OCD Hobbs

Form 3160-4
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Duplicate

FORM APPROVED
OMB NO. 1004-0137
Expires: October 31, 2014

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. Lease Serial No.: NMNM-2512

1a. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Dry ☐ Other
b. Type of Completion: ☑ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.,
Other:

6. If Indian, Allottee or Tribe Name:

7. Unit or CA Agreement Name and No.: NEDU NMNM072602X

2. Name of Operator: Apache Corporation (873)

8. Lease Name and Well No.: Northeast Drinkard Unit (NEDU) #355

3. Address: 303 Veterans Airpark Lane Suite 1000, Midland TX 79705

3a. Phone No. (include area code): 432/818-1062

9. API Well No.: 30-025-41286

4. Location of Well (Report location clearly and in accordance with Federal requirements)*

At surface: 1310' FSL & 620' FEL UL P Sec 3 T21S R37E

10. Field and Pool or Exploratory: Eunice; B-T-D, North (22900)

11. Sec., T., R., M., on Block and Survey or Area: UL P Sec 3 T21S R37E

At top prod. interval reported below

At total depth: 1193' FSL & 555' FEL UL P Sec 3 T21S R37E

12. County or Parish: Lea County

13. State: NM

14. Date Spudded: 11/14/2013

15. Date T.D. Reached: 11/19/2013

16. Date Completed: 01/17/2014 ☐ D & A ☑ Ready to Prod.

17. Elevations (DF, RKB, RT, GL)*: 3463' GL

18. Total Depth: MD 6966' TVD

19. Plug Back T.D.: MD 6916' TVD

20. Depth Bridge Plug Set: MD TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each): CNL/DLL/Caliper

22. Was well cored? ☑ No ☐ Yes (Submit analysis)
Was DST run? ☑ No ☐ Yes (Submit report)
Directional Survey? ☐ No ☑ Yes (Submit copy)

23. Casing and Liner Record (Report all strings set in well)

Hole Size	Size/Grade	Wt. (#/ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sks. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
11"	8-5/8" J-55	24#	Surface	1349'		470 sx Class C		Surface	
7-7/8"	5-1/2" L-80	17#	Surface	6962'		1325 sx Class C		100' (CBL)	

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2-7/8"	6818'							

25. Producing Intervals / 26. Perforation Record

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) Blinebry	5623'		5653' - 5999'	1 SPF	36	Producing
B) Tubb	6097'		6128' - 6496'	1 SPF	36	Producing
C) Drinkard	6568'		6607' - 6761'	1 SPF	32	Producing
D)						

27. Acid, Fracture, Treatment, Cement Squeeze, etc.

Depth Interval	Amount and Type of Material
Blinebry 5653'-5999'	3528 gal acid; 99,078 gal SS-22; 254,306# sand; 5292 gal gel
Tubb 6128'-6496'	4746 gal acid; 84,336 gal SS-25; 150,379# sand; 4788 gal gel
Drinkard 6607'-6761'	4418 gal acid; 22,765 gal SS-30; no sand; 5124 gal gel

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
1/17/14	1/20/14	24	→	34	39	235	37.0		Pumping

Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status
			→				1147	Producing

28a. Production - Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						

Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status
			→					

*(See instructions and spaces for additional data on page 2)

RECEIVED
FEB 23 2015
HOBBSOCD

ACCEPTED FOR RECORD
FEB 19 2015
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

FEB 23 2015

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method

Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status

28c. Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method

Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status

29. Disposition of Gas *(Solid, used for fuel, vented, etc.)*

SOLD

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top Meas. Depth
				Rustler	1316'
				Tansill	2466'
				Yates	2620'
				Seven Rivers	2863'
				Queen	3433'
				Penrose	3594'
				Grayburg	3763'
				San Andres	4160'
				Glorieta	5225'
				Paddock	5271'
				Blinebry	5623'
				Tubb	6097'
				Drinkard	6568'
				Abo	6823'

32. Additional remarks (include plugging procedure):

33. Indicate which items have been attached by placing a check in the appropriate boxes:

☑ Electrical/Mechanical Logs (1 full set req'd.) ☐ Geologic Report ☐ DST Report ☑ Directional Survey

☐ Sundry Notice for plugging and cement verification ☐ Core Analysis ☑ Other: OCD Forms C-102 & C-104

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name *(please print)* Reesa Fisher Title Sr Staff Reg Analyst

Signature Reesa Fisher Date 02/05/2014

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.

(Continued on page 3)

HOBBS OCD

FEB 10 2014

RECEIVED

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) 748-0720

DISTRICT III
1000 Rio Brazos Rd., 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 and 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	Pool Code	Pool Name
30-025-41286	22900	EUNICE; B-T-D, NORTH

Property Code	Property Name	Well Number
22503	NORTHEAST DRINKARD UNIT	355

OGRID No.	Operator Name	Elevation
873	APACHE CORPORATION	3462'

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	3	21 S	37 E		1310	SOUTH	620	EAST	LEA

Bottom Hole Location If Different From Surface

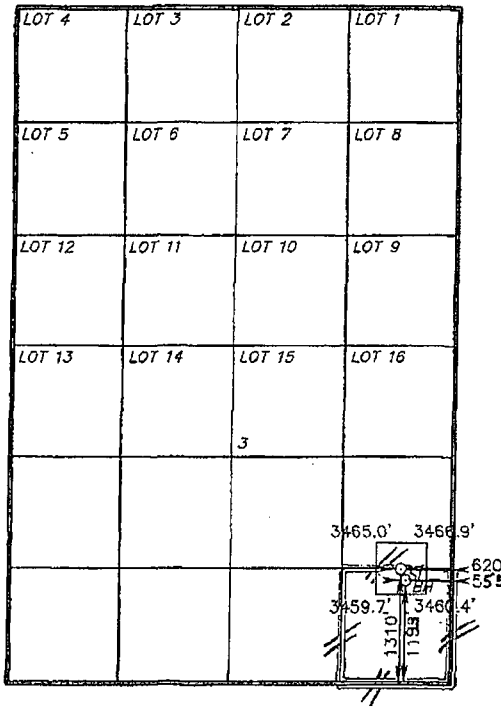
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	3	21 S	37 E		1193	SOUTH	555	EAST	LEA

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

SURFACE LOCATION
Lat – N 32°30'15.55"
Long – W 103°08'39.81"
NMSPCE– N 549246.17
E 907874.81
(NAD-83)
Lat – N 32°30'15.12"
Long – W 103°08'38.11"
NMSPCE– N 549186.357
E 866690.925
(NAD-27)

PROPOSED BOTTOM HOLE LOCATION
Lat – N 32°30'14.27"
Long – W 103°08'39.11"
NMSPCE– N 549116.938
E 907936.364
(NAD-83)
Lat – N 32°30'13.84"
Long – W 103°08'37.41"
NMSPCE– N 549057.128
E 866752.472
(NAD-27)



1" = 2000'

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 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 a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Reesa Fisher 2/4/14
Signature Date

REESA FISHER
Printed Name

Reesa.fisher@apachecorp.com
Email Address

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 supervison, and that the same is true and correct to the best of my belief.

NOVEMBER 2013
Date Surveyed

Signature & Seal of Professional Surveyor

NEW MEXICO 7977 REGISTERED PROFESSIONAL SURVEYOR

Certificate No. Gary L. Jones 7977

BASIN SURVEYS 27711

MAR 31 2014

Apache Corporation (873)
303 Veterans Airpark Lane, #3000
Midland, TX 79705

Northeast Drinkard Unit # 355 30-025-41286 ULP 3-21S-37E 1310'FSL & 620' FEL
Lea County, New Mexico

492	4.92	0.10	0.18	0.86	0.86
738	2.46	0.50	0.88	2.15	3.01
993	2.55	0.40	0.70	1.79	4.80
1250	2.57	1.80	3.15	8.10	12.89

HOBBS OCD

FEB 1 0 2014

RECEIVED

Archie Brown - General Manager

The attached instrument was acknowledged before me on the 3rd day of December, 2013 by Archie Brown - General Manager, CapStar Drilling, Inc.

Jacki Ann Zent
Notary Public

JACKI ANN ZENT
Notary Public, State of Texas
My Commission Expires
March 03, 2015

Apache
EXPLORING WHAT'S POSSIBLE

Apache Corporation

Lea County, NM (NAD83 NME)
NEDU 30-025-41286 UL P 3-21S-37E
#355 1310' FSL & 620' FEL
WB1/Job #1310141

Survey: Phoenix MWD Surveys

Phoenix Final Survey Report

19 November, 2013

PHOENIX
TECHNOLOGY SERVICES

Phoenix Technology Services

Phoenix Final Survey Report

Company:	Apache Corporation	**Local Co-ordinate Reference:**	Well #355
Project:	Lea County, NM (NAD83 NME)	**TVD Reference:**	KB @ 3473.00usft (Capstar 120)
Site:	NEDU	**MD Reference:**	KB @ 3473.00usft (Capstar 120)
Well:	#355	**North Reference:**	Grid
Wellbore:	WB1/Job #1310141	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys (Capstar 120)	**Database:**	GCR DB

Project Lea County, NM (NAD83 NME)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site NEDU

Site Position:		**Northing:**	549,246.17 usft	**Latitude:**	32° 30' 15.55234 N
From:	Map	**Easting:**	907,874.81 usft	**Longitude:**	103° 8' 39.81023 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16"	**Grid Convergence:**	0.64 °

Well #355

Well Position	**+N/-S**	0.00 usft	**Northing:**	549,246.17 usft	**Latitude:**	32° 30' 15.55234 N
	+E/-W	0.00 usft	**Easting:**	907,874.81 usft	**Longitude:**	103° 8' 39.81023 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,462.00 usft

Wellbore WB1/Job #1310141

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	11/13/13	7.21	60.45	48,581

Design Surveys (Capstar 120)

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	154.53

Survey Program **Date** 11/19/13

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	1,293.00	Gyro Surveys (WB1/Job #1310141)	ISCWSA-GYRO-3	VES Gyro
1,387.00	6,966.00	Phoenix MWD Surveys (WB1/Job #13101	MWD	MWD - Standard

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
1,293.00	0.70	162.75	1,292.97	-5.93	2.77	6.54	0.00
1,387.00	0.60	168.70	1,386.97	-6.96	3.03	7.59	0.13
First Phoenix Survey							
1,472.00	0.50	160.80	1,471.96	-7.75	3.24	8.39	0.15
1,557.00	0.20	129.90	1,556.96	-8.19	3.48	8.89	0.40
1,643.00	0.50	114.10	1,642.96	-8.44	3.94	9.31	0.36
1,728.00	0.50	140.40	1,727.96	-8.88	4.51	9.96	0.27
1,814.00	0.70	104.70	1,813.95	-9.30	5.26	10.66	0.48
1,899.00	1.00	76.40	1,898.94	-9.26	6.48	11.15	0.60
1,985.00	1.40	73.80	1,984.92	-8.79	8.22	11.47	0.47
2,070.00	1.80	76.90	2,069.89	-8.20	10.52	11.92	0.48

Company:	Apache Corporation	**Local Co-ordinate Reference:**	Well #355
Project:	Lea County, NM (NAD83 NME)	**TVD Reference:**	KB @ 3473.00usft (Capstar 120)
Site:	NEDU	**MD Reference:**	KB @ 3473.00usft (Capstar 120)
Well:	#355	**North Reference:**	Grid
Wellbore:	WB1/Job #1310141	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys (Capstar 120)	**Database:**	GCR DB

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
2,155.00	1.60	67.50	2,154.85	-7.44	12.91	12.27	0.40
2,240.00	1.10	101.20	2,239.83	-7.14	14.81	12.82	1.08
2,325.00	1.30	107.20	2,324.81	-7.59	16.53	13.96	0.28
2,411.00	1.30	124.80	2,410.79	-8.43	18.27	15.47	0.46
2,496.00	0.60	155.90	2,495.78	-9.39	19.24	16.75	0.99
2,581.00	0.50	166.50	2,580.77	-10.16	19.51	17.56	0.17
2,667.00	0.40	204.10	2,666.77	-10.79	19.47	18.12	0.35
2,752.00	0.50	207.80	2,751.77	-11.39	19.18	18.53	0.12
2,837.00	0.40	224.30	2,836.77	-11.93	18.80	18.86	0.19
2,922.00	0.30	224.60	2,921.76	-12.30	18.43	19.04	0.12
3,007.00	0.40	238.10	3,006.76	-12.62	18.03	19.15	0.15
3,092.00	0.60	230.00	3,091.76	-13.06	17.43	19.29	0.25
3,177.00	0.40	242.20	3,176.76	-13.49	16.83	19.41	0.27
3,263.00	0.30	239.60	3,262.75	-13.74	16.37	19.45	0.12
3,348.00	0.40	252.90	3,347.75	-13.94	15.90	19.42	0.15
3,433.00	0.50	193.80	3,432.75	-14.39	15.52	19.67	0.53
3,518.00	0.30	202.20	3,517.75	-14.95	15.35	20.10	0.24
3,604.00	0.40	234.30	3,603.75	-15.34	15.02	20.31	0.25
3,689.00	0.40	213.10	3,688.75	-15.76	14.62	20.51	0.17
3,774.00	0.40	229.20	3,773.74	-16.20	14.23	20.75	0.13
3,859.00	0.40	206.30	3,858.74	-16.66	13.88	21.01	0.19
3,945.00	0.30	192.20	3,944.74	-17.15	13.70	21.37	0.15
4,030.00	0.40	227.90	4,029.74	-17.57	13.43	21.64	0.28
4,115.00	0.50	226.90	4,114.74	-18.02	12.94	21.83	0.12
4,200.00	0.30	262.70	4,199.73	-18.30	12.45	21.88	0.37
4,285.00	0.30	256.30	4,284.73	-18.38	12.01	21.76	0.04
4,370.00	0.40	176.60	4,369.73	-18.73	11.81	21.99	0.54
4,455.00	0.30	217.10	4,454.73	-19.21	11.69	22.37	0.31
4,540.00	0.30	265.80	4,539.73	-19.40	11.34	22.39	0.29
4,626.00	0.30	233.70	4,625.73	-19.55	10.93	22.35	0.19
4,711.00	0.20	275.70	4,710.73	-19.67	10.60	22.32	0.24
4,796.00	0.30	277.40	4,795.73	-19.62	10.24	22.12	0.12
4,882.00	0.20	250.20	4,881.73	-19.64	9.87	21.98	0.18
4,967.00	0.40	267.00	4,966.72	-19.71	9.44	21.85	0.25
5,052.00	0.20	175.30	5,051.72	-19.87	9.15	21.88	0.53
5,138.00	1.10	162.00	5,137.72	-20.81	9.42	22.84	1.05
5,223.00	2.20	157.40	5,222.68	-23.09	10.30	25.28	1.30
5,308.00	3.00	153.80	5,307.59	-26.59	11.91	29.13	0.96
5,393.00	4.30	151.40	5,392.42	-31.39	14.41	34.53	1.54
5,479.00	4.60	148.80	5,478.16	-37.17	17.74	41.19	0.42
5,564.00	4.10	150.40	5,562.91	-42.72	21.01	47.61	0.61
5,650.00	3.50	149.20	5,648.72	-47.65	23.87	53.29	0.70
5,735.00	3.30	150.40	5,733.57	-52.01	26.41	58.31	0.25
5,821.00	3.30	151.40	5,819.43	-56.33	28.82	63.25	0.07
5,906.00	3.30	148.20	5,904.29	-60.56	31.28	68.13	0.22

Company:	Apache Corporation	**Local Co-ordinate Reference:**	Well #355
Project:	Lea County, NM (NAD83 NME)	**TVD Reference:**	KB @ 3473.00usft (Capstar 120)
Site:	NEDU	**MD Reference:**	KB @ 3473.00usft (Capstar 120)
Well:	#355	**North Reference:**	Grid
Wellbore:	WB1/Job #1310141	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys (Capstar 120)	**Database:**	GCR DB

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
5,991.00	3.60	150.30	5,989.14	-64.96	33.69	73.22	0.38
6,077.00	3.40	151.30	6,074.98	-69.54	36.45	78.46	0.24
6,162.00	3.40	150.30	6,159.83	-73.94	38.91	83.49	0.07
6,247.00	3.00	148.80	6,244.69	-78.03	41.31	88.21	0.48
6,333.00	3.30	157.20	6,330.56	-82.24	43.44	92.93	0.64
6,418.00	3.40	156.90	6,415.42	-86.81	45.37	97.89	0.12
6,503.00	3.60	150.90	6,500.26	-91.46	47.66	103.07	0.49
6,589.00	4.00	149.20	6,586.07	-96.40	50.51	108.75	0.48
6,674.00	4.00	145.30	6,670.86	-101.38	53.72	114.63	0.32
6,759.00	4.20	143.80	6,755.65	-106.33	57.24	120.61	0.27
6,844.00	3.90	143.40	6,840.43	-111.16	60.80	126.51	0.35
6,912.00	3.40	143.90	6,908.30	-114.65	63.37	130.76	0.74
Last Phoenix Survey							
6,966.00	3.40	143.90	6,962.20	-117.24	65.26	133.91	0.00
Projection to TD							

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,387.00	1,386.97	-6.96	3.03	First Phoenix Survey
6,912.00	6,908.30	-114.65	63.37	Last Phoenix Survey
6,966.00	6,962.20	-117.24	65.26	Projection to TD

Checked By: _____ Approved By: _____ Date: _____

Phoenix Technology Services

Apache Corporation

NEDU #355
Lea County, NM (NAD83 NME)
WB1/Job #1310141
Phoenix MWD Surveys

Surface Loc.:
Northing: (Y) 907874.81
Easting: (X) 549246.17
KB Elev: 3473.00'
GL Elev: 3462.00'

Survey Type Information:
H 100.00 - 1293.00 GYRO SURVEYS : ISCWSA-GYRO-3
H 1387.00 - 6966.00 PHOENIX MWD SURVEYS : MWD

Measured Depth (ft)	Incl.	Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coo (+N/-S) (ft)	(+E/-W) (ft)	UTM Coord Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft	Annotation
1293	0.7	162.75	-2180.03	1292.97	-5.93	2.77	549240.2	907877.6	6.54	0	
1387	0.6	168.7	-2086.03	1386.97	-6.96	3.03	549239.2	907877.8	7.59	0.13	First Phoenix Survey - MWD
1472	0.5	160.8	-2001.04	1471.96	-7.75	3.24	549238.4	907878.1	8.39	0.15	
1557	0.2	129.9	-1916.04	1556.96	-8.19	3.48	549238	907878.3	8.89	0.4	
1643	0.5	114.1	-1830.04	1642.96	-8.44	3.94	549237.7	907878.8	9.31	0.36	
1728	0.5	140.4	-1745.04	1727.96	-8.88	4.51	549237.3	907879.3	9.96	0.27	
1814	0.7	104.7	-1659.05	1813.95	-9.3	5.26	549236.9	907880.1	10.66	0.48	
1899	1	76.4	-1574.06	1898.94	-9.26	6.48	549236.9	907881.3	11.15	0.6	
1985	1.4	73.8	-1488.08	1984.92	-8.79	8.22	549237.4	907883	11.47	0.47	
2070	1.8	76.9	-1403.11	2069.89	-8.2	10.52	549238	907885.3	11.91	0.48	
2155	1.6	67.5	-1318.15	2154.85	-7.44	12.91	549238.7	907887.7	12.27	0.4	
2240	1.1	101.2	-1233.17	2239.83	-7.14	14.81	549239	907889.6	12.82	1.08	
2325	1.3	107.2	-1148.19	2324.81	-7.59	16.53	549238.6	907891.3	13.96	0.28	
2411	1.3	124.8	-1062.21	2410.79	-8.43	18.27	549237.7	907893.1	15.47	0.46	
2496	0.6	155.9	-977.22	2495.78	-9.39	19.24	549236.8	907894.1	16.75	0.99	
2581	0.5	166.5	-892.23	2580.77	-10.16	19.51	549236	907894.3	17.56	0.17	
2667	0.4	204.1	-806.23	2666.77	-10.79	19.47	549235.4	907894.3	18.12	0.35	
2752	0.5	207.8	-721.23	2751.77	-11.39	19.18	549234.8	907894	18.53	0.12	
2837	0.4	224.3	-636.23	2836.77	-11.93	18.8	549234.2	907893.6	18.86	0.19	
2922	0.3	224.6	-551.24	2921.76	-12.3	18.43	549233.9	907893.2	19.04	0.12	
3007	0.4	238.1	-466.24	3006.76	-12.62	18.03	549233.6	907892.8	19.15	0.15	
3092	0.6	230	-381.24	3091.76	-13.06	17.43	549233.1	907892.2	19.19	0.25	
3177	0.4	242.2	-296.24	3176.76	-13.49	16.83	549232.7	907891.6	19.41	0.27	
3263	0.3	239.6	-210.25	3262.75	-13.74	16.37	549232.4	907891.2	19.45	0.12	
3348	0.4	252.9	-125.25	3347.75	-13.94	15.9	549232.2	907890.7	19.42	0.15	
3433	0.5	193.8	-40.25	3432.75	-14.39	15.52	549231.8	907890.3	19.67	0.53	
3518	0.3	202.2	44.75	3517.75	-14.95	15.35	549231.2	907890.2	20.1	0.24	
3604	0.4	234.3	130.75	3603.75	-15.34	15.01	549230.8	907889.8	20.31	0.25	
3689	0.4	213.1	215.75	3688.75	-15.76	14.62	549230.4	907889.4	20.51	0.17	
3774	0.4	229.2	300.74	3773.74	-16.2	14.23	549230	907889	20.75	0.13	
3859	0.4	206.3	385.74	3858.74	-16.66	13.88	549229.5	907888.7	21.01	0.19	
3945	0.3	192.2	471.74	3944.74	-17.15	13.7	549229	907888.5	21.37	0.15	
4030	0.4	227.9	556.74	4029.74	-17.57	13.43	549228.6	907888.2	21.64	0.28	
4115	0.5	226.9	641.74	4114.74	-18.02	12.94	549228.2	907887.8	21.83	0.12	
4200	0.3	262.7	726.73	4199.73	-18.3	12.45	549227.9	907887.3	21.88	0.37	
4285	0.3	256.3	811.73	4284.73	-18.38	12.01	549227.8	907886.8	21.76	0.04	
4370	0.4	176.6	896.73	4369.73	-18.73	11.81	549227.4	907886.6	21.99	0.54	
4455	0.3	217.1	981.73	4454.73	-19.21	11.69	549227	907886.5	22.37	0.31	
4540	0.3	265.8	1066.73	4539.73	-19.4	11.34	549226.8	907886.2	22.39	0.29	
4626	0.3	233.7	1152.73	4625.73	-19.55	10.93	549226.6	907885.7	22.35	0.19	
4711	0.2	275.7	1237.73	4710.73	-19.67	10.6	549226.5	907885.4	22.32	0.24	
4796	0.3	277.4	1322.73	4795.73	-19.62	10.24	549226.6	907885.1	22.12	0.12	
4882	0.2	250.2	1408.73	4881.73	-19.64	9.87	549226.5	907884.7	21.98	0.18	
4967	0.4	267	1493.72	4966.72	-19.71	9.44	549226.5	907884.3	21.85	0.25	
5052	0.2	175.3	1578.72	5051.72	-19.87	9.15	549226.3	907884	21.88	0.53	
5138	1.1	162	1664.72	5137.72	-20.81	9.42	549225.4	907884.2	22.84	1.05	
5223	2.2	157.4	1749.68	5222.68	-23.09	10.3	549223.1	907885.1	25.28	1.3	
5308	3	153.8	1834.59	5307.59	-26.59	11.91	549219.6	907886.7	29.13	0.96	
5393	4.3	151.4	1919.42	5392.42	-31.39	14.41	549214.8	907889.2	34.53	1.54	
5479	4.6	148.8	2005.16	5478.16	-37.17	17.74	549209	907892.6	41.19	0.42	
5564	4.1	150.4	2089.91	5562.91	-42.72	21.01	549203.5	907895.8	47.61	0.61	
5650	3.5	149.2	2175.72	5648.72	-47.65	23.87	549198.5	907898.7	53.29	0.7	
5735	3.3	150.4	2260.57	5733.57	-52.01	26.41	549194.2	907901.2	58.31	0.25	
5821	3.3	151.4	2346.43	5819.43	-56.33	28.82	549189.8	907903.6	63.25	0.07	
5906	3.3	148.2	2431.29	5904.29	-60.56	31.28	549185.6	907906.1	68.13	0.22	
5991	3.6	150.3	2516.14	5989.14	-64.96	33.89	549181.2	907908.7	73.22	0.38	
6077	3.4	151.3	2601.98	6074.98	-69.54	36.45	549176.6	907911.3	78.46	0.24	
6162	3.4	150.3	2686.83	6159.83	-73.94	38.91	549172.2	907913.7	83.49	0.07	
6247	3	148.8	2771.69	6244.69	-78.03	41.31	549168.1	907916.1	88.21	0.46	
6333	3.3	157.2	2857.56	6330.56	-82.24	43.44	549163.9	907918.3	92.93	0.64	
6418	3.4	156.9	2942.42	6415.42	-86.81	45.37	549159.4	907920.2	97.89	0.12	
6503	3.6	150.9	3027.26	6500.26	-91.46	47.66	549154.7	907922.5	103.07	0.49	
6589	4	149.2	3113.07	6586.07	-96.4	50.51	549149.8	907925.3	108.75	0.48	
6674	4	145.3	3197.86	6670.86	-101.38	53.72	549144.8	907928.5	114.63	0.32	
6759	4.2	143.8	3282.65	6755.65	-106.33	57.24	549139.8	907932.1	120.61	0.27	
6844	3.9	143.4	3367.43	6840.43	-111.16	60.8	549135	907935.6	126.51	0.35	
6912	3.4	143.9	3435.3	6908.3	-114.65	63.37	549131.5	907938.2	130.76	0.74	Last Phoenix Survey
6966	3.4	143.9	3489.2	6962.2	-117.24	65.26	549128.9	907940.1	133.91	0	Projection to TD

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to KB. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100 feet.
Vertical Section is from Slot and calculated along an Azimuth of 154.530° (Grid).

Coordinate System is North American Datum 1983 US State Plane 1983, New Mexico Eastern Zone.
Grid Convergence at Surface is 0.639°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 6966.00ft.,
the Bottom Hole Displacement is 134.18ft., in the Direction of 154.530° (Grid).

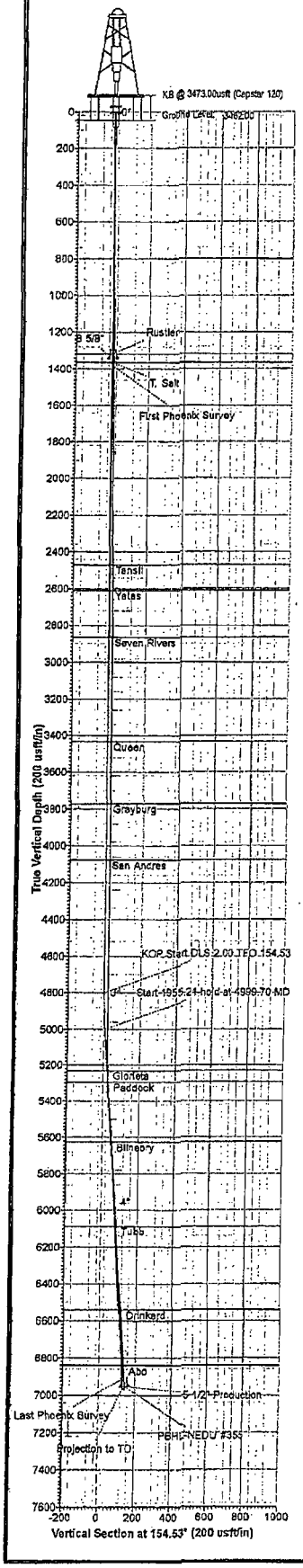
Apache
EXPLORING WHAT'S POSSIBLE

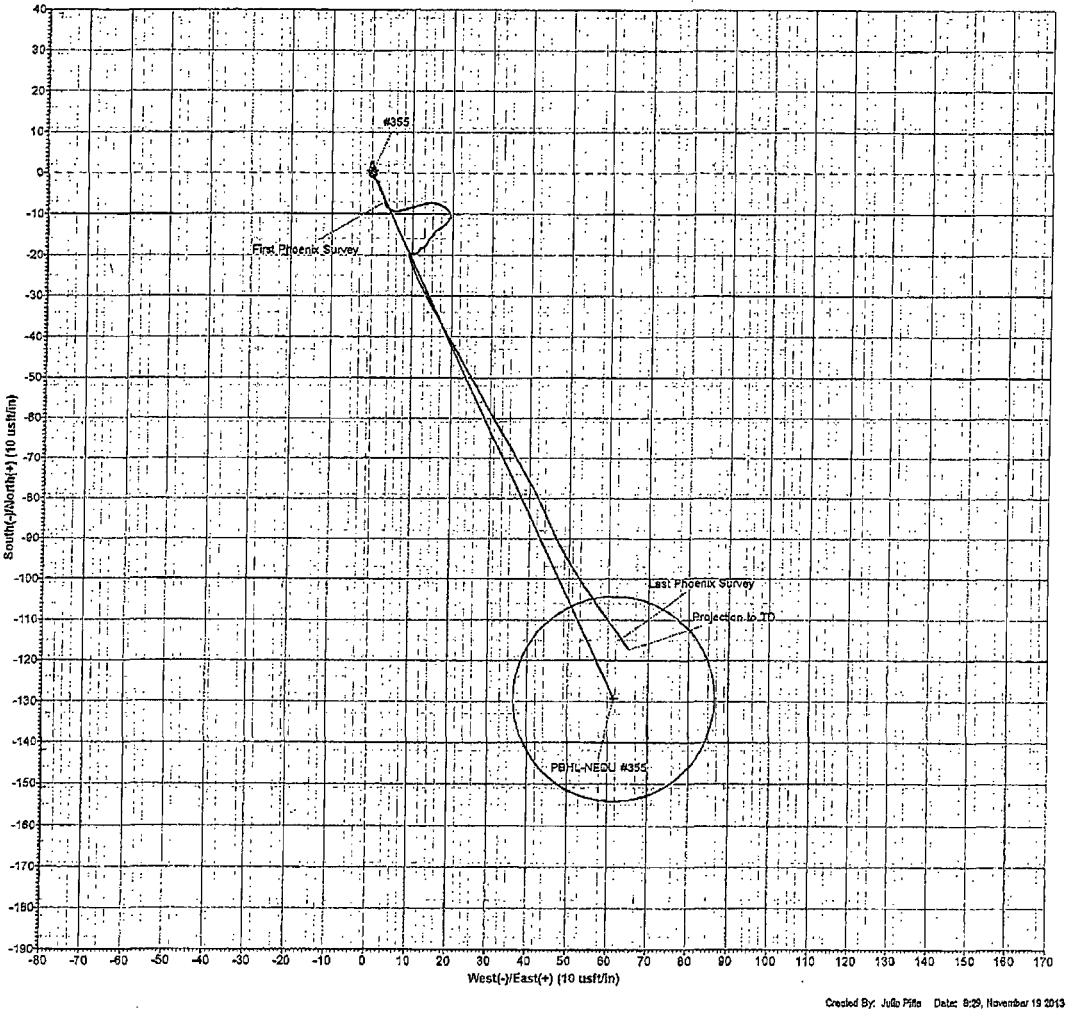
Project: Lea County, NM (NAD83 NME)
Site: NEDU
Well: #355
Wellbore: WB1/Job #1310141
Design: Plan #3 11-11-13
Rig: Capstar 120

PHOENIX TECHNOLOGY SERVICES

Azimuths to Grid North
True North: -0.64°
Magnetic North: 6.57°

Magnetic Field
Strength: 48581.1snT
Dip Angle: 60.45°
Date: 11/13/2013
Model: BGGM2013





WELL DETAILS

+N/-S	+E/-W	Northing	Ground Level: 3462.00 Easting	Latitude	Longitude
0.00	0.00	549246.17	907874.81	32° 30' 15.55234 N	103° 6' 39.81023 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	4800.00	0.00	0.00	4800.00	0.00	0.00	0.00	0.00	0.00		KOP Start DLS 2.00 TFO 154.53
3	4999.70	3.99	154.53	4999.54	-6.26	2.99	2.00	154.53	5.96		Start 1955.21 hold at 4999.70 MD
4	6954.91	3.99	154.53	6950.00	-129.23	61.55	0.00	0.00	143.14	PBHL-NEDU #355	TD at 6954.91

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL-NEDU #355	6950.00	-129.23	61.55	549116.94	907936.36	32° 30' 14.26689 N	103° 6' 39.10840 W	Circle (Radius: 25.00)
	- plan hits target center							

LEGEND

#355, WB1/Job #1310141, Surveys (Capstar 120) V0
Plan #3 11-11-13

CASING DETAILS

TVD	MD	Name	Size
1343.00	1343.00	8 5/8"	8-5/8
6950.00	6954.91	5 1/2" Production	5-1/2

Map System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone Name: New Mexico Eastern Zone

Local Origin: Well #355, Grid North

Latitude: 32° 30' 15.55234 N
Longitude: 103° 6' 39.81023 W

Grid East: 907874.81
Grid North: 549246.17
Scale Factor: 1.000

Geomagnetic Model: BGGM2013
Sample Date: 13-Nov-13
Magnetic Declination: 7.21°
Dip Angle from Horizontal: 60.45°
Magnetic Field Strength: 48581

To convert a Magnetic Direction to a Grid Direction, Add 6.57°
To convert a Magnetic Direction to a True Direction, Add 7.21° East
To convert a True Direction to a Grid Direction, Subtract 0.64°

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
1318.00	1318.00	Rustler		
1385.00	1385.00	T. Salt		
2459.00	2459.00	Tansil		
2808.00	2808.00	Yates		
2884.00	2884.00	Seven Rivers		
3434.00	3434.00	Queen		
3771.00	3771.00	Grayburg		
4078.00	4076.00	San Andres		
5230.00	5230.72	Glorieta		
5294.00	5294.88	Paddock		
5624.00	5625.58	Blinebry		
6087.00	6088.81	Tubb		
6541.00	6544.91	Drinkard		
6840.00	6844.64	Abo		

Created By: Julio Pita Date: 8:29, November 19 2013

APACHE CORP

Eunice
Lea County, NM (Grid North)
Northeast Drinkard Unit #355 30-025-41286
VH - Job #321113-KW-1192

UL P 3-21S-37E 1310' FSL + 620' FEL

HOBBS OCD

FEB 10 2014

RECEIVED

Survey: Gyro

SDI Survey Report

This survey is correct to the best of my knowledge and is supported by actual field data.

Notarized this date 3rd of November, 2013.

Notary Signature
County of Midland
State of Texas

NOTARY PUBLIC STATE OF TEXAS

CARRIE REED
My Commission Expires
October 4, 2015

SDI

SDI Survey Report

Company:	APACHE CORP	Local Co-ordinate Reference:	Well Northeast Drinkard Unit #355
Project:	Eunice	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Lea County, NM (Grid North)	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Northeast Drinkard Unit #355	North Reference:	Grid
Wellbore:	VH - Job #321113-KW-1192	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #321113-KW-1192	Database:	EDM-Regulatory

Project Eunice

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 Lea County, NM (Grid North)

Site Position:		Northing:	550,762.04 usft	Latitude:	32° 30' 31.140 N
From:	Lat/Long	Easting:	862,794.70 usft	Longitude:	103° 9' 23.400 W
Position Uncertainty:	0.0 usft	Slot Radius:	0"	Grid Convergence:	0.63 °

Well Northeast Drinkard Unit #355, Vertical

Well Position	+N/-S	0.0 usft	Northing:	549,227.93 usft	Latitude:	32° 30' 15.550 N
	+E/-W	0.0 usft	Easting:	866,545.26 usft	Longitude:	103° 8' 39.810 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	0.0 usft

Wellbore VH - Job #321113-KW-1192

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/15/2013	7.11	60.46	48,614

Design VH - Job #321113-KW-1192

Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	154.97

Survey Program Date 11/27/2013

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	1,293.0	Gyro (VH - Job #321113-KW-1192)	Keeper	Keeper Gyro

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0
100.0	0.20	289.36	100.0	0.1	-0.2	289.36	0.2
200.0	0.08	229.94	200.0	0.1	-0.4	280.48	0.4
300.0	0.18	178.47	300.0	-0.1	-0.4	253.11	0.5
400.0	0.26	155.85	400.0	-0.5	-0.3	214.07	0.6
500.0	0.17	134.81	500.0	-0.8	-0.1	189.63	0.8
600.0	0.33	126.45	600.0	-1.1	0.2	169.53	1.1
700.0	0.31	122.49	700.0	-1.4	0.7	154.75	1.5
800.0	0.38	142.86	800.0	-1.8	1.1	148.96	2.1
900.0	0.35	149.69	900.0	-2.3	1.4	148.31	2.7
1,000.0	0.42	158.08	1,000.0	-2.9	1.7	149.48	3.4
1,100.0	0.63	160.13	1,100.0	-3.8	2.1	151.55	4.3

SDI

SDI Survey Report

Company:	APACHE CORP	Local Co-ordinate Reference:	Well Northeast Drinkard Unit #355
Project:	Eunice	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Lea County, NM (Grid North)	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Northeast Drinkard Unit #355	North Reference:	Grid
Wellbore:	VH - Job #321113-KW-1192	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #321113-KW-1192	Database:	EDM-Regulatory

Survey

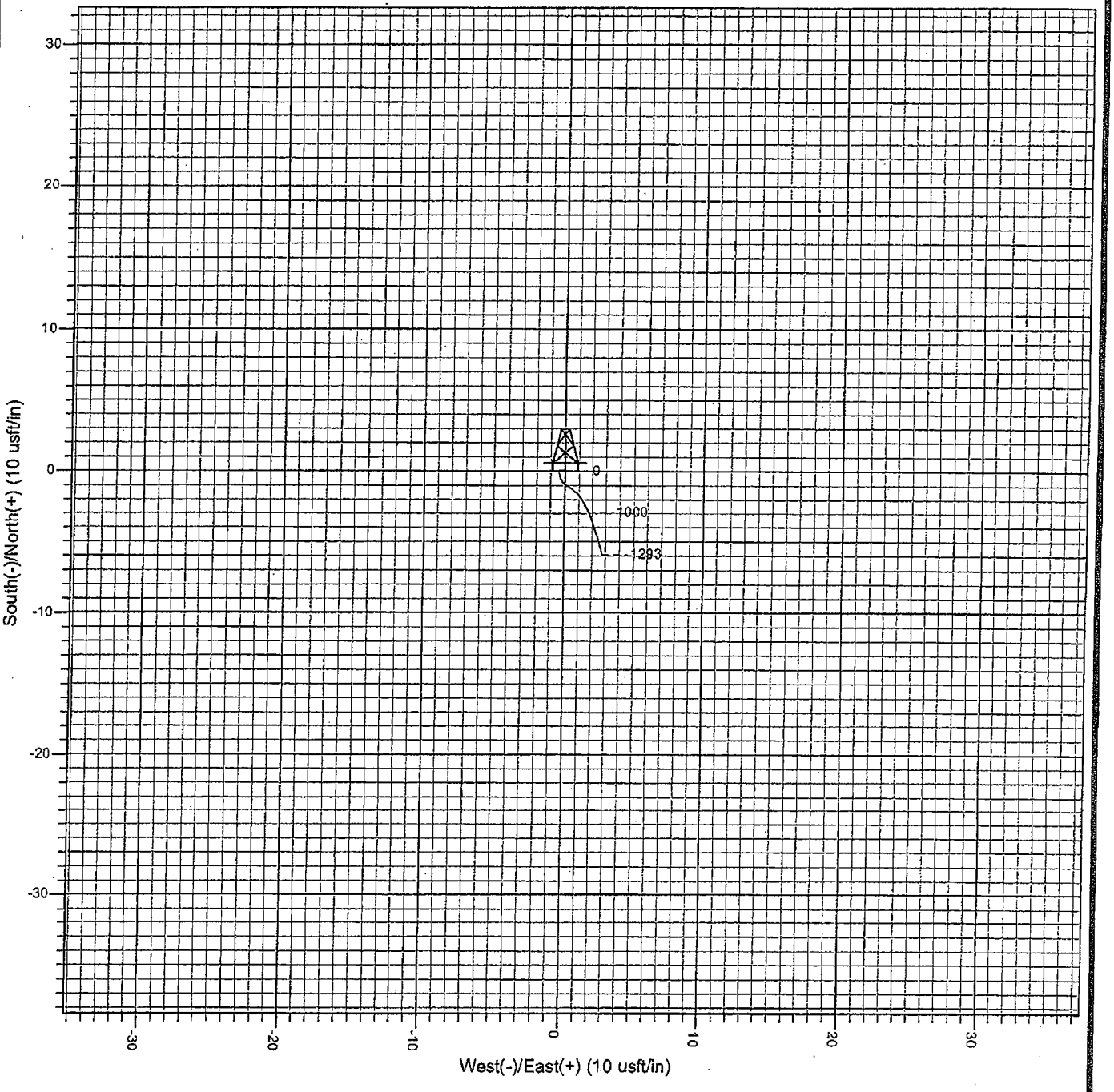
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,200.0	0.67	161.66	1,200.0	-4.9	2.4	153.50	5.4
1,293.0	0.70	162.75	1,293.0	-5.9	2.8	154.97	6.5

Scientific Drilling

Project: Eunice
Lea County, NM (Grid North)
Well: Northeast Drinkard Unit #355
Wellbore: VH - Job #321113-KW-1192
Design: VH - Job #321113-KW-1192

WELL DETAILS: Northeast Drinkard Unit #355
WELL @ 0.0usft (Original Well Elev)
Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	549227.93	866545.26	32° 30' 15.550 N	103° 8' 39.810 W	



PROJECT DETAILS: Eunice
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

SITE DETAILS: Lea County, NM (Grid North)
Site Centre Latitude: 32° 30' 31.140 N
Longitude: 103° 9' 23.400 W
Positional Uncertainity: 0.0
Convergence: 0.63
Local North: Grid

Results of Directional Survey

API number:	30-025-41286		DD
OGRID:		Operator:	APACHE CORP
		Property:	NORTHEAST DRINKARD UNIT # 355

surface	ULSTR:	X(P)	03	T	21S	R	37E
				1310	FSL	620	FEL

BH Loc	ULSTR:	X(P)	03	T	21S	R	37E
6966	MD	6962.2	TVD	1193	FSL	555	FEL

Top Perf/OH	ULSTR:	X(P)	03	T	21S	R	37E
5653	MD	5651.7	TVD	1262	FSL	596	FEL

Bot Perf/OH	ULSTR:	X(P)	03	T	21S	R	37E
6761	MD	6757.6	TVD	1204	FSL	563	FEL

	MD	N/S	E/W	VD
	5650	-47.65	23.87	5648.72
TOP PERFS/OH	**5653**	-47.80	23.96	5651.71
	5735	-52.01	26.41	5733.57
	6759	-106.33	57.24	6755.65
BOT PERFS/OH	**6761**	-106.44	57.32	6757.64
	6844	-111.16	60.80	6840.43

NEXT TO LAST	6912	-114.65	63.37	6908.30
LAST READING	6966	-117.24	65.26	6962.20
TD	**6966**	-117.24	65.26	6962.20

Surface Location	1310	FS	620	FE
Projected BHL	1193	FS	555	FE
Location of				
Top Perfs/OH	1262	FS	596	FE
Bottom Perfs/OH	1204	FS	563	FE

SUMMARY of Subsurface Locations

Surface Location	X-03-21S-37E	1310	FS	620	FE	Vert. Depth
Top Perfs/OH	X-03-21S-37E	1262	FS	596	FE	5651.71
Bottom Perfs/OH	X-03-21S-37E	1204	FS	563	FE	6757.64
Projected TD	X-03-21S-37E	1193	FS	555	FE	6962.20

MAR 31 2014