

## Proposed P&A Procedure

**Well Name: DOERING I28-23**

API 05-123-21985	Original KB Elevation (ft) 4,723	Ground Elevation (ft) 4,713	Total Depth (ftKB) 7,255.0	Current PBTD (mKB) ORIGINAL HOLE - 7,179.0
Section 28	Township 6	Range 66	County/Parish WELD	State/Province COLORADO

### Casing Strings

Csg Des	MD (ftKB)	Run Date	Prop Run?	Cut/Pull Date	Proposed Cut/Pull?	Depth Cut/Pull (ftKB)	OD (in)	ID (in)	Grade	Len (ft)
Surface	545.0	3/1/2004	No		No		8 5/8	8.10	J-55	535.00
Production	7,224.8	3/7/2004	No	7/25/2017	Yes	745.0	4 1/2	4.00	M-80	7,214.83

### Tubing Strings

Des	Set Depth (ftKB)	Run Date	Prop Run?	String Location	Pull Date	Prop Pull?	Cut/Pull Date	Proposed Cut/Pull?	Depth Cut/Pull (ftKB)
Tubing - Production	7,068.7	10/30/2013	No	Tubing - Production set at 7,068.7ftKB on 10/30/2013 14:00	7/25/2017	Yes		No	

### Perforations

Zone	Type	Date	Prop?	Top (ftKB)	Btm (ftKB)
CODELL, ORIGINAL HOLE	Perforated		No		
CODELL, ORIGINAL HOLE	Perforated	7/25/2017	Yes	2,500.00	2,500.00
CODELL, ORIGINAL HOLE	Perforated	3/12/2004	No	7,090.00	7,108.00

### Other In Hole

Des	Run Date	Prop Run?	Prop Pull?	Top (ftKB)	Btm (ftKB)
Cement Retainer	7/25/2017	Yes	No	2,395.0	2,400.0
Cast Iron Bridge Plug	7/25/2017	Yes	No	7,035.0	7,040.0

### Cement Stages

Des	Type	Prop?	End Date	Top (ftKB)	Btm (ftKB)
Surface Casing Cement	Casing	No	3/1/2004	10.0	545.0
Production Casing Cement	Casing	No	3/7/2004	6,460.0	7,224.8
Cement Plug	Plug	Yes		6,590.0	7,035.0
Cement Squeeze	Casing	Yes		2,200.0	2,500.0
Balance Plug	Plug	Yes		2,400.0	2,500.0
Cement Plug	Plug	Yes		2,266.0	2,395.0
Cement Plug	Plug	Yes		445.0	745.0
Cement Plug	Plug	Yes		10.0	445.0

### P&A PROCESS

Type Abandon	Sub Type WBI Non-Op	Start Date	Engineer John Hatch	Cell Phone 303.505.6589
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### PROCESS STEPS

Type	Comment																																								
1)	MIRU workover rig, pump, and tank.																																								
2)	Blow down well and roll hole with fresh water, if possible.																																								
3)	ND WH, NU BOP.																																								
4)	POOH and stand back tbq.																																								
5)	RU WL and RIH w/ CIBP and set @ 7040'																																								
6)	Pump 35 sx of Class G Neat cement on top of CIBP. TOC @ 6590' (200' above Nio)																																								
7)	Load hole with fluid and pressure test CIBP to 1000 psi with rig pumps. Hold for 15 minutes. Test will be considered successful if lose less than 100 psi. If test is unsuccessful, contact engineer.																																								
8)	RIH w/ 1' perforating gun and shoot 4-6 spf @ 2500'																																								
9)	RIH w/ CICR on workstring and set @ 2400' (100' above perforations).																																								
10)	Load annulus between production casing and workstring. Test to 500 psi for 15 minutes. Test is considered successful if lose less than 50 psi. If pressure test fails, contact engineer.																																								
11)	Establish injection rate.																																								
12)	<div><div>Pump 10 bbls Mud Flush (or similar spacer) followed by 135 sx of cement.</div><table><thead><tr><th>Length (ft)</th><th>OD (in)</th><th>ID (in)</th><th>ft^3/ft</th><th>Volume (ft^3)</th><th>Yield (ft^3/sk)</th><th>Cement (sk)</th><th>Nearest 5sk</th></tr></thead><tbody><tr><td>300</td><td>10.000</td><td>4.500</td><td>0.435</td><td>130</td><td>1.150</td><td>113</td><td>115</td></tr><tr><td>100</td><td>4.000</td><td>0.000</td><td>0.087</td><td>9</td><td>1.150</td><td>8</td><td>10</td></tr><tr><td>129</td><td>--</td><td>4.000</td><td>0.087</td><td>11</td><td>1.150</td><td>10</td><td>10</td></tr><tr><td colspan="7">TOTAL: 135</td><td></td></tr></tbody></table><div>Calculations assume 10" open hole and last 2 bbls cmt left on top of CICR.</div></div>	Length (ft)	OD (in)	ID (in)	ft^3/ft	Volume (ft^3)	Yield (ft^3/sk)	Cement (sk)	Nearest 5sk	300	10.000	4.500	0.435	130	1.150	113	115	100	4.000	0.000	0.087	9	1.150	8	10	129	--	4.000	0.087	11	1.150	10	10	TOTAL: 135							
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13)	<div><div>Displace cement with 7 bbls fresh water (2 bbls short of workstring volume).</div><table><thead><tr><th>Tubing ID</th><th>Length (ft)</th><th>Disp. (BBL/ft)</th><th>Disp (BBL)</th><th>Disp -2BBL</th></tr></thead><tbody><tr><td>1.995</td><td>2400</td><td>0.00387</td><td>9</td><td>7</td></tr></tbody></table></div>	Tubing ID	Length (ft)	Disp. (BBL/ft)	Disp (BBL)	Disp -2BBL	1.995	2400	0.00387	9	7																														
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14)	Unsting from CICR.																																								
15)	Place remaining 2 bbls of cement on top of CICR. Allow to fall on CICR as pulling out. TOC: 2266'																																								
16)	POOH w/ workstring.																																								
17)	RIH w/ WL and cut production casing at 745'. (200' below surface shoe)																																								

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## PROCESS STEPS

Type	Comment							
18)	Circulate a MINIMUM of 2 bottoms up volumes (70 bbls) or until well is free of oil, gas, or any large cuttings.							
	Length (ft)	OD (in)	ID (in)	BBL/ft	Disp (BBL)	2x Disp (BBL)		
	445	8.097	4.500	0.0440	20	39		
	200	10.000	4.500	0.0775	15	31		
	TOTAL: 70							
19)	Perform flow check for 5 minutes to ensure well is static and record current fluid weight in WellView.							
20)	Unland production casing.							
21)	POOH and LD production casing filling pipe every 6 joints.							
22)	RIH w/ workstring to 795' (50ft inside top of casing cut).							
23)	Establish circulation.							
24)	Pump 10 bbls Mud Flush (or similar spacer) followed by 130 sx of cement 15.8 ppg PlugCem cement as a balanced plug. TOC should be ~445' (100' into surf.casing shoe)							
	Length (ft)	OD (in)	ID (in)	ft^3/ft	Volume (ft^3)	Yield (ft^3/sk)	Cement (sk)	Nearest 5sk
	100	8.097	0.000	0.358	36	1.210	30	30
	200	10.000	0.000	0.545	109	1.210	90	95
	50	4.000	0.000	0.087	4	1.210	4	5
	TOTAL: 130							
25)	SDFN and ensure that the well has no pressure prior to pumping second plug to surface. If pressure is present, contact engineer.							
26)	Pump 140 sx 15.8 G neat cement bring TOC to surface.							
	Length (ft)	OD (in)	ID (in)	ft^3/ft	Volume (ft^3)	Yield (ft^3/sk)	Cement (sk)	Nearest 5sk
	445	8.097	0.000	0.358	159	1.150	138	140
27)	POOH workstring. Top off cement as needed. Cement needs to be ~10' from surface.							
28)	ND BOP.							
29)	RDMO.							