Form 3160-3
(March 2012)

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

13-95

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NMNM90807

JCS 4/5/2013

6. If Indian, Allotee or Tribe Name

1a. Type of work: [X] DRILL [ ] REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other [X] Single Zone [ ] Multiple Zone

8. Lease Name and Well No. <39397> OSAGE 34 FEDERAL 5H

2. Name of Operator <154903> SM ENERGY COMPANY

9. API Well No. 30-015-41250

3a. Address 3300 N "A" ST, BLDG 7-200 MIDLAND, TX 79705

3b. Phone No. *(include area code)* (432)688-1709

10. Field and Pool, or Exploratory PARKWAY BONE SPRING <49622>

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 560' FSL & 13' FEL (SL) UNIT P
At proposed prod. zone 400' FSL & 330' FWL (BHL) UNIT M

11. Sec., T. R. M. or Blk. and Survey or Area SEC 34 - T19S - R29E

14. Distance in miles and direction from nearest town or post office*
8 MILES SOUTH OF LOCO HILLS, NM

12. County or Parish EDDY

13. State NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
13'	1120	160
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. on file**
30'	11901' MD 7167' TVD	NMB000805
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3326' GL	03/01/2013	50 DAYS

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
	MALCOLM KINTZING	12/18/2012

Title: RESERVOIR ENGINEER

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
James A. Amos		APR - 1 2013
Title FIELD MANAGER	**Office** CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

Capitan Controlled Water Basin

RECEIVED
APR 05 2013
NMOCD ARTESIA

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

SM Energy Company
3300 N. A Street, Suite 200
Midland, TX 79705
(432) 688-1700 (Office)
(432) 682-1701 (Fax)

I hereby certify that I or persons under my supervision have inspected the proposed drill site and the access road routes, that I am familiar with the conditions that currently exist, and that the statements made in this plan are to the best of my knowledge are true and correct, and that the work associated with the operations proposed herein will be performed by SM Energy Company, its contractors or its sub-contractors is in conformance with this plan and the terms and the conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C 1001 for filing of a false statement.

Signature: _____ Date: 12/18/12

Malcolm Kintzing
SM Energy Company
3300 N. A St. 7-200
Midland, TX 79705
Office: 432.688.3125
Cell: 432.212.2628

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-41250	49622	Parkway Bone Spring

Property Code	Property Name	Well Number
~~30481~~ 39397	OSAGE 34 FEDERAL	5H

OGRID No.	Operator Name	Elevation
154903	SM ENERGY Company	3326

Surface Location

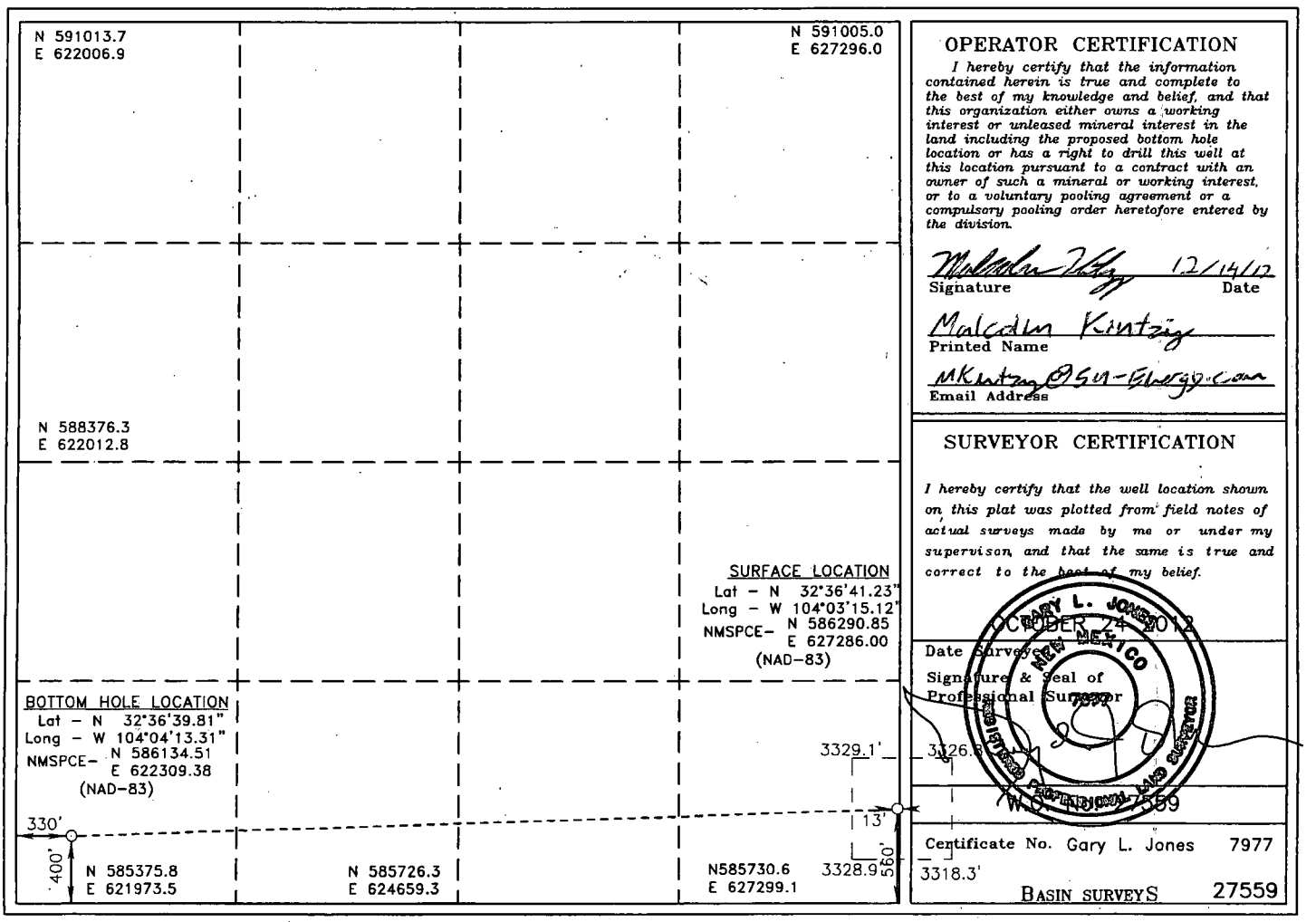
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	34	19 S	29 E		560	SOUTH	13	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	34	19 S	29 E		400	SOUTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature 12/14/12 Date

Malcolm Kintzig
Printed Name

MKintzig@SM-Energy.com
Email Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my belief.

OCTOBER 24, 2012
Date Surveyed

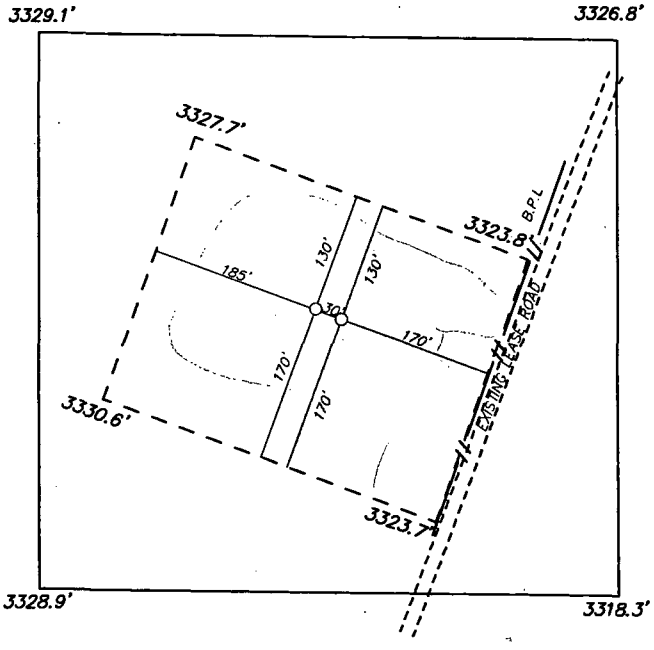
Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL LAND SURVEYOR

W.O. Number: 7559

Certificate No. Gary L. Jones 7977
BASIN SURVEYS 27559

SECTION 34, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.,
EDDY COUNTY, **NEW MEXICO.**



SM ENERGY
OSAGE 34 FEDERAL #5H
ELEV. - 3326'

SURFACE LOCATION
Lat - N 32°36'41.23"
Long - W 104°03'15.12"
NMSPCE- N 586290.85
E 627286.00
(NAD-83)

N

NOTE: WELL IS LOCATED ABOUT 16 MILES NORTH-NORTHEAST OF CARLSBAD, NEW MEXICO.

200 0 200 400 FEET
SCALE: 1" = 200'

Directions to Location:

FROM HIGHWAY 360 AND CURRY COMB GO WEST 4.7 MILE TURN SOUTH GO .5 MILES TO A CURVE CONTINUE WEST .1 MILE TURN SOUTH GO .7 MILES TURN WEST GO 1.2 MILE TURN SOUTH GO .2 MILE TO PROPOSED LOCATIONS.

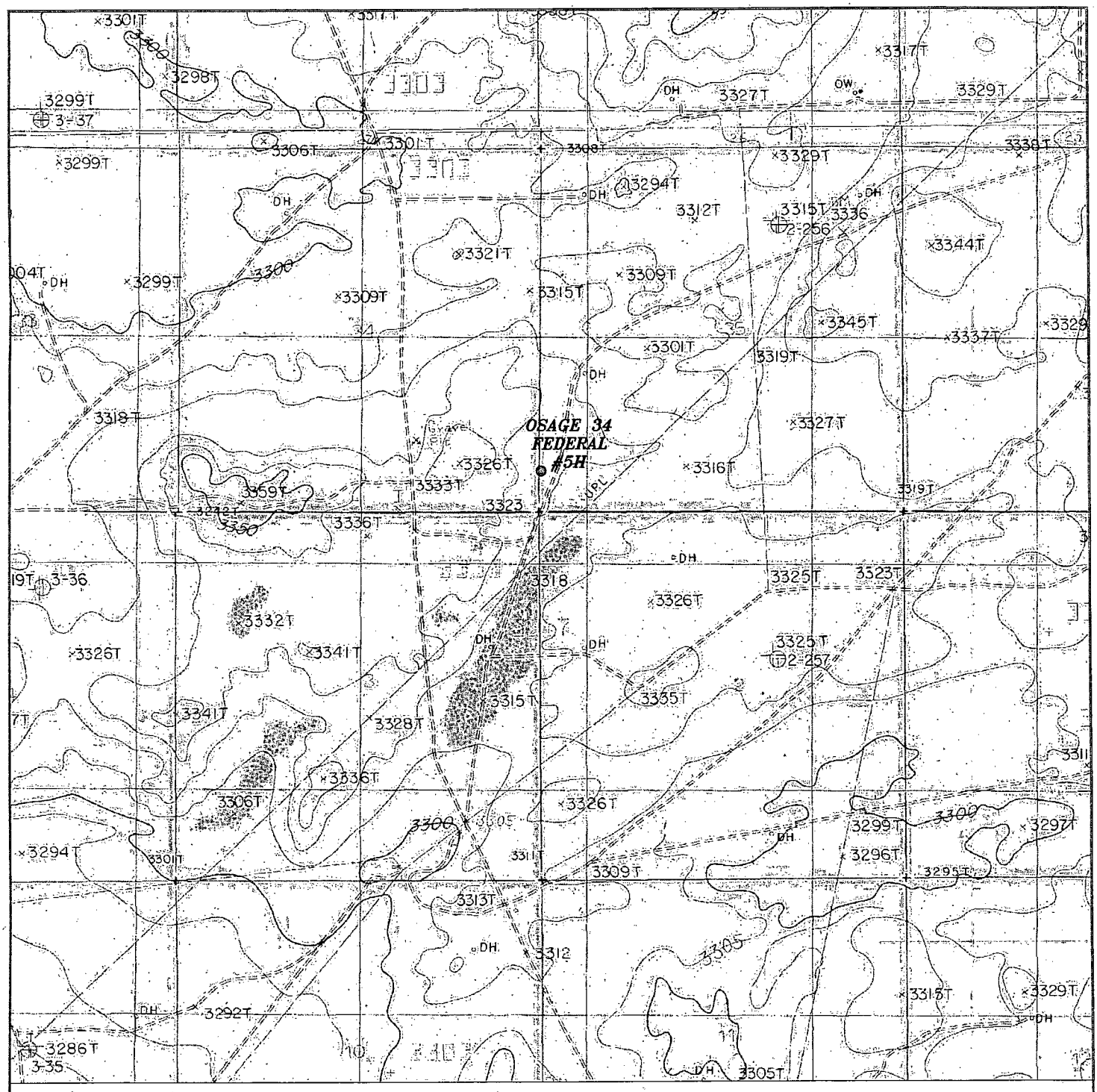
SM ENERGY

REF: OSAGE 34 FEDERAL #5H / WELL PAD TOPO

THE OSAGE 34 FEDERAL #5H LOCATED 560' FROM THE SOUTH LINE AND 13' FROM THE EAST LINE OF SECTION 34, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 27559	Drawn By: D. JONES		
Date: 10-25-2012	Disk: DAJ 27559	Survey Date: 10-24-2012	Sheet 1 of 1 Sheets



OSAGE 34 FEDERAL #5H
Located 560' FSL and 13' FEL
Section 34, Township 19 South, Range 29 East,
N.M.P.M., EDDY County, New Mexico.

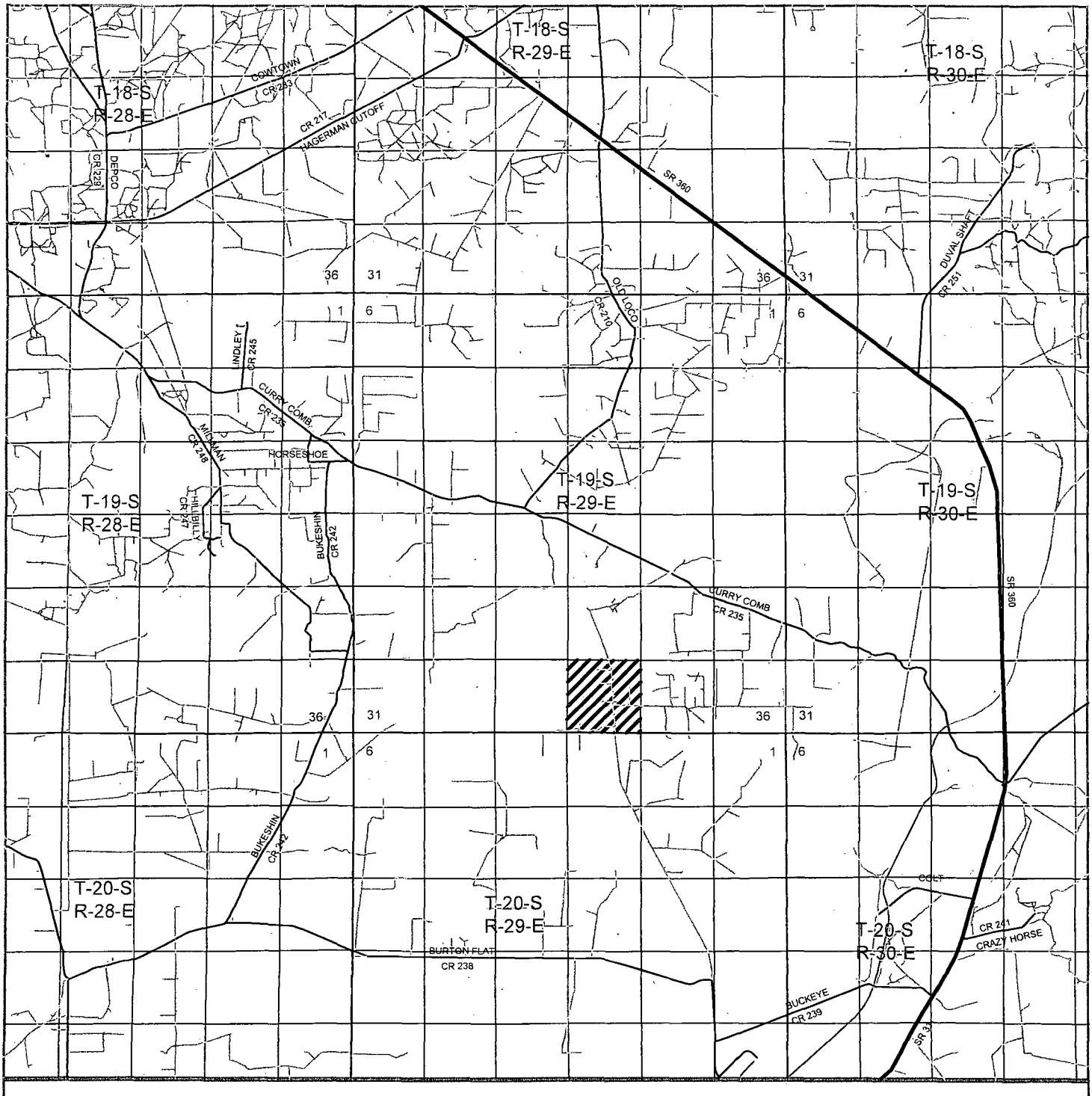
basin surveys
focused on excellence in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: DAJ 27559
Survey Date: 10-24-2012
Scale: 1" = 2000'
Date: 06-13-2012

N

SM ENERGY



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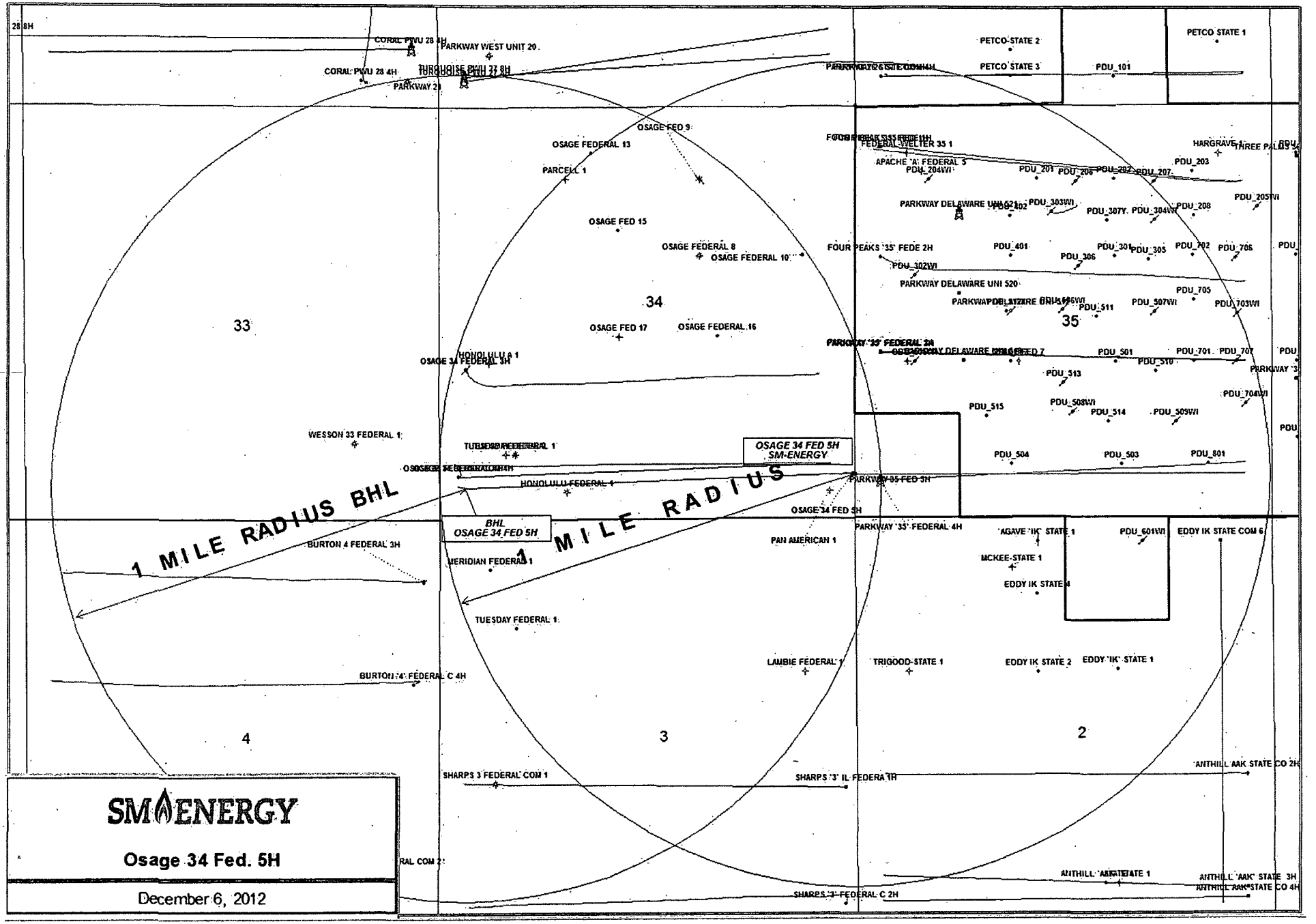
basinsurveys.com

W.O. Number:	DAJ 27559
Survey Date:	10-24-2012
Scale:	1" = 2 Miles
Date:	06-13-2012

N

SM ENERGY


1 MILE RADIUS BHL
1 MILE RADIUS
BHL
OSAGE 34 FED 5H
OSAGE 34 FED 5H
SM-ENERGY
33
34
35
4
3
2
CORAL PWU 28 4H
PARKWAY WEST UNIT 20
TURQUOISE PWU 27 8H
PARKWAY 21
OSAGE FED 9
OSAGE FEDERAL 13
PARCELL 1
OSAGE FED 15
OSAGE FEDERAL 8
OSAGE FEDERAL 10
OSAGE FED 17
OSAGE FEDERAL 16
OSAGE 34 FEDERAL 3H
HONOLULU 6 1
WESSON 33 FEDERAL 1
HONOLULU FEDERAL 1
PARKWAY 35 FED 5H
OSAGE 34 FED 5H
PARKWAY '35' FEDERAL 4H
PAN AMERICAN 1
BURTON 4 FEDERAL 3H
MERIDIAN FEDERAL 1
TUESDAY FEDERAL 1
LAMBIE FEDERAL 1
BURTON '4' FEDERAL C 4H
SHARPS 3 FEDERAL COM 1
SHARPS '3' IL FEDERA 1H
SHARPS '3' FEDERAL C 2H
PETCO STATE 2
PETCO STATE 3
PETCO STATE 1
PDU_101
FEDERAL WELTER 35 1
APACHE 'A' FEDERAL 3
HARGRAVE 1
THREE PALMS
PDU_203
PDU_204WI
PDU_201
PDU_206
PDU_202
PDU_207
PDU_205WI
PARKWAY DELAWARE UNI 521
PDU_303WI
PDU_307Y
PDU_304WI
PDU_208
FOUR PEAKS '35' FEDE 2H
PDU_401
PDU_301
PDU_305
PDU_702
PDU_706
PDU_306
PDU_302WI
PARKWAY DELAWARE UNI 520
PDU_705
PDU_507WI
PDU_703WI
PDU_511
PDU_501
PDU_701
PDU_707
PDU_510
PDU_513
PDU_704WI
PDU_515
PDU_508WI
PDU_514
PDU_509WI
PDU_504
PDU_503
PDU_801
AGAVE 'IK' STATE 1
PDU_601WI
EDDY IK STATE COM 6
MCKEE-STATE 1
EDDY IK STATE 4
TRIGOOD-STATE 1
EDDY IK STATE 2
EDDY 'IK' STATE 1
ANTHILL 'AAK' STATE CO 2H
ANTHILL 'AAK' STATE 3H
ANTHILL 'AAK' STATE CO 4H
SM ENERGY
Osage 34 Fed. 5H
December 6, 2012

Drilling program

SM Energy Company
Osage 34 Federal 5H
560 FSL & 13 FEL (SHL)
400 FSL & 330 FEL (BHL)
Sec 34-T19S-R29E
Eddy County, New Mexico

The estimated tops of geologic markers are as follows

Rustler	143'
Top of Salt	357'
Base of Salt	980'
*Yates	1328'
Capitan	2723'
*Cherry Canyon	3478'
*Brushy Canyon	4033'
*Bone Spring	5776'
*Wolfcamp	9381'

Estimated depths of anticipated fresh water, oil, or gas

Fresh water is expected at 75'and will be protected by setting surface casing at 250' and cementing to surface.

Oil and gas are anticipated in the above (*) formations. These zones will be protected by casing as required.

Pressure and control equipment

SM Energy Company requests a variance to Onshore Order 2 in order to use a diverter system on the 20" surface casing.

See COA

A 13-5/8" 2M Annular system will be installed on after running the 13-3/8" casing. An 11" 3M Double Ram BOP and 3M Annular will be installed after running the 9 -5/8" casing. Pressure tests will be conducted prior to drill out the 13-3/8" casing. BOP controls will be installed prior to drilling out from under 13-3/8" casing and will remain in use until completion of drilling operations. BOP's will be inspected and operated as regulated in Onshore Order #2. A Kelly cock valve and a sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the in the open position when the Kelly is not in use. SM Energy Company will have the ~~13-3/8"~~ 13 5/8" BOPE tested to 1500# and the annular tested to 1500# with a third party testing company before drilling below the 1st intermediate casing shoe. 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 the test is done with a test plug. All blowout preventer are related equipment

See COA

shall comply with well control requirements in Onshore Oil and Gas Order No. 2 and API RP 53 Sec 17.

See COA

SM Energy Company respectfully requests a variance to Onshore Order No 2. SM Energy Company requests a variance to use a co-flex hose between the BOPE and the choke manifold. The hose will be kept straight as possible with minimal turns.

Proposed casing and cementing program

See COA

A. Casing program:

Hole Size	Casing Size	Casing #/foot	Grade	Setting Depth	Collar
26"	20" (new)	94	J55	0-~~250~~	BTC
17.5"	13 3/8" (new)	48	J55	0-1200'	STC
17.5	13 3/8" (new)	54.5	J55	1200-1500 ✔	STC
12 ¼"	9 5/8" (new)	36	J55	0-3300' ✔	LTC
8 ¾"	7" (new)	26	P110	0-7506'	LTC
6 1/8"	4.5" (new)	11.6	P110	7306-11901	LTC

Minimum casing design factors: Collapse 1.125, Burst 1.0, Tensile strength 1.8.
*Subject to casing availability

A. Cementing Program:

I. **20"Surface casing:** 525 sx 35:65 Class C light cement with salt and LCM additives. Yeild at 2.0 cuft/sx. 780 sx class C cement containing 2% CaCl2. Yield 1.34 cuft/sx. Cmt circulated to surface w/100% excess.

II. **13-3/8"Intermediate Casing:** 730 sx 35:65 Class C 12.50 ppg cement with salt and LCM additives. Yield at 2.04 cuft/sx. 200 sx class C cement containing 2% CaCl2. Yield 1.34 cuft/sx. 14.80 ppg Cmt circulated to surface w/50% excess.

III. **9-5/8"Deep intermediate Casing:** The deep intermediate casing will be pumped in two stages using an ECP stage collar.
Stage 1 Scavenger Slurry Lead Slurry: 400 sacks Class C Cement yield 2.41 (cf/sack) density 12.50 (ppg), Tail Slurry: 200 Class C Cement 1.34 (cf/sack) density 14.80 (ppg). Position of the packer stage cementing collar will be placed in the deepest competent formation but not with in 100' of the previous casing shoe. The positioning of the packer stage cementing collar will be determined either by caliper survey or rate of penetration log. Current estimated setting depth is 1,700'. Second stage volume of slurry will be 400 sacks (35:65) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.25 lbs/sack Cello Flake + 10% bwoc Bentonite II + 151.7% Fresh Water yield 2.41 (cf/sack) density 12.50 (ppg). Should packer placement chance cement volume will be adjusted proportionally determined by annulus volume above the packer with 35% excess and will meet the 500 psi requirement before casing test and drill out.

See COA

IV. **7"Production Casing:** 750 sks (35:65) Poz (Fly Ash): class C Lead 12.5 ppg, 2.41 cu/sk, 200 class H cement 15.60 ppg, 1.19 cf/sack containing 1% Sodium Chloride. TOC will be designed to cover the Captain Reef at 1,650' with excess of 75%.

V. **4-1/2"Production Liner:** plans are to use a sliding sleeve, frac port and packer system with 4 ½" liner. No cement required. Liner will be hung inside the 7" csg.

See COA

*SM Energy Company reserves the right to change cement designs as hole conditions may warrant.

Mud Program – See COA

No abnormal pressure is expected
Lost circulation is common in the area for every hole section.
SM Energy will use an air unit in the Capitan Reef to assist in circulation if large losses occur. Estimated mud weight is 6 ppg. If a well control situation is encountered the emergency shut offs on the air units will be utilized and the rig pumps will be used to regain the 8.4 ppg mud weight.
A mud monitoring system will be in place to record the following: Slow Pump Rate, pit gain or loss, mud weight, viscosity, gel strength, filtration and pH.

See COA

Interval	mud type	weight	Viscosity	Fluid loss
0-210'	Fresh water spud mud	8.6-9.4	32-34	No Control
210'-1500'	Brine	10	28-30	No Control
1500'-3300'	Fresh water	8.4	28-30	No Control
3300'-7506'	Cut bine	8.4-8.6	28-30	No Control
7506'-11,901'	Cut brine w/polymer	8.4-8.6	32-40	No Control

Evaluation Program * See COA

I. Mud log samples will be taken after drilling out the surface casing.
II. Cased hole Gamma ray/Neutron will be run from KOP(6594') to surface.
III. Gamma Ray will be used to drill lateral hole.
IV. No Drill stem tests or coring is planned at this time
V. Additional testing may be initiated based on log evaluation and geological sample shows.

Downhole Conditions

Zones of abnormal pressure:	None anticipated
Zones of lost circulation:	Anticipated in surface and intermediate holes
Maximum bottom hole temperature:	130 degrees F
Maximum bottom hole pressure:	.433 psi/ft gradient (3120 psi)

Anticipated Starting Date

SM Energy Company intends to drill this well late 2012 or early 2013 with approximately 40 days involved in drilling operations and an additional 10 days involved in completion operations on the project.

Potential Hazards See COA

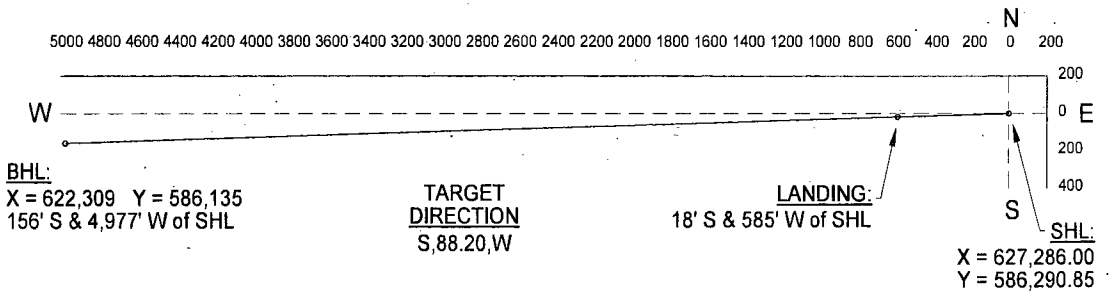
No abnormal pressures or temperatures are expected. There is no known presence of H_2S in the area. If H_2S is encountered the operator will comply with the provisions of Onshore Order No 6.

SM ENERGY COMPANY

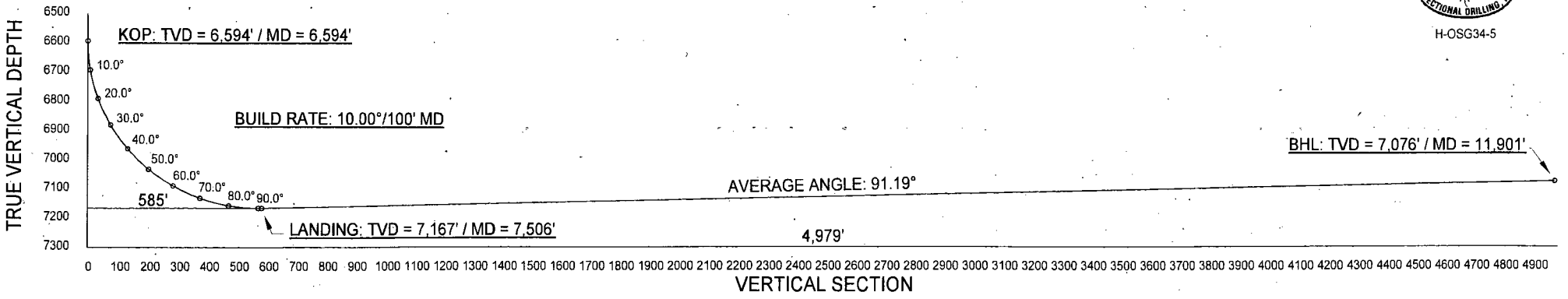
OSAGE 34 FEDERAL WELL #5H
SECTION 34, T-19-S, R-29-E
EDDY COUNTY, NEW MEXICO

(12/05/12)

HORIZONTAL PROJECTION



VERTICAL PROJECTION



RAMCO DIRECTIONAL DRILLING, INC.

H-OSG34-5

SM ENERGY COMPANY

12/5/2012

OSAGE 34 FEDERAL WELL #5H
SECTION 34, T-19-S, R-29-E
EDDY COUNTY, NEW MEXICO

RKB = 3344' AMSL Est. (GL = 3326') **SHL: X: 627,286.00' Y: 586,290.85'**
NAD 83

Obj.= S 88.20 W

Type	#	MD	ANG	Azimuth	DIR	CL	TVD	(+)North (-)South	(+)East (-)West	Vertical Section	Dogleg /100'
		SURVEY									
9-5/8" CASING	TI-IN	**3550.00**	0.00	268.20	S 88.20 W	----	**3550.00**	**0.00**	**0.00**	**0.00**	TI-IN
KOP	1	**6594.17**	0.00	268.20	S 88.20 W	3044	**6594.16**	**0.00**	**0.00**	**0.00**	0.00
	2	6626.17	3.20	268.20	S 88.20 W	32	6626.15	-0.03	-0.89	0.89	10.00
	3	6658.17	6.40	268.20	S 88.20 W	32	6658.03	-0.11	-3.57	3.57	10.00
	4	6690.17	9.60	268.20	S 88.20 W	32	6689.72	-0.25	-8.02	8.02	10.00
	5	6722.17	12.80	268.20	S 88.20 W	32	6721.10	-0.45	-14.23	14.24	10.00
	6	6754.17	16.00	268.20	S 88.20 W	32	6752.09	-0.70	-22.18	22.20	10.00
	7	6786.17	19.20	268.20	S 88.20 W	32	6782.59	-1.00	-31.85	31.87	10.00
	8	6818.17	22.40	268.20	S 88.20 W	32	6812.50	-1.36	-43.21	43.23	10.00
	9	6850.17	25.60	268.20	S 88.20 W	32	6841.73	-1.77	-56.22	56.25	10.00
	10	6882.17	28.80	268.20	S 88.20 W	32	6870.19	-2.23	-70.84	70.87	10.00
	11	6914.17	32.00	268.20	S 88.20 W	32	6897.79	-2.73	-87.02	87.06	10.00
	12	6946.17	35.20	268.20	S 88.20 W	32	6924.44	-3.29	-104.72	104.77	10.00
	13	6978.17	38.40	268.20	S 88.20 W	32	6950.06	-3.89	-123.87	123.93	10.00
	14	7010.17	41.60	268.20	S 88.20 W	32	6974.57	-4.54	-144.43	144.50	10.00
	15	7042.17	44.80	268.20	S 88.20 W	32	6997.89	-5.22	-166.32	166.40	10.00
	16	7074.17	48.00	268.20	S 88.20 W	32	7019.96	-5.95	-189.48	189.57	10.00
	17	7106.17	51.20	268.20	S 88.20 W	32	7040.69	-6.72	-213.83	213.94	10.00
	18	7138.17	54.40	268.20	S 88.20 W	32	7060.04	-7.52	-239.31	239.43	10.00
	19	7170.17	57.60	268.20	S 88.20 W	32	7077.93	-8.35	-265.82	265.95	10.00
	20	7202.17	60.80	268.20	S 88.20 W	32	7094.31	-9.21	-293.29	293.43	10.00
	21	7234.17	64.00	268.20	S 88.20 W	32	7109.14	-10.10	-321.63	321.79	10.00
	22	7266.17	67.20	268.20	S 88.20 W	32	7122.35	-11.02	-350.75	350.93	10.00
	23	7298.17	70.40	268.20	S 88.20 W	32	7133.92	-11.96	-380.57	380.76	10.00
	24	7330.17	73.60	268.20	S 88.20 W	32	7143.81	-12.91	-410.99	411.19	10.00
	25	7362.17	76.80	268.20	S 88.20 W	32	7151.98	-13.88	-441.90	442.12	10.00
	26	7394.17	80.00	268.20	S 88.20 W	32	7158.42	-14.87	-473.23	473.46	10.00
	27	7426.17	83.20	268.20	S 88.20 W	32	7163.09	-15.86	-504.87	505.12	10.00
	28	7458.17	86.40	268.20	S 88.20 W	32	7165.99	-16.86	-536.72	536.98	10.00
	29	7490.17	89.60	268.20	S 88.20 W	32	7167.11	-17.86	-568.68	568.96	10.00
LANDING	30	**7506.03**	91.19	268.20	S 88.20 W	16	**7167.0000**	**-18.36**	**-584.53**	**584.82**	10.00
	31	7538.03	91.19	268.20	S 88.20 W	32	7166.34	-19.37	-616.51	616.81	0.00
	32	8038.03	91.19	268.20	S 88.20 W	500	7155.99	-35.06	-1116.15	1116.70	0.00
	33	8538.03	91.19	268.20	S 88.20 W	500	7145.63	-50.76	-1615.80	1616.60	0.00
	34	9038.03	91.19	268.20	S 88.20 W	500	7135.28	-66.46	-2115.44	2116.49	0.00
	35	9538.03	91.19	268.20	S 88.20 W	500	7124.93	-82.15	-2615.09	2616.38	0.00
	36	10038.03	91.19	268.20	S 88.20 W	500	7114.58	-97.85	-3114.74	3116.27	0.00
	37	10538.03	91.19	268.20	S 88.20 W	500	7104.22	-113.55	-3614.38	3616.17	0.00
	38	11038.03	91.19	268.20	S 88.20 W	500	7093.87	-129.24	-4114.03	4116.06	0.00
	39	11538.03	91.19	268.20	S 88.20 W	500	7083.52	-144.94	-4613.68	4615.95	0.00
BHL	40	**11901.23**	91.19	268.20	S 88.20 W	363	**7076.00**	-156.34	-4976.62	4979.08	0.00
LATERAL		4395.21						-156.34	-4976.62	4979.08	

Diverter System

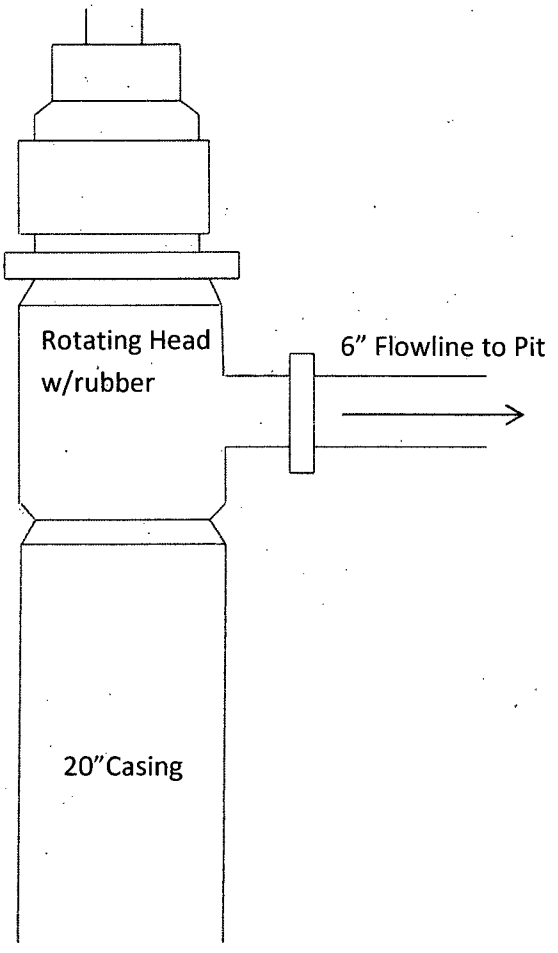
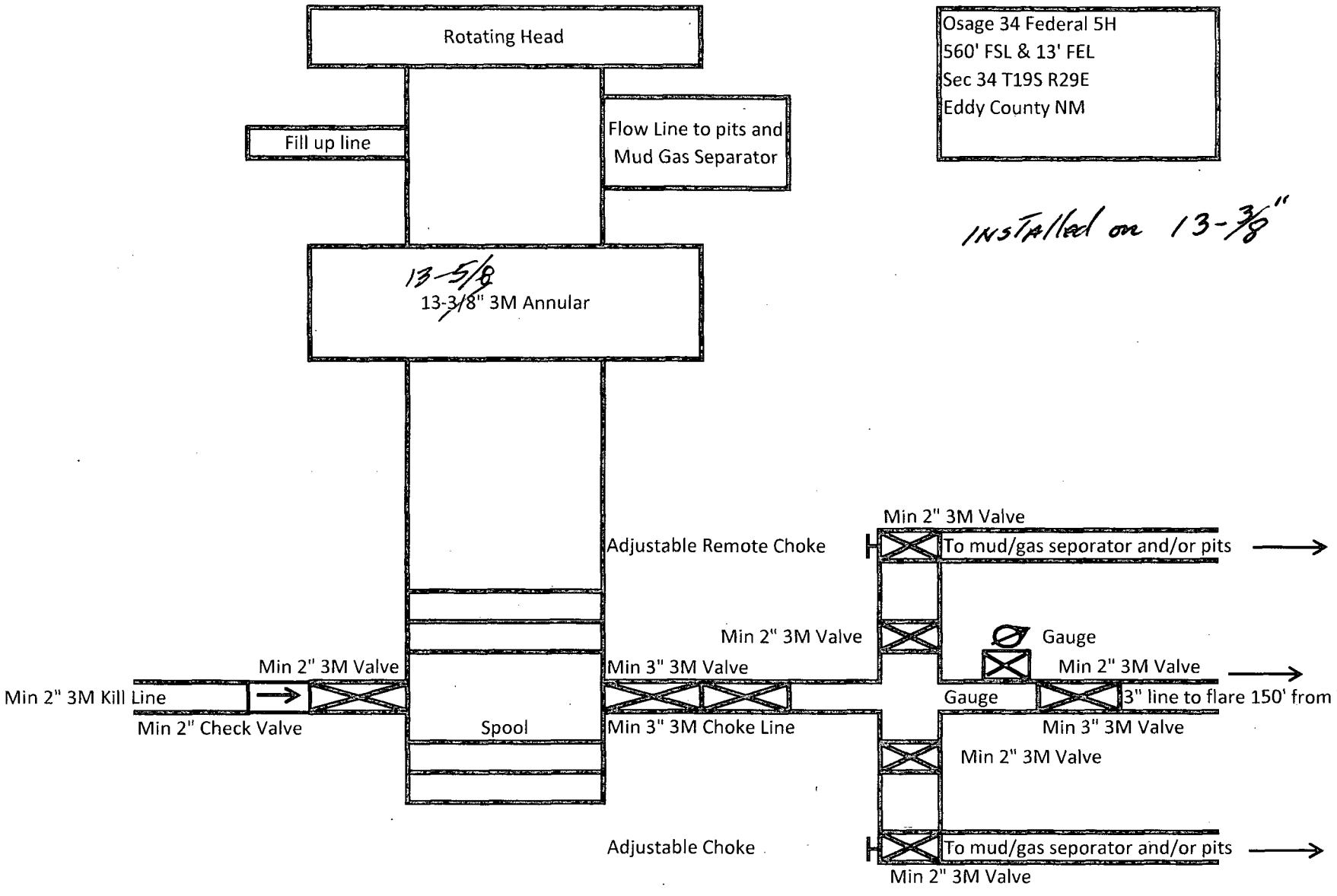


Diagram #1

BOP SCHEMATIC

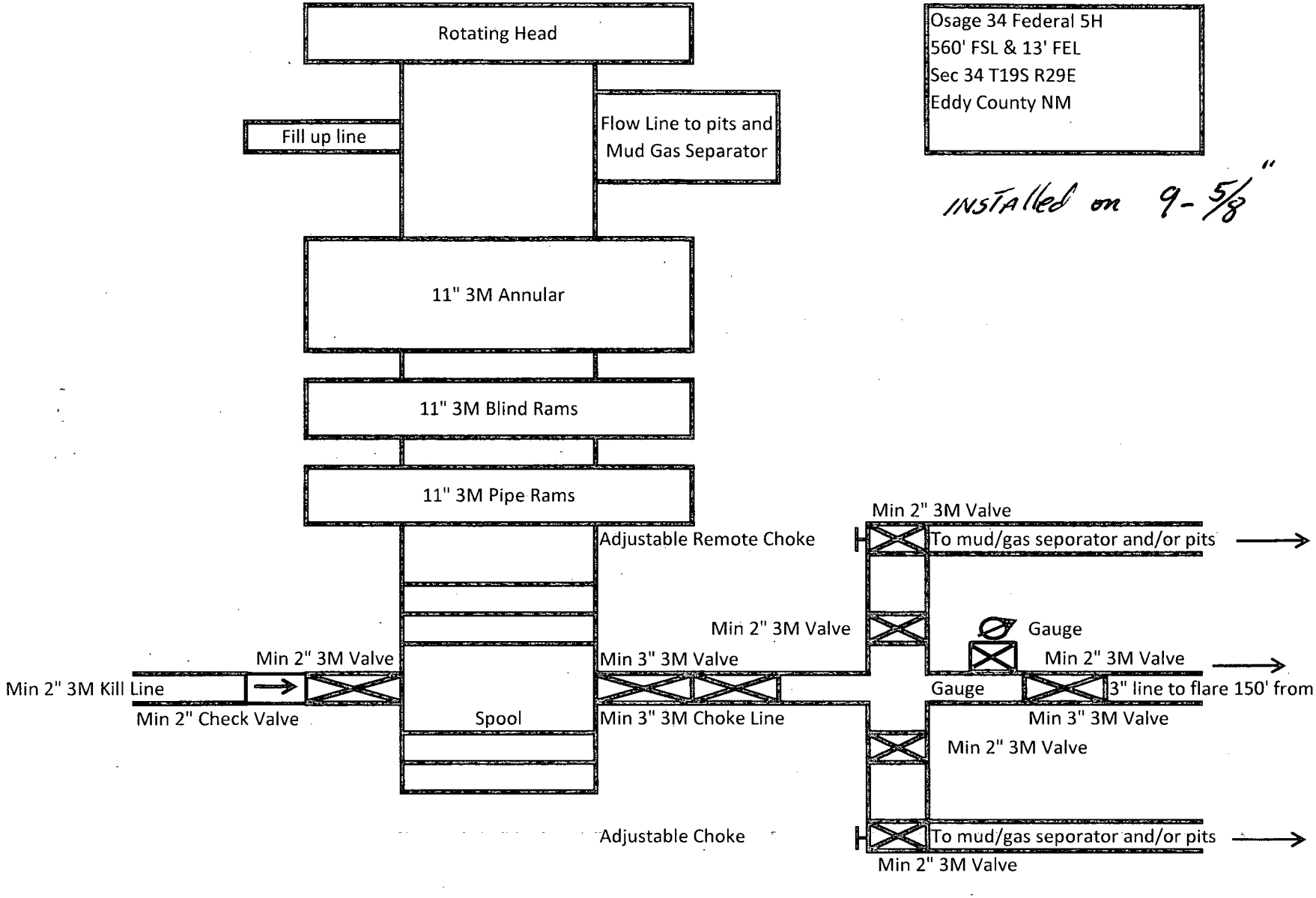
Osage 34 Federal 5H
560' FSL & 13' FEL
Sec 34 T19S R29E
Eddy County NM



INSTALLED on 13-3/8"

Diagram #2

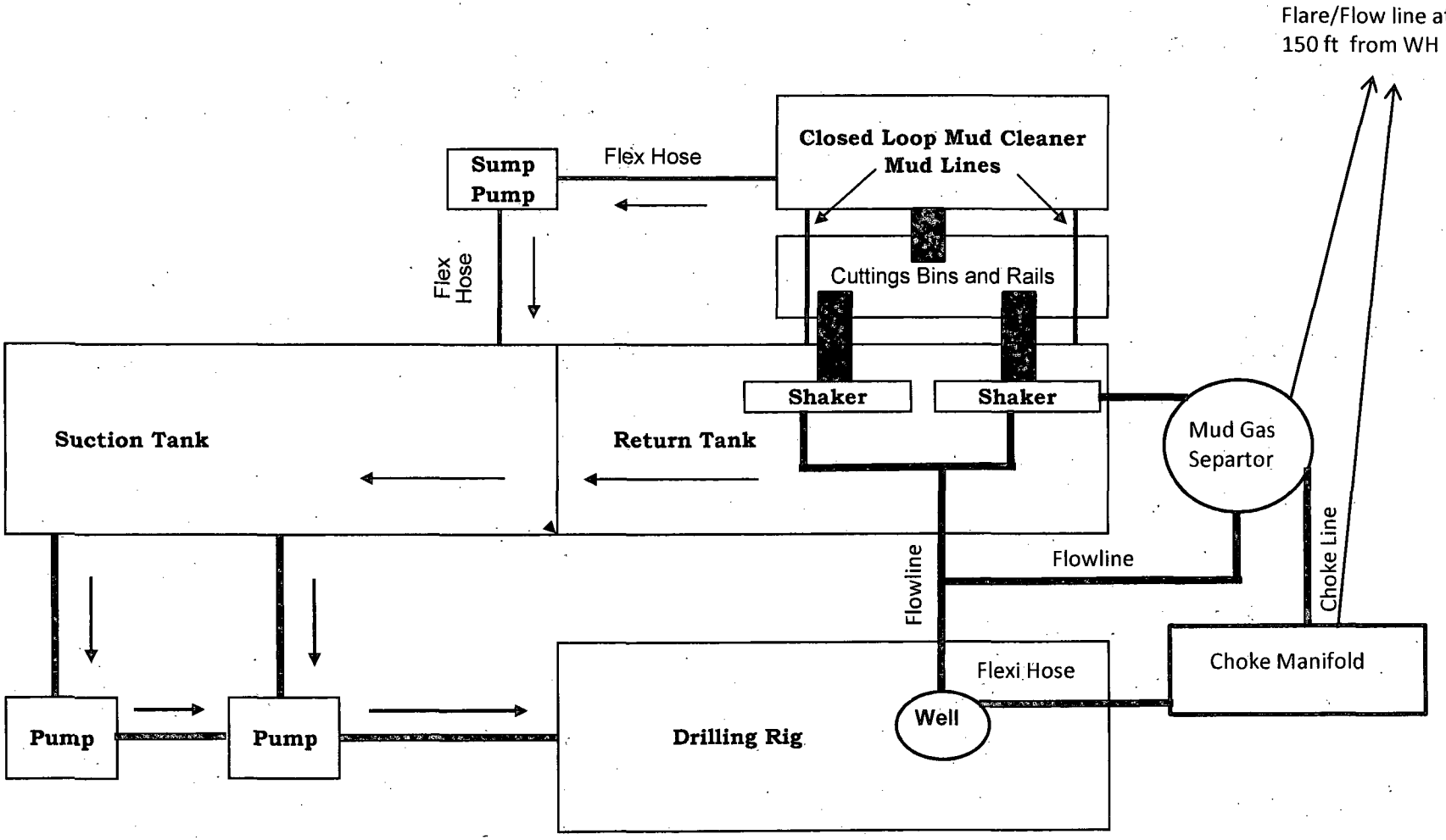
BOP SCHEMATIC



Osage 34 Federal 5H
560' FSL & 13' FEL
Sec 34 T19S R29E
Eddy County NM

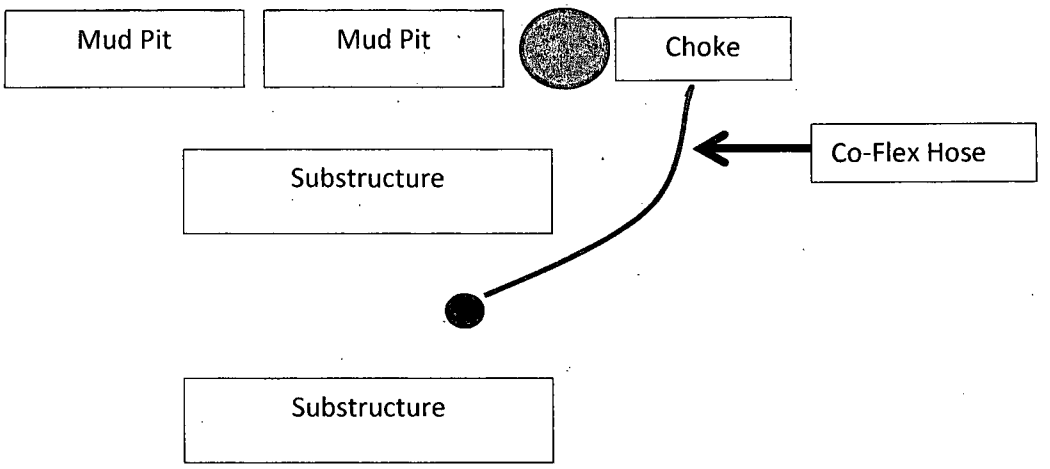
INSTALLED on 9-5/8"

Choke Manifold Schematic for Closed Loop System



SM Energy Company respectfully requests a variance to Onshore Order No 2. SM Energy Company requests the ability to use a co-flex hose between the BOPE and the choke manifold. The hose will be kept straight as possible with minimal turns.

Co-Flex Hose:
Manufacturer: Midwest Hose & Specialty, Inc
Length: 47'
3" ID With 1 1/16 5K Flanges
Quality Control Inspection and Test Certification attached
See configuration schematic
Safety clamps are not required since ends are flanged
Line is to be kept as straight as possible



Midwest Hose
& Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT

Customer:	Customer P.O. Number:
ALICE	132599

HOSE SPECIFICATIONS

Type: Rotary / Vibrator Hose GRADE D / API 7K	Hose Length: 47 FEET
I.D. 3 *INCHES*	O.D. 4.49 *INCHES*

WORKING PRESSURE	TEST PRESSURE	BURST PRESSURE
5,000 *PSI*	5,000 *PSI*	N/A *PSI*

COUPLINGS

Part Number	Stem Lot Number	Ferrule Lot Number
D3.5X64WB	1Q11LOT1	1Q11LOT1
D3.5X64WB	1Q11LOT1	1Q11LOT1

Type of Coupling:	Die Size:
Swage-It	5.12 INCHES

PROCEDURE

Hose assembly pressure tested with water at ambient temperature.

TIME HELD AT TEST PRESSURE	ACTUAL BURST PRESSURE:
1 1/2 *MIN.*	N/A *PSI*

Hose Assembly Serial Number:	Hose Serial Number:
143913	7818

Comments:

Date:	Tested:	Approved:
2/23/2012	Dave McClure	Kim Thomas

Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Graph

March 23, 2012

Customer: Alice

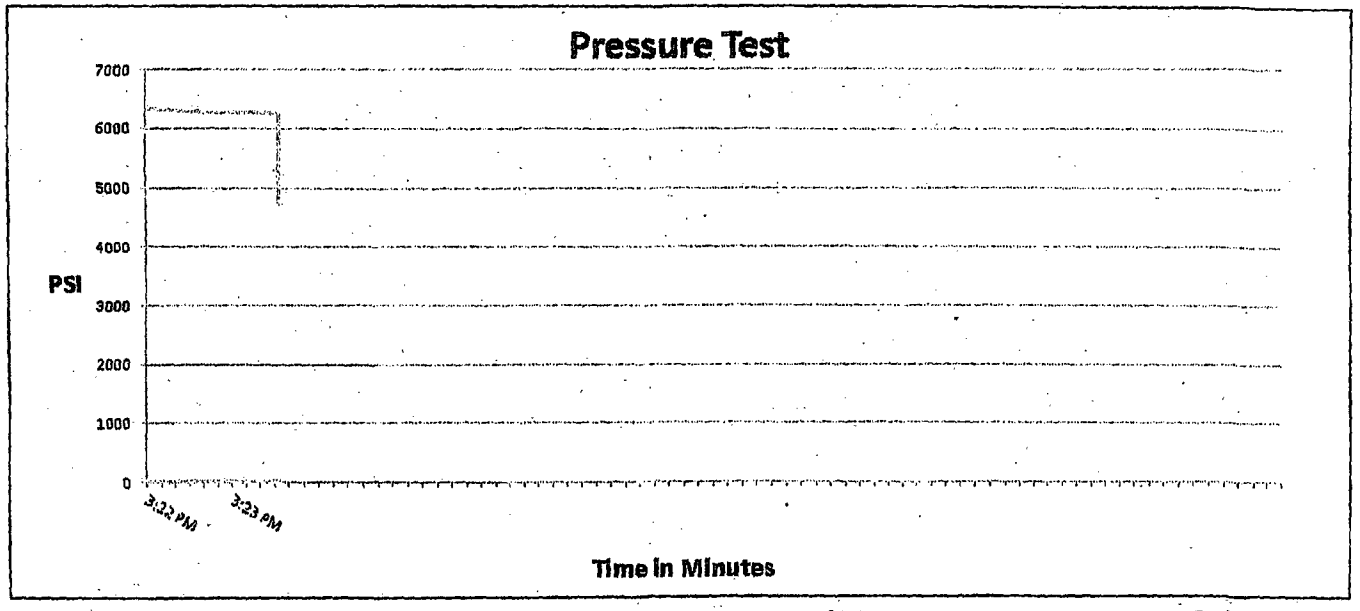
Pick Ticket #: 143913

Hose Specifications

Hose Type	Length
D	47'
I.D.	**O.D.**
3"	4.49"
Working Pressure	**Burst Pressure**
5000 PSI	Standard Safety Multiplier Applies

Verification

Type of Fitting	Coupling Method
4 1/16 5K	Swage
Die Size	**Final O.D.**
5.12"	5.10"
Hose Serial #	**Hose Assembly Serial #**
7818	143913



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
5000 PSI	1 2/4 Minutes		6679 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

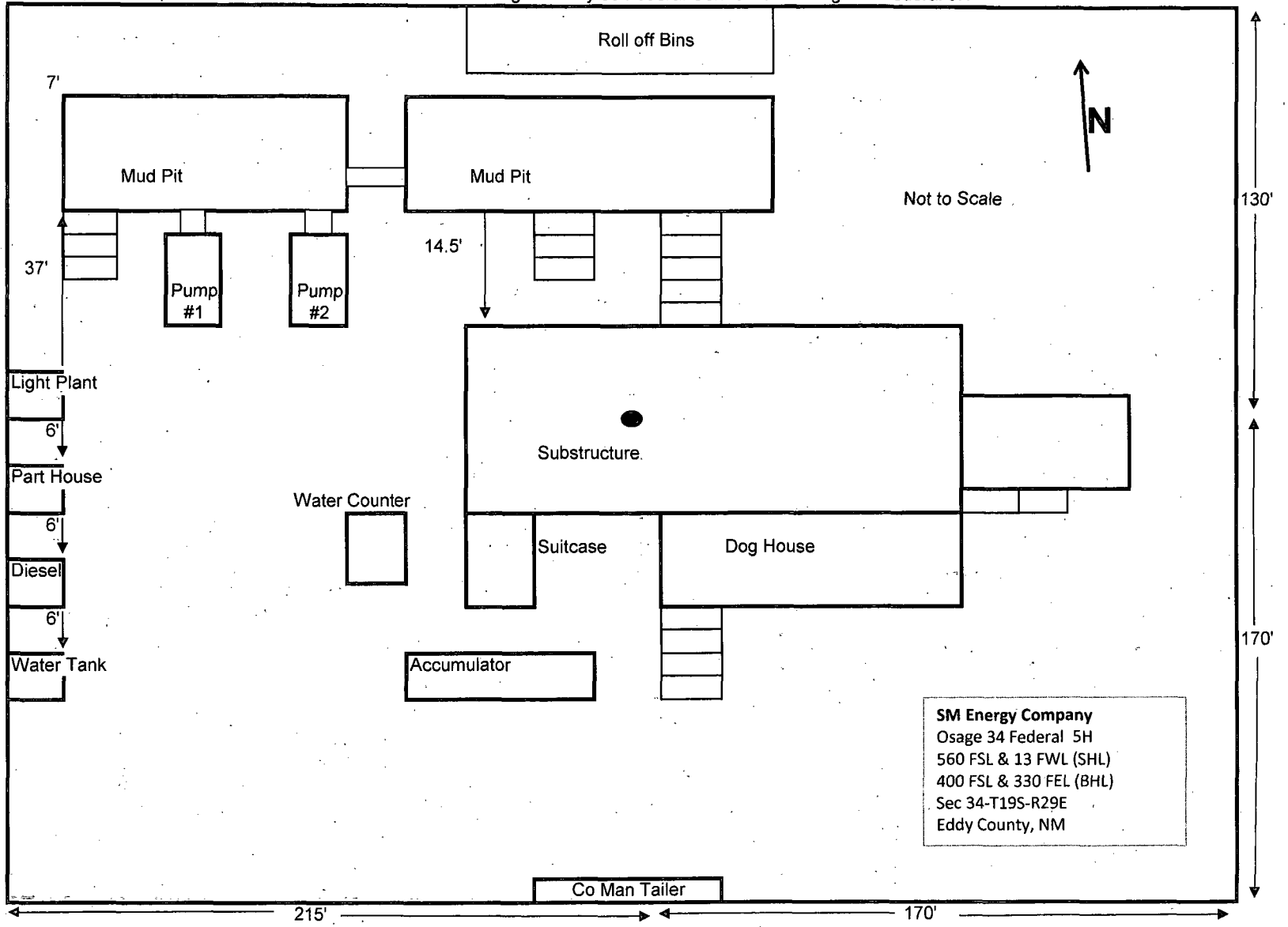
Tested By: *Donnie Mclemore*

x _____

Approved By: *Kim Thomas*

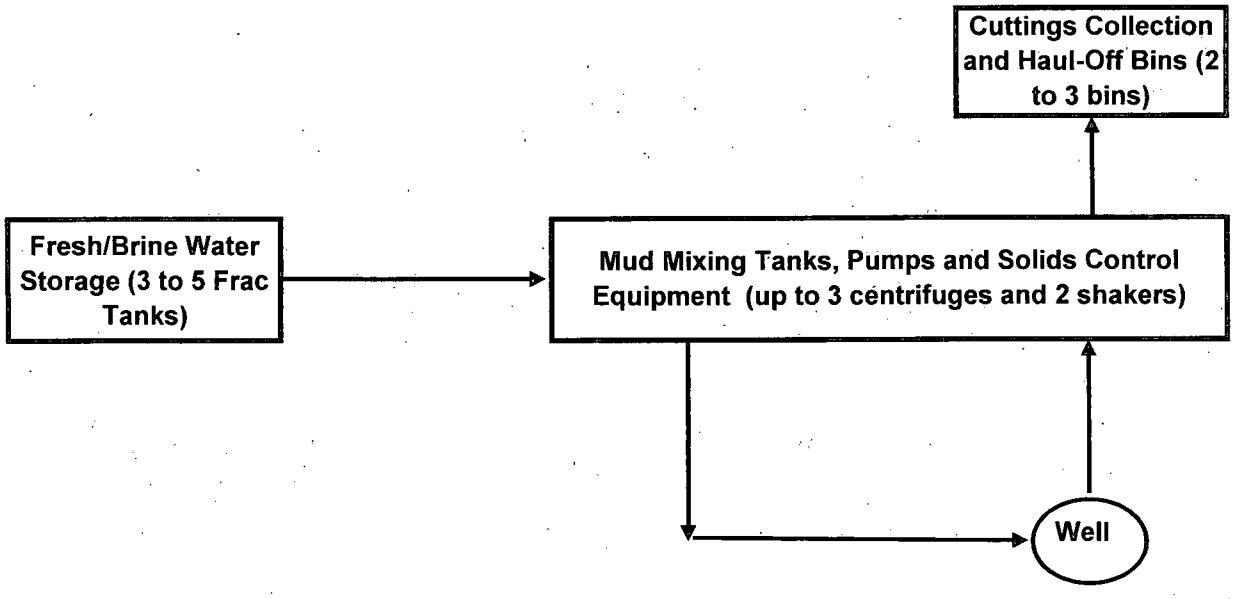
x _____

Closed Loop Pad Dimensions 385' x 300' For Pad drilling Parkway 35 Federal Com 5H and Osage 34 Federal 5H



CLOSED-LOOP SYSTEM

Design Plan:



Operating and Maintenance Plan:

During drilling operations, third party service companies will utilize solids control equipment to remove cuttings from the drilling fluid and collect it in haul-off bins. Equipment will be closely monitored at all times while drilling by the derrick man and the service company employees.

Closure Plan:

During drilling operations, third party service companies will haul-off drill solids and fluids to an approved disposal facility as noted on the C-144 form. At the end of the well, all closed loop equipment will be removed from the location.

Hydrogen Sulfide Drilling Operations Plan

1. Company and Contract personnel admitted on location should be trained by a qualified H_2S safety instructor to the following:
   A. Characteristics of H_2S.
   B. Physical Effects and Hazards.
   C. Proper Use of Safety Equipment and Life Support Systems.
   D. Principle and Operation of H_2S Detectors, Warning System and Briefing.
   E. Evacuation Procedure, Routes and First Aid.
   F. Proper Use of 30 minute Pressure Demand Air Pack.

2. H_2S Detection and Alarm Systems
   A. H_2S Detectors and Audio Alarm System to be Located at Bell Nipple, End of Blooie Line (mud pit) and on Derrick floor or doghouse.

3. Windsock and/or Wind Streamers
   A. Windsock at Mud Pit Area Should be High Enough to be Visible.
   B. Windsock at Briefing Area Should be High Enough to be Visible.
   C. There Should be a Windsock at Entrance to Location.

4. Condition Flags and Signs
   A. Warning Sign on Access Road to Location.
   B. Flags to be Displayed on Sign at Entrance to Location.
      1. Green Flag, Normal Safe Condition.
      2. Yellow Flag, Indicates Potential Pressure and Danger.
      3. Red Flag, Danger H_2S Present in Dangerous Concentration Only Emergency Personnel Admitted to Location.

5. Well Control Equipment
   A. See Attached Diagrams #1 & 2.

6. Communication
   A. While Working Under Masks Chalkboards Will be Used for Communication.
   B. Hand Signals will be Used Where Chalk Board is Inappropriate.
   C. Two Way Radio or Cell Phone will be Used to Communicate off Location in Case of Available at Most Drilling Foreman's Trailer or Living Quarters.

7. Drillstem Testing
   A. Exhausts will be Watered.
   B. Flare Line will be Equipped with an Electric Igniter or a propane pilot light in case gas reaches the surface.
   C. If Location is near any Dwelling a Closed DST will be Performed.

8. Drilling Contractor Supervisor will be Required to be Familiar with the Effects H_2S has on tubular goods and other mechanical equipment.

9. If H_2S Encountered, Mud system will be Altered if Necessary to Maintain Control of Formation. A Mud Gas Separator will be Brought into Service Along with H_2S Scavengers if Necessary.

SM ENERGY

Company Contact List:

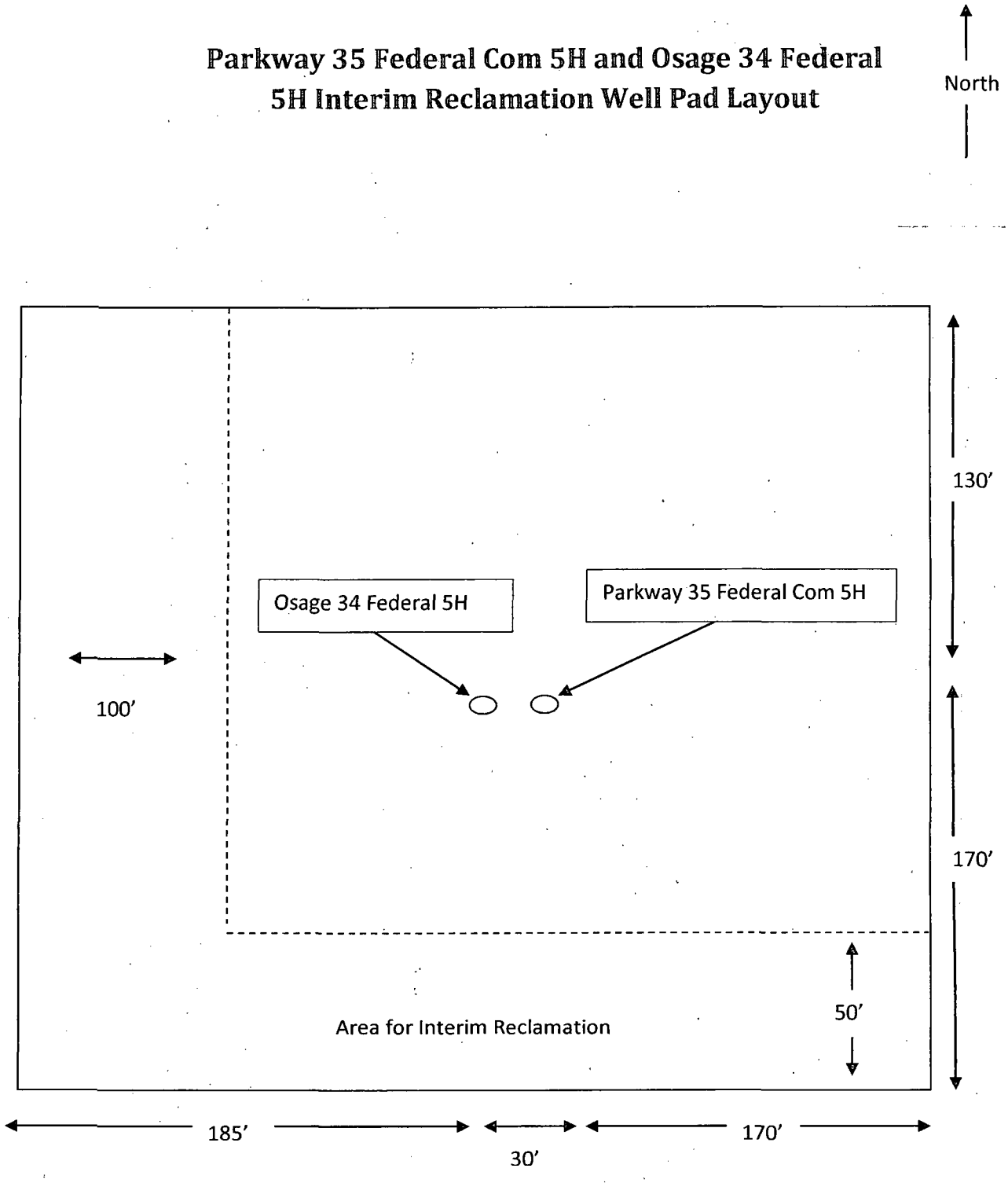
New Mexico Operations:	Name:	Cellular:	Office:
Drilling Superintendent	Howard Smith	903-262-0001	432-400-2395
Asst. Drilling Superintendent	Keith Pagett	806-317-5159	432-400-2395
Drilling Manager	Jonathan Nix	432-296-8956	432-688-3127
HSE Manager	David Carrillo	432-664-2095	432-688-3391
Project Manager	Malcolm Kintzing	432-212-2628	432-688-3125
Drilling Engineer	Michael Mataalii	432-271-2230	432-688-3392

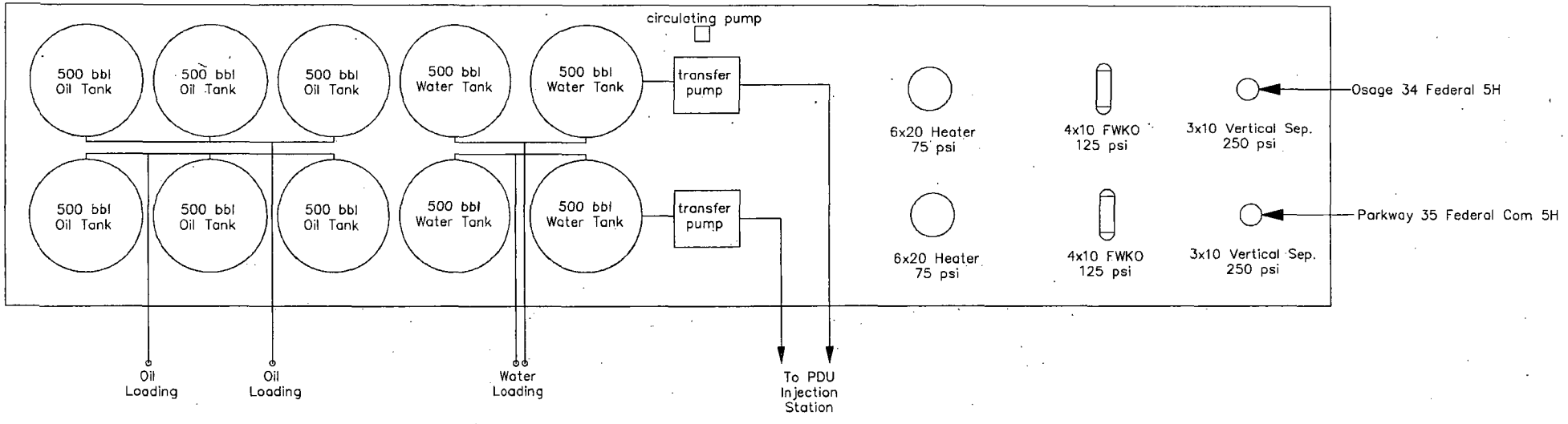
Lea County (Hobbs):	Contact Number:
State Police	575-392-5588
City Police	575-397-9265
Sheriff's Office	575-393-2515
Ambulance	911
Fire Department	575-397-9308
Local Emergency Planning Committee	575-393-2870
NMOCD	575-393-6161
US Bureau of Land Management	575-393-3612

Eddy County (Carlsbad)	Contact Number:
State Police	575-885-3137
City Police	575-855-2111
Sheriff's Office	575-887-7551
Ambulance	911
Fire Department	575-885-2111
Local Emergency Planning Committee	575-887-3798
US Bureau of Land Management	575-887-6544

Emergency Services	Contact Numbers:
Boots & Coots IWC	1-800-256-9688 or 281-931-8884
Cudd Pressure Control	915-699-0139 or 915-563-3356
Halliburton	575-746-2757
B.J. Services	575-746-3569
Flight for Life Lubbock TX	806-743-9911
Aerocare Lubbock TX	806-747-8923
Med Flight Air Ambulance Albuquerque NM	575-842-4433
Lifeguard Air Med Albuquerque NM	575-272-3115

Parkway 35 Federal Com 5H and Osage 34 Federal 5H Interim Reclamation Well Pad Layout





SM ENERGY	Osage 34 Federal 5H & Parkway 35 Federal Com 5H Tank Battery	Date: 12/6/12	
		Eddy County, New Mexico	Not To Scale

Surface Use and Operations Plan

Osage 34 Federal 5H
550 FSL & 13 FWL (SHL)
400 FSL & 330 FEL (BHL)
Sec. 35-T19S-R29E
Eddy County, New Mexico

The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plans, the magnitude of surface disturbance, and the procedures associated with the remediation plan.

Existing and Proposed Roads

a. Directions to location: From highway 360 and Curry Comb road go west 4.7 miles turn south and go 0.5 miles to a curve continue west 0.1 miles turn south go 0.7 miles turn west go 1.2 miles turn south and go 0.2 miles to proposed locations.
b. The Form C-102 and the attached maps show the well site, the aerial view, vicinity map, and elevation map.
c. The Form C-102 and attached maps show the proposed well site as staked with the current and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. All new roads will be constructed to BLM specifications.

Planned Access Roads

a. This location is being built off an existing lease road.
b. Entrance to location will be located on the northeast corner of the pad.

Location of Existing Wells within a one mile radius

The attached 1 mile radius map shows all existing wells within a one mile radius of the proposed surface hole and bottom hole location.

Location of Existing and/ or proposed facilities

a. There are no production facilities on this location at the present time
b. In the event that the well is productive, production will go to a new battery on the east side of the location. See the attached diagram of the proposed facilities.
c. Produced water will go to the PDU water injection station. Flow lines for the transport of produced waster will follow lease roads. See the attached map showing the path of the proposed flow lines.
d. Power lines to supply electricity for artificial lift will follow lease roads to the location.

e. The interim reclamation diagram shows the dimensions of reclaimed after drilling and completion activities have ceases.

Location and Type of Water Supply

Water will be purchased locally from a commercial source and trucked over to the location access roads or piped to location in flexible lines laid on top of the ground.

Source of Construction Materials

If possible construction material will be obtained from the excavation of the drill site, if additional material is required it will be obtained from a local source and transported over the location access road. The construction contractor will be responsible for paying royalties on any additional materials required.

Methods of Handling Waste

a. Drill cuts not used for evaluation purposes will be hauled off to approved disposal sites
b. Water produced during operations will be sent to an approved SWD well.
c. If hydrocarbons are produced during operations, those liquids will be stored in suitable storage containers
d. Sewage from living quarters will be drained into holding tanks and will be cleaned out periodically. A porta-potty will be provided for the rig crews. This equipment will be properly maintained during operations and removed upon completion.
e. All trash, junk and other waste material will be contained in trash cages or trash bins in order to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.

Ancillary Facilities

No camps or air strips will be constructed on this location.

Well Site Layout

a. The rig layout diagram show the proposed well site layout with dimension of the well pad.
b. The rig layout diagram shows the proposed location of the closed loop system and other essential components to the drilling rig.

Plans for restoration of Surface

a. Upon completion of the proposed operations, if the well is abandoned the location and road will be ripped and reseeded. The entire location will be restored to its original condition prior to the operation. All trash and garbage will picked up and disposed of in

an approved site. All restoration work will be completed within 180 days of cessation of activities.

b. The disturbed area will be restored by re seeing during the proper growing season.
c. Any additional caliche required will be obtained as described in section 6.
d. Within 90 days of completion of drilling and completion operations, all equipment not necessary for production operations will be removed. The location will be cleared of all trash and junk to insure the location is left as aesthetically pleasing as possible.

Surface Ownership

a. The surface is owned by United States Federal Government and managed the Bureau of Land Management.

Other Information

b. The primary use of the surface at the location is for grazing livestock
c. An archaeological survey has been requested and is in the process of being conducted on the proposed location.

Operator's Representative

Through APD approval, drilling, completion and production operations

Malcolm Kintzing
Reservoir Engineer
SM Energy Company
3300 N. A St. 7-200
Midland, TX 79705
O: 432-688-3125
C: 432-212-2628
Mkintzing@SM-Energy.com

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	SM ENERGY COMPANY
LEASE NO.:	NM90807
WELL NAME & NO.:	5H-OSAGE 34 FEDERAL
SURFACE HOLE FOOTAGE:	560' FSL & 13' FEL
BOTTOM HOLE FOOTAGE	400' FSL & 330' FWL
LOCATION:	Section 34, T. 19 S., R 29 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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

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)

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 pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the pad. All sides will be bermed.

Tank Battery Liners and Berms:
Tank battery locations 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 ½ 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.

Cave/Karst 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 cave-bearing 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.

Livestock Buried Waterline Requirement

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

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 stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 4 inches in depth. The topsoil will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

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

F. ON LEASE ACCESS ROADS

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

surface disturbance, when constructing the access road, shall not exceed twenty-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.

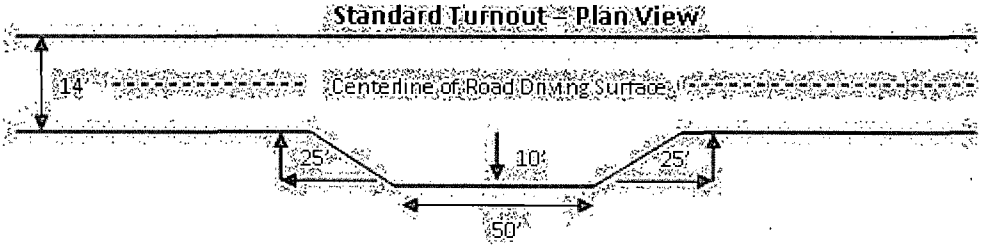
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing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

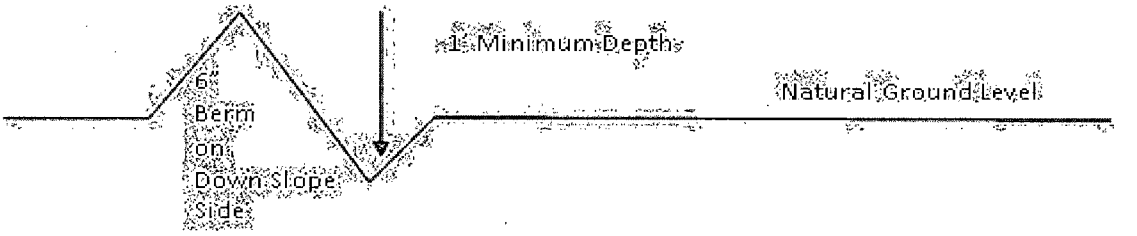
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Culvert Installations

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

Cattleguards

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

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

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

Fence Requirement

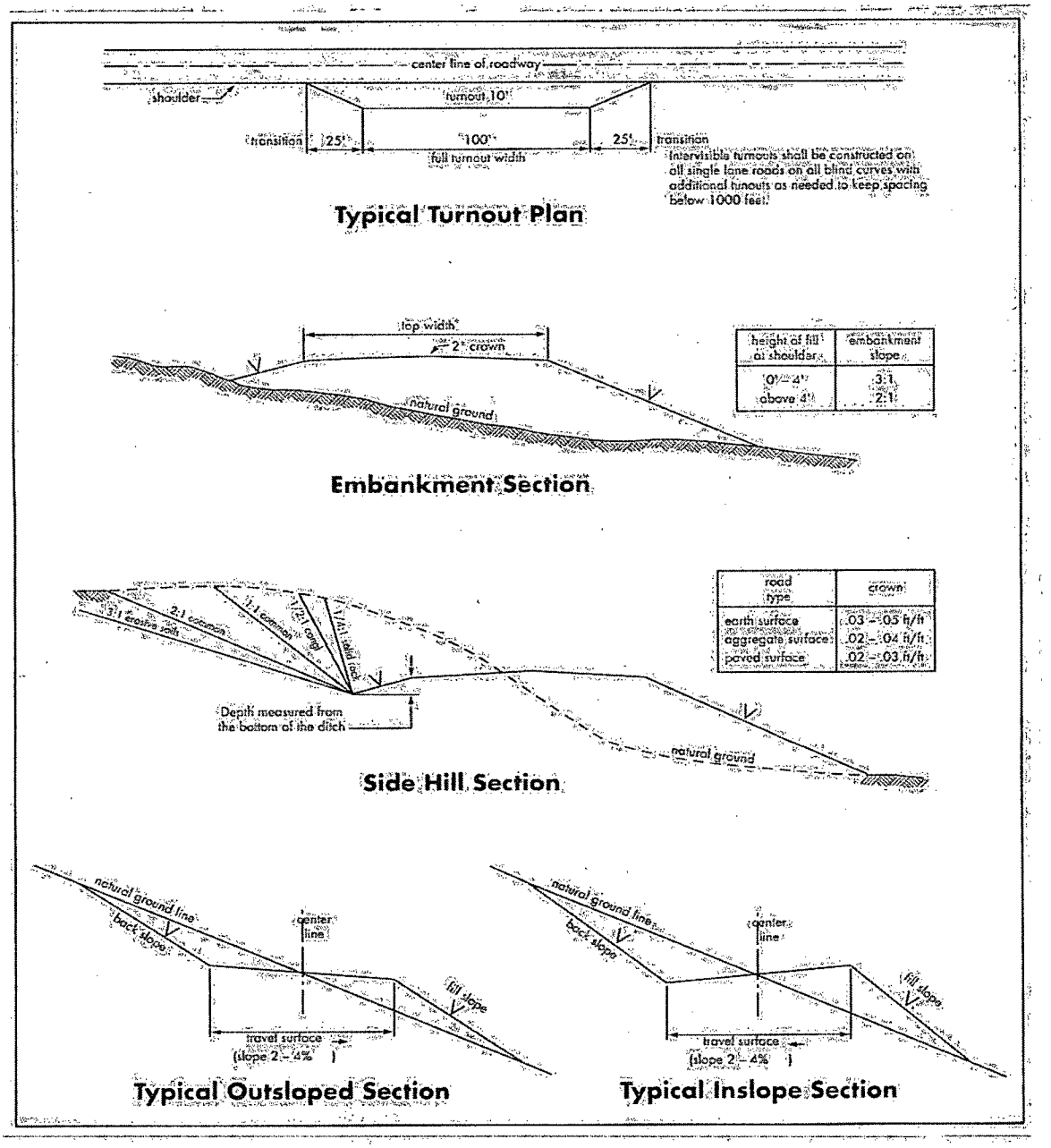
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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

Public Access

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

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

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

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

1. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works 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 top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

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

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

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

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

High cave/karst
Possibility of water and brine flows in the Salado and Artesia Groups.
Possibility of lost circulation in the Artesia Group, Delaware, and Bone Springs.

1. The **20** inch surface casing shall be set at approximately **350** feet (**in a competent bed <u>below the Magenta Dolomite</u>, a <u>Member of the Rustler</u>**) and cemented to the surface. **Freshwater mud to be used to setting depth.**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **13-3/8** inch, **first intermediate casing** is:

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

3. The minimum required fill of cement behind the **9-5/8** inch, **second intermediate casing, which shall be set at the base of the Capitan Reef,** is:

Operator has proposed DV tool at depth of 1700', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

If 75% or greater lost circulation occurs while drilling the 2nd intermediate (9-5/8') casing hole, the cement on the 7" casing must come to surface.

The BLM shows the Capitan Reef marker at 1700 feet. Top of cement on 7" casing shall reach a minimum of 50 feet above that depth.

a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

b. Second stage above DV tool:

☒ Cement to surface. If cement does not circulate see B.1.a, c-d above._**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst and potash.**

Centralizers shall be placed to obtain good cement placement around the 7" casing in the curve, must be type for horizontal service and a minimum of one every other joint.

4. The minimum required fill of cement behind the **7** inch production casing is:

☒ Cement should tie-back a minimum of 50 feet above the Capitan Reef, which is estimated at 1700 feet. Operator shall provide method of verification. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef, cave/karst.**

5. The minimum required fill of cement behind the **4-1/2** inch production Liner is:

   ☒ Cement not required – Packer/Port system to be used.

6. 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. **A variance is granted for the use of a diverter on the 20" surface casing.**

3. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review**. If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 13-3/8" first intermediate casing shoe shall be **2000 (2M)** psi. **In the case where the only BOP installed is an annular preventer, it shall be tested to a minimum of 2000 psi (which may require upgrading to 3M or 5M annular).**

5. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **3000 (3M)** psi.

6. 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.

    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. DRILLING MUD

Approved for aerated mud, but not air drilling, in the Capitan Reef.

F. 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.

EGF 032713

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, Shale Green from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the APD 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 et seq. (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 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 agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The 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 the 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.

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 the holder, regardless of fault. Upon failure of the 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 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 the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of **20** feet.

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

8. The 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 will be "snaked" around hummocks and dunes rather then suspended across these features.

9. The pipeline shall be buried with a minimum of **24** 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.

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. **Special Stipulations:**

Maximum allowable working pressure for surface installed pipelines is 125 psi.

C. ELECTRIC LINES (not applied for in APD)

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 4, for Gypsum 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 no 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	lb/acre
Alkali Sacaton (Sporobolus airoides)	1.0
DWSFour-wing saltbush (Atriplex canescens)	5.0

DWS: DeWinged Seed

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