B SUNDRY Do not use th	UNITED STATES EPARTMENT OF THE INTE UREAU OF LAND MANAGEN NOTICES AND REPORTS is form for proposals to dril ill. Use form 3160-3 (APD) for	1ENT S ON WELLS I or to re-enter an	HOBBS OC APR 2-7 20 Received	FORM OMB N Expires: 5. Lease Serial No. NMNM120907	BBS APPROVED O. 1004-0135 July 31, 2010	
SUBMIT IN TR	PLICATE - Other instruction	ns on reverse side.		7. If Unit or CA/Agre	ement. Name and/or No.	
1. Type of Well		. <u></u>	······	8. Well Name and No.	FEDERAL SWD 1	
Oil Well Gas Well Ot	Contact: BRI	AN MAIORINO		9: API Well No.		
COG OPERATING LLC 3a. Address	E-Mail: bmaiorino@con 3b.	Phone No. (include area	code)	30-025-41570 10. Field and Pool, or	Exploratory	
ONE CONCHO CENTER 600 MIDLAND, TX 79701	W. ILLINOIS AVE	: 432-221-0467		SWD		
4. Location of Well (Footage, Sec., 7	T., R., M., or Survey Description)	· · · · · · · · · · · · · · · · · · ·		11. County or Parish,	and State	
Sec 26 T24S R32E NESW				LEA COUNTY,	NM	
<u></u>	2310'FSL \$ 2	310' FWL	-			
12. CHECK APPI	ROPRIATE BOX(ES) TO IN	DICATE NATURE (OF NOTICE, RI	EPORT, OR OTHE	R DATA	
TYPE OF SUBMISSION		TYP	E OF ACTION			
Notice of Intent	🗖 Acidize	Deepen	Product	on (Start/Resume)	□ Water Shut-Off	
□ Subsequent Report	□ Alter Casing	Fracture Treat	🗖 Reclama		□ Well Integrity	
	Casing Repair	New Construction	- 1		🛛 Other	
		Plug and Abandor Plug Back	n 📋 Tempor [•] Water D	rarily Abandon Disnosal		
COG Operating LLC respectfu #1. Please see the attached comp wellbore diagram along with a The injection permit for this we work and commence injection	oletion package containing the ttached logs. ell expires February 5, 2015. C	proposed completion	n procedure and			
					TACHED FOR S of Approval	
14. I hereby certify that the foregoing is	Electronic Submission #28418	4 verified by the BLM ATING LLC, sent to t	Well Information	System		
Name(Printed/Typed) BRIAN MA	NORINO	Title AUT	HORIZED REPI	RESENTATIVE		
		· · · · · · · · · · · · · · · · · · ·				
Signature (Electronic S	THIS SPACE FOR F			<u></u>	<u></u>	
					2015	
Approved By		Title		APR 21	2015 Dat	
onditions of approval, if any, are attached rify that the applicant holds legal or equ hich would entitle the applicant to condu	itable title to those rights in the subje-			UREAL OF LAND	MANDEMENT	
itle 18 U.S.C. Section 1001 and Title 43 1 States any false, fictitious or fraudulent s	U.S.C. Section 1212, make it a crime	for any person knowingly	and willing mat	e to any department or a	gency of the United	
** OPERAT	OR-SUBMITTED ** OPER	ATOR-SUBMITTE	D ** OPERATO	DR-SUBMITTED	ж	
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Gold Coast 26 Fed SWD 1 2310' fsl, 2310' fwl K-26-24s-32e Lea Co., NM

SWD Completion Procedure 3 Dec 14

Basic Data:

13-3/8" @ 1079' Circ. Cmt.

9-5/8" @ 4903' Circ. Cmt. (DV/ECP @ 4673', DV tool wouldn't open, TOC @ 4040' TS stage 1, perf casing 4000-4002', circulate cement on stage 2)

7" @ 7200' DV/ECP @ 5040', saw red dye but didn't circulate cement on stage 1, TOC stage 2 @ xxxx' CBL.

Objective: Well drilled as SWD well. Complete as Delaware SWD 5043-7072'. See wellbore schematic. Give OCD Hobbs and BLM 24 hrs notice to witness MIT after running injection packer and tubing (Order SWD-1391, permitted 4900-7200', injection pressure limit = 980 psi).

<u>Note:</u> Delaware section has no mud log shows. There are no mud log shows in this section on nearby wells. The open hole logs can be characterized as having very low resistivity and high water saturations. There is no evidence of hydrocarbon potential in this section of the Delaware. The injection interval will be swab tested after being acidized.

Procedure:

- 1. Clean location, set anchors, MIRU WSU, reverse unit and other completion equipment. NU 7-1/16" hydraulic BOP with 2-7/8" pipe rams and blind rams. Close blind rams and test BOP and top of casing to 3000 psi.
- 2. Drill out DV/ECP at 5040' and tag PBD (PBD needs to be at least 7100'). TOOH, pick up scraper, make a few passes through DV/ECP then RIH to PBD. Close pipe rams, test casing to 3000 psi for 30 minutes while recording test on a chart and TOOH.
- 3. RU lubricator and run GR/CCL/Cement Bond Log from PBD to 500' above the definite TOC with 1500 psi pressure in the casing.

Note: Depending on results of the Cement Bond Log, decision might be made to modify this completion procedure—let's discuss before perforating.

4. RU lubricator and perf Delaware with 1 spf at any phasing at the depths shown below using 3-1/8" or 4" casing gun. Total number of perfs approx. 159.

Stage 8	Stage 7	Stage 6	Stage 5	Stage 4	Stage 3	Stage 2	Stage 1
5043	5324	5560	5832	6050	6220	6564	6799
5048	5331	5566	5838	6053	6228	6567	6806
5053	5336	5571	5842	6059	6233	6571	6810
5071	5343	5576	5851	6062	6240	6575	6815
5075	5350	5584	5858	6068	6255	6580	6819
2012	1220	5504	2020	5000	0233	0000	0019

5095	5354	5620	5866	6072	6261	6620	6840
5100	5368	5628	5875	6 08 0	6268	6625	6845
5110	5373	5636	5922	6085	6277	6630	6851
5119	5404	5643	5926	6091	6287	6633	6864
5137	5409	5650	5930	6120	6292	6637	6872
5147	5414	5695	5936	6123	6296	6677	6878
5162	5422	5701	5942	6 126	6300	6681	6893
5168	5429	5706	5946	6130	6308	6684	6899
5182	5452	5712	5954	6134	6313	6688	6907
5188	5461	5742	5983		6325	6691	6917
5194	5467	5750	5987		6330		6927
5226	5484	5755	5990		6334		6935
5232	5492	5762	5996		6347		6943
5244	5500	5766			6364		6950
5252					6369		6980
5258					6381		6983
					6397		7023
					6411		7025
					6419		7047
					6426		7055
	,						7063
							7067
							7072
					•		
21	19	19	18	14	25	15	28

5. Stage 1. Pick up treating packer and RBP with ball catcher. Set RBP at approx. 7100', spot approx. 500 gals NE Fe 15% HCL acid at 7072', pull packer to approx. 6750', reverse 10 bbls down annulus, set packer, establish injection rate and acidize perfs 6799-7072' with 3500 gals NE Fe 15% HCl acid as follows. Drop 60 1.3SG ballsealers in drops of 10 spaced evenly throughout acid. If ballout occurs, surge balls off perfs, wait a couple minutes then resume acid job. Flush with 55 bbls cut brine.

Note: Try to pump acid at 3-5 bpm while limiting treating pressure to 3000 psi.

- 6. Stage 2. Collect shut-in pressure data, bleed pressure off, retrieve RBP, set RBP at approx. 6750', test RBP to 1500 psi, spot approx. 200 gals NE Fe 15% HCL acid at 6691', pull packer to approx. 6500', reverse 10 bbls down annulus, set packer, establish injection rate and acidize perfs 6564-6691' with 2000 gals NE Fe 15% HCl acid as follows. Drop 30 1.3SG ballsealers in drops of 10 spaced evenly throughout acid. If ballout occurs, surge balls off perfs, wait a couple minutes then resume acid job. Flush with 55 bbls cut brine.
- 7. Stage 3. Collect shut-in pressure data, bleed pressure off, retrieve RBP, set RBP at approx. 6500', test RBP to 1500 psi, spot approx. 350 gals NE Fe 15% HCL acid at 6426', pull packer to approx. 6175', reverse 10 bbls down annulus, set packer, establish injection rate and acidize perfs 6220-6426' with 3000 gals NE Fe 15% HCl acid as follows. Drop 50 1.3SG ballsealers in drops of 10 spaced evenly throughout acid. If ballout occurs, surge balls off perfs, wait a couple minutes then resume acid job. Flush with 55 bbls cut brine.

- 8. Stage 4. Collect shut-in pressure data, bleed pressure off, retrieve RBP, set RBP at approx. 6175', test RBP to 1500 psi, spot approx. 150 gals NE Fe 15% HCL acid at 6134', pull packer to approx. 6025', reverse 10 bbls down annulus, set packer, establish injection rate and acidize perfs 6050-6134' with 2000 gals NE Fe 15% HCl acid as follows. Drop 30 1.3SG ballsealers spaced evenly throughout acid. If ballout occurs, surge balls off perfs, wait a couple minutes then resume acid job. Flush with 55 bbls cut brine.
- 9. Stage 5. Collect shut-in pressure data, bleed pressure off, retrieve RBP, set RBP at approx. 6025', test RBP to 1500 psi, spot approx. 250 gals NE Fe 15% HCL acid at 5996', pull packer to approx. 5800', reverse 10 bbls down annulus, set packer, establish injection rate and acidize perfs 5832-5996' with 2500 gals NE Fe 15% HCl acid as follows. Drop 40 1.3SG ballsealers in drops of 10 spaced evenly throughout acid. If ballout occurs, surge balls off perfs, wait a couple minutes then resume acid job. Flush with 55 bbls cut brine.
- Stage 6. Collect shut-in pressure data, bleed pressure off, retrieve RBP, set RBP at approx. 5800', test RBP to 1500 psi, spot approx. 300 gals NE Fe 15% HCL acid at 5766', pull packer to approx. 5525', reverse 10 bbls down annulus, set packer, establish injection rate and acidize perfs 5560-5766' with 2500 gals NE Fe 15% HCl acid as follows. Drop 40 1.3SG ballsealers in drops of 10 spaced evenly throughout acid. If ballout occurs, surge balls off perfs, wait a couple minutes then resume acid job. Flush with 50 bbls cut brine.
- 11. Stage 7. Collect shut-in pressure data, bleed pressure off, retrieve RBP, set RBP at approx. 5525', test RBP to 1500 psi, spot approx. 300 gals NE Fe 15% HCL acid at 5500', pull packer to approx. 5290', reverse 10 bbls down annulus, set packer, establish injection rate and acidize perfs 5324-5500' with 2500 gals NE Fe 15% HCl acid as follows. Drop 40 1.3SG ballsealers in drops of 10 spaced evenly throughout acid. If ballout occurs, surge balls off perfs, wait a couple minutes then resume acid job. Flush with 50 bbls cut brine.
- 12. Stage 8. Collect shut-in pressure data, bleed pressure off, retrieve RBP, set RBP at approx. 5290', test RBP to 1500 psi, spot approx. 350 gals NE Fe 15% HCL acid at 5258', pull packer to approx. 5000', reverse 10 bbls down annulus, set packer, establish injection rate and acidize perfs 5043-5258' with 2500 gals NE Fe 15% HCl acid as follows. Drop 40 1.3SG ballsealers in drops of 10 spaced evenly throughout acid. If ballout occurs, surge balls off perfs, wait a couple minutes then resume acid job. Flush with 50 bbls cut brine.

Total Acid: 22,900 gals Total Ball Sealers: 330

- 13. Lay down RBP, RIH with packer to approx. 5000' and swab test Delaware until notified to do otherwise. Will probably need to swab at least 1000 bbls fluid. If we get a significant oil show, we will have to pick up a packer/RBP combo and swab test each stage that we acidized to locate the source of the oil show—let's discuss. Contact the BLM Petroleum Tech and report the swab results when done swabbing prior to moving to Step 14.
- 14. RU pickup/laydown machine and 4.5" casing tongs. Install 4.5" pipe rams.
- 15. RIH with injection packer on 4-1/2" Glassbore lined injection tubing to approx. 5000'.
- 16. Space out to put 20 pts compression on packer, set packer and get off of on/off tool. Reverse circulate annulus with approx 120 bbls fresh water packer fluid containing corrosion inhibitor/biocide/oxygen scavenger.

- 17. Latch onto on/off tool, install injection tree and plumb all casing and casing x tubing annuli to surface.
- 18. Give OCD Hobbs and BLM 24 notice for MIT. Test tubing x casing annulus to 500 psi for 30 minutes. Record pressure test on a chart for submittal to the OCD and BLM. Limit injection pressure to 980 psi using a pressure limiting device.
- 19. Run injection profile logs to determine the location and distribution of the injected water while the injection battery facility and annulus monitoring systems are being constructed.



Conditions of Approval

COG Operating LLC Gold Coast - 01, API 3002541570 T24S-R32E, Sec 26, 2310FSL & 2310FWL April 21, 2015

- Due to being within the Lesser Prairie Chicken habitat, this workover activity will be restricted to the hours of 9:00am through 3:00am for the period of March 1 through June 15. Exceptions to these restrictions may be granted by BLM's Johnny Chopp <jchopp@blm.gov> 575.234.2227 or Bob Ballard <bballard@blm.gov> 575.234.5973.
- 2. Subject to like approval by the New Mexico Oil Conservation Division.
- **3.** Before casing or a liner is added, replaced, or repaired prior BLM approval of the design is required. Use notice of intent Form 3160-5.
- 4. Provide BLM with an electronic copy (Adobe Acrobat Document) cement bond log record from PBTD to top of cement <u>taken with 0psig casing pressure</u>. The CBL may be attached to a <u>pswartz@blm.gov</u> email. The CFO BLM on call engineer may be reached at 575-706-2779.
- 5. Do not exceed the approved SWD-1391 injection pressure of 980 with stimulation pump pressure to attain the 3-5 BMP rate of the submitted procedure.
- 6. Surface disturbance beyond the existing pad shall have prior approval.
- 7. A closed loop system is required. The operator shall properly dispose of drilling/circulating contents at an authorized disposal site. Tanks are required for all operations, no excavated pits.
- 8. Functional H_2S monitoring equipment shall be on location.
- 9. 2000 (2M) Blow Out Prevention Equipment to be used. All BOPE and workover procedures shall establish fail safe well control. Blind ram(s) and pipe ram(s) designed to close on all workstring diameters used is required equipment. A manual BOP closure system (hand wheels) shall be available for use regardless of BOP design. Function test the installed BOPE to 500psig when well conditions allow. Related equipment, (choke manifolds, kill trucks, gas vent or flare lines, etc.) shall be employed when needed for reasonable well control requirements.
- 10. All waste (i.e. trash, salts, chemicals, sewage, gray water, etc.) created as a result of work over 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.
- 11. File intermediate **subsequent sundry** Form 3160-**5** within 30 days of any interrupted workover procedures and a complete workover subsequent sundry.

- 12. Submit the BLM Form 3160-4 **Recompletion Report** within 30 days of the date all BLM approved procedures are complete.
- 13. Workover approval is good for 90 days (completion to be within 90 days of approval). A legitimate request is necessary for extension of that date.
- 14. The operator shall test for oil and gas production from the injection zone. Demonstrate that paying quantities of hydrocarbons are not produced when the well has a pumped off fluid level. Open hole logs may support the evaluation. BLM agreement is to be obtained prior completion as a disposal well.
- 15. Approval is granted for disposal of water produced from the lease, communitization, or unit agreement of this well only. Disposal fluid from another operator, lease, communitization, or unit agreement require BLM surface right-of-way agreement **approvals** and if applicable, authorization from the surface owner.
- **16.** Disposal of water from another operator requires that the well be designated as a commercial well and BLM surface right-of-way agreement **approvals**.
- 17. If the well is to receive off-lease water or commercial disposal, the operator shall provide proof of surface right-of-way approval prior to injection.
- 18. Enclose a site security diagram for the water disposal facility upstream of this well. Document the lease name and the lease number of the source(s) of production water disposed to that facility with the diagram.

Well with a Packer - Operations

- 1) Conduct a Mechanical Integrity Test of the tubing/casing annulus after a tubing, packer or casing seal is established.
- 2) The minimum test pressure should be 500 psig for 30 minutes or 300 psig for 60 minutes, with a minimum 200 psig differential between tubing and casing pressure (at test time) but no more than 70% of casing burst pressure as described by Onshore Order 2.III.B.1.h. (The tubing or reservoir pressure may need to be reduced). Verify all annular casing vents are plumbed to surface and those valves open to the surface during this pressure test. An alternate method for a BLM approved MIT is to have the fluid filled system open to atmospheric pressure and have a loss of less than five barrels in 30 days witnessed by a BLM authorized officer.
- 3) Document the pressure test on a one hour full rotation chart recorder (calibrated within the last 6 months) registering within 25 to 85 per cent of its full range. Greater than 10% pressure leakoff will be viewed as a failed MIT. Less than 10% pressure leakoff will be evaluated site specifically and may restrict injection approval.
- Make arrangements 24 hours before the test for BLM to witness. In Lea County phone 575-393-3612. If no answer, leave a voice mail or email with the API#, workover purpose, and a call back phone number.

- 5) Submit a subsequent Sundry Form 3160-5 relating the dated daily wellbore and MIT activities. Include a copy of the recorded MIT pressure chart. List the name of the BLM witness, or the notified person and date of notification. NMOCD is to retain the original recorded MIT chart.
- 6) Use of tubing internal protection, tubing on/off equipment just above the packer, a profile nipple, and an in line tubing check valve below the packer or between the on/off tool and packer is a "Best Management Practice". The setting depths and descriptions of each are to be included in the subsequent sundry.
- 7) Submit the original subsequent sundry with three copies to BLM Carlsbad.
- 8) Compliance with a NMOCD Administrative Order is required, submit documentation of that authorization.
 - a) Approved injection pressure compliance is required.
 - b) If injection pressure exceeds the approved pressure you are required to reduce that pressure and notify the BLM within 24 hours.
 - c) When injection pressure is within 50 psig of the maximum pressure, install automation equipment that will prevent exceeding that maximum. Submit a subsequent report (Sundry Form 3160-5) describing the installed automation equipment within 30 days.
- 9) Unexplained significant variations of rate or pressure to be reported within 5 days of notice.
- 10) The casing/tubing annulus is required to be monitored for communication with injection fluid or loss of casing integrity. A BLM inspector may request verification of a full annular fluid level at any time.
- 11) A "Best Management Practice" is to maintain the annulus full of packer fluid at atmospheric pressure. Equipment that will display on site, continuous open to the air fluid level is necessary to achieve this goal.
- 12) Loss of packer fluid above five barrels per month indicates a developing problem. Notify BLM Carlsbad Field Office, Petroleum Engineering within 5 days.
- 13) A suggested format for monthly records documenting that the casing annulus is fluid filled is available from the BLM Carlsbad Field Office.
- 14) Gain of annular fluid pressure requires notification within 24 hours. Cease injection and maintain a production casing pressure of Opsia. Notify the BLM's authorized officer ("Paul R. Swartz" <<u>pswartz@blm.gov></u>, cell phone 575-200-7902). If there is no response phone 575-361-2822.
- 15) Submit a (Sundry Form 3160-5) subsequent report (daily reports) describing all wellbore activity and Mechanical Integrity Test as per item 1) above. Include the date(s) of the well work, and the setting depths of installed equipment: internally corrosive protected tubing, tubing on/off equipment just above the packer, and an in line tubing check valve below the packer or between the on/off tool and packer. The setting depths and descriptions of each are to be included in the subsequent sundry.
- 16) A request for increased wellhead pressures is to be accompanied by a step rate test. PRIOR to a Step Rate Test BLM – CFO is requiring a Notice of Intent.

17) Class II (production water disposal) wells will not be permitted stimulation injection pressures that exceed frac pressure.

Access information for **use of Form 3160-5** "Sundry Notices and Reports on Wells" NM Fed Regs & Forms - <u>http://www.blm.gov/nm/st/en/prog/energy/oil_and_gas.html</u> § 43 CFR 3162.3-2 Subsequent Well Operations.

§ 43 CFR 3160.0-9 (c)(1) Information collection.

§ 3162.4-1 (c) Well records and reports.