



# PHOENIX

TECHNOLOGY SERVICES USA, INC.

3610 Elkins Road, Midland, Texas 79705 T. 432.684.0057 F. 432.686.7964 www.phxtech.com

*Celebrating 20 Years of Focused Solutions*

August 30, 2016

Oil Conservation Division  
State of New Mexico  
811 S. First St.  
Artesia, New Mexico 88210

**NM OIL CONSERVATION**  
ARTESIA DISTRICT

SEP 16 2016

Dear District 2 - Artesia

Attention: Regulatory Department

RECEIVED

Re: BC Operating  
Cass 16 State 1H  
Eddy County, NM  
API #30-015-42730  
Job No. 60272

Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced Well by Phoenix Technology Services, Inc. (P-5 No. 664171). Other information required by your office is as follows:

Name & Title of Surveyor	Drain Hole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Andy Askew	1H	0	360	08/15/16	08/15/16	Gyro

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,

Claudia Carreon  
Operations Administrator

# SURVEY CERTIFICATION FORM

3610 Elkins Road Midland, TX 79705 t:432-684-0057 f: 432-686-7964



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TECHNOLOGY SERVICES

Company: BC Operating

Job #: 60272

Well Name: Cass 16 State 1H

County/State: Eddy/ NM

Survey Instrument Type: North Seek Rate Gyro

API # 30-015-42730

## TIE-IN DATA

Measure Depth (ft)	Vertical Depth (ft)	Inclination (°)	Azimuth (°)	N-S Coordinates	E-W Coordinates	Data Source
0	0	0	0	0	0	Surface

## First Survey

Date	Depth (ft)	Inclination (°)	Azimuth (°)
2016-08-15	0	0	0

## Last Survey

Date	Depth (ft)	Inclination (°)	Azimuth (°)
2016-08-15	360	3.49	41.99

## Projected TD Survey

Date	Depth (ft)	Inclination (°)	Azimuth (°)
0	0	0	0

Grid Correction
-0.07

Gyro Operator: Phoenix Technology Services USA Ltd.

Gyro Supervisor: Jaime Stephenson

To the best of my knowledge I certify this survey data to be correct and true

Date:

8/15/16

Print Name: Andy Askew

Signature:



**PHOENIX**  
TECHNOLOGY SERVICES

Company: BC Operating  
Well: Cass 16 State 1H  
Location: Eddy Co., NM  
Rig: Production

Job Number: 60272  
Grid Corr.: -0.07  
Lat: 32.31  
Long: -104.20

Date: 08-15-16  
Calculation Method: Minimum Curvature  
Proposed Azimuth:   
RKB - MSL in feet: Ground Level  
Tie Into: Surface

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S	E/W	Distance (ft)	Angle (deg)			
Enter Tie-In Survey on Line 10													
FIELD COPY, NON-DEFINITIVE													
TIE IN	0			0	0	0	0	0					
Gyro	100.00	0.67	55.66	100	100.00	0.33	0.33 N	0.48 E	0.58	55.66	0.67	0.67	55.66
	200.00	1.32	32.68	100	199.98	1.63	1.63 N	1.59 E	2.27	44.26	0.75	0.65	-22.98
	300.00	2.74	37.34	100	299.92	4.50	4.50 N	3.66 E	5.80	39.12	1.43	1.42	4.66
	360.00	3.49	41.99	60	359.83	7.00	7.00 N	5.75 E	9.06	39.42	1.32	1.25	7.75