

Williams 7-20

- 1 Level location for base beam equipped rig.
- 2 Call Foreman or Field Coordinator before rig up to catch plunger, isolate production equipment, and ask if replacement parts/equipment are requested. Operations need to hook up the Bradenhead through hardline to a tank and bleed off the pressure before the rig gets on location.
- 3 Check and report surface casing pressure prior to bleeding off. If surface casing is not accessible at ground level, re-plumb so valve is at ground level.
- 4 If the tubing head is not rated to 5000 psi then replace the wellhead and all the valves and fittings to make the tubinghead good to 5000 psi.
- 5 Spot a minimum of **12** jts of **2-3/8"**, **4.7#**, **J-55**, **EUE tbg** and **173** jts 1-1/4", 2.33#/ft, J-55, 10rd IJ for annular cement job.
- 6 MIRU WO rig. Kill well, as necessary, with freshwater treated with biocide. ND wellhead. NU BOP.
- 7 MIRU slickline. Fish plunger if necessary and tag for PBTD (should be at **8418'**). RDMO slickline.
- 8 PUH with tubing string to break any possible sand bridges, unseat landing joint and lay down. Do not exceed 80% of tubing tensile strength or **57,384** lbs.
- 9 MIRU "EMI". TOOH with **2-3/8"** tubing. EMI tubing while TOOH. Lay down joints with wall loss or penetrations >35%. Replace joints as necessary. **Keep yellow & blue band tubing. Note joint number and depth of tubing leak(s) on PRODUCTION EQUIPMENT FAILURE REPORT IN OPEN WELLS. Clearly mark all junk (red band) tubing sent to the yard.
- 10 TIH with **2-3/8"** tbg and 4.5" RBP, (**4.5" csg 11.6#, I-80**). Set RBP @ **+/-6130'**, (**collars are at 6106' and ±6146'**). Pressure test the RBP and casing to **3000** psi for 15 minutes. (Bad cement) Spot 2 sx of sand on top of RBP and TOOH. (Bad cement below TOC)
- 11 ND BOP's. ND wellhead. Un-land 4 1/2" casing string. NU double entry flange. NU BOP.
- 12 PU 1-1/4" 2.3#/ft J-55 10rd IJ tubing, and TIH outside 4-1/2" casing in open hole to **5070'** (Top of existing cement @ **5082'**). MIRU cement services and water truck containing fresh water for cementing. Circulate on bottom with freshwater treated with biocide until returns clean up with rig pump.
- 13 Rig up cement trucks.
- 14 Circulate **180** bbl of drilling mud. Commence pumping cement job consisting of 20 Bbls Sodium Metasilicate followed by **190** sx 15.8 ppg neat Class G cement with 1/4 #/sx cello-flake. The cement to be retarded for 125 degree Fahrenheit for six hour pump time. (Attempt to cement from **5082'** to **4320'**).
- 15 TOH with **40** joints to **3870'** and reverse circulate 2 times the tubing volume with drilling mud or until the cement cleans up.
- 16 Rig down cementing company.
- 17 Trip out of the hole with 1-1/4" and SB tubing and shut well in overnight.
- 18 Rig up wireline truck and run a CCL-GR-CBL-VDL from **5200'** to **3800'** or the top of cement. If cement isn't above **4320'** then get with the Engineer on further cement work.
- 19 RDMO Wireline
- 20 PU and TIH with 1-1/4" 2.3#/ft J55 to **1550'**. MIRU cement services and water truck containing fresh water for cementing. Circulate on bottom with fresh water treated with biocide until returns clean up with rig pump.

- 21 Rig up cement trucks
- 22 Circulate **30** bbl of drilling mud. Commence pumping cement job consisting of 20 bbls Sodium Metasilicate followed by **195** sx of 15.8 pgg neat Class G cement with ½#/sx cello-flake. The cement to be retarded for 125 F degree Farenheit for a six hour pump time (Attempt to cement from **1550** to **771'**)
- 23 Rig up wireline truck and run a CCL-GR-CBL-VDL from **1600' to 500'** or the top of cement. If cement isn't above **771'** then get with the Engineer on further cement work.
- 24 RDMO Wireline
- 25 TOH with **38 joints to 400'** and reverse circulate 2 times the tubing volume with drilling mud or until the cement cleans up.
- 26 ND BOP. ND double entry flange and crossover. Pick up and land 4-1/2" casing in slips. NU tubing head. NU BOP SDFN to WOC.
- 27 PU and TIH with 2-3/8" tbg and retrieving head. Circulate sand off RBP at @ +/-**6130'**. TOOH with RBP and stand back tubing.
- 28 Bail if the need be.
- 29 TIH 2-3/8" SN, and 2-3/8" 6.5# J-55 EUE 8rd tubing. Land tubing at +/- **7833** or 1 joint above the top **Codell perforation (7863-7881)**.
- 30 Broach tubing to seating. ND BOPs. NU master valve and tubing head adaptor and install 3' pup joint above master valve. Hydrotest tubinghead assembly to **5000** psi for 15 mins.
- 31 RDMO WO Rig.
- 32 Clean location and swab well back to production, if necessary. Notify Foreman/Field Coordinator of finished work and turn well over to production team.

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KERR-MCGEE OIL AND GAS ONSHORE LP

WILLIAMS 7-20

NW SE 20 2N 68W 1,608' FSL 1,497' FEL

LAT: 40.12130 LONG: -105.02310

WELD,COLORADO

09/12/2013

AREA: S2 ROUTE: S22 Spud: 05/01/2009 WINS No.: 00319 AFE/WO#: 88414680 API#: 0512328044

GL: 4901 KB: 4916 MTD: 8465 TVD: 8093 LOG MD: 8453 PBMD: 8418 PBTVD: 8047

Directions: WCR 20 & WCR 7, W 2/10, SW 3/4 & NW INTO

<u>TUBULARS</u>	<u>Tool Type</u>	<u>Joints</u>	<u>Size</u>	<u>Weight</u>	<u>Grade</u>	<u>Thread</u>	<u>Condition</u>	<u>Top D</u>	<u>Bottom D</u>
SURFACE CASING									
	Casing	16	8.63	24.00	J-55	STC	NEW	15	726
	Baffle	1	0.00					726	726
	Shoe Joint	1	8.63	24.00	J-55	STC	NEW	726	770
	Casing Guide Shoe	1	8.63					770	771
PRODUCTION CASING									
	Casing	201	4.50	11.60	I-80	LTC	NEW	15	8418
	Latch Down Baffle	1	4.50					8418	8418
	Casing	1	4.50	11.60	I-80	LTC	NEW	8418	8452
	Casing Float Shoe	1	4.50					8452	8454
PRODUCTION TUBING									
	Tubing		2.38	4.70	J-55	8RD EUE		15	7817
	Seating Nipple		2.38					7817	7819
	Notched Collar							7819	7819

<u>CEMENT TYPE</u>	<u>Stage</u>	<u>Sacks</u>	<u>Cement Type</u>		<u>Top D</u>	<u>Btm D</u>	<u>cbf</u>	<u>est</u>	<u>Comments</u>
SURFACE CASING CEMENT									
	PRIM CMT 1ST STAGE	490	LEAD	TYPE 3	15	780	No		
PRODUCTION CASING CEMENT									
	PRIM CMT 1ST STAGE	520	LEAD	ECONOCCEM	5182	7150	Yes	No	
	PRIM CMT 1ST STAGE	230	TAIL	FRACCHEM	7150	8454	Yes	No	

<u>PERFORATIONS</u>									
<u>Formation</u>	<u>Zone</u>	<u>Top</u>	<u>Btm</u>	<u>spf</u>	<u>Shots</u>	<u>Date</u>	<u>Reason</u>	<u>Comments</u>	<u>Producing</u>
NIOBRARA	A	7576	7580	3	12	09/23/2009	PRODUCTION		Yes
NIOBRARA	B	7643	7655	3	36	09/23/2009	PRODUCTION		Yes
NIOBRARA	C	7740	7746	3	18	09/23/2009	PRODUCTION		Yes
CODELL		7863	7881	3	54	09/22/2009	PRODUCTION		Yes

Comments:

Proposed Completion Procedure

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Proposed Perforation Intervals

Top	Btm	Zone	Comments

Engineer: AARON HOLTEN: 970-330-1070

Foreman: BRIAN WALLS: 970-301-1544

Lead Pumper: TONY KERN: 970-301-1594

Authorized By: CORY EIKENBERG: 970-590-6234