



## P&A PROCEDURE

April 30, 2014

### Executive Brief

The scope of this work is to re-enter the old wellbore that had previously been plugged and abandoned. The well will be properly plugged and abandoned by setting cement plugs to isolate the formation, freshwater zone, and setting a cement cap near the surface. Then the surface casing will have a plate welded as final seal 5' below the surface. The old wellbore will then be buried and the surface location will be remediated.

Well Information	
Surface Location	1980' FNL & 1980' FWL from the Section Line
Lat/Long	Lat: 40.709335 & Long:-103.871156
API Number	05-123-14187
AFE Number	
Ground Level Elevation, feet	4760
Working Interest	100%
Estimated TD, feet	6518

Formation Tops	
Top Names	Footage
Freshwater Zone	0' - 396'
Niobrara	5590
D Sand	6358
J Sand	6446

Existing Tubular Data										
Size in	Depth	Weight	Grade	ID	Drift	Thread	Burst w/ No SF	Collapse w/ No SF	Capacity	Capacity
	(MD ft)	lb/ft		In	In		Psi	Psi	Bbl/ft	ft <sup>3</sup> /ft
8 5/8"	182	24	J55	8.097	7.972	STC	2,950	1,370	0.06368	0.35758

All personnel should keep their speed down to **30 mph** once they are near a residence or in a high traffic area to minimize dust.

### PERFORM SAFETY CHECKS AND SAFETY MEETING

Perform safety meeting prior to rigging up **ANY** equipment on location. Discuss the job procedure and objectives with all personnel on location. Document the safety meeting on the report sent to Carrizo. Make note of all potential risks/hazards, and clearly identify an emergency route and emergency vehicle. Also make note of any new or inexperienced personnel on location. Ensure proper Personal Protective Equipment (PPE) is used during the job. Minimums are hard hats, steel toes, and safety glasses.

### PROCEDURE

1. Locate old surface casing using magnetometer. Record the GPS coordinates and the datum used for the GPS coordinates.

Set a stake and try to locate the boundaries of the old pad site.

2. Dig down to the old surface casing and cut plate off, install a slip collar to fit over the 8 5/8".

3. Install flange. If rig is not on location then install a dry hole tree to secure the well until the rig arrives.

Re-enter & Cleanout Wellbore

4. MIRU workover rig and related equipment including power swivel, mud tank and pump. Bleed off any pressure on the dry hole tree. ND the dry hole tree and NU the rig BOP's.

5. Test the BOP's to 250 psi for a low test and 4,500 psi for a high test. RU the work floor and PU 2 7/8" 8 rd work string, 4-4 3/4" DCs, and a 6 1/2" rock bit. Pressure test surface casing to 1000 psi.

6. Drill out surface cement plug and plug at casing shoe, estimated at 155' to 205'. Continue washing down to 5,590', POOH and P/U wash tool.

7. RIH with wash tool and wash down to the top of the Niobrara at **5,590'**. Circulate and prepare to set cement plugs

Set Cement Plugs and Abandon Well

9. RU cementers. Test lines to 4,500 psi.

10. Set plugs coming up hole according to the following Cement Plug Table.

11. Once the top plug has been set cut casing to 5' below surface and weld on a plate to seal the well. Cover up the well and remediate the disturbed area with the appropriate seed mix.

Re-entry Hole Data		
Planned Hole Size in	Capacity bbl/ft	Capacity ft <sup>3</sup> /ft
7.875	0.06024	0.33824

Cement Plug Table						
Plug Number	Formation or Location	Plug Btm Depth	Plug Top Depth	Cement Class	Yield ft <sup>3</sup> /sk	Number of Sacks
1	Niobrara	5,590	5,290	G	1.18	86
2	Fresh Water Zone	600	0	G	1.18	173

Total                    **259**                    sacks