

30-15-370⁹3

RKI Exploration & Production LLC

Eddy County, New Mexico

Section 15-T26S-R30E

RDX 15-11

Original Wellpath

Design: Original Wellpath

Standard Survey Report

26 January, 2012



Survey Report



Company: RKI Exploration & Production LLC
Project: Eddy County, New Mexico
Site: Section 15-T26S-R30E
Well: RDX 15-11
Wellbore: Original Wellpath
Design: Original Wellpath

Local Co-ordinate Reference: Site Section 15-T26S-R30E
TVD Reference: WELL @ 3131 0usft (Original Well Elev)
MD Reference: WELL @ 3131 0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000 1 Single User Db

Project: Eddy County, New Mexico

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site: Section 15-T26S-R30E

Site Position: **From:** Map
Position Uncertainty: 0 0 usft
Northing: 380,029 90 usft
Easting: 684,016 53 usft
Slot Radius: 13-3/16 "
Latitude: 32° 2' 38 205 N
Longitude: 103° 52' 22 235 W
Grid Convergence: 0 24 °

Well: RDX 15-11

Well Position: **+N/-S** 0 0 usft **Northing:** 380,029 90 usft **Latitude:** 32° 2' 38 205 N
+E/-W 0 0 usft **Easting:** 684,016 53 usft **Longitude:** 103° 52' 22 235 W
Position Uncertainty: 0 0 usft **Wellhead Elevation:** usft **Ground Level:** 3,114 0 usft

Wellbore: Original Wellpath

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	01/06/12	7 64	59 95	48,420

Design: Original Wellpath

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	39 29

Survey Program: Date: 01/26/12

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100 0	845 0	Gyro Surveys (Original Wellpath)	NS-GYRO-MS	North sensing gyrocompassing m/s
895 0	7,344 0	MWD Surveys (Original Wellpath)	MWD	MWD - Standard

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	2 34	120 20	100 0	-1 0	1 8	0 3	2 34	2 34	0 00
1st Gyro Survey									
200 0	2 31	117 05	199 9	-3 0	5 3	1 1	0 13	-0 03	-3 15
300 0	1 98	115 29	299 8	-4 6	8 7	1 9	0 34	-0 33	-1 76
400 0	1 95	112 27	399 8	-6 0	11 8	2 8	0 11	-0 03	-3 02
500 0	1 72	111 10	499 7	-7 2	14 8	3 8	0 23	-0 23	-1 17
600 0	1 30	100 81	599 7	-7 9	17 3	4 8	0 50	-0 42	-10 29
700 0	1 24	82 49	699 7	-8 0	19 5	6 1	0 41	-0 06	-18 32
800 0	1 43	86 41	799 6	-7 8	21 8	7 8	0 21	0 19	3 92

Survey Report



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 Site: Section 15-T26S-R30E
 Well: RDX 15-11
 Wellbore: Original Wellpath
 Design: Original Wellpath

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

Site Section 15-T26S-R30E
 WELL @ 3131 0usft (Original Well Elev)
 WELL @ 3131 0usft (Original Well Elev)
 Grid
 Minimum Curvature
 EDM 5000 1 Single User Db

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)
845 0	1 56	93 75	844 6	-7 8	23 0	8 5	0 51	0 29	16 31
Last Gyro Survey									
895 0	1 80	109 70	894 6	-8 1	24 4	9 2	1 05	0 48	31 90
1st MWD Survey									
986 0	2 50	101 40	985 5	-9 0	27 7	10 6	0 84	0 77	-9 12
1,078 0	3 70	93 20	1,077 4	-9 5	32 6	13 3	1 39	1 30	-8 91
1,170 0	5 30	83 20	1,169 1	-9 2	39 8	18 1	1 93	1 74	-10 87
1,263 0	7 10	73 80	1,261 6	-7 1	49 6	25 9	2 22	1 94	-10 11
1,357 0	7 70	61 80	1,354 8	-2 5	60 7	36 5	1 76	0 64	-12 77
1,450 0	9 30	56 90	1,446 8	4 5	72 5	49 4	1 89	1 72	-5 27
1,543 0	9 60	50 90	1,538 5	13 5	84 8	64 2	1 11	0 32	-6 45
1,637 0	8 50	49 80	1,631 3	23 0	96 2	78 7	1 18	-1 17	-1 17
1,730 0	7 50	47 10	1,723 4	31 5	105 9	91 5	1 15	-1 08	-2 90
1,824 0	6 20	44 50	1,816 7	39 3	114 0	102 6	1 42	-1 38	-2 77
1,917 0	5 60	36 20	1,909 3	46 6	120 2	112 1	1 12	-0 65	-8 92
2,011 0	6 10	32 70	2,002 8	54 5	125 6	121 7	0 65	0 53	-3 72
2,104 0	6 10	33 70	2,095 2	62 8	131 0	131 5	0 11	0 00	1 08
2,197 0	7 00	27 00	2,187 6	71 9	136 3	142 0	1 27	0 97	-7 20
2,291 0	7 70	24 90	2,280 9	82 7	141 5	153 7	0 80	0 74	-2 23
2,384 0	7 60	25 50	2,373 0	93 9	146 8	165 7	0 14	-0 11	0 65
2,478 0	8 40	22 80	2,466 1	105 9	152 2	178 3	0 94	0 85	-2 87
2,571 0	5 80	21 90	2,558 4	116 5	156 5	189 3	2 80	-2 80	-0 97
2,665 0	4 10	34 80	2,652 0	123 7	160 2	197 2	2 15	-1 81	13 72
2,758 0	4 30	47 00	2,744 8	128 8	164 7	203 9	0 98	0 22	13 12
2,851 0	4 80	40 20	2,837 5	134 1	169 7	211 3	0 79	0 54	-7 31
2,944 0	5 50	41 00	2,930 1	140 5	175 2	219 6	0 76	0 75	0 86
3,038 0	6 90	44 70	3,023 6	147 9	182 1	229 8	1 55	1 49	3 94
3,131 0	6 60	35 70	3,115 9	156 2	189 1	240 7	1 18	-0 32	-9 68
3,224 0	7 30	44 40	3,208 3	164 7	196 4	251 9	1 36	0 75	9 35
3,317 0	6 60	43 80	3,300 6	172 8	204 2	263 1	0 76	-0 75	-0 65
3,411 0	6 20	44 10	3,394 0	180 4	211 5	273 5	0 43	-0 43	0 32
3,504 0	5 70	29 20	3,486 5	188 0	217 3	283 1	1 74	-0 54	-16 02
3,552 0	5 30	22 90	3,534 3	192 1	219 3	287 6	1 51	-0 83	-13 13
3,667 0	4 80	15 70	3,648 8	201 7	222 6	297 1	0 70	-0 43	-6 26
3,760 0	6 70	25 90	3,741 3	210 3	226 1	305 9	2 31	2 04	10 97
3,854 0	7 00	27 30	3,834 7	220 3	231 1	316 8	0 37	0 32	1 49
3,947 0	7 00	28 70	3,927 0	230 3	236 4	328 0	0 18	0 00	1 51
4,041 0	7 00	27 70	4,020 3	240 4	241 8	339 2	0 13	0 00	-1 06
4,134 0	6 40	28 10	4,112 6	250 0	246 9	349 8	0 65	-0 65	0 43
4,227 0	6 20	29 10	4,205 1	259 0	251 8	359 9	0 25	-0 22	1 08
4,320 0	6 30	28 40	4,297 5	267 8	256 7	369 8	0 14	0 11	-0 75
4,413 0	6 30	30 30	4,390 0	276 7	261 7	379 9	0 22	0 00	2 04
4,506 0	5 70	31 00	4,482 5	285 1	266 6	389 5	0 65	-0 65	0 75

Survey Report



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Well: RDX 15-11
Wellbore: Original Wellpath
Design: Original Wellpath

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MD Reference: WELL @ 3131.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000 1 Single User Db

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)
4,600 0	7 30	29 60	4,575 9	294 3	272 0	400 0	1 71	1 70	-1 49
4,693 0	8 20	27 80	4,668 0	305 3	278 0	412 3	1 00	0 97	-1 94
4,787 0	8 00	28 50	4,761 1	317 0	284 2	425 3	0 24	-0 21	0 74
4,880 0	8 20	29 30	4,853 1	328 4	290 6	438 2	0 25	0 22	0 86
4,973 0	8 30	28 80	4,945 2	340 1	297 0	451 3	0 13	0 11	-0 54
5,067 0	8 00	29 40	5,038 2	351 7	303 5	464 4	0 33	-0 32	0 64
5,160 0	8 00	32 10	5,130 3	362 9	310 1	477 2	0 40	0 00	2 90
5,254 0	7 70	33 30	5,223 4	373 7	317 1	490 0	0 36	-0 32	1 28
5,347 0	4 50	32 10	5,315 9	382 0	322 4	499 8	3 44	-3 44	-1 29
5,440 0	3 60	36 80	5,408 7	387 4	326 1	506 3	1 03	-0 97	5 05
5,505 8	2 39	45 19	5,474 4	390 0	328 3	509 8	1 95	-1 84	12 75
RDX 15-11 TGT 1									
5,506 4	2 38	45 31	5,475 0	390 0	328 3	509 8	1 95	-1 78	19 23
TGT 1 5506.4 MD/5475' TVD 390' N 328.3 E N: 380419.94 E: 684344.88									
5,534 0	1 90	52 00	5,502 6	390 7	329 1	510 8	1 95	-1 73	24 24
5,627 0	0 90	185 40	5,595 5	390 9	330 3	511 7	2 80	-1 08	143 44
5,721 0	1 60	209 00	5,689 5	389 1	329 6	509 8	0 91	0 74	25 11
5,814 0	1 40	205 00	5,782 5	386 9	328 4	507 4	0 24	-0 22	-4 30
5,908 0	1 50	208 90	5,876 5	384 8	327 4	505 1	0 15	0 11	4 15
6,002 0	1 30	202 00	5,970 4	382 7	326 4	502 9	0 28	-0 21	-7 34
6,095 0	1 10	257 40	6,063 4	381 5	325 1	501 2	1 21	-0 22	59 57
6,188 0	1 10	267 20	6,156 4	381 3	323 3	499 9	0 20	0 00	10 54
6,282 0	1 40	255 70	6,250 4	381 0	321 3	498 3	0 41	0 32	-12 23
6,375 0	1 40	256 50	6,343 3	380 4	319 1	496 5	0 02	0 00	0 86
6,469 0	1 20	245 50	6,437 3	379 8	317 1	494 7	0 34	-0 21	-11 70
6,562 0	1 10	241 30	6,530 3	378 9	315 4	493 0	0 14	-0 11	-4 52
6,656 0	0 80	291 00	6,624 3	378 7	314 0	492 0	0 90	-0 32	52 87
6,749 0	0 60	315 30	6,717 3	379 3	313 1	491 8	0 38	-0 22	26 13
6,842 0	0 60	295 20	6,810 3	379 9	312 3	491 8	0 23	0 00	-21 61
6,936 0	0 50	290 10	6,904 3	380 2	311 5	491 5	0 12	-0 11	-5 43
7,029 0	0 70	268 60	6,997 3	380 3	310 5	491 0	0 32	0 22	-23 12
7,123 0	1 40	226 30	7,091 3	379 5	309 1	489 5	1 06	0 74	-45 00
7,217 0	0 50	257 20	7,185 2	378 6	307 9	488 0	1 07	-0 96	32 87
Last MWD Survey 7217 MD/7185.2 TVD 378.6' N 307.9' E N: 380408.54 E: 684324.43									
7,344 0	0 50	257 20	7,312 2	378 4	306 8	487 1	0 00	0 00	0 00
PTD 7344 MD/7312.2 TVD 378.4' N 306.8' E N: 380408.29 E: 684323.35 - RDX 15-11 PBHL									

Survey Report



Company: RKI Exploration & Production LLC
Project: Eddy County, New Mexico
Site: Section 15-T26S-R30E
Well: RDX 15-11
Wellbore: Original Wellpath
Design: Original Wellpath

Local Co-ordinate Reference: Site Section 15-T26S-R30E
TVD Reference: WELL @ 3131 0usft (Original Well Elev)
MD Reference: WELL @ 3131 0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000 1 Single User Db

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
100 0	100 0	-1 0	1 8	1st Gyro Survey
845 0	844 6	-7 8	23 0	Last Gyro Survey
895 0	894 6	-8 1	24 4	1st MWD Survey
5,506 4	5,475 0	390 0	328 3	TGT 1 5506 4 MD/5475' TVD 390' N 328 3 E N 380419 94 E 684344 88
7,217 0	7,185 2	378 6	307 9	Last MWD Survey 7217 MD/7185 2 TVD 378 6' N 307 9' E N 380408 54 E 684
7,344 0	7,312 2	378 4	306 8	PTD 7344 MD/7312 2 TVD 378 4' N 306 8' E N 380408 29 E 684323 35

Checked By _____ Approved By _____ Date _____



RHI EXPLORATION & PRODUCTION LLC

Project: Eddy County, New Mexico

Site: Section 15-T26S-R30E

Well: RDX 15-11

Wellbore: Original Wellpath

Design: Plan #4

Lat: 32° 2' 38.205 N

22.235 W

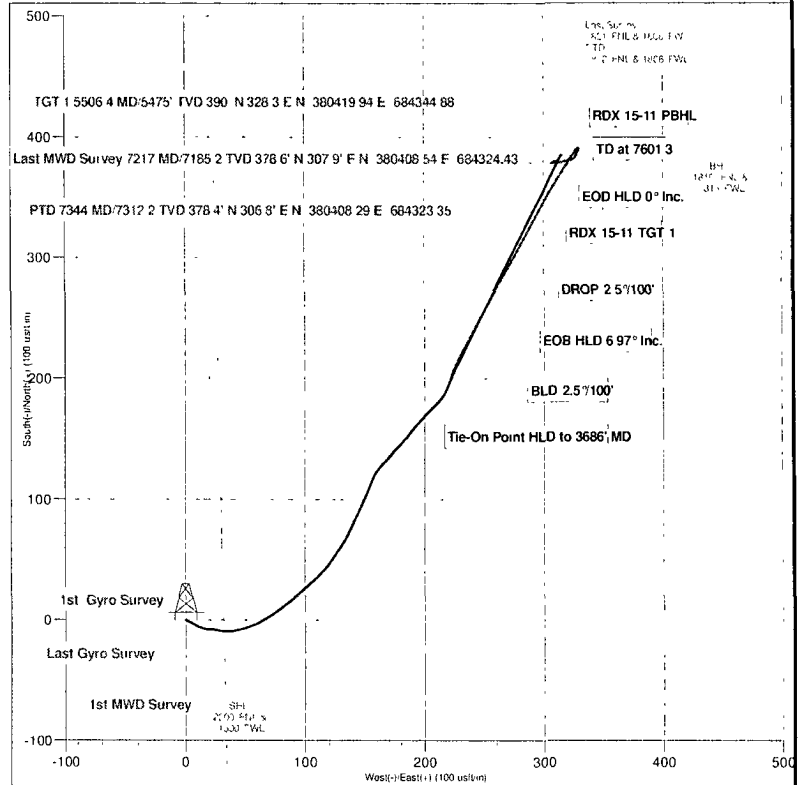
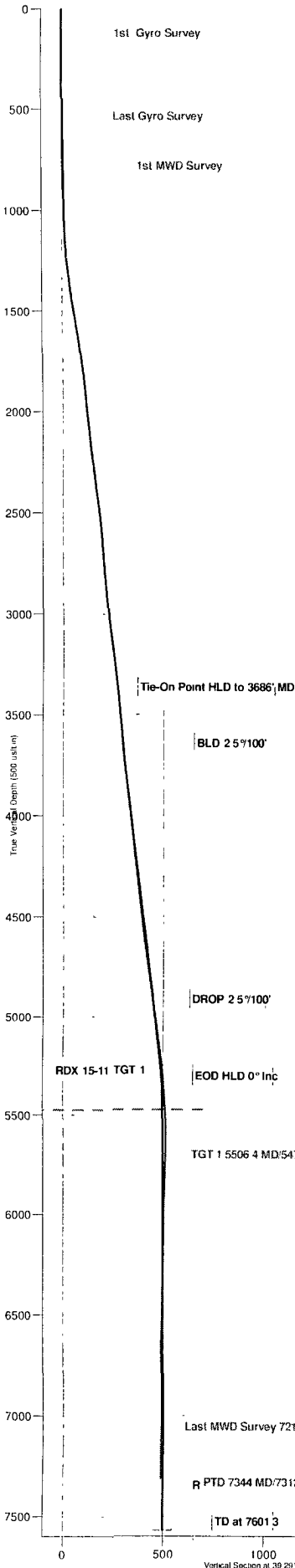
114.0

(Original Well Elev)



Azimuths to Grid North
True North -0.24°
Magnetic North 7.40°

Strength 48420 2snT
Dip Angle: 59.95°
Date 01/06/2012
Model: IGRF2010
Magnetic Field



SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl
3552.0	5.30	22.90	3534.3	192.1	219.3	0.00	0.00	287.6
3686.0	5.30	22.90	3667.7	203.5	224.1	0.00	0.00	299.4
3754.8	6.97	26.67	3736.1	210.2	227.2	2.50	15.40	306.6
5226.3	6.97	26.67	5196.7	369.8	307.4	0.00	0.00	480.9
5505.3	0.00	0.00	5475.0	385.0	315.0	2.50	180.00	497.4
7601.3	0.00	0.00	7571.0	385.0	315.0	0.00	0.00	497.4

WELL DETAILS RDX 15-11

		Ground Level 3114.0			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	380029.90	684016.54	32° 2' 38.205 N	103° 52' 22.235 W

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
RDX 15-11 TGT 1	5475.0	385.0	315.0	32° 2' 42.002 N	103° 52' 18.556 W
RDX 15-11 PBHL	7571.0	385.0	315.0	32° 2' 42.002 N	103° 52' 18.556 W

DISTRICT I
1626 N. French Dr., Hobbs, NM 88240

DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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 October 12, 2005

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
Property Code	Property Name RDX "15"	Well Number 11
OGRID No.	Operator Name RKI EXPLORATION & PRODUCTION	Elevation 3114'

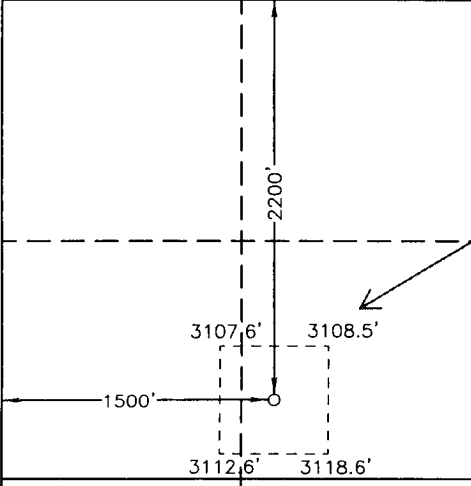
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	15	26 S	30 E		2200	NORTH	1500	WEST	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
Dedicated Acres	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

 Surface Location LAT N.: 32°02'38.21" LONG W.: 103°52'22.23" SPC N.: 380029.897 E.: 684016.539 (NAD-83)	Last Svy: 7217' MD/7185.2 TVD FSHL: 378.6' N 307.9'E N: 380408.54 E: 684324.43 PTD: 7344 MD/7312.2 TVD FSHL: 378.4' N 306.8' E N: 380408.29 E: 684323.35	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 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. Signature _____ Date _____ Printed Name _____ 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. JULY 25 2008 Date Surveyed _____ Signature _____ Professional Surveyor W. L. Jones 7977 Certificate No. Gary L. Jones 7977 BASIN SURVEYS
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State of New Mexico
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Attention: Oil and Gas Division

RE: RKI Exploration & Production LLC
RDX "15" #11
Eddy County, New Mexico
API #

Enclosed, please find the original and one copy of the survey performed on the referenced well by INTREPID Directional Driller., a division of INTREPID DIRECTIONAL DRILLING SPECIALISTS. Other information required by your office is as follows:

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Scott Steward MWD Operator	#1	895'-7344'	01/10/12-01/26/12	MWD/GAMA

A certified plat on which the bottom hole 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.

Sincerely,

Christina Myers

Well Planner
Christina Myers

Enclosures: 2



State of New Mexico
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

RE: RKI Exploration & Production LLC
RDX "15" #11
Eddy County, New Mexico
API #

I, Scott Steward, certify that: I am employed by INTREPID DIRECTIONAL DRILLING SPECIALISTS, Ltd.; that I did on the days of 01/10/12 through 01/26/12 conduct or supervise the taking of MWD surveys from a depth of 895' feet to a depth of 7344' feet; that the data is true, correct, complete and within the limitations of the tool as set forth by INTREPID MWD, a division of INTREPID DIRECTIONAL DRILLING, Ltd.; that I am authorized and qualified to make this report; that this survey was conducted at the request of RKI Exploration & Production LLC, API# in Eddy County, New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by INTREPID MWD, a division of INTREPID DIRECTIONAL DRILLING SPECIALISTS, Ltd.

Scott Steward

Scott Steward
MWD Operator