

Submit 1 Copy To Appropriate District
Office
District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM
87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised August 1, 2011

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

WELL API NO.
30-015-39949

5. Indicate Type of Lease

STATE ☒ FEE ☐

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name

Burkett 16 State

8. Well Number 15H

9. OGRID Number

229137

10. Pool name or Wildcat

Fren; Glorieta Yeso

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

COG Operating, LLC

3. Address of Operator

One Concho Center, 600 W Illinois Ave, Midland, TX 79701

4. Well Location

Unit Letter B : 815 feet from the NORTH line and 1685 feet from the EAST line

Section 16 Township 17S Range 31E NMPM County EDDY

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
3853'

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☒
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐

OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐

OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

COG Operating LLC respectfully requests permission to move this location to:

SHL: 330' FNL & 490 FWL, Section 16, T17S, R31E, Unit D

BHL: 330' FNL & 330 FEL, Section 16, T17S, R31E, Unit A

An amended plat and new Directional Plan is attached for your review.

RECEIVED

NOV 28 2012

NMOCD ARTESIA

Spud Date:

Rig Release Date:

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

SIGNATURE Kacie Connally TITLE Permitting Tech DATE 11/8/2012

Type or print name Kacie Connally E-mail address: kconnally@concho.com PHONE: 432-221-0336

For State Use Only

APPROVED BY: T. C. Shepard TITLE Geologist DATE 11/28/2012

Conditions of Approval (if any):

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-39949	Pool Code 26770	Pool Name Fren; Glorieta-Yeso
Property Code	Property Name BURKETT 16 STATE	Well Number 15H
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3792'

Surface Location

UL or lot No. D	Section 16	Township 17-S	Range 31-E	Lot Idn	Feet from the 330	North/South line NORTH	Feet from the 490	East/West line WEST	County EDDY
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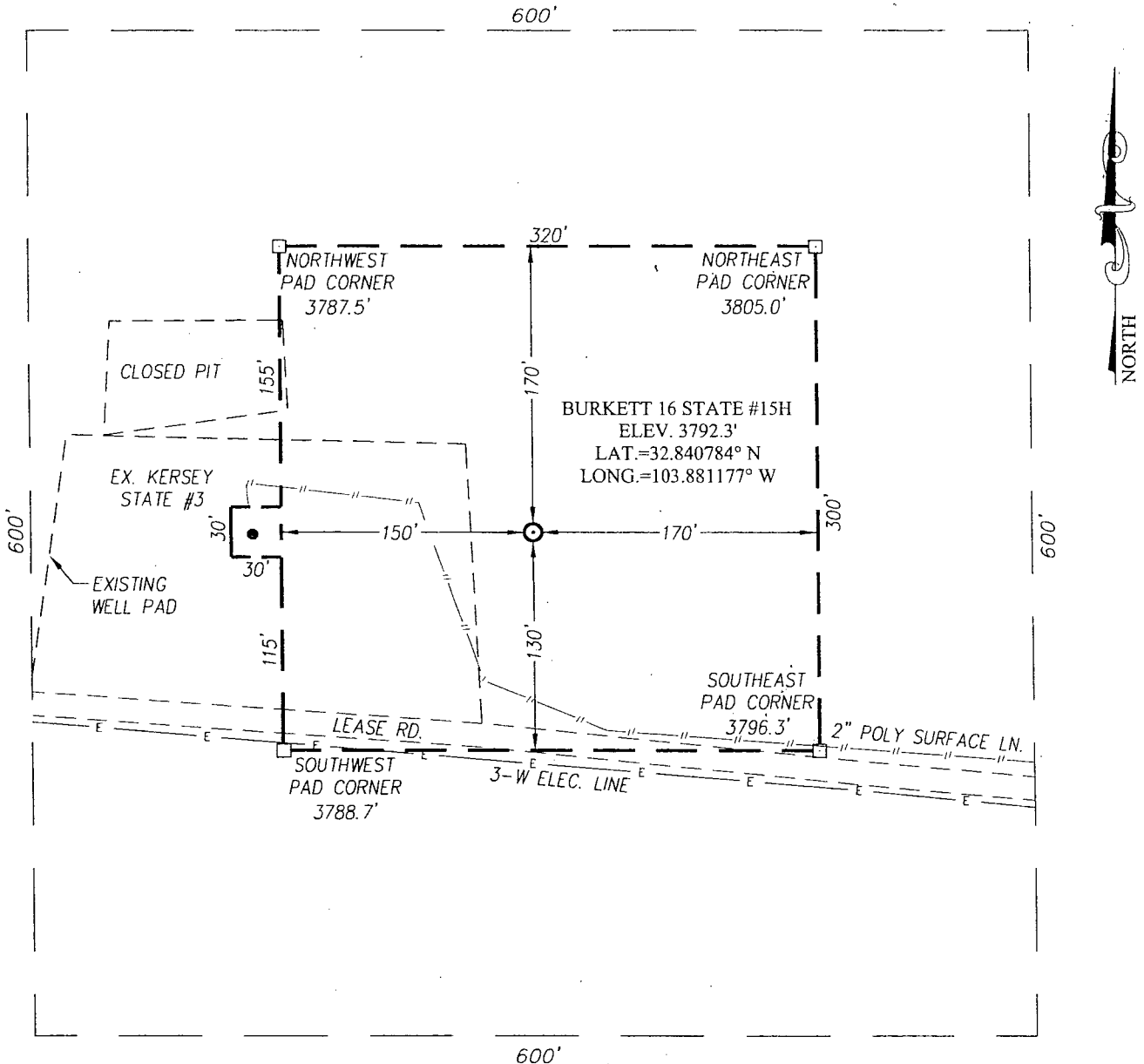
Bottom Hole Location If Different From Surface

UL or lot No. A	Section 16	Township 17-S	Range 31-E	Lot Idn	Feet from the 330	North/South line NORTH	Feet from the 330	East/West line EAST	County EDDY
Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.						

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

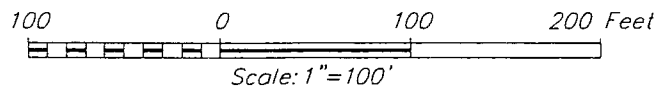
		OPERATOR CERTIFICATION I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this 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>Kacie Connally</i> 11/27/12 Signature Date Kacie Connally Printed Name kconnally@concho.com E-mail Address
GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=669885.7 N X=638872.5 E LAT.=32.840784° N LONG.=103.881177° W BOTTOM HOLE LOCATION Y=669914.2 N X=643334.0 E	CORNER COORDINATES TABLE A - Y=670212.4 N, X=638380.7 E B - Y=670246.2 N, X=643662.0 E C - Y=668892.8 N, X=638388.2 E D - Y=668927.2 N, X=643669.6 E	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. FEBRUARY 15, 2012 Date of Survey Signature & Seal of Professional Surveyor: Certificate Number Gary G. Eidson 12641 Ronald J. Eidson 3239 AF JWSC W.O.: 12.11.1678

SECTION 16, 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. #223 (SWEET GUM) GO NORTH ON CO. RD. #223 APPROX. 1.2 MILES. TURN RIGHT AND GO EAST APPROX. 0.1 MILES. TURN LEFT AND GO NORTHWEST APPROX. 0.1 MILES TO Y. TURN RIGHT AND GO NORTHEAST APPROX. 0.1 MILES. TURN LEFT AND GO NORTHWEST APPROX. 0.3 MILES TO OLD WELL PAD. TURN LEFT AND GO WEST APPROX. 0.5 MILES. THE LOCATION STAKE IS APPROX. 125 FEET NORTH OF THE LEASE ROAD.



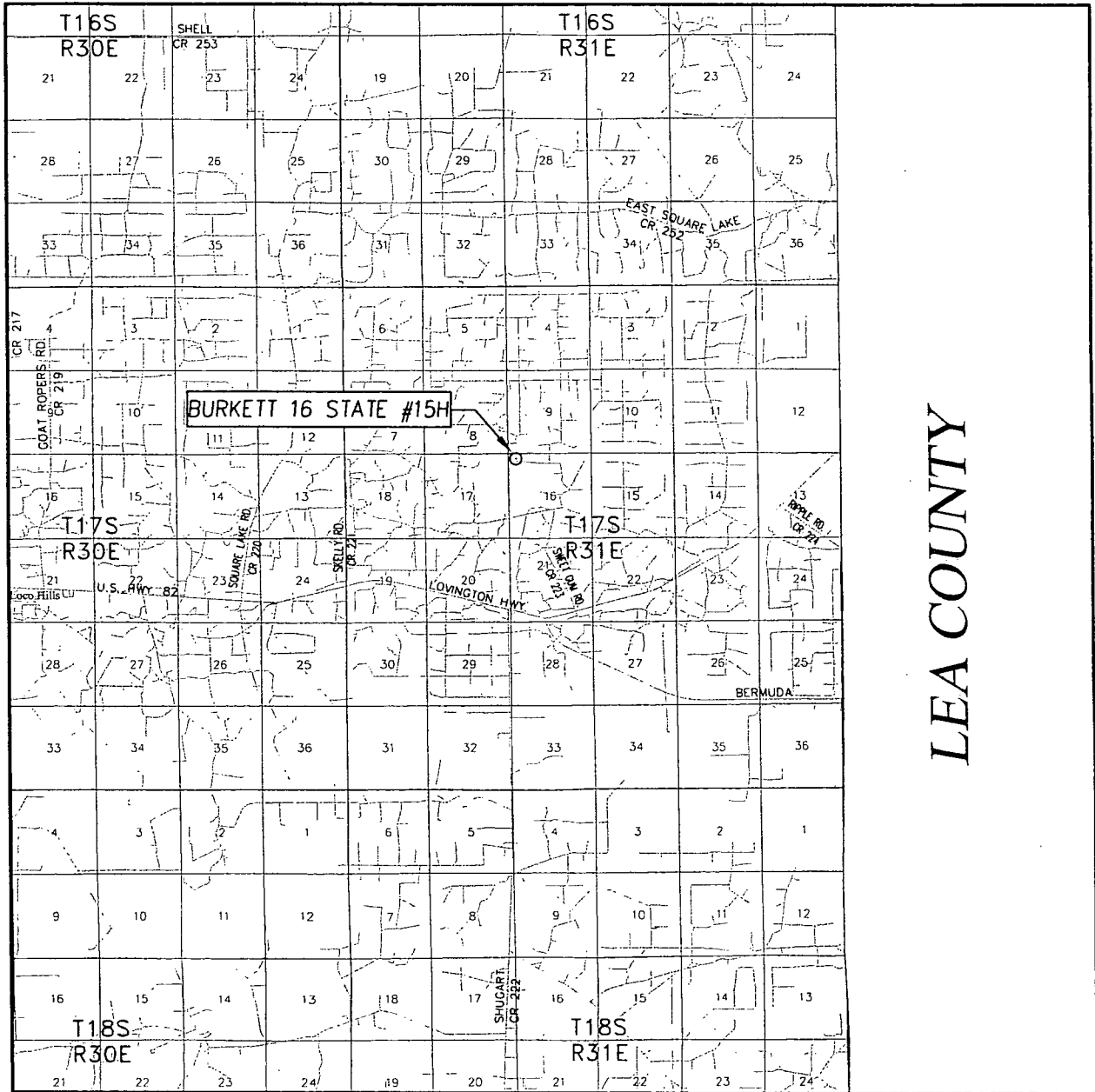
COG OPERATING, LLC

BURKETT 16 STATE #15H WELL
LOCATED 330 FEET FROM THE NORTH LINE
AND 490 FEET FROM THE WEST LINE OF SECTION 16,
TOWNSHIP 17 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

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

Survey Date: 02/15/12	CAD Date: 10/12/12	Drawn By: AF
W.O. No.: 12111678	Rev: .	Rel. W.O.: 11112733
Sheet 1 of 1		

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 16 TWP. 17-S RGE. 31-E

SURVEY N.M.P.M.

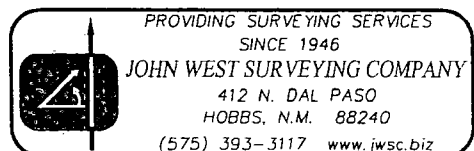
COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 330' FNL & 490' FWL

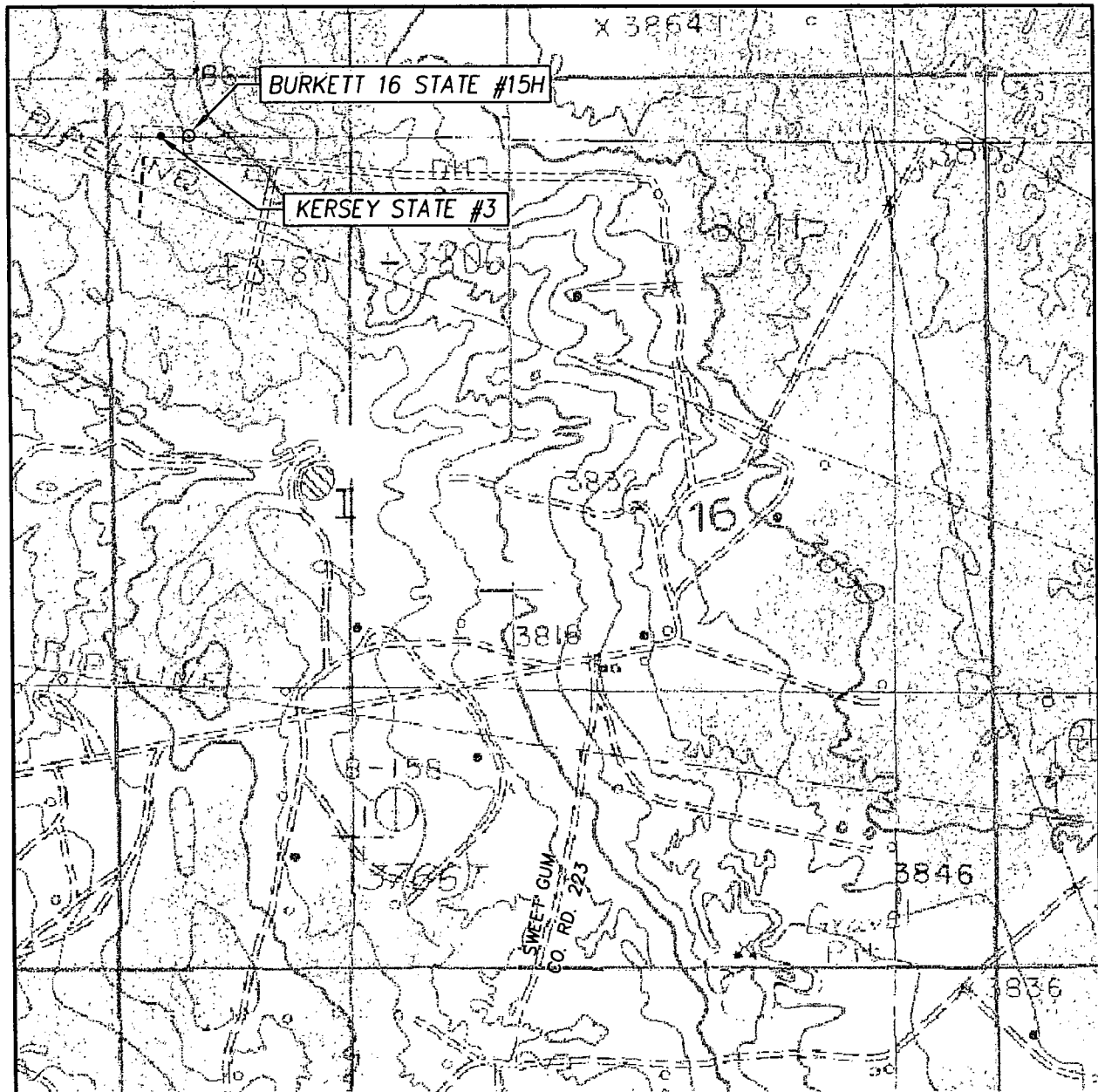
ELEVATION 3792'

OPERATOR COG OPERATING, LLC

LEASE BURKETT 16 STATE



LOCATION VERIFICATION MAP



SCALE: 1" = 1000'

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

SEC. 16 TWP. 17-S RGE. 31-E

SURVEY _____ N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

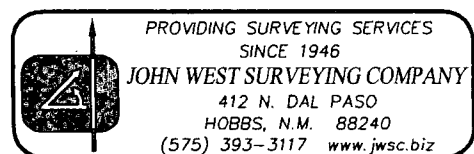
DESCRIPTION 330' FNL & 490' FWL

ELEVATION 3792'

OPERATOR COG OPERATING, LLC

LEASE BURKETT 16 STATE

U.S.G.S. TOPOGRAPHIC MAP
 LOCO HILLS, N.M.





COG Operating LLC

Eddy County, NM

Burkett 16 State

#15H

OH

Plan: Plan #2

Standard Planning Report

01 November, 2012

Surface: 330' FNL, 490' FWL, Sec 16, T17S, R31E, Unit D
BHL: 330' FNL, 330' FEL, Sec 16, T17S, R31E, Unit A



Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #15H
Company:	COG Operating LLC	TVD Reference:	Well @ 3806.0usft (UDI #40 - 14' KB)
Project:	Eddy County, NM	MD Reference:	Well @ 3806.0usft (UDI #40 - 14' KB)
Site:	Burkett 16 State	North Reference:	Grid
Well:	#15H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Project	Eddy County, NM		
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	Burkett 16 State		
Site Position:		Northing:	669,419.27 usft
From:	Map	Easting:	641,980.82 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 50' 22.075 N
		Longitude:	103° 52' 15.830 W
		Grid Convergence:	0.25 °

Well	#15H		
Well Position	+N-S	466.4 usft	Northing: 669,885.70 usft
	+E-W	-3,108.3 usft	Easting: 638,872.50 usft
Position Uncertainty	2.0 usft	Wellhead Elevation:	3,792.0 usft
		Latitude:	32° 50' 26.824 N
		Longitude:	103° 52' 52.238 W
		Ground Level:	

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/13/2012	7.65	60.68	48,851

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction
	(usft)	(usft)	(usft)	(°)
	-65.0	0.0	0.0	89.63

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,622.5	0.00	0.00	5,622.5	0.0	0.0	0.00	0.00	0.00	0.00	
6,372.5	90.00	89.63	6,100.0	3.0	477.5	12.00	12.00	0.00	89.63	
10,356.7	90.00	89.63	6,100.0	28.5	4,461.5	0.00	0.00	0.00	0.00	PBHL (B16#15H)

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #15H
Company:	COG Operating LLC	TVD Reference:	Well @ 3806.0usft (UDI #40 - 14' KB)
Project:	Eddy County, NM	MD Reference:	Well @ 3806.0usft (UDI #40 - 14' KB)
Site:	Burkett 16 State	North Reference:	Grid
Well:	#15H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #15H
Company:	COG Operating LLC	TVD Reference:	Well @ 3806.0usft (UDI #40 - 14' KB)
Project:	Eddy County, NM	MD Reference:	Well @ 3806.0usft (UDI #40 - 14' KB)
Site:	Burkett 16 State	North Reference:	Grid
Well:	#15H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,622.5	0.00	0.00	5,622.5	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build @ 12.00°/100'									
5,625.0	0.30	89.63	5,625.0	0.0	0.0	0.0	11.83	11.83	0.00
5,650.0	3.30	89.63	5,650.0	0.0	0.8	0.8	12.00	12.00	0.00
5,675.0	6.30	89.63	5,674.9	0.0	2.9	2.9	12.00	12.00	0.00
5,700.0	9.30	89.63	5,699.7	0.0	6.3	6.3	12.00	12.00	0.00
5,725.0	12.30	89.63	5,724.2	0.1	11.0	11.0	12.00	12.00	0.00
5,750.0	15.30	89.63	5,748.5	0.1	16.9	16.9	12.00	12.00	0.00
5,775.0	18.30	89.63	5,772.4	0.2	24.1	24.1	12.00	12.00	0.00
5,800.0	21.30	89.63	5,795.9	0.2	32.6	32.6	12.00	12.00	0.00
5,825.0	24.30	89.63	5,819.0	0.3	42.3	42.3	12.00	12.00	0.00
5,850.0	27.30	89.63	5,841.5	0.3	53.2	53.2	12.00	12.00	0.00
5,875.0	30.30	89.63	5,863.4	0.4	65.2	65.2	12.00	12.00	0.00
5,900.0	33.30	89.63	5,884.6	0.5	78.4	78.4	12.00	12.00	0.00
5,925.0	36.30	89.63	5,905.2	0.6	92.6	92.6	12.00	12.00	0.00
5,950.0	39.30	89.63	5,924.9	0.7	108.0	108.0	12.00	12.00	0.00
5,975.0	42.30	89.63	5,943.8	0.8	124.3	124.3	12.00	12.00	0.00
6,000.0	45.30	89.63	5,961.9	0.9	141.6	141.6	12.00	12.00	0.00
6,025.0	48.30	89.63	5,979.0	1.0	159.8	159.8	12.00	12.00	0.00
6,050.0	51.30	89.63	5,995.1	1.1	178.9	178.9	12.00	12.00	0.00
6,075.0	54.30	89.63	6,010.3	1.3	198.8	198.8	12.00	12.00	0.00
6,100.0	57.30	89.63	6,024.3	1.4	219.5	219.5	12.00	12.00	0.00
6,125.0	60.30	89.63	6,037.3	1.5	240.9	240.9	12.00	12.00	0.00
6,150.0	63.30	89.63	6,049.1	1.7	262.9	262.9	12.00	12.00	0.00
6,175.0	66.30	89.63	6,059.7	1.8	285.5	285.5	12.00	12.00	0.00
6,200.0	69.30	89.63	6,069.2	2.0	308.7	308.7	12.00	12.00	0.00
6,225.0	72.30	89.63	6,077.4	2.1	332.3	332.3	12.00	12.00	0.00
6,250.0	75.30	89.63	6,084.4	2.3	356.3	356.3	12.00	12.00	0.00
6,275.0	78.30	89.63	6,090.1	2.4	380.6	380.6	12.00	12.00	0.00
6,300.0	81.30	89.63	6,094.5	2.6	405.2	405.2	12.00	12.00	0.00
6,325.0	84.30	89.63	6,097.6	2.7	430.0	430.0	12.00	12.00	0.00
6,350.0	87.30	89.63	6,099.5	2.9	454.9	454.9	12.00	12.00	0.00
6,372.5	90.00	89.63	6,100.0	3.0	477.4	477.4	12.00	12.00	0.00
Landing Point - Hold @ 90.00° INC, 278.08° AZ									
6,400.0	90.00	89.63	6,100.0	3.2	504.9	504.9	0.02	0.02	0.00
6,500.0	90.00	89.63	6,100.0	3.9	604.9	604.9	0.00	0.00	0.00
6,600.0	90.00	89.63	6,100.0	4.5	704.9	704.9	0.00	0.00	0.00
6,700.0	90.00	89.63	6,100.0	5.1	804.9	804.9	0.00	0.00	0.00
6,800.0	90.00	89.63	6,100.0	5.8	904.9	904.9	0.00	0.00	0.00
6,900.0	90.00	89.63	6,100.0	6.4	1,004.9	1,004.9	0.00	0.00	0.00
7,000.0	90.00	89.63	6,100.0	7.1	1,104.9	1,104.9	0.00	0.00	0.00
7,100.0	90.00	89.63	6,100.0	7.7	1,204.9	1,204.9	0.00	0.00	0.00
7,200.0	90.00	89.63	6,100.0	8.3	1,304.9	1,304.9	0.00	0.00	0.00
7,300.0	90.00	89.63	6,100.0	9.0	1,404.9	1,404.9	0.00	0.00	0.00
7,400.0	90.00	89.63	6,100.0	9.6	1,504.9	1,504.9	0.00	0.00	0.00
7,500.0	90.00	89.63	6,100.0	10.3	1,604.9	1,604.9	0.00	0.00	0.00
7,600.0	90.00	89.63	6,100.0	10.9	1,704.9	1,704.9	0.00	0.00	0.00
7,700.0	90.00	89.63	6,100.0	11.5	1,804.9	1,804.9	0.00	0.00	0.00
7,800.0	90.00	89.63	6,100.0	12.2	1,904.9	1,904.9	0.00	0.00	0.00
7,900.0	90.00	89.63	6,100.0	12.8	2,004.9	2,004.9	0.00	0.00	0.00

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #15H
Company:	COG Operating LLC	TVD Reference:	Well @ 3806.0usft (UDI #40 - 14' KB)
Project:	Eddy County, NM	MD Reference:	Well @ 3806.0usft (UDI #40 - 14' KB)
Site:	Birkett 16 State	North Reference:	Grid
Well:	#15H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

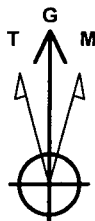
Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,000.0	90.00	89.63	6,100.0	13.4	2,104.9	2,104.9	0.00	0.00	0.00	
8,100.0	90.00	89.63	6,100.0	14.1	2,204.9	2,204.9	0.00	0.00	0.00	
8,200.0	90.00	89.63	6,100.0	14.7	2,304.9	2,304.9	0.00	0.00	0.00	
8,300.0	90.00	89.63	6,100.0	15.4	2,404.9	2,404.9	0.00	0.00	0.00	
8,400.0	90.00	89.63	6,100.0	16.0	2,504.9	2,504.9	0.00	0.00	0.00	
8,500.0	90.00	89.63	6,100.0	16.6	2,604.9	2,604.9	0.00	0.00	0.00	
8,600.0	90.00	89.63	6,100.0	17.3	2,704.9	2,704.9	0.00	0.00	0.00	
8,700.0	90.00	89.63	6,100.0	17.9	2,804.9	2,804.9	0.00	0.00	0.00	
8,800.0	90.00	89.63	6,100.0	18.6	2,904.9	2,904.9	0.00	0.00	0.00	
8,900.0	90.00	89.63	6,100.0	19.2	3,004.9	3,004.9	0.00	0.00	0.00	
9,000.0	90.00	89.63	6,100.0	19.8	3,104.9	3,104.9	0.00	0.00	0.00	
9,100.0	90.00	89.63	6,100.0	20.5	3,204.9	3,204.9	0.00	0.00	0.00	
9,200.0	90.00	89.63	6,100.0	21.1	3,304.9	3,304.9	0.00	0.00	0.00	
9,300.0	90.00	89.63	6,100.0	21.8	3,404.9	3,404.9	0.00	0.00	0.00	
9,400.0	90.00	89.63	6,100.0	22.4	3,504.9	3,504.9	0.00	0.00	0.00	
9,500.0	90.00	89.63	6,100.0	23.0	3,604.9	3,604.9	0.00	0.00	0.00	
9,600.0	90.00	89.63	6,100.0	23.7	3,704.9	3,704.9	0.00	0.00	0.00	
9,700.0	90.00	89.63	6,100.0	24.3	3,804.9	3,804.9	0.00	0.00	0.00	
9,800.0	90.00	89.63	6,100.0	24.9	3,904.8	3,904.9	0.00	0.00	0.00	
9,900.0	90.00	89.63	6,100.0	25.6	4,004.8	4,004.9	0.00	0.00	0.00	
10,000.0	90.00	89.63	6,100.0	26.2	4,104.8	4,104.9	0.00	0.00	0.00	
10,100.0	90.00	89.63	6,100.0	26.9	4,204.8	4,204.9	0.00	0.00	0.00	
10,200.0	90.00	89.63	6,100.0	27.5	4,304.8	4,304.9	0.00	0.00	0.00	
10,300.0	90.00	89.63	6,100.0	28.1	4,404.8	4,404.9	0.00	0.00	0.00	
10,356.7	90.00	89.63	6,100.0	28.5	4,461.5	4,461.6	0.00	0.00	0.00	
TD @ 10356.7' MD, 6100.0' TVD										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL (B16#15H)	0.00	0.00	6,100.0	28.5	4,461.5	669,914.20	643,334.00	32° 50' 26.914 N	103° 51' 59.944 W
- plan hits target center									
- Point									

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
5,622.5	5,622.5	0.0	0.0	KOP - Start Build @ 12.00°/100'	
6,372.5	6,100.0	3.0	477.4	Landing Point - Hold @ 90.00° INC, 278.08° AZ	
10,356.7	6,100.0	28.5	4,461.5	TD @ 10356.7' MD, 6100.0' TVD	

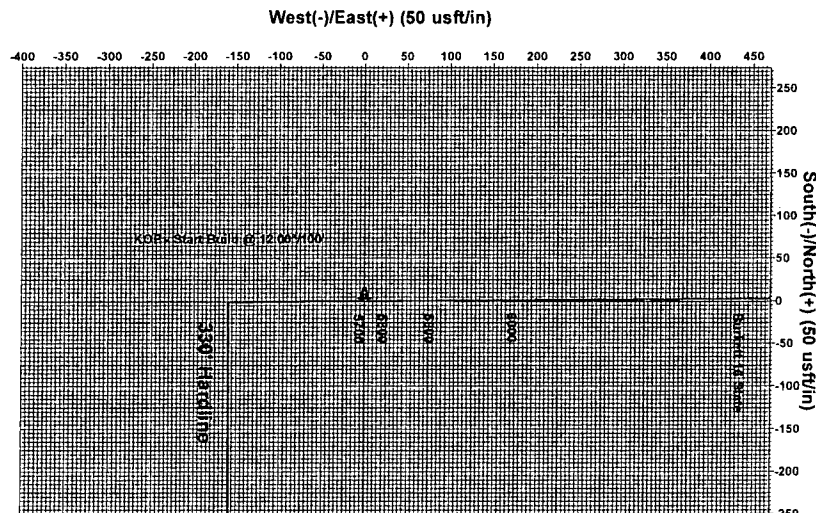
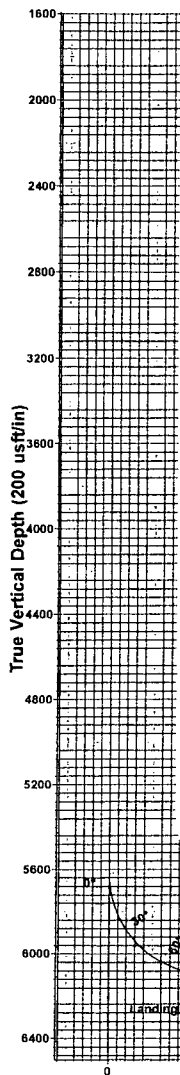


COG Operating LLC
Project: Eddy County, NM
Site: Burkett 16 State
Well: #15H
Wellbore: OH
Plan: Plan #2 (#15H/OH)



Azimuths to Grid North
True North: -0.24°
Magnetic North: 7.41°

Magnetic Field
Strength: 48851.1snT
Dip Angle: 60.68°
Date: 6/13/2012
Model: IGRF2010



KOP - Start Build @ 12.00°/100'

Landing Point - Hold @ 90.00° INC. 2.518° AZ

Section Details											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target	
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	5622.5	0.00	0.00	5622.5	0.0	0.0	0.00	0.00	0.0		
3	6372.5	90.00	89.63	6100.0	3.0	477.5	12.00	89.63	477.5		
4	10356.7	90.00	89.63	6100.0	28.5	4461.5	0.00	0.00	4461.6	PBHL (B16#15H)	

WELL DETAILS: #15H

Ground Elevation:: 3792.0
RKB Elevation: Well @ 3806.0usft (UDI #40 - 14' KB)
Rig Name: UDI #40 - 14' KB

Surface Hole Location			
Northing	Easting	Latitude	Longitude
669885.70	638872.50	32° 50' 26.824 N	103° 52' 52.238 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL (B16#15H)	6100.0	28.5	4461.5	669914.20	643334.00

PROJECT DETAILS: Eddy County, NM
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid



Crescent Directional Drilling
7715 West Industrial Ave. Midland, Tx 79706
Phone: 432-618-1135

Plan: Plan #2 (#15H/OH)
Created By: Matt Higgins Date: 17:34, November 01 2012