

Pressure Blanket Procedure

Frac Blanket Wells - See Fig. 1 for Wellbore Layout

Guttersen C28-755 (05-123-48939)

Wells Fracing

Guttersen C28-745 (05-123-48931)

Guttersen C28-735 (05-123-48932)

Guttersen C28-725 (05-123-48933)

Guttersen C28-715 (05-123-48929)

Equipment on Location - See Fig 2. for Layout

8 frac tanks

Piping manifold for frac tanks (water storage)

1 chemical trailer treating freshwater w/ biocide to prevent bacterial fouling

1 Booster truck

2 Pump trucks (1 for backup)

Piping on discharge side of the pump truck

1 Frac tank for flow back

Volume, Pressure and Rate Consideration

Total freshwater volume 48,000-67,000 bbls target; 100,000 bbls permitted

Pumping rate 0.5-5 bbls/min

Max pressure at surface 3,000 psi (safety kill switch setup on pump and PSV do not allow pressure to exceed 3000 psi)

Frac gradient in the area is around 1.01 psi/ft

Maximum bottomhole pressure = 5,944 psi. ~3,000 psi at surface and 2,944 psi hydrostatic assuming no friction. Maximum gradient is 0.87 psi/ft which is below frac gradient.

Initial pressure on Wellhead

Tubing = 537 psi and Casing = 1018 psi

Timing

Pumping operation will continue no longer than 4 weeks (but approximate dates are 4/2/24-4/14/24).
Frac will start on approximately 4/2/24.

Procedure:

1. Rig up equipment on location (frac tank, flowback tank, biocide, pumps, piping)
2. Shut-in casing and open tubing.
3. Start pumping at 1 bbl/min through tubing (recording pressure, rate and volume)
4. If the pressure stays below 3000 psi after an hour, bump rate to 2-5 bbls/min (MAX RATE 5 BBLS/MIN AND PRESSURE 3000PSI)
5. Pump all water away (24 hour operation). Monitor Pressure on offset wells.
6. Shut well in after all volume pumped.
7. RDMO
8. Once offset well is finished fracing, bring well back online normally or by using green flowback

Fig. 1

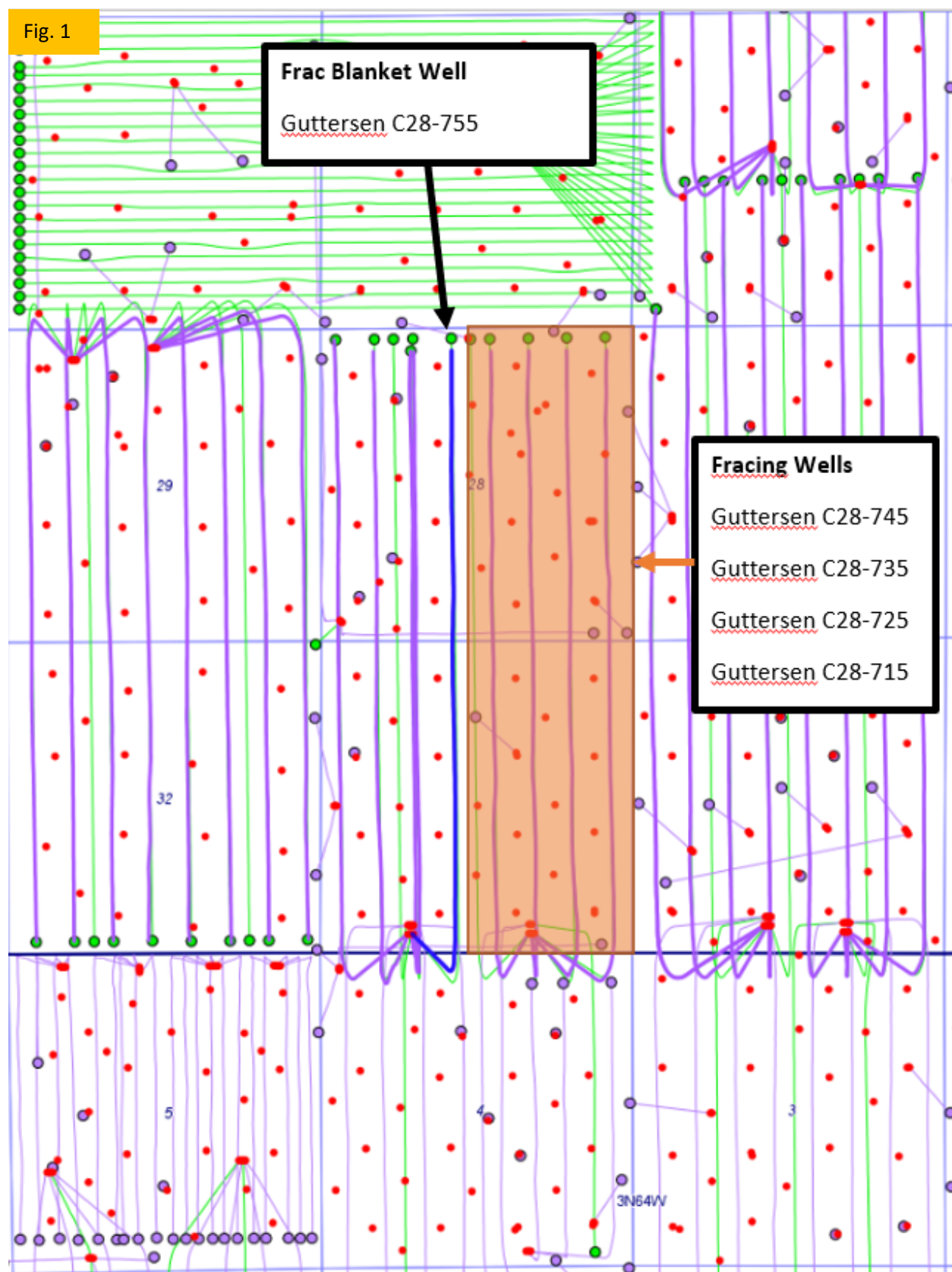
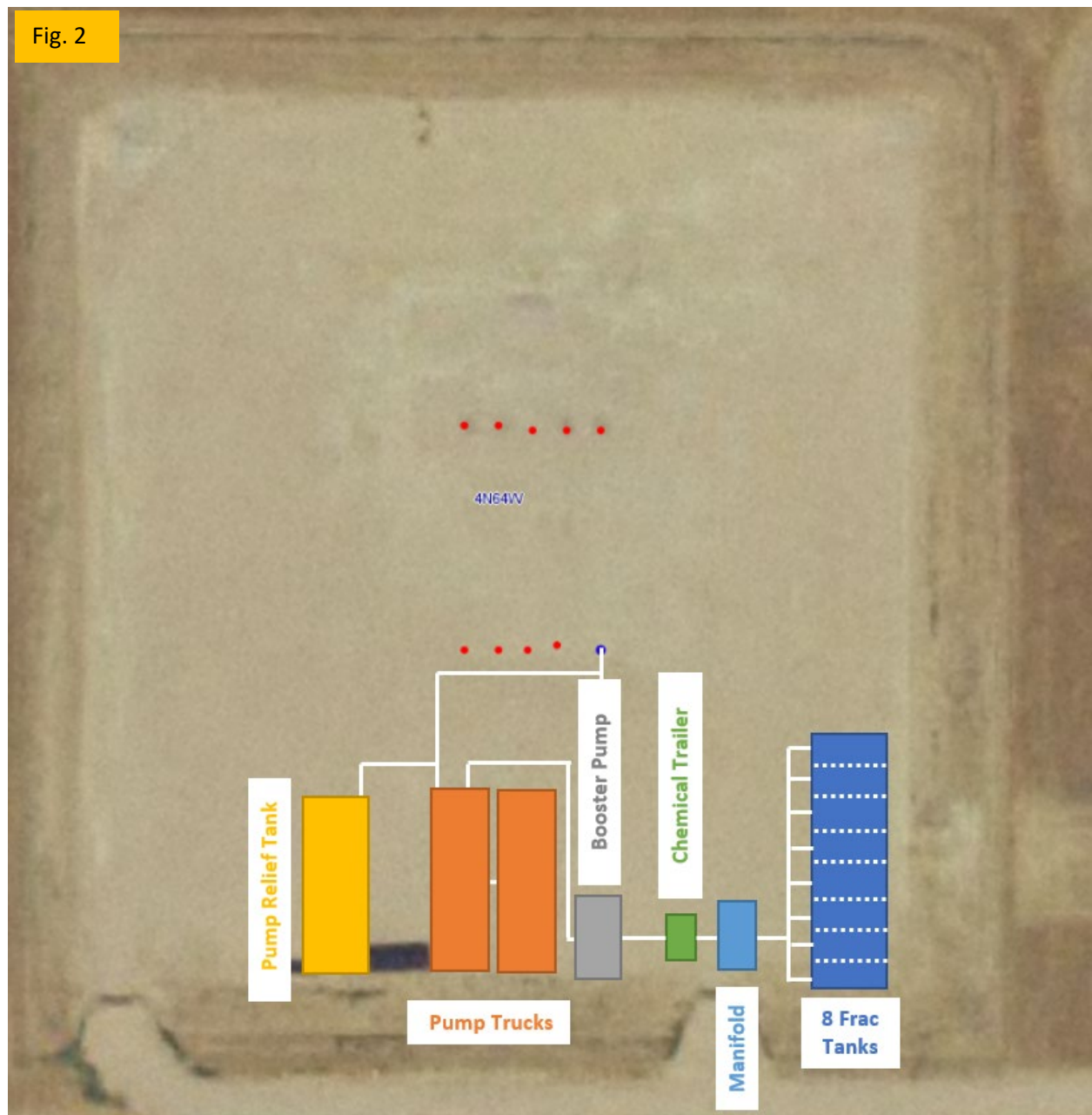


Fig. 2



Well Name: GUTTERSEN C28-755

Original Hole [Land]		Well Header					
MD (ftKB)	Vertical schematic (actual)	Surface UWI 0512348939		Asset Team		Production Tree Location Land	
8800.0		Original RKB Elevation (ft) 4,745.00		Original KB to Ground (ft) 21.00		Original Spud Date 8/15/2022	
7910.0		Range		Well Sub-Status PR		Abandon Date	
7200.1		Directions To Well CR53 & 36 west 0.21 of a mile, northwest 1.1 miles and west 0.1 of a mile into		Latitude (°) 40.262618555		Longitude (°) -104.55986721	
7770.0		Comment THERE IS AN EXCEPTION TO THE COGCC LOGGING REQUIREMENTS RULE 317.p. Acased-hole neutron log with gamma-ray log will be run from the kick-off point into the surface casing. See Sundry Doc. #402821799 dated 09/24/2021 for COA details.					
7800.0		Congressional Location					
8000.1		Quarter 3 NE	Quarter 4 NW	Section 33	Township 4	Twnshp N/S Dir N	Range 64
8051.1		Rig Operator					
8400.1		Rig Unit Supervisor Josh Lewis					
8670.0		Daily Cost Summary					
8207.1		Sum of Field Est (Cost) 0					
8747.0		Wellbore Plug Back Total Depths					
8800.0		Date 9/22/2022		PSTD (ftKB) 17,052		Method Csg Tally	
10100.0						Com BALL SEAT SUB	
10600.1		Wellbore Sections					
10800.0		Section Des		Hole Size (in)		Top Depth (ftKB)	
10800.0		CONDUCTOR		26		21.0	
11000.1		SURFACE		13 1/2		101.0	
11000.0		PRODUCTION		8 1/2		1,946.0	
11071.0						17,086.0	
11000.0		Zone Statuses					
11000.0	Zone Name		Status Date		Status		
11070.0	NIOBRARA		8/21/2023		Open		
11000.1	Casing Strings						
12100.0	Conductor, Actual, 101ftKB						
12077.0	Casing Description Conductor	Run Date 7/19/2022	OD (in) 16	Wt/Len (lb/ft) 36.94	Grade A-52A	Top Depth ... 21	
12000.0	Surface, Actual, 1936.4ftKB						
12000.1	Casing Description Surface	Run Date 8/17/2022	OD (in) 9 5/8	Wt/Len (lb/ft) 36.00	Grade J-55	Top Depth ... 21	
12000.1	Set Depth ... 1936.4						
12000.1	Production Casing, Actual, 17071.5ftKB						
12000.1	Casing Description Production Casing	Run Date 9/24/2022	OD (in) 5 1/2	Wt/Len (lb/ft) 17.00	Grade P-110	Top Depth ... 21	
12000.1	Set Depth ... 17071.5						
12000.0	Cement						
12000.0	Des		Start Date		Top (ftKB)		
12000.0	Conductor Cement		7/19/2022		21.0		
12000.0	Surface Casing Cement		8/17/2022		21.0		
12000.0	Production Casing Cement		9/24/2022		1,112.9		
12000.0	Proposed Cement						
12000.0	Des		Top (ftKB)		Btm (ftKB)		
12000.0							
12000.0	Tubing Strings						
12000.0	Tubing Description TUBING - PRODUCTION	Run Date 8/16/2023	String ... 2 3/8	ID (in) 2.000	Wt (lb/ft) 4.70	Grade L-80	
12000.0	Len (ft) 7,104		Btm (ftKB) 17		Set Depth ... 6,774.7		
12000.0	Tubing Components						
12000.0	Item Des	OD (in)	Wt (lb/ft)	Grade	Jts	Len (ft)	
12000.0	Tubing Hanger	7 1/8	4.70	N-80	1	0.50	
12000.0	Tubing	2 3/8	4.70	L-80	198	6,567.01	
12000.0	X-Nipple	2 3/8	4.70	N-80	1	0.90	
12000.0	Tubing	2 3/8	4.70	L-80	16	530.54	
12000.0	XN-Nipple	2 3/8	4.70	N-80	1	0.90	
12000.0	Tubing Pup Joint	2 3/8	4.70	N-80	1	3.10	
12000.0	Ceramic disc sub	2 3/8	4.70	N-80	1	0.80	
12000.0	Mule Shoe	2 3/8	4.70	N-80	1	0.42	