Form 3160-5 (August 2007) I SUNDR Do not use is abandoned w SUBMIT IN Tr I. Type of Well SO Oil Well Gas Well C 2. Name of Operator DEVON ENERGY PRODUC 3a. Address 333 WEST SHERIDAN AVE OKC, OK 73102 4. Location of Well (Footage, Sec.,	UNITED STATES DEPARTMENT OF THE I BUREAU OF LAND MANA Y NOTICES AND REPO his form for proposals to rell. Use form 3160-3 (AP RIPLICATE - Other instruct Other Contact: CTION CO. E-Mail: ERIN.WOF	OC S NTERIOR GEMENT RTS ON WE drill or to re-e D) for such pr ctions on reve	D Artesla LLS enter an roposals.		FORM OMB N Expires: 5. Lease Serial No. NMNM0107697 6. If Indian, Allottee of	APPROVED O. 1004-0135 July 31, 2010
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 Type of Well Oil Well Gas Well Gas Well Cas Well Cotage, Sec.,)ther Contact: CTION CO.∉-Mail: ERIN.WOF				7. If Unit or CA/Agre	ement, Name and/or No.
 Name of Operator DEVON ENERGY PRODUC 3a. Address 333 WEST SHERIDAN AVE OKC, OK 73102 4. Location of Well (Footage, Sec., 	Contact: CTION CO.∉-Mail: ERIN.WOP	EDINI LIMODI		· · · <u>-</u>	8. Well Name and No. ANTARES 23 FE	DERAL 4H
 3a. Address 333 WEST SHERIDAN AVE OKC, OK 73102 4. Location of Well (Footage, Sec., 	······································	RKMAN@DVN.C	KMAN COM		9. API Well No. 30-015-41108	
4. Location of Well (Footage, Sec.,	NUE	3b. Phone No. (Ph: 405-552	(include area code -7970	e)	10. Field and Pool, or LUSK; BONE S	Exploratory PRING, WEST
	T., R., M., or Survey Description)			11. County or Parish,	and State
Sec 23 T19S R31E 2080FS	L 185FWL				EDDY COUNT	Y, NM
12. CHECK AP	PROPRIATE BOX(ES) TO	D INDICATE I	NATURE OF	NOTICE, R	EPORT, OR OTHE	R DATA
TYPE OF SUBMISSION			TYPE O	F ACTION		<u></u>
🛿 Notice of Intent	Acidize	Deepe	en	Product	tion (Start/Resume)	Water Shut-Off
Subsequent Report	Casing Repair	□ Fracu □ New (Construction	Reclam	ation	Other
Final Abandonment Notice	Change Plans	🗖 Plug a	and Abandon Back	☐ Tempor	rarily Abandon Disposal	Change to Original A PD
13. Describe Proposed or Completed C If the proposal is to deepen directic Attach the Bond under which the w following completion of the involv testing has been completed. Final determined that the site is ready for	peration (clearly state all pertiner nally or recomplete horizontally, ork will be performed or provide ed operations. If the operation res Abandonment Notices shall be file final inspection.)	nt details, includin give subsurface lo the Bond No. on f sults in a multiple ed only after all re	g estimated startir ocations and meas file with BLM/BL completion or rec quirements, includ	ng date of any p ured and true vo A. Required su completion in a ding reclamatio	roposed work and approsentical depths of all pertin bsequent reports shall be new interval, a Form 316 n, have been completed,	kimate duration thereof. ent markers and zones. filed within 30 days 0-4 shall be filed once and the operator has
Devon Energy Production C location, as well as the drillin	ompany, LP respectfully rea g and cement changes per	quests to chang the attached o	ge the currentl documents.	ly approved	BEC	
Attachments:	SEE AT	тасны) FOR			JEIVED
Directional Information(2) Drilling Plan Revised C-102	CONDI	TIONS O	OF APPRO	OVAL	APR NMOCI	2 08 2013 DARTES:A
Fran mysing 1 . m.	ale I CON MA	1 Jacon	+/1	2	Accer	and for record
14. Thereby certify that the foregoing	is true and correct. Electronic Submission #2 For DEVON ENERG	202063 verified Y PRODUCTION	by the BLM We N CO.,LP, sent	ell Information	n System	NMOCD 10 10
Name(Printed/Typed) ERINL	Committed to AFMSS to	or processing b	Title REGUL	DNS on 03/25/ LATORY CO	/2013 () MPLIANCE ASSOC	ulanue
				·		
Signature (Electronic	Submission)	1	Date 03/20/2	2013		
<u></u>	THIS SPACE FO	R FEDERAL	OR STATE	OFFICE U	SE	
Approved By	D. ans_	[Title SE	cps		4.4-17 Date
Conditions of approval, if any, are attack certify that the applicant holds legal or e which yould entitle the applicant to con	ed. Approval of this notice does quitable title to those rights in the duct operations thereon.	not warrant or subject lease	Office	CARLSBAD	FIELD OFFICE	
fitle 18 U.S.C. Section 1001 and Title 4 States any fase, fictitious or fraudulen	3 U.S.C. Section 1212, make it a t statements or representations as	crime for any pers to any matter with	son knowingly and hin its jurisdiction	d willfully to m	ake to any department or	agency of the United

ī.

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

District J 1625 N. French Dr., Hobbs, NM 88240 Phone: (575) 393-6161 Fax: (575) 393-0720 <u>District II</u> 811 S. First SL, Artesia, NM 88210 Phone: (575) 748-1283 Fax: (575) 748-9720 <u>District III</u> 1000 Rio Brazos Road, Aztee, NM 37410 Phone: (505) 334-6178 Fax: (505) 334-6176

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

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

AMENDED REPORT

· · · · · · · · · · · · · · · · · · ·		·····		7.0.0			· · · · · · · · · · · · · · · · · · ·	· ·			
	API Numbe	r	· ·	* Pool Cod	•	' Pool Name					
							Lusk; Bone Sp	ring West			
⁴ Property	Code				⁵ Property	Name		1	Well Number		
				, I	ANTARES 23	ARES 23 FEDERAL					
⁷ OGRID	No.				⁸ Operator	Name			⁹ Elevation		
6137			DEVON ENERGY PRODUCTION COMPANY, L.P.								
					^{io} Surface	Location					
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County		
L	23	19 S	31 E		2190	SOUTH	185	WEST	ĘĎDY		
			^н Во	ttom Ho	e Location I	f Different From	n Surface	···			
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County		
P	23	19 S	31 E		990	SOUTH	340	EAST	EDDY		
Dedicated Acre	s ¹² Joint o	Infill	onsolidation	Code 15 Or	der No.		L		<u>.</u>		
160		1									

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.

S89-37:30"/w	2642.70 FT \$89'38	'59"W 2641.32 FT	"OPERATOR CERTIFICATION
NW CORNER SEC. 23	N Q CORNER SEC. 23	NE CORNER SEC. 23	I hereby certify that the information contained herein is mue and complete
$LAT_{.} = 32.6532167'N$	LAI. = 32:6532308:N LONG. = 103.8399720'W	LONG. = 103.8313901'W	to the best of my knowledge and belief, and that this organization either
NMSP EAST (FT)	NMSP EAST (FT)	NMSP EAST (FT)	owns a working interest or indeased mineral interest in the land including
$\omega N = 601711.78$	N = 601729.07 F = 603180.21	N = 601745.22 Z F = 695821.48 S	the proposed bollow note location of miss a right to data this west at the
0 E = 090007.07			interest, or to a voluntary pooling gavement or a control(cov) pooling
4	1		order hemiofore antered by the division
N			- planey
338	1	39.	Signature 9 Date 9-1-13
36	1	94	Judy A. Barnett, Regulatory Specialist
\exists W Q CORNER SEC. 23 AT. = 32.6459648'N	1	<u>і</u> П	Printed Name
LONG. = 103.8485371'\			Judith Barnett@dvn.com
NMSP EAST (FT)	1		E-mail Address
E = 690556:15	ء 	COMPUTED	
SURFACE		1	*SURVEYOR CERTIFICATION
LOCATION			I hereby certify that the well location shown on this
- 0-185 ANTARES	23 FEDERAL 4H	BOTTOM OF HOLE	plat was plotted from field notes of actual surveys
0 LAT. = 32	.6447275'N (NADB3)	LAT. = 32.6414502N	made by me or under my supervision and that the
LONG. = 1	03.8479322'W	NMSP EAST (FT)	
8 N = 5986	24.17	N = 597453.95	sume is if the mini, don let i to the best of my beney.
$m = \frac{E}{E} = \frac{69074}{1000}$	44.41	-+	MARCH 13, 2013
264	:	OF HOLE	Date of Survey
0.0			A Games 127
TI SW CORNER SEC.	23 S 0 CORNER SEC. 23	SE CORNER SEC. 23	MAL KINN
LAT. = 32.638705	$59^{\circ}N$ LAT. = $3216387534^{\circ}N$	LAT. I = 32.6387287'N	NI Roman Iman
NUSP FAST (FT)	NMSP EAST (FT)	NMSP EAST (FT)	Summure and Sen of Environmentary Surveyor.
N = 596432.63	N = 596462.08 E = 693214.30	N = 596465.46	Certificme Number LFILINGET BARAMILLO. PLS 12797
N89'21'38"E	2639.01 FT N89'55	36"E 2642.88 FT	SURVEY NO. 1045B









Antares 23 Fed 4H – APD DRILLING PLAN Section 23-19S-31E Revised 3.19.13 SKS

Casing Program

<u>Hole</u> <u>Size</u>	<u>Hole</u> Interval	OD Csg	<u>Casing</u> Interval	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
26"	0 - 750 See	COA20"	0 - 750	94#	BTC	J/K-55
17-1/2"	0 - 2620	13-3/8"	0 - 2620	61#	BTC	J/K-55
12-1/4"	2620 - 4450 30	9-5/8"	0 - 4450	40#	LTC	J-55
8-3/4"	4450 - 8318 Cas	₹ 5-1/2"	0 - 8318	17#	LTC	P-110
8-3/4"	8318 - 13892	5-1/2"	8318 - 13892	17#	BTC	P-110

Max TVD: 9,240 ft

Casing Size	Collapse Design Factor	<u>Burst Design Factor</u>	Tension Design Factor
20"	1.48	6.01	20.99
13-3/8"	1.13	2.27	3.39
9-5/8"	1.23	1.90	3.54
5-1/2" 17# P-110 LTC	2.20	2.73	1.88
5-1/2" 17# P-110 BTC	1.97	2.44	4.70

The maximum possible collapse load that the intermediate casing will experience will result from evacuated casing with the pore pressure exerting a collapse load at TD. The pore pressure is estimated to be **10.0 ppg** for this calculation. This results in a collapse design factor of **1.23** for **9.625**" **40**# J-55 LT&C casing at a depth of **4,450**ft. While running the intermediate casing, the casing will never be completely evacuated. There is no potential for the intermediate casing to be used as a production string.

Mud Program:

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc.</u>	Fluid Loss	Type System
0-750 670	8.4 - 9.0	30-34	N/C	FW
0 - 2620	9.8 - 10.0	28-32	N/C	Brine
2620 - 4450 42	00 8.4 - 9.0	28-30	N/C	FW
4450 - 13892	8.6 - 9.0	28-32	N/C	FW

Pressure Control Equipment:

The BOP system used to drill the 17-1/2" hole will consist of a 20" 2M Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a 2M system prior to drilling out the casing shoe.

The BOP system used to drill the 12-1/4" and 8-3/4" holes will consist of a 13-5/8" 3M Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a 3M system prior to drilling out the casing shoe.

The pipe rams will be operated and checked as per Onshore Order No 2. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

Antares 23 Federal 4H Cementing Program (cement volumes based on at least 100% excess Surface, 50% on Intermediate and 25% excess on the Production)

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20" Surface	Tail: 1700 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Poly-E-Flake + 63.1% Fresh Water, 14.8 ppg Yield: 1.35 cf/sk TOC @ surface
13 3/8" Intermediate	Lead: 925 sacks (65:35) Class C Cement:Poz (Fly Ash): + 5% bwow Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 6% bwoc Bentonite + 70.9% Fresh Water, 12.9 ppg Yield: 1.85 cf/sk TOC @ surface Tail: 800 sacks Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Water, 14.8 ppg Yield: 1.33 cf/sk
9 5/8"Intermediate	1 st Stage Lead: 250 sacks (65:35) Class H Cement:Poz (Fly Ash) + 6% bwoc Bentonite + 0.2% bwoc HR- 601 + 74.1% Fresh Water, 12.5 ppg Yield: 1.95 cf/sk Tail: 360 sks Class C Cement +0.125 lbs Poly E Flake+0.2%bwoc Halad 9 @14.8 #/gal Yield: 1.35 cf/sk.
	2 nd Stage
	DV TOOL at 2670
	Lead: 450 sks (65:35) Class C Cement: Poz(Flyash)+5%bwowSodium Cloride+0.125#/sk Poly E Flake+65 Bentonite @ 12.9 #/gal Yield: 1.85 Cf/sk. Tail: 360 sks Class C Cement+ 0.2% Halad 9 @ 14.8#/gal Yield: 1.35 cf/sk.
5 ½ " Production	<u>1.st stage</u> Lead: 4392 ft.800 sks (65:35)Class H: Poz (Fly.Ash) +5% KCL+ 0.5% Halad 322@ 12.8 #/gal Yield: 1.75cf/sk
	Tail: 1610 sacks (50:50) Class H Cement:Poz (Fly Ash) + 1 lb/sk Sodium Chloride + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.1% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water, 14.5 ppg Yield: 1.22 cf/sk
	DV TOOL at 4500 ft
	2 nd Stage
	Lead: 200 sacks Class C Cement + 3% bwoc Econolite + 0.125 lbs/sack Poly-E-Flake + 82.4% Fresh Water, 11.4 ppg
	Yield: 2.87 cf/sk
	Tail:: 240 sacks Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water, 14.8 ppg
	Yield: 1.33cf/sk
TOC for All Strings: Surface: Intermediate: Intermediate 2 Production:	0 0 0 2300 ft

ACTUAL CEMENT VOLUMES WILL BE ADJUSTED BASED ON FLUID CALIPER AND CALIPER LOG DATA. LOG DATA.



Drilling Services

Proposal



ANTARES 23 FEDERAL 4H

EDDY COUNTY, NM

WELL FILE: PLAN 2

MARCH 19, 2013

Weatherford International, Ltd. P.O. Box 61028 Midland, TX 79711 USA +1.432.561.8892 Main +1.432.561.8895 Fax www.weatherford.com





Weatherford Wft Plan Report X Y's.



Company: Field: Site: Well: Wellpath:	Devon Éne Eddy Co., N Antares 23 Antares 23 1	rgy NM (NAD 83 Federal #4 Federal #4)) 日 日			Date: 3/19/20 Co-ořdinatě(N Vertical (TVD Section (VS) 1 Survey Calcul	013 VE) Referen) Reference Reference: ation Meth	Time: 10:44:02 ce: Well: Antares SITE:3565:0, Well: (0:00N:0 od: Minimum Cur	23 Federal #4 00E,104:07A vature	Page: 1 H, Grid North' zi)) Db:: Sybaste
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Weatherford Wft Plan Report X Y's.



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Bit Colu C 2100 Bit 230 C 2100 F 2130 C 2000 S 21940.00 S 21940.70 S 2000.00 B200.00 2 500 187.55 643.13 -761.37 -100.04.4 971.90 0.00 597862.68 690643.47 B418.48 25.00 187.55 823.81 -100.28 160.44 91.98 0.00 59782.68 690643.47 B418.48 25.00 187.55 823.61 -401.28 -100.37 118.21 6.00 59778.07 690662.61 B400.00 25.71 162.00 4415.08 -467.11 -53.07 100.15 6.00 59778.07 69062.61 B400.00 33.03 123.44 475.56 -407.13 30.42 6.00 59759.85 690977.79 107.43 90.40 348.87 6.00 59749.84 690983.99 9300.00 33.61 123.44 272.82 496.75 6.00 59749.84 690989.99 9300.00 53.60 108.63 630757 750.08 55749.84 690989.97 <td>8000.00</td> <td>25.00</td> <td>187.55</td> <td>7871.30</td> <td>-635.66</td> <td>-84.27</td> <td>72.79</td> <td>0.00</td> <td>597988.51</td> <td>690660.14</td> <td></td> <td></td>	8000.00	25.00	187.55	7871.30	-635.66	-84.27	72.79	0.00	597988.51	690660.14		
S300.00 25.00 187.55 8143.18 -761.37 -100.44 87.19 0.00 597828.08 690643.47 8410.00 25.00 187.55 823.33 -603.28 -106.44 91.99 0.00 597828.08 690643.47 8600.00 24.78 175.93 8324.55 -845.16 -108.57 100.15 6.00 59773.45 690642.41 8700.00 27.85 148.83 884.42 247.52 -81.80 146.14 6.00 597780.18 690662.81 8800.00 34.74 130.45 9675.44 -106.04 -14.50 230.27 6.00 597780.28 690977.91 9100.00 43.67 117.67 8830.72 -1074.33 90.40 346.87 6.00 59779.12.6 690989.99 9300.00 58.76 105.01 90163.64 -174.53 322.2 667.65 6.00 597749.18 690982.77.73 9400.00 58.76 105.01 90163.64 -1777.91 95749.18 690982.77.73	8100.00	25.00	187.55	8052.56	-677.57	-89.82 -95.38	77.59 82.39	0.00	597946.60	690649.03		
8300.00 25.00 187.55 8143.18 -761.37 -100.94 87.19 0.00 597482.80 690043.47 8406.00 25.00 187.55 823.31 -802.28 -106.44 91.99 0.00 597420.89 690043.47 8418.88 25.00 187.55 823.45 -844.16 -180.75 100.15 6.00 597773.01 690044.04 8600.00 25.71 162.00 8415.08 -866.72 -100.37 118.21 6.00 597662.66 690064.04 8700.00 27.71 161.05.34 -14.50 230.77 183.63 6.00 597692.86 600077.91 900.00 39.31 830.72 -107.33 90.00 397542.86 6000 597748.26 690077.79 910.00 45.51 112.82 880.02 1716.75 733.22 677.45 60.00 597748.84 690058.41 9200.00 63.57 190.58 1192.87 483.57 750.06 6.00 597447.50 69113.63 <td></td> <td>}</td>												}
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8600.00 25.71 162.00 8415.08 -886.72 -100.37 118.21 6.00 597737.45 690644.04 8700.00 27.85 149.53 8501.59 -907.11 -55.07 183.85 6.00 597657.06 6906621.34 8900.00 34.74 130.45 8755.64 -1005.04 -14.50 230.27 6.00 597761.31 690729.91 9000.00 34.74 130.45 8755.64 -1044.33 90.40 348.87 6.00 597761.26 690699.99 9300.00 53.60 106.66 8962.83 1176.57 332.2 667.45 6.00 597491.83 690697.73 9400.00 53.78 105.01 9016.82 -1152.34 223.2 7750.0 6.00 597491.83 690697.73 9400.00 63.29 913.661 -1122.47 750.0 653.747.0 6.00 59741.83 691622.31 9700.00 74.78 55.99 913.661 -121.29 757.66 6.00 597407.74	8500.00	24.78	175.93	8324.55	-845.16	-108.57	100.15	6.00	597779.01	690635.84	NO.	
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BB00 00 30 85 139 03 BB9150 -967 111 -53 07 183 83 E.00 5977819.13 600729 91 9000 00 39 03 123.44 8755.64 -104.09 1 33.50 285.55 6.00 5975919.13 690729 91 9100 0.0 43.67 117.67 8830.72 -1074.33 90.40 348.87 6.00 597519.26 690939.48 9200 0.0 53.60 108.66 8962.86 -1132.34 228.32 496.75 6.00 59747.86 691127.23 9400 0.0 53.78 105.61 9063.78 116.52 116.52 307.22 667.45 6.00 59747.86 691127.33 9500 0.0 64.05 107.57 906.35 -112.57 805.75 6.00 597413.30 691128.53 117.65 906.35 912.73 9136.61 +120.50 577.90 853.52 6.00 59749.83 691128.53 117.65 914.91.12 691128.53 117.65 914.91.12 691128.53 117.65 914.91.12	8700.00	27.85	149.53	8504.42	-927 52	-81 80	146.14	6.00	597696.65	690662 61		
9900.00 34.74 130.45 8675.64 -104.91 33.50 28.55 6.00 597583.26 60077.91 9100.00 43.67 117.67 8330.72 -1074.33 90.40 346.87 6.00 597583.26 600973.91 9100.00 43.67 117.67 8330.72 -1074.33 90.40 346.87 6.00 597549.84 690972.73 9400.00 53.60 106.60 8962.86 -1176.53 307.82 567.70 6.00 59749.84 690972.73 9400.00 54.78 105.81 -1178.27 393.22 667.45 6.00 597447.60 691137.63 9600.00 64.95 10.75 9961.56 577.90 853.52 6.00 597411.16 691419.57 9904.00 85.64 90.80 9170.59 -1216.37 518.07 1090.30 6.00 597407.46 691518.48 LP Tgl 10000.00 88.08 89.67 9174.23 -1216.43 874.12 1240.48 0.00 59	8800.00	30.95	139.03	8591.59	-967.11	-53.07	183.63	6.00	597657.06	690691.34		
9000.00 39.03 123.44 6755.64 -1040.91 33.50 285.55 6.00 597549.86 600077.91 9100.00 48.55 112.82 890.00 53.60 108.66 8962.88 -1132.34 228.32 496.75 6.00 597549.84 69093.48.1 9200.00 53.60 108.66 8962.88 -1153.23 228.32 496.75 6.00 597447.60 691052.23 9600.00 64.05 107.75 9066.35 -1176.57 393.22 667.45 6.00 597447.60 691137.63 9600.00 69.39 98.77 9105.86 -121.05.65 577.90 853.52 6.00 597447.60 691137.63 9900.00 74.78 95.99 913.66.1 -120.56 577.90 853.52 6.00 597447.60 691137.63 9900.00 85.64 91.08 1718.68 1714.58 1216.43 9174.12 1246.81 6.00 597407.42 89166.48 LP Tgt 10000.00 88.08	8900.00	34.74	130.45	8675.64	-1005.04	-14.50	230.27	6.00	597619.13	690729.91		ł
9100.00 43.67 117.67 8830.72 -107.433 90.40 348.87 6.00 597491.84 600034.81 9200.00 48.65 112.82 890.05 -1104.91 155.58 419.53 6.00 597491.86 600999.99 9400.00 58.78 105.01 9014.52 -115.32 307.82 579.70 6.00 597447.85 691157.63 9400.00 64.05 107.75 9066.35 -1120.86 -1120.87 480.57 759.06 6.00 597417.60 691137.63 9700.00 74.78 95.99 9136.61 -120.50 577.90 853.52 6.00 597419.12 691322.31 9800.00 85.64 90.80 9170.59 -1216.57 774.28 1046.81 6.00 597407.60 691516.69 9944.86 80.80 89.67 9178.23 -1215.86 974.12 1240.48 0.00 597408.36 69118.67 10000.00 88.08 89.67 918.27 -1215.86 974.12 1240.48 0.00 597408.86 691816.47 10000.00 88.08	9000.00	39.03	123.44	8755.64	-1040.91	33.50	285.55	6.00	597583.26	690777.91		
9200.00 48.55 112.22 800.05 -110.491 155.58 419.53 6.00 59741.83 60089.99 9300.00 58.76 105.61 9016.52 -113.24 207.82 577.70 6.00 597447.85 601157.23 9500.00 64.05 101.75 9066.35 -1176.57 393.22 667.45 6.00 597415.12 691137.63 9600.00 64.05 101.75 906.55 -171.98 673.16 942.79 6.00 597411.12 691322.31 9600.00 80.20 93.35 9176.26 -121.09 673.16 942.79 6.00 597419.12 691322.31 9600.00 80.64 91.65 -121.65 810.07 1090.30 6.00 597407.40 891418.57 9944.86 80.67 9178.23 -121.5.66 974.12 1240.48 0.00 597408.31 69116.42 10100.00 88.08 89.67 918.45 -121.47 1240.48 0.00 597410.33 692118.57 <td>9100.00</td> <td>43.67</td> <td>117.67</td> <td>8830.72</td> <td>-1074.33</td> <td>90.40</td> <td>348.87</td> <td>6.00</td> <td>597549.84</td> <td>690834.81</td> <td></td> <td></td>	9100.00	43.67	117.67	8830.72	-1074.33	90.40	348.87	6.00	597549.84	690834.81		
9300.00 53.60 108.66 9862.80 -1158.32 228.32 496.75 6.00 597491.83 690972.73 9400.00 64.05 101.75 9066.35 -1176.57 393.22 667.45 6.00 597447.60 691137.63 9600.00 64.05 101.75 9066.35 -1176.57 393.22 667.45 6.00 597417.60 691322.31 9600.00 00.20 93.35 9158.26 -1212.98 675.16 949.79 6.00 597407.06 69158.69 9900.00 85.64 00.80 9170.59 1216.57 774.28 1046.81 6.00 597407.42 69158.34 LP Tgt 10000.00 88.08 89.67 9174.83 1216.75 810.07 1090.30 6.00 597407.42 69158.54 0.01 597408.31 691718.53 10000.00 88.08 89.67 9181.57 -1215.29 1074.06 1337.29 0.00 597408.31 691718.53 10200.00 88.08 89.67 9184.25 -1214.14 1273.95 1530.90 0.00 597410.03	9200.00	48.55	112.82	8900.05	-1104.91	155.58	419.53	6.00	597519.26	690899.99		
9400.00 58,78 105.01 9018.52 -1176.57 392.22 397.70 6.00 597447.66 691137.63 9600.00 69.39 98.77 9105.86 -1192.87 483.57 759.06 6.00 597447.60 691137.63 9700.00 74.78 95.99 9136.61 -1205.05 577.90 863.52 6.00 597447.60 691137.63 9900.00 85.64 90.80 9170.59 -1216.57 774.28 1046.81 6.00 597407.60 69158.48 LP Tgt 10000.00 88.08 89.67 9174.80 -1216.57 742.8 1046.81 6.00 597407.74 691618.59 10000.00 88.08 89.67 9174.83 -1216.75 714.28 1040.48 0.00 597408.8 691818.47 10200.00 88.08 89.67 9184.91 -1214.72 1174.01 1434.09 0.00 597408.45 691918.42 10400.00 88.08 89.67 9194.94 -1214.72 157.78 1627.70 0.00 597411.60 69218.30 10600.00 88	9300.00	53.60	108.66	8962.88	-1132.34	228.32	496.75	6.00	597491.83	690972.73		ł
9900.00 64.03 101.73 9900.53 1170.57 7353.66 6.00 597441.00 691227.88 9700.00 74.78 95.99 9136.61 -122.67 483.57 7759.66 6.00 597419.12 691227.38 9800.00 85.64 90.02 93.35 9158.26 -1212.99 675.16 949.79 6.00 597407.42 691518.69 9900.00 85.64 90.80 9170.59 -1216.75 819.07 1090.30 6.00 597407.74 691618.59 10000.00 88.08 89.67 9174.88 -1215.86 974.12 1240.48 0.00 597408.31 691718.53 10200.00 88.08 89.67 918.25 -1214.72 1174.01 1373.89 1000 597408.31 691718.53 10400.00 88.08 89.67 9191.60 -1213.57 1373.89 1627.70 0.00 597408.36 69118.42 10400.00 88.08 89.67 9194.94 -1213.57 1373.89 1627.70 0.00 597410.60 692118.30 10600.00 88.08	9400.00	58.78	105.01	9018.52	-1156.32	307.82	579.70	6.00	597467.85	691052.23		
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100.00 80.00 83.07 91.01.5 121.52.99 1074.06 133.72.99 0.00 59740.88 691818.47 10300.00 88.08 89.67 9184.91 -1214.72 1174.06 1337.29 0.00 597409.48 691918.42 10400.00 88.08 89.67 9194.94 -1213.57 1373.89 1627.70 0.00 597410.60 682118.30 10600.00 88.08 89.67 9194.94 -1213.57 1373.89 1627.70 0.00 597410.60 682118.30 10600.00 88.08 89.67 9194.94 -1213.57 1373.78 1821.31 0.00 597411.77 692218.24 10700.00 88.08 89.67 9204.82 -121.85 1673.72 1918.12 0.00 597413.46 692218.07 10900.00 88.08 89.67 9204.82 -121.28 1773.60 2111.73 0.00 597414.61 692217.99 11200.00 88.08 89.67 9211.65 -1210.71 1873.60 2111.73 0.00 597414.61 692817.90 11200.00 88.08 <td>10100.00</td> <td>88 08</td> <td>80.67</td> <td>0178.03</td> <td>1015.96</td> <td>07/ 10</td> <td>1240.48</td> <td>0.00</td> <td>597408 31</td> <td>601718 53</td> <td></td> <td></td>	10100.00	88 08	80.67	0178.03	1015.96	07/ 10	1240.48	0.00	597408 31	601718 53		
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10400.00 88.08 89.67 9188.25 -1214.14 1273.95 1530.90 0.00 597410.03 692018.36 10600.00 88.08 89.67 9191.60 -1213.57 1373.89 1627.70 0.00 597410.03 692118.30 10600.00 88.08 89.67 9194.94 -1212.43 1573.78 1821.31 0.00 597411.74 692218.24 10700.00 88.08 89.67 9201.62 -1214.185 1673.72 1918.12 0.00 597412.32 692418.13 10800.00 88.08 89.67 9208.31 -1210.71 1873.66 2014.92 0.00 597412.89 692518.07 11000.00 88.08 89.67 9218.34 -1209.56 2073.49 2305.34 0.00 597415.06 692618.01 11100.00 88.08 89.67 921.84 -1208.99 2173.43 2402.14 0.00 597415.75 693017.78 11400.00 88.08 89.67 9221.68 -1208.42 2273.32 2498.95 0.00 597416.32 693117.73 11600.00 88.08 </td <td>10300.00</td> <td>88.08</td> <td>89.67</td> <td>9184.91</td> <td>-1214.72</td> <td>1174.01</td> <td>1434.09</td> <td>0.00</td> <td>597409.45</td> <td>691918.42</td> <td></td> <td></td>	10300.00	88.08	89.67	9184.91	-1214.72	1174.01	1434.09	0.00	597409.45	691918.42		
10500.00 88.08 89.67 9191.60 -1213.57 1373.89 1627.70 0.00 597411.60 692118.30 10600.00 88.08 89.67 9199.84 -1213.00 1473.83 1724.51 0.00 597411.17 692218.24 10700.00 88.08 89.67 9201.62 -1211.85 1673.72 1918.12 0.00 597412.32 692418.13 10900.00 88.08 89.67 9204.97 -1211.85 1773.66 2014.92 0.00 597412.32 692218.07 11000.00 88.08 89.67 9214.97 -1210.71 1873.60 2111.73 0.00 597414.03 692717.96 11200.00 88.08 89.67 9214.99 -1209.56 2073.49 2305.34 0.00 597414.03 692717.96 11300.00 88.08 89.67 9218.34 -1208.99 2173.43 2402.14 0.00 597415.18 692917.84 11400.00 88.08 89.67 9221.62 -1207.85 2373.32 2595.75 0.00 597416.32 693117.73 11600.00 88.08 </td <td>10400.00</td> <td>88.08</td> <td>89.67</td> <td>9188.25</td> <td>-1214.14</td> <td>1273.95</td> <td>1530.90</td> <td>0.00</td> <td>597410.03</td> <td>692018.36</td> <td></td> <td>1</td>	10400.00	88.08	89.67	9188.25	-1214.14	1273.95	1530.90	0.00	597410.03	692018.36		1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	10500.00	88.08	89.67	9191.60	-1213.57	1373.89	1627.70	0.00	597410.60	692118.30		{
10700.00 88.08 89.67 9198.28 -1212.43 1573.78 1821.31 0.00 597411.74 692318.19 10800.00 88.08 89.67 9204.97 -1211.85 1673.72 1918.12 0.00 597412.29 692418.13 10900.00 88.08 89.67 9204.97 -1211.28 1773.66 2111.73 0.00 597412.89 692518.07 11000.00 88.08 89.67 9211.65 -1210.71 1873.60 2111.73 0.00 597413.46 692618.01 11100.00 88.08 89.67 9211.65 -1210.14 1973.55 2208.53 0.00 597414.61 692617.96 11200.00 88.08 89.67 9218.34 -1208.42 2273.37 2498.95 0.00 597415.75 693017.78 11500.00 88.08 89.67 9225.02 -1207.85 2373.32 2595.75 0.00 597416.89 693217.67 11700.00 88.08 89.67 923.05 1206.70 2573.20 2789.36 0.00 597416.89 693217.67 11700.00 88.08 <td>10600.00</td> <td>88.08</td> <td>89.67</td> <td>9194.94</td> <td>-1213.00</td> <td>1473.83</td> <td>1724.51</td> <td>0.00</td> <td>597411.17</td> <td>692218.24</td> <td></td> <td></td>	10600.00	88.08	89.67	9194.94	-1213.00	1473.83	1724.51	0.00	597411.17	692218.24		
10800.00 88.08 89.67 9201.62 -1211.85 1673.72 1918.12 0.00 597412.32 692518.07 11000.00 88.08 89.67 9204.97 -1211.28 1773.66 2014.92 0.00 597412.39 692518.07 11100.00 88.08 89.67 9211.65 -1210.71 1873.60 2111.73 0.00 597414.03 692518.01 11100.00 88.08 89.67 9214.99 -1209.56 2073.49 2305.34 0.00 597414.61 692617.90 11300.00 88.08 89.67 9216.8 -1208.42 2273.37 2498.95 0.00 597415.75 693017.78 11500.00 88.08 89.67 9225.02 -1207.85 2373.32 2595.75 0.00 597416.39 693217.67 11700.00 88.08 89.67 923.05 -1207.28 2473.26 2692.56 0.00 597418.61 693217.67 11700.00 88.08 89.67 923.05 -1206.13 2673.14 2866.17 0.00 597418.04 693417.55 11900.00 88.08	10700.00	88.08	89.67	9198.28	-1212.43	1573.78	1821.31	0.00	597411.74	692318.19		1
10000.00 88.08 89.67 9204.97 -1211.28 1773.66 2014.92 0.00 597412.89 692518.07 11000.00 88.08 89.67 9208.31 -1210.71 1873.60 2111.73 0.00 597413.46 692618.01 11100.00 88.08 89.67 9211.65 -1210.14 1973.55 2208.53 0.00 597414.01 692217.90 11300.00 88.08 89.67 9218.34 -1208.99 2173.43 2402.14 0.00 597415.18 692917.84 11400.00 88.08 89.67 9228.36 -1207.85 2373.32 2595.75 0.00 597416.32 693117.73 11600.00 88.08 89.67 9228.36 -1207.28 2473.26 2692.56 0.00 597416.89 693217.67 11700.00 88.08 89.67 9235.05 -1206.13 2673.14 2866.17 0.00 597418.04 693417.55 11900.00 88.08 89.67 9241.73 -1204.99 2873.03 3079.78 0.00 597419.18 693617.44 12000.00 88.08 </td <td>10800.00</td> <td>88.08</td> <td>89.67</td> <td>9201.62</td> <td>-1211.85</td> <td>1673.72</td> <td>1918.12</td> <td>0.00</td> <td>597412.32</td> <td>692418.13</td> <td></td> <td>·</td>	10800.00	88.08	89.67	9201.62	-1211.85	1673.72	1918.12	0.00	597412.32	692418.13		·
11100.00 88.08 89.67 9211.65 -1210.14 1973.55 2208.53 0.00 597414.03 692717.96 11200.00 88.08 89.67 9214.99 -1208.99 2173.43 2402.14 0.00 597414.61 692817.90 11300.00 88.08 89.67 9218.34 -1208.99 2173.43 2402.14 0.00 597415.18 692917.84 11400.00 88.08 89.67 9228.02 -1207.85 2373.32 2595.75 0.00 597416.32 693117.73 11600.00 88.08 89.67 9228.36 -1207.28 2473.26 2692.56 0.00 597416.89 693217.67 11700.00 88.08 89.67 9231.71 -1206.70 2573.20 2789.36 0.00 597418.04 693417.55 11800.00 88.08 89.67 9235.05 -1206.56 2773.09 2982.97 0.00 597418.04 693417.55 11900.00 88.08 89.67 9245.08 -1204.41 2972.97 3176.58 0.00 597419.76 693717.38 1200.00 88.08 <td>11000.00</td> <td>88.08</td> <td>89.67</td> <td>9204.97 9208.31</td> <td>-1211.28</td> <td>1773.60</td> <td>2014.92</td> <td>0.00</td> <td>597412.89</td> <td>692618.07</td> <td></td> <td></td>	11000.00	88.08	89.67	9204.97 9208.31	-1211.28	1773.60	2014.92	0.00	597412.89	692618.07		
11100.00 88.08 89.67 9211.65 -1210.14 1973.55 2208.53 0.00 597414.03 692717.96 11200.00 88.08 89.67 9214.99 -1209.56 2073.49 2305.34 0.00 597414.61 692817.90 11300.00 88.08 89.67 9218.34 -1208.99 2173.43 2402.14 0.00 597415.18 692917.84 11400.00 88.08 89.67 9221.68 -1207.85 2373.32 2595.75 0.00 597416.32 693117.73 11600.00 88.08 89.67 9223.02 -1207.85 2373.32 2595.75 0.00 597416.89 693217.67 11700.00 88.08 89.67 923.171 -1206.70 2573.20 2789.36 0.00 597416.89 693217.61 11800.00 88.08 89.67 9235.05 -1206.70 2573.20 2789.36 0.00 597418.04 693417.55 11900.00 88.08 89.67 9238.39 -1205.56 2773.09 2982.97 0.00 597419.18 693617.44 12000.00 88.08 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td>							_					
11200.00 80.03 30.07 9214.39 1203.00 207.343 2402.14 0.00 597415.18 692017.84 11300.00 88.08 89.67 9221.68 -1208.92 2273.37 2498.95 0.00 597415.18 692017.84 11400.00 88.08 89.67 9225.02 -1207.85 2373.32 2595.75 0.00 597416.32 693117.73 11600.00 88.08 89.67 9228.36 -1207.28 2473.26 2692.56 0.00 597416.89 693217.67 11700.00 88.08 89.67 9231.71 -1206.70 2573.20 2789.36 0.00 597418.04 693417.55 11900.00 88.08 89.67 9235.05 -1206.13 2673.14 2886.17 0.00 597418.04 693417.55 11900.00 88.08 89.67 9241.73 -1205.56 2773.09 2982.97 0.00 597418.61 693517.50 12000.00 88.08 89.67 9245.08 -1204.49 2972.97 3176.58 0.00 597419.76 693717.38 1200.00 88.08 <td>11100.00</td> <td>88.08</td> <td>89.67</td> <td>9211.65</td> <td>-1210.14</td> <td>19/3.55</td> <td>2208.53</td> <td>0.00</td> <td>597414.03</td> <td>692717.96</td> <td></td> <td>· · ·</td>	11100.00	88.08	89.67	9211.65	-1210.14	19/3.55	2208.53	0.00	597414.03	692717.96		· · ·
11400.00 88.08 89.67 9221.68 -1208.42 2273.37 2498.95 0.00 597415.75 693017.78 11500.00 88.08 89.67 9225.02 -1207.85 2373.32 2595.75 0.00 597416.32 693117.73 11600.00 88.08 89.67 9228.36 -1207.28 2473.26 2692.56 0.00 597416.89 693217.67 11700.00 88.08 89.67 9235.05 -1206.70 2573.20 2789.36 0.00 597418.44 693417.55 11900.00 88.08 89.67 9238.39 -1205.56 2773.09 2982.97 0.00 597419.76 69317.50 12000.00 88.08 89.67 9241.73 -1204.99 2873.03 3079.78 0.00 597419.76 693717.38 12000.00 88.08 89.67 9245.08 -1204.41 2972.97 3176.58 0.00 597419.76 693717.38 12200.00 88.08 89.67 9245.08 -1204.41 2972.97 3176.58 0.00 597420.33 693817.32 12300.00 88.08 <td>11300.00</td> <td>88.08</td> <td>89.67</td> <td>9218.34</td> <td>-1209.30</td> <td>2173.43</td> <td>2402.14</td> <td>0.00</td> <td>597415 18</td> <td>692917.84</td> <td></td> <td></td>	11300.00	88.08	89.67	9218.34	-1209.30	2173.43	2402.14	0.00	597415 18	692917.84		
11500.00 88.08 89.67 9225.02 -1207.85 2373.32 2595.75 0.00 597416.32 693117.73 11600.00 88.08 89.67 9228.36 -1207.28 2473.26 2692.56 0.00 597416.89 693217.67 11700.00 88.08 89.67 9231.71 -1206.70 2573.20 2789.36 0.00 597416.89 693317.61 11800.00 88.08 89.67 9235.05 -1206.13 2673.14 2886.17 0.00 597418.04 693417.55 11900.00 88.08 89.67 9238.39 -1205.56 2773.09 2982.97 0.00 597419.16 693517.50 1200.00 88.08 89.67 9241.73 -1204.99 2873.03 3079.78 0.00 597419.76 693717.38 1200.00 88.08 89.67 9245.08 -1203.84 3072.91 3273.39 0.00 597420.33 693817.32 12300.00 88.08 89.67 9251.76 -1203.27 3172.86 3370.19 0.00 597420.30 693917.27 12400.00 88.08 <td>11400.00</td> <td>88.08</td> <td>89.67</td> <td>9221.68</td> <td>-1208.42</td> <td>2273.37</td> <td>2498.95</td> <td>0.00</td> <td>597415.75</td> <td>693017.78</td> <td></td> <td>1</td>	11400.00	88.08	89.67	9221.68	-1208.42	2273.37	2498.95	0.00	597415.75	693017.78		1
11600.00 88.08 89.67 9228.36 -1207.28 2473.26 2692.56 0.00 597416.89 693217.67 11700.00 88.08 89.67 9231.71 -1206.70 2573.20 2789.36 0.00 597416.89 693217.67 11800.00 88.08 89.67 9235.05 -1206.13 2673.14 2886.17 0.00 597418.04 693417.55 11900.00 88.08 89.67 9238.39 -1205.56 2773.09 2982.97 0.00 597418.61 693517.50 12000.00 88.08 89.67 9245.08 -1204.99 2873.03 3079.78 0.00 597419.76 693717.38 12200.00 88.08 89.67 9245.08 -1204.41 2972.97 3176.58 0.00 597419.76 693717.38 12200.00 88.08 89.67 9248.42 -1203.84 3072.91 3273.39 0.00 597420.33 693817.27 12300.00 88.08 89.67 9251.76 -1203.27 3172.86 3370.19 0.00 597420.90 693917.27 12400.00 88.08 </td <td>11500.00</td> <td>88.08</td> <td>89.67</td> <td>9225.02</td> <td>-1207.85</td> <td>2373.32</td> <td>2595.75</td> <td>0.00</td> <td>597416.32</td> <td>693117.73</td> <td></td> <td></td>	11500.00	88.08	89.67	9225.02	-1207.85	2373.32	2595.75	0.00	597416.32	693117.73		
11700.00 88.08 89.67 9231.71 -1206.70 2573.20 2789.36 0.00 597417.47 693317.61 11800.00 88.08 89.67 9235.05 -1206.13 2673.14 2886.17 0.00 597417.47 693317.61 11900.00 88.08 89.67 9235.05 -1206.13 2673.14 2886.17 0.00 597418.04 693417.55 12000.00 88.08 89.67 9245.08 -1204.41 2972.97 3176.58 0.00 597419.76 693717.38 12200.00 88.08 89.67 9245.08 -1204.41 2972.97 3176.58 0.00 597419.76 693717.38 12200.00 88.08 89.67 9245.08 -1204.41 2972.97 3176.58 0.00 597420.33 693817.32 12300.00 88.08 89.67 9251.76 -1203.27 3172.86 3370.19 0.00 597420.33 693817.27 12400.00 88.08 89.67 9255.10 -1202.70 3272.80 3467.00 0.00 597422.05 694117.21 12500.00 88.08 </td <td>11600.00</td> <td>88.08</td> <td>89.67</td> <td>9228.36</td> <td>-1207.28</td> <td>2473.26</td> <td>2692.56</td> <td>0.00</td> <td>597416.89</td> <td>693217.67</td> <td></td> <td></td>	11600.00	88.08	89.67	9228.36	-1207.28	2473.26	2692.56	0.00	597416.89	693217.67		
11800.00 88.08 89.67 9235.05 -1206.13 2673.14 2886.17 0.00 597418.04 693417.55 11900.00 88.08 89.67 9238.39 -1205.56 2773.09 2982.97 0.00 597418.61 693517.50 12000.00 88.08 89.67 9241.73 -1204.99 2873.03 3079.78 0.00 597419.16 693617.44 12100.00 88.08 89.67 9245.08 -1204.41 2972.97 3176.58 0.00 597419.76 693717.38 12200.00 88.08 89.67 9245.08 -1203.27 3172.86 3370.19 0.00 597420.33 693817.32 12300.00 88.08 89.67 9251.76 -1203.27 3172.86 3370.19 0.00 597420.30 693917.27 12400.00 88.08 89.67 9255.10 -1202.70 3272.80 3467.00 0.00 597421.47 694017.21 12500.00 88.08 89.67 9258.45 -1202.12 3372.74 3563.80 0.00 597422.05 694117.15 12600.00 88.08 </td <td>11700.00</td> <td>88.08</td> <td>89.67</td> <td>9231.71</td> <td>-1206.70</td> <td>2573.20</td> <td>2789.36</td> <td>0.00</td> <td>597417.47</td> <td>693317.61</td> <td></td> <td></td>	11700.00	88.08	89.67	9231.71	-1206.70	2573.20	2789.36	0.00	597417.47	693317.61		
11900.00 88.08 89.67 9238.39 -1205.56 2773.09 2982.97 0.00 597418.61 693517.50 12000.00 88.08 89.67 9241.73 -1204.99 2873.03 3079.78 0.00 597419.18 693617.44 12100.00 88.08 89.67 9245.08 -1204.41 2972.97 3176.58 0.00 597419.76 693717.38 12200.00 88.08 89.67 9248.42 -1203.84 3072.91 3273.39 0.00 597420.33 693817.32 12300.00 88.08 89.67 9251.76 -1203.27 3172.86 3370.19 0.00 597420.90 693917.27 12400.00 88.08 89.67 9255.10 -1202.70 3272.80 3467.00 0.00 597422.05 694117.21 12500.00 88.08 89.67 9261.79 -1201.55 3472.68 3660.61 0.00 597422.05 694117.09 12600.00 88.08 89.67 9261.79 -1201.55 3472.68 3660.61 0.00 597422.62 694217.09 12700.00 88.08 </td <td>11800.00</td> <td>88.08</td> <td>89.67</td> <td>9235.05</td> <td>-1206.13</td> <td>2673.14</td> <td>2886.17</td> <td>0.00</td> <td>597418.04</td> <td>693417.55</td> <td></td> <td>Į</td>	11800.00	88.08	89.67	9235.05	-1206.13	2673.14	2886.17	0.00	597418.04	693417.55		Į
12100.00 88.08 89.67 9241.73 -1204.33 2873.03 3079.78 0.00 357419.76 693617.44 12100.00 88.08 89.67 9245.08 -1204.41 2972.97 3176.58 0.00 597419.76 693717.38 12200.00 88.08 89.67 9248.42 -1203.84 3072.91 3273.39 0.00 597420.33 693817.32 12300.00 88.08 89.67 9251.76 -1203.27 3172.86 3370.19 0.00 597420.90 693917.27 12400.00 88.08 89.67 9255.10 -1202.70 3272.80 3467.00 0.00 597422.05 694017.21 12500.00 88.08 89.67 9261.79 -1201.55 3472.68 3660.61 0.00 597422.05 694117.15 12600.00 88.08 89.67 9265.13 -1200.98 3572.63 3757.41 0.00 597423.19 694317.04 12800.00 88.08 89.67 9268.47 -1200.41 3672.57 3854.22 0.00 597423.76 694416.98 12900.00 88.08 </td <td>11900.00</td> <td>88.08</td> <td>89.67</td> <td>9238.39</td> <td>-1205.56</td> <td>2773.09</td> <td>2982.97</td> <td>0.00</td> <td>597418.61</td> <td>693517.50</td> <td></td> <td></td>	11900.00	88.08	89.67	9238.39	-1205.56	2773.09	2982.97	0.00	597418.61	693517.50		
12100.00 88.08 89.67 9245.08 -1204.41 2972.97 3176.58 0.00 597419.76 693717.38 12200.00 88.08 89.67 9248.42 -1203.84 3072.91 3273.39 0.00 597420.33 693817.32 12300.00 88.08 89.67 9251.76 -1203.27 3172.86 3370.19 0.00 597420.90 693917.27 12400.00 88.08 89.67 9255.10 -1202.70 3272.80 3467.00 0.00 597421.47 694017.21 12500.00 88.08 89.67 9258.45 -1202.12 3372.74 3563.80 0.00 597422.05 694117.15 12600.00 88.08 89.67 9261.79 -1201.55 3472.68 3660.61 0.00 597422.62 694217.09 12700.00 88.08 89.67 9265.13 -1200.98 3572.63 3757.41 0.00 597423.19 694317.04 12800.00 88.08 89.67 9268.47 -1200.41 3672.57 3854.22 0.00 597423.76 694416.98 12900.00 88.08 </td <td>12000.00</td> <td>00.00</td> <td>09.07</td> <td>3241.13</td> <td>-1204.99</td> <td>2013.03</td> <td>3019.10</td> <td>0.00</td> <td>391419.10</td> <td>093017.44</td> <td></td> <td></td>	12000.00	00.00	09.07	3241.13	-1204.99	2013.03	3019.10	0.00	391419.10	093017.44		
12200.00 88.08 89.67 9248.42 -1203.84 3072.91 3273.39 0.00 597420.33 693817.32 12300.00 88.08 89.67 9251.76 -1203.27 3172.86 3370.19 0.00 597420.90 693917.27 12400.00 88.08 89.67 9255.10 -1202.70 3272.80 3467.00 0.00 597421.47 694017.21 12500.00 88.08 89.67 9258.45 -1202.12 3372.74 3563.80 0.00 597422.05 694117.15 12600.00 88.08 89.67 9261.79 -1201.55 3472.68 3660.61 0.00 597422.62 694217.09 12700.00 88.08 89.67 9265.13 -1200.98 3572.63 3757.41 0.00 597423.19 694317.04 12800.00 88.08 89.67 9268.47 -1200.41 3672.57 3854.22 0.00 597423.76 694416.98 12900.00 88.08 89.67 9271.82 -1199.83 3772.51 3951.02 0.00 597423.44 694516.92	12100.00	88.08	89.67	9245.08	-1204.41	2972.97	3176.58	0.00	597419.76	693717.38		
12300.00 88.08 89.67 9251.76 -1203.27 3172.86 3370.19 0.00 597420.90 693917.27 12400.00 88.08 89.67 9255.10 -1202.70 3272.80 3467.00 0.00 597421.47 694017.21 12500.00 88.08 89.67 9258.45 -1202.12 3372.74 3563.80 0.00 597422.05 694117.15 12600.00 88.08 89.67 9261.79 -1201.55 3472.68 3660.61 0.00 597422.62 694217.09 12700.00 88.08 89.67 9265.13 -1200.98 3572.63 3757.41 0.00 597423.19 694317.04 12800.00 88.08 89.67 9268.47 -1200.41 3672.57 3854.22 0.00 597423.76 694416.98 12900.00 88.08 89.67 9271.82 -1199.83 3772.51 3951.02 0.00 597424.34 694516.92	12200.00	88.08	89.67	9248.42	-1203.84	3072.91	3273.39	0.00	597420.33	693817.32		
12500.00 88.08 89.67 9258.45 -1202.10 3272.60 3407.00 0.00 597422.05 694117.15 12600.00 88.08 89.67 9261.79 -1201.55 3472.68 3660.61 0.00 597422.62 694217.09 12700.00 88.08 89.67 9265.13 -1200.98 3572.63 3757.41 0.00 597423.19 694317.04 12800.00 88.08 89.67 9268.47 -1200.41 3672.57 3854.22 0.00 597423.76 694416.98 12900.00 88.08 89.67 9271.82 -1199.83 3772.51 3951.02 0.00 597424.34 694516.92	12300.00	88.08 88.09	89.67 20.67	9251.76 0255 10	-1203.27	31/2,86	3370,19	0.00	597420.90	693917.27		
12600.00 88.08 89.67 9261.79 -1201.55 3472.68 3660.61 0.00 597422.62 694217.09 12700.00 88.08 89.67 9265.13 -1200.98 3572.63 3757.41 0.00 597423.19 694317.04 12800.00 88.08 89.67 9268.47 -1200.41 3672.57 3854.22 0.00 597423.76 694416.98 12900.00 88.08 89.67 9271.82 -1199.83 3772.51 3951.02 0.00 597424.34 694516.92	12500.00	88.08	89.67	9258.45	-1202.10	3372.74	3563.80	0.00	597422.05	694117.15		}
12000.00 88.08 89.67 9261.79 -1201.55 3472.68 3660.61 0.00 597422.62 694217.09 12700.00 88.08 89.67 9265.13 -1200.98 3572.63 3757.41 0.00 597423.19 694317.04 12800.00 88.08 89.67 9268.47 -1200.41 3672.57 3854.22 0.00 597423.76 694416.98 12900.00 88.08 89.67 9271.82 -1199.83 3772.51 3951.02 0.00 597424.34 694516.92	10000 00	00.00	00.07	0001 70	1001 75	0470.00	0000.01	0.00	FN7 100 00	004047.00		
12800.00 88.08 89.67 9268.47 -1200.41 3672.57 3854.22 0.00 597423.76 694416.98 12900.00 88.08 89.67 9271.82 -1199.83 3772.51 3951.02 0.00 597424.34 694516.92	12600.00	88.08 88.08	89.67 80.67	9261.79	-1201.55	34/2.68	3060.61	0.00	597422.62 597423 19	694217.09		
12900.00 88.08 89.67 9271.82 -1199.83 3772.51 3951.02 0.00 597424.34 694516.92	12800.00	88.08	89.67	9268.47	-1200.41	3672.57	3854.22	0.00	597423.76	694416.98		
	12900.00	88.08	89.67	9271.82	-1199.83	3772.51	3951.02	0.00	597424.34	694516.92		

1



Weatherford Wft Plan Report X Y's.



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Company: Field: Site: Well: Well:	Devon Ene Eddy Co., N Antares 23 Antares 23	rgy VM (NAD 8 Federal # Federal #	3) 4H 4H			ate:, 3/19/2 o-ordinate(ertical, (TV) ection (VS) irvey, Calcu	013 NE) Referen D) Reference Reference: lation Meth	Time: 10:44:02/ ce: Well: Antare SITE 3565.0 Well (0.00N) od: Minimum Cu	s 23 Federal #4 0 00E, 104 07Az ivalure	Page: 3 H. Grid/North I) Dh: Sybase	
Survey											
MD	-Incl. deg	Azim. deg	TVD ft	N/S	Ē/Ŵ Ît	ŶŜ [₽]	DLS deg/100ft	MapÑ. ft		Comm	្ត្រី
13000.00	88.08	89.67	9275.16	-1199.26	3872.45	4047.83	0.00	597424.91	694616.86	A LAND A POINT AND A CONTRACT	4
13100.00	88.08	89.67 89.67	9278.50	-1198.69	3972.40	4144.63	0.00	597425.48	694716.81 694816 75		
13300.00	88.08	89.67	9285.19	-1197.54	4172.28	4338.24	0.00	597426.63	694916.69		
13400.00	88.08	89.67	9288.53	-1196.97	4272.22	4435.05	0.00	597427.20	695016.63		
13500.00	88.08	89.67	9291.87	-1196.40	4372.17	4531.85	0.00	597427.77	695116.58		
13600.00 13700.00	88.08 88.08	89.67 89.67	9295.21 9298.56	-1195.83 -1195.25	4472.11 4572.05	4628.66 4725.46	0.00 0.00	597428.34 597428.92	695216.52 695316.46		
13800.00	88.08	89.67	9301.90	-1194.68	4671.99	4822.27	0.00	597429.49	695416.40		
13892.78	88.08	89.67	9305.00	-1194.15	4764.72	4912.08	0.00	597430.02	695509.13	PBHL	
Targets	<u> </u>					<u> </u>					
Ren Contra	111-20 S.F.		and the second second	The State March		Má	n Mai		itude	Longitude .	T
Name		Descriptio	on Ty	′D +N	/-S. +E/-	W Nort	hing East	ing Deg-Min	Sec De	Min Sec	.]
b	teren e nora e ta	Dip.	Dir.	and a second second	ft <u>i s</u> ett	<u>i se se se s</u> fi	in the	an a			1
LP Tgt			9173	.04 -1216	6.75 819.0	07 59740	7.42 691563	3.48 32 38 2	8.930 N 103	50 43.058 W	
PBHL		1.92	89.67 9305	.00 -1194	4.15 4764.7	72 59743	0.02 695509	.13 32 38 2	8.972 N 103	49 56.912 W	
-Rec	angle (394	17x50)									
L		·	<u> </u>								
Casing Poi	nts										
r, MD	TVD	Diame	ter Hole	Size	Name		1.78			an a	7
and a stand of the second of the				а. 	n <u>n N</u> n <u>n n</u>	-the starts		lan an ann an	te de la Parte de la Carte	States and the same same	
Annotation	1										
MD ft	TVD.	an a church ann an	in Connection of the second		i tangan sangan san Sangan sangan br>Sangan sangan		an Basistan an a	At an and a second s		ener	
6073.00	6073.00	Nudge									٦
6906.49	6880.28	Hold								,	
9944.86	8250.56 9173.04	LP									
13892.77	9305.00	PBHL									
L				w. <u></u> .		······	· •				





Company Field: Referenc Referenc	é Site: e Wêll] e W <u>ellpat</u> h	Devon'Ener Eddy Co: N Antares 23 Antares 23 II	gy IM (NAD)83 Federal #4 Federal #4				Date: 3/ Eo-ordina Vertical (19/2013 fte(NE) R FVD) Ref	ference: erence:	ie:, 10:45 Well: An SITE 350	03) tares 23' Fe 55.0	Page: 1 deral #4H: Grid North Db: Sybase	
NO GLO Interpole Depth R Maximu	BAL SCAI ation Metho ange: m Radius0	N: Using u odMD + Sta 100.00 to 000.00 ft	ser defined tions Inte 13428.72	l selection rval: 100 ft	n & sca).00 ft	n criteri	ia	Ref Erro Scar Erro	erence: or Model: n Method or Surfac	Plan ISC\ : Clos e: Ellip	: Plan #2 VSA Ellipse est Approa se	ch 3D	
Plan:	Plan #2						Date (Composed	: 1	2/6/2012			
Principo	I. Voc						Versia Tight	on:	1	rom Surf			
	1: 165						1160-0			Ioni Suna			
Summar	y	CONTRACTOR SA - HOLE &	New York (1994)	un 14161 - 5 14600 -	1915 Det # 1916/			Manager of Large			manager the first state	and were a set on a ball time, reserve an all states the	1. 1. 1.
Silc		Offset We Well		Vellpath			Referenc MD It	e Offser MD	Ctr-Ci *Distand	r. Edge e Distant	Separation e Factor	Warning	4 5
Aquila 22	Fed Com 4	raquila 22 F	-ea Com 4n	i vo Plan:	Plan # i	IVI (8500.00	8487.84	93.18	47.19	2.03		
Site: Well:	Aquila 22 Aquila 22	Fed Com 4	4H 4H								<u> </u>	·	
Wellpat	h: 1 V0 Plar	n: Plan #1 V	/1						Inter-S	ite Error	: 0.00	ft	
, Re	erence	0 ,	ffset	Semi-M	ajor A	xis	Offset	Location	<u>Çtř</u> £Çt	r' Edger	Separation		
MD: . It	, T.VD / ft	MD ft:	TVD, * ft	Ref ft	Offset fi	TFO-H	IS North It 45	East ft	Distanc ft	e Distan	e Factor,	Warning	
100.00	100.00	96.00	96.00	0.09	0.09	262.56	-53.47	-409.56	413.04	412.86	2343.91		
200.00	200.00	196.00	196.00	0.31	0.31	262.56	-53.47	-409.56	413.04	412.42	665.81		
300.00	300.00	296.00	296.00	0.54	0.53	262.56	-53.47	-409.56	413.04	411.97	386.06		
500.00	500.00	496.00	496.00	0.99	0.98	262.56	-53.47	-409.56	413.04	411.07	209.77		
600.00	600.00	596.00	596.00	1 21	1 20	262 56	-53 47	-409 56	413.04	410.62	170 78		
700.00	700.00	696.00	696.00	1.44	1.43	262.56	-53.47	-409.56	413.04	410.17	144.01		
800.00	800.00	796.00	796.00	1.66	1.65	262.56	-53.47	-409.56	413.04	409.72	124.50		
900.00	900.00	896.00	896.00	1.89	1.88	262.56	-53.47	-409.56	413.04	409.27	109.64		
1000.00	1000.00	996.00	996.00	2.11	2.10	202.30	-53.47	-409.56	413.04	408.82	97.95		
1100.00	1100.00	1096.00	1096.00	2.34	2.33	262.56	-53.47	-409.56	413.04	408.37	88.52		
1200.00	1200.00	1196.00	1196.00	2.56	2.55	262.56	-53.47	-409.56	413.04	407.92	80.74		
1300.00	1300.00	1296.00	1296.00	2.79	2.78	262.56	-53.47	-409.56	413.04	407.47	74.22		
1400.00	1400.00	1496.00	1396.00	3.01	3.00	262.56	-53.47	-409.56	413.04	407.02	63.07		
1000.00	1000.00	1400.00	1400.00	0.24	0.20	202.00	50.47	403.30	410.04	400.57	00.00		
1600.00	1600.00	1596.00	1596.00	3.46	3.45	262.56	-53.47	-409.56	413.04	406.12	59.74		
1700.00	1/00.00	1706.00	1796.00	3.69	3.68	262.56	-53.47	-409.56	413.04	405.67	50.09 52.97		- I
1900.00	1900.00	1896.00	1896.00	4.14	4.13	262.56	-53.47	-409.50	413.04	403.22	49.99		- 1
2000.00	2000.00	1996.00	1996.00	4.36	4.35	262.56	-53.47	-409.56	413.04	404.32	47.41		
2100.00	2100.00	2096.00	2096.00	4.59	4.58	262.56	-53.47	-409.56	413.04	403.87	45.08		
2200.00	2200.00	2196.00	2196.00	4.81	4.80	262.56	-53.47	-409.56	413.04	403.42	42.98		
2300.00	2300.00	2296.00	2296.00	5.03	5.03	262.56	-53.47	-409.56	413.04	402.98	41.06		
2400.00	2400.00	2396.00	2396.00	5.26	5.25	262.56	-53.47	-409.56	413.04	402.53	39.30		
2500.00	2500.00	2496.00	2496.00	5.48	5.48	262.56	-53.47	-409.56	413.04	402.08	37.69		
2600.00	2600.00	2596.00	2596.00	5.71	5.70	262.56	-53.47	-409.56	413.04	401.63	36.20		
2700.00	2700.00	2696.00	2696.00	5.93	5.92	262.56	-53.47	-409.56	413.04	401.18	34.83		
2800.00	2800.00	2796.00	2/96.00	6.16	6.15	262.56	-53.47	-409.56	413.04	400.73	33.56		
3000.00	2900.00	2090.00 2996.00	2996.00 2996.00	0.38 6.61	6.60	262.50 262.56	-53.47 -53.47	-409.56 -409.56	413.04	400.28 399.83	32.38 31.27		ļ
0100.00	0100.00	2002.00	2000.00	6.00	6.00	060 50	E0 47	400 50	440.01	000.00	00.04		
3100.00	3200.00	3196.00	3196.00	0.83 7.06	0.82 7.05	202.50	-53.47	-409.56	413.04	308 03	30.24 20.28		
3300.00	3300.00	3296.00	3296.00	7.28	7.27	262.56	-53.47	-409.56	413 04	398.48	28.20		
3400.00	3400.00	3396.00	3396.00	7.51	7.50	262.56	-53.47	-409.56	413.04	398.03	27.53		
3500.00	3500.00	3496.00	3496.00	7.73	7.72	262.56	-53.47	-409.56	413.04	397.58	26.73		ļ
3600.00	3600.00	3596.00	3596.00	7.96	7.95	262.56	-53.47	-409.56	413.04	397.13	25.97		





 Company:
 Devon Energy.
 Date:: 3/19/2013
 Time: 10:45:03
 Page: 2

 Field:
 Eddy Co., NMI(NAD'83);
 Eddy Co., NMI(NAD'83);
 Eddy Co., NMI(NAD'83);
 Eddy Co., NMI(NAD'83);

 Reference Site:
 Antares 23 Federal #4H;
 Eddy Co., NMI(NAD'83);
 Eddy Co., NMI(NAD'83);

 Reference Site:
 Antares 23 Federal #4H;
 Co., ordinate(NE); Reference;
 Well; Antares 23; Federal #4H; Grid North, Reference;

 Reference Well:
 Antares 23; Federal #4H;
 Co., ordinate(NE); Reference;
 SITE 3565:01;

 Reference Wellpath;
 Db::
 Sybase

 Aquila 22 Fed Com 4H Site: Aquila 22 Fed Com 4H Well: Wellpath: 1 V0 Plan: Plan #1 V1 Inter-Site Error: 0.00 ft Reference Offset Semi: Major Axis Offset Location Crr-Grr Edge. Separation MD TVD MD Ref Offset a TFO-HS North East Distance Distance Factor Warning It deg 8.17 262.56 -53.47 -409.56 3700.00 3700.00 3696.00 3696.00 8.18 413.04 396.68 25.26 3800.00 3796.00 3796.00 8 4 1 8.40 262.56 -53.47 -409.56 413.04 396.23 3800.00 24.58 3900.00 3900.00 3896.00 3896.00 8.63 8.62 262.56 -53.47 -409.56 413.04 395.78 23.94 8.85 262.56 4000.00 4000.00 3996.00 3996.00 8.86 -53.47 -409.56 413.04 395.33 23.33 4100.00 4100.00 4096.00 4096.00 9.08 9.07 262.56 -53.47 -409.56 413.04 394.88 22.75 9.30 262.56 4200.00 4200.00 4196.00 4196.00 9.31 -53.47 -409.56 413.04 394.43 22.20 4296.00 9.52 262.56 413.04 393.98 4300.00 4300.00 4296.00 9.53 -53.47 -409.56 21.68 4400.00 4400.00 4396.00 4396.00 9.75 9.75 262.56 -53.47 -409.56 413.04 393.53 21.18 4496.00 -53.47 -409.56 4500.00 4500.00 4496.00 9.98 9.97 262.56 413.04 393.09 20.70 10.20 262.56 4600.00 4600.00 4596.00 4596.00 10.20 -53.47 -409.56 413.04 392.64 20.25 4700.00 4700.00 4696.00 4696.00 10.43 10.42 262.56 -53.47 -409.56 413.04 392.19 19.81 4800.00 4800.00 4796.00 4796.00 10.65 10.64 262.56 -53.47 -409.56 413.04 391.74 19.39 4896.00 4896.00 10.87 262.56 -53.47 -409.56 4900.00 4900.00 10.88 413.04 391.29 18.99 5000.00 5000.00 4996.00 4996.00 11.10 11.09 262.56 -53.47 -409.56 413.04 390.84 18.61 5096.00 11.32 262.56 5100.00 5100.00 5096.00 11.33 -53.47 -409.56 413.04 390.39 18 24 5200.00 5200.00 5196.00 5196.00 11.55 11.54 262.56 -53.47 -409.56 413.04 389.94 17.88 11.77 262.56 5300.00 5300.00 5296.00 5296.00 11.78 -53.47 -409.56 413.04 389.49 17.54 5396.00 11.99 262.56 -53.47 -409.56 5400.00 5400.00 5396.00 12.00 413.04 389.04 17.21 5500.00 5500.00 5496.00 5496.00 12.23 12.22 262.56 -53.47 -409.56 413.04 388.59 16.90 5600.00 5596.00 12.45 12.44 262.56 -53.47 -409.56 5600.00 5596.00 413.04 388.14 16.595700.00 5700.00 5696.00 5696.00 12.68 12.67 262.56 -53 47 -409 56 413.04 387.69 16.30 5800.00 5800.00 5796.00 5796.00 12.90 12.89 262.56 -53.47 -409.56 413.04 387.24 16.01 5900.00 5896.00 5896.00 13.13 13.12 262.56 -53.47 -409.56 413.04 386.79 5900.00 15.74 6000.00 5996.00 5996.00 13.34 262.56 -53.47 -409.56 6000.00 13 35 413.04 386.34 15.47 6073.00 6073.00 6069.00 6069.00 13.52 13.51 262.56 -53.47 -409.56 413.04 386.01 15.29 6096.00 6096.00 6100.00 6100.00 13.57 13.57 75.04 -53 47 -409 56 412.99 385.85 15.22 6200.00 6199.91 6198.34 6198.32 13.73 13.77 75.38 -55.23 -409.09 411.72 384.22 14.97 75.76 6300.00 6299.47 6301.29 6301.00 13.90 13.94 -62.25 -407.24 408.44 380.60 14.67 14.07 6400.00 6398.40 6404.22 6403.12 14 12 76.17 -74.60 -403.97 403.13 374.96 14.31 6500.00 6496.45 6507.07 6504.32 14.24 14.30 76.61 -92.24 -399.30 395.81 367.29 13.88 6600.00 6593.34 6609.75 6604.24 14.43 14.49 77.09 -115.07 -393.25 386.49 357.61 13.38 6700.00 6688.80 6712.21 6702.53 14.65 14.70 77.61 -143.00 -385.86 375.22 345.92 12.81 6782.57 6814.39 6798.86 14.89 14.94 78.18 -175.88 -377.15 362.01 332.25 6800.00 12.16 6900.00 6874.40 6916.22 6892.93 15.17 15.22 78.80 -213.57 -367.17 346.92 316.61 11.45 6906.49 6880.29 6922.82 6898.95 15.19 15.24 78.84 -216.18 -366.48 345.88 315.53 11.40 7000.00 6965.03 7015.81 6983.30 15.49 15.54 78.83 -254.02 -356.46 330.62 299.68 10.69 7055.66 7114.46 7072.71 15.84 15.89 78.78 -294.32 -345.79 314.27 282.64 7100.00 9.94 78.72 -334.63 -335.12 7200.00 7146.28 7213 12 7162 12 16.23 16 27 297.92 265.54 9.20 7300.00 7236.91 7311.77 7251.53 16.64 16.68 78.65 -374.93 -324.45 281.58 248.38 8.48 7327.54 7410.43 7340.94 78.58 -415.24 -313.78 7400.00 17.09 17.12 265.23 231.16 7.79 7509.08 78.50 -455.55 -303.11 7500.00 7418.17 7430.35 17.55 17.59248.88 213.90 7.11 7508.79 7607.74 7519.76 18.08 78.41 -495.85 -292.43 7600.00 18.04 232.54 196.59 6.47 7599.42 7706.39 7609.17 18.55 18.59 78.30 -536.16 -281.76 7700.00 216.19 179.24 5.85 7800.00 7690.05 7805.04 7698.58 19.09 19.12 78.18 -576.46 -271.09 199.85 161.85 5.26 7780 67 7903 70 7787 99 19.64 19.67 78.04 -616 77 -260 42 183.51 144.42 7900.00 4 70 8000.00 7871.30 8002.35 7877.40 20.20 20.23 77.86 -657.07 -249.75 167.16 126.97 4.16 8100.00 7961.93 8101.01 7966.81 20.78 20.82 77.65 -697.38 -239.08 150.82 109.49 3.65 8056.22 8052.56 8199.66 21.38 21.41 77.39 -737.69 -228.41 91.98 8200.00 134 49 3.16 8300.00 8143.18 8298.32 8145.63 21.99 22.02 77.05 -777.99 -217.73 118.15 74.45 2.70 8233.81 8396.97 8235.04 22.61 22.64 2.27 8400.00 76.61 -818.30 -207.06 101.82 56.91 8418.48 8250.55 8413.94 8250.43 22.72 22.74 76.52 -825.24 -205.30 98.89 53.76 2.19





 Company
 Devon Energy
 Date: 3/19/2013
 Time: 10/45.03
 Page: 3

 Field:
 (Eddy.Co./NM.(NAD.83))
 Co.ordinate(NE) Reference: Well: Antares/23/Federal #4H; Grid/North

 Reference Site:
 Antares/23/Federal #4H; Grid/North

 Reference Well:
 Antares/23/Federal #4H; Grid/North

 Reference:
 SITE 3665.0.

 Reference:
 Well for the second s Aquila 22 Fed Com 4H Site: Well: Aquila 22 Fed Com 4H Wellpath: 1 V0 Plan: Plan #1 V1 Inter-Site Error: 0.00 ft Reference Offset Semi-MajorAxis, Offset Location Crr-Ctr Edge, Separation MD, TVD Ref Offset, IFO-HS, North Last Distance Distance Factor, Warning It II II. II. Offset, IFO-HS, North II. II. 8276 22 80.49 -836.92 -203.01 8279.15 8442.35 22.90 22.90 8450.00 95 12 49.62 2 09 8500.00 8324.55 8487.84 8317.56 23.14 23.10 86.98 -855.78 -201.09 93.18 47.19 2.03 8550.00 8369.90 8533.24 8358.82 23.33 23.26 93.58 -874.75 -201.33 96.22 49.82 2.07 8600.00 8415.08 8577.92 8399.28 23.48 23.38 100.08 -893.51 -203.67 104.19 2.23 57.48 8650.00 8459.96 8621.23 8438.33 23.59 23.46 106.25 -911.76 -207.92 116.97 70.02 2.49 23.65 23.51 111.95 -929.23 -213.80 8662.65 8475 42 134.36 87.25 2.85 8700.00 8504.42 8750.00 8548.34 8701.73 8510.12 23.68 23.53 117.10 -945.69 -220.97 156.09 108.91 3.31 8800.00 8591.59 8738.12 8542.13 23.67 23.52 121.68 -960.99 -229.06 181.86 134.69 3.86 23.49 125.71 -975.01 -237.68 8850.00 8634.06 8771.59 8571.28 23.62 211.34 164.23 4.49 8900.00 8675.64 8802.03 8597.50 23.55 23.45 129.22 -987.69 -246.50 244.17 197.19 5.20 8950.00 8716.20 8829.37 8620.81 23.46 23.40 132.28 -999.03 -255.21 280.01 233.20 5.98 23.35 134.91 - 1009.05 - 263.56 23.36 8755.64 8853.66 8641.30 318.49 271.89 6.84 9000.00 9050.00 8793.85 8874.98 8659.10 23 26 23.30 137.17 - 1017.80 - 271.36 359.29 312.95 7.75 9100.00 8830 72 8893.44 8674.38 23.18 23.25 139.09 - 1025.33 - 278.48 402 10 356 03 873 8687.30 9150.00 8866.15 8909.19 23.13 23.21 140.69 - 1031.73 - 284.81 446.61 400.84 9.76 9200.00 8900.05 8922.39 8698.06 23.13 23.17 141.97 - 1037.07 - 290.30 492.55 447.10 10.84 8932.32 8933.21 8706.82 23.19 23.14 142.91 - 1041.43 - 294.92 539.68 494.53 11.95 9250.00 23.12 143.44 -1044.89 -298.67 9300.00 8962.88 8941.82 8713.75 23.31 587.76 542.90 13 10 9350.00 8991.64 8950.00 8720.31 23.50 23.09 143.44 - 1048.16 - 302.30 636.57 591.97 14.27 8950.00 8720.31 23 75 23.09 141.92 - 1048.16 - 302.30 685 94 641 40 9400.00 9018 52 15.40 9450.00 9043.44 8956.00 8725.10 24.07 23.08 137.81 - 1050.56 - 305.01 735.65 690.87 16.43 8726.16 23.07 112.90 - 1051.09 - 305.61 9500.00 9066.35 8957.33 24.45 785.58 738.56 1671 8957.20 8726.05 23.07 -0.06-1051.04 -305.55 835.57 795.87 9550.00 9087.18 24.89 21.05 9600.00 9105.86 8950.00 8720.31 25.38 23.09 343.03 - 1048.16 - 302.30 885.51 844.82 21.76 9650.00 9122.35 8950.00 8720.31 25.92 23.09 339.91 -1048.16 -302.30 935.19 894.46 22.96 8950.00 8720.31 23.09 338.61 -1048.16 -302.30 984.56 943 98 24.26 9700.00 9136.61 26.519750.00 9148.59 8950.00 8720.31 27.14 23.09 337.95 - 1048.16 - 302.30 1033.55 993.16 25.5923.13 337.41 - 1043.49 - 297.15 9800.00 9158.26 8938.35 8710.96 27.81 1081.95 1041.70 26.88 9850.00 9165.60 8931.59 8705.52 28.52 23.15 337.14 - 1040.78 - 294.22 1129.77 1089.67 28.18 9900.00 9170.59 8924.03 8699.39 29.27 23.17 336.92 - 1037.73 - 290.99 1176.88 1136.92 29.45 9944.86 9173.04 8916.60 8693.35 29.95 23.19 336.75 - 1034.73 - 287.87 1218.49 1178.61 30.55 23.24 336.67 - 1028.00 - 281.09 9174.88 8900.00 8679 78 31.05 1269.38 1228.98 10000.00 31.42 9178.23 8900.00 8679.78 23.24 336.67 -1028.00 -281.09 1362.10 1320.85 10100.00 33.13 33.02 8877.02 8660.80 23.30 336.57 -1018.63 -272.14 10200.00 9181.57 35.30 1455.33 1413 08 34.45 23.33 336.51 -1013.12 -267.13 10300.00 9184.91 8863.56 8649.59 37.54 1549.13 1505.89 35.83 10400.00 9188.25 8850.00 8638.23 39.85 23.36 336.46 -1007.54 -262.26 1643.41 1599.13 37.12 10500.00 9191.60 8850.00 8638.23 42.21 23.36 336.46 -1007.54 -262.26 1738.18 1692.88 38.38 8620.19 23.40 336.38 -998.73 -254.96 10600.00 9194.94 8828.63 44.62 1833.14 1786.73 39.50 10700.00 9198.28 8818.53 8611.60 47 07 23 42 336.35 -994 54 -251 66 1928.53 1881.02 40.59 23.45 336.29 -986.85 -245.88 10800.00 8800.00 8595.77 49.54 9201.62 2024.29 1975.62 41.60 8595.77 23.45 336.29 -986.85 -245.88 10900.00 9204.97 8800.00 52 05 2120.192070.41 42.59 9208.31 8800.00 8595.77 54.58 23.45 336.29 -986.85 -245.88 2216.45 2165.55 11000.00 43 54 8784.02 8582.02 23.47 336.25 -980.19 -241.17 2312.85 2260.75 57.13 11100.00 9211.65 44.40 11200.00 9214.99 8776.62 8575.64 59.70 23.48 336.23 -977.11 -239.07 2409.50 2356.23 45.23 8569.60 62.28 23.49 336.21 -974.19 -237.15 11300.00 9218.34 8769.64 2506.34 2451.88 46.02 11400.00 9221.68 8750.00 8552.52 64.88 23.51 336.16 -965.97 -231.99 2603.47 2547.79 46.75 11500.00 9225.02 8750.00 8552.52 67.49 23.51 336.16 -965.97 -231.99 2700.56 2643.68 47.48 23.51 336.16 -965.97 -231.99 11600.00 9228.36 8750.00 8552.52 70.11 2797.852739.78 48 18 11700.00 9231.71 8750.00 8552.52 72.74 23.51 336.16 -965.97 -231.99 2895.332836.05 48.84 23.51 336.16 -965.97 -231.99 11800.00 9235.05 8750.00 8552.52 75.38 2992.97 2932.48 49.47 8750.00 8552.52 78.03 23.51 336.16 -965.97 -231.99 11900.00 9238.39 3090.77 3029.05 50.08





Company: Devon Energy/ Eddy Co., NM.(NAD/83) Reference Site: Antares:23 Federal #4H Reference Well: Antares:23 Federal #4H Devon Energy/ Reference Well: Antares:23 Federal #4H Devon Energy Aguila 22 Fed Com 4H Site: Aquila 22 Fed Com 4H Well: Wellpath: 1 V0 Plan: Plan #1 V1 Inter-Site Error: 0.00 ft
 Reference
 Offset
 Semi: Major. Axis
 Offset Location
 Ctr=Ctr=Edge
 Separation

 MD
 TVD
 MD⁷
 TVD
 Ref=_Offset
 TFO-HS
 North
 East
 Distance Distance Factor
 Warning

 ft
 19 12000.00 9241.73 8729.95 8534.98 80.69 23.52 336.11 -957.56 -227.13 3188,42 3125,45 50.63 9245.08 8725.33 23.52 336.10 -955.62 -226.06 12100.00 8530.92 83.35 3286.34 3222.12 51.17 9248.42 8720.91 8527.04 86.02 23.52 336.09 -953.76 -225.07 3384.36 3318.89 51.70 12200.00 23.53 336.05 -944.97 -220.62 12300.00 9251.76 8700.00 8508.60 88.69 3482.64 3415.90 52.18 12400.00 9255.10 8700.00 8508.60 91.36 23.53 336.05 -944.97 -220.62 3580.75 3512.76 52.67 9258.45 8700.00 8508.60 94.05 23.53 336.05 -944.97 -220.62 3678.95 3609.72 12500.00 53 14 23.53 336.05 -944.97 -220.62 8508.60 9261.79 8700.00 96.73 3777.25 3706.77 12600.00 53.59 12700.00 9265.13 8700.00 8508.60 99.42 23.53 336.05 -944.97 -220.62 3875.64 3803.90 54.02 23.53 336.05 -944.97 -220.62 9268.47 8700.00 8508.60 102.11 3974.11 3901.11 12800.00 54.44 12900.00 9271.82 8700.00 8508.60 104.81 23.53 336.05 -944.97 -220.62 4072.65 3998.40 54.85 23.53 336.05 -944.97 -220.62 13000.00 9275.16 8700.00 8508.60 107.51 4171.27 4095.75 55.24 23.53 336.05 -944.97 -220.62 13100.00 9278.50 8700.00 8508.60 110.21 4269.94 4193.16 55.61 13200.00 9281.84 8700.00 8508.60 112.91 23.53 336.05 -944.97 -220.62 4368.68 4290.63 55.97 8508.60 115.62 8700.00 23.53 336.05 -944.97 -220.62 4467.47 4388.16 13300.00 9285.19 56.33 23.52 336.02 -936.61 -216.82 13400.00 9288.53 8680.17 8491.02 118.33 4566.07 4485.45 56.64



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Weatherford Drilling Services

GeoDec	v5.03		

	Report Date:	March 19, 2013			
	Customer: Well Name: API Number: Big Name:	Devon Energy Antares 23 Feder	cal #4H		
	Location: Block:	Eddy Co., NM			
	Engineer:	RWJ			
\langle	US State Plane 1983 System: New Mexico Eastern Zone Projection: Transverse Mercator/Gauss Kruger Datum: North American Datum 1983 Ellipsoid: GRS 1980 North/South 598624.170 USFT East/West 690744.410 USFT Grid Convergence: .26° Total Correction: +7.35° Geodetic Location WGS84 Latitude = 32.64473° N 32° 3 Longitude = 103.84793° W 103° 5		Geodetic Latitude / Longitude System: Latitude / Longitude Projection: Geodetic Latitude and Longitude Datum: North American Datum 1983 Ellipsoid: GRS 1980 Latitude 32.6447275 DEG Longitude -103.8479322 DEG		
			ion = 0.0 Meters ° 38 min 41.019 sec ° 50 min 52.556 sec		
	Magnetic Declination Local Gravity = Local Field Strength = Magnetic Dip = Magnetic Model = Spud Date =	= 7.61° .9988 g 48635 nT 60.44° bggm2012 Jun 15, 2013	[True North Offset] CheckSum = Magnetic Vector X = Magnetic Vector Y = Magnetic Vector Z = Magnetic Vector H =	6609 23783 nT 3178 nT 42304 nT 23994 nT	

Signed:_____

Date:_____

Weatherford

Wft Plan Report X Y's. Date: 3/19/2013 Company: Devon Energy Field: Eddy Co., NM (NAD 83) Co-ordinate(NE) Refer Site: Antares 23 Federal #4H Vertical (TVD) Refere Well: Antares 23 Federal #4H Section (VS) Referenc Survey Calculation Me Wellpath: 1 Plan: Plan #2 Date Composed: Version: Principal: Yes Tied-to: Antares 23 Federal #4H Site: Site Position: Northing: 598624.17 ft Latitude: From: Easting: 690744.41 ft Longitude: Мар 1 Position Uncertainty: ft 0.00 North Reference: Ground Level: 3545.00 ft Grid Convergence: Well: Antares 23 Federal #4H Slot Name: Well Position: +N/-S 0.00 ft Northing: 598624.17 ft Latitude: +E/-W 0.00 ft Easting : 690744.41 ft Longitude: 1 0.00 Position Uncertainty: ft Wellpath: 1 Drilled From: Tie-on Depth: Current Datum: SITE Height 3565.00 ft Above System Datum Declination: Magnetic Data: 6/6/2013 Field Strength: 48667 Mag Dip Angle: nT +N/-S Vertical Section: Depth From (TVD) +E/-W ft ft ft 9305.00 0.00 0.00 Plan Section Information TVD +N/-S +E/-W MD Incl Azim DLS Build ft deg deq ft ft ft deg/100ftdeg/100f 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 6073.00 0.00 0.00 6073.00 0.00 0.00 0.00 0.00 6906.49 25.00 187.55 6880.29 -177.45-23.53 3.00 3.00 8418.48 25.00 187.55 8250.55 -811.02 -107.52 0.00 0.00 9944.86 88.08 89.67 9173.04 -1216.75 6.00 4.13 819.07 88.08 13892.78 89.67 9305.00 -1194.15 4764.72 0.00 0.00 Survey Incl TVD E/W MD Azim N/S VS DLS ft deq deq ft ft ft ft deg/100ft 6000.00 0.00 0.00 6000.00 0.00 0.00 0.00 0.00 0.00 6073.00 0.00 6073.00 0.00 0.00 0.00 0.00 0.81 6100.00 187.55 6100.00 -0.19 -0.03 0.02 3.00 6200.00 3.81 187.55 6199.91 -4.18 -0.55 0.48 3.00 6300.00 6.81 187.55 6299.47 -13.36 -1.77 1.53 3.00

https://ilmnirm0ap151:8281/attachment/202063/16649201.TXT

6400.00	9.81	187.55	6398.40	-27.68	-3.67	3.17	3.00
6500.00	12.81	187.55	6496.45	-47.12	-6.25	5.40	3.00
6600.00	15.81	187.55	6593.34	-71.62	-9.49	8.20	3.00
6700.00	18.81	187.55	6688.80	-101.12	-13.40	11.58	3.00
6800.00	21.81	187.55	6782.57	-135.52	-17.97	15.52	3.00
6900.00	24.81	187.55	6874.40	-174.74	-23.17	20.01	3.00
6906.49	25.00	187.55	6880.29	-177.45	-23.53	20.32	3.00
7000.00	25.00	187.55	6965.03	-216.64	-28.72	24.81	0.00
7100 00	25 00	187 55	7055 66	-258 54	-34 27	29 61	0 00
7200.00	25.00	197 55	7146 28	-300.44	_20.92	20.01	0.00
/200.00	25.00	107.00	/140.20	500.44	- 55.05	54.40	0.00
7300.00	25.00	187.55	7236.91	-342.34	-45.38	39.20	0.00
7400.00	25.00	187.55	7327.54	-384.25	-50.94	44.00	0.00
7500.00	25.00	187.55	7418.17	-426.15	-56.49	48.80	0.00
7600.00	25.00	187.55	7508.79	-468.05	-62.05	53.60	0.00
7700.00	25.00	187.55	7599.42	-509.96	-67.60	58.40	0.00
7800.00	25.00	187.55	7690.05	-551.86	-73.16	63.20	0.00
7900.00	25.00	187.55	7780.67	-593.76	-78.71	67.99	0.00
8000 00	25 00	187 55	7871 30	-635 66	-84 27	72 79	0 00
8100.00	25.00	187 55	7961 93	-677 57	_ 89 82	77 59	0.00
8100.00	25.00	107.55	7901.93	077.57		11.59	0.00
8200.00	25.00	10/.55	0052.50	-/19.4/	- 95.36	02.39	0.00
8300.00	25.00	187.55	8143.18	-761.37	-100.94	87.19	0.00
8400.00	25.00	187.55	8233.81	-803.28	-106.49	91.99	0.00
8418.48	25.00	187.55	8250.55	-811.02	-107.52	92.87	0.00
8500.00	24.78	175.93	8324.55	-845.16	-108.57	100.15	6.00
8600.00	25.71	162.00	8415.08	-886.72	-100.37	118.21	6.00
8700.00	27.85	149.53	8504.42	-927.52	-81.80	146.14	6.00
8800.00	30.95	139.03	8591.59	-967.11	-53.07	183.63	6.00
8900.00	34.74	130.45	8675.64	-1005.04	-14.50	230.27	6.00
9000.00	39.03	123.44	8755.64	-1040.91	33.50	285.55	6.00
9100.00	43.67	117.67	8830.72	-1074.33	90.40	348.87	6,00
9200 00	18 55	112 82	8900 05	-1104 91	155 58	419 53	6 00
9200.00	53 60	108 66	8962 88	-1122 24	100.00	419.33	6.00
9300.00	53.00	105.00	0019 50	-1152.34	220.32	490.75	0.00
9400.00	58.78	105.01	9018.52	-1156.32	307.82	579.70	6.00
9500.00	64.05	101.75	9066.35	-11/6.5/	393.22	667.45	6.00
9600.00	69.39	98.77	9105.86	-1192.87	483.57	759.06	6.00
9700.00	74.78	95.99	9136.61	-1205.05	577.90	853.52	6.00
9800.00	80.20	93.35	9158.26	-1212.98	675.16	949.79	6.00
9900.00	85.64	90.80	9170.59	-1216.57	774.28	1046.81	6.00
9944.86	88.08	89.67	9173.04	-1216.75	819.07	1090.30	6.00
10000.00	88.08	89.67	9174.88	-1216.43	874.18	1143.68	0.00
10100.00	88.08	89.67	9178.23	-1215.86	974.12	1240.48	0.00
10200.00	88.08	89.67	9181.57	-1215.29	1074.06	1337.29	0,00
10300 00	88 08	89 67	9184 91	-1214 72	1174 01	1434 09	0 00
10400 00	88 08	89 67	91 88 25	-1214 14	1273 05	1530 00	0.00
10500.00	20.00 20 00	80 C7	9101 CA	1010 E7	1272 00	1607 70	0.00
10200.00	00.08	07.6/	9191.6U	-1413.5/	27.9.67	102/./U	0.00
10600.00	88.08	89.67	9194.94	-1213.00	1473.83	1724.51	0.00
10700.00	88.08	89.67	9198.28	-1212.43	1573.78	1821.31	0.00
10800.00	88.08	89.67	9201.62	-1211.85	1673.72	1918.12	0.00
10900.00	88.08	89.67	9204.97	-1211.28	1773.66	2014.92	0.00
11000.00	88.08	89.67	9208.31	-1210.71	1873.60	2111.73	0.00
	-		·				

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11100.00	88.08	89.67	9211.65	-1210.14	1973.55	2208.53	0.00
11200.00	88.08	89.67	9214.99	-1209.56	2073.49	2305.34	0.00
11300.00	88.08	89.67	9218.34	-1208.99	2173.43	2402.14	0.00
11400.00	88.08	89.67	9221.68	-1208.42	2273.37	2498.95	0.00
11500.00	88.08	89.67	9225.02	-1207.85	2373.32	2595.75	0.00
11600.00	88.08	89.67	9228.36	-1207.28	2473.26	2692.56	0.00
11700.00	88.08	89.67	9231.71	-1206.70	2573.20	2789.36	0.00
11800.00	88.08	89.67	9235.05	-1206.13	2673.14	2886.17	0.00
11900.00	88.08	89.67	9238.39	-1205.56	2773.09	2982.97	0.00
12000.00	88.08	89.67	9241.73	-1204.99	2873.03	3079.78	0.00
12100.00	88.08	89.67	9245.08	-1204.41	2972.97	3176.58	0.00
12200.00	88.08	89.67	9248.42	-1203.84	3072.91	3273.39	0.00
12300.00	88.08	89.67	9251.76	-1203.27	3172.86	3370.19	0.00
12400.00	88.08	89.67	9255.10	-1202.70	3272.80	3467.00	0.00
12500.00	88.08	89.67	9258.45	-1202.12	3372.74	3563.80	0.00
12600.00	88.08	89.67	9261.79	-1201.55	3472.68	3660.61	0.00
12700.00	88.08	89.67	9265.13	-1200.98	3572.63	3757.41	0.00
12800.00	88.08	89.67	9268.47	-1200.41	3672.57	3854.22	0.00
12900.00	88.08	89.67	9271.82	-1199.83	3772.51	3951.02	0.00
13000.00	88.08	89.67	9275.16	-1199.26	3872.45	4047.83	0.00
13100.00	88.08	89.67	9278.50	-1198.69	3972.40	4144.63	0.00
13200.00	88.08	89.67	9281.84	-1198.12	4072.34	4241.44	0.00
13300.00	88.08	89.67	9285.19	-1197.54	4172.28	4338.24	0.00
13400.00	88.08	89.67	9288.53	-1196.97	4272.22	4435.05	0.00
13500.00	88.08	89.67	9291.87	-1196.40	4372.17	4531.85	0.00
13600.00	88.08	89.67	9295.21	-1195.83	4472.11	4628.66	0.00

Targets

13700.00

13800.00

13892.78

88.08

88.08

88.08

89.67

89.67

89.67

9298.56

9301.90

9305.00

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Name	Descript	ion	TVD	+N/-S	+E/-W	Map Northing	M Ea
LP Tgt	Dip.	Dir.	ft 9173.04	ft -1216.75	ft 819.07	ft 597407.42	691
PBHL -Rectangle	1.92 (3947x50)	89.67	9305.00	-1194.15	4764.72	597430.02	695

-1195.25

-1194.15

.

4725.46

4912.08

0.00

0.00

0.00

4572.05

4764.72

-1194.68 4671.99 4822.27

Casing Points

MD	TVD	Diameter	Hole Size	Name

Annotation

MD	TVD	
ft	ft	
6073.00	6073.00	Nudge
6906.49	6880.28	Hold
8418.48	8250.56	KOP

9944.86	9173.04	ΓЪ
13892.77	9305.00	PBHL

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PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Prod Co
LEASE NO.:	NM0107697
WELL NAME & NO.:	4H Antares 23 Federal
SURFACE HOLE FOOTAGE:	2080' FSL & 185' FWL
BOTTOM HOLE FOOTAGE	0340' FSL & 0340' FEL
LOCATION:	Section23, T.19 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

- 1. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the Yates formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.
- 2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. If the drilling rig is removed without approval an Incident of Non-Compliance will be written and will be a "Major" violation.
- 3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

4. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possible water and brine flows in the Salado and Artesia groups. Possible lost circulation in the Artesia group and Capitan Reef.

- 1. The 20 inch surface casing shall be set at approximately 670 feet (below the Magenta Dolomite member of the Rustler Anhydrite and above the salt) and cemented to the surface. If the salt is encountered, the casing shall be set 25' above the salt.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial cementing will be done prior to drilling out that string.
- 2. The minimum required fill of cement behind the **13-3/8** inch first intermediate casing is:

Cement to surface. If cement does not circulate see B.1.a, c-d above. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef.

If either DV tool cannot be set as proposed, operator shall submit a sundry requesting to move the tool and providing cement volumes.

- 3. The minimum required fill of cement behind the 9-5/8 inch second intermediate casing, which shall be set in the base of the Capitan Reef at approximately 4300', is:
 - a. First stage to DV tool, which shall be set a minimum of 50 feet below the previous casing shoe:
 - Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.
 - b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef.
- 4. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - a. First stage to DV tool:
 - Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage..
 - b. Second stage above DV tool:
 - Cement as proposed. Operator shall provide method of verification.

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

- 1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
- 2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
- 3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000** (**2M**) psi.
 - a. For surface casing only: If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
- Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 13-3/8 inch intermediate casing shoe shall be 3000 (3M) psi.

- 5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock.
 - d. The results of the test shall be reported to the appropriate BLM office.
 - e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
 - f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

WWI 032813

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy prod Co
LEASE NO.:	NM0107697
WELL NAME & NO.:	4H Antares 23 Federal
SURFACE HOLE FOOTAGE:	2190' FSL & 185' FWL
BOTTOM HOLE FOOTAGE	1980' FSL & 340' FEL
LOCATION:	Section 23, T.19 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

General Provisions Permit Expiration Archaeology, Paleontology, and Historical Sites **Noxious Weeds** Special Requirements Lesser Prairie-Chicken Timing Stipulations Ground-level Abandoned Well Marker Hackberry Lake OHV Area Construction Notification Topsoil Closed Loop System Federal Mineral Material Pits Well Pads Roads **Road Section Diagram** Drilling H₂S – Onshore Order #6 Logging Requirements Waste Material and Fluids **Production** (Post Drilling) Well Structures & Facilities Pipelines - not requested Electric Lines - not requested Interim Reclamation Final Abandonment & Reclamation

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

<u>Ground-level Abandoned Well Marker to avoid raptor perching</u>: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Hackberry Lake OHV Special Recreation Management Area (SRMA)

Pipelines shall be buried a minimum of <u>24</u> inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. Power poles and associated ground structures (poles, guy wires) will not be placed within 20 feet of recreation trails. Guy wires must be equipped with a sleeve, tape or other industry approved apparatus that is highly visible during the day and reflective at night. Appropriate safety signage will be in place during all phases of the project. Upon completion of construction, the road shall be returned to pre-construction condition with no bumps or dips. All vehicle and equipment operators will observe speed limits and practice responsible defensive driving habits.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-6235 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. ON LEASE ACCESS ROADS

Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty (20) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\underline{400'}_{4\%}$ + 100' = 200' lead-off ditch interval 4%

Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

Fence Requirement

Where entiry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.



Figure 1 - Cross Sections and Plans For Typical Road Sections

VII. DRILLING

DRILLING OPERATIONS REQUIREMENTS A.

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

- 1. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the Yates formation. As a result, the Hydrogen Sulfide area must meet **Onshore Order 6 requirements, which includes equipment and personnel/public** protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.
- 2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
- 3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well - vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the **Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the

· I mi.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possible water and brine flows in the Salado and Artesia groups. Possible lost circulation in the Artesia group and Capitan Reef.

- 1. The 20 inch surface casing shall be set at approximately 670 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - **b.** Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
- 2. The minimum required fill of cement behind the **13-3/8** inch 1st intermediate casing is:

Cement to surface. If cement does not circulate see B.1.a, c-d above. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef.

1.1

- The minimum required fill of cement behind the 9-5/8 inch 2nd intermediate casing is: (Set casing in the base of the Capitan Reef at approximately 4300') DV tool shall be set a minimum of 50 feet below previous casing shoe.
 - a. First stage to DV tool:
 - Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.
 - b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef.
- 4. The minimum required fill of cement behind the 5-1/2 inch production casing is:
 - a. First stage to DV tool, cement shall:
 - Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage..
 - b. Second stage above DV tool, cement shall:
 - Cement as proposed. Operator shall provide method of verification.
- 5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.



- 2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
- 3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000** (**2M**) psi.
 - a. For surface casing only: If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
- 4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **3000 (3M)** psi.
- 5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - c. The results of the test shall be reported to the appropriate BLM office.

- d. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

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VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color Shale Green, Munsell Soil Color Chart # 5Y 4/2

B. PIPELINES – not requested

C. ELECTRIC LINES – not requested

IX. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture for LPC Sand/Shinnery Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be <u>no</u> primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	<u>lb/acre</u>
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed