

**BEFORE THE STATE CORPORATION COMMISSION  
OF THE STATE OF KANSAS**

In the Matter of the Application of )  
TDR Construction, Inc. to Authorize ) Docket No. 19-CONS-3167-CUIC  
Injection of Saltwater into the )  
Squirrel Formation at the McCoy ) CONSERVATION DIVISION  
#4WA, #8W, and #9W Wells Located )  
in Section 32, Township 15 South, ) License No. 32218  
Range 21 East, Franklin County, )  
Kansas. )

**PREFILED TESTIMONY OF SCOTT YEARGAIN**

1. Q. Please state your name and address.

A. My name is Scott Yeargain; I reside at 2263 Nevada Road, Ottawa, Kansas 66067.

2. Q. Summarize your education and background.

A. My degrees are from the University of Missouri-Columbia: BA with Honors; MA, and PhD. All degrees are in philosophy. The BA minors are in chemistry and mathematics; the PhD minor is mathematics. I am retired. I am 77 years of age. I taught philosophy in a college in Kansas (Johnson County Community College) for 33 years (until retirement). I held an assistantship in philosophy at the University of Missouri-Columbia during graduate school. In addition, I was a bench-chemist, part time, in the Pathology Department at the University of Missouri-Columbia School of Medicine from 1967-1971. In my adult life I have been involved in a family farming operation in Audrain county, Missouri. In Kansas we own a small farm, 47 acres, in Franklin county. My wife is involved in a family farming operation (1,000 acres) in Ouachita Parish, Louisiana. In addition, my wife and I own rental properties in Prairie Village, Kansas, Leawood, Kansas, and Franklin county, Kansas.

1 3. Q. Summarize your qualifications and experience which are relevant to this  
2 testimony.

3 A. I was trained sufficiently in chemistry and mathematics to qualify for the  
4 part-time chemistry position in the Pathology lab at the University of  
5 Missouri-Columbia school of medicine. I did routine titrations, dilutions,  
6 determinations of concentrations of substances (bilirubin in blood  
7 serum, blood urea nitrogen in serum, and so on) in solution, and so on. I  
8 held this position while in graduate school. Also, I was appointed by the  
9 Kansas Water Office in 2014 to a position on the Governor's 50-Year  
10 Vision for Water in Kansas Committee; I was one of several people so-  
11 appointed who set long-range goals for the Marais des Cygnes  
12 watershed. Since 2016 I have been a member of the Regional Advisory  
13 Committee for the Marais des Cygnes Watershed, a committee which  
14 advises the Kansas Water Office regarding needs and goals for this  
15 watershed. My training in philosophy helps also. Formal training in  
16 philosophy teaches one to put a critical eye on complex argument  
17 structures, mostly regarding logical coherence.

18 4. Q. What sponsors your interest in these dockets?

19 A. I'll start with the Applicant's pre-filed testimony. Mr. Town says "I am a  
20 third generation oil producer and have been around the oil business my whole  
21 life." My thinking is that we cannot keep doing things our parents, grandparents,  
22 great-grand parents did. This is what our progenitors have endowed us: we must  
23 add increased amounts of fertilizer to field crops to produce paying yields. This is  
24 related to diminished organic content in field soils. The mercury content in  
25 bottom-feeding fish, like catfish, in Kansas farm ponds, like my pond, is  
26 sufficiently high for Kansas Fish and Game to advise fishermen to curtail the  
27 frequency by which they eat the fish from Kansas ponds and rivers. Algae blooms  
28 in Kansas reservoirs and ponds are a chronic health and water quality issue for  
29 KDHE because of nutrient migration into water bodies, largely nitrogen and  
30 phosphate. These chronic blooms are related to heavy fertilizer loading to  
31 compensate for diminished organic matter in soils. The fecal coliform content of  
32 the Marais des Cygnes river above Franklin County Rural Water #6 is so high that  
33 chlorine is added in quantities which in turn cause violative TTHM and haloacetic  
34 acid readings in that public water supply. These high fecal coliform issues are

1 linked to the large numbers of confined animal feeding operations in the  
2 watershed. When the EPA mandated water body monitoring following passage of  
3 the Safe Drinking Water Act the KDHE began reporting water quality on all the  
4 major watersheds in the state. In 2000, the date of the initial assessment for the  
5 Marais des Cygnes watershed, The KDHE reported that 50.6% of the stream  
6 segments in this watershed were impaired for their designated uses. You see the  
7 narrative. Our farming practices, industrial practices are killing pollinators,  
8 extinguishing species, filling our water impoundments with silt. I am not a third-  
9 generation oil man who wants to keep doing the same thing my grandfather did.  
10 Oil production is an extractive process, not sustainable, not regenerative. The  
11 economic paradigm of oil production in my county, Franklin, is the economic  
12 paradigm of small towns in Kansas, including Ottawa, the closest town to our  
13 farm. The largest retailer in Ottawa is Wal-Mart. Wal-Mart extracts capital from  
14 the town. It is a negative balance of payments for the town. The largest number  
15 of restaurants are franchise operations: profits leave town. These are extractive  
16 businesses. Like all extractive processes, operations continue until the thing is  
17 used up. Measures of “used up” in this domestic population are drug use,  
18 domestic abuse rates, household income, retirement savings, standardized test  
19 scores, rates of teenage pregnancy. Really, a requirement for becoming a  
20 commissioner at the KCC ought be to read Donald E. Worster’s Shrinking the  
21 Earth: The Rise and Decline of American Abundance, Oxford University Press,  
22 2016. Worster was the Hall Distinguished Professor of American History at the  
23 University of Kansas and his book attributes the “greatness of America” to using  
24 up the continent’s fisheries, forests, soils, waters, and grasses. Now we’re like  
25 everyone else: fighting over what’s left. And that is what this docket is about.  
26 Here’s what I know: all the protestants in this docket live in rural areas; we  
27 believe we cannot keep doing “business as usual.” My wife and I, on a small scale,  
28 the Mettenburgs, on a much larger scale, run cows and calves on pastures on  
29 which we do not put fertilizers. We’ve stopped using back-pours on our cattle in  
30 order to grow populations of scarab beetles, family *Scarabaeidae*, in the soil,  
31 which, in turn, increase the organic content of the soil; when tilth increases, water  
32 run-off in heavy rain diminishes; the cow shit stays put because the beetles bury it  
33 in the soil. These are not extractive processes. We still make money. I believe  
34 Kansas will become a wasteland of salted soils, spoiled rivers, if we do business as  
35 usual. If one examines the state of the aquifers, the water impoundments, the

1 watersheds I think the evidence supports my belief. Donald Worster also thinks  
2 the evidence supports by belief.

3 5. Q. You make claims in your protest about the possibility of abandoned wells  
4 existing in the vicinity of both the McCoy lease and the Superior lease. On what do  
5 you base your claims?

6 A. The Kansas Corporation Commission, in its 2019 Abandoned Oil and Gas  
7 Well Status, Annual Report, states that there exist 21,922 records of abandoned  
8 wells in Kansas. 6,046 of these wells are designated as "Other." "Other" refers to  
9 wells which have been removed from the list of "Wells Requiring Action." I make  
10 an inference here with regard to which I cannot supply a metric and to which I  
11 think the KCC cannot supply a metric: a percentage of these 6,046 wells "not  
12 requiring action" actually require action. I make this inference because I believe  
13 that abandoned well coordinators do, at times, "spot plug" abandoned wells. I  
14 mean by this that the coordinator will cement the bottom 20 ft. of a string, the  
15 top 20 ft. of a string, and the remaining string between the cemented portions  
16 remains hollow or filled with water or debris. Affidavits from coordinators, field  
17 notes, and a statistically accurate sampling methodology of the 6,046 wells might  
18 disabuse me of such inference. If "spot plugged" does characterize a portion of  
19 these 6,046 wells then such wells are a risk to fresh and usable waters by virtue  
20 cathodic processes, increased pore pressure in surrounding geologic strata due to  
21 pressurized EOR activities, and simple oxidation-reduction processes. Of 21,922  
22 wells in the 2019 Annual Report, 19,325 of these wells are reported to be in  
23 District 3, the district in which I live, my wife and I have a modest financial  
24 investment (\$1.3-1.4 million, in two counties), and where our children and  
25 grandchildren visit. In the section in which the Superior lease is located, the 2019  
26 Annual Report indicates 5 Priority 1, Level B wells, which are a groundwater risk,  
27 requiring action. In Miami county, section 3, township 16S, range 21E, the section  
28 contiguous with the Franklin county section 10, township 16S, range 21 E, and  
29 immediately to the east, one finds 9 abandoned wells, all groundwater threats, all  
30 Priority 1, Level C wells. Here is KCC's definition of Priority 1, Level C,  
31 groundwater-listed wells: "Wells located outside designated sensitive  
32 groundwater areas which have potential impacts to groundwater supplies or loss  
33 of water resources through downward drainage." Here is KCC's definition of  
34 Priority 1, Level B, groundwater-risk wells: "Wells creating ongoing or potential

1 impacts to groundwater supplies through water quality degradation or loss of  
2 water supplies through downward drainage. Wells may be located within a  
3 designated sensitive groundwater area. Includes wells with impacts to  
4 groundwater supplies outside of public water supply areas and cases of strong  
5 potential for subsidence.”

6 5. Q. The wells referenced in section 4 above are not in the Superior lease.  
7 Hence, what is your concern?

8 A. My concern is this: abandoned wells exist which are not on “the list,” i.e., not  
9 in the KCC’s 2019 Report. Here is an instance of such: If one looks at KGS records  
10 for well API # 15-059-26584 in the Jensen lease in Franklin county it is described  
11 as “producing.” The last production noted at the KGS for this well is 2016. In  
12 Docket No. 17-CONS-3633-CPEN the KCC describes this well as “abandoned.” This  
13 well does not appear on any abandoned well listed reported to the legislature.  
14 Further, in a formal complaint to the KCC, 19-CONS-3204-CMSC, received by the  
15 KCC on December 6<sup>th</sup>, 2018, Judith L. Wells states that “The January 2018  
16 Abandoned Wells Report required by K.S.A. 55-194 did not include any of the 483  
17 wells that Butler Petroleum abandoned.” (Section 3) Also, I do not find these  
18 wells in the 9019 report to the legislature.

19 Here is further evidence of abandoned wells which fail to appear in the  
20 KCC’s annual report to the legislature regarding. On January 9, 2018 I protested  
21 an application for injection permits for Blunk I-10 and I-11 wells in Franklin  
22 county. The docket in this protest is 18-CONS-3273-CUIC. On March 15, 2018 this  
23 docket was closed due the withdrawal by JTC, Inc., the applicant, of the request  
24 for permit. Today, March 11, 2019, on the KGS interactive map, the status of  
25 Blunk I-10 and Blunk I-11 is describe as “UIC application withdrawn.” The wells  
26 appear on no report to the legislature as “abandoned.” My conclusion is that the  
27 KCC is in violation of its fiduciary responsibilities to declare these wells as  
28 “abandoned” since they have been idle for a year. I see no evidence of a permit  
29 request by JCT for a temporary abandonment permit or for a permit to plug these  
30 wells. My evidence is that these wells are “de facto” abandoned but not so  
31 reported.

32 In addition, the Interstate Oil and Gas Compact Commission’s 2008 “Orphaned  
33 Well Survey Data” revised 02/19/2010 (Attachment A) indicates

undocumented/unidentified orphan wells at 20,000-40,000. KCC's 2019 Annual Report identifies 21,922 such wells which is in the range of the IOGCC's survey data but in the bottom 10% of the range. If one were to pick the midpart of IOGCC's survey data, one discovers the number of undocumented and orphaned wells in Kansas to be 30,000, which is 36.8% higher than the KCC's 2019 Report indicates. I attempted to find the provenance of IOGCC's data by a phone call to the Commission's offices in Oklahoma. I did not get the answer. It's not unreasonable to think that the provenance of such data regarding Kansas' orphaned wells is the KCC since Kansas is a member state of the IOGCC and since the KCC is the state agency authorized by statute to monitor, regulate, inventory, and supervise plugging of such wells. If one examines the age of the leases and the spudding dates of the wells in the sections in which the wells for which permit is sought in these two dockets one can reasonably conclude that undocumented/unidentified orphan wells may exist in these sections.

6. Q: Are there other concerns regarding risk to fresh and usable water in the McCoy and Superior leases?

A: Yes. In the Superior lease, I examined the plugging report of well #1 in the Dorsey lease. This well was plugged by a KCC technician on or about January 8, 2007. No spud date exists for this well. The technician washed the 1" string to 15 ft. He then moved in a drill rig and drilled to 260 ft. There he says "hit steel." He then ran 1" pipe to 260 ft and pumped Portland cement to surface; he then pulled the 1" pipe and topped off the well. (See Attachment B) Here is my conclusion. Well #1 in the Dorsey lease had concrete pumped to 260 ft. in January of 2007. Below 260 ft. the condition of the well's stringer is unknown. I'll assume a 5" drilling bit drilled out the cement hit at 15' and drilled to 260 ft. Now, these questions: did the cement hit at 15' depth indicate that the well had already been plugged? No one knows. Using some elementary math one finds that a 5" diameter column at 260 ft is 35.6 cu. ft. Assuming one 80 lb. sack of Portland cement produces 0.6 cu. ft. of concrete, one can conclude that 59.3 sacks of Portland will fill the column. So, where did the remaining 102.7 sacks go? 162 sacks will fill a 5" dia. 710 ft. in length, assuming 1 sack yields 0.6 cu. ft. Can we safely assume 102.7 sacks filled the old stringer and then poured into the old producing zone? Probably not no one knows the condition of the steel found at 260 ft. If this steel were sufficiently oxidized then a 1,000 psi concrete pump may

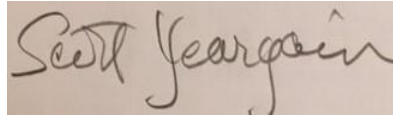
1 have ripped open the old stringer at any place and the concrete have just poured  
2 into a zone adjacent to the stringer. Or, at the 260 ft. depth the old stringer may  
3 have been plugged and the 102.7 sacks of Portland simply was forced into the  
4 surrounding geologic strata. Now one knows. These are the unknowns which  
5 characterize the "protection of fresh and usable water" under the current  
6 protocols in the Superior and McCoy lease. In the application for I-1 in Superior  
7 applicant indicates 200 ft. in the section "Deepest Usable Water." I conclude,  
8 based on the technician's description of the plugging experience with the Dorsey  
9 #1 well, that the old Dorsey #1 stringer may be within 60 vertical ft. of the  
10 deepest usable water. The Superior I-1 well lies 63 ft. east of the Dorsey #1 well  
11 and 219 ft. north of Dorsey #1. At 650 psig, the pressure for which applicant  
12 seeks permit, no one knows what will happen at the old Dorsey #1. Staff in the  
13 Conservation Division will make a guess. Here is a more interesting plugging  
14 report close to the Superior I-1 well. Lying 230.85 ft. to the south-south east of  
15 Superior I-1 is well 1-A in the Deitche lease. API is 15-059-01210-00-00. The  
16 plugging report was received by the KCC on July 20, 2009. The proposal was  
17 received from a Richard Hermann with C&R Well Service. The proposed action  
18 was "Fill well with cement from bottom to surface." Here is the actual plugging  
19 report: "Run 1-inch tubing into well and fill full with 10 sacks of Portland cement  
20 from 30 feet to surface. Top off well with cement and cut off casing below  
21 surface." I conclude that this well is plugged to 30 ft. below surface. This well  
22 includes no report regarding its original depth. The plugging apparently was not  
23 supervised by a KCC technician. I see no data to suggest that this well was  
24 originally a dry hole 30 ft. in depth. My conclusion is that no one knows what's  
25 below the 30 ft. concrete column into which C&R Well service placed 10 sacks of  
26 Portland cement. In this circumstance, a permit by TDR to pressure Superior I-1  
27 at 650 psig for 500 bbls/day in perpetuity is an unacceptable risk to fresh and  
28 usable water, most especially the waters of Hickory Creek, a tributary of the  
29 Marais des Cygnes, and the intake pipe of RWD6 public water supply.

30 7. Q. Do you have concerns regarding the Mechanical Integrity Test required by  
31 the KCC?

32 A. Yes. KCC regulations mandate a MIT test of 300 psig. Applicant requests a  
33 pressure of 600 psig for the McCoy lease and a pressure of 650 psig in the  
34 Superior lease. I have never witnessed a scientific protocol in which the

1 experimental conditions were outside the approved range of the testing protocol.  
2 Stated another way: here is are applications for permits for a procedure for  
3 which no tests are conducted. No tests are conducted for the mechanical  
4 integrity of the pressurized string beyond 300 psig. This is bad science. Look, for  
5 instance at the State of Colorado Oil and Gas Conservation Commission Form 21.  
6 Item #4 in the protocols for the MIT test states: "New injection wells must be  
7 tested to maximum requested injection pressure." (Attachment C) Or look at  
8 Form H-5 of the Railroad Commission of Texas, Oil and Gas Division (Pressure Test  
9 Report). In the instructions section, #4 (c) one reads "The casing test pressure  
10 must be at least equal to the maximum authorized injection pressure or 500 psig,  
11 whichever is less, but no less than 200 psig." (Attachment D) I conclude that the  
12 KCC is not just out of conformity with good scientific practice, but the MIT  
13 protocol is much less rigorous than those of two other oil-producing states.

14  
15 Respectfully submitted,  
16

17   
18

19 Scott Yeargain  
20 2263 Nevada Road  
21 Ottawa, Kansas 66067  
22 785-418-7615  
23  
24

25 **CERTIFICATE OF SERVICE**  
26

27 I certify that a true copy of the above and foregoing was served to the following  
28 parties electronically on February 28<sup>th</sup>, 2019.  
29



1 Jonathan R. Myers  
2 [j.myers@kcc.ks.gov](mailto:j.myers@kcc.ks.gov)

Lauren Wright  
[l.wright@kcc.ks.gov](mailto:l.wright@kcc.ks.gov)

3

4

5 Keith A. Brock  
6 [kbrock@andersonbyrd.com](mailto:kbrock@andersonbyrd.com)

Jake Eastes  
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16 Lisa Jewell  
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18

19

20 **ATTACHMENT A**

21

# ATTACHMENT A

To: 3

STATE CORPORATION COMMISSION  
Wichita State Office Bldg. - PLUGGING SECTION  
130 S. Market, Room 2078  
Wichita, Kansas 67202

TECHNICIAN'S PLUGGING REPORT

Operator License # 101

Operator: STATE OF KANSAS

Name & FEE FUND

Address \_\_\_\_\_

AB oil well X Gas Well \_\_\_\_\_ SWD Well/ Input Well \_\_\_\_\_

Other well as hereinafter indicated: \_\_\_\_\_

Plugging Contractor: K-W OIL WELL SERVICES, INC. Lic. # 3097

Address: 19450 FORD ROAD CHANUTE, KS. 66720

Company to plug at: Hour: \_\_\_\_\_ Day: \_\_\_\_\_ 8 Month: SEPT 2006

Plugging proposal received from: SAM KEPLEY

Company Name: K-W OILWELL SERVICES, INC. Phone: 620-496-7173

Were: PLUG WELL WITH PORTLAND CEMENT TO TO SURFACE

API NUMBER 15-059- 01007-00-00  
NENWNE Sec/Tap/Rge 10-16S-21E  
4692 feet from south section line  
1560 feet from east section line

Lease/Well# EGDORSEY 1 ~~SPS EGDORSEY~~  
County FRANKLIN  
Well Total Depth 650 EST. feet  
Production Pipe: \_\_\_\_\_ Size Feet 650 EST  
Surface Casing: 8 Size Feet 20 EST.  
D & A \_\_\_\_\_

Plugging Proposal Received by: FRANK GUILFOYLE

Plugging attended by Agent: All \_\_\_\_\_ Part X TECHNICIAN  
Operations Completed: Hour: \_\_\_\_\_ Day: \_\_\_\_\_ 18 Month: DEC 2006

Actual Plugging Report: DIG AND LOCATE WELL. SET SURFACE. WASH 1" TO 15 FT. HIT CEMENT. MOVE IN DRILL RIG AND START DRILLING. DRILL TO 260 FT. HIT STEEL. PULL DRILL PIPE AND RUN 1" TO 260 FT. PUMP PORTLAND CEMENT TO SURFACE. PULL PIPE AND TOP OFF WELL. PUMP TOTAL OF 162 SACKS OF CEMENT. WELL PLUGGED.

Remarks: CONTROL NO. 20060050-035 GPS # EGD13 CONTRACT NO. 09378  
(If additional description is necessary, use BACK of this form.)

I DID NOT observe this plugging

RECEIVED  
KANSAS CORPORATION COMMISSION  
JAN 08 2007

Signed: FRANK GUILFOYLE  
TECHNICIAN

PKT

## ATTACHMENT B

2  
3  
4

Attachment Click here to reset the form

FORM 21 Rev 9/14

State of Colorado  
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)-894-2100 Fax: (303)-894-2100

**MECHANICAL INTEGRITY TEST**

1. Duration of the pressure test must be a minimum of 15 minutes.
2. An original pressure chart must accompany this report if this test was not witnessed by a OGCC representative. Injection wells tests must be witnessed by an OGCC representative.
3. For production wells, test pressures must be a at minimum of 300 psig.
4. New injection wells must be tested to maximum requested injection pressure.
5. For injection wells, test pressures must be at least 300 psig or average injection pressure, whichever is greater.
6. A minimum 300 psi differential pressure must be maintained between the tubing and tubing/casing annulus pressure.
7. Do not use this form if submitting under provisions of Rule 326.a.(1) B. or C.
8. OGCC notification must be provided 10 days prior to the test via Form 42.
9. Packers or bridge plugs, etc., must be set within 100 feet of the perforated interval to be considered a valid test.

OGCC Operator Number: _____	Contact Name: _____
Name of Operator: _____	No: _____
Address: _____	Email: _____
State: _____	Zip: _____

# ATTACHMENT D

**Attachment D**

**RAILROAD COMMISSION OF TEXAS**  
Oil and Gas Division  
Disposal/Injection Well  
Pressure Test Report

**Form H-5**  
(06/03/95)

NO INSTRUCTIONS ON BACK.  
PLEASE TYPE OR PRINT

OPERATOR'S NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

FIELD NAME (Exactly as shown on permit schedule) \_\_\_\_\_

EASE NAME \_\_\_\_\_

REASON FOR TEST \_\_\_\_\_

Initial Test Prior to Injection \_\_\_\_\_

After Workover \_\_\_\_\_

Annual Test Required By Permit \_\_\_\_\_

Five-Year Test Required By Rule \_\_\_\_\_

Other (Specify) \_\_\_\_\_

13. DATE OF TEST \_\_\_\_\_

14. RETEST? ☐ YES ☐ NO  
If YES, see Instructions No. 5

15. WELL COMPLETION \_\_\_\_\_  
Surface Casing \_\_\_\_\_  
Long String Casing \_\_\_\_\_  
Tubing \_\_\_\_\_

16a. PACKER MAKE AND MODEL \_\_\_\_\_

16b. DEPTH SET \_\_\_\_\_

17. AUTHORIZED INJECTION PRESSURE (PSIG) \_\_\_\_\_

18a. COMPLETED INJECTION INTERVAL  
Top \_\_\_\_\_ Bottom \_\_\_\_\_

18b. COMPLETED INJECTION INTERVAL  
Top \_\_\_\_\_ Bottom \_\_\_\_\_

19. PRESSURE (PSIG) (see Instructions 4(c) and 4(d))

TIME	TUBING	CASING	SURFACE CSG.
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

20. CHARACTERISTICS OF INJECTION FLUID  
(see Instruction 4(c))

21. CHARACTERISTICS OF ANNULUS FLUID  
(see Instructions 4 (e) and 4(f))

22. WITNESSED BY RRC? ☐ YES ☐ NO  
(see Instruction 4(a))  
Name of RRC Representative \_\_\_\_\_

23. WERE OTHER TESTS/SURVEYS PERFORMED AT THIS TIME? ☐ YES ☐ NO If YES, List: \_\_\_\_\_

24. OTHER COMMENTS ON TEST (attach separate sheet if necessary)



WHERE TO FILE - File in duplicate, including any attachments, with the appropriate District Office.

**TEST REQUIREMENTS -**

(a) A pressure recorder must be used for all tests. The pressure recording chart must be signed by the operator's field representative. The pressure recording chart must be filed with this form for any test not witnessed by a Railroad Commission representative. The maximum range of the pressure recording chart must be such that the casing test pressure falls within 30-70% of full scale. If a circular pressure recording chart is used, the clock on the pressure recorder must not exceed 24 hours.

(b) A pressure gauge must be used when taking pressure readings to be entered in Item 19. The maximum range of the pressure gauge must be such that the casing test pressure falls within 30-70% of full scale. The precision of the pressure gauge must be such that the minimum pressure increment is no more than 5% of the test pressure required by Instruction 4(c).

(c) The casing test pressure must be at least equal to the maximum authorized injection pressure or 500 psig, whichever is less, but no less than 200 psig. For wells equipped for injection through tubing and packer, a pressure differential of at least 200 psig must exist between the tubing-casing annulus pressure and any tubing pressure.

(d) The test must be conducted for a period of no less than 30 minutes. A longer test may be required at the discretion of the District Office. For longer tests, pressure readings must be taken at least every 30 minutes. Pressure readings must be entered in Item 19.

(e) If any pressure anomaly occurs during the pressure test, list the characteristics (such as temperature and specific gravity) of the injection fluid (Item 20) and the fluid in the annulus (Item 21) necessary to explain the anomaly.

(f) If the annulus is not loaded with fluid for the test, explain in Item 21.

**RETEST REQUIREMENTS -** If a retest is being performed as a result of a previous test failure, give the date of last unsuccessful test and explain any remedial action that was taken to prepare the well for retest (casing repair, tubing and/or packer replacement, etc.). Explain in Item 24.

**REFERENCE:** Statewide Rules 9 and 46

## VERIFICATION

I, Scott Yeargain, state that I am the witness identified in the foregoing Pre-filed  
Testimony of Scott Yeargain; that I have read the above and foregoing; and that the  
statements therein contained are true according to my knowledge, information, and belief.

Scott Yeargain  
Signature

Subscribed and sworn to before me this 10<sup>th</sup> of March 2019

Elizabeth Jewell  
Notary Public Signature

