Operator:	Encana Oil & Gas (USA) Inc.
Well Name:	SOUTH DOUGLAS CREEK 7326
Lease Number:	COC03967
Unit Number:	
Location:	SWNE Sec.6 -T4S -R101W
Field:	Douglas Creek South
County, State:	Rio Blanco, CO
API Number:	05-103-09727-0000
Diagram Date:	As of May 26, 2011

Plug and Abandonment Procedure

June 2, 2011

Prepared by: Nicholas Ronan 720-876-3838

Attachments:

Attachment 1 – Current Wellbore Diagram
Attachment 2 – Proposed Wellbore Diagram

API Number: 05-103-09727-0000

KB Elevation: 7,081 ft
GL Elevation: 7,074 ft

PBTD: 1,861 ft MD
TD: 1,861 ft MD

Surface Casing: 9 – 5/8" OD, 43 lb/ft, set at 94 ft, **assumed L-80**

Surface Casing OD	9 5/8	in.
Surface Casing ID	8.755	in.
Surface Casing Drift	**8.599**	**in.**
Surface Hole size	12 1/4	in.
Surface Casing COLLAPSE (100%)	**3,810**	**psi**
Surface Casing BURST (100%)	**6,330**	**psi**
Surface Casing JOINT YIELD	**813,000**	**lbs**

Production Casing: 7" OD, 23 lb/ft, set at 1,750 ft, J-55

Production Casing OD	7	in.
Production Casing ID	6.366	in.
Production Casing Drift	**6.241**	**in.**
Production Hole size	8 3/4	in.
Production Casing COLLAPSE (100%)	**3,270**	**psi**
Production Casing BURST (100%)	**4,360**	**psi**
Production Casing JOINT YIELD	**284,000**	**lbs**

Tubing: 2-3/8" OD, 4.7 lb/ft, set 1,764 ft., J-55

Tubing Casing OD	2 3/8	in.
Tubing Casing ID	1.995	in.
Tubing Casing Drift	**1.901**	**in.**
Tubing COLLAPSE (100%)	**8,100**	**psi**
Tubing BURST (100%)	**7,700**	**psi**
Tubing JOINT YEILD	**71,730**	**lbs**

Safety
Safety meetings are to be held with all service company personnel prior to each job. Wellsite supervisor must notify contractors as to known hazards of which the contractors may be unaware. Well site supervisor must ensure that all workers are aware of their responsibilities and duties under the EH&S guidelines. All safety meetings will be recorded on the EnCana daily completion reports in Wellcore.

Regulations
All verbal notifications and approval from government regulatory agencies will be recorded on the EnCana daily report. The name of the individual contacted and the subject matter of approval or notification will be recorded.

Please note Chemical Inventory on Wellcore Report. Note amount of chemicals pumped downhole and amount stored on location each evening.

JOB OBJECTIVE

The SOUTH DOUGLAS CREEK 7326 is a vertical well OPEN HOLE completed in September, 1994 in the Castlegate formation. The well has not produced since December, 2004. The well has very low production potential; therefore the **SOUTH DOUGLAS CREEK 7326 will be plugged and abandoned.**

PROCEDURE

Rig Up and Pull Tubing

1. Notify State of Colorado and BLM (White River Field Office) at least 48 hours prior to start of operations.
2. Hold a pre-job safety meeting. Discuss all aspects of the procedure with any involved personnel. Identify and address any safety concerns before the job begins.
3. MIRU pulling unit. Blow down well and kill well as needed with produced water. ND production tree. NU BOPs.
4. TOOH with 2-3/8", 4.7#, J-55 tubing. Scope and tally while TOOH. Visually inspect all tubing for scale, corrosion, and wear. Replace joints as needed. **Report results of inspection in Wellcore Report.**

Isolate Open Hole

5. TIH and tag PBTD with wireline. (Current PBTD is assumed to be equal to TD: PBTD = 1,861 ft) MAKE NOTE OF NEW TAG. **NOTE: Based on the calculations below, if the tag is the same as TD i.e. PBTD = 1,861 ft, then the total # of sacks below the CICR = B = 62 sks.**
6. TIH with wireline and set CICR in 4-1/2" casing at 1,690 ft (Must be placed at least 50 ft above the Production shoe set at 1,750 ft). Verify that the CICR will not be placed within 5 ft of a collar.
7. RDMO wireline unit.
8. TIH with 2-3/8", 4.7#, J-55 tubing. Circulate hole with 9 lb/gal mud.

CALCULATIONS for the # of sacks needed below the CICR:
*where **A** is the number of sacks calculated for the open hole geometry; and B is the total sacks required.*

Open Hole Cement = [0.41758 ft^3/ft * [(NEW TAG DEPTH) – 1,750] ft / 1.15 ft^3/sk] = **A** sks

Casing Cement = [0.22103 ft^3/ft * [1,750 – 1,690] ft / 1.15 ft^3/sk] = **11.53 sks**

TOTAL SACKS NEEDED With 18.61% Excess = (**A** sks + **11.53** sks) * 1.1861 = **B sks**

9. Sting into CICR and pump **B sks** of Class G cement under the CICR.

10. Sting out of CICR. Spot 50 ft (12 sks) of class G cement on top of CICR set at 1,690 ft.

Casing Cement = [0.22103 ft^3/ft * 50 ft / 1.15 ft^3/sk] = 9.61 sks
With 16.90% Excess = 9.61 sks * 1.1690 = 11.2 sks **= 12 sks**

11. Wait on cement for 4 hours. Tag cement top. Pump more cement as needed to ensure at least 50 ft of cement is on top of the CICR set at 1,690 ft.
12. Pressure test production casing to 300 psig surface pressure.

    Contact Nicholas Ronan (720-876-3838) or Mitch Steinke (303-918-3844) if the casing fails the pressure test.
13. Circulate hole with 9 lb/gal mud. POOH with tubing.

Cement Annulus across Surface Casing Shoe

14. TIH with wireline and set CIBP in 4-1/2" casing at 150 ft. Verify that CIBP will not be placed within 5 ft of a collar.
15. TIH with wireline and perforate four squeeze holes at 140 ft. POOH with perforating gun. Verify all shots fired. RDMO wireline unit.
16. TIH with 2-3/8" tubing. Ensure tbg/production csg annulus is shut-in. Establish injection into squeeze holes. **Ensure annulus circulation is established to surface.** IF IT IS POSSIBLE TO GET CIRCULATION TO SURFACE MOVE TO STEP 17. If it is not possible to get circulation to surface:
    a. Squeeze 100 ft (14 sks) of Class G cement into annular space through perforations at 140 ft.
    b. Pump 150 ft (30 sks) of Class G cement on top of the CIBP set at 150 ft. WOC and tag casing plug and pump more cement as needed.
    c. Using a 1" pipe in the annulus, pump 40 ft (6 sks) of Class G cement into annular space up to the surface.
17. Squeeze 140 ft (19 sks) of Class G cement into annular space through perforations at 140 ft. Annular plug must extend minimum of 50 ft above and below the surface casing shoe at 94 ft.

Annular Cement = [140 ft * 0.1508 ft^3/ft / 1.15 ft^3/sk] = 18.4 sks
With 1.40% Excess = 18.4 sks * 1.014 = 18.6 sks = **19 sks**

Cement Plug in Casing from CIBP to Surface

18. Pump 150 ft of Class G cement (30 sks) in casing on top of CIBP set at 150 ft. Casing plug must extend a minimum of 50 ft above and below the surface casing shoe at 94 ft.

Casing Cement = [150 ft * 0.22103 ft^3/ft / 1.15 ft^3/sk] = 28.8 sks
With 1.5% Excess = 28.8 sks * 1.015 = 29.3 sks = **30 sks**

19. WOC for four hours.
20. Top off annulus and casing as needed to bring cement to surface.
21. ND BOP. RDMO pulling unit.

22. Cut off anchors.
23. Cut off all casing at the base of the cellar or 4 ft below final restored ground level; whichever is deeper.
24. Weld on metal plate at least 1/4" thick and dry hole marker.
25. Restore surface location.
26. Ensure that cement tickets are mailed (or scanned and emailed) to the Denver office for subsequent reporting.