

DATE IN 8-5-09	SUSPENSE	ENGINEER Brook	LOGGED IN 8-10-9	TYPE NSL	PTW APP NO. 0922228139
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
 - Engineering Bureau -
 1220 South St. Francis Drive, Santa Fe, NM 87505



ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS
 WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

- [1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]
- [A] Location - Spacing Unit - Simultaneous Dedication
☒ NSL ☐ NSP ☐ SD
- Check One Only for [B] or [C]
- [B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR
- [D] Other: Specify _____
- [2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or Does Not Apply
- [A] ☐ Working, Royalty or Overriding Royalty Interest Owners
- [B] ☐ Offset Operators, Leaseholders or Surface Owner
- [C] ☐ Application is One Which Requires Published Legal Notice
- [D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F] ☐ Waivers are Attached
- [3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Print or Type Name _____	Signature _____	Title _____	Date _____
e-mail Address _____			

Phyllis Edwards

To: Brooks, David K., EMNRD
Subject: Skelly Unit 660 - NSL 6055

8-3-09

Dear Mr. Brooks,

At your earliest convenience, please amend NSL 6055 (copy attached) to show that COG will drill this location directionally.

Skelly Unit #660Eddy	SHL	1265 FSL, 1173 FEL	Sec 14, T17S, R31E, Unit P
Skelly Unit #660	BHL	990 FSL, 990 FEL	Sec 14, T17S, R31E, Unit P

The revised plat is attached denoting Yeso penetration point.
Also attached is the directional plan.

Phyllis Edwards

Regulatory Analyst



COG Operating LLC

Fasken Tower II

550 W. Texas Avenue, Suite 1300

Midland, TX 79701

432-685-4340 P

432-685-4396 F

pedwards@conchoresources.com

RECEIVED OCD
2009 AUG -5 A 11:22



New Mexico Energy, Minerals and Natural Resources Department

Bill Richardson
Governor

Joanna Prukop
Cabinet Secretary

Mark Fesmire
Division Director
Oil Conservation Division



July 10, 2009

COG Operating, LLC
Attn: Ms. Robyn Odom
Fasken Center, Tower II
550 West Texas Ave., Suite 1300
Midland, TX 79701



Administrative Order NSL-6055

Re: Skelly Unit Well No. 660
API No. 30-015
1265 feet FSL and 1173 feet FEL
Unit P, Section 14-17S-31E
Eddy County, New Mexico

Dear Ms. Odom:

Reference is made to the following:

(a) your application (**administrative application reference No. pTGW09-18148304**) submitted to the New Mexico Oil Conservation Division (the Division) in Santa Fe, New Mexico on June 30, 2009, and

(b) the Division's records pertinent to this request.

COG Operating, LLC [OGRID 229137] (COG) has requested to drill the above-referenced well at an unorthodox oil well location, described above in the caption of this letter. The SE/4 SE/4 of Section 14 will be dedicated to this well in order to form a standard 40-acre spacing unit in the undesignated Fren Glorieta-Yeso Pool (26770). This pool is governed by statewide Rule 15.9.A, which provides for 40-acre units, with wells located at least 330 feet from a unit outer boundary. This location is less than 330 feet from the northern and western unit boundaries.

Your application has been duly filed under the provisions of Division Rules 15.13 and 4.12.A(2).

It is our understanding that you are seeking this location because of sand dunes.

Oil Conservation Division * 1220 South St. Francis Drive
* Santa Fe, New Mexico 87505

* Phone: (505) 476-3440 * Fax (505) 476-3462* <http://www.emnrd.state.nm.us>



July 10, 2009

Page 2

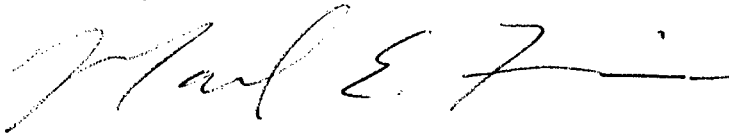
It is also understood that notice of this application to offsetting operators or owners is unnecessary due to common ownership.

Pursuant to the authority conferred by Division Rule 15.13.B, the above-described unorthodox location is hereby approved.

This approval is subject to your being in compliance with all other applicable Division rules, including, but not limited to Division Rule 5.9.

Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark E. Fesmire", followed by a horizontal line.

Mark E. Fesmire, P.E.
Director

MEF/db

cc: New Mexico Oil Conservation Division - Artesia
United States Bureau of Land Management - Carlsbad

State of New Mexico

DISTRICT I

1625 N. FRENCH DR., HOBBS, NM 88240

Energy, Minerals and Natural Resources Department

Form C-102

DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 88210

OIL CONSERVATION DIVISION

1220 SOUTH ST. FRANCIS DR.

Santa Fe, New Mexico 87505

Submit to Appropriate District Office

State 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 30-015-	Pool Code 26770	Pool Name FREN; GLORIETA-YESO
Property Code 305607	Property Name SKELLY UNIT	Well Number 660
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3914'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	14	17-S	31-E		1265	SOUTH	1173	EAST	EDDY

Bottom Hole Location If Different From Surface

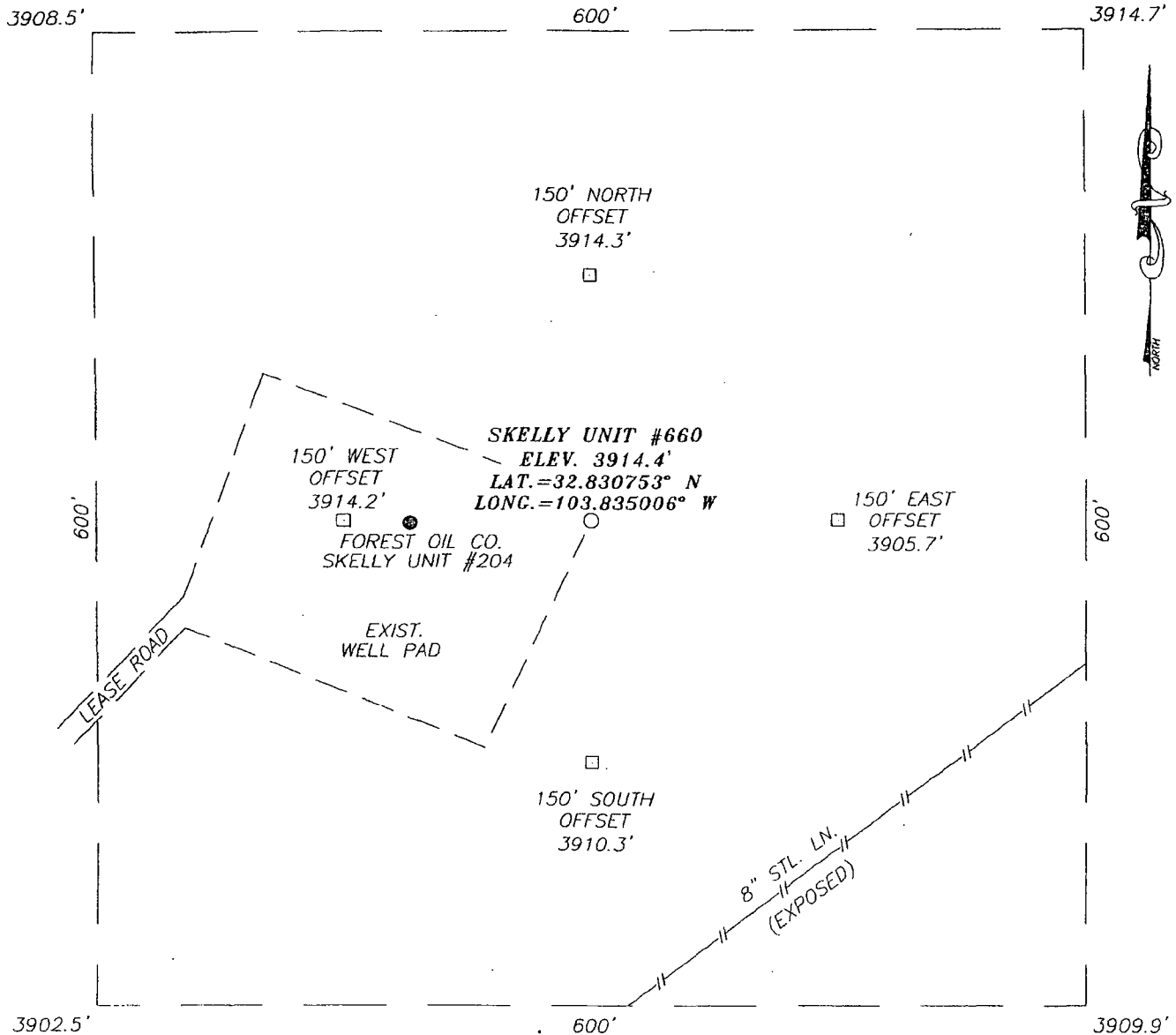
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	14	17-S	31-E		990	SOUTH	990	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

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

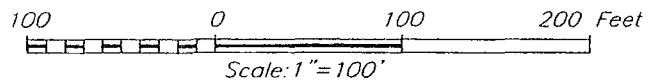
GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=666299.9 N X=653070.8 E LAT.=32.830753° N LONG.=103.835006° W BOTTOM HOLE LOCATION Y=666026.2 N X=653255.3 E GRID AZ.-146°00'54" HORZ. DIST.-330.2' PENETRATION POINT 1001' FSL + 498' FEL	OPERATOR CERTIFICATION I hereby certify that the information herein 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. <i>Phyllis A. Edwards</i> 7/27/09 Signature Date PHYLLIS A. EDWARDS Printed Name REGULATORY ANALYST 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. JUNE 17, 2009 Date Surveyed <i>Phyllis A. Edwards</i> Signature & Seal of Professional Surveyor PHYLLIS A. EDWARDS Printed Name LA 09.13.0648 Date 12641 Certificate No. 3239 Surveyor No.
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SECTION 14, TOWNSHIP 17 SOUTH, RANGE 31 EAST, N.M.P.M.,
 EDDY COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U.S. HWY. #82 AND CO. RD. #224 (RIPPLE RD.), GO SOUTHWEST ON U.S. HWY. #82 APPROX. 1.2 MILES TO WISER OIL CO. SIGN AND LEASE ROAD. TURN LEFT AND GO NORTHWEST APPROX. 0.3 MILES. TURN RIGHT AND GO NORTH APPROX. 0.3 MILES. TURN RIGHT AND GO NORTHEAST APPROX. 0.4 MILES. TURN RIGHT AND GO SOUTHEAST APPROX. 0.3 MILES TO THE FIRST OIL CO. SKELLY UNIT #204 WELL PAD. THIS LOCATION IS EAST APPROX. 110 FEET AT THE NORTHEAST CORNER OF THIS WELL PAD.



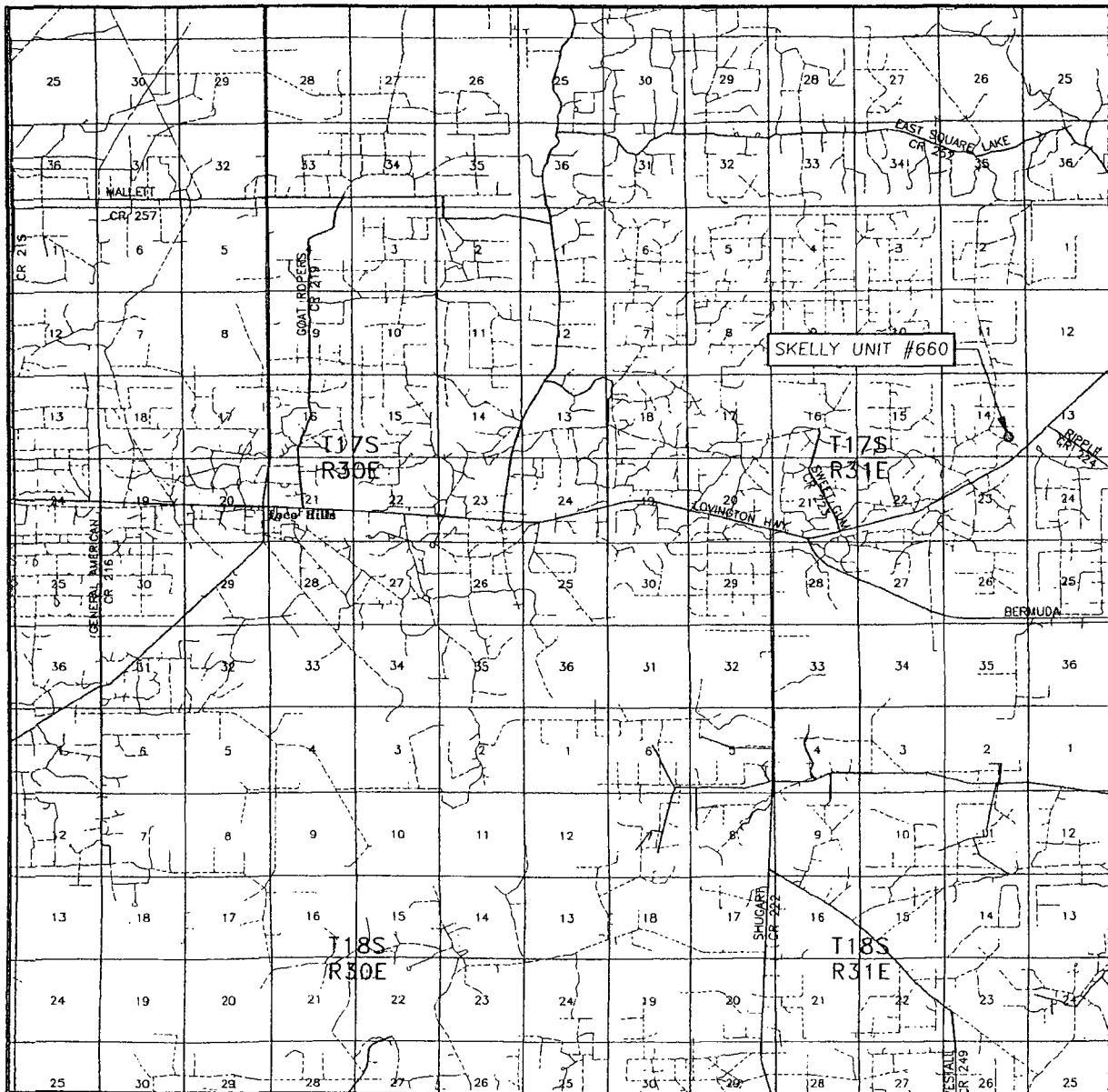
COG OPERATING, LLC

SKELLY UNIT #660 WELL
 LOCATED 1265 FEET FROM THE SOUTH LINE
 AND 1173 FEET FROM THE EAST LINE OF SECTION 14,
 TOWNSHIP 17 SOUTH, RANGE 31 EAST, N.M.P.M.,
 EDDY COUNTY, NEW MEXICO.

Survey Date: 6/17/09		Sheet 1 of 1 Sheets	
W.O. Number: 09.11.0400		Dr By: AR	Rev 1:N/A
Date: 6/23/09	Disk:	09110400	Scale: 1"=100'

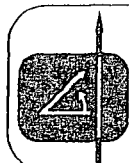
PROVIDING SURVEYING SERVICES.
 SINCE 1946
JOHN WEST SURVEYING COMPANY
 412 N. DAL PASO
 HOBBS, N.M. 88240
 (575) 393-3117

VICINITY MAP



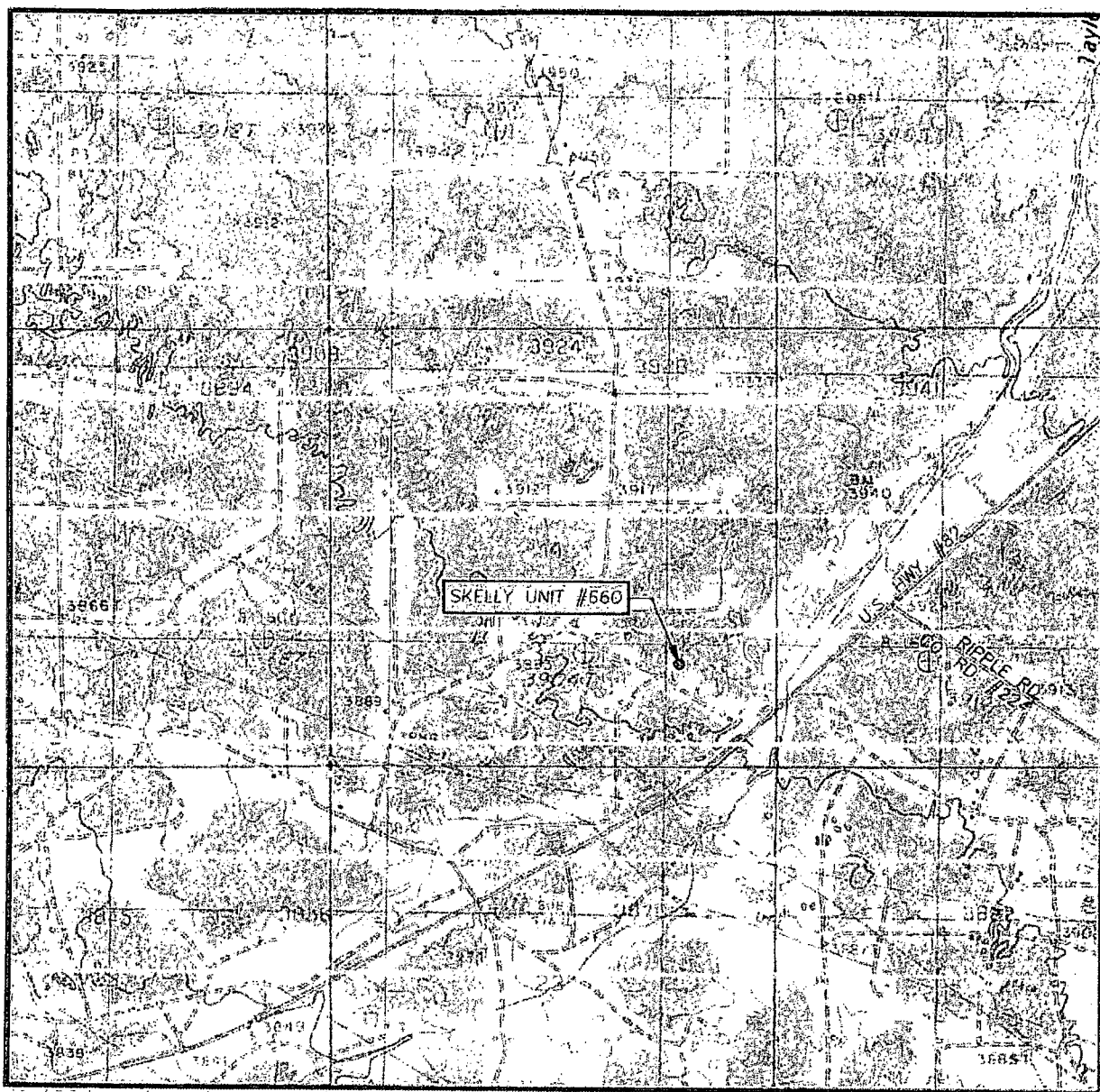
SCALE: 1" = 2 MILES

SEC. 14 TWP. 17-S RGE. 31-E
 SURVEY N.M.P.M.
 COUNTY EDDY STATE NEW MEXICO
 DESCRIPTION 1265' FSL & 1173' FEL
 ELEVATION 3914'
 OPERATOR COG OPERATING, LLC
 LEASE SKELLY UNIT



PROVIDING SURVEYING SERVICES
 SINCE 1946
JOHN WEST SURVEYING COMPANY
 412 N. DAL PASO
 HOBBS, N.M. 88240
 (575) 393-3117

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
MALJAMAR, N.M. - 10'

SEC. 14 TWP. 17-S RGE. 31-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

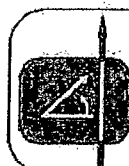
DESCRIPTION 1265' FSL & 1173' FEL

ELEVATION 3914'

OPERATOR COG OPERATING, LLC

LEASE SKELLY UNIT

U.S.G.S. TOPOGRAPHIC MAP
MALJAMAR, N.M.



PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117

COG OPERATING LLC

550 West Texas, Suite 1300
Midland, TX 79701

DIRECTIONAL PLAN VARIANCE REQUEST

**SKELLY UNIT #660
EDDY COUNTY, NM**

SHL	1265 FSL, 1173 FEL	Sec 14, T17S, R31E, UL P
BHL	990 FSL, 990 FEL	Sec 14, T17S, R31E, UL P

COG Operating LLC, as Operator, desires that the APD reflect the footages as stated on the surveyor's plat. However, Operator also desires to avoid inadvertently drilling the well to a non-standard location. Therefore, due to the proximity of the plat bottom hole location to the pro-ration unit hard line(s), the attached directional plan is designed to avoid the hard lines by as much as fifty feet; said fifty feet being in either (or both) the north-south and/or east-west directions as applicable.



COG Operating LLC

Eddy County, NM (NAN27 NME)

Skelly Unit #660

Skelly Unit #660

OH

Plan: Plan #1 - 7-7/8" Hole

SHL = 1265' FSL & 1173' FEL

BHL = 980' FSL & 980' FEL

Top of Paddock = 980' FSL & 980' FEL @ 5220' TVD

Standard Planning Report

03 August, 2009





Scientific Drilling
Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Skelly Unit #660
Company:	COG Operating LLC	TVD Reference:	Ground Elev @ 3914.00ft (Rig ?)
Project:	Eddy County, NM (NAN27 NME)	MD Reference:	Ground Elev @ 3914.00ft (Rig ?)
Site:	Skelly Unit #660	North Reference:	Grid
Well:	Skelly Unit #660	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 - 7-7/8" Hole		

Project	Eddy County, NM (NAN27 NME)		
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	Skelly Unit #660		
Site Position:		Northing:	666,299.90 ft
From:	Map	Easting:	653,070.80 ft
Position Uncertainty:	0.00 ft	Slot Radius:	0 "
		Latitude:	32° 49' 50.710 N
		Longitude:	103° 50' 6.020 W
		Grid Convergence:	0.27 °

Well	Skelly Unit #660		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	Ground Level:
			3,914.00 ft

Wellbore	OH		
Magnetics:	Model Name:	Sample Date:	Declination:
			(°)
	IGRF200510	2009/08/03	7.97
			Dip Angle:
			(°)
			60.77
			Field Strength:
			(nT)
			49,165

Design	Plan #1 - 7-7/8" Hole		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction
			(°)
			146.51

Plan Sections:										
Measured	Inclination:	Azimuth:	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)	
(ft)			(ft)			(°/100ft)	(°/100ft)	(°/100ft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,950.00	0.00	0.00	1,950.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,254.33	6.09	146.51	2,253.76	-13.47	8.91	2.00	2.00	0.00	146.51	
4,931.91	6.09	146.51	4,916.24	-250.23	165.59	0.00	0.00	0.00	0.00	
5,236.24	0.00	0.00	5,220.00	-263.70	174.50	2.00	-2.00	0.00	180.00	
7,116.24	0.00	0.00	7,100.00	-263.70	174.50	0.00	0.00	0.00	0.00	PBHL-SU #660



Scientific Drilling
Planning Report



Database: EDM 5000.1 Single User Db
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Skelly Unit #660
Well: Skelly Unit #660
Wellbore: OH
Design: Plan #1 - 7-7/8" Hole

Local Co-ordinate Reference: Site Skelly Unit #660
TVD Reference: Ground Elev @ 3914.00ft (Rig ?)
MD Reference: Ground Elev @ 3914.00ft (Rig ?)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
East HL-SU #660 - South HL-SU #660									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,850.00	0.00	0.00	1,850.00	0.00	0.00	0.00	0.00	0.00	0.00
8 5/8" Casing									
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,950.00	0.00	0.00	1,950.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Start Build 2.00°/100'									
2,000.00	1.00	146.51	2,000.00	-0.36	0.24	0.44	2.00	2.00	0.00
2,100.00	3.00	146.51	2,099.93	-3.27	2.17	3.93	2.00	2.00	0.00
2,200.00	5.00	146.51	2,199.68	-9.09	6.02	10.90	2.00	2.00	0.00
2,254.33	6.09	146.51	2,253.76	-13.47	8.91	16.15	2.00	2.00	0.00
EOC hold 6.09°									
2,300.00	6.09	146.51	2,299.17	-17.51	11.58	20.99	0.00	0.00	0.00
2,400.00	6.09	146.51	2,398.61	-26.35	17.44	31.60	0.00	0.00	0.00
2,500.00	6.09	146.51	2,498.04	-35.19	23.29	42.20	0.00	0.00	0.00
2,600.00	6.09	146.51	2,597.48	-44.03	29.14	52.80	0.00	0.00	0.00
2,700.00	6.09	146.51	2,696.92	-52.88	34.99	63.40	0.00	0.00	0.00
2,800.00	6.09	146.51	2,796.35	-61.72	40.84	74.01	0.00	0.00	0.00
2,900.00	6.09	146.51	2,895.79	-70.56	46.69	84.61	0.00	0.00	0.00
3,000.00	6.09	146.51	2,995.22	-79.40	52.54	95.21	0.00	0.00	0.00
3,100.00	6.09	146.51	3,094.66	-88.25	58.40	105.82	0.00	0.00	0.00
3,200.00	6.09	146.51	3,194.10	-97.09	64.25	116.42	0.00	0.00	0.00
3,300.00	6.09	146.51	3,293.53	-105.93	70.10	127.02	0.00	0.00	0.00
3,400.00	6.09	146.51	3,392.97	-114.77	75.95	137.63	0.00	0.00	0.00
3,500.00	6.09	146.51	3,492.41	-123.62	81.80	148.23	0.00	0.00	0.00
3,600.00	6.09	146.51	3,591.84	-132.46	87.65	158.83	0.00	0.00	0.00
3,700.00	6.09	146.51	3,691.28	-141.30	93.50	169.44	0.00	0.00	0.00
3,800.00	6.09	146.51	3,790.71	-150.14	99.36	180.04	0.00	0.00	0.00
3,900.00	6.09	146.51	3,890.15	-158.99	105.21	190.64	0.00	0.00	0.00
4,000.00	6.09	146.51	3,989.59	-167.83	111.06	201.25	0.00	0.00	0.00
4,100.00	6.09	146.51	4,089.02	-176.67	116.91	211.85	0.00	0.00	0.00
4,200.00	6.09	146.51	4,188.46	-185.51	122.76	222.45	0.00	0.00	0.00
4,300.00	6.09	146.51	4,287.90	-194.36	128.61	233.06	0.00	0.00	0.00
4,400.00	6.09	146.51	4,387.33	-203.20	134.46	243.66	0.00	0.00	0.00
4,500.00	6.09	146.51	4,486.77	-212.04	140.32	254.26	0.00	0.00	0.00
4,600.00	6.09	146.51	4,586.20	-220.88	146.17	264.87	0.00	0.00	0.00



Scientific Drilling Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Skelly Unit #660
Company:	COG Operating LLC	TVD Reference:	Ground Elev @ 3914.00ft (Rig ?)
Project:	Eddy County, NM (NAN27 NME)	MD Reference:	Ground Elev @ 3914.00ft (Rig ?)
Site:	Skelly Unit #660	North Reference:	Grid
Well:	Skelly Unit #660	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 - 7-7/8" Hole		

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)
4,700.00	6.09	146.51	4,685.64	-229.73	152.02	275.47	0.00	0.00	0.00
4,800.00	6.09	146.51	4,785.08	-238.57	157.87	286.07	0.00	0.00	0.00
4,900.00	6.09	146.51	4,884.51	-247.41	163.72	296.68	0.00	0.00	0.00
4,931.91	6.09	146.51	4,916.24	-250.23	165.59	300.06	0.00	0.00	0.00
Start Drop 2.00°/100'									
5,000.00	4.72	146.51	4,984.03	-255.58	169.13	306.47	2.00	-2.00	0.00
5,100.00	2.72	146.51	5,083.81	-261.00	172.71	312.97	2.00	-2.00	0.00
5,200.00	0.72	146.51	5,183.76	-263.51	174.37	315.98	2.00	-2.00	0.00
5,236.24	0.00	0.00	5,220.00	-263.70	174.50	316.21	2.00	-2.00	0.00
EOC hold 0.00° - TG1-SU #660									
5,300.00	0.00	0.00	5,283.76	-263.70	174.50	316.21	0.00	0.00	0.00
5,400.00	0.00	0.00	5,383.76	-263.70	174.50	316.21	0.00	0.00	0.00
5,500.00	0.00	0.00	5,483.76	-263.70	174.50	316.21	0.00	0.00	0.00
5,600.00	0.00	0.00	5,583.76	-263.70	174.50	316.21	0.00	0.00	0.00
5,700.00	0.00	0.00	5,683.76	-263.70	174.50	316.21	0.00	0.00	0.00
5,800.00	0.00	0.00	5,783.76	-263.70	174.50	316.21	0.00	0.00	0.00
5,900.00	0.00	0.00	5,883.76	-263.70	174.50	316.21	0.00	0.00	0.00
6,000.00	0.00	0.00	5,983.76	-263.70	174.50	316.21	0.00	0.00	0.00
6,100.00	0.00	0.00	6,083.76	-263.70	174.50	316.21	0.00	0.00	0.00
6,200.00	0.00	0.00	6,183.76	-263.70	174.50	316.21	0.00	0.00	0.00
6,300.00	0.00	0.00	6,283.76	-263.70	174.50	316.21	0.00	0.00	0.00
6,400.00	0.00	0.00	6,383.76	-263.70	174.50	316.21	0.00	0.00	0.00
6,500.00	0.00	0.00	6,483.76	-263.70	174.50	316.21	0.00	0.00	0.00
6,600.00	0.00	0.00	6,583.76	-263.70	174.50	316.21	0.00	0.00	0.00
6,700.00	0.00	0.00	6,683.76	-263.70	174.50	316.21	0.00	0.00	0.00
6,800.00	0.00	0.00	6,783.76	-263.70	174.50	316.21	0.00	0.00	0.00
6,900.00	0.00	0.00	6,883.76	-263.70	174.50	316.21	0.00	0.00	0.00
7,000.00	0.00	0.00	6,983.76	-263.70	174.50	316.21	0.00	0.00	0.00
7,100.00	0.00	0.00	7,083.76	-263.70	174.50	316.21	0.00	0.00	0.00
7,116.24	0.00	0.00	7,100.00	-263.70	174.50	316.21	0.00	0.00	0.00
PBHL-SU #660									

Design Targets

Target Name	-hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
East HL-SU #660		0.00	0.00	0.00	-273.70	184.50	666,026.20	653,255.30	32° 49' 47.993 N	103° 50' 3.873 W
- plan misses target center by 330.08ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)										
- Rectangle (sides W0.00 H100.00 D0.00)										
South HL-SU #660		0.00	0.00	0.00	-273.70	184.50	666,026.20	653,255.30	32° 49' 47.993 N	103° 50' 3.873 W
- plan misses target center by 330.08ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)										
- Rectangle (sides W100.00 H0.00 D0.00)										
TG1-SU #660		0.00	0.00	5,220.00	-263.70	174.50	666,036.20	653,245.30	32° 49' 48.093 N	103° 50' 3.989 W
- plan hits target center										
- Circle (radius 10.00)										
PBHL-SU #660		0.00	0.00	7,100.00	-263.70	174.50	666,036.20	653,245.30	32° 49' 48.093 N	103° 50' 3.989 W
- plan hits target center										
- Circle (radius 10.00)										



Scientific Drilling
Planning Report



Database: EDM 5000.1 Single User Db
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Skelly Unit #660
Well: Skelly Unit #660
Wellbore: OH
Design: Plan #1 - 7-7/8" Hole

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

Site Skelly Unit #660
Ground Elev @ 3914.00ft (Rig ?)
Ground Elev @ 3914.00ft (Rig ?)
Grid
Minimum Curvature

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,850.00	1,850.00	8 5/8" Casing	8-5/8	12-1/4

Plan Annotations

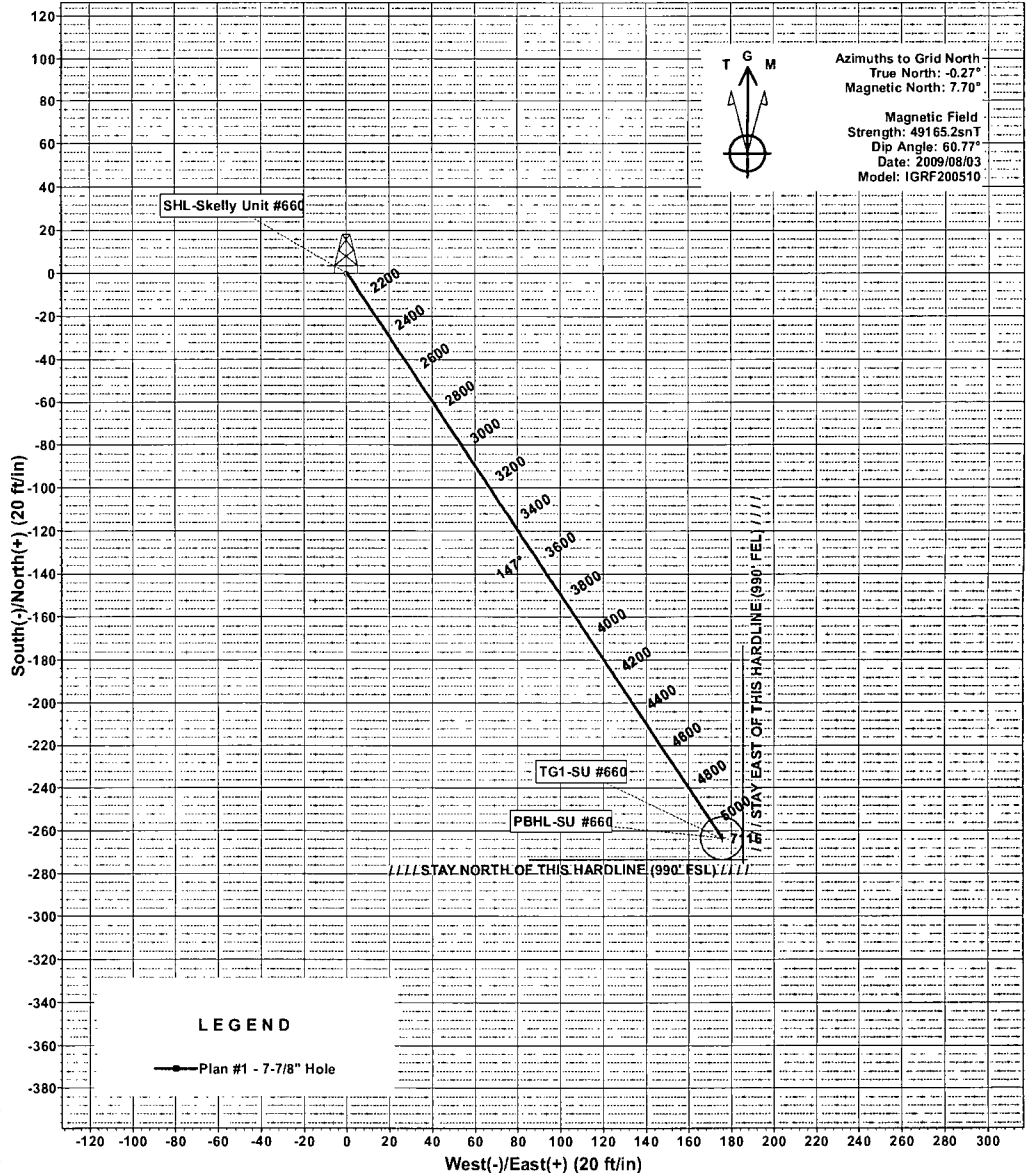
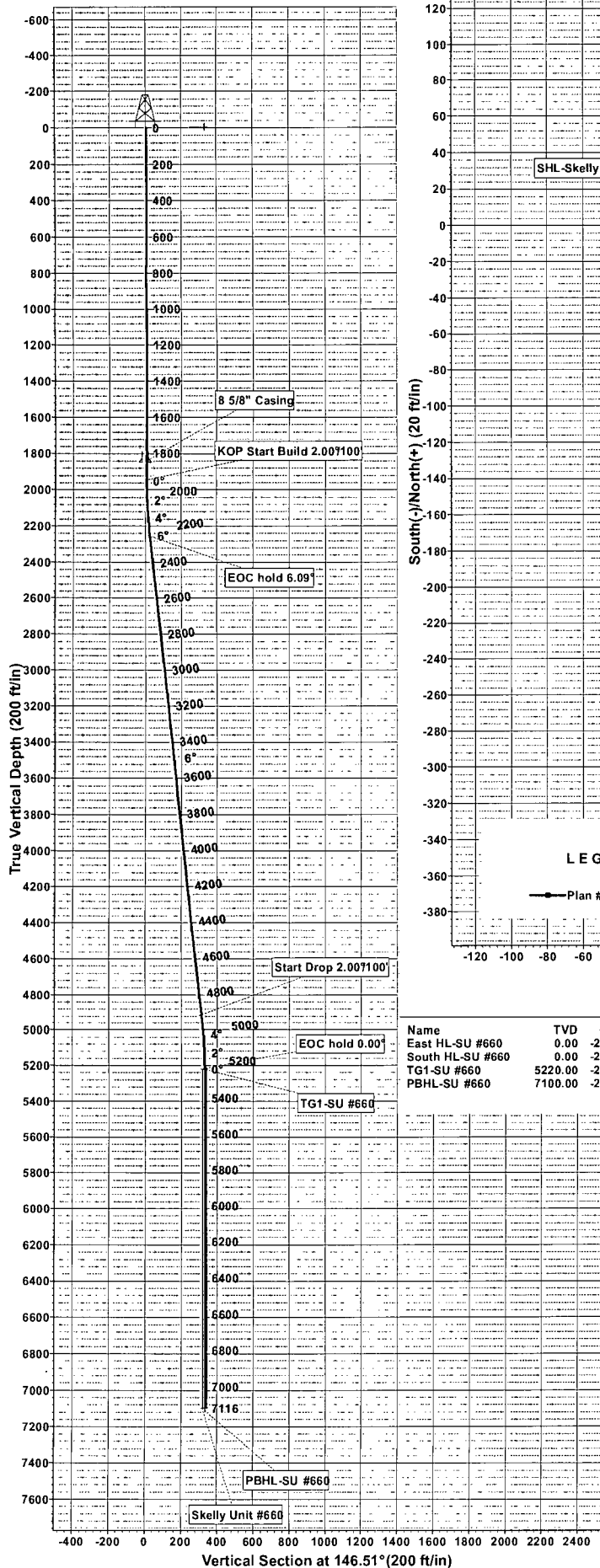
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,950.00	1,950.00	0.00	0.00	KOP Start Build 2.00°/100'
2,254.33	2,253.76	-13.47	8.91	EOC hold 6.09°
4,931.91	4,916.24	-250.23	165.59	Start Drop 2.00°/100'
5,236.24	5,220.00	-263.70	174.50	EOC hold 0.00°



Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Skelly Unit #660
Wellbore: OH
Design: Plan #1 - 7-7/8" Hole



Scientific Drilling



WELLBORE TARGET DETAILS (MAP CO-ORDINATES)							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Shape
East HL-SU #660	0.00	-273.70	184.50	666026.20	653255.30	32°49' 47.993 N	Rectangle (Sides: L1 00.00 W0.00)
South HL-SU #660	0.00	-273.70	184.50	666026.20	653255.30	32°49' 47.993 N	Rectangle (Sides: L 0.00 W100.00)
TG1-SU #660	5220.00	-263.70	174.50	666036.20	653245.30	32°49' 48.093 N	Circle (Radius: 10.0)
PBHL-SU #660	7100.00	-263.70	174.50	666036.20	653245.30	32°49' 48.093 N	Circle (Radius: 10.0)

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1950.00	0.00	0.00	1950.00	0.00	0.00	0.00	0.00	0.00
3	2254.33	6.09	146.51	2253.76	-13.47	8.91	2.00	146.51	16.15
4	4493.91	6.09	146.51	4493.24	-250.23	165.59	0.00	0.00	300.06
5	5236.24	0.00	0.00	5220.00	-263.70	174.50	2.00	180.00	316.21
6	7116.24	0.00	0.00	7100.00	-263.70	174.50	0.00	0.00	316.21

WELL DETAILS: Skelly Unit #660							
Ground Level:				3914.00			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude		
0.00	0.00	666299.90	653070.80	32°49' 50.710 N	103°50' 6.020 W		

PROJECT DETAILS: Eddy County, NM (NAN27 NME) Plan: Plan #1 - 7-7/8" Hole (Skelly Unit #660/OH)
Geodetic System: US State Plane 1927 (Exact solution) Created By: Julio Pina Date: 03-Aug-09
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Checked: _____ Date: _____
Reviewed: _____ Date: _____
Approved: _____ Date: _____