Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

5. Lease Serial No.
NMLC029426B

6. If Indian, Allottee or Tribe Name

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

1 Type of Well
☐ Oil Well ☐ Gas Well ☒ Other INJECTION

8. Well Name and No
H E WEST B 018

2. Name of Operator
LINN OPERATING, INC.
Contact TERRY B CALLAHAN
E-Mail: tcallahan@linnenergy.com

9. API Well No.
30-015-05057

3a. Address
600 TRAVIS STREET SUITE 5100
HOUSTON, TX 77002

3b Phone No (include area code)
Ph: 281-840-4272

10 Field and Pool, or Exploratory
GRAYBURG JACKSON;SR-Q-G-S

4 Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 3 T17S R31E Mer NMP SWSE 660FNL 1980FEL
32.858200 N Lat, 103.854660 W Lon

11 County or Parish, and State
EDDY COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Workover Operations
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13 Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones Attach the Bond under which the work will be performed or provide the Bond No on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection)

LINN PROPOSES TO MIRU AND LOCATE HOLE IN CASING. ONCE LOCATED, WE WILL RUN A LINER AND CEMENT TO SURFACE. RIH W/ TUBING & PACKER AND PLACE ON INJECTION.

Accepted for record
NMOCD
05/08/2012

SUBJECT TO LIKE APPROVAL BY BLM

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

RECEIVED
MAY 03 2012
NMOCD ARTESIA

14 I hereby certify that the foregoing is true and correct.
Electronic Submission #134095 verified by the BLM Well Information System
For LINN OPERATING, INC., sent to the Carlsbad

Name *(Printed/Typed)* TERRY B CALLAHAN — Title REGULATORY SPECIALIST III

Signature (Electronic Submission) — Date 03/28/2012

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

APPROVED
APR 30 2012
WESLEY W. INGRAM
PETROLEUM ENGINEER

Approved By — Title — Date

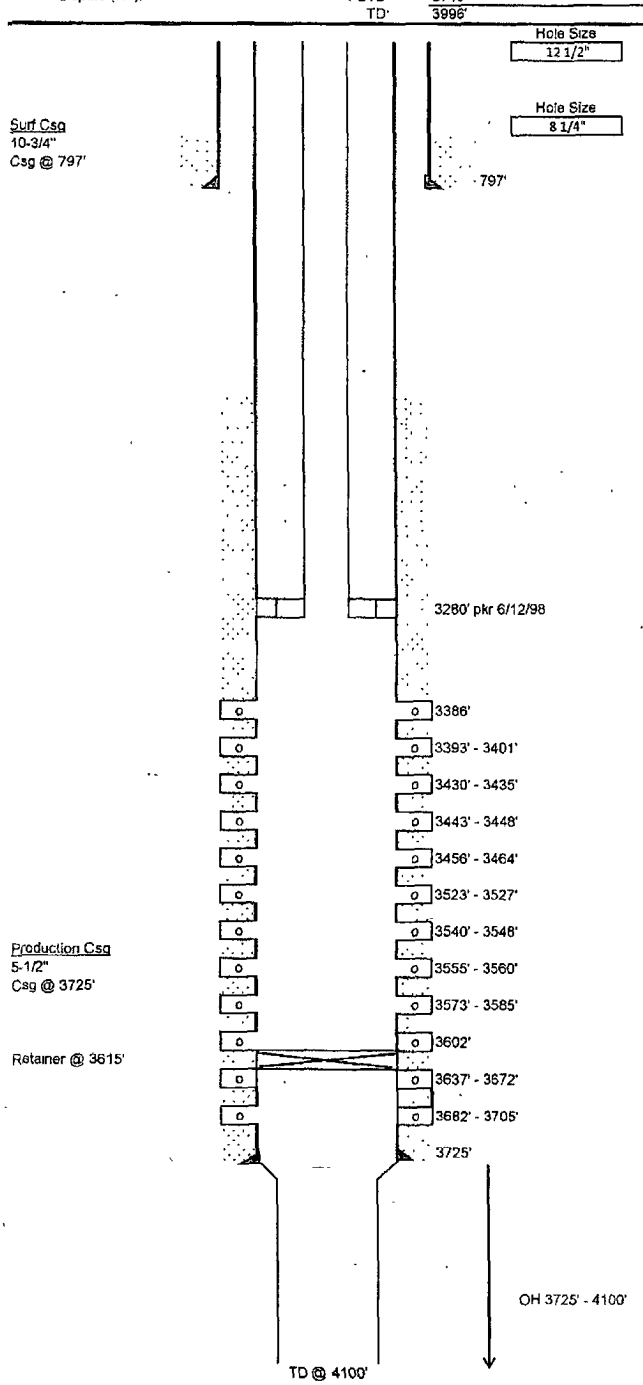
Conditions of approval, if any, are attached Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. — Office

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.

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

Current Wellbore Schematic

Well Name	H E West B # 018 (Type: Injection)	Date Prepared:	2/23/12 CB
Location:	O-03-17S-31E 660' FSL 1980' FEL	Last Updated:	
Lat/Long	32 8582 - 103 85466	Spud Date:	10/24/1958
API #.	30-015-05057	RR Date:	12/5/1958
		Spud Date to RR Date	
Elevations:	GROUND: 3948'	Completion Start Date.	
	DF:	Completion End Date	
Depths (KB):	PBTD 3716'	Completion Total Days.	
	TD: 3996'	Co-ordinates	



Surface Casing ()
Set 10- 3/4" OD H-40 32.75# csg set @ 797'
Cmt'd w/ 100 sxs reg cmt
TOC @ 450' (calc)

Production Casing ()
Set 5-1/2" OD 17# J-55 8R csg set @ 3725'
Cmt'd w/ 100 sxs reg cmt
TOC behind 5-1/2" OD csg @ 2654' (temp survey)

Tubing.
102 jts 2-3/8" pkr set @ 3100' Length (ft)

Notes:
Top of Salt - 770
Base of Salt -

Perforations.
5-1/2" OD csg 3393-3401, 3430 - 3435, 3443-3448 & 3456-3464 w/ 4 jts shots per ft.

5-1/2" OD csg 3523-27, 3540-48, 3555-60' w/ 34-3/8" holes w/ jets
Perf'd 3386' - 3705' w/ 52 holes

3386' - 3705' (OA) - 189 Holes

Proposed Wellbore Schematic

Well Name:	H E West B # 018 (Type: Injection)	Date Prepared:	2/23/12 CB
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Depths (KB)	PBTD: 3716'	Completion Total Days:	
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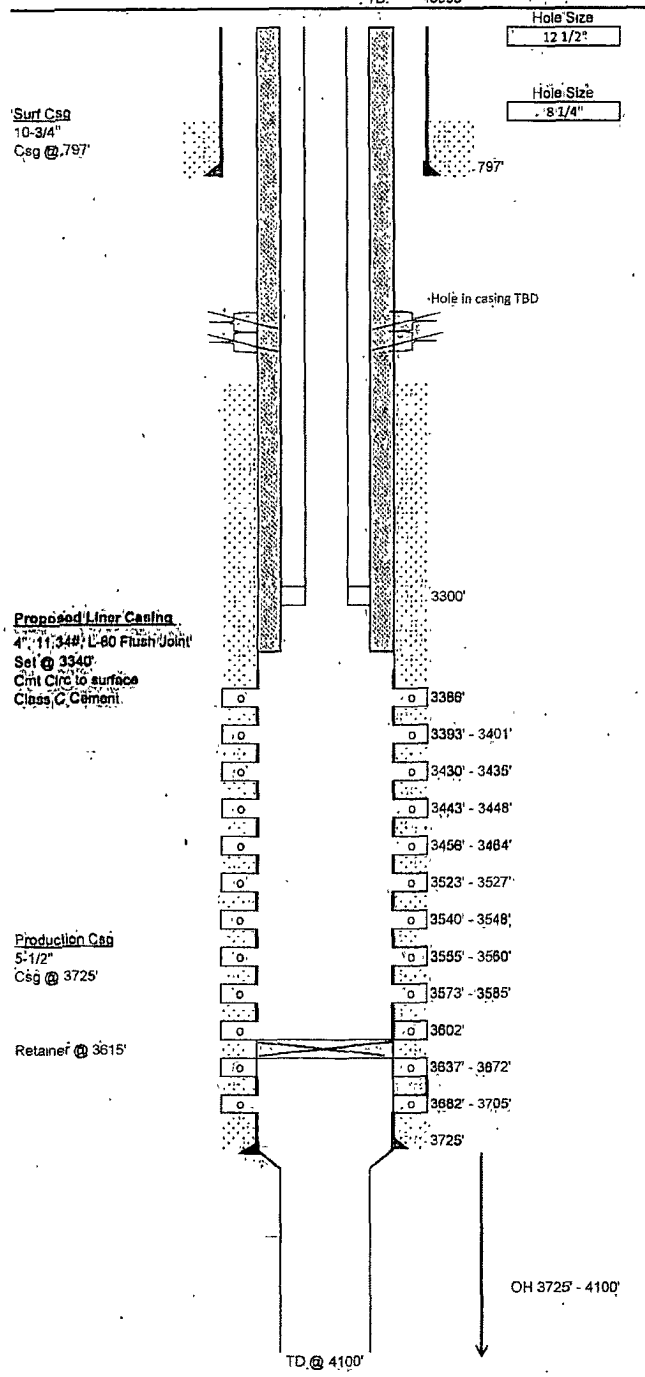

Surface Casing ():
Set 10-3/4" OD H-40 32.75# csg set @ 797'
Cmt'd w/ 100 sxs reg. cmt
TOC @ 450' (calc)

Production Casing ():
Set 5-1/2" OD 17# J-55 8R csg set @ 3725'
Cmt'd w/ 100 sxs reg. cmt
TOC behind 5-1/2" OD csg @ 2654' (temp survey)

Liner:
4", 11.34#, L-80 Flush Joint, set @ 3340'
TOC @ surface, class C Cement

Tubing:
2-3/8" tbg and pkr set @ 3300' Length (ft)

Notes:
Top of Salt - 770
Base of Salt -

Perforations:
5-1/2" OD csg 3393-3401, 3430 - 3435, 3443-3448 & 3456-3464 w/ 4 jts shots per ft

5-1/2" OD csg 3523-27, 3540-48, 3555-60' w/ 34-3/8" holes w/ jets
Perf'd 3386' - 3705' w/ 52 holes:

3386' - 3705' (OA) - 169 Holes

HE West B 18

EDDY COUNTY, NM

O-03-17S-31E 660 FSL 1980 FEL

30-015-05057

04/03/2012

Project Scope: Install 4" Flush Joint Liner from top perforation to surface

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Non Routine Equipment Needs:

4", ~~11.34#~~ 11.6C, L-80 Ultra Flush Joint – Purchased

4" wiper plug, ball, 4" crossover, 4" cementing pump out sleeve, 4" D&L casing packer (for cement job)

Lift Nubbins and Stabbing Cup – Rental

4" Packer

New Wellhead components for 4" Liner

Casing Crew

Cementing Services

Procedure:

1. Test anchors prior to rigging up.
2. MIRU WO Rig and record casing and tubing pressure.
3. Bleed pressure off of well.
4. NU BOP.
5. Unseat packer and TOOH with tubing and packer.
6. RIH with workstring and bit to TD and circulate clean. POOH LD bit.
7. TIH with packer on workstring and set at 3350' and pressure test plug to 500 PSI.
8. Release packer and establish circulation with work string and brine fluid to load the hole.
9. TOOH with workstring and LD packer.
10. PU and TIH with 4" D&L casing packer (for cement job), 4" cementing pump out sleeve, 4" crossover, 4", ~~11.34#~~ 11.6C, L-80, Ultra Flush Joint Casing and set at 3345'.
11. Drop ball to open port and establish circulation with brine fluid.
12. Rig up cement company.
13. Pump Class "C" cement until circulation is obtained and then displace with wiper plug and brine water. Shut BH valve prior to bumping plug.
14. ND BOP
15. Set slips for 4" casing.

Contact Information:

Jennifer Charbonneau – Asset Engineer
Cell – 281-785-4090
Office – 281-840-4050

Joe Hernandez - Foreman
Cell – 575-942-9492

16. Install bowl for 2-3/8" tubing.
17. NU BOP.
18. WOC.
19. Bleed well pressure down or kill well as necessary.
20. PU and RIH with workstring and packer.
21. Perform Acid Job
22. POOH and LD workstring and packer.
23. PU 1 jts of 2-3/8" IPC tail pipe, 4" injection packer (Arrowset with on off tool), 2-3/8" IPC injection tubing, and TIH with packer landed at 3195' (unset).
24. ND BOP.
25. Circulate packer fluid.
26. Set packer at 3,300'.
27. NU WH.
28. Conduct mock MIT to 500 PSI.
29. Notify foreman that the well is ready for a witnessed MIT.
30. RDMO.

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Liner Oper. From Snodgrass Packer & Service

4" 9.5-11# FL4S Box x 4" NUE Crossover
List 1432.26 -25% = $1074.20

4" Liner Jobs

Pump-Out Cementing Sleeve

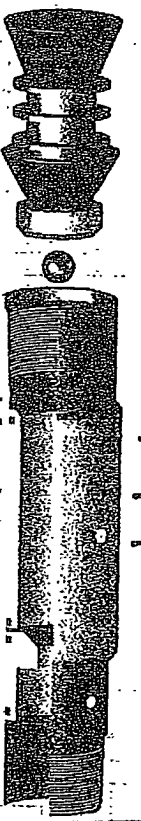
The D&L Pump-Out Cementing Sleeve is used for cementing tubing strings in both cased and open holes. It allows for internal parts to be pumped out after the cementing process leaving a full open bore with no loss of tubing strength. Available in a variety of materials. A basket or packer placed below the sleeve provides a seal-point for pumping cement up the outside of the tubing string.

Special Features

- Full ID after pump out
- Simple design
- Adjustable shear value

Operations

Simplicity is the key to the D&L Pump-Out Plug Cementing Sleeve. Pressure applied to the trip ball moves the lower piston past the cementing ports allowing cement to be pumped outside the tubing string. After the desired amount of cement has been placed the wiper plug is pumped down to the sleeve and moves the upper piston and outer sleeve over the cementing ports. Pins are then sheared and the upper and lower pistons are pumped out of the bottom of the tool leaving a full and unrestricted opening through the sleeve. The outer sleeve is locked in the closed position.



Product Specifications

2-3/8	2.250	1.000	1.93	2-3/8 EUE	22020
2-7/8	3.250	1.250	2.40	2-7/8 EUE	22027
3-1/2	4.410	1.250	2.90	3-1/2 EUE	22035
4	4.625	1.250	3.45	4" NUE	22040
4-1/2	5.500	1.250	3.87	4-1/2 LTC	22045
5-1/2	8.130	1.250	4.63	5-1/2 LTC	22055

*Other sizes and connections available upon request

4" x 4" NUE Cementing Pump Out Sleeve OD 4.625" ID 3.50"
List 1998.00 -40% = $1198.80

Casing Packer

The D&L Casing Packer is a large bore single grip tool used to isolate damaged casing and for production or injection. It can be run in tension or compression and can be used as a liner hanger when equipped with a right-hand release sub. Coarse, deep wickered slips allow the packer to set in open-hole or scaly casing. For open-hole set, casing packers can be equipped with two elongated packing elements to assure a positive seal.

Special Features

- Set/run in tension or compression
- Applicable for set in open hole
- Can be used as a liner hanger
- Full opening
- Coarse, deep wickered slip teeth
- Available with right-hand or left-hand set - manual or automatic release

Product Specifications

4-1/2	9.5-13.5	3.920 - 4.090	3.750	2.50	2-7/8 EUE	44045
	15.1	3.826	3.656	2.50	2-7/8 EUE	44044
5	11.5-18	4.276 - 4.560	4.000	2.50	2-7/8 EUE	44060
	19-21.4	4.126 - 4.276	3.875	2.50	2-7/8 EUE	44051
5-1/2	13-17	4.892 - 5.044	4.650	3.50	4" NUE	44058
	13-20	4.778 - 5.044	4.625	2.00	3-1/2 EUE	44055
5-3/4	14-17	5.190 - 5.290	4.875	3.50	4-1/2 EUE	44057
6	18-20	5.352 - 5.424	4.650	3.50	4" EUE	44060
6-5/8	20-28	5.791 - 6.049	5.625	4.00	4-1/2 LTC	44065
7	17-38	5.920 - 6.538	5.750	4.00	4-1/2 LTC	44070
	20-29	6.184 - 6.456	5.969	4.50	5" LTC	44071
7-5/8	20-33.7	6.765 - 7.125	6.500	4.00	4-1/2 LTC	44075
				5.00	5-1/2 LTC	44076
8-5/8	24-36	7.825 - 8.097	7.656	6.00	6-5/8 LTC	44086
	24-40	7.725 - 8.097	7.500	4.00	4-1/2 LTC	44084
				5.00	5-1/2 LTC	44085
9-5/8	32.3-43.5	8.755 - 9.001	8.500	6.28	7" LTC	44095
10-3/4	32.75-55.5	9.760 - 10.192	8.500	6.50	7" LTC	44010
				8.00	8-5/8 LTC	44011

5 1/2 x 4" NUE Csg. Pkr. 13-17#
OD 4.650" ID 3.50"
List 1932.00 -40% = $1159.20

3432.20 Total

No Drilling Out -
No Composit - Needed w/ Cement on Top

Conditions of Approval

Linn Operating, Inc.
H E West B 018
API 3001505057
April 30, 2012

1. Surface disturbance beyond the originally approved pad shall have prior approval.
2. A closed loop system is required. The operator shall properly dispose of drilling contents at an authorized disposal site. Tanks are required for all operations, no excavated pits.
3. Functional H_2S monitoring equipment shall be on location.
4. A 2000 (2M) BOPE to be used. All blowout preventer (BOP) and related equipment (BOPE) shall comply with reasonable well control requirements. A two ram system with a blind ram and a pipe ram designed for the work string shall be adequate. Tapered work strings will require an additional pipe ram. The manifold shall comply with Onshore Oil and Gas Order #2 (attachment 1, 2M diagrams of choke manifold equipment). The accumulator system shall have an immediately available power source to close the rams and retain 200 psi above pre-charge. The pre-charge test shall follow requirements in Onshore Order #2.
5. 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.
6. **Operator stated that they would determine the depth of the hole in the casing. This is not listed in the procedure, but shall be done prior to installing the liner. This is information that will be needed when the well is plugged and abandoned.**
7. **When the well is plugged the annulus between the 5 ½" and 10 ¾" shall be filled. Operator may want to cement that annulus prior to installing the liner, which makes locating the hole critical. BLM approval required prior to cementing this annulus.**
8. **STEP 11: Establish circulation with at least 9 ppg brine. Close the 4" x 5 ½" annular at the surface and open the 10 ¾" x 5 ½" annulus. Establish an injection rate and pressure into the 5 1/2'' casing leaks. Record that rate and pressure. Base the estimated necessary cement volume on this rate and pressure.**
9. **STEP 13: Pump more than 150 sx Class "C" – mixed at 14.8 ppg, 1.32 ft^3/sx, and 6.3 gal/sx water. After cement circulation is obtained, close the 4" x 5 ½" annular and squeeze the 5 ½" casing with cement attempting to obtain at least a 1,000 psig squeeze before the wiper plug seats. Find and report the top of cement in the 4" x 5 ½" annulus. If not visible, run a temp survey.**
10. 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.

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. Repair that seal any time more than five barrels of packer fluid is replaced within 30 days.
2) The minimum test pressure should be 500 psig for 30 minutes or 300 psig for 60 minutes, with 200 psig differentials 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). 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 calibrated recorder chart 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.
4) At least 24 hours before the test: In Eddy County email Paul R. Swartz pswartz@blm.gov, (phone 575-200-7902). If there is no response, phone 575-361-2822. Note the contact notification method, time, & date in your subsequent report.
5) Submit a subsequent Sundry Form 3160-5 relating the MIT activity. 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 Practice". The setting depths and descriptions of each are to be included in the subsequent sundry. List (by date) descriptions of daily activity of any previously unreported wellbore workover.
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 the annular fluid level at any time.

11) A "Best 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 requires notification within 24 hours. Cease injection and maintain a production casing pressure of 0psia. Notify the BLM's authorized officer ("Paul R. Swartz" <pswartz@blm.gov>, cell phone 575-200-7902). If there is no response phone 575-361-2822.
15) Also submit to this office a (Sundry Form 3160-5) Notice of Intent (NOI) for planned well work involving a formation change, casing repair/replacement, and injection well fracture treatment for approval by BLM and NMOCD. Verbal approval for the plan may be given by a BLM authorized officer, with the NOI filed within five business days. Packer and tubing repair (normal maintance procedures) do not require a NOI, but a subsequent sundry needs to be filed.
16) 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 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. List (by date) descriptions of daily activity of any previously unreported wellbore workover.

NM Fed Regs & Forms - http://www.blm.gov/nm/st/en/prog/energy/oil_and_gas.html