



## P&A PROCEDURE

April 15, 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 Niobrara formation, freshwater zones, and setting a cement cap near the surface. Then the surface casing will have a plate welled 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	2040' FNL & 660' FEL from the Section Line
Lat/Long	Lat: 40.634444 & Long:-104.184955
API Number	05-123-14111
AFE Number	
Ground Level Elevation, feet	4993
Working Interest	100%
Estimated TD, feet	7234

Formation Tops	
Top Names	Footage
Freshwater Zone	0' - 500'
Niobrara	6370
D Sand	7082
J Sand	7150

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	610	24	J-55	8.097	N/A	Unk	Unk	Unk	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, 6-4 3/4" DCs, and a 6 1/2" rock bit.
  6. Drill up surface cement plug and plug at bottom of surface casing to approximately 684', POOH. GIH with 4 3/4" wash tool and wash down to top of Niobrara at 6370'.
  7. Circulate and prepare to set cement plugs.
  8. If unable to wash down past surface casing, GIH with 6 1/2" rock bit and wash down to 6370'. POOH and GIH open ended to set required 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	6,370	6,070	G	1.18	86
2	Fresh Water Zone	600	0	G	1.18	180

Total 266 sacks