Pertinent Data Sheet - Cleveland #5
Latitude: 36.56445 Longitude: 107.80544

Location: 1090' FNL & 990' FEL, Unit A, Section 20, T27N, R09W, San Juan County, New Mexico

Field: Fulcher-Kutz **Elevation:** 6421 RKB **TD:** 2383'

Completed: 5/30/55 **Spud Date:** 5/2/55 **DP #:** 49321A
Lease: Cleveland
GWI: 100
NRI: 85
Prop#: 012632900

Initial Potential: Initial Potential = 3758 MCF/D, SICP=630 psi

Casing Record:

Hole Size	Csg Size	Wt. & Grade	Depth Set	Cement	Cement (Top)
e13-3/4"	8-5/8"	24# J-55	96'	80 sx.	Circ Cmt
e 7-7/8"	5-1/2"	14 # J-55	2304'	100 sx.	e 1650'

Tubing Record:

Tbg. Size	Wt. & Grade	Depth Set	
1"	N/A	2360'	112 Jts

Formation Tops:

Ojo Alamo: 1285'
Pictured Cliffs: 2290'

Logging Record: GRN

Stimulation: Frac'd open hole w/ 8000 gal diesel oil and 10,000# sand.

Workover History: NONE

Production history: Cum = 1049 MMCF. Currently capable of 0 MCF/DAY.

Pipeline: EPNG

Cleveland #5 PC
Workover Procedure
A Sec 20 T27N R9W
San Juan County, N.M.
Lat. 36" 33.9' Lon: 107" 48.3'

1. Comply to all NMOCD, BLM, & MOI rules, regulations, environmental, and safety standards. MIRU completion rig. NU 6" 900 series BOP w/flow tee and stripping head. NU blooie line & 2-7/8" relief line.

2. TOH w/1" tbg & lay down. TIH w/4-3/4" bit on 2-3/8" work string & C.O. w/air/mist to new TD 2430'. Load hole w/1% KCL water. TOH.

3. MI Blue Jet. Run an advanced integrated data processing GSL neutron log 2430'-2000'.

4. Run 3-1/2"-OD 9.3# J-55 NUE tbg to TD 2430' w/Omega type latching collar above 2' tbg sub w/notched collar on bottom. Pump 20 bbls gel water to clean and seal hole. Cement w/200sx 50-50 Cl"B" POZ w/2% gel & 6-1/2#/sx kolite & 10% salt & 2% Cacl. (yield=1.44 cf/sx). After cmt, break & wash lines, run 2 wiper balls & Omega wiper latching plug, followed by 100 gal 7-1/2% HCL acid. Displace acid w/1%KCL water. Space out using tbg subs & install 3-1/2" csg in new csg spool. Install 6000 psi rental frac valve on 3-1/2" csg. WOC

5. Pressure test csg to 6000 psi. MI Basin Perforating. Run GR-CCL & correlate to neutron log. Perf PC top down w/about 14 holes over 100' of PC interval as per Production Engineering Dept. Perf w/2-1/8" SHOGUN SDP STP-2125-401NT 14 gr charges which make a 0.27" hole & 21.8" of penetration in concrete

6. Break down PC perfs down 3-1/2" csg w/2000 gal 15% HCL & 150% excess perf balls. Acidize @ 7 BPM w/max pressure = 6000 psi. Run junk basket to retrieve balls. Measure perf diameter on perf balls and ensure that frac rates, no. of perfs, and perf diameter agree with perf differential pressure > 500 psi to ensure limited entry.

7. Spot & fill 2-400 bbl. frac tanks w/2% KCL water. Filter all water to 25 microns. One tank is for gel & one tank is for breakdown water. Usable gel water required for frac is 355 bbls.

8. Frac PC down 3-1/2" csg w/49,000 gals. of 70 quality foam using 30# gel as the base fluid & 80,000# 20/40 Arizona sand. Pump at 55 BPM. Monitor bottomhole & surface treating pressures, rate, foam quality, & sand concentration with computer van. Sand to be tagged w/ 0.4 mCi/1000# Ir-192 tracer. Max. TR PR is 6000 psi & estimated TR PR is 5500 psi. Treat per the following schedule:

Stage	Foam Vol. (Gals.)	Gel Vol. (Gals.)	Sand Vol. (lbs.)
Pad	14,000	4,200	---
1.0 ppg	10,000	3,000	10,000
2.0 ppg	10,000	3,000	20,000
3.0 ppg	10,000	3,000	30,000
4.0 ppg	5,000	1,500	20,000
Flush	(986)	(296)	0
Totals	49,000	14,700	80,000#

SI after frac for six hours in an attempt to allow the gel to break and fracture to heal. Treat frac fluid w/the following additives per 1000 gallons:

* 30# J-48	(Guar Gel mix in full tank - 16,000 gal)
* 2.0 gal. SSO	(Non-ionic Surfactant mix on fly)
* 1.0# GVW-3	(Enzyme Breaker mix on fly)
* 1.0# B - 5	(Breaker mix on fly)
* 3.0 gal AQF-2	(Foamer mix on fly)
* 0.38# FracCide 20	(Bactericide mix on full tank)

9. Open well through choke manifold & monitor flow. Flow @ 20 bbl/hr, or less if sand is observed. **Take pitot gauges when possible.**

10. Change out frac valve w/tbg head. TIH w/notched collar on 1-1/4" IJ tbg & C.O. to 2428'. Monitor gas & water returns & **take pitot gauges when possible.**

11. When wellbore is sufficiently clean and water production is <1bbl/hr, TOH & run after frac gamma-ray log from 2428'-2000'.

12. TIH w/1-1/4" IJ tbg w/ SN one joint off bottom & again cleanout to 2428'. Use expendable check if necessary. When wellbore is sufficiently clean, land tbg @ 2354' KB. **Take final water & gas samples & rates.**

13. ND BOP & NU WH & tree. RD & release rig.

Approve:_____
Drilling Superintendent

VENDORS:

Logging:	Blue Jet	325-5584	Danny Seip
Perfing:	Basin	327-5244	Dana McGarh
Fracturing:	Howco	325-3575	Penny Goeringer
RA Tagging:	Pro-Technics	326-7133	Rickey Kent
Csg Equip:	Howco	325-3575	
Cmt:	Howco	325-3575	

TMB