Control of the second sec	** BLM REVISED ** BLM RE	& Special Stipulation	s Attached ( (ISED ** BLM REVIS	CONDITIONS C	)FSFMOVAL
Provide and provide the provide state of the provide state provide state of the provide state of the pro	Additional Operator Remarks (see next page) Electronic Submiss For OX Committed to AFMSS for	ion #332475 verified ( USA INCORPORATI processing by JAMIE oval Subject to Gener	by the BLM Well Infor ED, sent to the Carls E RHOADES on 03/16 al Requirements	NtW( mation System bad /2016 (16JLR0330AE)	DIL CONSERVATIO ARTESIA DISTRICT MAY 09 2016
Carter Deriver Area Control of the Control of	Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, a States any false, fictitious or fraudulent statements or representat	nake it a crime for any perso ions as to any matter within	on knowingly and willfully t its jurisdiction.	to make to any department or ag	gency of the United
Contract Dark Department of the intervent of the int	Application approval does not warrant or certify the applicant he operations thereon. Conditions of approval, if any, are attached.	nus legal or equitable title to	i mose rights in the subject l	APPROVAL FO	R TWO YEARS
Carlier Structure and well by the second and t	Title FIELD MANAGER	Office	CARLS	BAD FIELD OFFICE	nlight to conduct
Carta Strong And Angeneration Ange	Approved by (Signature) /S/George MacDonell	Name (Printed/Typed)			MAY - 4 2016
From 3: 40-3 (August 2007)       FORM APPROVED UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT       FORM APPROVED UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT       FORM APPROVED UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT         APPLICATION FOR PERMIT TO DRILL OR REENTRECEIVED       9. If Indian. Allottee or Tribe Name         Ia. Type of Work:       DRILL       REENTER         Ia. Type of Work:       0 OILWell       Contact: DAVID STEWART       7. If Unit or CA Agreement, Name and No.         1. Type of Work:       0 OILWell       Contact: DAVID STEWART       7. If Unit or CA Agreement, Name and No.         2. Name of Operator OXY USA INCORPORATED       Contact: DAVID STEWART       9. Plone No. (include area code)       9. Plone No. (include area code)         10. Type of Well:       0.01 Well       BS. Phone No. (include area code)       10. Fled and Pool, or Exploratory         14. Location of Well (Report location clearly and in accordance with any State requirements?)       11. Sec. 7. R., M., or Bik and Survey or Area         14. Detation of Well (Report location to nearest own or pool office*       10. Pletd and Pool, or Exploratory         14. Jobatance from proposed location to nearest property or learning the integration of the reset in Lask MM       13. State         15. Distance from proposed location to nearest property or learning the integration on the states, ft.       16. No. of Acres in Lask 13215 MD       18. Plone No. (include area code)					
CATISPOENT CATTER CONTRACT OF THE INTERIOR OF A CONTRACT OF A CONTRACT OF THE INTERIOR OF A CONTRACT O CONTRACT OF A CONTRA	25. Signature (Electronic Submission)	Name (Printed/Typed) DAVID STEWART	Ph: 432.685.5717		Date 02/29/2016
Cart Sprace and Control of the	<ol> <li>The following, completed in accordance with the requirements o</li> <li>Well plat certified by a registered surveyor.</li> <li>A Drilling Plan.</li> <li>A Surface Use Plan (if the location is on National Forest Syst SUPO shall be filed with the appropriate Forest Service Of</li> </ol>	f Onshore Oil and Gas Orde em Lands, the 5 fice).	<ul> <li>r No. 1, shall be attached to</li> <li>Bond to cover the operati Item 20 above).</li> <li>Operator certification</li> <li>Such other site specific in authorized officer.</li> </ul>	this form: ons unless covered by an existi formation and/or plans as may	ng bond on file (see be required by the
Porm 3:60-3     (August 2007)     UNITED STATES     DEPARTMENT OF THE INTERIOR     DURAL OF LAND MANAGEMENT     APPLICATION FOR PERMIT TO DRILL OR REENTRECEIVED     S. Lease Serial No.     MMNM13996     G. Lease Name and No.     Loase Name and No.     S. Lease Name and Well No.     CEDAR CANYON 22 FEDERAL COM 5H     Subject Not Series     Contact: DAVID STEWART     OXY USA INCORPORATED     E-Mail: david_stewart@oxy.com     G.     G. GEENWAY PLAZA SUITE 110     HOUSTON IX 77046-0521     Contact: DAVID STEWART     S. Science In miles and direction clearly and in accordance with any State requirements:     At surface     SWSW 1120FSL 207FWL 32.198632 N Lat, 103.979724 W Lon     At proposed prod.zone NESE 1690FSL 250FEL 32.200166 N Lat, 103.964080 W Lon     H.     Distance from proposed location to nearest town or post office*     GMILES NORTHEAST FROM LOVING, NM     IS. Distance from proposed location to nearest town or post office*     MILES NORTHEAST FROM LOVING, NM     IS. Distance from proposed location to nearest town or post office*     G.     G.     G.     G.     G.     G.     Distance from proposed location to nearest well, drilling, 207     199.71     160.00     IS.     Distance from proposed location to nearest well, drilling, 207     199.71     160.00     IS.     Distance from proposed location to nearest well, drilling, 207     199.71     160.00     IS.     County or Parish, 13. State     NMB000862     ISIAMBIA Bond No. on file     NMB000862     ISIAMBIA Bond No. on file	2940 GL	24. Attach	ments	JUDAYS	
Porm 3:60-3 (August 2007)       CartISDE Structure of the INTERIOR DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT       PORM APPROVED OWAN 0: 040-0136 Expires July 31, 2010         APPLICATION FOR PERMIT TO DRILL OR REENTRECEIVED       5. Lease Serial No. NMMN13996         APPLICATION FOR PERMIT TO DRILL OR REENTRECEIVED       5. Lease Serial No. NMMN13996         Ia. Type of Work:       D DRILL       REENTER         Ib. Type of Well:       O OIL       Other       Single Zone       Multiple Zone         2. Name of Operator OXY USA INCORPORATED       Contact: DAVID STEWART OXY USA INCORPORATED       Onter       Single Zone       Multiple Zone         3. Address 5. GREENWAY PLAZA SUITE 110 HOUSTON, TX 77046-5012       3. Phone No. (include area code) Ph: 432.685.5717       9. APJ Well No. COT(CAL) DEVALUE OF THE SUPPORTOR OXY USA INCORPORATED       Burk and Survey or Area         4. Location of Well       Generation clearly and in accordance with any State requirements.*)       10. Field and Pool, or Exploratory UNKHOWN       11. Sec. T. R. M. or Bik. and Survey or Area         At surface       SWSW 1120FSL 207FWL 32.198632 N Lat, 103.979724 W Lon       12. Country or Parish EDDY       13. State NM         14. Distance from proposed nodic non nearest own or post office* 6 MILES NORTHEAST FROM LOVING, NM       16. No. of Acres in Lease 17. Spacing Unit dedicated to this well 160.00       13. State NM         15. Distance from proposed location to nearest well, drilling       19. Proposed Depth	21. Elevations (Show whether DF, KB, RT, GL, etc.	13215 MD 8720 TVD 22. Approximate date we	rk will start	NMB000862	
Prom 3: 60-3 (August 2007)       FORM APPROVED OWA APPROVED DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT       FORM APPROVED OWA P	lease line, ft. (Also to nearest drig, unit line, if any)         207'         18. Distance from proposed location to nearest well, drilling,	199.71 19. Proposed Depth		160.00 20. BLM/BIA Bond No. on	file
Prom 5:66-3 (August 2007)       FORM APPROVED UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT       FORM APPROVED OMEN & 1004-0136 Expires July 31, 2010         APPLICATION FOR PERMIT TO DRILL OR REENTRECEIVED       5. Lease Serial No. NMNM13996         APPLICATION FOR PERMIT TO DRILL OR REENTRECEIVED       6. If Indian, Allottee or Tribe Name         Ia. Type of Work:       Ø DRILL       REENTER         Ib. Type of Well:       Ø Oil Well       Gas Well       Other         Single Zone       Multiple Zone         2. Name of Operator OXY USA INCORPORATED       Contact: DAVID STEWART E-Mail: david_stewart@oxy.com       9. API Well No. SO O 1.5       COS 5         3a. Address 5 GREENWAY PLAZA SUITE 110 HOUSTON, TX 77046-0521       3b. Phone No. (include area code) Ph: 432.685.5717       10. Field and Pool, or Exploratory UNKHOWN Cort Call Draw _ Bark Sprince         4. Location of Well       (Report location clearly and in accordance with any State requirements.*)       11. Sec. T. R., M., or Bik. and Survey or Area Sec 22 T24S R29E Mer NMP         4. t surface       SWSW 1120FSL 207FWL 32.198632 N Lat, 103.979724 W Lon At proposed prod. zone NESE 1690FSL 250FEL 32.200166 N Lat, 103.964080 W Lon       12. County or Barich       13. State	6 MILES NORTHEAST FROM LOVING, NM 15. Distance from proposed location to nearest property or	16. No. of Acres in Lease	;	EDDY 17. Spacing Unit dedicated	to this well
Porm 36 60-3 (August 2007) UNITED STATES DEPARTMENT OF THE INTERIOR UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT  APPLICATION FOR PERMIT TO DRILL OR REENTRECEIVED  APPLICATION FOR PERMIT OD TO DRILL OR REENTRECEIVED  APPLICATION FOR PERMIT OD TO DRILL OR REENTRECEIVED  APPLICATION FOR PERMIT OD TO DRILL OR REENTRECEIVENT  APPLICATION CONTACT ON TO TRIBUTE TO DRILL OR REENTRECEIVENT ON TO TRIBUTE TO TRIBUTE TO DRILL OR REENTRECEIVENT ON TO TRIBUTE TO DRILL OR REENTRE COMPANY  A ADVIN A ADVIN TO A ADVIN TO A ADVIN TO TR	At proposed prod. zone NESE 1690FSL 250FEL 32	2.200166 N Lat, 103.96	34080 W Lon	12 County or Parish	13 State
Form 5/60-3 (August 2007)       FORM APPROVED UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT       FORM APPROVED OMB No. 1004-0136 Expires July 31, 2010         APPLICATION FOR PERMIT TO DRILL OR REENTRECEIVED       5. Lease Serial No. NMNM13996         APPLICATION FOR PERMIT TO DRILL OR REENTRECEIVED       5. I findian, Allottee or Tribe Name         1a. Type of Work:       OII Well       Gas Well       Other         1b. Type of Well:       OII Well       Gas Well       Other         2. Name of Operator OXY USA INCORPORATED       Contact: DAVID STEWART E-Mail: david_stewar@oxy.com       Multiple Zone         3a. Address 5 GREENWAY PLAZA SUITE 110 HOUSTON, TX 77046-0521       3b. Phone No. (include area code) Ph: 432.685.5717       10. Field and Pool, or Exploratory UNKMOWN         4. Location of Well       (Report location clearly and in accordance with any State requirements *)       11. Sec. T. R. M. or Blk. and Survey or Area	At surface SWSW 1120FSL 207FWL	32.198632 N Lat, 103.	979724 W Lon	Sec 22 T24S R29E	Mer NMP
Form 5:60-3 (August 2007)       FORM APPROVED OMB No. 1004-0136 Expires July 31, 2010         UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT       OCD AFTES IN OCD AFTES IN OCD AFTES IN OMB No. 1004-0136 Expires July 31, 2010         APPLICATION FOR PERMIT TO DRILL OR REENTRECEIVED       5. Lease Serial No. NMNM13996         Ia. Type of Work:       Image: Contact: David Stewart@oxy.com         Ib. Type of Well:       Image: Contact: David Stewart@oxy.com         2. Name of Operator OXY USA INCORPORATED       Contact: DAVID STEWART E-Mail: david_stewart@oxy.com	3a. Address 5 GREENWAY PLAZA SUITE 110 HOUSTON, TX 77046-0521	3b. Phone No. (include an Ph: 432.685.5717	ents *)	10. Field and Pool, or Explo UNKNOWN Corra Draw	BIN SPIN
Form 5:60-3 (August 2007)       FORM APPROVED OMB No. 1004-0136 Expires July 31, 2010         UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT       OCD ATLES OF ATLES       OCD ATLES         APPLICATION FOR PERMIT TO DRILL OR REENTRECEIVED       5. Lease Serial No. NMNM13996       NMNM13996         Ia. Type of Work:       DRILL       REENTER       7. If Unit or CA Agreement, Name and No.         Ib. Type of Well:       Oil Well       Gas Well       Other       Single Zone       Multiple Zone	2. Name of Operator Contact: OXY USA INCORPORATED E-Mail: david_st	DAVID STEWART ewart@oxy.com		9. API Well No. 30015 C	13758
Form 5:60-3 (August 2007) UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT APPLICATION FOR PERMIT TO DRILL OR REENTRECEIVED 1a. Type of Work: DRILL REENTER REENTER PORM APPROVED OMB No. 1004-0136 Expires July 31, 2010 5. Lease Serial No. NMNM13996 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No.	1b. Type of Well: 🛛 Oil Well 🗂 Gas Well 🔲 Oth	er 🛛 🛛 Single Z	one 🔲 Multiple Zone	8. Lease Name and Well No CEDAR CANYON 22 F	EDERAL COM 5H
'Form 3:60-3 (August 2007)       Carrisperior       FORM APPROVED OMB No. 1004-0136 Expires July 31, 2010         UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT       OCAP 4 DISTRICT OMB No. 1004-0136 Expires July 31, 2010         5. Lease Serial No. NMNM13996         APPLICATION FOR PERMIT TO DRILL OR REENTRECEIVED         6. If Indian, Allottee or Tribe Name	la. Type of Work: 🛛 DRILL 🔲 REENTER			7. If Unit or CA Agreement	, Name and No.
Form 5:60-3 - (August 2007) UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT - (August 2007) UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT - (Lease Serial No. NMNM13996	APPLICATION FOR PERMIT	TO DRILL OR REEN	ITRECEIVED	6 If Indian, Allottee or Trib	e Name .
Form 5:60-3 - (August 2007) UNITED STATES DEPARTMENT OF THE INTERIOR Carispide States OCD Artesia Carispide States Carispide States	BUREAU OF LAND N	ANAGEMENT	MAY 09 2010	5. Lease Serial No. NMNM13996	
	'Form 5:60-3 - (August 2007) UNITED ST		BECN ALLES	FORM APP OMB No. 10 Expires July	ROVED 104-0136 31, 2010

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### Additional Operator Remarks:

- See attached for the following: e

  - APD Drilling Plan
     Surface Use Plan of Operations
     Plats/surveys/diagrams
     Directional Drilling Plan
     BOP Diagrams
     Choke Manifold Diagrams
     Closed Loop Diagrams
     Flex Hose Information
     H2S Plan
     Staking Natice

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10. Staking Notice 11. Operator Certification

<u>District I.</u> 1623 M. Franch Dr., Hobbs, 104 88340 Phane, (137) 383-4161 Faz: (372) 393-4720 <u>District II.</u> 111 S. First Sc., Arenda, NM 82110 Phane: (375) 748-1243 Faz: (375) 748-9720 <u>District III.</u> 1000 Kai Branan Rand, Amer., NM 87410 Phane: (320) 334-6178 Faz: (325) 334-6170 <u>District IV.</u> 1220 S. S. Francis Dr., Same Fa, NM 87805 Phane: (321) 478-3460 Faz: (325) 478-3463 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

			WEL	<u>L LOCA</u>	<u>ATIC</u>	<u>IN ANI</u>	ACK	LEAGE D	EDICATIO	N PLAT			
	API	Number	~		Pool C	Code			<u> </u>	Pool Name			
30-0	015	-437	50	94	22	38		Cor	ral Dr	and Bor	re S	SALA	رحر
Рторе	any Code						Property	Name				<b>7</b> 97	ell Mumber
316	104	,		CEDA	R C	ANYON	i /22	🕈 FEDEF	RAL COM				5H
OGI	RID No.					,	Operato	Name		· · · · ·			Elevation
المولون ا	94					OXY	' USA	A INC.			Ì	29	<i>339.</i> 7'
						Surf	ace Le	ocation					
UL or lot no.	Section	Township		Re	nge		Lot Ida	Feet from the	North South line	Feet from the	East/We	st line	County
м	22	24 SOUT	н	29 EAST,	N. 1	<b>Г. Р. М</b> .		1120'	SOUTH	207	WES	T	EDDY
	<u> </u>			Bottom	Hole	e Locati	on If I	Different I	From Surfac	c			<u> </u>
UL ar lat no.	Section	Township		Ra	nge		Lot Ida	Feet from the	North/South line	Feet from the	East/We	at line	County
1	22	24 SOUT	н   2	29 EAST,	N, 1	I. P. M.		1690`	SOUTH	250'	EAS	T	EDDY
Dedicated	i Acres	Joint or Infil	Con	solidation Co	de 🛛	Order No.		1 <u></u>	<u></u>	<u> </u>			
160	>	V V											

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.



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LVM

# LOCATION VERIFICATION MAP



VM

VICINITY MAP



AERIAL MAP



SCALE: NOT TO SCALE

SEC. 22 TV	VP. <u>24-5</u> RGE. <u>29-E</u>	
SURVEY	N.M.P.M.	
COUNTY	EDDY	
DESCRIPTION_	1120' FSL & 207' FWL	
ELEVATION	2939.7'	
OPERATOR	OXY USA INC.	
LEASE CEDAR	CANYON "22" FEDERAL COM	#5н









Chargebra (2016) OXY USA INC V AX HEATS (6) 10005 Figure to the Centr Conyon 21 Federal First & First Sec. 22, 1245, RNS.



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CAnjeters/2016/027 USA INC/EASENENTS/16110065 Pipeline to the Cross Conyon 21 Federal 15H & 15H, Sec22, 1215, 229E





Cedar Canyon 21/22 Federal - 1 Mile AOR

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### **OPERATOR NAME / NUMBER: OXY USA INC.**

<u>16696</u>

### LEASE NAME/NUMBER: Cedar Canyon 22 Federal Com #5H

STATE: <u>NM</u> COUNTY: <u>Eddy</u>

POOL NAME/NUMBER: Corral Draw Bone Spring 96238

### PROJECTED TD: <u>13215'M / 8720'V</u> OBJECTIVE: <u>2nd Bone Spring</u>

 SURFACE LOCATION:
 <u>1120 FSL 207 FWL SWSW (M) Sec 22 T24S R29E-Fee</u>

 SL: LAT: 32.1986322N
 LONG:103.9797236W
 X:609380.48
 Y:436162.08
 NAD: 27

 TOP PERFORATION:
 1690 FSL 340 FWL NWSW (L) Sec 22 T24S R29E-NMNM13996

 TP: LAT: 32.2001974N
 LONG:103.9792932W
 X:609511.75
 Y:436731.89
 NAD: 27

BOTTOM PERFORATION: <u>1690 FSL 340 FEL NESE (I) Sec 22 T24S R29E-NMNM81586</u> BP: LAT: 32.2001668N LONG:103.9643692W X:614128.10 Y:436736.29 NAD: 27

BOTTOM HOLE LOCATION: <u>1690 FSL 250 FEL NESE (I) Sec 22 T24S R29E-NMNM81586</u> BHL: LAT: 32,2001662N LONG:103.9640782W X:614218.10 Y:436736.38 NAD: 27

APPROX GR ELEV: 2939.7'

EST KB ELEV: 2964.7' (25' KB-GL)

### **COMPANY PERSONNEL:**

<u>Name</u>	<u>Title</u>	<u>Office Phone</u>	<u>Mobile Phone</u>
Richard Mercer	Drilling Engineer	(713)366-5174	(832) 523-6392
Diego Tellez	Drilling Engineering Team Lead	(713)350-4602	(713) 303-4932
Ryan Farrell	Drilling Engineer Supervisor	(713)366-5058	(832) 914-7443
Travis Samford	Drilling Superintendent	(713)522-8652	(281) 684-6897

### **SPACING UNITS:**

The following well are either permitted, drilled and/or completed in the following pools. Gaines 22 Federal #1 - 30-015-35188 - TVD-7692' - Units M

### 1. Geologic Formations

TVD of target	8,720'	Pilot hole depth	N/A
MD at TD:	13,215'	Deepest expected fresh water:	355'

### **Delaware Basin**

Formation	TVD - RKB	Expected Fluids
T. Rustler	355	
T. Salt	767	
T. Delaware / Lamar / B. Anhydrite	2,970	Oil/Gas
T. Bell Canyon*	3,018	Water/Oil/Gas
T. Brushy Canyon*	5,093	Oil/Gas
T. 1 <sup>st</sup> BSPG	6,662	Oil/Gas
T. 2 <sup>nd</sup> BSPG	7,914	Oil/Gas
Target 2 <sup>nd</sup> BSPG	8,720	Oil/Gas
T. 3 <sup>rd</sup> BSPG	8,850	Oil/Gas

\*H2S, water flows, loss of circulation, abnormal pressures, etc.

### 2. Casing Program

Hole	Casin	g Interval	Csg.	Weight	Grade	Conn.	SF	SF	ŞF
Size	From	To	Size	(lbs)			Collapse	Burst	Tension
14.75"	0	400	10.75"	40.5	J55	BTC	8.05	1.4	3.98
9.875"	0.	8,100	7.625"	26.4	L80	BTC	2.82	1.25	2.01
6.75"	0	8,750	5.5"	17	P-110	Ultra SF	1.7	1.20	2.23
6.75"	8,750	13,215	4.5"	11.6	P-110	DQX	1.7	1.20	1.96
				BLM Min	imum Sat	fety Factor	1.125	1	1.6 Dry
						-			1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h. \*Oxy-requests-the option to set-casing shallower yet still below the salts if losses or hole. -conditions require this: Cement volumes may be adjusted if casing is set shallower and a DV tool will be run in case a contingency second stage is required for cement to reach surface. If cement circulated to surface during first stage we will drop a cancelation cone and not pump the second stage.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N

# PERFORMANCE DATA

TMK UP ULTRA<sup>™</sup> SF Technical Data Sheet

### 5.500 in

17.00 lbs/ft

**Tubular Parameters** 

Size -	5.500	in
Nominal Weight	17.00	lbs/ft
Grade	P-110	
PE Weight	16.87	lbs/ft
Wall Thickness	0.304	i'n
Nominal ID	4.892	in
Drift Diameter	4.767	in -
Nom. Pipe Body Area	4.962	in²

Minimum Yield	110,000	psi
Minimum Tensile	125,000	psi
Yield Load	545,000	lbs
Tensile Load	620,000	lbs
Min. Internal Yield Pressure	· 10,600	. psi
Collapse Pressure	7,500	psi

Connection Parameters		
Connection OD	5.663	in
Connection ID	4,848	in
Make-Up Loss	5.911	in
Critical Section Area	4.559	in²
Tension Efficiency	91.6	%
Compression Efficiency	91.6	%
Yield Load In Tension	499.000	lbs
Min. Internal Yield Pressure	10.600	psi
Collapse Pressure	7.500	psi
Uniaxial Bending	84	°/ 100 fi
		4
Make-Up Torques		
Min. Make-Up Torque	10,300	ft-lbs

Min. Make-Up Torque	10,300	ft-lbs
Opt. Make-Up Torque	11,300	ft-lbs
Max. Make-Up Torque	12,400	ft-lbs
Yield Torque	15,500	ft-lbs

### Printed on: May-20-2015

#### NOTE:

The content of this Technical Data Sheet is for general information only and does not guarantee performance or imply fitness for a particular purpose, which only a competent drilling professional can determine considering the specific installation and operation parameters. Information that is printed or downloaded is no longer controlled by TMK IPSCO and might not be the latest information. Anyone using the information herein does so at their own risk. To verify that you have the latest TMK IPSCO technical information, please contact TMK IPSCO Technical Sales toll free at 1-888-258-2000.



. Internal Yield Pressure 10,6 apse Pressure 7,5



## **PERFORMANCE DATA**

TMK UP ULTRA™ DQX Technical Data Sheet

### 4.500 in

11.60 lbs/ft

Tubular Parameters

Size	4.500	in
Nominal Weight	11.60	lbs/ft
Grade	P-110	
PE Weight	11.35	lbs/ft
Wall Thickness	0.250	in
Nominal ID	4.000	in
Drift Diameter ,	3.875	in
Nom. Pipe Body Area	3.338	in²
	•	•

110,000	psi
125,000	psi
367,000	lbs
417,000	lbs
10,700	psi
<sup>•</sup> 7,580	psi
	110,000 125,000 367,000 417,000 10,700 7,580

### **Connection Parameters**

Connection OD	5.000	in
Connection ID	· 4.000	in
Make-Up Loss	3.772	in
Critical Section Area	3.338	in²
Tension Efficiency	100.0	%
Compression Efficiency	100,0	%
Yield Load In Tension	367,000	lbs
Min. Internal Yield Pressure	10.700	psi
Collapse Pressure	7,580	psi
Uniaxial Bending	112	°/ 100 ft

### **Make-Up Torques**

Min. Make-Up Torque	4,800	ft-lbs
Opt. Make-Up Torque	5,400	ft-lbs
Max. Make-Up Torque	5,900	ft-lbs
Yield Torque	8,600	ft-lbs

# Printed on: July-24-2015 NOTE:

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### OXY USA Inc. - Cedar Canyon 22 Federal Com #5H

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If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N ·
If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back	
500' into previous casing?	
	•
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	Ν
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
	1104
Is well located in critical Cave/Karst?	Ν
If yes, are there three strings cemented to surface?	

### 3. Cementing Program

•

Casing	# Sks	Wt.	Yld	H <sub>2</sub> 0	500#	Slurry Description
		lb/	ft3/	gal/sk	Comp.	
•		gal	sack		Strength	
<u> </u>	· · · ·		· ·		(hours)	
Surf.	260	14.8	1.35	6.53	6:50	Premium Plus Cement
1						2% Calcium Chloride – Flake (Accelerator)
Inter.	910	10.3	3.05	15.63	15:07	TUNED LIGHT (TM) SYSTEM
						0.80% HR-601(Retarder), 3 lbm/sk Kol-Seal (Lost Circulation
	0.50		1.05	0.45	10.55	Additive), 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)
	250	13.2	1.65	8.45	12:57	Super H Cement, 0.1 % HR-800 (Recarder), 0.5 % Halad(R)-344
						Seal (Lost Circulation Additive), 3 lbm Salt (Accelerator)
	DV/E0	CP Tool (	$a 2.900^{\circ}$	(We reat	lest the option	n to cancel the second stage if cement is circulated to
		、		surface d	uring the first	t stage of cement operations)
	450	12.9	1.85	9.86	12:44	Halliburton Light Premium Plus Cement with 5% Salt, 0.125
						lbs/sk Poly-E-Flake, 5 lbs/sk Kol-Seal, 0.35% HR-800
	190	14.8	1.33	6.34	6:31	Premium Plus cement
Prod.	550	13.2	1.631	8.37	15:15	Super H Cement, 0.1 % HR-800, 0.5 % Halad(R)-344, 0.4 %
					-	CFR-3, 3 lbm Salt
	· · · · · · · · · · · · · · · · · · ·		I	J	DV/E	CP Tool N/A
	N/A					
	N/A					
	1.1.1		<u> </u>			<u> </u>

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### OXY USA Inc. - Cedar Canyon 22 Federal Com #5H

Casing String	TOC	% Excess (Lead/Tail)
Surface	0,	50%
Intermediate	0'	100% / 20%
Intermediate Contingency 2 <sup>nd</sup> Stage	0,	75% / 125%
Production	7,100'	15%

Include Pilot Hole Cementing specs: **Pilot hole depth** <u>N/A</u> **KOP** <u>N/A</u>

Plug top	Plug Bottom	% Excess	`No.  Ŝacks⊪	Wt. lb/gal	Yld ft3/sack	Water gal/sk	Slurry Description and Cement Type
N/A					144		
N/A							

### 4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Туре			Tested to:
			Annul	ar	$\checkmark$	70% of working pressure
0.975"			Blind R	am	✓	
9.075 Intermediate	13-3/8"	5M	Pipe Ra	am		250/5000
Inclineulate			Double Ram		$\checkmark$	230/3000psi
			Other*			

\*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.

### OXY USA Inc. - Cedar Canyon 22 Federal Com #5H

A variance is requested for the use of a flexible choke line from the BOP to Choke<br/>Manifold. See attached for specs and hydrostatic test chart.YAre anchors required by manufacturer?A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after<br/>installation on the surface casing which will cover testing requirements for a maximum of

30 days. If any seal subject to test pressure is broken the system must be tested.

See attached schematic.

We are proposing that we will run the wellhead through the rotary prior to cementing surface casing as discussed with the BLM on October 8, 2015.

### 5. Mud Program

See COA

Depth		Type Weight (ppg)		Viscosity	Water Loss	
From	To				-	
0	Surf. shoe	FW Gel	8.4-8.8	28-38	N/C	
Surf csg	2,970'	Saturated Brine	9.8-10	28-32	N/C	
2,970°	Int shoe	EnerSeal (MMH)	8.8-9.6	38-50	N/C	
Int shoe	TD	OBM	8.8-9.4	28-100	N/C	

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Oxy proposes to drill out the 10-3/4" surface casing shoe with a saturated brine system from 400'-2,970', which is the base of the salt system. At this point we will swap fluid systems to a high viscosity mixed metal hydroxide system. We will drill with this system to the intermediate TD (a, 8, 100)'.

What will be used to monitor the loss or gain	PVT/MD Totco/Visual Monitoring
of fluid?	

### 6. Logging and Testing Procedures

Logg	ing, Coring and Testing.
Yes	Will run GR from TD to surface (horizontal well - vertical portion of hole). Stated logs
	run will be in the Completion Report and submitted to the BLM.
No	Logs are planned based on well control or offset log information.
No	Drill stem test? If yes, explain
No	Coring? If yes, explain

Addi	tional logs planned	Interval		- · · ·
No	Resistivity			
No	Density			
No	CBL			
Yes	Mud log	Surface Shoe	- TD	
No	PEX			

### 7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	3984 psi
Abnormal Temperature	No

Pump high viscosity sweeps as needed for hole cleaning. The mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times. Appropriately weighted mud will be used to isolate potential gas, oil, and water zones until such time as casing can be cemented into place for zonal isolation.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

N H2S is present

Y H2S Plan attached

### 8. Other facets of operation

	Yes/No
<ul> <li>Will the well be drilled with a walking/skidding operation? If yes, describe.</li> <li>We plan to drill the three well pad in batch by section: all surface sections, intermediate sections and production sections. The wellhead will be secured with a night cap whenever the rig is not over the well.</li> </ul>	Yes
Will more than one drilling rig be used for drilling operations? If yes, describe.	No

### Attachments

- \_x\_ Directional Plan
- \_x\_\_ H2S Contingency Plan
- \_x\_\_ Flex III Attachments

### 9. Company Personnel

<u>Name</u>	Title	Office Phone	<u>Mobile Phone</u>
Richard Mercer	Drilling Engineer	(713)366-5174	(832) 523-6392
Diego Tellez	Drilling Engineering Team Lead	(713)350-4602	(713) 303-4932
Ryan Farrell	Drilling Engineer Supervisor	(713)366-5058	(832) 914-7443
Travis Samford	Drilling Superintendent	(713)522-8652	(281) 684-6897
Daniel Holderman	Drilling Manager	(713)497-2006	(832) 525-9029



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### Oxy Cedar Canyon 22 Fed Com 5H Rev2 MMC 17Feb16 Proposal Geodetic

#### Report (Ni

Report Date:	February 17, 2016 - 05 27 PM	Survey / DLS Computation:	Minimum Curveture / Lubinski
Cflent:	OXY	Vertical Section Azimuth:	63.104 * (Grid North)
Field.	NM Eddy County (NAD 27)	Vertical Section Origin:	0 000 h, 0 000 h
Structure / Slot:	Oxy Cedar Canyon 22 Fed Com 5H / Oxy Cedar Canyon 22 Fed Com 5H	TVD Reference Datum	RKB
Walt:	Oxy Cedar Canyon 22 Fed Com 5H	<b>TVD Reference Elevation:</b>	2965 200 ft above MSL
Borehote:	Ory CC 22 Fed Com SH-Original Bolehole	Seabed / Ground Elevation:	2940 400 ft above MSL
UMA / APIe;	Unknown / Unknown	Megnetic Declination:	7.264 *
Butwey Name;	Ony Cedar Camjon 22 Fed Com SH Rev2 MMC 17 Febte	Total Gravity Field Strength	998 457 tmgn (9 80685 Eizeed)
Burvey Date:	January 19, 2015	Gravity Model:	GARM
Tort / AHD / DDI / ERD Ratio	104 955 */ 5300 084 k/ 5 621 / 0 601	Total Magnetic Field Brength:	48257.520 nî
Coordinate Reference Bystem:	NAD27 New Mexico State Plane, Eastern Zone, US Fact	Magnetic Dip Angle:	60 D47 *
Location Lat / Long:	N 32" 11" 55 07597", W 100" 58' 47.00490"	Declination Date:	February 17: 2016
Location Grid N/E Y/X:	N 436162 080 MUS, E 809380 460 RUS	Magnetic Declination Model:	HDGM 2015
CR9 Orid Convergence Angle:	0.1084 *	North Reference:	Grid North
Cirid Scale Factor	0 99992279	Grid Convergence Used:	0.1884 *
Version / Patch:	2 9 365 0	Total Corr Nag North-Strid North	7.0757 *
		Local Coord Referenced To:	Structure Reference Point

Commenta	MD (13)	inci (")	Adm Grid (*)	TVD (ft)	TVDS8	VSEC	NS (11)	EV7 (11)	DLS ("/1898)	Northing (DUS)	Easting (#U3)	Latitude OVS *** 1	Longitude (E/W ****)
SHL	0 00	0 00	0 00	0 00	-2984 20	0.00	0.05	0.00	N/A	438162.08	609380 46	32 11 55 00	W 100 58 47 00
BackBuild 2* DLS	3300 00	0.00	4 76	3300 00	333 60	0 00	0 00	9 OC G	0.00	436162.05	\$09380.48 E	32 11 55 08	W 103 58 47.00
Hold 8 13' Inc	3706 64	8.13	4 76	3705 28	739 08	5 82	2971	2 39	2 00	438190 79	609382 67 7	32 11 55 34	W 103 58 48 98
Drop 2* DLS	7554.70	8,13	4.78	7514 72	4548 52	115 85	571.22	47.81	0.00	436733 26	609425.08	1 32 12 0 73	W 103 58 46 43
Return to Versical	7961 43	0 09	4 78	7920 00	4953 80	121.87	599 94	50 00	2 90	436761.97	609430.48	N 32 12 1 01	W 103 58 46 40
KOP Build 107/100 N DLS	8158 93	0 00	4 76	8147.50	5181.30	121 87	599 94	50 00	0 00	436761 97	809430 48	V 3212 101	W 103 58 48 40
sinding Point	9075 82	68 69	90 31	6720 31	5754.11	677 10	595 68	609 84	10 00	436758 91	609990 27	N 32 12 0 96	W 103 58 39 89
Pist Battom Perl	13215.12	50 60	90 31	6815 00	5848 60	4782 80	574 28	4745 00	0.00	436736.29	E14125.10	V 32 12 6 8D	W 103 57 51 73

Burvey Type:	Non-Del Plan
Survey Error Model:	ISCWS& Rev 0 *** 3-D 95 000% Confidence 2 7955 sigma

active roganic.				•			_ ·		
Description	Рап	alD From (R)	MD To (ft)	ECU Freq (N)	Hale Size Casi (III)	ing Diamatar (in)	Espected Nax Inclination (deg)	Survey Teol Type	Bershole / Survey
	1	C 050	25 800	1/120 000	20 000	30 000		BLB_MWD-STD_HDGM-Depth Only	Ony CC 22 Fed Com 5H-Original Barehole / Ony Dedar Canyon 22 Fed Com 5H Rev2 MMC 17Feb15
	1	25 800	10215.121	1/100 000	30 000	30 000		SLB_MWD-STD_HDGM	Day CC 22 Fed Com SH-Onganal Borehole / Day Cedar Conyon 22

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Schlunderger

### Oxy Cedar Canyon 22 Fed Com 5H Rev2 MMC 17Feb16 Proposal Geodetic Report

(Hon-Def Plan)

Report Date:	February 17, 2018 - 05 28 PM	Survey / OLS Computation:	Minimum Curveture Ft. domain
Client: Field:	CXY Nil Eddy County (NAD 27)	Vertical Section Azimuth: Vertical Section Origin:	83 104 * (Cind North) 0 630 ft, 0 300 ft
Structure / Slot:	Oxy Cedar Canyon 22 Fed Com 5H / Oxy Cedar Canyon 22 Fed Com 5H	TVD Reference Datum:	RK9
Well:	Day Cedar Canyon 22 Fed Com 5H	<b>TVD Reference Elevation:</b>	2956 200 ft above MS,
Barehole:	Oxy CC 22 Fed Com SH-Original Borehola	Seabed / Ground Elevation:	2940 400 ft sbove MS.
UWI/APIE	Unknown / Unknown	Magnetic Declination;	7.264 *
Survey Name:	Ozy Ceder Canyon 22 Fed Com 5H Rev2 MMC 175 eb 16	Total Crevity Field Strength:	998 467 (mgn (9 80665 Dased)
Survey Date:	January 19, 2018	Gravity Medal:	GARM
Ten / AHD / DDI / EAD Ratio:	104 955 * / 5300 094 11 / 5 921 / 0 801	Total Magnetic Field Strength:	48257.520 nT
Coordinate Reference System:	NAD27 New Mexico State Plane, Eastann Zone, US Feet	Megnetic Cip Angle:	50 047 *
Location Lat / Long:	N 32" 11'55 07597", W 103" 58'47.00490"	Declination Date:	February 17: 2016
Location Orid N/E Y/X:	N 438162 090 11JS, E 609380 480 mJS	Magnetic Declination Medel:	HOQM 2015
CR9 Grid Convergence Angle:	Q.1864 *	North Relarance:	Grid North
Grid Scale Factor:	0 99992279	Grid Convergence Used:	Q.1884 *
Version / Patch:	2 9 365 0	Total Con Mag North->Onid North:	7.0757 *

Local Coord Referenced To: Structure Relarence Point

Commente	MD (D)	Inc)	Azim Grid	TVD	TVDSS	VSEC	NS	EW (P)	DLS C/100m	Northing	Eseting	Latitude	Longflude
SHL	0.00	0.00	0.00	200	-2966 20	0.00	0.00	0.00	NA	436162.08	609780 68	12 11 55 01	W 103 51 47 00
	100 00	0 00	4 76	100 00	-2868 20	0 00	0.00	0.00	0.00	436162 08	609380 48	32 11 55 00	W 103 58 47 00
	200 00	0.00	4 76	200 00	-2768 20	0 00	0 00	0.00	0.00	436162.08	609380 45	32 11 55 08	W 103 58 47 00
	300 00	0 00	4 76	300.00	-2666 20	0.00	0.00	0 00	0.00	436162.08	609380 4E	32 11 55 08	W 103 58 47 00
	400.00	0.00	4.76	400.00	-2568.20	0.00	0 00	0.05	0.00	436162.08	609080 48	32 11 55 08	W 103 58 47 00
	500 00	0 00	4.76	500 00	-2466 20	0.00	0 0 0	0 00	0.00	438162.08	609360 48 M	32 11 55 08	W 103 58 47 00
	600 00	0.00	4 78	600 00	-2366 20	0 00	0 00	0 00	6 00	438162.06	609380 48	32 11 55 08	W 103 58 47 D0
	700 00	0.00	4.78	700 00	-2266 20	0 00	0.00	0.00	0.00	438162 08	609380 48 M	¥ 32 11 55 DB	W 103 58 47 00
	800 00	0.00	4 76	600 008	-2166.20	0 00	000	0 00	0 00	430102.06	609380 48 M	1 32 11 55 08	W 103 55 47.00
	600 00	0.00	4 78	900 00	-2056 20	000	00 0	0.00	0 00	436162.05	605380 48 h	¥ 32 11 55 D8	W 103 58 47 00
	1000 00	0.00	4 76	1000.00	-1966 20	0.00	0.00	0.00	0.00	436162.08	609380 48	22 11 55 00	W 103 58 47 00
	1*00 00	0.00	4 76	1100 00	-1666 20	0.00	0.00	0 00	0.00	436162.08	609383 48	4 32 11 55 08	W 103 58 47 00
	1200 00	0.00	4 /0	1200.00	-1/00 20	0.00	000	0.00	000	436162.08	609360 46 1	32 11 55 00	W 103 58 47.00
	1400.00	0.00	4 74	1400.00	-1000 20	0.00	0.00	0.00	0.00	436162 08		4 32 11 59 98	W 103 58 47 00
	1500.00	0.00	474	1500.00	-1468 20	0.00	0.00	0.00	0.00	438162.08		4 34 11 35 96 3 33 11 35 96	11 103 28 47.00
	1600.00	0.00	4 76	1800.00	-1368 20	0.00	0.00	0.00	5.00	434162.08		4 13 11 55 00	W 103 56 47 00
	1700.00	0.00	4 76	1700 00	-1266 20	0.00	0.00	0.00	0.00	416162.08	608380 46	1 12 11 55 05	W 103 58 47.00
	1800 00	0 00	4 76	1800 00	-1168 20	0 03	0.00	0.00	0.00	436162.08	609380 48	1 12 11 55 08	W 102 58 47 00
	1900-00	0.00	4 76	1900 00	-1065 20	0 00	0.00	0 00	0.00	436182 08	609383 45 M	1 32 11 55 08	W 103 58 47.00
	2000 00	0.00	4 76	2000 00	-966 20	0 00	0.00	0 00	0 00	436162 08	609380 46 N	32 11 55 08	W 103 56 47.00
	2100 00 ~	0.00	4 76	2100 00	-864 20	0.00	0 00	0 00	0 00	436162 08	609350 48 M	12 11 55 08	W 103 58 47.00
	2200 00	0 00	4.78	2200 00	-766.20	0.00	0 00	0 00	0.00	436162.08	600380 48 M	1 32 11 55 08	W 103 54 47.00
	2300 00	0.00	4 76	2300 00	-666 20	0.00	9 DC	D D0	0.00	436162.08	609380 48	1 22 11 55 08	W 103 56 47.00
	2400.00	0.00	4 78	2407 00	-566 20	0 00	0 00	0 00	0 00	436162 08	629360 46 h	1 12 11 55 08	W 103 58 47.00
	2500.00	0,00	4 76	2500 00	-468 20	0,00	0.00	0.00	0 00	436162.08	809360 48 h	1 32 11 55 08	W 103 56 47.00
	2600 00	0.00	4.76	2600 00	-366 20	0 00	0 00	0.00	0.00	436162.08	609360 48 N	32 11 55 08	W 103 58 47.00
	2700 00	000	4 76	2700 00	-266 20	0 00	0 00	6 60	0.00	436162 08	629360 46	32 11 55 08	W 103 58 47.00
	2800 00	0 00	4 76	2800 00	-166 20	0.00	0.00	0.00	0 00	436162 08	609380 48 M	1 32 11 55 08	W 103 58 47,00
	2900 00	0 20	4 76	2900 00	-66 20	0 00	0 00	0.00	0 00	436162 08	609360 48 h	32 11 55 08	W 103 58 47 D0
LamanDele ware	2970.00	0.00	4.70	2970.00	3 80	0.00	0.00	0.00	0.00	436162.08	809380 48 h	32 11 55 08	W 103 58 47 00
	3090 00	0.00	4 75	3000 00	13 60	00 0	0 00	0 00	0 00	436162.08	609380 48 M	32 11 55 08	W 103 58 47 00
Bell Canyon	3018.00	0.00	4,78	3018.00	57 80	0.00	0.00	0.00	0.00	43616206	608380.48 N	32 11 55.08	W 103 58 47 00
	3100.00	0.00	4.76	3100 00	133 80	0.00	0.00	0.00	000	4 38 162 08	EUSTED 48 P	32 11 55 148	W 103 58 47 00
BackBuild 2*	3200.00	0.00	4 76	3300 00	333 80	0.00	0.00	0.00	300	436162 08	609380.48 h	4 32 11 55 08 4 32 11 55 08	W 103 58 47 00
069	2.00.00	7.04	. 74								4142240 40 4		
	3530.00	200	4 78	3400 84	413.64	141	4.05	0.14	200	430163 62	699389 62 P	321135.00	W 103 58 47 00
	3630.00	400	4.78	3500 44	413.25	3 17	14.44	0.05	200	438127 73	605381 VO P	4 342 14 33,14	W 103 58 47 00
	3700 00	8 00	4.76	3898 70	732 50	5 63	27 75	2 32	200	414145 84	A19392 65 M	37 11 55 25	W 103 56 46 55
Cherry Cenvon	3701.31	8.03	4.76	3700.00	733 80	5 67	27.97	2.13	200	418190.04	A00182 81 A	1 32 11 45 34	W 103 58 46 06
Hold 8 13* Inc	3708 64	8.13	4.76	3705.28	739 06	5 82	28 71	2 39	2.00	43819079	609382 B7 h	4 32 11 55 38	W 103 58 46 BA
	3600.00	8,13	4 76	3797 70	831 50	8 4 9	41 67	3 48	0 00	436203 95	608383 97	32 11 55 49	W 103 58 48 96
	3900 00	8,13	4 78	3896 69	930 49	11.35	55 97	4 65	0.00	436218 05	609385.14 M	32 11 55 63	W 103 58 46 95
	4000 00	8 13	4 76	3995 69	1029 49	14.21	70 07	5 64	0.00	436232.14	509365 32 N	32 11 55 77	W 103 58 46 93
	4100.00	8.13	4 76	4094 68	1128 48	17.07	\$4,17	7.01	0 00	436246 24	609367 49 N	32 11 55.91	W 103 58 48 9Z
	4200 00	8.13	4 78	4193 67	1227 47	10 93	96 27	B.19	0.00	436260 34	509388 57 N	32 11 56 95	W 103 58 45 91
	4300.00	8,13	4 76	4292 67	1326 47	Z2 70	112 36	8 36	0.00	436274 44	4 MB 980908	32 11 56.19	W 103 58 45 69
	4400 00	8 13	4 78	4391.66	1425 48	25 65	126 46	10 54	D 00	436258 53	609391 C2 N	32 11 56 33	W 103 58 45 85
	4500 00	6.13	4.76	4490 68	1524 48	28.51	140 56	\$171	0.00	436302 63	809392 19 1	32 11 56 47	W 103 58 46 85
	4800 00	6.13	4.76	4589 65	1623 45	31 37	154 86	12 B9	0 00	43631673	609393 37 N	1 32 11 56 61	W 103 58 46 85
	4700 00	6.13	4 78	4688 65	1722 45	34 23	165 76	14 D6	0 00	436330 82	609394 54 N	1 32 11 56 75	W 103 58 45 83
	4800.00	6.13	4 78	4787 64	1821 44	37.08	142 85	15 24	000	436344 92	609395.72 h	22 11 56 88	W 103 58 46 82
	4900 00	8.13	4.70	4886 63	1920 43.	39.94	196 95	18 41	000	436359 02	809396 89 N	32 11 57.02	W 103 58 46 81
	5000 00	0.53	4 76	4985 63	2019 43	42 80	211,05	17 59	0.00	436373 11	509398 07 h	32 11 57 16	VV 103 58 48 78
Brushy Conums	5100 00	8.14	476	5084 62	2116 42	45.86	223.15	18 75	0.00	436387.21	609399.24	1 12 11 57.30	YY 103 58 46.78
orwany Canyon	3100.40	0.23	4.70	5050 00	2120 80	45.80	220.34	FØ 85	0.00	435358.40	609399.34 N	32 11 57.32	W 103 58 48.78
	5200 00	6.13	476	5787 61	2217 42	40 34	23927	10.04	000	438401.31	609400 42 6	1 12 11 57.44	VV TU3 58 46 78
	5405.00	4.13	- 70	2202 01	231041	01.00 64.44	494 34	27 11	000	41041340		21157.50	W 103 58 46 75
	5500.00	A 13	4.70	5480.60	2514.40	57.10	201.44	22 47	0.00	430429.00	800403.04	1 Jac 11 27 / 22	VE 103 20 40 74
	5600 00	4.13	476	5570 50	2612 30	50.04	295 84	24 84	0.00	414457 70	800406 11	t usiii⊋7.640. 	VI 103 38 48 72
	5799.00	6.13	4.78	5678 59	2712 30	62 62	309 74	25.61	0.00	416471 70	803408.20 k	3 32 11 30 00	W 103 48 48 49
	5800 00	8.13	478	5777.58	2011.38	85 64	323 83	28 09	0.00	426485.89	609407 47	32115474	W 103 58 48 44
•	5900.00	6.13	4 78	5876 58	2910 38	68 54	337 83	28.16	0 00	436499 99	609408 64	32 11 58 42	W 102 58 48 68

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Carmenia	MD	Inct	Azim Gria	TVD	TVDSS	VSEC	NS	EW	DL5	Herthing	Easting	Letitude	Longitude
	6000.00	613		5975 57	3002 37	71.40	352.03	29.34	0.00	434334 08	809409 A2 N	32 11 58 55	W 103 56 46 65
	6100.00	. 12	4 7 8	6074 57	3108 37	74 25	366 13	30 81	0.00	436528.18	500410.99 N	32 11 58 70	W 103 55 46 64
	6200 00	8 13	476	6173 55	3207 38	77.11	390 23	31.49	0 00	426542.28	800412.17 N	32 11 58 84	W 103 58 46 62
	6300 00	8:3	4 78	6272 55	3306 35	78 97	394 32	32 88	00 0	436556 37	809413.34 N	32 11 58 96	W 103 58 46 61
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	6700.00	813	4.78	06655 53	3702 33	121-41 01-07	450 72	37.56	0.00	43661278	106418 C4 N	32 11 59 53	W 103 58 46 55
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	7000 00	# 13	4 75	4965 51	3599 31	49.99	493.01	41 09	0.00	438855 05	400420 JJ N	32 11 30 01	W 100 58 46 52
	7100 00	6 13	4 76	7064 51	4008 31	167.65	507 11	42.24	0.00	436668 15	106422 74 N	32 12 0.09	W 100 58 45 49
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	8500.00	21 11	00.31	8443 61	5307 UJ	104 01	59973	00 44	10.00	436/61 /8	BOSH68 BY N	32 12 1.01	W 103 58 45 95
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	8800 0085	61 11	PC 31	6549 14	5862 84	415.45	508 32	346 11	10 00	436760 35	609726 57 N	32 12 0 89	W 103 56 42 95
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	9630.00	67 69	90.31	8732 30	5763 01	1197.00	594.05	1033 80	0.00	434758.05	610614.30 N	1212 0 93	W 103 58 34 95
	9700.00	63 63	90 31	8734 59	5768 39	1295.18	593 47	1233 65	0.00	436755 50	610614 23 N	32 12 .0 91	W 103 58 32 62
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	8930.00	68 68	90 31	8719.18	5772 98	1494 55	592 37	1433.79	0.00	436754 41	610014 16 N	32 12 0 89	W 103 58 30 30
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	10200 00	58 69	90.37	8746 02	5779 82	1792 10	590 73	1733 71	0 00	436752 77	611114 05 N	32 12 0 86	W 103 58 26 81
	10300.00	84 64	90.31	8/48 J1	5/62 12	1691 28	590.10	1833 65	0.00	436752.22	611214 02 N	32 12 0 86	W 103 56 25 64
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Вигуер Туре:

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Non-Det Plan

#### Survey Error Model: ISCWSA Rev 0 \*\*\* 3-0 95 000% Confidence 2 7955 sigms Survey Program:

Description	Part	NO Frem (fi)	MD To (ft)	EDU Fred (R)	Hole Bize Cas (in)	ing Diameter (in)	Expected Max IncOnstion (deg)	Survey Tool Type	Garahala / Garway
	١	6 000	25 800	1/100 000	30 800	29 000		SLB_MWD-STD_HDGM-Depth Only	Oxy CC 22 Fed Com 5H-Orginal Borehols / Oxy Cedar Cenyon 22 Fed Com 5H Rev2 MMC 17Fab16
	1	25 800	13215.121	1/100 000	30 000	30 039		SLB_MWD-STD_HDGM	Oxy CC 22 Fed Com SH-Onginal Borehole / Oxy Ceder Canyon 22

BOP-1





BOP-2





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CM-2



Choke Manifold - Gas Separator (Top View)

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Fluid Technology

Quality Document

	Y CONT	ROL CERTIFI	CATE		CERT. N	۷°;	746	
PURCHASER: Ph	noenix Bea	ttie Co.			P.O. Nº:	; 0	02491	
CONTITECH ORDER Nº: 41	2638	HOSE TYPE:	3"	D	Ch	oke and K	ill Hose	
HOSE SERIAL Nº: 5	2777	NOMINAL / AC	TUAL LE	ENGTH:		10,67 m		<u></u>
W.P. 68,96 MPs 100	00 psi	T.P. 103,4	MPa	15000	psi	Duration:	60 ~	ារាំព
ambient temperature See attachment. (1 page) $\uparrow$ 10 mm = 10 Min. $\rightarrow$ 10 mm = 25 MPa								
î 10 mm = 10 Min. → 10 mm = 25 MPa			<u></u>			<b>`</b>		-
10 mm = 10 Min. → 10 mm = 25 MPa		COUF	PLINGS			·		
↑ 10 mm = 10 Min. → 10 mm = 25 MPa Type		COUF Sental Nº	PLINGS	Q	uality		Heat N	
↑ 10 mm = 10 Min. → 10 mm = 25 MPa Type 3" coupling with 4 1/16" Flange end	917	COUF Serial Nº 913	PLINGS	Q AISI AISI	uzilty 4130 4130		Heat N <sup>*</sup> 17998A 26984	
↑ 10 mm = 10 Min. → 10 mm = 25 MPa Type 3" coupling with 4 1/16" Flange end INFOCHIP INSTALLED Will metal parts are flawless	917	COUF Sental Nº 913	PLINGS	Q AISI AISI	uelity 4130 4130	 / Ter	Heat N <sup>*</sup> T7998A 26984 API Spec 10 nperature r	6 C ate:"B"
↑ 10 mm = 10 Min. → 10 mm = 25 MPa Type 3" coupling with 4 1/16" Flange end INFOCHIP INSTALLED Wi metal parts are flawless VE CERTIFY THAT THE ABOVE HO RESSURE TESTED AS ABOVE WI	917 917 OSE HAS BEITH SATISFAC	COUF Serial N° 913 913 EN MANUFACTLI TORY RESULT.	PLINGS	Q AISI AISI	uality 4130 4130	A Ter	Heat N T7998A 26984 API Spec 10 nperature n MS OF THE OR	6 C ate:"B"
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## **Coflex Hose Certification**

Page: 1/1

# - PHOENIX Beattie

Form No 100/12

Phoenix Beattie Corp 11535 Brittscore Park Drive Houston, TX 7704) Tel: (822) 227-0141 Fox: (822) 227-0148 E-soft BasilRohoenUncettie.com weightentiducttie.com

# **Delivery Note**

Customer Order Number 370-369-001	Delivery Note Number	003078	Page	1
Customer / Invoice Address HELMERICH & PAYNE INT'L DRILLING CO 1437 SOUTH BOULDER TULSA, OK 74119	Delivery / Address HELMERICH & PAYNE IDC ATTN: JOE STEPHENSON - RIG 13609 INDUSTRIAL ROAD HOUSTON, TX 77015	5 370		

Customer Acc No	Phoenix Beattie Contract Manager	Phoenix Beattle Reference	Date
HOI	JJL	006330	05/23/2008

ltem No	Beattle Part Number / Description	Qty Ordered	` Qty Sent	Qty To Follow
1	HP1DCK3A-35-4F1 3° 10K 16C C&K HOSE x 35ft OAL CW 4.1/16" API SPEC FLANGE E/ End 1: 4.1/16" 10Kps1 API Spec 6A Type 68X Flange End 2: 4.1/16" 10Kps1 API Spec 6A Type 6BX Flange c/w BX155 Standard ring groove at each end' Suitable for H2S Service Working pressure: 10.000psi Test pressure: 15.000psi Standard: API 16C Full specification Armor Guarding: Included Fire Rating: Not Included Temperature rating: -20 Deg C to +100 Deg C	1	1	0
2	SECK3-HPF3 LIFTING & SAFETY EQUIPMENT TO SUIT HP10CK3-35-F1 2 x 160mm ID Safety Clamps 2 x 244mm ID Lifting Collars & element C's 2 x 7ft Stainless Steel wire rope 3/4" OD 4 x 7.75t Shackles		1	
3	SC725-200CS SAFETY CLAMP 200MM 7.25T C/S GALVANISED	1	1	D

Continued...

All goods remein the property of Phoenix Beattle until paid for in full. Any damage or shortage on this delivery must be edviced within 5 days. Returns may be subject to a handling charge.

FH-4

# - PHOENIX Beattie

Phoenix Beattle Corp 1158 Britmoore Park Drive Houston, TX 77041 Tel: (632) 327-014 Fax: (632) 327-014 E-ast3 selfiption(sbeattle.con ww.promissesttle.com

# **Delivery Note**

Customer Order Number	370-369-001	Delivery Note Number	003078	Page	2
Customer / Invoice Addre HELHERICH & PAYNE INT'L 1437 SOUTH BOULDER TULSA, OK 74119	ss Drilling Co	Delivery / Address Helmerich & Payne IDC Attn: Joe Stephenson - Ric 13609 Industrial Road Houston, Tx 77015	3 370		

Customer Acc'No	Phoenix Beattie Contract Manager	Phoenix Beattle Reference	Date
HO1	JJL	006330	05/23/2008

   P	tem No	Beattle Part Number / Description	Oty Ordered	Oty Sent	Oty To Follow
	4	SC725-132CS SAFETY CLAMP 132MM 7.25T C/S GALVANIZED C/W BOLTS	1	1	0
	5	ODCERT-HYDRO HYDROSTATIC PRESSURE TEST CERTIFICATE	1	1	0
	6	DOCERT-LOAD LOAD TEST CERTIFICATES	1	1	0
	7	ODFREIGHT INBOUND / OUTBOUND FREIGHT PRE-PAY & ADD TO FINAL INVOICE NOTE: MATERIAL MUST BE ACCOMPANIED BY PAPERNORK INCLUDING THE PURCHASE ORDER, RIG NUMBER TO ENSURE PROPER PAYMENT			D
		Phoenix Beattle Inspection Signature :	TUTAL	Which	
		Received in Good Condition : Signature	F	$\overline{\mathcal{A}}$	
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All goods remain the property of Phoenix Beattle until paid for in full. Any damage or shortage on this delivery must be advised within 5 days. Returns may be subject to a handling charge.

E.	OENIX Bea	uttie	Materia	l Identifi	catio	n Certific	ate			
PA No 006	3330 Client H	ELMERICH & PA	YNE INT'L DRILLING	Clant Raf	376	100 001				
						100-600-			Paga	-
Part Nol	Description	Material Desc	Material Spec	atv W	O No T	Batch No	Tost Cost No.			
1910CXCM-35-4F1	3' 10K 16C CAK HOSE x 35ft 0M								Urg No	Jssue No
SECKU-HIPF3	LIFTING & SAFETY EQUIPHON TO		1.04		10	11/1/1004		WIER		
50725-22005	SWETY CLAPP 200H 7.251	CARBON STEEL						N/5TK		
1 SJ2E1-52/JS	SAFETY CLAPP 132HH 7, 25T	CARBON STEEL			¥ []	8		×		
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we need of the best of our these goods have been inspected by our Quality Management System, and to the best of our knowledge are found to conform to relevant Industry standards within the requirements of the purchase order as issued to Phoenix Beattie Corporation. 05/23/09.

## **Coflex Hose Certification**



Quality Document

Fluid Technology

## CERTIFICATE OF CONFORMITY

Supplier : CONTITECH RUBBER INDUSTRIAL KFT. Equipment : 6 pcs. Choke and Kill Hose with installed couplings Type : 3" x 10,67 m WP: 10000 psi Supplier File Number : 412638 Date of Shipment : April. 2008 Customer : Phoenix Beattie Co. Customer P.o. : 002491 Referenced Standards / Codes / Specifications : API Spec 16 C Serial No.: 52754,52755,52776,52777,52778,52782

### STATEMENT OF CONFORMITY

We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.

COUNTRY OF ORIGIN HUNGARY/EU

Signed

Position: Q.C. Manager

\_ontiTech Bubber Industrial Rft. Quality Control Dept. (1)

Date: 04. April. 2008



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Rig Layout



# Permian Drilling Hydrogen Sulfide Drilling Operations Plan Cedar Canyon 22 Federal Com 5H

Open drill site. No homes or buildings are near the proposed location.

1. Escape

Personnel shall escape upwind of wellbore in the event of an emergency gas release. Escape can take place through the lease road on the Northwest side of the location. Personnel need to move to a safe distance and block the entrance to location. If the primary route is not an option due to the wind direction, then a secondary egress route should be taken.

#25-2





# Permian Drilling Hydrogen Sulfide Drilling Operations Plan New Mexico

#### <u>Scope</u>

This contingency plan establishes guidelines for the public, all company employees, and contract employees who's work activities may involve exposure to hydrogen sulfide (H2S) gas.

While drilling this well, it is possible to encounter H2S bearing formations. At all times, the first barrier to control H2S emissions will be the drilling fluid, which will have a density high enough to control influx.

## **Objective**

- 1. Provide an immediate and predetermined response plan to any condition when H2S is detected. All H2S detections in excess of 10 parts per million (ppm) concentration are considered an Emergency.
- 2. Prevent any and all accidents, and prevent the uncontrolled release of hydrogen sulfide into the atmosphere.
- 3. Provide proper evacuation procedures to cope with emergencies.
- 4. Provide immediate and adequate medical attention should an injury occur.

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## **Discussion**

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Implementation:	This plan with all details is to be fully implemented before drilling to <u>commence</u> .
Emergency response Procedure:	This section outlines the conditions and denotes steps to be taken in the event of an emergency.
Emergency equipment Procedure:	This section outlines the safety and emergency equipment that will be required for the drilling of this well.
Training provisions:	This section outlines the training provisions that must be adhered to prior to drilling.
Drilling emergency call lists:	Included are the telephone numbers of all persons to be contacted should an emergency exist.
Briefing:	This section deals with the briefing of all people involved in the drilling operation.
Public safety:	Public safety personnel will be made aware of any potential evacuation and any additional support needed.
Check lists:	Status check lists and procedural check lists have been included to insure adherence to the plan.
General information:	A general information section has been included to supply support information.

## Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on the well:

- 1. The hazards and characteristics of H2S.
- 2. Proper use and maintenance of personal protective equipment and life support systems.
- 3. H2S detection.
- 4. Proper use of H2S detectors, alarms, warning systems, briefing areas, evacuation procedures and prevailing winds.
- 5. Proper techniques for first aid and rescue procedures.
- 6. Physical effects of hydrogen sulfide on the human body.
- 7. Toxicity of hydrogen sulfide and sulfur dioxide.
- 8. Use of SCBA and supplied air equipment.
- 9. First aid and artificial respiration.
- 10. Emergency rescue.

In addition, supervisory personnel will be trained in the following areas:

- 1. The effects of H2S on metal components. If high tensile strength tubular is to be used, personnel will be trained in their special maintenance requirements.
- 2. Corrective action and shut-in procedures when drilling a well, blowout prevention and well control procedures.
- 3. The contents and requirements of the H2S Drilling Operations Plan.

H2S training refresher must have been taken within one year prior to drilling the well. Specifics on the well to be drilled will be discussed during the pre-spud meeting. H2S and well control (choke) drills will be performed while drilling the well, at least on a weekly basis. This plan shall be available in the well site. All personnel will be required to carry the documentation proving that the H2S training has been taken.

Service company and visiting personnel

- A. Each service company that will be on this well will be notified if the zone contains H2S.
- B. Each service company must provide for the training and equipment of their employees before they arrive at the well site.
- C. Each service company will be expected to attend a well site briefing

### **Emergency Equipment Requirements**

#### 1. <u>Well control equipment</u>

The well shall have hydraulic BOP equipment for the anticipated pressures. Equipment is to be tested on installation and follow Oxy Well Control standard, as well as BLM Onshore Order #2.

Special control equipment:

- A. Hydraulic BOP equipment with remote control on ground. Remotely operated choke.
- B. Rotating head
- C. Gas buster equipment shall be installed before drilling out of surface pipe.

#### 2. Protective equipment for personnel

- A. Four (4) 30-minute positive pressure air packs (2 at each briefing area) on location.
- B. Adequate fire extinguishers shall be located at strategic locations.
- C. Radio / cell telephone communication will be available at the rig.
  - Rig floor and trailers.
  - Vehicle.

#### 3. <u>Hydrogen sulfide sensors and alarms</u>

- A. H2S sensor with alarms will be located on the rig floor, at the bell nipple, and at the flow line. These monitors will be set to alarm at 10 ppm with strobe light, and audible alarm.
- B. Hand operated detectors with tubes.
- C. H2S monitor tester (to be provided by contract Safety Company.)
- D. There shall be one combustible gas detector on location at all times.

#### 4. Visual Warning Systems

A. One sign located at each location entrance with the following language:

Caution – potential poison gas Hydrogen sulfide No admittance without authorization

#### Wind sock – wind streamers:

- A. One 36" (in length) wind sock located at protection center, at height visible from rig floor.
- B. One 36" (in length) wind sock located at height visible from pit areas.

## Condition flags

A. One each condition flag to be displayed to denote conditions.

green – normal conditions yellow – potential danger red – danger, H2S present

B. Condition flag shall be posted at each location sign entrance.

## 5. <u>Mud Program</u>

The mud program is designed to minimize the risk of having H2S and other formation fluids at surface. Proper mud weight and safe drilling practices will be applied. H2S scavengers will be used to minimize the hazards while drilling. Below is a summary of the drilling program.

#### Mud inspection devices:

Garrett gas train or hatch tester for inspection of sulfide concentration in mud system.

## 6. <u>Metallurgy</u>

- A. Drill string, casing, tubing, wellhead, blowout preventers, drilling spools or adapters, kill lines, choke manifold, lines and valves shall be suitable for the H2S service.
- B. All the elastomers, packing, seals and ring gaskets shall be suitable for H2S service.

## 7. <u>Well Testing</u>

No drill stem test will be performed on this well.

8. <u>Evacuation plan</u>

Evacuation routes should be established prior to well spud for each well and discussed with all rig personnel.

- 9. Designated area
  - A. Parking and visitor area: all vehicles are to be parked at a predetermined safe distance from the wellhead.
  - B. There will be a designated smoking area.
  - C. Two briefing areas on either side of the location at the maximum allowable distance from the well bore so they offset prevailing winds perpendicularly, or at a 45-degree angle if wind direction tends to shift in the area.

#### Emergency procedures

- A. In the event of any evidence of H2S level above 10 ppm, take the following steps:
  - 1. The Driller will pick up off bottom, shut down the pumps, slow down the pipe rotation.
  - 2. Secure and don escape breathing equipment, report to the upwind designated safe briefing / muster area.
  - 3. All personnel on location will be accounted for and emergency search should begin for any missing, the Buddy System will be implemented.
  - 4. Order non-essential personnel to leave the well site, order all essential personnel out of the danger zone and upwind to the nearest designated safe briefing / muster area.
  - 5. Entrance to the location will be secured to a higher level than our usual "Meet and Greet" requirement, and the proper condition flag will be displayed at the entrance to the location.
  - 6. Take steps to determine if the H2S level can be corrected or suppressed and, if so, proceed as required.
- B. If uncontrollable conditions occur:
  - Take steps to protect and/or remove any public in the down-wind area from the rig – partial evacuation and isolation. Notify necessary public safety personnel and appropriate regulatory entities (i.e. BLM) of the situation.

- 2. Remove all personnel to the nearest upwind designated safe briefing / muster area or off location.
- 3. Notify public safety personnel of safe briefing / muster area.
- 4. An assigned crew member will blockade the entrance to the location. No unauthorized personnel will be allowed entry to the location.
- 5. Proceed with best plan (at the time) to regain control of the well. Maintain tight security and safety procedures.
- C. Responsibility:
  - 1. Designated personnel.
    - a. Shall be responsible for the total implementation of this plan.
    - b. Shall be in complete command during any emergency.
    - c. Shall designate a back-up.

All personnel:	1. 2. 3. 4.	On alarm, don escape unit and report to the nearest upwind designated safe briefing / muster area upw Check status of personnel (buddy system). Secure breathing equipment. Await orders from supervisor.
Drill site manager:	1.	Don escape unit if necessary and report to nearest upwind designated safe briefing / muster area.
	2.	Coordinate preparations of individuals to return to point of release with tool pusher and driller (using the buddy system)
	3.	Determine H2S concentrations.
	4.	Assess situation and take control measures.
Tool pusher:	1.	Don escape unit Report to up nearest upwind designated safe briefing / muster area.
	2.	Coordinate preparation of individuals to return to point of release with tool pusher drill site manager (using the buddy system).
	3.	Determine H2S concentration.
	4.	Assess situation and take control measures.
Driller:	1.	Don escape unit, shut down pumps, continue

		rotating DP.
	2.	Check monitor for point of release.
	3.	Report to nearest upwind designated safe briefing / muster area.
	4.	Check status of personnel (in an attempt to rescue, use the buddy system).
	5.	Assigns least essential person to notify Drill Site Manager and tool pusher by quickest means in case of their absence.
	6.	Assumes the responsibilities of the Drill Site Manager and tool pusher until they arrive should they be absent.
Derrick man Floor man #1 Floor man #2	1.	Will remain in briefing / muster area until instructed by supervisor.
Mud engineer:	ł.	Report to nearest upwind designated safe briefing / muster area.
	2.	When instructed, begin check of mud for ph and H2S level. (Garett gas train.)
Safety personnel:	1.	Mask up and check status of all personnel and secure operations as instructed by drill site manager.

## Taking a kick

When taking a kick during an H2S emergency, all personnel will follow standard Well control procedures after reporting to briefing area and masking up.

## **Open-hole logging**

All unnecessary personnel off floor. Drill Site Manager and safety personnel should monitor condition, advise status and determine need for use of air equipment.

#### Running casing or plugging

Following the same "tripping" procedure as above. Drill Site Manager and safety personnel should determine if all personnel have access to protective equipment.

## **Ignition procedures**

The decision to ignite the well is the responsibility of the operator (Oxy Drilling Management). The decision should be made only as a last resort and in a situation where it is clear that:

- 1. Human life and property are endangered.
- 2. There is no hope controlling the blowout under the prevailing conditions at the well.

## Instructions for igniting the well

- 1. Two people are required for the actual igniting operation. They must wear self-contained breathing units and have a safety rope attached. One man (tool pusher or safety engineer) will check the atmosphere for explosive gases with the gas monitor. The other man is responsible for igniting the well.
- 2. Primary method to ignite: 25 mm flare gun with range of approximately 500 feet.
- 3. Ignite upwind and do not approach any closer than is warranted.
- 4. Select the ignition site best for protection, and which offers an easy escape route.
- 5. Before firing, check for presence of combustible gas.
- 6. After lighting, continue emergency action and procedure as before.
- 7. All unassigned personnel will remain in briefing area until instructed by supervisor or directed by the Drill Site Manager.

**<u>Remember</u>**: After well is ignited, burning hydrogen sulfide will convert to sulfur dioxide, which is also highly toxic. **<u>Do not assume the area is safe after the well is ignited.</u>** 

## Status check list

Note: All items on this list must be completed before drilling to production casing point.

- 1. H2S sign at location entrance.
- 2. Two (2) wind socks located as required.
- 3. Four (4) 30-minute positive pressure air packs (2 at each Briefing area) on location for all rig personnel and mud loggers.
- 4. Air packs inspected and ready for use.
- 5. Cascade system and hose line hook-up as needed.
- 6. Cascade system for refilling air bottles as needed.
- 7. Condition flag on location and ready for use.
- 8. H2S detection system hooked up and tested.
- 9. H2S alarm system hooked up and tested.
- 10. Hand operated H2S detector with tubes on location.
- 11. 1 100' length of nylon rope on location.
- 12. All rig crew and supervisors trained as required.
- 13. All outside service contractors advised of potential H2S hazard on well.
- 14. No smoking sign posted and a designated smoking area identified.
- 15. Calibration of all H2S equipment shall be noted on the IADC report.

Checked by:	Date:

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### Procedural check list during H2S events

#### Perform each tour:

- 1. Check fire extinguishers to see that they have the proper charge.
- 2. Check breathing equipment to ensure that it in proper working order.
- 3. Make sure all the H2S detection system is operative.

### Perform each week:

- 1. Check each piece of breathing equipment to make sure that demand or forced air regulator is working. This requires that the bottle be opened and the mask assembly be put on tight enough so that when you inhale, you receive air or feel air flow.
- 2. BOP skills (well control drills).
- 3. Check supply pressure on BOP accumulator stand by source.
- 4. Check breathing equipment mask assembly to see that straps are loosened and turned back, ready to put on.
- 5. Check pressure on breathing equipment air bottles to make sure they are charged to full volume. ( Air quality checked for proper air grade "D" before bringing to location)
- 6. Confirm pressure on all supply air bottles.
- 7. Perform breathing equipment drills with on-site personnel.
- 8. Check the following supplies for availability.
  - A. Emergency telephone list.
  - B. Hand operated H2S detectors and tubes.

#### General evacuation plan

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- 1. When the company approved supervisor (Drill Site Manager, consultant, rig pusher, or driller) determines the H2S gas cannot be limited to the well location and the public will be involved, he will activate the evacuation plan.
- 2. Drill Site Manager or designee will notify local government agency that a hazardous condition exists and evacuation needs to be implemented.
- 3. Company or contractor safety personnel that have been trained in the use of H2S detection equipment and self-contained breathing equipment will monitor H2S concentrations, wind directions, and area of exposure. They will delineate the outer perimeter of the hazardous gas area. Extension to the evacuation area will be determined from information gathered.
- 4. Law enforcement personnel (state police, police dept., fire dept., and sheriff's dept.) Will be called to aid in setting up and maintaining road blocks. Also, they will aid in evacuation of the public if necessary.
- 5. After the discharge of gas has been controlled, company safety personnel will determine when the area is safe for re-entry.

<u>Important:</u> Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.

#### **Emergency** actions

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## Well blowout -- if emergency

- 1. Evacuate all personnel to "Safe Briefing / Muster Areas" or off location if needed.
- 2. If sour gas evacuate rig personnel.
- 3. If sour gas evacuate public within 3000 ft radius of exposure.
- 4. Don SCBA and shut well in if possible using the buddy system.
- 5. Notify Drilling Superintendent and call 911 for emergency help (fire dept and ambulance) if needed.
- 6. Implement the Blowout Contingency Plan, and Drilling Emergency Action Plan.
- 6. Give first aid as needed.

#### Person down location/facility

- 1. If immediately possible, contact 911. Give location and wait for confirmation.
- 2. Don SCBA and perform rescue operation using buddy system.

#### Toxic effects of hydrogen sulfide

Hydrogen sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 ppm, which is .001% by volume. Hydrogen sulfide is heavier than air (specific gravity -1.192) and colorless. It forms an explosive mixture with air between 4.3 and 46.0 percent by volume. Hydrogen sulfide is almost as toxic as hydrogen cyanide and is between five and six times more toxic than carbon monoxide. Toxicity data for hydrogen sulfide and various other gases are compared in table i. Physical effects at various hydrogen sulfide exposure levels are shown in table ii.

### Table i

Common name	Chemical formula	Specific gravity (sc=1)	Threshold limit (1)	Hazardous limit (2)	Lethal concentration (3)
Hydrogen Cyanide	Hen	0.94	10 ppm	150 ppm/hr	300 ppm
Hydrogen Sulfide	H2S	1.18	10 ppm	250 ppm/hr	600 ppm
Sulfur Dioxide	So2	2.21	5 ppm	-	1000 ppm
Chlorine	Cl2	2.45	1 ppm	4 ppm/hr	1000 ppm
Carbon Monoxide	Co	0.97	50 ppm	400 ppm/hr	1000 ppm
Carbon Dioxide	Co2	1.52	5000 ppm	5%	10%
Methane	Ch4	0.55	90,000 ppm	Combustible	e above 5% in air

## Toxicity of various gases

1) threshold limit – concentration at which it is believed that all workers may be repeatedly exposed day after day without adverse effects.

- 2) hazardous limit concentration that will cause death with short-term exposure.
- 3) lethal concentration concentration that will cause death with short-term exposure.

#### Toxic effects of hydrogen sulfide

## Table ii Physical effects of hydrogen sulfide

		<b>Concentration</b>	Physical effects
Percent (%)	<u>Ppm</u>	Grains	
		100 std. Ft3*	
0.001	<10	00.65	Obvious and unpleasant odor.

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0.002	10	01.30	Safe for 8 hours of exposure.
0.010	100	06.48	Kill smell in 3 – 15 minutes. May sting eyes and throat.
0.020	200	12.96	Kills smell shortly; stings eyes and throat.
0.050	500	32.96	Dizziness; breathing ceases in a few minutes; needs prompt artificial respiration.
0.070	700	45.36	Unconscious quickly; death will result if not rescued promptly.
0.100	1000	64.30	Unconscious at once; followed by death within minutes.

\*at 15.00 psia and 60'f.

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### Use of self-contained breathing equipment (SCBA)

- 1. Written procedures shall be prepared covering safe use of SCBA's in dangerous atmosphere, which might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available SCBA.
- 2 SCBA's shall be inspected frequently at random to insure that they are properly used, cleaned, and maintained.
- 3. Anyone who may use the SCBA's shall be trained in how to insure proper facepiece to face seal. They shall wear SCBA's in normal air and then wear them in a test atmosphere. (note: such items as facial hair {beard or sideburns} and eyeglasses will not allow proper seal.) Anyone that may be reasonably expected to wear SCBA's should have these items removed before entering a toxic atmosphere. A special mask must be obtained for anyone who must wear eyeglasses or contact lenses.
- 4. Maintenance and care of SCBA's:
  - a. A program for maintenance and care of SCBA's shall include the following:
    - 1. Inspection for defects, including leak checks.
    - 2. Cleaning and disinfecting.
    - 3. Repair.
    - 4. Storage.
  - b. Inspection, self-contained breathing apparatus for emergency use shall be inspected monthly.
    - 1. Fully charged cylinders.
    - 2. Regulator and warning device operation.
    - 3. Condition of face piece and connections.
    - 4. Rubber parts shall be maintained to keep them pliable and prevent deterioration.
  - c. Routinely used SCBA's shall be collected, cleaned and disinfected as frequently as necessary to insure proper protection is provided.
- 5. Persons assigned tasks that requires use of self-contained breathing equipment shall be certified physically fit (medically cleared) for breathing equipment usage at least annually.
- 6. SCBA's should be worn when:
  - A. Any employee works near the top or on top of any tank unless test reveals less than 10 ppm of H2S.

- B. When breaking out any line where H2S can reasonably be expected.
- C. When sampling air in areas to determine if toxic concentrations of H2S exists.
- D. When working in areas where over 10 ppm H2S has been detected.
- E. At any time there is a doubt as to the H2S level in the area to be entered.

## Rescue First aid for H2S poisoning

Do not panic!

Remain calm - think!

- 1. Don SCBA breathing equipment.
- 2. Remove victim(s) utilizing buddy system to fresh air as quickly as possible. (go up-wind from source or at right angle to the wind. Not down wind.)
- 3. Briefly apply chest pressure arm lift method of artificial respiration to clean the victim's lungs and to avoid inhaling any toxic gas directly from the victim's lungs.
- 4. Provide for prompt transportation to the hospital, and continue giving artificial respiration if needed.
- 5. Hospital(s) or medical facilities need to be informed, before-hand, of the possibility of H2S gas poisoning no matter how remote the possibility is.
- 6. Notify emergency room personnel that the victim(s) has been exposed to H2S gas.

Besides basic first aid, everyone on location should have a good working knowledge of artificial respiration.

Revised CM 6/27/2012

Operator Name/Number:	<u>OXY USA Inc. – 16696</u>	
Lease Name/Number:	Cedar Canyon 22 Federal Com #5H	
Pool Name/Number:	Corral Draw Bone Spring – 96238	
Surface Location:	1120 FSL 207 FWL SWSW (M) Sec 22 T24S R29E	Fee
Bottom Hole Location:	1690 FSL 250 FEL NESE (I) Sec 22 T24S R29E	NMNM81586

## 1. Existing Roads

- a. A copy of the USGS "Pierce Canyon, NM" quadrangle map is attached showing the proposed location. The well location is spotted on the map, which shows the existing road system.
- b. The well was staked by Terry J. Asel, Certificate No. 15079 on 11/09/15, certified 2/16/16.
- c. Directions to Location: From the intersection of USH 285 and Black River Road in Malaga, go east on CR 720 for 1.3 miles. Turn right on CR 746 and go south for 0.8 miles, continue southeast/east for 4.8 miles. Curve to the left for 0.4 miles. Turn left and go west for 0.1 miles. Turn right and go north for 0.5 miles. Turn left on proposed road and go northwest for 209.2 feet to location.

## 2. New of Reconstructed Access Roads:

- a. A new access road will be built. The access road will begin at an existing lease road and will go northwest approximately 209.2' through the pasture to the southwest corner of pad.
- b. The maximum width of the road will be 15'. It will be crowned and made up of 6" of rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent surface erosion.
- c. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest in proximity to the location. The average grade will be approximately 1%.
- d. No cattle guards, grates or fence cuts will be required. No turnouts are planned.
- e. Blade, water and repair existing caliche roads as needed.
- f. Water Bars will be incorporated every 200' during the construction of the road, see attached.

## 3. Location of Existing Wells:

Existing wells within a one mile radius of the proposed well are shown on attached plat.

## 4. Location of Existing and/or Proposed Facilities:

- a. In the event the well is found productive, the Cedar Canyon 23 Federal tank battery would be utilized and the necessary production equipment will be installed at the well site. See proposed Production Facilities Layout diagram.
- b. All flow lines will adhere to API standards. They will consist of 2 4" composite flowlines operating < 75% MAWP, and 1 4" composite gas life supply line operating < 125 psig on surface, lines to follow surveyed route. Surveys for a pipeline approximately 6161' in length crossing Sections 22 T24S R29E, NMPM, Eddy County, NM, see attached.</p>
- c. Electric line will follow a route approved by the BLM. Survey for an electric line 143.6' in length crossing Section 22 24S R29E, NMPM, Eddy County, NM, see attached.

## 5. Location and types of Water Supply

This well will be drilled using a combination of water mud systems. It will be obtained from commercial water stations in the area and will be hauled to location by transport truck using existing and proposed roads.

#### 6. Construction Materials:

#### Primary

All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM/State/Fee approved pit or from prevailing deposits found on the location. Will use BLM recommended extra caliche from other locations close by for roads, if available.

#### Secondary

The secondary way of obtaining caliche to build locations and roads will be by "turning over" the location. This means, caliche will be obtained from the actual well site. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2400 cubic yards is max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel:

- a. The top 6" of topsoil is pushed off and stockpiled along the side of the location.
- b. An approximate 120' X 120' area is used within the proposed well site to remove caliche.
- c. Subsoil is removed and piled alongside the 120' X 120' within the pad site.
- d. When caliche is found, material will be stockpiled within the pad site to build the location and road.
- e. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
- f. Once the well is drilled the stockpiled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche nor subsoil will be stockpiled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in the attached plat.

#### 7. Methods of Handling Waste Material:

- a. A closed loop system will be utilized consisting of above ground steel tanks and haul-off bins. Disposal of liquids, drilling fluids and cuttings will be disposed of at an approved facility. Solids-CRI, Liquids-Laguna
- b. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed, all contents will be removed and disposed of in an approved sanitary landfill.
- c. The supplier, including broken sacks, will pickup slats remaining after completion of well.
- d. A Porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
- e. Disposal of fluids to be transported will be by the following companies. TFH Ltd, Laguna SWD Facility

#### 8. Ancillary Facilities: None needed.

#### 9. Well Site Layout:

The proposed well site layout with dimensions of the pad layout and equipment location.

V-Door – South CL Tanks – East Pad – 470' X 280' - 3 well pad

#### 10. Plans for Surface Reclamation:

a. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The original topsoil will again be returned to the pad and contoured, as close as

possible, to the original topography, and the area will be seeded with an approved BLM mixture to re-establish vegetation.

 b. If the well is deemed commercially productive, caliche from the areas of the pad site not required for operations will be reclaimed. The original topsoil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography, and the area will be seeded with an approved BLM mixture to re-establish vegetation.

#### 11. Surface Ownership:

The surface is owned by the John D. Brantley, Jr. 706 W. Riverside Dr., Carlsbad, NM 88220 and Henry McDonald, P.O. Box 597, Loving, NM 88256. Surface Use and Compensation Agreement between OXY USA Inc. and John D. Brantley, Jr. and Harry McDonald, as Surface Owners, dated January 27, 2014, copy provided upon request. They will be notified of our intention to drill prior to any activity.

The minerals are owned by the U.S. Government and administered by the BLM.

The surface is of limited use except for the grazing of livestock and the production of oil and gas.

#### 12. Other Information:

- a. The vegetation cover is generally sparse consisting of mesquite, yucca, shinnery oak, sandsage and perennial native range grass. The topsoil is sandy in nature. Wildlife in the area is also sparse consisting of deer, coyotes, rabbits, rodents, reptiles, dove and quail.
- b. There is no permanent or live water in the general proximity of the location.
- c. There are no dwellings within one mile of the proposed well site.
- d. Cultural Resources Examination This well will be on a multi-well pad to accommodate batch drilling with skidding operations. The Permian Basin MOA fees were paid on the Cedar Canyon 21 Federal #5H.
- e. Copy of this Application has been mailed to CEHMM, 505 N. Main St. Carlsbad, NM 88220.

#### 13. Bond Coverage:

Bond coverage is Individual-NMB000862, Nationwide-ESB00226.

#### 14. Operators Representatives:

The OXY Permian representatives responsible for ensuring compliance of the surface use plan are listed below:

Victor Guadian	Charles Wagner
Production Coordinator	Manager Field Operations
1502 West Commerce Dr.	1502 West Commerce Dr.
Carlsbad, NM 88220	Carlsbad, NM 88220
Office – 575-628-4006	Office – 575-628-4151
Cellular 575-291-9905	Cellular 575-725-8306
Jim Wilson	Omar Lisigurski
Operation Specialist	RMT Leader
P.O. Box 50250	P.O. Box 4294
Midland, TX 79710	Houston, TX 77210
Cellular – 575-631-2442	Office – 713-215-7506
	Cellular – 281-222-7248

#### **OPERATOR CERTIFICATION**

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this  $2\pi/42$  day of February, 2016.

Signature: Cheller
Name:Omar Lisigurski
Position:Reservoir Management Team Leader
Address:5 Greenway Plaza, Suite 110, Houston, TX 77046
Telephone:713-215-7506
E-mail: (optional):omar_lisigurski@oxy.com
Company:Occidental Permian LP/OXY USA Inc./OXY USA WTP LP
Field Representative (if not above signatory): Jim Wilson
Address (If different from above): _P.O. Box 50250 Midland, TX 79710
Telephone (if different from above):575-631-2442
E-mail (if different from above): jim_wilson@oxy.com

# Oxy U.S.A Inc.

	ew Mexico Staking Form
Date Staked:	11-13-15
Lease/Well Name:	Cedar Canyoh Fed Com #5H
legal Description:	1090 F5L 207 FWL Sec 22 7245 R295
Latitude:	32° 11' 55.21" And 83
Longitude:	-103" 58' 48.76"
More Information;	
County:	Eddy
Serface Owner/Tenant:	BLM
Risarest Residence:	1/2 mile
Nearest Water Well:	
<b>Y-D</b> BOT.	SOUTH
Road Description:	Road Into SW corner from SAUTH
Ristor Roads	· · · · · · · · · · · · · · · · · · ·
Upgrade Existing Road:	
Interim Reclamation:	50' EAST 80' NORTH 30'SOUTH
Source of Caliche:	
Top Soll:	NOTTH
Onsite Date Performed:	12-10-15
Onsite Atlendees:	JESSIE BASSETT-BEM JIM WILSON-OXY ASEL SURVEY
Soocial Notes:	,

## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Oxy USA Incorporated
LEASE NO.:	NMNM13996
WELL NAME & NO.:	5H-Cedar Canyon 22 Federal Com
SURFACE HOLE FOOTAGE:	1120'/S & 207'/W
BOTTOM HOLE FOOTAGE	1690'/S & 250'/E
LOCATION:	Section 22, T.24 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

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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.

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## **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)

### **Avian Protection**

Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all power line structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. The holder without liability or expense shall make such modifications and/or additions to the United States.

## **Cave and Karst**

\*\* Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

## **Cave/Karst Surface Mitigation**

The following stipulations will be applied to minimize impacts during construction, drilling and production.

## **Construction:**

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

#### No Blasting:

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

## **Pad Berming:**

The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

#### Tank Battery Liners and Berms:

Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain  $1\frac{1}{2}$  times the content of the largest tank.

#### Leak Detection System:

A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

#### Automatic Shut-off Systems:

Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

### **<u>Cave/Karst</u>** Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

#### **Rotary Drilling with Fresh Water:**

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

#### **Directional Drilling:**

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

#### Lost Circulation:

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cavebearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

#### Abandonment Cementing:
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

# **Pressure Testing:**

Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

# **Communitization Agreement**

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. <u>When the Communitization Agreement number is known, it shall also be</u> <u>on the sign.</u>

# 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) 234-5909 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 strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area 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. EXCLOSURE FENCING (CELLARS & PITS)

#### **Exclosure Fencing**

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

#### G. 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-five (25) 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 conform to Figure 1; cross section and plans for typical road construction.

#### 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: 400' + 100' = 200' lead-off ditch interval 4%

#### Cattleguards

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route 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 cattleguards that are in place and are utilized during lease operations.

#### Fence Requirement

Where entry is granted 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 fences.

#### **Public Access**

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

# Construction Steps 1. Salvage topsoil 3. Redistribute topsoil 2. Construct road 4. Revegetate slopes





# VII. DRILLING

# A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)
  - 🔀 Eddy County

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

- 1. Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.
- 2. The operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well.
- 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 is 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 or are Non-API. 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 changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

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

#### Wait on cement (WOC) for Water Basin:

After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least <u>8 hours</u>. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. (For surface casing the BOP can be nippled up after the cement has reached 500 psi compressive strength.)

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

#### Medium cave/karst

Possible water flows in Castile and Salado. Posible lost circulation in Rustler, Red Beds and Delaware.

- 1. The 10 3/4 inch surface casing shall be set at approximately 400 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. If salt is encountered, the operator shall set the casing 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.

Formation below the 10-3/4" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

The 7-5/8 inch intermediate casing must be kept liquid filled while running into hole to meet minimum BLM requirements for collapse.

2. The minimum required fill of cement behind the 7-5/8 inch intermediate 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.

Operator has proposed a contingency DV tool at 2900'. If operator circulates cement on the first stage, operator is approved to inflate the ACP and run the DV tool cancellation plug and cancel the second stage of the proposed cement plan. If cement does not circulate, operator will inflate ACP and proceed with the second 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 cave/karst.

If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface.

Formation below the 7-5/8" shoe to be tested according to Onshore Order 2.111.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

3. The minimum required fill of cement behind the 5-1/2 x 4-1/2 inch production casing is:

Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.

4. 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. These documents shall be posted in the company man's trailer and on the rig floor. 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. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi.
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.
  - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

# 5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

- 4. 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**.
  - 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. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two 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. This test shall be performed prior to the test at full stack pressure.

#### 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.

#### **Exclosure Netting (Open-top Tanks)**

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to

prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

#### **Chemical and Fuel Secondary Containment and Exclosure Screening**

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

#### **Open-Vent Exhaust Stack Exclosures**

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

#### **Containment Structures**

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

#### **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, <u>Shale Green</u> from the BLM Standard Environmental Color Chart (CC-001: June 2008).

#### VRM Facility Requirement

Low-profile tanks not greater than eight-feet-high shall be used.

#### **B. PIPELINES**

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the Grant and attachments, including stipulations, survey plat(s) and/or map(s), shall be on location during construction. BLM personnel may request to

stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, Holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC § 2601 *et seq.* (1982) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant (*see* 40 CFR, Part 702-799 and in particular, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193). Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. Holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. § 9601, *et seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq.*) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way Holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way Holder on the Right-of-Way. This provision applies without regard to whether a release is caused by Holder, its agent, or unrelated third parties.

4. Holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. Holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

- a. Activities of Holder including, but not limited to: construction, operation, maintenance, and termination of the facility;
- b. Activities of other parties including, but not limited to:
  - (1) Land clearing
  - (2) Earth-disturbing and earth-moving work
  - (3) Blasting

#### (4) Vandalism and sabotage;

#### c. Acts of God.

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The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of Holder, regardless of fault. Upon failure of Holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he/she deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of Holder. Such action by the Authorized Officer shall not relieve Holder of any responsibility as provided herein.

6. All construction and maintenance activity shall be confined to the authorized right-of-way width of 20 feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline shall be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline shall be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity shall be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation shall be allowed unless approved in writing by the Authorized Officer.

8. Holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline shall be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with 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. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their

former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

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11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – Shale Green, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder 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 will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. 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, powerline 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.

17. Surface pipelines shall be less than or equal to 4 inches and a working pressure below 125 psi.

#### C. ELECTRIC LINES

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STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 <u>et seq</u>. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-

of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

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- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

# 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).

#### Seed Mixture 2, for Sandy 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	l <u>b/acre</u>
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

\*Pounds of pure live seed:

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

#### NMOCD CONDITION OF APPROVAL

The New! Gas Capture Plan (GCP) notice is posted on the NMOCD website under Announcements. The Plan became effective May 1, 2016. A copy of the GCP form is included with the NOTICE and is also in our FORMS section under Unnumbered Forms. Please review filing dates for all applicable activities currently approved or pending and submit accordingly. Failure to file a GCP may jeopardize the operator's ability to obtain C-129 approval to flare gas after the initial 60-day completion period.

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