

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTNMOCD
ArtesiaFORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**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.**5. Lease Serial No.
NMNM7752

6. If Indian, Allottee or Tribe Name

7. If Unit or C/A/Agreement, Name and/or No.

8. Well Name and No.
FAT TIRE 12 FEDERAL LBB 1H9. API Well No.
30-015-41789-00-X110. Field and Pool, or Exploratory
EMPIRE11. County or Parish, and State
EDDY COUNTY, NM

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator
COG OPERATING LLCContact: KELLY J HOLLY
E-Mail: kholly@concho.com3a. Address
600 W ILLINOIS AVENUE
MIDLAND, TX 797013b. Phone No. (include area code)
Ph: 432.685.4384

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

Sec 12 T17S R29E NENE 330FNL 150FEL
32.855250 N Lat, 104.019660 W Lon**12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

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 recomplete 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.)

COG Operating LLC respectfully requests permission to change the Well # and TVD of this well as follows:

FROM: Fat Tire 12 Federal LBB #1H
TO: Fat Tire 12 Federal #21H (313981)

FROM: 5426' TVD; 10071' MD
TO: 4926' TVD; 9571' MD

Original Coils Still Stand

LD 1/20/10
Accepted for record
NMOCD

NM OIL CONSERVATION
ARTESIA DISTRICT

JAN 19 2016

A revised C-102, 1 mile map and directional plan are attached.

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

Electronic Submission #292966 verified by the BLM Well Information System
For COG OPERATING LLC, sent to the Carlsbad
Committed to AFMSS for processing by JAMIE RHOADES on 09/16/2015 (15/LR0420SE)

Name (Printed/Typed) KELLY J HOLLY

Title PERMITTING TECH

Signature (Electronic Submission)

Date 02/25/2015

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Title

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

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.

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Form 1
1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax (575) 393-9720
District II
911 S. First St., Artesia, NM 88210
Phone (575) 748-1281 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, NM 87505

NM OIL CONSERVATION
ARTESIA DISTRICT
Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office
RECEIVED ☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-015-41789		2 Pool Code 96610		3 Pool Name Empire; Glorieta Yaso East	
4 Property Code 40221		5 Property Name FAT TIRE 12 FEDERAL			6 Well Number 21H
7 OGRID No. 229137		8 Operator Name COG OPERATING, LLC			9 Elevation 3671'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	12	17-S	29-E		330	NORTH	150	EAST	EDDY

11 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
D	12	17-S	29-E		330	NORTH	330	WEST	EDDY

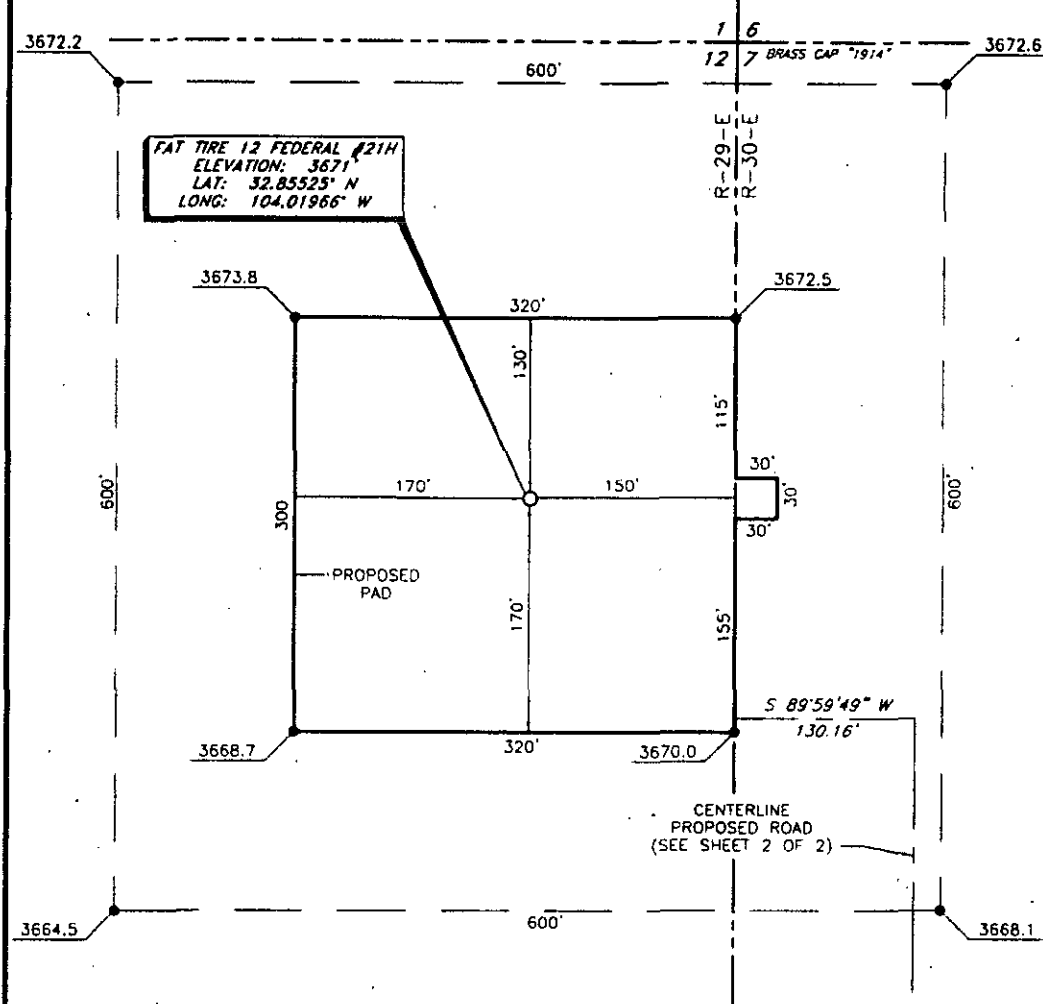
12 Dedicated Acres 160	13 Joint or Infill	14 Consolidation Code	15 Order No.
----------------------------------	--------------------	-----------------------	--------------

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.

S 89°59'00" W (GRID) 4,794.79' (HORIZ.) Producing Area Project Area DETAIL "A" Estimated Completed Interval: 330 FNL 330 FEL CORNER DATA NAD 27 GRID - NM EAST A: BRASS CAP "1914" N 670041.9 - E 591216.3 B: 1" SIL. PIPE N 572682.3 - E 591209.8 C: BRASS CAP "1914" N 675322.5 - E 591200.4 D: BRASS CAP "1914" N 575325.5 - E 591344.9 E: BRASS CAP "1914" N 575324.2 - E 591474.6 F: BRASS CAP "1914" N 572685.0 - E 591473.6 G: BRASS CAP "1914" N 670054.6 - E 591494.2 H: BRASS CAP "1914" N 670048.4 - E 591385.0		17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well in the location pursuant to a contract with the owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature: <i>[Signature]</i> Date: 2-25-15 Printed Name: Kelly J. Holly E-mail Address: kholly@concho.com	
GEODETIC DATA NAD 27 GRID - NM EAST SURFACE LOCATION N 674993.4 - E 591325.2 LAT: 32.85525° N LONG: 104.01956° W BOTTOM LOCATION N 674993.0 - E 591531.6		18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date of Survey: 1/30/13 Signature and Seal of Professional Surveyor: <i>[Signature]</i> ROBERT M. HOWETT NEW MEXICO 19680 PROFESSIONAL SURVEYOR 19680 Certificate Number Revised: 2/4/15	

COG OPERATING, LLC

Fat Tire 12 Federal #21H
(330' FNL & 150' FEL)
Section 12, T-17-S, R-29-E,
N. M. P. M., Eddy Co., New Mexico



DIRECTIONS TO LOCATION

From the intersection of U. S. Hwy. No. 82 and County Road No. 217 (Hagerman Cutoff);
Go North on Co. Rd. No. 217 0.9 mile;
Turn left on a lease road and go West 0.8 mile;
Turn right and go Northwest 0.7 mile to a "Y" intersection;
Turn left at the "Y" and go West 0.8 mile;
Turn right and go North 0.2 mile to another "Y" intersection;
Turn right at the "Y" and go Northeast 0.3 mile to a two track road; Continue Northeastly along the two track road 0.15 mile;
Turn left and go West 0.25 mile to the proposed road;
Follow road survey 0.3 mile North to the location.

SCALE: 1" = 100'
0 50 100
BEARINGS ARE
MAG 27° - NW EAST
DISTANCES ARE
GROUND.

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2	Well Name	2/4/15
1	Well Name	5/2/13
NO.	REVISION	DATE
JOB NO.: LS130016		
DWG. NO.: 130016PAD		

PROSPERITY CONSULTANTS, LLC



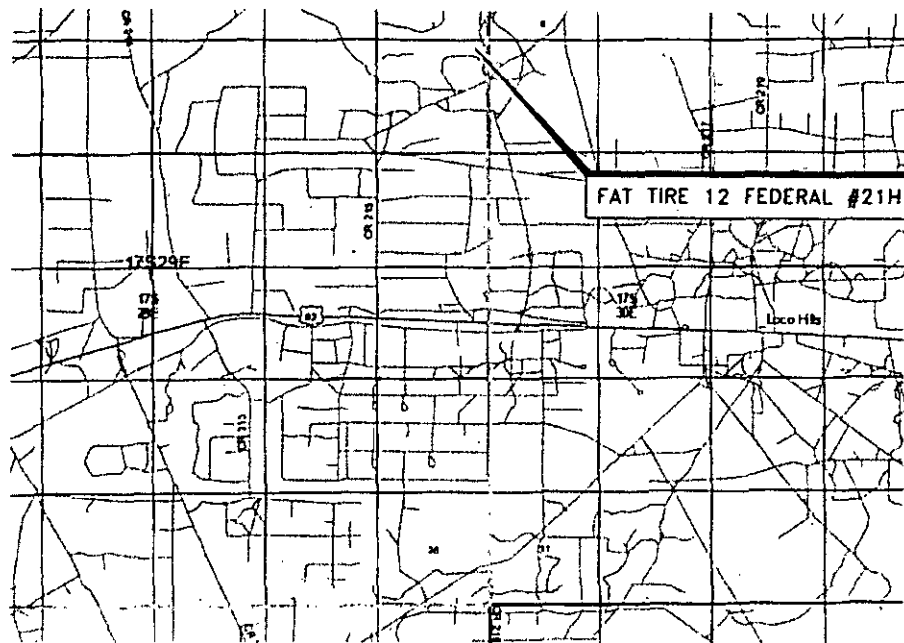
2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664

o1512) 992-7087 f1512) 251-2518

SCALE: 1" = 100'
DATE: 1/30/13
SURVEYED BY: RH/GB
DRAWN BY: LWB
APPROVED BY: LWB
SHEET : 1 OF 2

VICINITY MAP

NOT TO SCALE



SECTION 12, TWP. 17 SOUTH, RGE. 29 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO

OPERATOR: COG Operating, LLC
LEASE: Fat Tire 12 Federal
WELL NO.: 21H
ELEVATION: 3671'
LOCATION: 330' FNL & 150' FEL

DIRECTIONS TO LOCATION

From the intersection of U. S. Hwy. No. 82 and
County Road No. 217 (Hagerman Cutoff);

Go North on Co. Rd. No. 217 0.9 mile;

Turn left on a lease road and go West 0.8 mile;

Turn right and go Northwest 0.7 mile to a "Y" intersection;

Turn left at the "Y" and go West 0.8 mile;

Turn right and go North 0.2 mile to another "Y" intersection;

Turn right at the "Y" and go Northeast 0.3 mile to a two track
road; Continue Northeasterly along the two track road 0.15 mile;

Turn left and go West 0.25 mile to the proposed road;

Follow road survey 0.3 mile North to the location.

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2	Well Name	2/4/15
1	Well Name	5/2/13
NO.	REVISION	DATE
JOB NO.:	LS130016	
DWG. NO.:	130016VM	

PROSPERITY CONSULTANTS, LLC

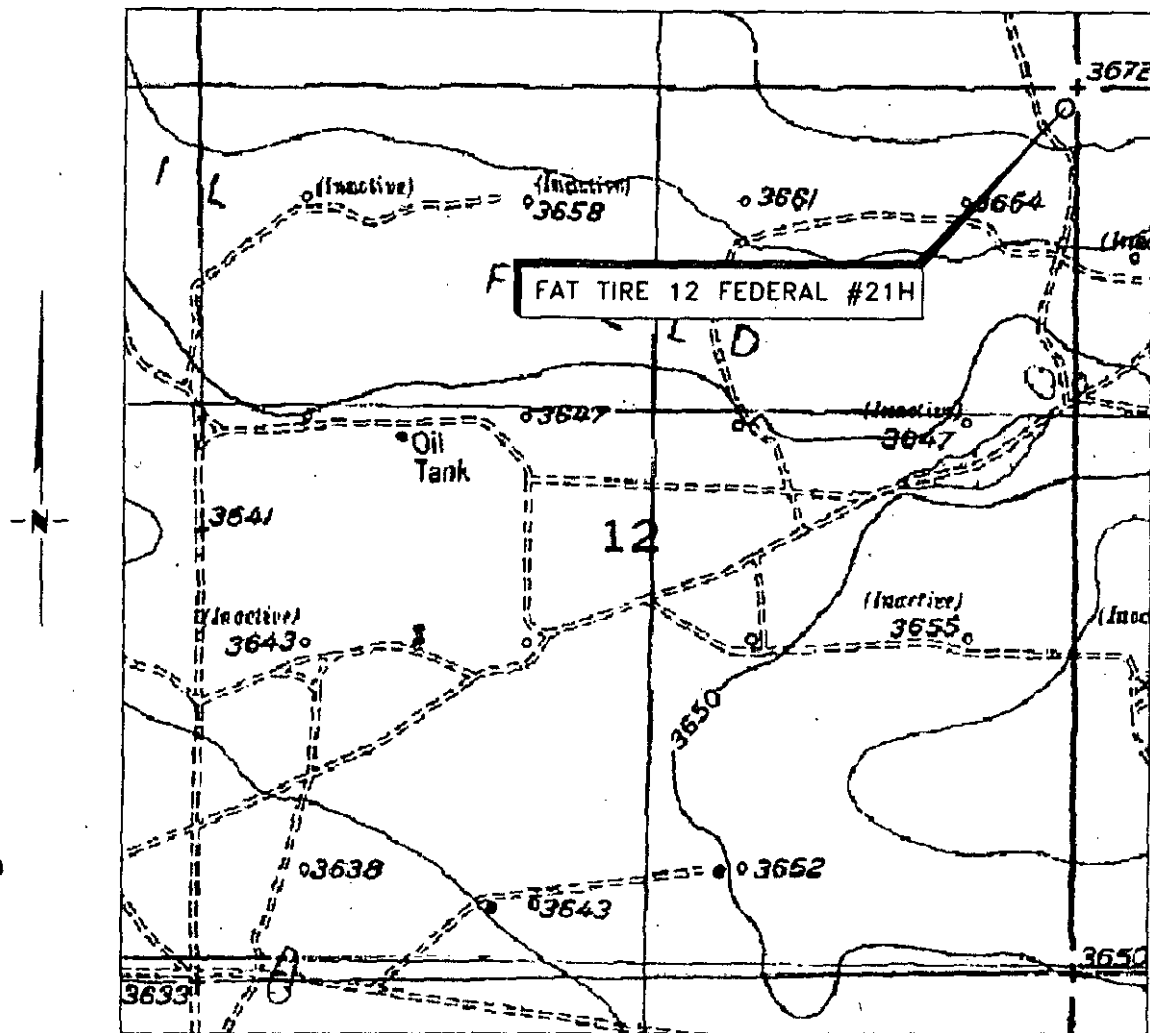


2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664

o (512) 992-2087 f (512) 251-2518

SCALE: 1" = 1000'
DATE: 1/30/13
SURVEYED BY: RH/GB
DRAWN BY: LWB
APPROVED BY: LWB
SHEET : 1 OF 1

LOCATION VERIFICATION MAP



SECTION 12, TWP. 17 SOUTH, RGE. 29 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO

OPERATOR: COG Operating, LLC
LEASE: Fat Tire 12 Federal
WELL NO.: 21H
ELEVATION: 3671'

LOCATION: 330' FNL & 150' FEL
CONTOUR INTERVAL: 10'
USGS TOPO. SOURCE MAP:
Red Lake SE, NM (1955)

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2	Well Name	2/4/15
1	Well Name	5/2/13
NO.	REVISION	DATE
JOB NO.: LS130016		
DWG. NO.: 130016LVM		

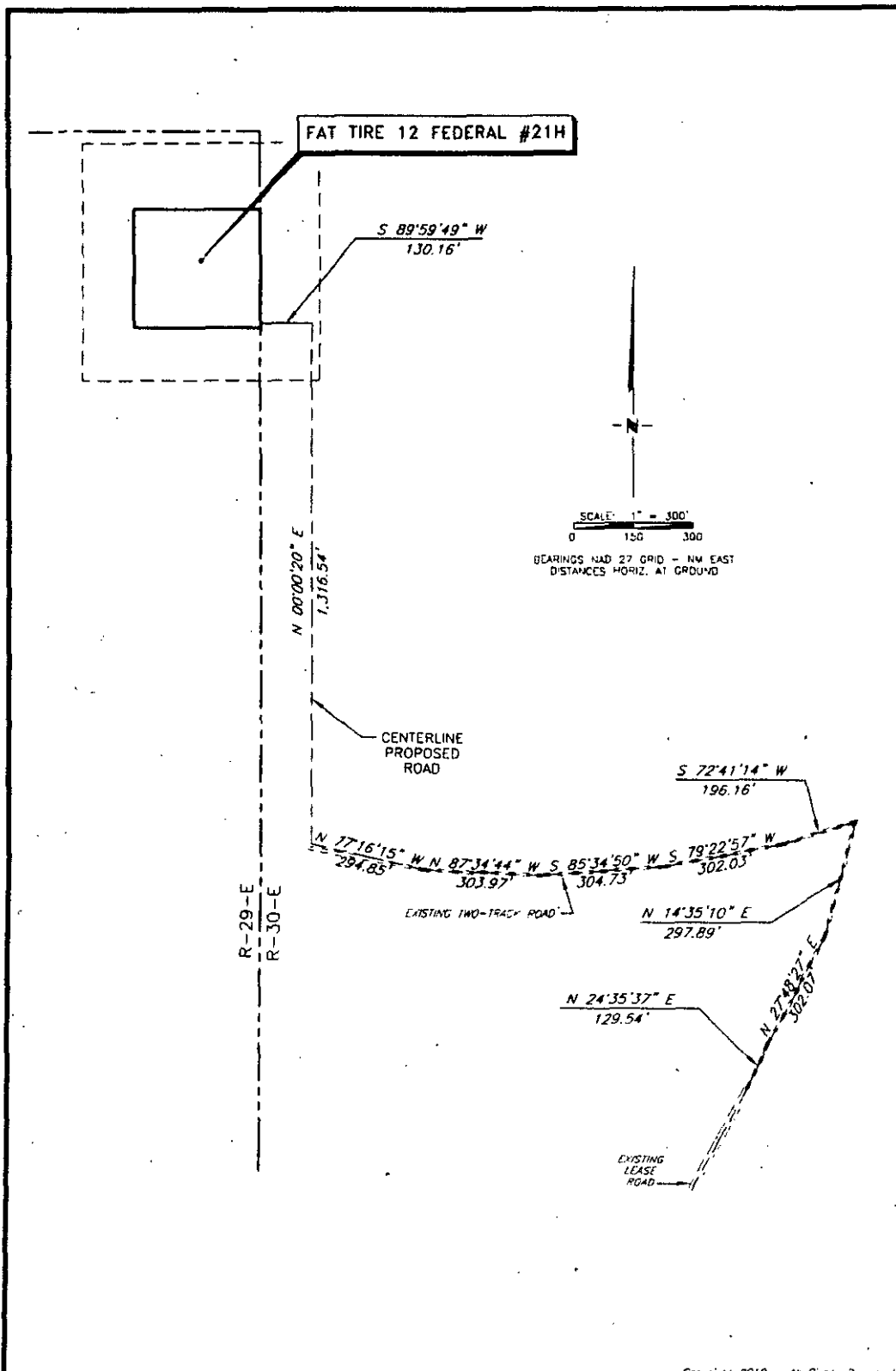
PROSPERITY CONSULTANTS, LLC



2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664

o (512) 992-2087 f (512) 251-2518

SCALE: 1" = 1000'
DATE: 1/30/13
SURVEYED BY: RH/GB
DRAWN BY: LWB
APPROVED BY: LWB
SHEET : 1 OF 1



3	Well Name	2/4/15
2	Road	8/16/13
1	Well Name	5/2/13
NO.	REVISION	DATE
JOB NO.: LS130016		
DWG. NO.: 130016PAD2		

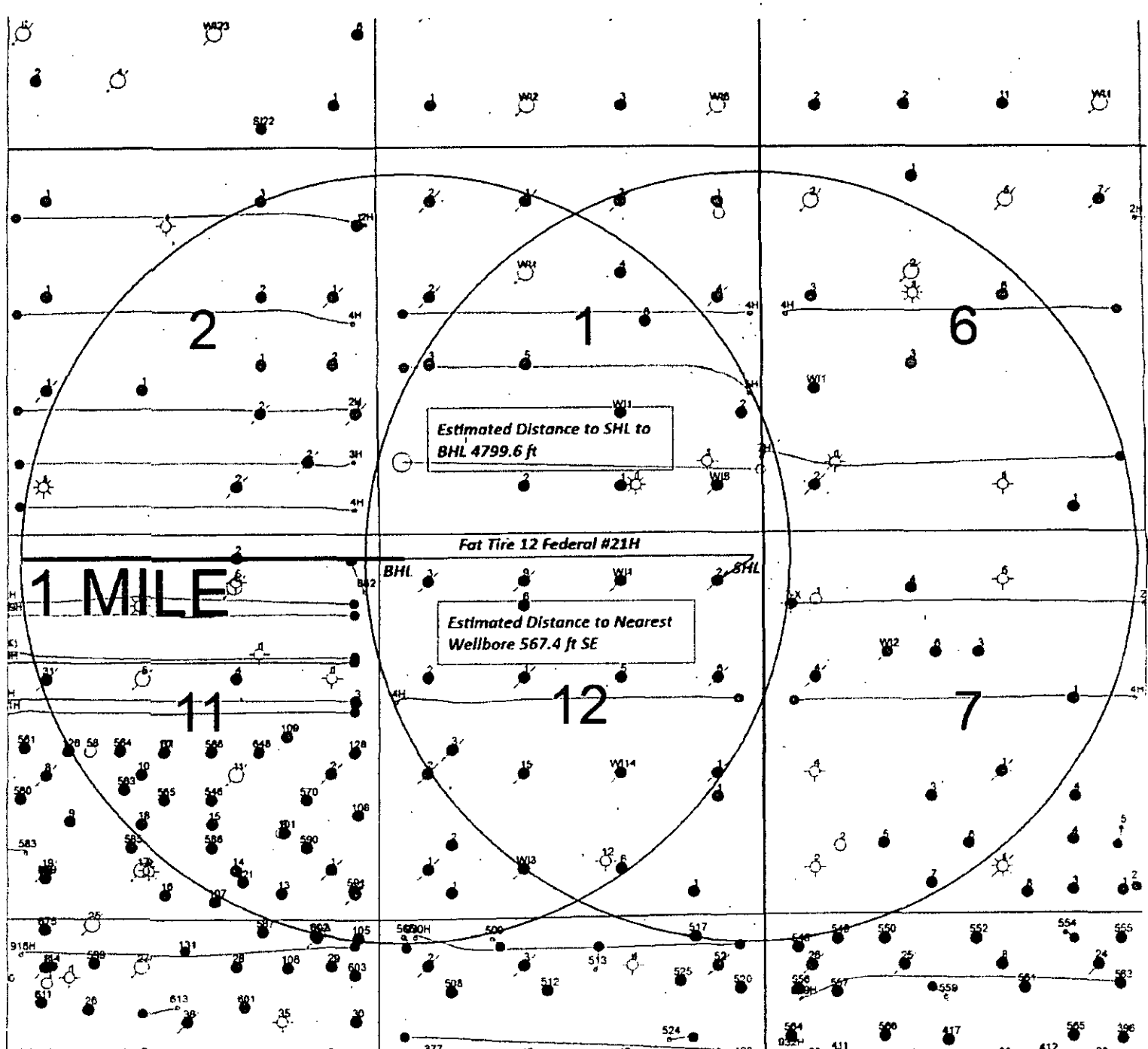
PROSPERITY CONSULTANTS, LLC



2751 Double Creek Drive, Suite 602, Round Rock, Texas 78664

© (512) 992-2087 / (512) 251-2518

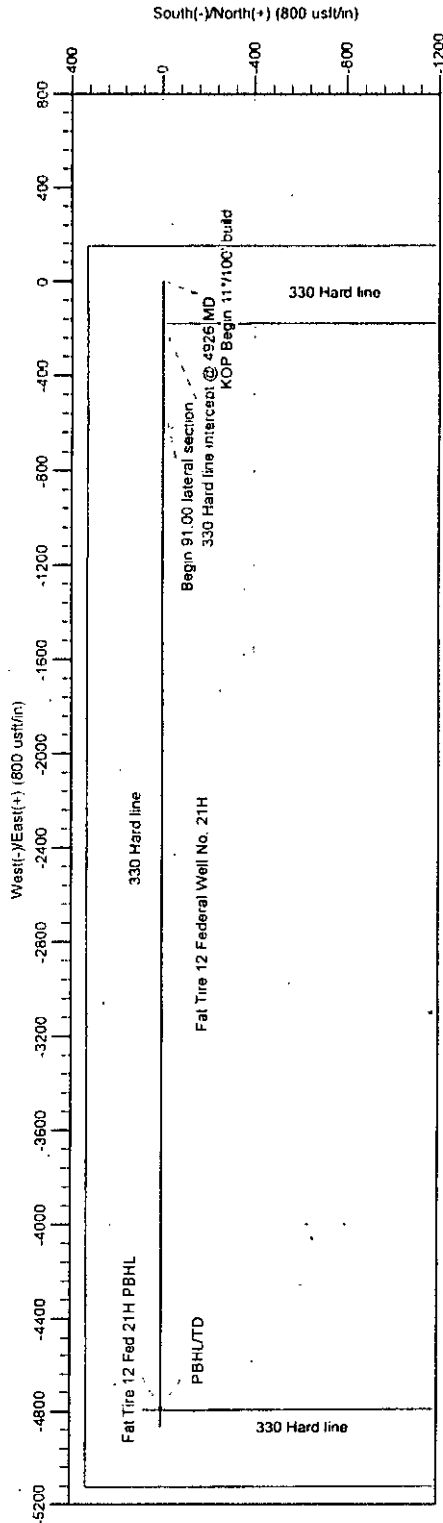
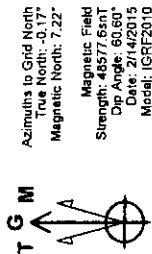
SCALE: 1" = 300'
DATE: 1/30/13
SURVEYED BY: LWB
DRAWN BY: LWB
APPROVED BY: LWB
SHEET : 2 OF 2



	
SENM Shelf Area Fat Tire 12 Federal #21H	
SEC. 12, T17S - R29E SHL 330 FNL 150 FEL, UNIT A SEC. 12, T17S - R29E SHL 330 FNL 330 FWL, UNIT D	
Author: 1-1-1	Date: 12 February 2006



Well: Fat Tire 12 Federal Well No. 21H
 Site: Fat Tire 12 Federal
 Project: Eddy County, New Mexico
 Design: rev0
 Rig: United #43



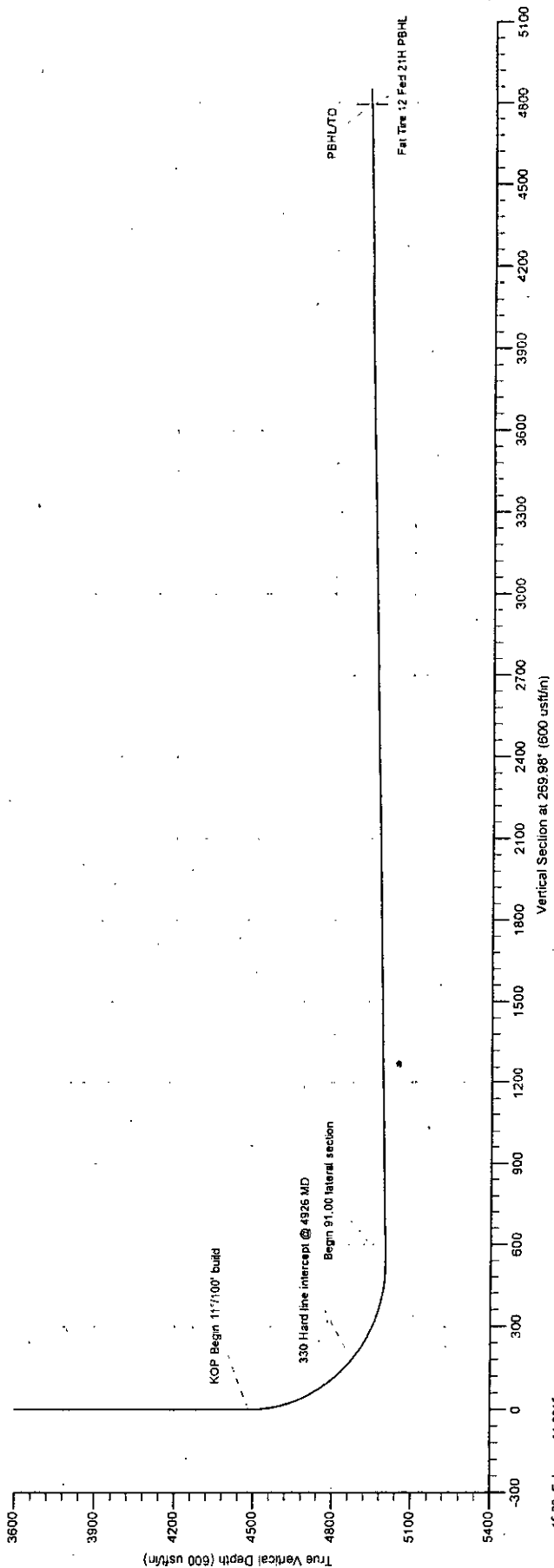
Surface Location: PK8-3671+12 @ 3683.00usf (United #43)
 US State Plane 1927 (Elev. solution)
 New Mexico East 3001

Nothing Easting 586325.20
 Nothing Easting 32.85525035
 Longitude -104.01965580

Total Correction (M => G) To convert a Magnetic Direction to a Grid Direction, Add 7.22°

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	0.00	
2	4479.20	0.00	0.00	4479.20	0.00	0.00	0.00	0.00	0.00	KOP Begin 11'100' build
3	5306.48	91.00	269.98	4999.99	-0.15	-529.97	11.00	269.98	529.97	Begin 91.00 lateral section
4	9570.76	91.00	269.98	4825.50	-1.40	-4793.60	0.00	0.00	4793.60	PBHL/UTD





COG Operating LLC

Eddy County, New Mexico

Fat Tire 12 Federal

Fat Tire 12 Federal Well No. 21H

Original Hole

SHL: 330 FNL 150 FEL Sect 12-T17S-R29E Unit A

POE: 330 FNL 330 FEL Sect 12-T17S-R29E Unit A

BHL: 330 FNL 330 FWL Sect 12-T17S-R29E Unit D

Plan: rev0

Standard_report

14 February, 2015

NM OIL CONSERVATION

ARTESIA DISTRICT

JAN 19 2016

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Standard_report

Company COG Operating LLC		Local Co-ordinate Reference: Well Fat Tire 12 Federal Well No. 21H	
Project: Eddy County, New Mexico		RKB=3671+12 @ 3683.00usft (United #43)	
Site: Fat Tire 12 Federal		RKB=3671+12 @ 3683.00usft (United #43)	
Well: Original Hole		Grid	
Design: rev0		Minimum Curvature	
		Doase Nov0914	
Project Eddy County, New Mexico		System Datum: Mean Sea Level	
Map System: US State Plane 1927 (Exact solution)			
Geo Datum: NAD 1927 (NADCON CONUS)			
Map Zone: New Mexico East 3001			
Site Fat Tire 12 Federal			
Site Position: Map		Latitude: 32.85525036	
Position Uncertainty: 0.00 usft		Longitude: -104.01965580	
		Grid Convergence: 0.17 °	
Well Fat Tire 12 Federal Well No. 21H, Surf Loc: 330 FNL 150 FEL Sect 12-T17S-R29E Unit A			
Well Position +N/-S +E/-W 0.00 usft 0.00 usft 0.00 usft		Latitude: 32.85525036	
		Longitude: -104.01965580	
Position Uncertainty		Ground Level: 3,671.00 usft	
Wellbore Original Hole			
Magnetics Model Name IGRF2010		Dip Angle: 7.39	
		Field Strength (nT) 48,578	
Design rev0			
Audit Notes:			
Version:			
Vertical Section:			
Depth From (TVD) (usft) 0.00		Direction (°) 269.98	
From (usft)		To (usft)	
Survey (Wellbore) 0.00		Survey (Wellbore) 9,570.69 rev0 (Original Hole)	
		Description MWD - Standard	



Standard_report

Company: COG Operating LLC				Local Co-ordinate Reference:				Well Fat Tire 12 Federal Well No. 21H					
Project: Eddy County, New Mexico				TVD Reference:				RKB=3671+12 @ 3683.00usft (United #43)					
Site: Fat Tire 12 Federal				MD Reference:				RKB=3671+12 @ 3683.00usft (United #43)					
Well: Fat Tire 12 Federal Well No. 21H				North Reference:				Grid					
Wellbore: Original Hole				Survey Calculation Method:				Minimum Curvature					
Design: rev0				Database:				Dbase Nov0914					
Planned Survey													
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)				
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	574,994.40	596,325.20				



Standard_report

Company: COG Operating LLC			Local Co-ordinate Reference:			Well Fat Tire 12 Federal Well No. 21H				
Project: Eddy County, New Mexico			TVD Reference:			RKB=3571+12 @ 3683.00usft (United #43)				
Site: Fat Tire 12 Federal			MD Reference:			RKB=3571+12 @ 3683.00usft (United #43)				
Well: Fat Tire 12 Federal Well No. 21H			North Reference:			Grid				
Wellbore: Original Hole			Survey Calculation Method:			Minimum Curvature				
Design: rev0			Database:			Dbase Nov0914				
Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
4,479.20	0.00	0.00	4,479.20	0.00	0.00	0.00	0.00	674,994.40	596,325.20	
KOP Begin 11°/100' build										
4,500.00	2.29	269.98	4,499.99	0.00	-0.42	11.00	0.42	674,994.40	596,324.78	
4,600.00	13.29	269.98	4,598.92	0.00	-13.95	11.00	13.95	674,994.40	596,311.25	
4,700.00	24.29	269.98	4,693.45	-0.01	-46.10	11.00	46.10	674,994.39	596,279.10	
4,800.00	35.29	269.98	4,780.10	-0.03	-95.71	11.00	95.71	674,994.37	596,229.49	
4,900.00	46.29	269.98	4,855.70	-0.05	-160.93	11.00	160.93	674,994.35	596,164.27	
4,926.00	49.15	269.98	4,873.19	-0.05	-180.17	11.00	180.17	674,994.35	596,145.03	
330 Hard line intercept @ 4926 MD										



Standard_report

Company: COG Operating LLC				Local Co-ordinate Reference:				Well Fat Tire 12 Federal Well No. 21H			
Project: Eddy County, New Mexico				TVD Reference:				RKB=3671+12 @ 3683.00usft (United #43)			
Site: Fat Tire 12 Federal				MD Reference:				RKB=3671+12 @ 3683.00usft (United #43)			
Well: Fat Tire 12 Federal Well No. 21H				North Reference:				Grid			
Wellbore: Original Hole				Survey Calculation Method:				Minimum Curvature			
Design: rev0				Database:				Dbase Nov0914			
Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	D/Leg (°/100usft)	V:Sec (usft)	Northing (usft)	Easting (usft)		
5,000.00	57.29	269.98	4,917.46	-0.07	-239.38	11.00	239.38	674,994.33	596,085.82		
5,100.00	68.29	269.98	4,963.12	-0.10	-328.18	11.00	328.18	674,994.30	595,997.02		
5,200.00	79.29	269.98	4,990.99	-0.12	-424.06	11.00	424.06	674,994.28	595,901.14		
5,300.00	90.29	269.98	5,000.06	-0.15	-523.49	11.00	523.49	674,994.25	595,801.71		
5,306.48	91.00	269.98	4,999.99	-0.15	-529.97	11.00	529.97	674,994.25	595,795.23		
Begin 91.00 lateral section											
5,400.00	91.00	269.98	4,998.36	-0.18	-623.47	0.00	623.47	674,994.22	595,701.73		
5,500.00	91.00	269.98	4,996.61	-0.21	-723.46	0.00	723.46	674,994.19	595,601.74		
5,600.00	91.00	269.98	4,994.86	-0.24	-823.44	0.00	823.44	674,994.16	595,501.76		
5,700.00	91.00	269.98	4,993.12	-0.27	-923.43	0.00	923.43	674,994.13	595,401.77		
5,800.00	91.00	269.98	4,991.37	-0.30	-1,023.41	0.00	1,023.41	674,994.10	595,301.79		
5,900.00	91.00	269.98	4,989.62	-0.33	-1,123.40	0.00	1,123.40	674,994.07	595,201.80		
6,000.00	91.00	269.98	4,987.88	-0.36	-1,223.38	0.00	1,223.38	674,994.04	595,101.82		
6,100.00	91.00	269.98	4,986.13	-0.39	-1,323.37	0.00	1,323.37	674,994.01	595,001.83		
6,200.00	91.00	269.98	4,984.38	-0.42	-1,423.35	0.00	1,423.35	674,993.98	594,901.85		
6,300.00	91.00	269.98	4,982.64	-0.44	-1,523.34	0.00	1,523.34	674,993.96	594,801.86		
6,400.00	91.00	269.98	4,980.89	-0.47	-1,623.32	0.00	1,623.32	674,993.93	594,701.88		
6,500.00	91.00	269.98	4,979.14	-0.50	-1,723.31	0.00	1,723.31	674,993.90	594,601.89		
6,600.00	91.00	269.98	4,977.40	-0.53	-1,823.29	0.00	1,823.29	674,993.87	594,501.91		
6,700.00	91.00	269.98	4,975.65	-0.56	-1,923.28	0.00	1,923.28	674,993.84	594,401.92		
6,800.00	91.00	269.98	4,973.90	-0.59	-2,023.26	0.00	2,023.26	674,993.81	594,301.94		
6,900.00	91.00	269.98	4,972.15	-0.62	-2,123.25	0.00	2,123.25	674,993.78	594,201.95		
7,000.00	91.00	269.98	4,970.41	-0.65	-2,223.23	0.00	2,223.23	674,993.75	594,101.97		
7,100.00	91.00	269.98	4,968.66	-0.68	-2,323.21	0.00	2,323.21	674,993.72	594,001.99		
7,200.00	91.00	269.98	4,966.91	-0.71	-2,423.20	0.00	2,423.20	674,993.69	593,902.00		
7,300.00	91.00	269.98	4,965.17	-0.74	-2,523.18	0.00	2,523.18	674,993.66	593,802.02		
7,400.00	91.00	269.98	4,963.42	-0.77	-2,623.17	0.00	2,623.17	674,993.63	593,702.03		



Standard_report

Company: COG Operating LLC		Local Co-ordinate Reference:		Well Fat Tire 12 Federal Well No. 21H					
Project: Eddy County, New Mexico		TVD Reference:		RKB=3671+12 @ 3683.00usft (United #43)					
Site: Fat Tire 12 Federal		MD Reference:		RKB=3671+12 @ 3683.00usft (United #43)					
Well: Fat Tire 12 Federal Well No. 21H		North Reference:		Grid					
Wellbore: Original Hole		Survey Calculation Method:		Minimum Curvature					
Design: rev0		Database:		Dbase Nov0914					
Planned Survey:									
MD (usft)	Inc (")	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg ("/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)
7,500.00	91.00	269.98	4,961.67	-0.80	-2,723.15	0.00	2,723.15	674,993.60	593,602.05
7,600.00	91.00	269.98	4,959.93	-0.82	-2,823.14	0.00	2,823.14	674,993.58	593,502.06
7,700.00	91.00	269.98	4,958.18	-0.85	-2,923.12	0.00	2,923.12	674,993.55	593,402.08
7,800.00	91.00	269.98	4,956.43	-0.88	-3,023.11	0.00	3,023.11	674,993.52	593,302.09
7,900.00	91.00	269.98	4,954.69	-0.91	-3,123.09	0.00	3,123.09	674,993.49	593,202.11
8,000.00	91.00	269.98	4,952.94	-0.94	-3,223.08	0.00	3,223.08	674,993.46	593,102.12
8,100.00	91.00	269.98	4,951.19	-0.97	-3,323.06	0.00	3,323.06	674,993.43	593,002.14
8,200.00	91.00	269.98	4,949.45	-1.00	-3,423.05	0.00	3,423.05	674,993.40	592,902.15
8,300.00	91.00	269.98	4,947.70	-1.03	-3,523.03	0.00	3,523.03	674,993.37	592,802.17
8,400.00	91.00	269.98	4,945.95	-1.06	-3,623.02	0.00	3,623.02	674,993.34	592,702.18
8,500.00	91.00	269.98	4,944.20	-1.09	-3,723.00	0.00	3,723.00	674,993.31	592,602.20
8,600.00	91.00	269.98	4,942.46	-1.12	-3,822.99	0.00	3,822.99	674,993.28	592,502.21
8,700.00	91.00	269.98	4,940.71	-1.15	-3,922.97	0.00	3,922.97	674,993.25	592,402.23
8,800.00	91.00	269.98	4,938.96	-1.17	-4,022.96	0.00	4,022.96	674,993.23	592,302.24
8,900.00	91.00	269.98	4,937.22	-1.20	-4,122.94	0.00	4,122.94	674,993.20	592,202.26
9,000.00	91.00	269.98	4,935.47	-1.23	-4,222.92	0.00	4,222.92	674,993.17	592,102.28
9,100.00	91.00	269.98	4,933.72	-1.26	-4,322.91	0.00	4,322.91	674,993.14	592,002.29
9,200.00	91.00	269.98	4,931.98	-1.29	-4,422.89	0.00	4,422.89	674,993.11	591,902.31
9,300.00	91.00	269.98	4,930.23	-1.32	-4,522.88	0.00	4,522.88	674,993.08	591,802.32
9,400.00	91.00	269.98	4,928.48	-1.35	-4,622.86	0.00	4,622.86	674,993.05	591,702.34
9,500.00	91.00	269.98	4,926.74	-1.38	-4,722.85	0.00	4,722.85	674,993.02	591,602.35
9,570.76	91.00	269.98	4,925.50	-1.40	-4,793.60	0.00	4,793.60	674,993.00	591,531.60
PBHL/TD									



Standard_report

Company: COG Operating LLC		Well Fat Tire 12 Federal Well No. 21H	
Project: Eddy County, New Mexico		RKB=3671+12 @ 3683.00usft (United #43)	
Site: Fat Tire 12 Federal		RKB=3671+12 @ 3683.00usft (United #43)	
Well: Fat Tire 12 Federal Well No. 21H		Grid	
Wellbore: Original Hole		Minimum Curvature	
Design: rev0		Dbase Nov0914	

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

Plan Annotations			
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates	Comment
		N-S (usft)	E-W (usft)
4,479.20	4,479.20	0.00	0.00
4,926.00	4,873.19	-0.05	-180.17
5,306.48	4,999.99	-0.15	-529.97
9,570.76	4,925.50	-1.40	-4,793.60