

WR-37
REV. 5/01

Date: 1/20/2016

Operator's Well Number	<u>Lawson Hamilton #3</u>		
	State	County	Permit
API Well No.:	<u>47-</u>	<u>019</u>	<u>00510</u>

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENT-OFFICE OF OIL AND GAS
PRE-OPERATION CERTIFICATE
FOR LIQUID INJECTION OR WASTE DISPOSAL WELL**

WELL OPERATOR EQT Production Company
Address 1710 Pennsylvania Avenue
Charleston, WV 25302

DESIGNATED AGENT _____
Address _____

GEOLOGICAL TARGET FORMATION U & L Weir Depth 2.524 feet(top) to 2664' feet(bottom)

Virgin reservoir pressure in target formation _____ psig

Source of information on virgin reservoir pressure: _____

Perforation intervals 2.524-2.544, 2604-2614, 2624-2634, 2654-2664

Open-hole intervals none

MAXIMUM PERMITTED INJECTION OPERATIONS

Well head injection pressure: 185 psig

Bottom hole pressure: _____ psig

Volume per hour: 100 bbl

DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED

Liquids to be injected for oil recovery: no changes

Wastes to be disposed of: no changes

Additives (Slurry mediums, inhibitors, solvents, oxidizers, deoxidizers, etc.) no changes

SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL existing well, no changes

ADDITIONAL DRILLING AS PART OF THE CONVERSION (Complete form WR-35)

DETAILS ON NEW CASING AND TUBING PROGRAM AS PART OF THE CONVERSION (To be completed below unless the new casing and tubing program is described on a form WR-35, submitted in connection with the permit to which this form WR-37 relates.)

CASING OR TUBING TYPE	SIZE	GRADE	WEIGHT PER FT.	NEW	USED	FOOTAGE USED IN DRILLING	FOOTAGE LEFT IN WELL	CEMENT USED	PACKERS (KIND, SIZE, DEPTH SET)
CONDUCTOR	_____	_____	_____	_____	_____	_____	_____	_____	_____
FRESH WATER	_____	_____	_____	_____	_____	_____	_____	_____	_____
COAL	_____	_____	_____	_____	_____	_____	_____	_____	_____
INTERMEDIATE	_____	_____	_____	_____	_____	_____	_____	_____	_____
PRODUCTION	_____	_____	_____	_____	_____	_____	_____	_____	_____
TUBING	_____	_____	_____	_____	_____	_____	_____	_____	_____
LINERS	_____	_____	_____	_____	_____	_____	_____	_____	_____

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MECHANICAL INTEGRITY TEST

Test Method: NOTE - EQT is requesting a drop in the Maximum Well Head Injection Pressure from 535 psig to 190 psig. The pipeline valves are rated at 285 #, and will not pass the required pipeline pressure test. Historically, the injection pressure stays below 90 psig. The MIT on well # 096211 was performed on 1/11/16 Big Justice Construction brought an 80 bbl water truck and began filling the 4-1/2" annulus at 9:00 AM. C&J Energy performed the pump test through a 2" port with 11-1/2 V-inch threads. They pressured up to 803 psig and held for 20 minutes. Terry Urban with the WVDEP Office of Oil and Gas witnessed the test. The chart and test procedure are attached.

Chuck Shafer

The undersigned certifies that the test was performed on 1/11/16, 20 16 and demonstrated mechanical integrity of the well. The test was witnessed by Terry Urban representing the Office of Oil and Gas.

Charles Shafer, *Chuck Shafer*
Well Operator

1/20/16
Date

THIS WELL IS AUTHORIZED FOR INJECTION.

Signed *Gene Smull* UIC PROGRAM DIRECTOR

Date 2/2/16

[NOTE: That the mechanical integrity of this well must be demonstrated again within ninety (90) days of five years from this date in order for injection to continue. Please notify the state inspector 24 hours in advance of the test].

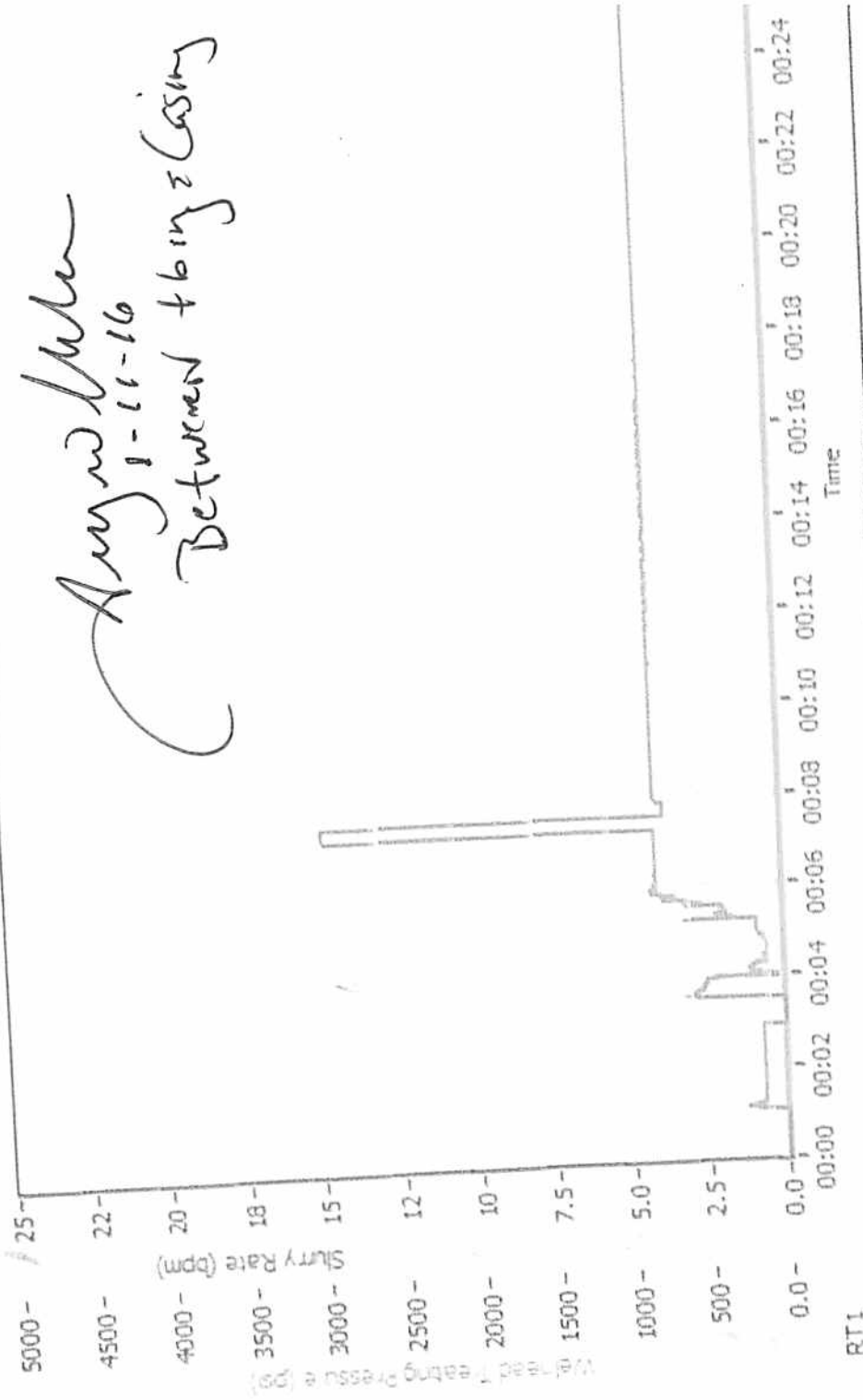
Chuck Shafer
Well Operator
By: *Chad Carmichael*
Its *Senior Environmental Coordinator*

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Fracture Report

SINGLE STAGE

SINGLE STAGE - Recorded Time Plot 1



SINGLE STAGE - Recorded Time Plot 1

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MIT Well Test Procedure

Directions:

Contact Chuck Shafer for directions.

Emergency Coordinates (For Helicopter):

Lat: 37.96522

Long: -81.30983

Status: Disposal Well

Well Information: Lawson Hamilton #3 (096211)

PBTD @ 2,764'

13-3/8" csg @ 76'

8-5/8" csg @ 1,642'

4-1/2" csg @ 6,348'

2-3/8" tbg @ 1,650' w/ packer at 1,600' (Baker AD-1)

Permitted for injection into Weir and Maxton formations from 1,653' to 2,664'.

Procedure:

1. Notify WV D.O.G. inspector Terry Urban at least 48 hours prior to integrity test.
2. 096211
 - a. MIRU 80 bbl water truck from Big Justice and pump truck from C&J Energy Services (Neighbors). Fresh water to have corrosion inhibitor (Alpha 3207 – 5 gal).
 - b. Load 4-1/2" csg with fresh water from Big J water truck. Allow trapped air to vent off fully prior to starting pressure test.
 - c. Pressure csg up to 803 psi with C&J pump truck and hold for 20 minutes. Record pressure during test.
 - d. RDMO Big Justice and C&J Energy.

Regional Manager – Joey Stumbo (606) 213-2904

Lead Assistant Superintendent – Chuck Shafer (304) 348-5333

Assistant Superintendent – Rick Adkins (304) 561-4558

Engineer – Shaun Murray (304) 266-3038

Environmental – Chad Carmichael (304) 539-8892

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