



ADU #210 P&A Supplemental Procedure
December 2, 2010



Affected Well / API # / AFE #:

ExxonMobil ADU #210

30-015-24653

XP.2010.47139

History and General Discussion:

The well currently has a nipple welded onto the 13-3/8" surface casing with 11" BOP's connected. Well still has gas migration from the surface/intermediate casing annulus and builds to 15-20 psig. Rig is currently on well and on stand-by. The objective is to plug and abandon the wellbore according to NMOCD standards (stopping gas migration).

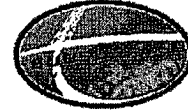
Pending Work Summary:

- a) Perform pre-mob work and planning
- b) MIRU TTS Sand Jetting Tool
- c) RIH with Sand Jetting Tool and tag TOC (expected TOC ~204')
- d) Jet through Intermediate and Surface casing strings at ~ 170', 140', and 100'
- e) Circulate fluids through WS until returns show low sand concentration
- f) Shut in casing valves and establish injection rate from pump truck at surface
- g) POOH with Sand Jetting Tools
- h) RIH with WS and spot 8.5 bbl of cement from ~ 204' to 70'
- i) PU WS to 30', reverse circulate clean, and apply 50 psi at surface
- j) Observe pressure on well throughout remainder of day and add fluid to keep pressure constant
- k) WOC and determine if gas migration still exists
- l) Continue to attempt pulling 8-5/8" intermediate string if necessary
- m) Finish P&A as per NOMCD

Wellbore Construction Details				ID (in)	Drift (in)	Cap. bbl/ft	Annular bbl/ft	100% Burst	1.25 SF Burst	100% Collapse	1.33 SF Collapse
Workstring	2-7/8"	6.5#	L-80	2.441	2.347	.0058	.0557	10,567	8,454	11,170	8,398
Intermediate Casing	8-5/8"	24#	J-55	8.097	7.972	.0637		2,950	2,360	1,370	1,030
Surface Casing	13-3/8"	68#	J-55	12.415	12.289	.1497		3,450	2,760	1,950	1,466
Conductor	20"	94#	H-40	19.125				1,530	1,224	520	391

MECHANICAL CONSIDERATION AND NOTES

- Follow published guidelines per the Wellwork Execution Manual, ExxonMobil Safety Manual, and the NOMCD.
- Every day, prior to beginning any operation, complete JSA and JSC, and hold safety meeting to outline procedures and scope of upcoming well work. During the meeting review the role of all personnel on location, and alert all hands to possible hazards and their role in conducting the activities safely. Discuss communications and emergency response. All operations should be performed according to guidelines in the Wellwork Execution Manual, and the Production Department Safety Manual (PDSM).

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Safety and protection of the environment are top priorities with ExxonMobil Corp. All work shall be done in accordance with company standards and policies as written in the USP Safety and Workover Manuals. Tailgate safety meetings are required daily and recorded on the drillers report. The scope, daily work plan, and potential hazards shall be discussed by all personnel on location. This procedure is a guide for the work to be done and should be followed. If different working conditions arise such that significant deviations from this procedure are necessary, then the ExxonMobil Workover Supervisor must be notified and approve of the changes. If the changes significantly increase the risks or scope of the job, then Management of Change procedures are to be followed and documented as soon as working conditions permit.

ExxonMobil Engineering Contacts

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ExxonMobil Field Contacts

Jim Ellison	Office: 432-524-5675
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Risk Assessment:

Injection well, no flow potential. Producing wells in the area have been known to have ± 9000 ppm H₂S concentration in their flow stream. Caution should be taken to prevent unexpected H₂S exposure. All personnel on location should be aware of the H₂S content and equipped with proper PPE.

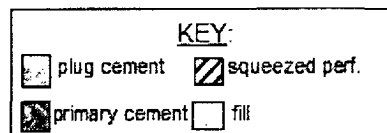
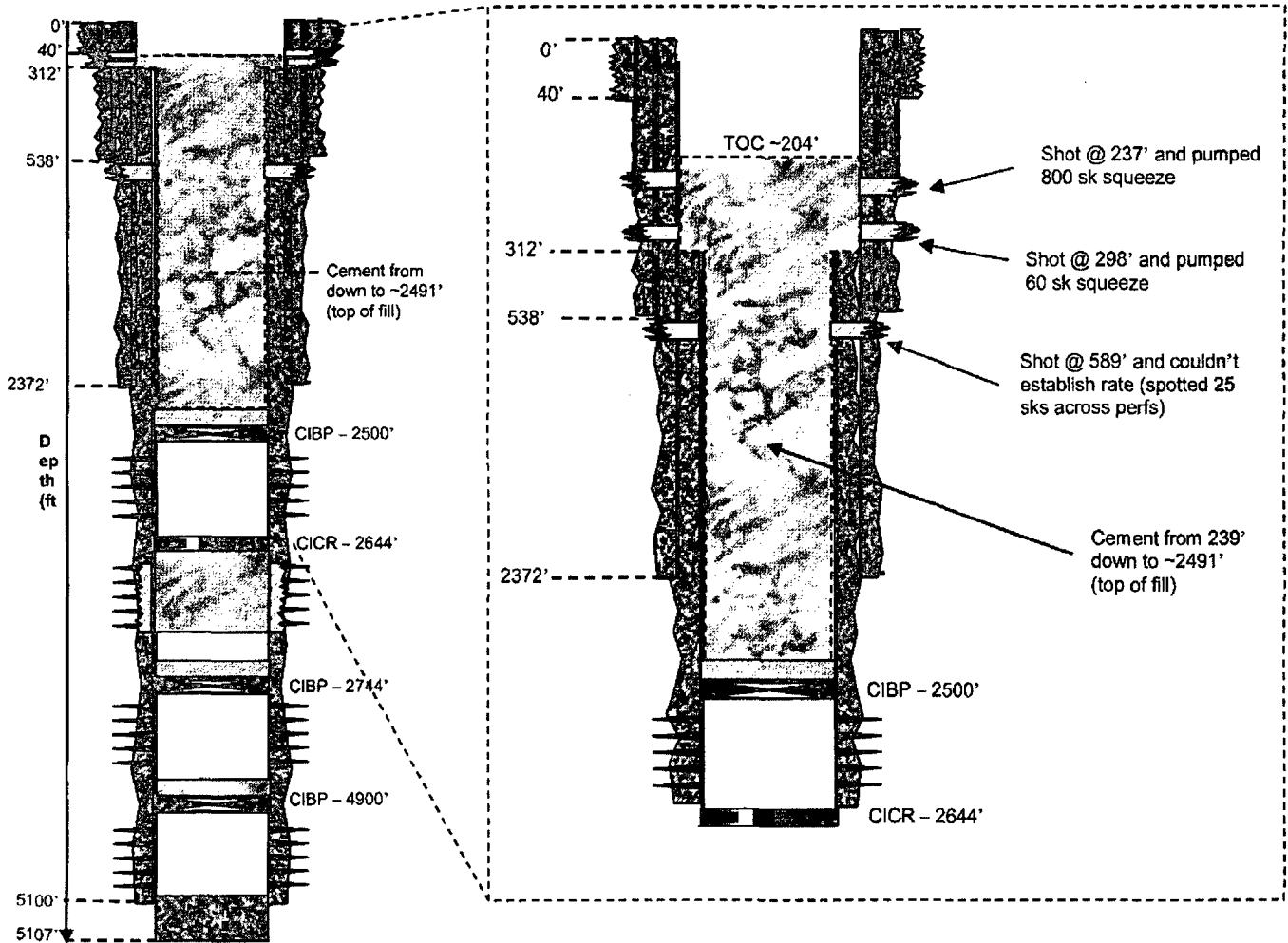
***NOTE:** Please confirm approval from NMOCD (either with email or written consent) regarding the plugging method described in the steps outlined in this procedure



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CURRENT WELLBORE STATE



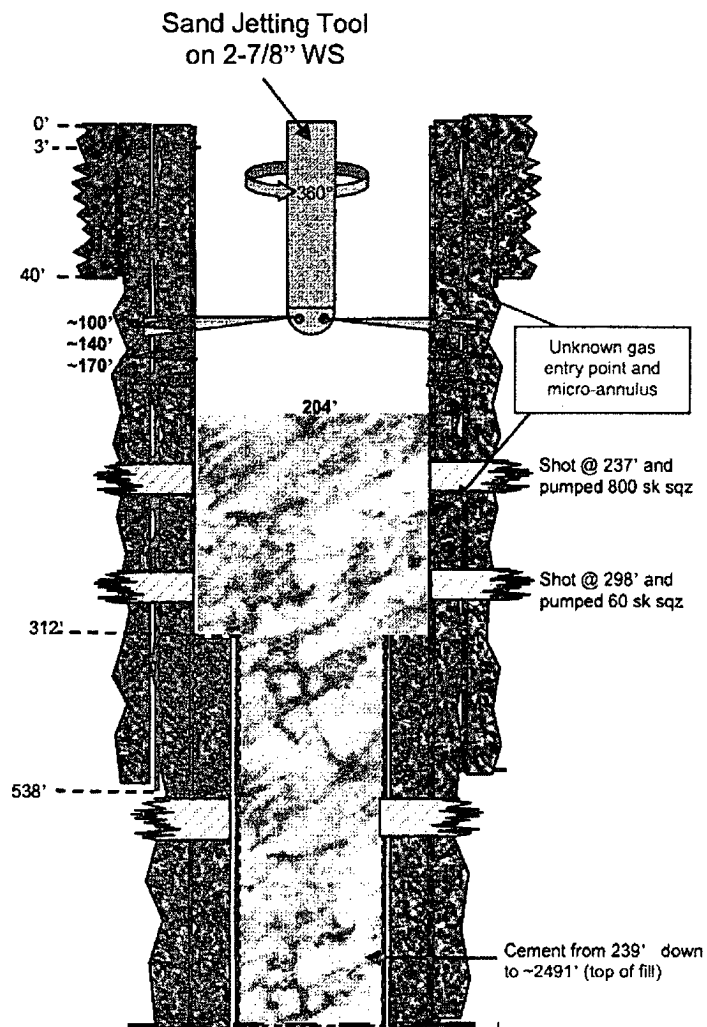


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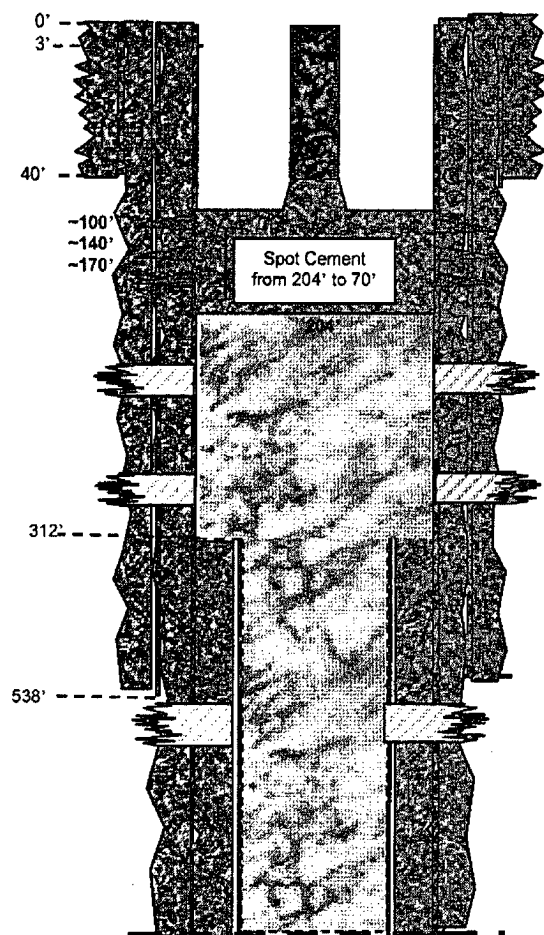


PROPOSED WORK SKETCHES

Sand Jet Tool Cuts



Spotted Cement Across Cuts





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RECOMMENDED PROCEDURES

Jet Sand Cut Casing & Spot Cement Plug Procedure

- 1) Review procedures and safety evaluations. Verify that the following equipment and operating personnel have been scheduled:
 - Workover rig, cement pumper, pressure testing equipment, jet cutting tool and associated equipment, frac tanks, and safety personnel
- 2) Check wellhead pressure and flow down accordingly, well has built to 15 – 20 psig over night **(if the pressure exceeds this range please contact SSE for additional discussion)**
- 3) RU reverse swivel unit on WO rig (will provide rotation to the abrasive cutter for a 360° cut)
- 4) Set up sand hopper and frac tanks to mix sand jetting slurry at the surface
 - 3 frac tanks: 2 full of brine (1 tank contingency) and 1 empty tank to take returns
- 5) PU jet cutting tool assembly, rotary sub, and 2-7/8" WS
- 6) RIH with assembly and tag TOC **(expected at ~204')**
- 7) Pull up-hole 1 joint of tubing to a depth of ~ 170' (record actual depth)
- 8) Jet through 8-5/8" intermediate casing and 13-3/8" surface casing while turning power swivel as per instruction from Thru Tubing Solutions representative on location
 - Circulating fluid should be gelled water with .75-1 ppg slurry with 100 mesh sand
 - Ideal pump rate to perform jetting is 3 bpm

Observe time taken to complete jetting of each casing string. Ensure pressure is monitored at surface as a secondary indication of when casing has been cut.

- 9) Repeat previous step at 140' and 100'



If the casing falls or has significant movement after any cuts notify SSE. Discuss following steps in "casing pull attempt procedure" before continuing.

- 10) After the three cuts have been made at 170', 140', and 100' shut-down the sand hopper and circulate water down WS and up well until returns show low concentrations of sand.



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- 11) Close casing valves and slowly pump water into well to establish an injection rate
- 12) Record injection rate and report to SSE
- 13) RU cement unit to 2-7/8" WS and test lines as per XOM requirements
 - High test pressure: 3,000 psi for 10 min's
 - Low test pressure: 200- 300 psi for 5 min's
- 14) Spot an 8.5 bbl Class "C" neat cement plug from 204' to 70'
- 15) Pull up-hole to a depth of ~30' and reverse circulate until returns are clean
- 16) Close casing valves and slowly pump until 50 psi is achieved at the surface
- 17) Hold pressure on well and report any pressure drop to SSE
 - If pressure drop occurs quickly open casing valve to relieve pressure and leave well static
 - If pressure drop is slow continue to apply pressure on well (**only pump a maximum of 1.5 bbls from surface or cement will be cleared past top jetted section**)
- 18) WOC for a minimum of 24 hrs and determine if gas migration has ended
- 19) If pressure build-up is observed record pressure and report to SSE
 - RU sand jetting equipment as stated in steps 3-5
 - RIH to 50' and perform cut with sand jetting tools
 - Continue to follow steps outlined in "Casing Pull Attempt Procedure" on next page
- 20) If gas migration has ceased then notify NMOCD and continue with spotting cement plugs as per original P&A procedure
- 21) Once NMOCD has approved of P&A completion RDMO
- 22) Call out welder to install cap and well marker as required by NMOCD



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Casing Pull Attempt Procedure

Follow the steps below if the casing falls or has significant movement and/or the previous steps failed to end gas migration to surface.

- 1) POOH with jet cutting tools and WS
- 2) RU spear and casing jacks to pull 8-5/8" intermediate casing from well
- 3) RIH and spear the cut 8-5/8" intermediate casing and attempt to remove it from the wellbore

Depending on the length of intermediate casing, it may be necessary to rest it in the slips and cut it in order to safely lay it down **(If the length of cut casing is in excess of approximately 65' have rig pull doubles)**

- 4) PU and RIH with 12-1/4" bit and clean-out to the top of the intermediate casing
- 5) RIH with retrievable packer on WS and attempt to isolate the gas entry point (if possible)
- 6) Engage the packer half way between the gas entry depth and the surface
- 7) Pump a thixotropic cement slurry below the packer followed by a 1.5 bbl spacer (10' displacement inside of 13-3/8" surface casing)
- 8) WOC a minimum of 24 hrs and monitor any pressure build-up at surface
- 9) Observe any pressure build-up at surface and record
 - If gas migration continues notify SSE and NMOCD to determine forward plans (RDMO)
- 10) If no gas migration is observed notify NMOCD to set cement on top of the plug to surface
- 11) Once NMOCD has approved of P&A completion RDMO
- 12) Call out welder to install cap and well marker as required by NMOCD



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SAND JET CUTTER BHA

		Customer: Exxon		Lease / Field: Aranton UR 210	
		Address: _____		Well Name / L&D: _____	
		Customer Rep.: Manuel Rosales		Well No. / UWI: _____	
		Phone: _____		County / Parish: _____	
				State / Province: _____	
				Operation Type: Abrasive Cutting	

Tool OD (in.)	Tool ID (in.)	Tool Diagram	Length (ft.)	Description	Connection (Make-Up Torque)	Drop Ball	Part #/Asset #
3.67			1.00	Rotary Sub	2-7/8" SUE S Rot Box Up x 2-3/8" PAC Pin Dn (2,300 Ft.Lbs)		
7.50			1.25	Abrasive Cutter, w/4 ports	2-3/8" PAC Pin Up (2,300 Ft.Lbs)		
Overall Length:			2.25	BHA Prepared By: Cody Thibault		Date: 11/30/10	
Notes:							