

**MARKWEST RESOURCES, INC.**  
**FULLERTON FEDERAL #13-24 PC**  
**N Sec. 13 – T27N – R11W, San Juan County, N.M.**  
**Surface Loc. 1130' FSL & 1660 FWL**

\* Prior to rig-up and commencement of operations, review the attached general wellsite stipulations.

\* All information concerning the workover operations of this well shall remain **confidential** and shall not be released without the written consent of MarkWest Resources.

1. MOL & RU, test anchors, set pump, 1 frac tank & air equipment. **All water to be 2% KCL or filtered produced PC or FRTC water.**
2. Kill well w/ water or set blanking plug in 2-3/8" SN @ 1763'
3. ND WH, NU BOP. TIH to tag bottom & strap OH w/2-3/8" tbg.
4. If necessary, TIH w/4-3/4" bit & CO to 1850' w/air/mist. TOH.
5. Rabbit in hole w/2-3/8" tbg & land @ 1780' w/SN one jt above open ended bottom. Replace all bad tbg jts.
6. ND BOP, NU WH. Unload & blow well as needed & place on line.

**EQUIPMENT & VENDORS LIST**

ITEM:	VENDOR	PHONE #
RIG:	KEY ENERGY SERVICES	970-563-9053 505-327-0416
RIG SUPERVISOR:	MIKE CONFER	505-599-7461 505-330-2022
ENGR. CONSULTANT 4573	MIKE PIPPIN	505-327- 505-330-0495
DOWNHOLE TOOLS:	BAKER	505-325-0216
TRUCKING:	SUNCO	505-327-0416
WELLHEAD	CAMERON	505-327-3402

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**FULLERTON FEDERAL #13-24 PC**  
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**Surface Loc. 1130' FSL & 1660 FWL**

**PC CLEANOUT**  
**Pertinent Data Sheet**

**Field:** West Kutz PC  
**Spud Date:** 10/12/94  
**PC Completion Date:** 2/12/95

**Elevation:** 6056' GL  
KB=12'

**TD:** 1985'  
**PBTD:** 1900'

**CASING PROGRAM:**

<u>Hole Size</u>	<u>Csg Size</u>	<u>Wt. &amp; Grade</u>	<u>Depth Set</u>	<u>Cement</u>	<u>TOC</u>
12-1/4"	8-5/8"	24# J-55	309'	260 cf	Circ. 5 sx Cmt
7-7/8"	5-1/2"	15.5# K-55	1985'	510 cf	Circ. Cmt.
					TOC – Surface – CBL

**Tubing Record:**

2-3/8"	4.7# J-55	1794'	(56 Jts.)
	SN @	1763'	

**Formation Tops:**

Ojo Alamo	722'
Kirtland	826'
Fruitland	1402'
Pictured Cliffs	1772'

**Logging Record:** Induction, Density-Neutron, Microlog, CBL - 1994

**Stimulation:** Perf PC w/2 spf @ 1772'-85'. Total 26-0.375" holes. Frac w/144,000# 12/20 sand foam w/30# gel base fluid. ISICP=140 psi.

**Workover History:** 4/6/95: Swab well in.

**Production History:** PC cum = 261 MMCF. Recently well suddenly dropped in producing rate from 60 MCF/D to 15 MCF/D. The wellhead compressor was subsequently removed so the well is now making 0 MCF/D.

**PC CLEANOUT**

**GENERAL**

# WELLBORE DIAGRAM

## PC CLEANOUT

### FULLERTON FEDERAL #13-24 PC

1130' FSL & 1660' FWL (N) Sec. 13 T-27N, R11W

West Kutz Pictured Cliffs

San Juan County, New Mexico

PMP 5/15/01

Hole Size: 12-1/4"

Casing: 8-5/8", 24# J-55 @ 309'

w/510 cf cmt.

Circ 5 sx cmt

2-3/8" 4.7# J-55 tbg

@ 1794' w/SN @ 1763'

Hole Size: 7-7/8"

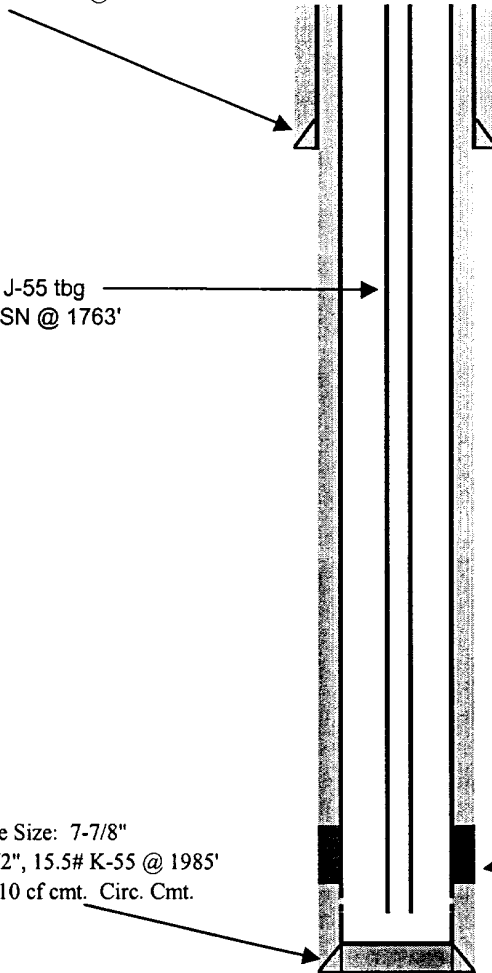
5-1/2", 15.5# K-55 @ 1985'

w/510 cf cmt. Circ. Cmt.

Perf PC @ 1772'-85' & frac w/144,000#  
12/20 sand in FOAM w/30# gel base  
fluid

1900' PBTB

1985' TD



**MARKWEST RESOURCES, INC.**  
**155 INVERNESS DRIVE WEST, SUITE 200**  
**ENGLEWOOD, COLORADO 80112**

**PROSPECT: ANGEL PEAK**  
**WELL NAME : FULLERTON FEDERAL #13-24 PC**  
**COUNTY :San Juan**  
**STATE : New Mexico**  
**LOCATION : N Sec.13 T27N R11W**  
**OPERATOR : MarkWest**

**AFE #**  
**WELL #: 13-24**  
**PROPOSED DEPTH: 1985' FT**  
**OBJECTIVE : PICTURED CLIFFS**  
**DATE : 5/15/01**  
**COMMENCEMENT DATE : 6/16/01**

**OVERALL PLAN: CLEAN OUT PC & REPAIR TBG**

**STEPS**

- 1 CHECK FOR FILL & PULL TBG
- 2 CLEAN OUT PC TO 1850'
- 3 RABBIT TBG IN HOLE & REPLACE ALL BAD JTS
- 4 RETURN WELL TO PRODUCTION

**CURRENT PC PRODUCTION (FROM CSG)**  
**ESTIMATED PC UPLIFT:**

**0 MCF/D**  
**60 MCF/D**

**INCREMENTAL ECONOMICS**  
**RATE OF RETURN**  
**PAYOUT**  
**P/1 (\$/\$N @10%)**

**SUMMARY OF ESTIMATED COSTS**

1980	INTANGIBLE WORKOVER COSTS	PICTURED CLIFFS
101	LOCATION	\$1,000
103	LABOR (WELDING, ETC.)	
104	ACIDIZING	
106	CASING CREW	
108	CEMENT	
109	PIPE INSPECTION	
201	WATER DISPOSAL	\$500
202	WORKOVER RIG (4 Days \$3,000/day)	\$12,000
203	PERFORATIONS	
203	CASED HOLE LOGS	
204	FUEL & WATER	\$500
205	FRAC WATER	
206	FRAC	
207	EQUIPMENT & TOOL RENTAL	\$500
209	FLOW TESTING	
210	TRANSPORTATION	\$500
212	COMPANY SUPERVISION	\$2,000
	COMPRESSION	\$4,000
217	ROUSTABOUT LABOR	\$500
218	MISC. (bits, float, strippers)	\$500
220	BATTERY CONSTRUCTION	
328	CONTINGENCIES (20%)	\$4,400
	SUBTOTAL INTANGIBLE WORKOVER	\$26,400
1910	TANGIBLE WORKOVER COSTS	
102	TUBING 200' OF 2-3/8" 4.7# J-55 EU @\$2.10/FT	\$420
102	TUBING 200' FO 3-1/2" 9.2# J-55 NUE @ \$3.85/FT	
152	WELLHEAD & VALVES	
208	DOWNHOLE VALVES & NIPPLES	
210	TREATER/SEPARATOR	
211	TANK BATTERY	
212	METERS	
213	SURFACE FITTINGS & FLOW LINE	
214	BUILDINGS	
215	FENCES-CATTLE GUARD	
216	OTHER (80 HP Wellhead Compressor)	
217	ANCHORS	
	CONTINGENCIES (15%)	\$63
	SUBTOTAL TANGIBLE WORKOVER	\$483
	TOTAL WORKOVER COSTS	\$26,883
	TOTAL AFE	\$26,883

PMP

APPROVALS:

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MARKWEST RESOURCES, INC.

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TITLE

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MARKWEST RESOURCES, INC.

\_\_\_\_\_  
TITLE

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MARKWEST HYDROCARBON, INC.

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TITLE