

OCD-ARTESIA

Form 3160-5
(April 2004)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

*Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE- Other instructions on reverse side.**

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		5. Lease Serial No. NM-15303 ✓
2. Name of Operator Southwestern Energy Production Company ✓		6. If Indian, Allottee or Tribe Name N/A
3a. Address 2350 N. Sam Houston Parkway East Houston, Tx 77032	3b. Phone No. (include area code) 281-618-4887	7. If Unit or CA/Agreement, Name and/or No. N/A
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Surface: 2520' FNL & 1650' FEL of Sect. 10, T25S R 29E Eddy County, New Mexico BHL: 200' FNL & 1860' FEL of Sect. 10, T25S R29E Eddy County, New Mexico		8. Well Name and No. Corral Fly Federal #1H ✓
		9. API Well No.
		10. Field and Pool, or Exploratory Area Corral Canyon, Delaware, NW
		11. County or Parish, State Eddy County, New Mexico

12. CHECK APPROPRIATE BOX(ES) 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"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other _____
	<input checked="" type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Changes to submitted APD:

1. A pilot hole will be vertically drilled to 5,600' MD to confirm the depth of the Cherry Canyon Target Sand. The well will be plugged back and prepared to the estimated KOP (Kick Off Point).
2. The following logs will be run from the TD of the pilot hole to the base of Surface Casing:
 - a. Dual Laterlog-Micro Laterolog with SP and gamma Ray
 - b. Compensated Neutron - Z Density log with Gamma Ray and Caliper
3. BLM Bond Number: ES-0051
4. A well schematic is attached.
5. Final directional plans will be submitted after review of the open hole log.

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed)

Martha Howard

Title

Staff Regulatory Analyst

Signature

Martha C. Howard

Date

3.26.2007

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

/s/ James Stovall

Title

FIELD MANAGER

Date

MAY 11 2007

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

CARLSBAD FIELD OFFICE

Title 18 U.S.C. 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)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations, and reports of such operations when completed, as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this

form and the number of copies to be submitted, particularly with regard to local area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13 - Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or

present productive zones, or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to top of any left in the hole; method of closing top of well and date well site conditioned for final inspection looking to approval of the abandonment.

NOTICE

The Privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

This information is being collected to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT

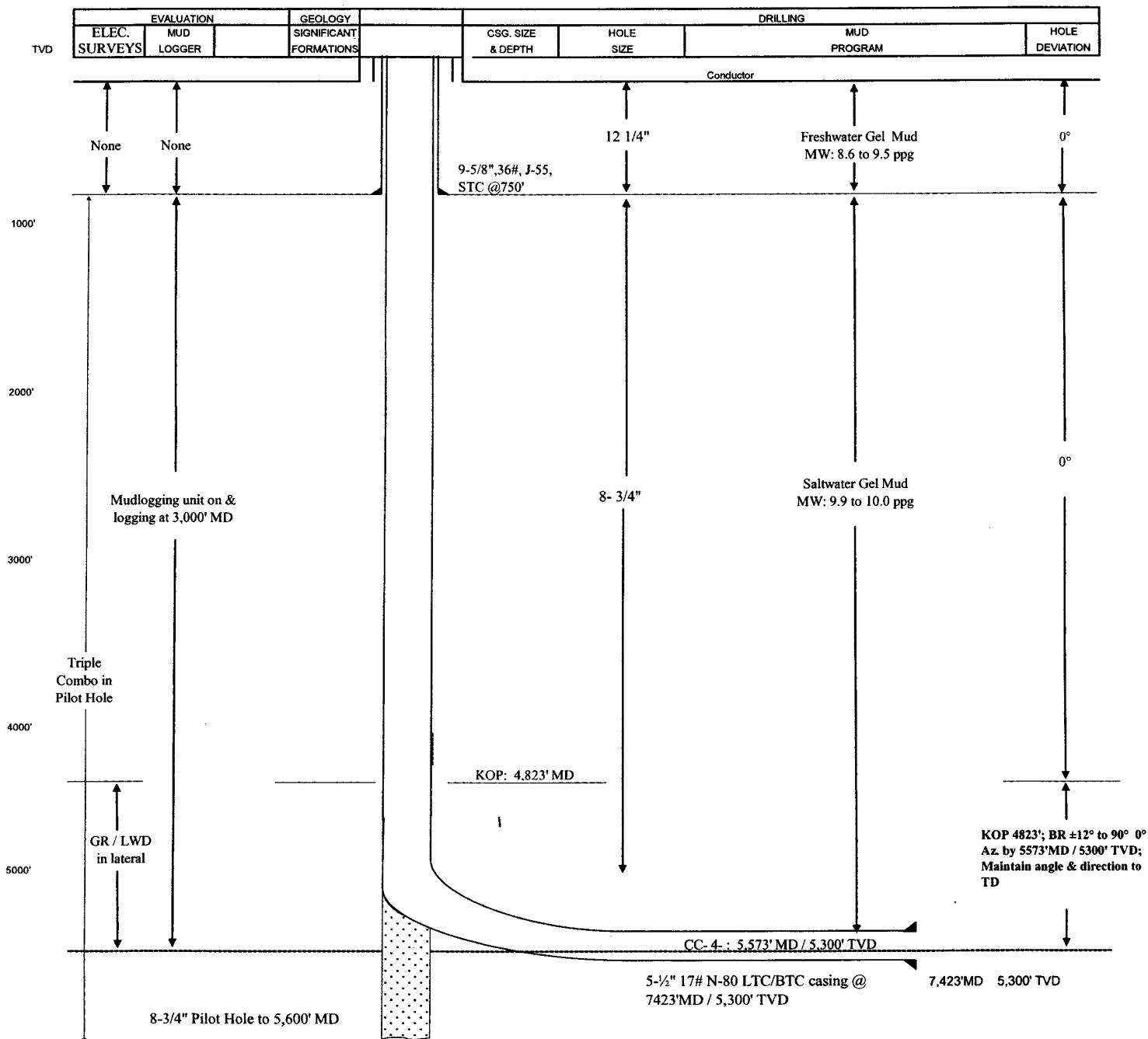
Public reporting burden for this form is estimated to average 25 minutes per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer, (WO-630), Mail Stop 401 LS, 1849 C St., N.W., Washington D.C. 20240



AFE NO.

PROSPECT: Corral Fly

EST. ELEVATION: GL 3038'; RKB \pm 16"



DISTRICT I

1625 N. FRENCH DR., MOORE, NM 86240

State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102

DISTRICT II

1361 W. GRAND AVENUE, ALBUQUERQUE, NM 86210

OIL CONSERVATION DIVISION

1220 SOUTH ST. FRANCIS DR.

Santa Fe, New Mexico 87505

Revised October 12, 2005
Submit to Appropriate District OfficeState Lease - 4 Copies
Fee Lease - 3 Copies

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV

1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code 13365	Pool Name Corral Canyon, Delaware, West
Property Code	Property Name CORRAL FLY FEDERAL	Well Number 1-H
OGRID No.	Operator Name SOUTHWESTERN ENERGY PRODUCTION COMPANY	Elevation 3038'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	10	25-S	29-E		2520	NORTH	1650	EAST	EDDY

Bottom Hole Location If Different From Surface

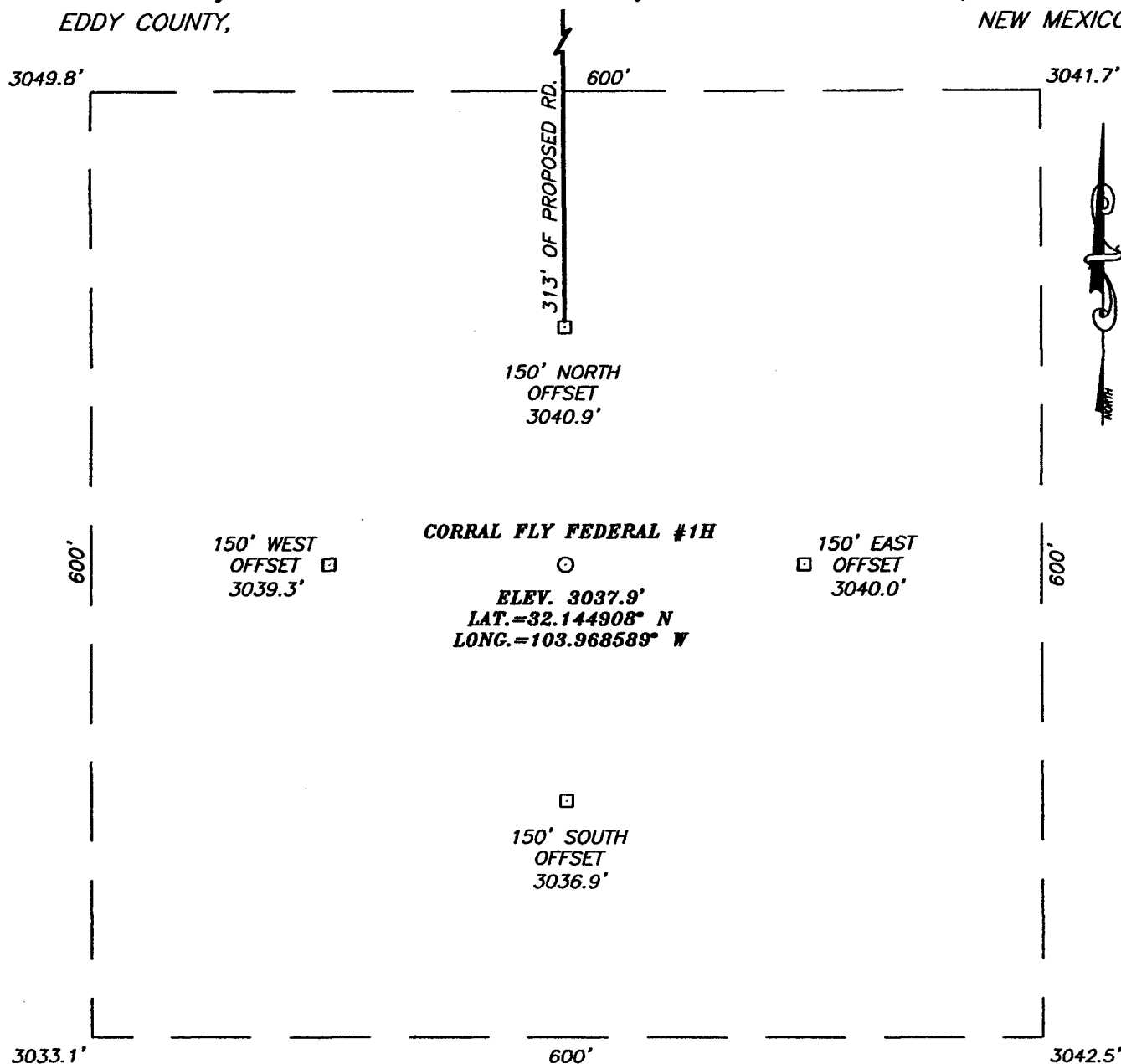
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	10	25-S	29-E		200	NORTH	1860	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
80			

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

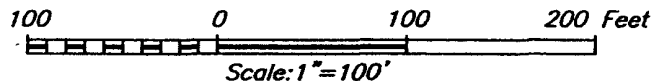
<p>BOTTOM HOLE Y=418948.7 N X=612674.2 E</p> <p>GRID AZ.=354°39'43" HORZ. DIST.=2329.0'</p> <p>3049.8' 3041.7'</p> <p>3033.1' 3042.5'</p> <p>GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=416630.4 N X=612890.8 E</p> <p>LAT.=32.144908° N LONG.=103.968589° W</p>	<p>200'</p> <p>B.H.</p> <p>1860'</p> <p>Project Area</p> <p>Producing Area</p> <p>2520'</p> <p>600'</p> <p>S.L.</p> <p>1650'</p> <p>600'</p>	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>James Alan Grimsley</i> 3/15/07 Signature Date JAMES ALAN GRIMSLEY Printed Name</p>
	<p>SURVEYOR CERTIFICATION</p> <p>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.</p> <p>JANUARY 02, 2007</p> <p>Date Surveyed AR</p> <p>Signature & Seal of Professional Surveyor</p> <p><i>Ronald J. Edson</i> 02/15/07 07.11.0151</p> <p>Certificate No. GARY EDSON 12841 RONALD J. EDSON 3239</p>	

SECTION 10, TOWNSHIP 25 SOUTH, RANGE 29 EAST, N.M.P.M.,
 EDDY COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U.S. HWY. #82 AND CO. RD. #725 (LONGHORN RD.), GO NORTHEAST ON CO. RD. #725 APPROX. 5.5 MILES. TURN LEFT AND GO NORTH APPROX. 4.2 MILES. VEER RIGHT AND GO NORTHEAST APPROX. 0.9 MILES TO A PROPOSED ROAD SURVEY. FOLLOW ROAD SURVEY SOUTH APPROX. 465 FEET TO THIS LOCATION.



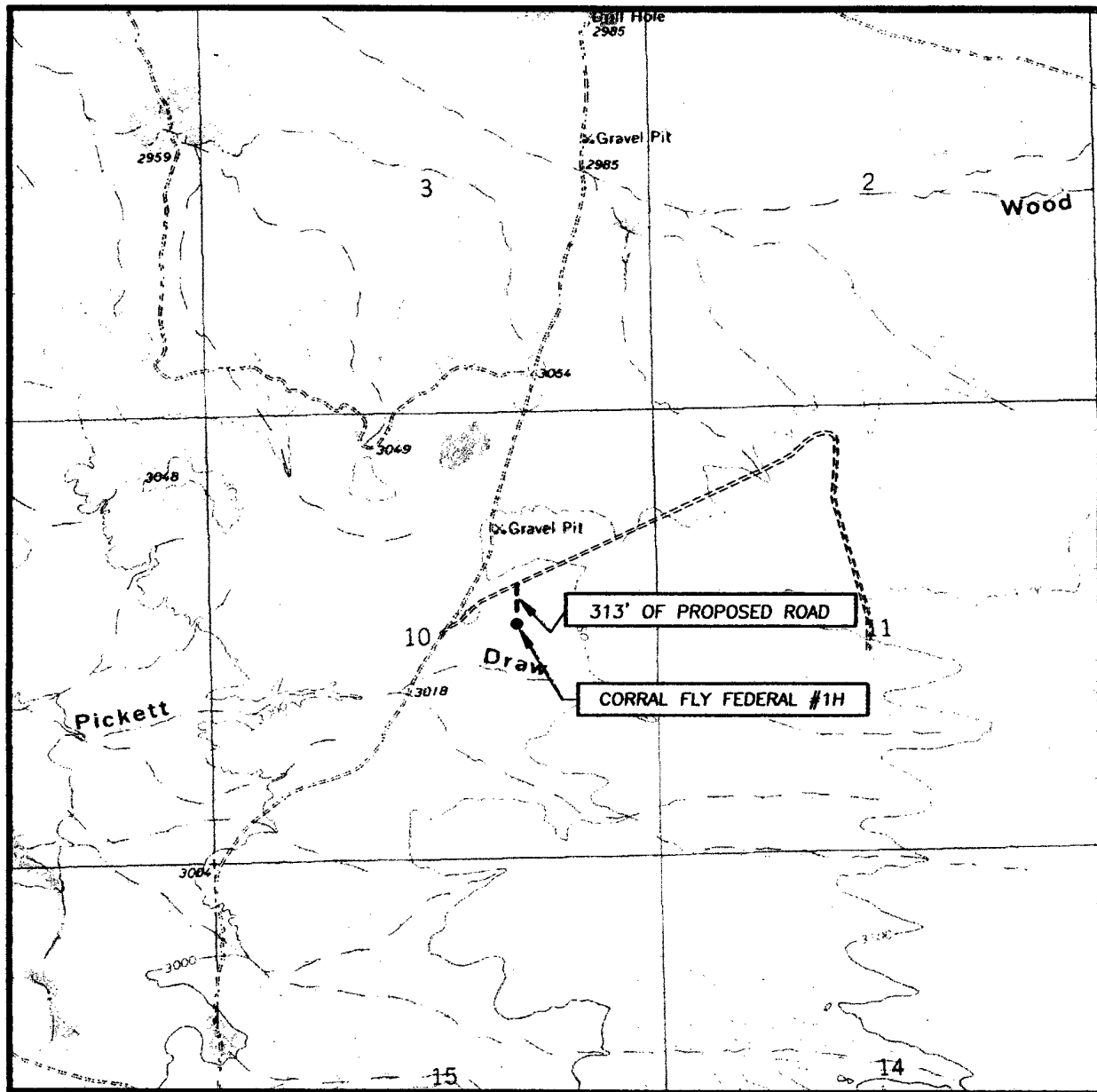
PROVIDING SURVEYING SERVICES
 SINCE 1946
JOHN WEST SURVEYING COMPANY
 412 N. DAL PASO
 HOBBS, N.M. 88240
 (505) 393-3117

SOUTHWESTERN ENERGY PRODUCTION COMPANY

CORRAL FLY FEDERAL #1H
 LOCATED 2520 FEET FROM THE NORTH LINE
 AND 1650 FEET FROM THE EAST LINE OF SECTION 10,
 TOWNSHIP 25 SOUTH, RANGE 29 EAST, N.M.P.M.,
 EDDY COUNTY, NEW MEXICO.

Survey Date: 02/02/07	Sheet 1 of 1 Sheets		
W.O. Number: 07.11.0151	Dr By: AR	Rev 1:N/A	
Date: 02/12/07	Disk: CD#6	07110151	Scale: 1"=100'

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
PIERCE CANYON, N.M. - 10'

SEC. 10 TWP. 25-S RGE. 29-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

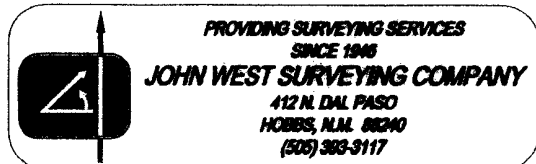
DESCRIPTION 2520' FNL & 1650' FEL

ELEVATION 3038'

OPERATOR SOUTHWESTERN ENERGY
PRODUCTION COMPANY

LEASE CORRAL FLY FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
PIERCE CANYON, N.M.



Southwestern Energy Production Company
Drilling and Operations Program

Corral Fly Federal #2H
2,520' FNL & 1650' FEL, Unit G
Section 10, T25S, R29E
Eddy County New Mexico

In conjunction with Form 3160-3, Application for Permit to Drill subject well, Southwestern Energy Production Company submits the following ten (10) items of pertinent information in accordance with BLM requirements. The surface location was moved 230' to the East as requested during the predrill site inspection. The attached plat reflects that change.

1. The geological surface formation is Permian.
2. The estimated tops of geological markers are as follows

Formation	Depth (ft)
Rustler	564'
Top Salt	1,615'
Bottom Salt	2,892'
Top of Delaware	3,142'

3. The estimated depth at which water, oil or gas formations are expected to be encountered:

Delaware	3,142'	Oil
----------	--------	-----

No other formations are expected to give up oil, gas, or fresh water in measurable quantities. The surface fresh water sands will be protected by setting 9-5/8" casing at 750' MD and circulating cement back to surface. Any shallower zones above TD which contain commercial quantities of oil and/or gas will have cement circulated across them by inserting a float shoe joint into the 5-½" production casing which will be run at TD to sufficiently cover all known oil and gas horizons 200' above.

**Corral Fly Federal #1H
Drilling Plan**

4. Proposed Well and Casing Program:

The well plan consists of drilling a vertical hole to the KOP (kick off point) at 4,823' MD/TVD. The hole will be directional drilled utilizing a build rate of 12°/100' to penetrate the Cherry Canyon 4 Sand at 5,573' MD / 5,300' TVD at 90° of angle with a 354.66° Azimuth. The Cherry Canyon 4 will be intersected at 2,045' FNL and 1,694' FEL of Section 10 T25S R29E. The well will continue laterally (90°) for ±2,318' of vertical displacement. The proposed BHL will be 200' FNL & 1,860' FEL of section 10. The top of the Delaware will be intersected at 3,142' MD/TVD at 2,520' FNL and 1,650' FEL of Section 10. A drilling prognosis, directional plot, and proposed survey report are attached as Exhibit #1 & #2.

<u>Hole Size</u>	<u>Interval</u>	<u>Casing OD</u>	<u>Wt.</u>	<u>Grade</u>
12-1/4"	0-750'	9-5/8"	36#	J-55
8-3/4"	0- 7,423'	5-1/2"	17#	N-80

Proposed Cementing Program:

9-5/8" Surface Casing:

Based on 100% excess and circulating to surface

Lead: 150 sxs of 35:65 Poz:Class "C" @ 12.7 ppg (Yield 1.88 ft³/sx)

Tail: 150 sxs of Class "C" @ 14.8 ppg (Yield 1.34 ft³/sx)

5-1/2" Production Casing:

Stage 1: 360 sxs of TXI Lightweight + 100% D151 + 0.2% D174 + 0.2% D46 + 0.5% D65 + 2% S1 mixed at 13.0 ppg (Yield = 2.76ft³/sx)
Top of cement for Stage 1 to be at 4,800' MD and based on 50% excess

DV Tool at 4800' MD

Stage 2:

Lead: 850 sxs of 35:65 Poz:Class C + 6%D20 + 0.2% D167 + 0.2% D65 + 0.2% D46 mixed at 12.5 ppg (Yield = 2.0 ft³/sx)

Tail: 100 sxs Class "C" Neat @ 14.8 ppg (Yield = 1.32 ft³/sx)
Top of cement for Stage 2 to be at surface and based on 50% excess in open hole

**Corral Fly Federal #1H
Drilling Plan**

5. Pressure Control Equipment

The blowout preventor equipment (BOP) shown in Exhibit #3 will consist of a 2000 psig WP double ram type preventor and annular preventer. Both units will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and 4-½" pipe rams on bottom. Both BOP's will be installed on the 9-5/8" surface casing and utilized continuously until total depth is reached. All BOP's and associated equipment will be tested to 1000 psig with the rig pump prior to drilling out the 9-5/8" casing shoe.

Pipe rams will be operated and checked each 24-hour period and each time the drill pipe is out of the hole. These function tests will be documented on the daily drillers log. A 2" kill line and 3" choke line will be incorporated in the drilling spool below the ram-type BOP. Other accessory BOP equipment will include a Kelly cock, floor safety valve, choke lines and manifold having a 5000 psig WP rating.

Actual BOP and manifold drawing will be submitted after rig selection.

6. Mud Program:

The applicable depth and properties of this system are as follows:

Depth	Type	MW (ppg)	Viscosity (sec)	Fluid Loss (cc)
0-750'	Fresh Water	8.5	28-30	Not Controlled
750' – 7,423'	Brine	9.8 - 10.2	38-45	10-12 cc in Lateral

7. Auxiliary Equipment:

- A Kelly Cock will be in the drill string at all times
- A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times

8. Testing, Logging, and Core Program:

- No drillstem tests are anticipated
- The electric logging program will consist of:
 - i. Total Depth of Horizontal Drainhole to Kick off Point:
Gamma Ray Depth Control log

**Corral Fly Federal #1H
Drilling Plan**

9. Potential Hazards

No abnormal pressures or temperatures are expected.

The estimated BHP of the Cherry Canyon 4 Sand is 1500 psig with an BHT of 130°F.

There is no known presence of H₂S in this area.

10. Anticipated Starting Date and Duration of Operations

Road and location construction will begin after the BLM has approved the APD.

The anticipated spud date is April 30, 2007..

Move in operations and drilling is expected to take 24 days. If production casing is run, an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.



DRILLING PROGNOSIS
Southwestern Energy Production Company

Exhibit #1

WELL NAME: Corral Fly Federal #1-H

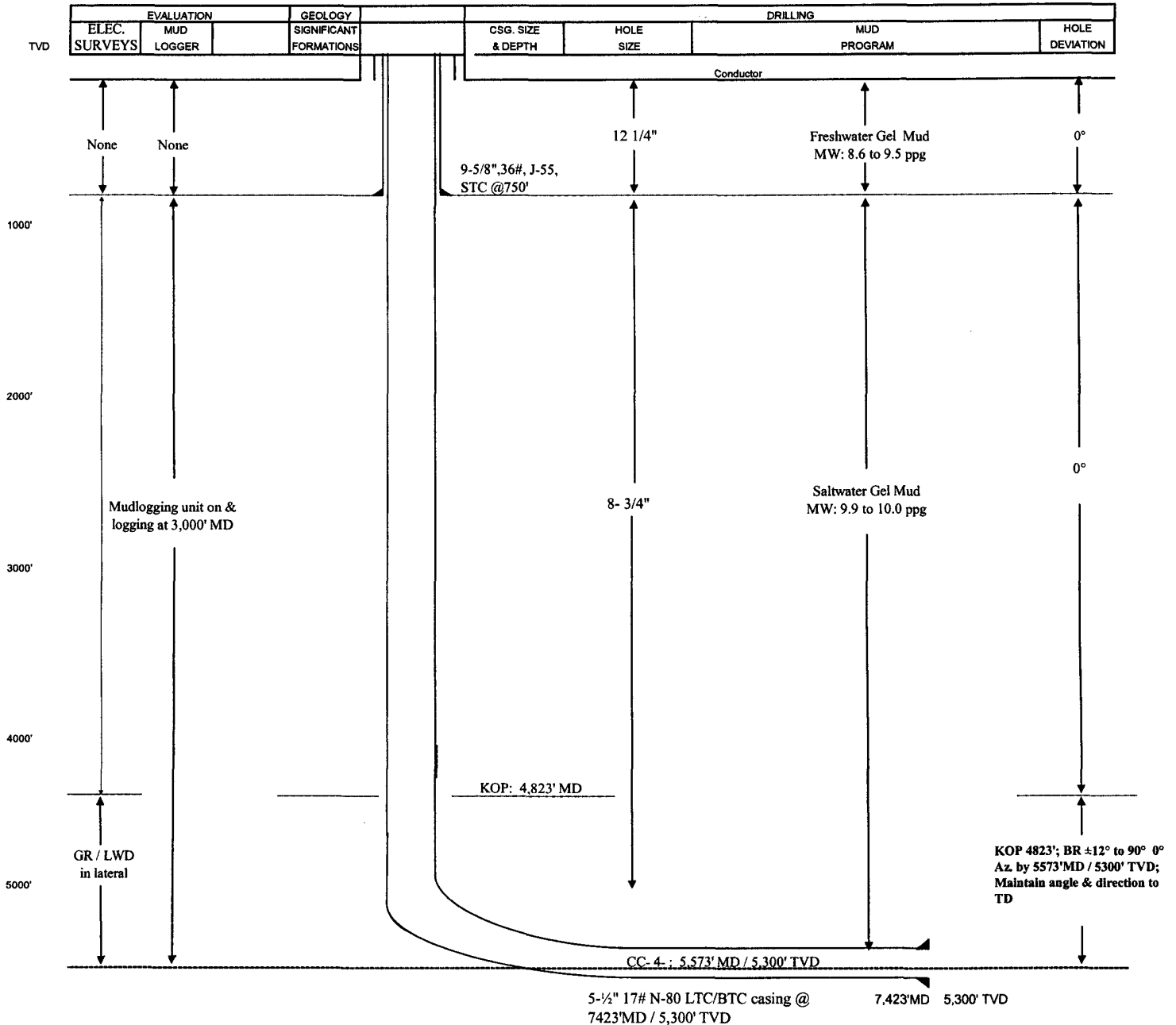
AFE NO.

LOCATION: Sec. 10, T25S, R29E
Eddy County NM
SL: 2520' FNL 1650' FEL
BHL: 200' FNL 1860' FEL
TGT ENTRY PT: 2,045' FNL 1694' FEL

PROSPECT: Corral Fly

OBJECTIVE: Cherry Canyon Sd, CC-4

EST. ELEVATION: GL 3038'; RKB \pm 16"



Southwestern Energy Production Co.

**Eddy County New Mexico
Corral Fly Section 10 - T25S R29E
Corral Fly Federal #1H
Wellbore #1**

Plan: Plan 2

Standard Planning Report

14 March, 2007



Southwestern Energy Production Co.
Corral Fly Federal #1H
Corral Fly Section 10 - T25S R29E
Eddy County New Mexico
Plan 2

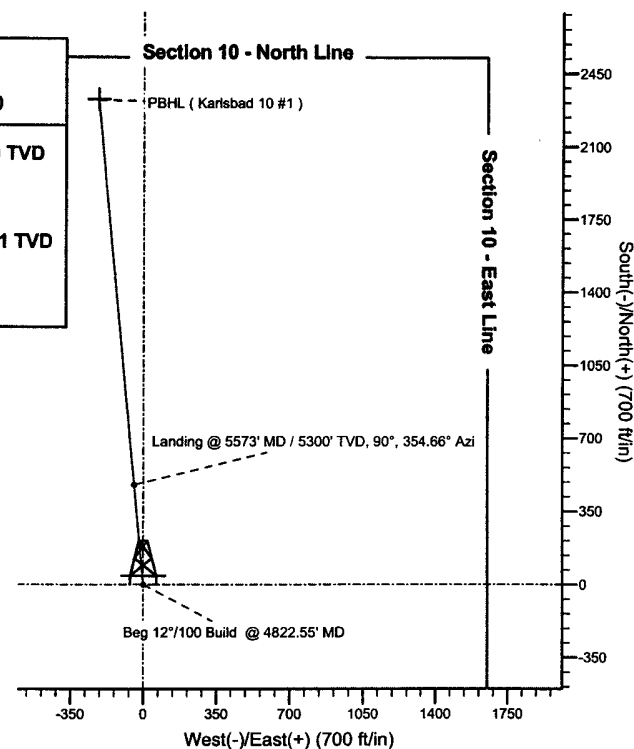
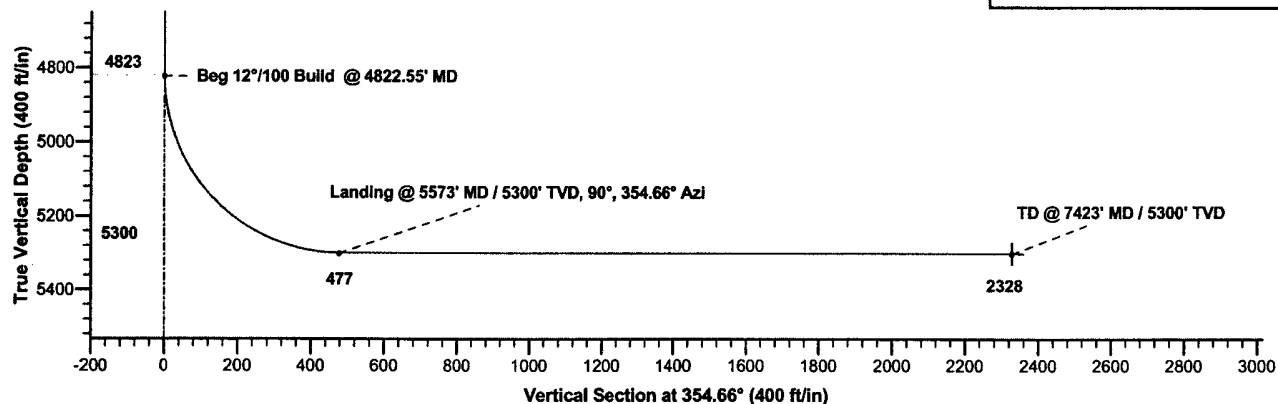


Southwestern Energy
Company

Surface Location		Ground Elevation: 6300.00		ESTIMATED RKB @ 6325.00ft (RIG NOT SPECIFIED)			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot	
0.00	0.00	416630.40	612890.80	32°8'41.661N	103°58'6.936W		

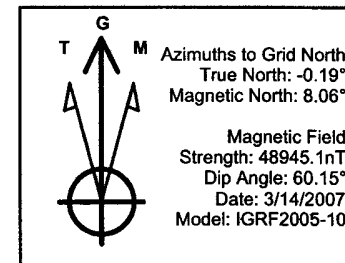
TARGET LOCATIONS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL (Karlsbad 10 #1)	5300.01	2318.30	-216.60	418948.70	612674.20

Surface Location:	
-2520.00 FNL	-1650.00 FEL
y= 416630.40	x= 612890.80
Section 10 (Eddy Cty NM) @ 0.00 TVD	
-2640.00 FNL	-2640.00 FEL
y=416510.40	x=611900.80
PBHL (Karlsbad 10 #1) @ 5300.01 TVD	
-201.70 FNL	-1866.60 FEL
y=418948.70	x=612674.20



Phil Lyons 3/14/2007

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
1	0.00	0.00	354.66	0.00	0.00	0.00	0.00	0.00	0.00
2	4822.55	0.00	354.66	4822.55	0.00	0.00	0.00	0.00	0.00
3	5572.55	90.00	354.66	5300.01	475.39	-44.42	12.00	354.66	477.46
4	7423.48	90.00	354.66	5300.01	2318.30	-216.60	0.00	0.00	2328.40
PBHL (Karlsbad 10 #1)									



Crescent Directional Drilling Planning Report

Database: COMPASS_2003.11_CDDSVR
Company: Southwestern Energy Production Co.
Project: Eddy County New Mexico
Site: Corral Fly Section 10 - T25S R29E
Well: Corral Fly Federal #1H
Wellbore: Wellbore #1
Design: Plan 2

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well Corral Fly Federal #1H
ESTIMATED RKB @ 6325.00ft (RIG NOT SPECIFIED)
ESTIMATED RKB @ 6325.00ft (RIG NOT SPECIFIED)
Grid
Minimum Curvature

Project Eddy County New Mexico

Map System: US State Plane 1927 (Exact solution)

System Datum:

Mean Sea Level

Geo Datum: NAD 1927 (NADCON CONUS)

Map Zone: New Mexico East 3001

Site Corral Fly Section 10 - T25S R29E

Site Position:		Northing:	416,630.40 ft	Latitude:	32° 08' 41.661" N
From:	Map	Easting:	612,890.80 ft	Longitude:	103° 58' 06.936" W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	0.19 °

Well Corral Fly Federal #1H

Well Position	+N/-S	0.00 ft	Northing:	416,630.40 ft	Latitude:	32° 08' 41.661" N
	+E/-W	0.00 ft	Easting:	612,890.80 ft	Longitude:	103° 58' 06.936" W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,300.00 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	3/14/2007	8.25	60.15	48,945

Design Plan 2

Audit Notes:

Version: **Phase:** PROTOTYPE **Tie On Depth:** 0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	354.66

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	MDP (ft)	Target
0.00	0.00	354.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,822.55	0.00	354.66	4,822.55	0.00	0.00	0.00	0.00	0.00	0.00	
5,572.55	90.00	354.66	5,300.01	475.39	-44.42	12.00	12.00	0.00	354.66	
7,423.48	90.00	354.66	5,300.01	2,318.30	-216.60	0.00	0.00	0.00	0.00	PBHL (Karlsbad 10 #

Crescent Directional Drilling Planning Report

Database:	COMPASS_2003.11_CDDSVR	Local Co-ordinate Reference:	Well Corral Fly Federal #1H
Company:	Southwestern Energy Production Co.	TVD Reference:	ESTIMATED RKB @ 6325.00ft (RIG NOT SPECIFIED)
Project:	Eddy County New Mexico	MD Reference:	ESTIMATED RKB @ 6325.00ft (RIG NOT SPECIFIED)
Site:	Corral Fly Section 10 - T25S R29E	North Reference:	Grid
Well:	Corral Fly Federal #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	354.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	354.66	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	354.66	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	354.66	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	354.66	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	354.66	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	354.66	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	354.66	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	354.66	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	354.66	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	354.66	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	354.66	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	354.66	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	354.66	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	354.66	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	354.66	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	354.66	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	354.66	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	354.66	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	354.66	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	354.66	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	354.66	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	354.66	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	354.66	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	354.66	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	354.66	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	354.66	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	354.66	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	354.66	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	354.66	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	354.66	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	354.66	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	354.66	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	354.66	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	354.66	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	354.66	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	354.66	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	354.66	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	354.66	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	354.66	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	354.66	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	354.66	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	354.66	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	354.66	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	354.66	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	354.66	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	354.66	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	354.66	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	354.66	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,822.55	0.00	354.66	4,822.55	0.00	0.00	0.00	0.00	0.00	0.00
Beg 12°/100 Build @ 4822.55' MD									
4,900.00	9.29	354.66	4,899.66	6.24	-0.58	6.27	12.00	12.00	0.00

Crescent Directional Drilling Planning Report

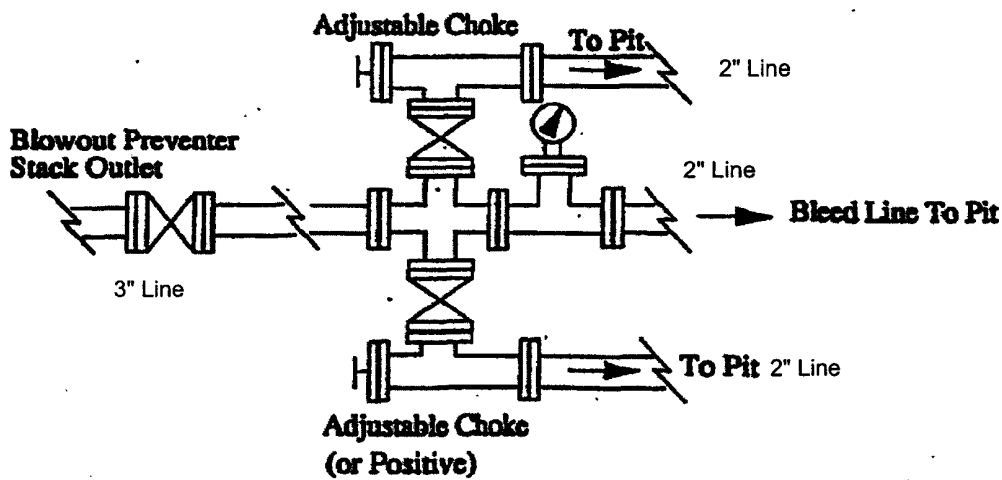
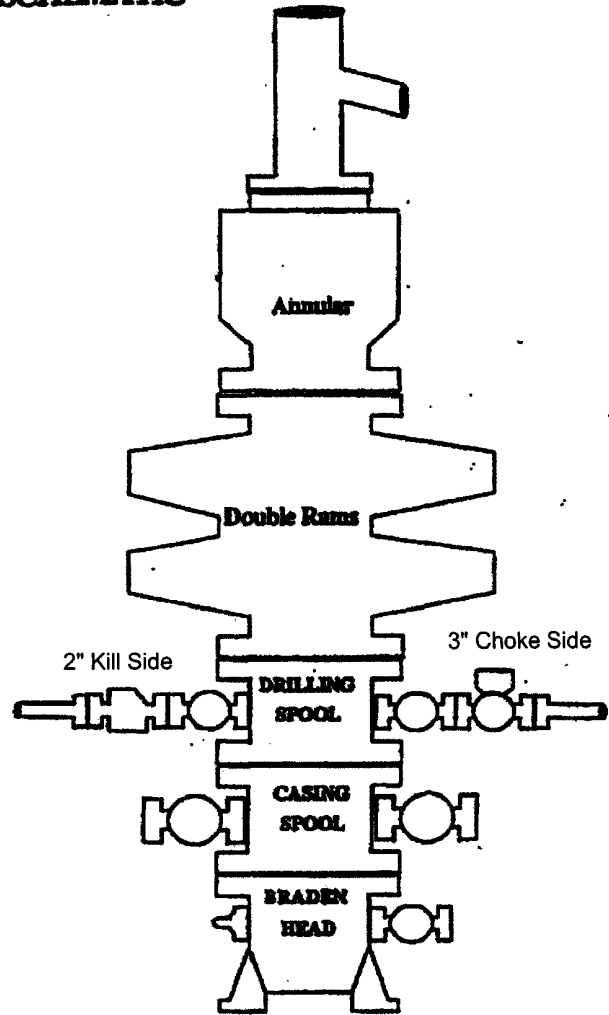
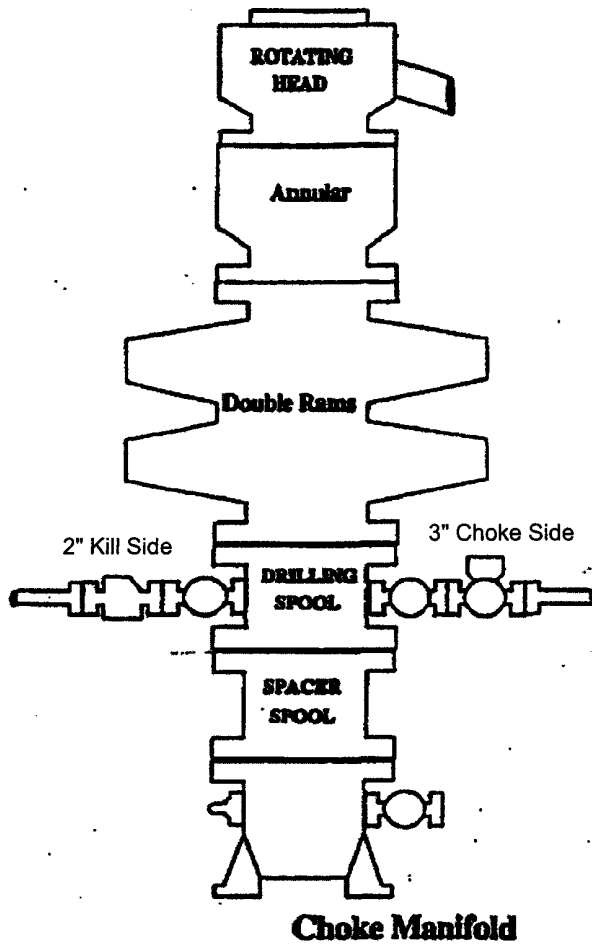
Database:	COMPASS_2003.11_CDDSVR	Local Co-ordinate Reference:	Well Corral Fly Federal #1H
Company:	Southwestern Energy Production Co.	TVD Reference:	ESTIMATED RKB @ 6325.00ft (RIG NOT SPECIFIED)
Project:	Eddy County New Mexico	MD Reference:	ESTIMATED RKB @ 6325.00ft (RIG NOT SPECIFIED)
Site:	Corral Fly Section 10 - T25S R29E	North Reference:	Grid
Well:	Corral Fly Federal #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2		

5,000.00	21.29	354.66	4,995.94	32.46	-3.03	32.60	12.00	12.00	0.00
5,100.00	33.29	354.66	5,084.65	78.03	-7.29	78.37	12.00	12.00	0.00
5,200.00	45.29	354.66	5,161.90	140.97	-13.17	141.59	12.00	12.00	0.00
5,300.00	57.29	354.66	5,224.31	218.53	-20.42	219.48	12.00	12.00	0.00
5,400.00	69.29	354.66	5,269.17	307.31	-28.71	308.65	12.00	12.00	0.00
5,500.00	81.29	354.66	5,294.51	403.44	-37.69	405.20	12.00	12.00	0.00
5,572.55	90.00	354.66	5,300.01	475.39	-44.42	477.46	12.00	12.00	0.00
Landing @ 5573' MD / 5300' TVD, 90°, 354.66° Azi									
5,600.00	90.00	354.66	5,300.01	502.73	-46.97	504.92	0.00	0.00	0.00
5,700.00	90.00	354.66	5,300.01	602.30	-56.27	604.92	0.00	0.00	0.00
5,800.00	90.00	354.66	5,300.01	701.86	-65.58	704.92	0.00	0.00	0.00
5,900.00	90.00	354.66	5,300.01	801.43	-74.88	804.92	0.00	0.00	0.00
6,000.00	90.00	354.66	5,300.01	901.00	-84.18	904.92	0.00	0.00	0.00
6,100.00	90.00	354.66	5,300.01	1,000.56	-93.48	1,004.92	0.00	0.00	0.00
6,200.00	90.00	354.66	5,300.01	1,100.13	-102.79	1,104.92	0.00	0.00	0.00
6,300.00	90.00	354.66	5,300.01	1,199.69	-112.09	1,204.92	0.00	0.00	0.00
6,400.00	90.00	354.66	5,300.01	1,299.26	-121.39	1,304.92	0.00	0.00	0.00
6,500.00	90.00	354.66	5,300.01	1,398.83	-130.69	1,404.92	0.00	0.00	0.00
6,600.00	90.00	354.66	5,300.01	1,498.39	-140.00	1,504.92	0.00	0.00	0.00
6,700.00	90.00	354.66	5,300.01	1,597.96	-149.30	1,604.92	0.00	0.00	0.00
6,800.00	90.00	354.66	5,300.01	1,697.53	-158.60	1,704.92	0.00	0.00	0.00
6,900.00	90.00	354.66	5,300.01	1,797.09	-167.90	1,804.92	0.00	0.00	0.00
7,000.00	90.00	354.66	5,300.01	1,896.66	-177.21	1,904.92	0.00	0.00	0.00
7,100.00	90.00	354.66	5,300.01	1,996.23	-186.51	2,004.92	0.00	0.00	0.00
7,200.00	90.00	354.66	5,300.01	2,095.79	-195.81	2,104.92	0.00	0.00	0.00
7,300.00	90.00	354.66	5,300.01	2,195.36	-205.11	2,204.92	0.00	0.00	0.00
7,400.00	90.00	354.66	5,300.01	2,294.92	-214.42	2,304.92	0.00	0.00	0.00
7,423.48	90.00	354.66	5,300.01	2,318.30	-216.60	2,328.40	0.00	0.00	0.00
TD @ 7423' MD / 5300' TVD									

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Hit/miss target	(°)	(°)	(ft)	ft	ft	(ft)	(ft)		
Section 10 (Eddy Cty)	0.00	0.00	0.00	-120.00	-990.00	416,510.40	611,900.80	32° 08' 40.506" N	103° 58' 18.456" W
- plan misses by 997.25ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Rectangle (sides W5,280.01 H5,280.01 D0.00)									
PBHL (Karlsbad 10 #1)	0.00	0.00	5,300.01	2,318.30	-216.60	418,948.70	612,674.20	32° 09' 04.611" N	103° 58' 09.365" W
- plan misses by 1850.94ft at 5572.54ft MD (5300.01 TVD, 475.39 N, -44.42 E)									
- Point									

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	
4,822.55	4,822.55	0.00	0.00	Beg 12"/100 Build @ 4822.55' MD
5,572.55	5,300.01	475.39	-44.42	Landing @ 5573' MD / 5300' TVD, 90°, 354.66° Azi
7,423.48	5,300.01	2,318.30	-216.60	TD @ 7423' MD / 5300' TVD

BOPE SCHEMATIC



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**Southwestern Energy
Company**

**Southwestern Energy Production Company
2350 N. Sam Houston Parkway East
Suite 300
Houston, Texas 77032**

Hydrogen Sulfide (H₂S) Contingency Plan

For

Corral Fly Federal #1-H

And

Corral Fly Federal #2-H

These wells are open drilling sites. H₂S monitoring equipment and emergency response equipment will be used within 500' of the zones known to contain H₂S, including warning signs, wind indicators and H₂S monitor.

Assumed 100 ppm ROE = 3000' (Radius of Exposure)
100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the case of a release of gas containing H₂S, the first responder(s) must isolate the area and prevent entry by other persons into the 100 ppm ROE. Additionally the first responder(s) must evacuate any public places encompassed by the 100 ppm ROE. First responder(s) must take care not to injure themselves during this operation. Company and/or local officials must be contacted to aid in this operation. Evacuation of the public should be beyond the 100 ppm ROE.

All responders must have training in the detection of H₂S, measures for protection against the gas, equipment used for protection and emergency response. Additionally, responders must be equipped with H₂S monitors and air packs in order to control the release. Use the "buddy system" to ensure no injuries during the response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Southwestern Energy Production Company personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the NMOCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Southwestern Energy Production Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

Southwestern Energy Production Call List Office Cellular

Bruce Drummond – Production Foreman	505-393-1850	505-631-8083
Jeff Kallmeyer – Production Engineer	281-618-7442	832-260-1890
Alan Grimsley – Drilling Engineer ..	281-618-4068	713-492-1657
Reese Mitchell – Drilling Manager ..	281-618-4071	281-702-6703
David Pickard – HSE Manager	281-618-4054	713-516-6296

Agency Call List

Eddy County (505)

Artesia

State Police	746-2703
City Police	746-2703
Sheriff's Office	746-9888
Ambulance	911
Fire Department	746-2701
LEPC (Local Emergency Planning Committee)	746-2122
NMOCD	748-1283

Carlsbad

State Police	885-3137
City Police	885-2111
Sheriff's Office	887-7551
Ambulance	911
Fire Department	885-2111
LEPC (Local Emergency Planning Committee)	887-3798
US Bureau of Land Management	887-6544

New Mexico Emergency Response Commission (Santa Fe)	(505)476-9600
24 HR	(505) 827-9126
National Emergency Response Center (Washington, DC)	...(800) 424-8802

Other

Wild Well Control	(281) 353-5481
Boots & Coots IWC	1-800-256-9688 or (281) 931-8884
Cudd Pressure Control	(915) 699-0139 or (915) 563-3356
Halliburton	(432) 682-4305
B. J. Services.....	(505) 392-5556
B.J. Services	(505) 746-3140
Schlumberger	(505) 748-1391
Flight For Life -4000 24th St, Lubbock, TX	(806) 743-9911
Aerocare -Rr 3 Box 49f, Lubbock, TX	(806) 747-8923
Med Flight Air Amb 2301 Yale Blvd SE #D3, Albuq, NM	(505) 842-4433
S B Air Med Svc 2505 Clark Carr Loop SE, Albuq, NM	(505) 842-4949

Southwestern Energy Production Company
Surface Use and Operating Plan

Corral Fly Federal #2H
2,520' FNL & 1650' FEL, Unit G
Section 10, T25S, R29E
Eddy County New Mexico

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

1. Existing Roads

- a. The well site and elevation plat for the proposed well are reflected in the attached survey. This well was surveyed by John West Surveying Company in Hobbs, New Mexico.
- b. All roads into the location are depicted in Exhibit #4.
- c. All existing roads will be maintained in the same or better condition.
- d. Directions to location:
From Malaga, New Mexico go north on Hwy 285 to SR 31 and turn right (East). Follow SR 31 to SR 128. Turn right onto SR 128 and continue on SR 128 (East of mile marker 19), turn South on Buck Jackson Road (CR 786) for 9.2 miles. Turn West (right) on CR 787 for 0.1 miles. Turn Southwest (left) on El Paso Pipeline ROW for 4.6 miles. Turn West (right) @ Devon Energy (Southwestern Energy) Sign. Go Northwest 0.5 miles to a "Y" in the road. Take right at "Y" and follow main road approximately 6.2 miles

2. Access Road

- a. Exhibit #4 shows the existing lease road. Approximately 313' of new access road will be required. It will be constructed as follows:
 - i. The maximum width of the road will be 15'. It will be crowned and made of 6" of rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent surface erosion.
 - ii. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest to the location.
 - iii. No cattle guards, grates, or fence cuts will be required. No turnouts are planned.

3. Location of Existing Wells

- a. Exhibit # 4 is a plat that shows all wells within a 1-mile radius of the proposed surface location.

Corral Fly Federal #1H
Surface Use and Operating Plan

4. Proposed Facilities

- a. In the event the well is found productive, a tank battery would be constructed.
- b. The tank battery, all connections and all lines will adhere to API standards.
- c. If the well is productive, rehabilitation plans are as follows:
 - i. The reserve pit will be closed pursuant to OCD rules and guidelines.
 - ii. The original topsoil from the well site will be returned to the location. The drill site will then be contoured as close as possible to the original state.

5. Methods of Handling Water Disposal

- a. Drill cuttings will be disposed into the reserve pit.
- b. All trash, junk, and other waste material will be contained in trash cages or trash bins to prevent scattering. When the job is completed, all contents will be removed and disposed of in an approved sanitary landfill.
- c. Remaining drilling fluids will be allowed to evaporate in the reserve pit until the pits are dry enough to be closed. If the drilling fluids do not evaporate in a reasonable time they will be hauled off by transports to a state approved disposal site. The reserve pit will be closed pursuant to NM OCD rules and guidelines.
- d. Water produced during completion will be put into the reserve pit. Oil and condensate produced will be put in a storage tank and sold.

6. Well Site Layout

- a. Exhibit #5 shows the proposed well site layout dimensions of the well pad and reserve pit.
- b. Mud pits in the active circulating system will be steel pits & the reserve pit will be lined with a 12 mil synthetic liner.
- c. The reserve pit will be fenced on three sides during drilling and completion operations. After the rig is removed, the reserve pit will be fenced on the fourth side to preclude endangering wildlife. The fencing shall remain in place until the pit is reclaimed. If the well is a producer, the reserve pit and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

7. Other Information

- a. The area surrounding the well site is grassland. The topsoil is very sandy in nature. The vegetation is moderately sparse with native prairie grass, sagebrush, yucca, and miscellaneous weeds.
- b. The surface and minerals are owned by the U.S. Government and is administered by the Bureau of Land Management. The surface is of limited use except for the grazing of livestock and the production of oil and gas.
- c. An archaeological survey has been performed and was forwarded to the Bureau of Land Management.
- d. There are no dwellings within 2 miles of location.

**Corral Fly Federal #1H
Surface Use and Operating Plan**

Operators Representative:

Through APD Approval:

Martha Howard
Regulatory Analyst
Southwestern Energy Production Company
2350 N. Sam Houston Parkway East
Houston, Texas 77032
Phone: (281) 618- 4887

Through Drilling Operations:

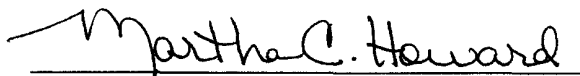
Alan Grimsley
Drilling Engineer
Southwestern Energy Production Company
2350 N. Sam Houston Parkway East
Houston, Texas 77032
Phone: (281) 618- 4068
Cell: (713) 492-1657

Through Completion and Production Operations:

Bruce Drummond
Production Superintendent
Southwestern Energy Production Company
816 E. Green Acres
Hobbs, New Mexico, 88240
Phone: (505) 393- 1850
Cell: (505) 631-8083

Certification:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route, that I am familiar with the conditions which presently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and that the work associated with the operations proposed therein will be performed by Southwestern energy Production Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

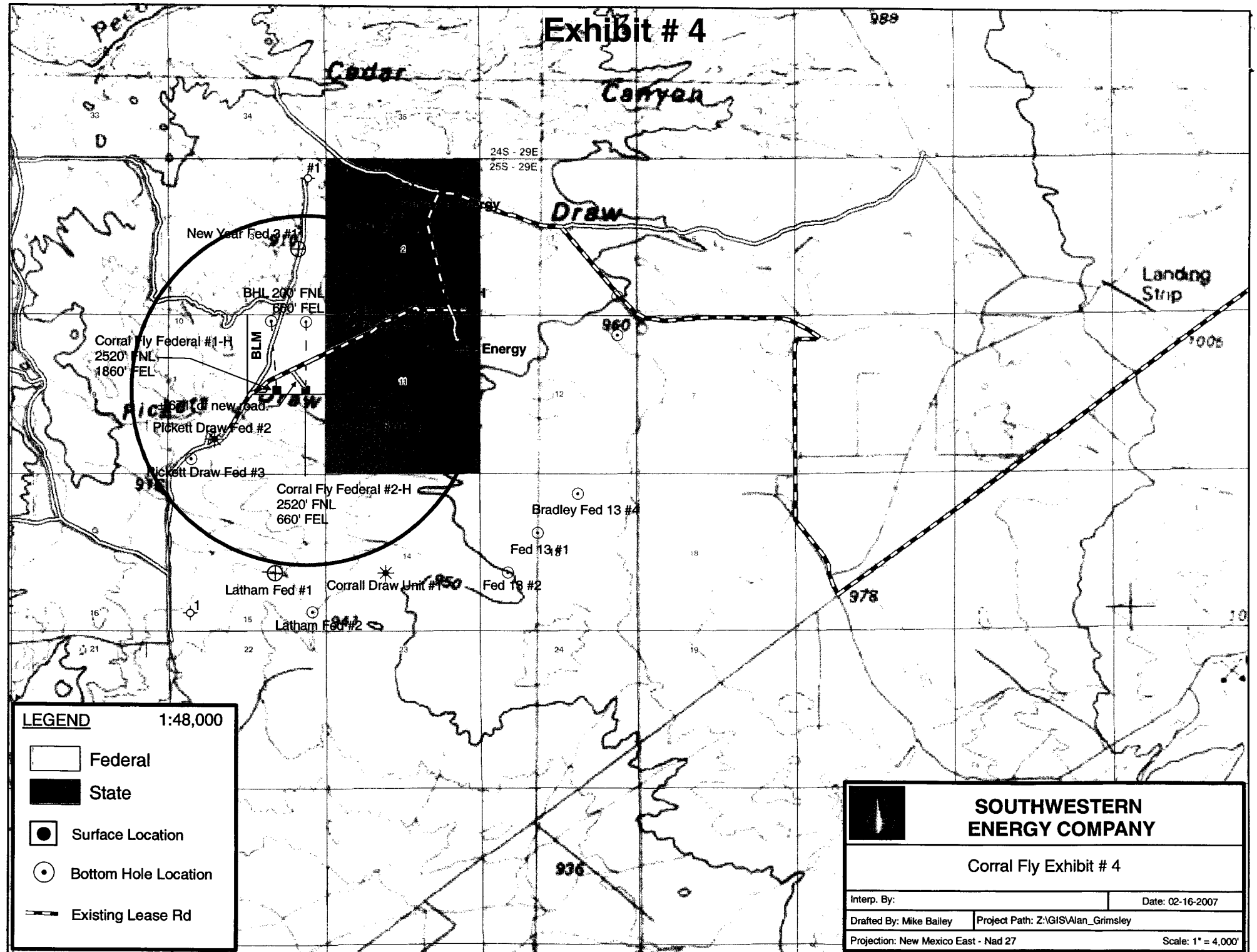


Martha Howard
Staff Regulatory Analyst

3.19.2007

Date

Exhibit # 4



CONDITIONS OF APPROVAL - DRILLING

Operator's Name: SOUTHWESTERN ENERGY PRODUCTION COMPANY
Well Name & No. 1-H – CORRAL FLY FEDERAL
Location: SHL 2520' FNL & 1650' FEL – SEC 10 – T25S – R29E - SHL
BHL 200' FNL & 1860' FEL – SEC 10 – T25S – R29E – BHL
Lease: NM-15303

.....

I. DRILLING OPERATIONS REQUIREMENTS:

- A. The Bureau of Land Management (BLM) is to be notified a minimum of 4 hours in advance for a representative to witness:
1. Spudding well
 2. Setting and/or Cementing of all casing strings
 3. BOPE tests
- Eddy County call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822
- B. 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.

II. CASING:

- A. The 9-5/8 inch surface casing shall be set at 750 feet and cemented to the surface.
1. If cement does not circulate to the surface, the appropriate BLM 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.
 2. Wait on cement (WOC) time for a primary cement job will be a minimum of 12 hours for a non-water basin, 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compression strength, whichever is greater. (This is to include the lead cement)
 3. 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.
 4. If cement falls back, remedial action will be done prior to drilling out that string.
- B. The minimum required fill of cement behind the 5-1/2 inch production casing is tie back cement 200 feet into the 9-5/8 inch casing.
- C. 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 I joints of the drill pipe will be installed prior to continuing drilling operations.

III. PRESSURE CONTROL:

- A. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53.
- B. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 2000 (2M) PSI.
- C. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - 1. The tests shall be done by an independent service company.
 - 2. The results of the test shall be reported to the appropriate BLM office.
 - 3. 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 appropriate BLM office.
 - 4. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi in accordance with API RP 53. 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.