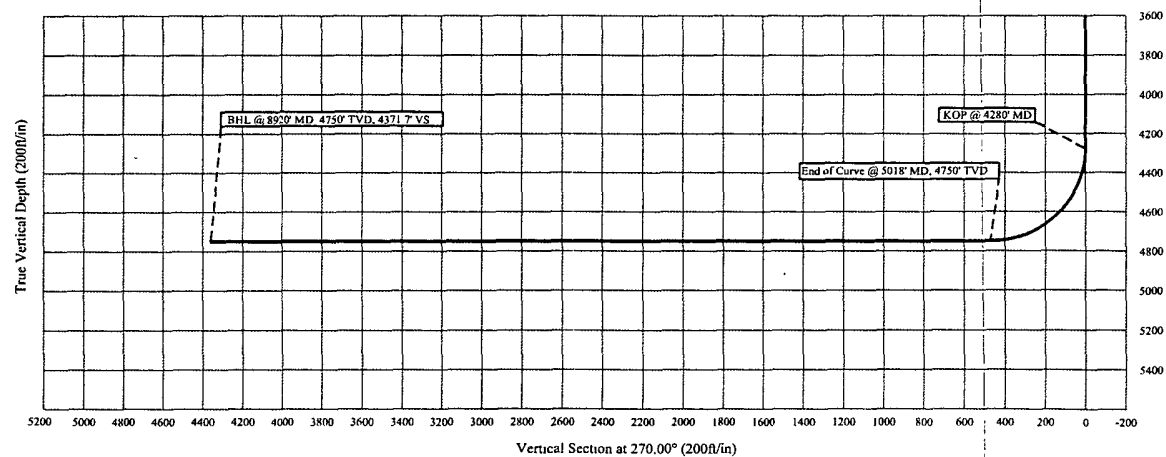
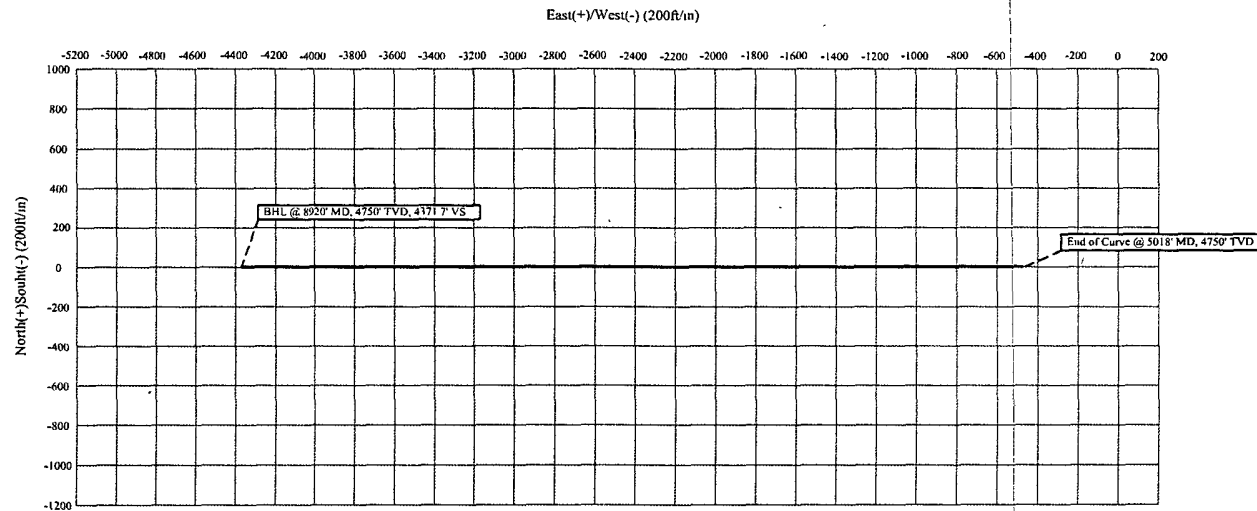
KOP @ 4280' MD  
 BUR = 12.2 DEG per 100 FT  
 End Curve @ 5018' MD, 4750' TVD  
 BHL @ 8920' MD, 4750' TVD, 4371.7' VS

# Parallel Petroleum Corp.

## COMPANY DETAILS

Parallel Petroleum Corp.  
1004 N. Big Spring, Ste 400  
Midland, Texas 79701

Silver Charm 1525-17 Fed. Com. #2H  
N/2 Sec. 17, T-15-S, R-25-E  
Chaves County, New Mexico



## DRILLING PROGRAM

### 1. Geologic Name of Surface Formation

San Andres

### 2. Estimated Tops of Important Geologic Markers:

Glorieta	2565'
Tubb	3575'
Abo Shale	3925'
Wolfcamp	4750'
Wolfcamp Shale	4925'

### 3. Estimated Depths of Anticipated Fresh Water, Oil and Gas

Water Sand	95'	Fresh Water
Wolfcamp	4750'	Oil/Gas

No other formations are expected to yield oil, gas or fresh water in measurable quantities. Setting 8-5/8" casing to 1400' and circulating cement to surface will protect the fresh water sand. There is no salt section in the area. The 5-1/2" casing production string will be planned to circulate back to surface and at a minimum, tie back to the surface casing.

### 4. Casing Program

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	Jt.	burst/collapse/tension
11"	0-1400'	8 5/8"	24#	J-55	New	ST&C	1.5/1.85/6.8
7 7/8"	1400'-TD	5 1/2"	17#	N-80	New	LT&C	1.4/2.6/2.27

### 5. Cement Program

8 5/8" Surface Casing: 600 sx "C", yield 1.32, circulate

5 1/2" Production Casing: 1200 sx "C" Acid-Soluble, yield 2.62, circulate or tie back to surface casing

**6. Minimum Specifications for Pressure Control**

The blowout preventer equipment (BOP) shown in Exhibit #7 will consist of a double ram-type (3000 psi WP) preventer. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on the bottom. The BOP will be nipped up on the 8 5/8" surface casing and tested to 3000 psi by a third party and used continuously until total depth is reached. All BOP's and accessory equipment will be tested to 3000 psi before drilling out of the surface casing. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment (Exhibit #10) will include a Kelly cock and floor safety valve, choke lines and a choke manifold (Exhibit #11) with a 2000 psi WP rating.

**7. Types and Characteristics of the Proposed Mud System**

The well will be drilled to TD with a combination of cut brine and polymer muds using a closed-loop system. The applicable depths and properties of this system are as follows:

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-300'	Fresh Water	8.5	28	N.C.
300-1400'	Fresh Water	8.5	34-36	N.C.
1400'-TD	Cut Brine	9.2	30-34	10-20

Sufficient mud materials will be kept at the well site to maintain mud properties and meet minimum lost circulation and weight increase requirements at all times.

**8. Auxiliary Well Control and Monitoring Equipment**

- A. Kelly cock will be kept in the drill string at all times.
- B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

**9. Logging, Testing and Coring Program**

- A. The electric logging program will consist of CNL, Spectral Density – Litho Density – Spectral GR and will be run from TD to 8 5/8" casing shoe. Optional logs include a Combinable Magnetic Resonance Log over select intervals. No MWD GR log will be run.

- B. Drill Stem test is not anticipated.
- C. No conventional coring is anticipated. Rotary sidewall cores may be taken if logging is inconclusive.
- D. Further testing procedures will be determined after the 5 ½" production casing has been cemented at TD, based on drill shows and log evaluation.

**10. Abnormal Conditions, Pressure, Temperatures and Potential Hazards**

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 110 degrees and the estimated maximum bottom hold pressure is 1900 psig. No H<sub>2</sub>S is anticipated to be present during drilling operations. A Hydrogen Sulfide Drilling Operation Plan is attached to this program. Loss of circulation zones are anticipated in the surface hole section in this well.

**11. Anticipated Starting Date and Duration of Operations**

Road and location work will not begin until approval has been received from the BLM. Please refer to the Form 3160-3 for the anticipated start date. Once commenced, drilling operations should be finished in approximately 12-16 days. If the well is productive, an additional 7-14 days will be required for completion and testing before a decision is made to install permanent facilities.



Legals:

Silver Charm 1525-17 Fed Com #2H

1880' FSL & 208' FEL

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Section 17

Township 15 South, Range 25 East, N.M.Y.M. Survey

Chaves County, New Mexico

**H2S**

# **“Contingency Plan”**

CALLAWAY SAFETY EQUIPMENT CO. INC.  
1020 W. Hwy. 80 East 3229 Industrial Drive  
Odessa, Texas 79765 Hobbs, New Mexico 88240  
(432) 561-5049 (877) 422-6345 (505) 392-2973

## ***TABLE OF CONTENTS***

### **I. H2S Contingency Plan**

- A. Scope
- B. Objective
- C. Discussion of Plan

### **II. Emergency Procedures**

- A. Emergency Procedures
- B. Emergency Reaction Steps
- C. Simulated Blowout Control Drills

### **III. Ignition Procedures**

- A. Responsibility
- B. Instructions

### **IV. Training Requirements**

### **V. Emergency Equipment**

### **VI. Check Lists**

- A. Status Check List
- B. Procedural Check List

### **VII. Briefing Procedures**

### **VIII. Evacuation Plan**

- A. General Plan
- B. Emergency Phone Lists

### **IX. Maps and Plats**

- A. Location Plat
- B. Map to Location
- C. Radius of Exposure

### **X. General Information**

- A. Drilling/Re-entry Permits
  - B. H-9 Permit
  - C. H<sub>2</sub>s Permissible Limits
  - D. Toxicity Table
  - E. Physical Properties
  - F. Respirator Use
  - G. Emergency Rescue
-



## H<sub>2</sub>S CONTINGENCY PLAN SECTION

### **Scope:**

This contingency plan provides an organized plan of action for alerting and protecting the public within an area of exposure prior to an intentional release, or following the accidental release of a potentially hazardous volume of hydrogen sulfide. The plan establishes guidelines for all personnel whose work activity may involve exposure to Hydrogen Sulfide Gas (H<sub>2</sub>S).

### **Objective:**

---

Prevent any and all accidents, and prevent the uncontrolled release of H<sub>2</sub>S into the atmosphere.

Provide proper evacuation procedures to cope with emergencies.

Provide immediate and adequate medical attention should an injury occur.

### **Discussion of Plan:**

#### ***Suspected Problem Zones:***

***Implementation:*** This plan, with all details, is to be fully implemented 1000' before drilling into the first sour zone.

***Emergency Response Procedure:*** This section outlines the conditions and denotes steps to be taken in the event of an emergency.

***Emergency Equipment and Procedure:*** This section outlines the safety and emergency equipment that will be required for the drilling of this well.

***Training Provisions:*** This section outlines the training provisions that must be adhered to 1000' before drilling into the first sour zone.

***Emergency call lists:*** Included are the telephone numbers of all persons that would need to be contacted, should an H<sub>2</sub>S emergency occur.

***Briefing:*** This section deals with the briefing of all persons involved with the drilling of this well.

***Public Safety:*** Public Safety Personnel will be made aware of the drilling of this well.

***Check Lists:*** Status check lists and procedural check lists have been included to ensure adherence to the plan.

***General Information:*** A general information section has been included to supply support information.

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## **EMERGENCY PROCEDURES SECTION**

- I. In the event of any evidence of H<sub>2</sub>S level above 10 ppm, take the following steps immediately:

- A. Secure breathing apparatus.
- B. Order non-essential personnel out of the danger zone.
- C. Take steps to determine if the H<sub>2</sub>S level can be corrected or suppressed, and if so, proceed with normal operations.

- ~~II. If uncontrollable conditions occur, proceed with the following:~~

- A. Take steps to protect and/or remove any public downwind of the rig, including partial evacuation or isolation. Notify necessary public safety personnel and the New Mexico Oil Conservation Division.
- B. Remove all personnel to the Safe Briefing Area.
- C. Notify public safety personnel for help with maintaining roadblocks and implementing evacuation.
- D. Determine and proceed with the best possible plan to regain control of the well. Maintain tight security and safety measures.

- III. Responsibility:

- A. The Company Approved Supervisor shall be responsible for the total implementation of the plan.
- B. The Company Approved Supervisor shall be in complete command during any emergency.
- C. The Company Approved Supervisor shall designate a back up Supervisor in the event that he/she is not available.

## **EMERGENCY PROCEDURE IMPLEMENTATION**

## **I. Drilling or Tripping**

### **A. All Personnel**

1. When alarm sounds, don escape unit and report to upwind Safe Briefing Area.
2. Check status of other personnel (buddy system).
3. Secure breathing apparatus.
4. Wait for orders from supervisor.

### **B. Drilling Foreman**

1. Report to the upwind Safe Briefing Area.
2. Don Breathing Apparatus and return to the point of release with the Tool Pusher or Driller (buddy system).
3. Determine the concentration of H<sub>2</sub>S.
4. Assess the situation and take appropriate control measures.

### **C. Tool Pusher**

1. Report to the upwind Safe Briefing Area.
2. Don breathing apparatus and return to the point of release with the Drilling Foreman or the Driller (buddy system).
3. Determine the concentration.
4. Assess the situation and take appropriate control measures.

### **D. Driller**

1. Check the status of other personnel (in a rescue attempt, always use the buddy system).
2. Assign the least essential person to notify the Drilling Foreman and Tool Pusher, in the event of their absence.

3. Assume the responsibility of the Drilling Foreman and the Tool Pusher until they arrive, in the event of their absence.

**E. Derrick Man and Floor Hands**

1. Remain in the upwind Safe Briefing Area until otherwise instructed by a supervisor.

**F. Mud Engineer**

1. Report to the upwind Safe Briefing Area.
2. When instructed, begin check of mud for pH level and H<sub>2</sub>S level.

**G. Safety Personnel**

1. Don Breathing Apparatus.
2. Check status of all personnel.
3. Wait for instructions from Drilling Foreman or Tool Pusher.

**II. Taking a Kick**

- A. All personnel report to the upwind Safe Briefing Area.
- B. Follow standard BOP procedures.

**III. Open Hole Logging**

- A. All unnecessary personnel should leave the rig floor.
- B. Drilling Foreman and Safety Personnel should monitor the conditions and make necessary safety equipment recommendations.

**IV. Running Casing or Plugging**

- A. Follow "Drilling or Tripping" procedures.
- B. Assure that all personnel have access to protective equipment.

## ***SIMULATED BLOWOUT CONTROL DRILLS***

All drills will be initiated by activating alarm devices (air horn). One long blast, on the air horn, for ACTUAL and SIMULATED Blowout Control Drills. This operation will be performed by the Drilling Foreman or Tool Pusher at least one time per week for each of the following conditions, with each crew:

Drill # 1      Bottom Drilling

Drill # 2      Tripping Drill Pipe

In each of these drills, the initial reaction time to shutting in the well shall be timed as well as the total time for the crew to complete its entire pit drill assignment. The times must be recorded on the IADC Driller's Log as "Blowout Control Drill".

Drill No.:

Reaction Time to Shut-In:            minutes,            seconds.

Total Time to Complete Assignment:            minutes,            seconds.

### **I. Drill Overviews**

#### **A. Drill No. 1- Bottom Drilling**

1. Sound the alarm immediately.
2. Stop the rotary and hoist kelly joint above the rotary table.
3. Stop the circulatory pump.
4. Close the drill pipe rams.
5. Record casing and drill pipe shut-in pressures and pit volume increases.

#### **B. Drill No. 2 – Tripping Drill Pipe**

1. Sound the alarm immediately.
2. Position the upper tool joint just above the rotary table and set the slips.

3. Install a full opening valve or inside blowout preventor tool in order to close the drill pipe.
4. Close the drill pipe rams.
5. Record the shut-in annular pressure.

## **II. Crew Assignments**

### **A. Drill No. 1 – Bottom Drilling**

#### **1. Driller**

- a) Stop the rotary and hoist kelly joint above the rotary table.
- b) Stop the circulatory pump.
- c) Check flow.
- d) If flowing, sound the alarm immediately.
- e) Record the shut-in drill pipe pressure.
- f) Determine the mud weight increase needed or other courses of action.

#### **2. Derrickman**

- a) Open choke line valve at BOP.
- b) Signal Floor Man # 1 at accumulator that choke line is open.
- c) Close choke and upstream valve after pipe rams have been closed.
- d) Read the shut-in annular pressure and report readings to Driller.

#### **3. Floor Man # 1**

- a) Close the pipe rams after receiving the signal from the Derrickman.
- b) Report to Driller for further instructions.

#### **4. Floor Man # 2**

- a) Notify the Tool Pusher and Operator Representative of the H<sub>2</sub>S alarms.
- b) Check for open fires and, if safe to do so, extinguish them.
- c) Stop all welding operations.
- d) Turn-off all non-explosion proof lights and instruments.
- e) Report to Driller for further instructions.

5. Tool Pusher

- 
- ~~a) Report to the rig floor.~~
  - b) Have a meeting with all crews.
  - c) Compile and summarize all information.
  - d) Calculate the proper kill weight.
  - e) Ensure that proper well procedures are put into action.

6. Operator Representative

- a) Notify the Drilling Superintendent.
- b) Determine if an emergency exists and if so, activate the contingency plan.

B. Drill No. 2 – Tripping Pipe

1. Driller

- a) Sound the alarm immediately when mud volume increase has been detected.
- b) Position the upper tool joint just above the rotary table and set slips.
- c) Install a full opening valve or inside blowout preventor tool to close the drill pipe.
- d) Check flow.
- e) Record all data reported by the crew.



f) Determine the course of action.

2. Derrickman

a) Come down out of derrick.

b) Notify Tool Pusher and Operator Representative.

c) Check for open fires and, if safe to do so, extinguish them.

d) Stop all welding operations.

~~e) Report to Driller for further instructions.~~

3. Floor Man # 1

a) Pick up full opening valve or inside blowout preventor tool and stab into tool joint above rotary table (with Floor Man # 2).

b) Tighten valve with back-up tongs.

c) Close pipe rams after signal from Floor Man # 2.

d) Read accumulator pressure and check for possible high pressure fluid leaks in valves or piping.

e) Report to Driller for further instructions.

4. Floor Man # 2

a) Pick-up full opening valve or inside blowout preventor tool and stab into tool joint above rotary table (with Floor Man # 1).

b) Position back-up tongs on drill pipe.

c) Open choke line valve at BOP.

d) Signal Floor Man # 1 at accumulator that choke line is open.

e) Close choke and upstream valve after pipe rams have been closed.

f) Check for leaks on BOP stack and choke manifold.

g) Read annular pressure.

- h) Report readings to the Driller.

5. Tool Pusher

- a) Report to the rig floor.

- b) Have a meeting with all of the crews.

- c) Compile and summarize all information.

- d) See that proper well kill procedures are put into action.

6. Operator Representative

- a) Notify Drilling Superintendent

- b) Determine if an emergency exists, and if so, activate the contingency plan.

## **IGNITION PROCEDURES**

### **Responsibility:**

The decision to ignite the well is the responsibility of the DRILLING FOREMAN in concurrence with the STATE POLICE. In the event the Drilling Foreman is incapacitated, it becomes the responsibility of the RIG TOOL PUSHER. This decision should be made only as a last resort and in a situation where it is clear that:

1. Human life and property are endangered.
2. There is no hope of controlling the blowout under the prevailing conditions.

If time permits, notify the main office, but do not delay if human life is in danger. Initiate the first phase of the evacuation plan.

### **Instructions for Igniting the Well:**

1. Two people are required for the actual igniting operation. Both men must wear self-contained breathing apparatus and must use a full body harness and attach a retrievable safety line to the D-Ring in the back. One man must monitor the atmosphere for explosive gases with the LEL monitor, while the Drilling Foreman is responsible for igniting the well.
2. The primary method to ignite is a 25mm flare gun with a range of approximately 500 feet.
3. Ignite from upwind and do not approach any closer than is warranted.
4. Select the ignition site best suited for protection and which offers an easy escape route.
5. Before igniting, check for the presence of combustible gases.
6. After igniting, continue emergency actions and procedures as before.
7. All unassigned personnel will limit their actions to those directed by the Drilling Foreman.

NOTE: After the well is ignited, burning Hydrogen Sulfide will convert to Sulfur Dioxide, which is also highly toxic. Do not assume the area is safe after the well is ignited.

## TRAINING PROGRAM

When working in an area where Hydrogen Sulfide ( $H_2S$ ) might be encountered, definite training requirements must be carried out. The Company Supervisor will ensure that all personnel, at the well site, have had adequate training in the following:

1. Hazards and Characteristics of Hydrogen Sulfide.
2. Physicals effects of Hydrogen Sulfide on the human body.
3. Toxicity of Hydrogen Sulfide and Sulfur Dioxide.
4.  $H_2S$  detection, emergency alarm and sensor location.
5. Emergency rescue.
6. Resuscitators.
7. First aid and artificial resuscitation.
8. The effects of Hydrogen Sulfide on metals.
9. Location safety.

Service company personnel and visiting personnel must be notified if the zone contains  $H_2S$ , and each service company must provide adequate training and equipment for their employees before they arrive at the well site.

## **EMERGENCY EQUIPMENT REQUIREMENTS**

### **Lease Entrance Sign:**

Should be located at the lease entrance with the following information:

CAUTION-POTENTIAL POISON GAS  
HYDROGEN SULFIDE  
NO ADMITTANCE WITHOUT AUTHORIZATION

### **Respiratory Equipment:**

- Fresh-air-breathing equipment should be placed at the safe briefing areas and should include the following:
  - Two SCBA's at each briefing area.
  - Enough air line units to operate safely, anytime the H<sub>2</sub>S concentration reaches the IDLH level (100 PPM).
  - Cascade system with enough breathing air hose and manifolds to reach the rig floor, the derrickman and the other operation areas.

### **Windsocks or Wind Streamers:**

- A minimum of two 10" windsocks located at strategic locations so that they may be seen from any point on location.
- Wind streamers (if preferred) should be placed at various locations on the well site to ensure wind consciousness at all times. (Corners of location).

### **Hydrogen Sulfide Detector and Alarms:**

- 1-Four channel H<sub>2</sub>S monitor with alarms.
- Four (4) sensors located as follows: # 1 – Rig Floor, # 2 – Bell Nipple, # 3 – Shale Shaker, # 4 – Mud Pits.
- Gastec or Draeger pump with tubes.
- Sensor test gas.

### **Well Condition Sign and Flags:**

The Well Condition Sign w/flags should be placed a minimum of 150' before you enter the location. It should have three (3) color coded flags (green, yellow and red) that will be used to denote the following location conditions:

GREEN – Normal Operating Conditions  
YELLOW – Potential Danger  
RED – Danger, H<sub>2</sub>S Gas Present

**Auxiliary Rescue Equipment:**

- Stretcher
- 2 – 100' Rescue lines
- First Aid Kit properly stocked.

**Mud Inspection Equipment:**

Garret Gas Train or Hach Tester for inspection of Hydrogen Sulfide in the drilling mud system.

**Fire Extinguishers:**

Adequate fire extinguishers shall be located at strategic locations.

**Blowout Preventor:**

- The well shall have hydraulic BOP equipment for the anticipated BHP.
- The BOP should be tested upon installation.
- BOP, Choke Line and Kill Line will be tested as specified by Operator.

**Confined Space Monitor:**

There should be a portable multi-gas monitor with at least 3 sensors (O<sub>2</sub>, LEL & H<sub>2</sub>S). This instrument should be used to test the atmosphere of any confined space before entering. It should also be used for atmospheric testing for LEL gas before beginning any type of Hot Work. Proper calibration documentation will need to be provided.

**Communication Equipment:**

- Proper communication equipment such as cell phones or 2 – way radios should be available at the rig.

- Radio communication shall be available for communication between the company man's trailer, rig floor and the tool pusher's trailer.
- Communication equipment shall be available on the vehicles.

**Special Control Equipment:**

- Hydraulic BOP equipment with remote control on the ground.
- Rotating head at the surface casing point.

**Evacuation Plan:**

---

- Evacuation routes should be established prior to spudding the well.
- Should be discussed with all rig personnel.

**Designated Areas:**

***Parking and Visitor area:***

- All vehicles are to be parked at a pre-determined safe distance from the wellhead.
- Designated smoking area.

***Safe Briefing Areas:***

- Two Safe Briefing Areas shall be designated on either side of the location at the maximum allowable distance from the well bore so they offset prevailing winds or they are at a 180 degree angle if wind directions tend to shift in the area.
- Personal protective equipment should be stored at both briefing areas or if a moveable cascade trailer is used, it should be kept upwind of existing winds. When wind is from the prevailing direction, both briefing areas should be accessible.

***NOTE:***

- Additional equipment will be available at the nearest Callaway Safety Office.
- Additional personal H<sub>2</sub>S monitors are available for all employees on location.

- Automatic Flare Igniters are recommended for installation on the rig.
-



## CHECK LISTS

### Status Check List

Note: Date each item as they are implemented.

1. Sign at location entrance. \_\_\_\_\_
2. Two (2) wind socks (in required locations). \_\_\_\_\_
3. Wind Streamers (if required). \_\_\_\_\_
- ~~4. SCBA's on location for all rig personnel and mud loggers. \_\_\_\_\_~~
5. Air packs, inspected and ready for use. \_\_\_\_\_
6. Spare bottles for each air pack (if required). \_\_\_\_\_
7. Cascade system for refilling air bottles. \_\_\_\_\_
8. Cascade system and hose line hook up. \_\_\_\_\_
9. Choke manifold hooked-up and tested.  
(Before drilling out surface casing.) \_\_\_\_\_
10. Remote Hydraulic BOP control (hooked-up and  
tested before drilling out surface casing). \_\_\_\_\_
11. BOP tested (before drilling out surface casing). \_\_\_\_\_
12. Mud engineer on location with equipment to test  
mud for H<sub>2</sub>S. \_\_\_\_\_
13. Safe Briefing Areas set-up. \_\_\_\_\_
14. Well Condition sign and flags on location and ready. \_\_\_\_\_
15. Hydrogen Sulfide detection system hooked-up & tested. \_\_\_\_\_
16. Hydrogen Sulfide alarm system hooked-up & tested. \_\_\_\_\_
17. Stretcher on location at Safe Briefing Area. \_\_\_\_\_
18. 2-100' Life Lines on location. \_\_\_\_\_

- 19. 1-20# Fire Extinguisher in safety trailer. \_\_\_\_\_
- 20. Confined Space Monitor on location and tested. \_\_\_\_\_
- 21. All rig crews and supervisor trained (as required). \_\_\_\_\_
- 22. Access restricted for unauthorized personnel. \_\_\_\_\_
- 23. Drills on H<sub>2</sub>S and well control procedures. \_\_\_\_\_
- 24. All outside service contractors advised of potential H<sub>2</sub>S on the well. \_\_\_\_\_
- 25. NO SMOKING sign posted. \_\_\_\_\_
- 26. H<sub>2</sub>S Detector Pump w/tubes on location. \_\_\_\_\_
- 27. 25mm Flare Gun on location w/flares. \_\_\_\_\_
- 28. Automatic Flare Ignitor installed on rig. \_\_\_\_\_

## Procedural Check List

Perform the following on each tour:

1. Check fire extinguishers to see that they have the proper charge.
2. Check Breathing equipment to insure that they have not been tampered with.
3. Check pressure on the supply air bottles to make sure they are capable of recharging.
- ~~4. Make sure all of the Hydrogen-Sulfide detection systems are operative.~~

Perform the following each week:

1. Check each piece of breathing equipment to make sure that they are fully charged and operational. This requires that the air cylinder be opened and the mask assembly be put on and tested to make sure that the regulators and masks are properly working. Negative and Positive pressure should be conducted on all masks.
2. BOP skills.
3. Check supply pressure on BOP accumulator stand-by source.
4. Check all breathing air mask assemblies to see that straps are loosened and turned back, ready to use.
5. Check pressure on cascade air cylinders to make sure they are fully charged and ready to use for refill purposes if necessary.
6. Check all cascade system regulators to make sure they work properly.
7. Perform breathing drills with on-site personnel.
8. Check the following supplies for availability:
  - Stretcher
  - Safety Belts and ropes.
  - Spare air bottles.
  - Spare oxygen bottles (if resuscitator required).
  - Gas Detector Pump and tubes.
  - Emergency telephone lists.

9. Test the Confined Space Monitor to verify the batteries are good.

---

## BRIEFING PROCEDURES

The following scheduled briefings will be held to ensure the effective drilling and operation of this project:

### Pre-Spud Meeting

Date: Prior to spudding the well.

Attendance: Drilling Supervisor

Drilling Engineer

Drilling Foreman

Rig Tool Pushers

Rig Drillers

Mud Engineer

All Safety Personnel

Key Service Company Personnel

Purpose: Review and discuss the well program, step-by-step, to insure complete understanding of assignments and responsibilities.

## **EVACUATION PLAN**

### **General Plan**

The direct lines of action prepared by CALLAWAY SAFETY EQUIPMENT CO., INC., to protect the public from hazardous gas situations are as follows:

1. When the company approved supervisor (Drilling Foremen, Tool Pusher or Driller) determine that Hydrogen Sulfide gas cannot be limited to the well location, and the public will be involved, he will activate the evacuation plan. Escape routes are noted on the Area Map.
- ~~2. Company safety personnel or designee will notify the appropriate local government agency that a hazardous condition exists and evacuation need to be implemented.~~
3. Company approved safety personnel that have been trained in the use of the proper emergency equipment will be utilized.
4. Law enforcement personnel (State Police, Local Police Department, Fire Department, and the Sheriff's Department) will be called to aid in setting up and maintaining road blocks. Also, they will aid in evacuation of the public if necessary.

NOTE: Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.

5. After the discharge of gas has been controlled, "Company" safety personnel will determine when the area is safe for re-entry.

**See Emergency Action Plan**

## Emergency Assistance Telephone List

### **PUBLIC SAFETY:**

**911 or**

Chavez Co. Sheriff	(505) 624-6770
Fire Department	(505) 624-6800
Hospital/Roswell, N.M.	(505) 622-8170

Life Flight:

Southwest Air-Med E Vac.	(800) 242-6199
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Lat: 33°01'17.73"N.

Long: 104°26'42.18" W.

New Mexico D.O.T.	(505) 827-5100
Bureau of Land Management	(505) 393-3612
U. S. Dept. of Labor	(505) 248-5302
New Mexico OCD	(505) 393-6161
New Mexico/After Hours	(505) 370-7106

### **Parallel Petroleum Corporation**

Parallel Petroleum Corporation/Midland, TX	Office (432) 684-3727
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Superintendent:

Donnie Hill

Office	(432) 684-3727
Cell	(432) 934-7164

Drilling Engineer:

Deane Durham

Office	(432) 684-3727
Cell	(432) 413-9701

### **Callaway Safety Equipment**

Odessa

Office	(432) 561-5049
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Hobbs

Office	(877) 422-6345
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### Affected Notification List

(within a \_\_\_\_\_' radius of exposure @100ppm)

The geologic zones that will be encountered during drilling are not known to contain hazardous quantities of H<sub>2</sub>S. The accompanying map illustrates the affected areas of the community. The residents within this radius will be notified via a hand delivered written notice describing the activities, potential hazards, conditions of evacuation, evacuation drill siren alarms and other precautionary measures.

Evacuee Description:

Residents: ~~THERE ARE NO RESIDENTS WITHIN 3000' ROE.~~

Notification Process:

A continuous siren audible to all residence will be activated, signaling evacuation of previously notified and informed residents.

Evacuation Plan:

All evacuees will migrate lateral to the wind direction.

The Oil Company will identify all home bound or highly susceptible individuals and make special evacuation preparations, interfacing with the local and emergency medical service as necessary.



**MAPS AND PLATS**  
**(Maps & Plats Attached)**

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## GENERAL INFORMATION

## Toxic Effects of H<sub>2</sub>S Poisoning

Hydrogen Sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 PPM, which is .001% by volume. Hydrogen Sulfide is heavier than air (specific gravity-1.192) and is colorless and transparent. Hydrogen Sulfide is almost as toxic as Hydrogen Cyanide and is 5-6 times more toxic than Carbon Monoxide. Occupational exposure limits for Hydrogen sulfide and other gasses are compared below in Table I. Toxicity table for H<sub>2</sub>S and physical effects are shown in Table II.

**Table 1**  
Permissible Exposure Limits of Various Gasses

Common Name	Symbol	Sp. Gravity	TLV	STEL	IDLH
Hydrogen Cyanide	HCN	.94	4.7 ppm	C	
Hydrogen Sulfide	H <sub>2</sub> S	1.192	10 ppm	15 ppm	100 ppm
Sulfur Dioxide	SO <sub>2</sub>	2.21	2 ppm	5 ppm	
Chlorine	CL	2.45	.5 ppm	1 ppm	
Carbon Monoxide	CO	0.97	25 ppm	200 ppm	
Carbon Dioxide	CO <sub>2</sub>	1.52	5000 ppm	30,000 ppm	
Methane	CH <sub>4</sub>	0.55	4.7% LEL	14% UEL	

### Definitions

- A. TLV – Threshold Limit Value is the concentration employees may be exposed to based on a TWA (time weighted average) for eight (8) hours in one day for 40 hours in one (1) week. This is set by ACGIH (American Conference of Governmental Hygienists and regulated by OSHA.
- B. STEL – Short Term Exposure Limit is the 15 minute average concentration an employee may be exposed to providing that the highest exposure never exceeds the OEL (Occupational Exposure Limit). The OEL for H<sub>2</sub>S is 19 PPM.
- C. IDLH – Immediately Dangerous to Life and Health is the concentration that has been determined by the ACGIH to cause serious health problems or death if exposed to this level. The IDLH for H<sub>2</sub>S is 100 PPM.

- D. TWA – Time Weighted Average is the average concentration of any chemical or gas for an eight (8) hour period. This is the concentration that any employee may be exposed to based on an TWA.

**TABLE II**  
Toxicity Table of H<sub>2</sub>S

Percent %	PPM	Physical Effects
.0001	1	Can smell less than 1 ppm.
.001	10	TLV for 8 hours of exposure
.0015	15	STEL for 15 minutes of exposure
.01	100	Immediately Dangerous to Life & Health. Kills sense of smell in 3 to 5 minutes.
.02	200	Kills sense of smell quickly, may burn eyes and throat.
.05	500	Dizziness, cessation of breathing begins <b>in a few minutes.</b>
.07	700	Unconscious quickly, death will result if not rescued promptly.
.10	1000	Death will result unless rescued promptly. Artificial resuscitation may be necessary.

## PHYSICAL PROPERTIES OF H<sub>2</sub>S

The properties of all gasses are usually described in the context of seven major categories:

COLOR  
ODOR  
VAPOR DENSITY  
EXPLOSIVE LIMITS  
FLAMMABILITY  
SOLUBILITY (IN WATER)  
BOILING POINT

---

Hydrogen Sulfide is no exception. Information from these categories should be considered in order to provide a fairly complete picture of the properties of the gas.

### ***COLOR – TRANSPARENT***

Hydrogen Sulfide is colorless so it is invisible. This fact simply means that you can't rely on your eyes to detect its presence. a fact that makes the gas extremely dangerous to be around.

### ***ODOR – ROTTEN EGGS***

Hydrogen Sulfide has a distinctive offensive smell, similar to "rotten eggs". For this reason it earned its common name "sour gas". However, H<sub>2</sub>S, even in low concentrations, is so toxic that it attacks and quickly impairs a victim's sense of smell, so it could be fatal to rely on your nose as a detection device.

### ***VAPOR DENSITY – SPECIFIC GRAVITY OF 1.192***

Hydrogen Sulfide is heavier than air so it tends to settle in low-lying areas like pits, cellars or tanks. If you find yourself in a location where H<sub>2</sub>S is known to exist, protect yourself. Whenever possible, work in an area upwind and keep to higher ground.

### ***EXPLOSIVE LIMITS – 4.3% TO 46%***

Mixed with the right proportion of air or oxygen, H<sub>2</sub>S will ignite and burn or explode, producing another alarming element of danger besides poisoning.

### **FLAMMABILITY**

Hydrogen Sulfide will burn readily with a distinctive clear blue flame, producing Sulfur Dioxide (SO<sub>2</sub>), another hazardous gas that irritates the eyes and lungs.

### **SOLUBILITY – 4 TO 1 RATIO WITH WATER**

Hydrogen Sulfide can be dissolved in liquids, which means that it can be present in any container or vessel used to carry or hold well fluids including oil, water, emulsion and sludge. The solubility of H<sub>2</sub>S is dependent on temperature and pressure, but if conditions are right, simply agitating a fluid containing H<sub>2</sub>S may release the gas into the air.

### **BOILING POINT – (-76 degrees Fahrenheit)**

Liquefied Hydrogen Sulfide boils at a very low temperature, so it is usually found as a gas.

## RESPIRATOR USE

The Occupational Safety and Health Administration (OSHA) regulates the use of respiratory protection to protect the health of employees. OSHA's requirements are written in the Code of Federal Regulations, Title 29, Part 1910, Section 134, Respiratory Protection. This regulation requires that all employees who might be required to wear respirators, shall complete a OSHA mandated medical evaluation questionnaire . The employee then should be fit tested prior to wearing any respirator while being exposed to hazardous gasses.

Written procedures shall be prepared covering safe use of respirators in dangerous atmospheric situations, which might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available respirators.

Respirators shall be inspected prior to and after each use to make sure that the respirator has been properly cleaned, disinfected and that the respirator works properly. The unit should be fully charged prior to being used.

Anyone who may use respirators shall be properly trained in how to properly seal the face piece. They shall wear respirators in normal air and then in a test atmosphere. (Note: Such items as facial hair (beard or sideburns) and eyeglass temple pieces will not allow a proper seal.) Anyone that may be expected to wear respirators should have these items removed before entering a toxic atmosphere. A special mask must be obtained for anyone who must wear eyeglasses. Contact lenses should not be allowed.

Respirators shall be worn during the following conditions:

- A. Any employee who works near the top or on the top of any tank unless tests reveal less than 20 ppm of H<sub>2</sub>S.
- B. When breaking out any line where H<sub>2</sub>S can reasonably be expected.
- C. When sampling air in areas where H<sub>2</sub>S may be present.
- D. When working in areas where the concentration of H<sub>2</sub>S exceeds the Threshold Limit Value for H<sub>2</sub>S (10 ppm).
- E. At any time where there is a doubt as to the H<sub>2</sub>S level in the area to be entered.



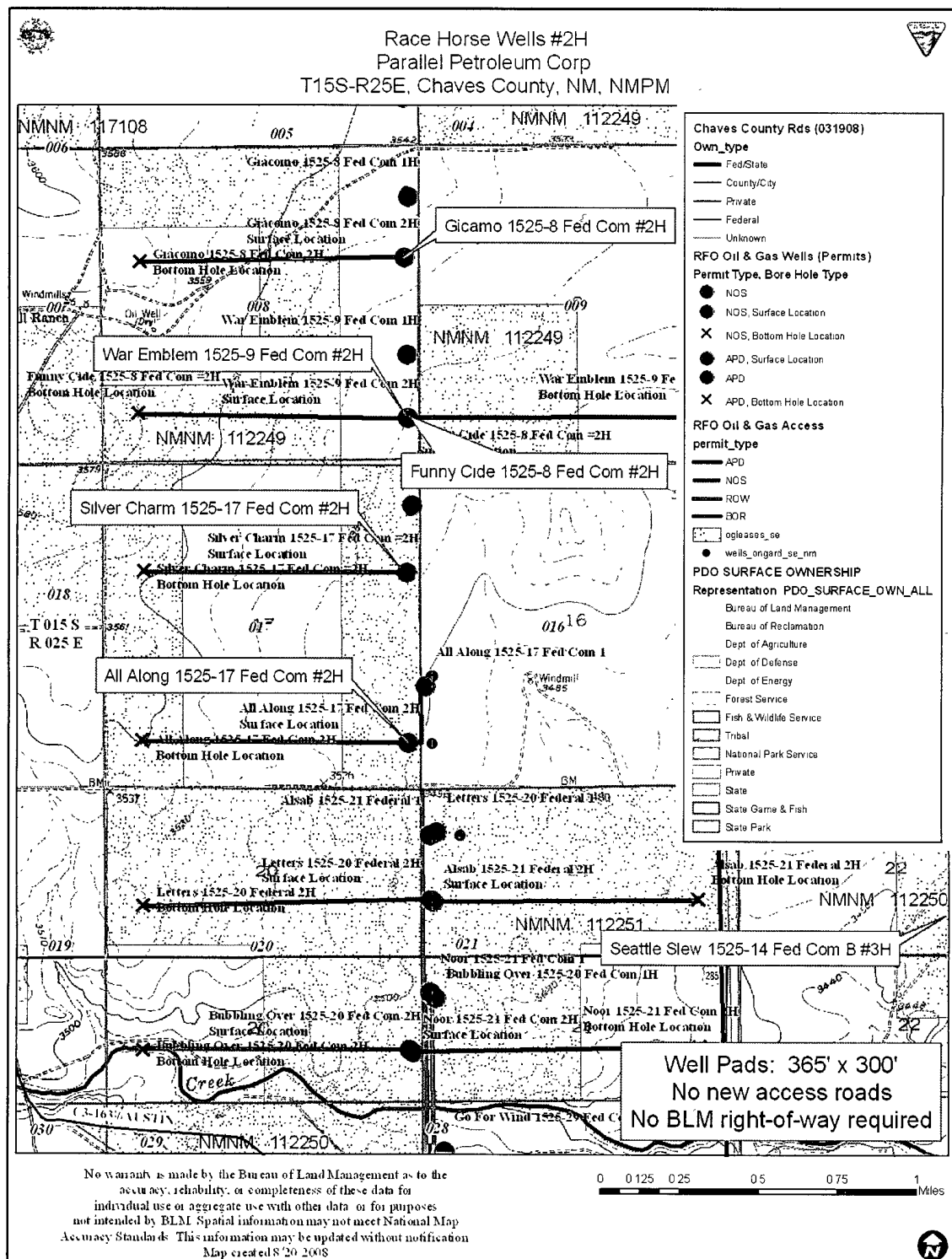
## EMERGENCY RESCUE PROCEDURES

***DO NOT PANIC!!!***

**Remain Calm - THINK**

1. Before attempting any rescue you must first get out of the hazardous area yourself. Go to a safe briefing area.
2. Sound an alarm and activate the 911 system.
3. Put on breathing apparatus. At least two persons should do this, when available use the buddy system.
4. Rescue the victim and return them to a safe briefing area.
5. Perform an initial assessment and begin proper First Aid/CPR procedures.
6. Keep the victim lying down with a blanket or coat, etc..., under the shoulders to keep airway open. Conserve body heat and do not leave unattended.
7. If the eyes are affected by H<sub>2</sub>S, wash them thoroughly with potable water. For slight irritation, cold compresses are helpful.
8. In case a person has only minor exposure and does not lose consciousness totally, it's best if he doesn't return to work until the following day.
9. Any personnel overcome by H<sub>2</sub>S should always be examined by medical personnel. They should always be transported to a hospital or doctor.

# Exhibit A General Location Map



**EXHIBIT B  
PECOS DISTRICT - RFO  
CONDITIONS OF APPROVAL**

**November 5, 2008**

Silver Charm 1525-17 Fed Com #2H  
SHL 1880' FNL & 208' FEL, Sec. 17 T15S-R25E  
BHL 1887' FNL & 660' FWL, Sec. 17, T15S-R25E  
Chaves County, New Mexico NMPM  
Parallel Petroleum Corporation

**GENERAL PROVISIONS**

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

**I. PERMIT EXPIRATION**

If the permit terminates prior to drilling, and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD (Filing of a Sundry Notice is required for this 60 day extension).

**II. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

### **III. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations (access road and/or well pad). Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

### **IV. CONSTRUCTION**

#### **A. NOTIFICATION:**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Roswell Field Office at (505) 627-0247 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved Application for Permit to Drill and Conditions of Approval on the well site and they shall be made available upon request by the Authorized Officer.

#### **B. TOPSOIL:**

The topsoil will be stripped to approximately 6 inches in depth within the area designated for construction of the well pad. The operator shall stockpile the stripped topsoil on the side of the well pad. The topsoil will be used for interim and final reclamation of the surface disturbance created by the construction of the well pad.

#### **C. CLOSED SYSTEMS OR STEEL TANKS: No reserve pit will be used.**

Steel tanks are required for drilling operations: No Pits Allowed.

The operator shall properly dispose of drilling contents at an authorized disposal site.

#### **D. FEDERAL MINERAL MATERIALS PIT:**

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the Roswell Field Office at (505) 627-0236.

#### **E. WELL PAD SURFACING:**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational need.

#### **F. ON LEASE ACCESS ROADS:**

##### Road Egress and Ingress

The access road shall be constructed to access the corner of the well pad.

##### Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

##### Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

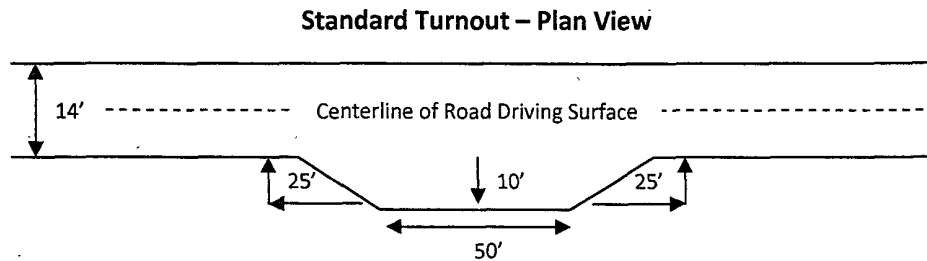
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

##### Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

## Turnouts

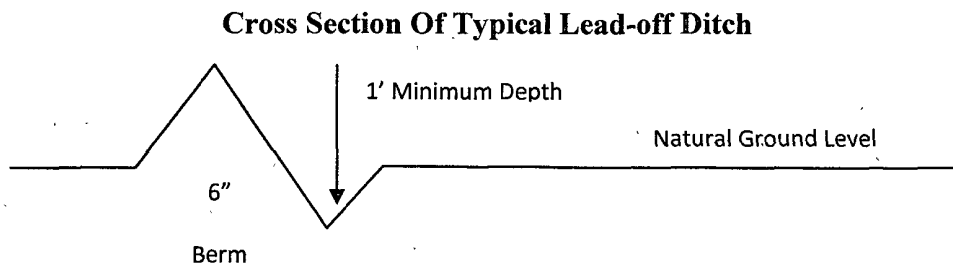
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



## Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

### **Formula For Spacing Interval Of Lead-off Ditches**

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

4%

### Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

### Fence Requirement

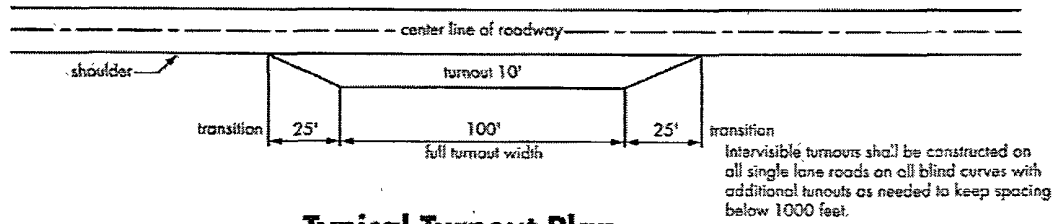
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

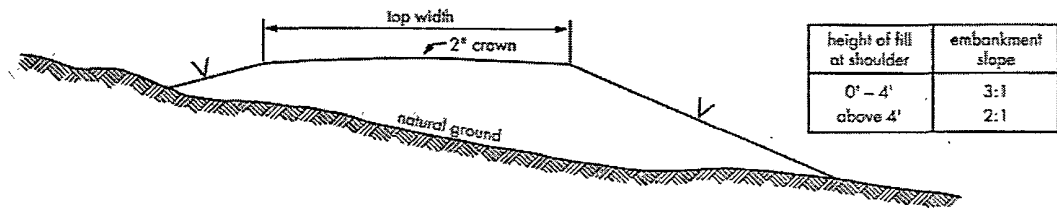
### Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

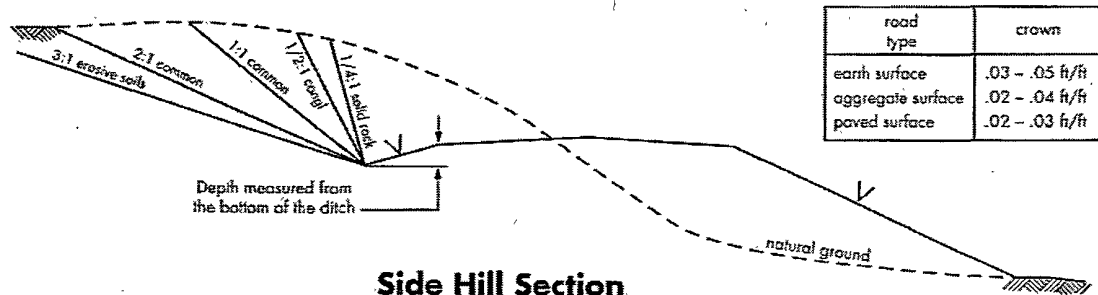
**Figure 1 – Cross Sections and Plans For Typical Road Sections**



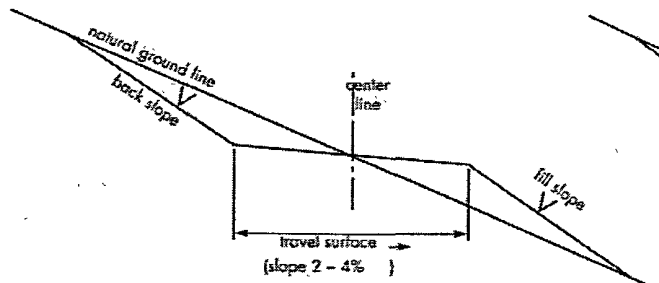
**Typical Turnout Plan**



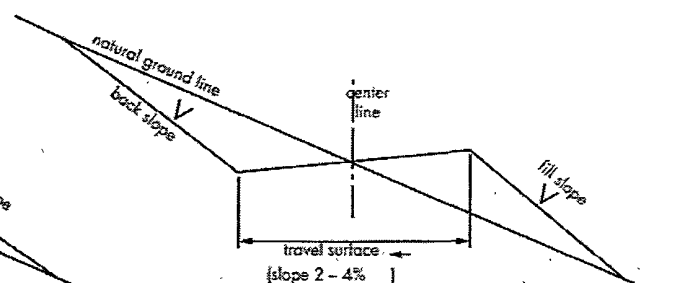
**Embankment Section**



**Side Hill Section**



**Typical Outsloped Section**



**Typical Insloped Section**



## **V. DRILLING**

### **A. DRILLING OPERATIONS REQUIREMENTS**

1. Call the Roswell Field Office, 2909 West Second St., Roswell, NM 88201. During office hours call (575) 627-0205 or after office hours call (575) 910-6024. Engineer on call during office hours call (575) 627-0275 or after office hours call (575) 626-5749.
2. The BLM is to be notified a minimum of 24 hours in advance for a representative to witness:
  - a. Spudding well
  - b. Setting and/or Cementing of all casing strings
3. The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

BOPE Tests
4. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
5. Include the API Number assigned to well by NMOCD on the subsequent report of setting the first casing string.
6. The operator will accurately measure the drilling rate in ft/min to set the base of the usable water protection casing string(s) opposite competent rock. The record of the drilling rate along with the caliper-gamma ray-neutron well log run to surface will be submitted to this office as well as all other logs run on the borehole 30 days from completion
7. Air, air-mist or fresh water and non toxic drilling mud shall be used to drill to the base of the usable water protection casing string(s). Any polymers used will be water based and non-toxic.

### **B. CASING**

1. The 8 5/8 inch usable water protection casing string(s) shall be set at approximately 1400 feet in competent bedrock.

If not the operator is required to set usable water protecting casing in the next thick competent bedding (i.e. 15 to 25 ft or greater) encountered and cemented to the surface.

- a. If cement does not circulate to the surface, the Roswell Field Office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
- b. Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin or 500 pounds compression strength, whichever is greater. (This is to include the lead cement).

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compression strength, whichever is greater.

d. If cement falls back, remedial action will be done prior to drilling out that string.

2. The minimum required fill of cement behind the 5-1/2 inch production casing is sufficient to tie back 500 feet above the uppermost perforation in the pay zone. If cement does not circulate, a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

3. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors, which have a larger diameter than the tool joints of the drill pipe, will be installed prior to continuing drilling operations.

### **C. PRESSURE CONTROL:**

1. Before drilling below the 8-5/8 inch surface casing shoe, the blowout preventer assembly shall consist of a minimum of One Annular Preventer or Two Ram-Type Preventers and a Kelly Cock/Stabbing Valve.

2. Before drilling below the 8-5/8 inch surface casing shoe, minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 2000 psi.

3. The BOPE shall be installed before drilling below the 8-5/8 inch surface casing and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

a. The BLM Roswell Field office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

b. The tests shall be done by an independent service company.

c. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

d. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the BLM Roswell Field Office at 2909 West Second Street, Roswell, New Mexico 88201.

e. Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.

f. Testing must be done in a safe workman like manner. Hard line connections shall be required.

## **VI. PRODUCTION**

### Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

### Containment Structures

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

### Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, Juniper Green (Standard Environmental Color Chart June 2008).

### VRM Facility Requirement

Low-profile tanks not greater than eight-feet-high shall be used.

## **VII. INTERIM RECLAMATION**

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo "interim" reclamation in order to minimize the environmental impacts of development on other resources and uses.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used in road repairs, fire walls or for building other roads and locations. In addition, in order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

The following seed mix may represent these ecological sites:

Common Name and Preferred Variety	Scientific Name	Pounds of Pure Live Seed Per Acre
Blue grama, var. Lovington	( <i>Bouteloua gracilis</i> )	4.00 lbs.
Sideoats grama, var. Vaughn or El Reno	( <i>Bouteloua curtipendula</i> )	1.00 lb.
Sand dropseed	( <i>Sporobolus cryptandrus</i> )	0.50 lb.
Vine mesquite	( <i>Panicum obtusum</i> )	1.00 lb.
Plains bristlegrass	( <i>Setaria macrostachya</i> )	1.00 lb.
Indian blanketflower	( <i>Gaillardia aristata</i> )	0.50 lb.
Desert or Scarlet Globemallow	( <i>Sphaeralcea ambigua</i> ) or ( <i>S. coccinea</i> )	1.00 lb.
Annual sunflower	( <i>Helianthus annuus</i> )	0.75 lb.
TOTAL POUNDS PURE LIVE SEED PER ACRE		9.75 lbs.

Certified Weed Free Seed.

If one species is not available increase all others proportionately.

Use no less than 4 species, including 1 forb.

No less than 8.5 pounds lbs per acre shall be applied.

## VIII. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

- a. Upon abandonment of the well and/or when the access road is no longer in service, a Notice of Intent for Final Abandonment with the proposed surface restoration procedure must be submitted for approval.
- b. On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the Private Surface Land Owner agreements and a copy of the release is to be submitted upon abandonment.
- c. Upon abandonment of the well, all casing shall be cut-off at the base of the cellar or 3-feet below final restored ground level (whichever is deeper). A 4-inch pipe, 10 feet in length, shall be installed 4 feet above ground and embedded in cement. The following information shall be permanently inscribed on the dry hole marker: Well name and number, the name of the operator, the lease serial number, the surveyed location (the quarter-quarter section, section, township and range or other authorized survey designation acceptable to the authorized officer; such as metes and bounds).
- d. Surface Reclamation must be completed within 6 months of well plugging. If the operator proposes to modify the plans for surface reclamation approved on the APD, the operator must attach these modifications to the Subsequent Report of Plug and Abandon using Sundry Notices and Reports on Wells, Form 3160-5.