



STATE OF MISSOURI
MISSOURI DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY PROGRAM
INJECTION WELL PERMIT APPLICATION
(TO DRILL, DEEPEN, PLUG BACK, OR CONVERT AN EXISTING WELL)

FORM OGC-31

NOTE ▶ Permit approval for drilling only, not injection. Approval or denial for injection determined after Mechanical Integrity Test results reviewed and official notification given.

APPLICATION TO DRILL DEEPEN PLUG BACK FOR AN OIL WELL OR GAS WELL

NAME OF COMPANY OR OPERATOR Kansas Resource Exploration & Development, LLC		DATE 08/06/2012	
ADDRESS 9393 W 110th Street, Suite 500	CITY Overland Park	STATE KS	ZIP CODE 66210

DESCRIPTION OF WELL AND LEASE

NAME OF LEASE Belton Unit	WELL NUMBER ADI 10-2	ELEVATION (GROUND) 1083
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WELL LOCATION (GIVE FOOTAGE FROM SECTION LINES)
2192 ft. from North South section line 1690 ft. from East West section line

WELL LOCATION Sec. <u>9</u> Township <u>46</u> North Range <u>33</u> <input type="checkbox"/> East <input checked="" type="checkbox"/> West	LATITUDE <input checked="" type="checkbox"/> N38 49' 22.762"	LONGITUDE <input checked="" type="checkbox"/> W94 34' 20.225"	COUNTY Cass <u>037</u>
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NEAREST DISTANCE FROM PROPOSED LOCATION TO PROPERTY OR LEASE LINE 448 FEET ✓
 DISTANCE FROM PROPOSED LOCATION TO NEAREST DRILLING, COMPLETED OR APPLIED - FOR WELL ON THE SAME LEASE 6 FEET ✓

PROPOSED DEPTH <u>650 feet</u>	ROTARY OR CABLE TOOLS Rotary	DRILLING CONTRACTOR, NAME AND ADDRESS Utah Oil, LLC	APPROX. DATE WORK WILL START 09/10/2012
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NUMBER OF ACRES IN LEASE 560	NUMBER OF WELLS ON LEASE INCLUDING THIS WELL, COMPLETED IN OR DRILLING TO THIS RESERVOIR <u>124</u>
	NUMBER OF ABANDONED WELLS ON LEASE <u>0</u>

IF LEASE PURCHASED WITH ONE OR MORE WELLS DRILLED, FROM WHOM PURCHASED? NAME <u>DE Exploration</u> ADDRESS <u>4595 Highway K33, Wellsville, KS 66092</u>	NO. OF WELLS PRODUCING <u>71</u> INJECTION <u>44</u> INACTIVE <u>8</u> ABANDONED <u>0</u>
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STATUS OF BOND	<input type="checkbox"/> SINGLE WELL AMOUNT \$ _____	<input checked="" type="checkbox"/> BLANKET BOND AMOUNT \$ <u>160,000</u>	<input checked="" type="checkbox"/> ON FILE <input type="checkbox"/> ATTACHED
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REMARKS: (IF THIS IS AN APPLICATION TO DEEPEN OR PLUG BACK, BRIEFLY DESCRIBE WORK TO BE DONE, GIVING PRESENT PRODUCING/INJECTION ZONE AND EXPECTED NEW INJECTION ZONE; USE BACK OF FORM IF NEEDED)

R ~230' below TD
 W 110th - 44' el.

SPECIAL PROJECT

PROPOSED CASING PROGRAM				APPROVED CASING - TO BE FILLED IN BY STATE GEOLOGIST			
AMOUNT	SIZE	WT/FT	CEM.	AMOUNT	SIZE	WT/FT	CEM.
20'	7"	14	8 sks	20'	7"	14	Full Length
650'	2 7/8"	6.5	100 sks	650'	2 7/8"	6.5	Full Length

I, the Undersigned, state that I am the COO of the KREd (Company), and that I am authorized by said company to make this report, and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct, and complete to the best of my knowledge.

SIGNATURE <u>BK</u>	DATE <u>10/10/12</u>
------------------------	-------------------------

PERMIT NUMBER <u>21009</u>	<input checked="" type="checkbox"/> DRILLER'S LOG REQUIRED	<input checked="" type="checkbox"/> E-LOGS REQUIRED IF RUN
APPROVED DATE <u>12-19-12</u>	<input checked="" type="checkbox"/> CORE ANALYSIS REQUIRED IF RUN	<input checked="" type="checkbox"/> DRILL SYSTEM TEST INFO REQUIRED IF RUN
APPROVED BY <u>Joseph A. [Signature]</u>	<input checked="" type="checkbox"/> SAMPLES REQUIRED - <u>one core per section (most extensive core)</u>	<input type="checkbox"/> SAMPLES NOT REQUIRED
	<input type="checkbox"/> WATER SAMPLES REQUIRED AT _____	

NOTE ▶ THIS PERMIT NOT TRANSFERABLE TO ANY OTHER PERSON OR TO ANY OTHER LOCATION. APPROVAL OF THIS PERMIT BY THE OIL AND GAS COUNCIL DOES NOT CONSTITUTE ENDORSEMENT OF THE GEOLOGIC MERITS OF THE PROPOSED WELL NOR ENDORSEMENT OF THE QUALIFICATIONS OF THE PERMITTEE

I, Leech of the Utah (Company), confirm that an approved drilling permit has been obtained by the owner of this well. Council approval of this permit will be shown on this form by presence of a permit number and signature of authorized council representative.

DRILLER'S SIGNATURE

B. Leach

DATE

10/9/12

PROPOSED OPERATIONS DATA

PROPOSED AVERAGE DAILY INJECTION,	PRESSURE <u>300</u> PSIG, RATE <u>.035</u> BPD <u>(GPM)</u> VOLUME <u>50</u> <u>(BBL)</u> /GAL
APPROVED AVERAGE DAILY INJECTION, (TO BE FILLED IN BY STATE GEOLOGIST)	PRESSURE <u>300</u> PSIG, RATE <u>.035</u> BPD/GPM, VOLUME <u>50</u> BBL/GAL
PROPOSED MAXIMUM DAILY INJECTION,	PRESSURE <u>300</u> PSIG, RATE <u>.035</u> BPD <u>(GPM)</u> VOLUME <u>50</u> <u>(BBL)</u> /GAL
APPROVED MAXIMUM DAILY INJECTION, (TO BE FILLED IN BY STATE GEOLOGIST)	PRESSURE <u>300</u> PSIG, RATE <u>.035</u> BPD/GPM, VOLUME <u>50</u> BBL/GAL

ESTIMATED FRACTURE PRESSURE GRADIENT OF INJECTION ZONE 0.43 PSI/FOOT

DESCRIBE THE SOURCE OF THE INJECTION FLUID Squirrel sandstone produced water and rural water

NOTE ▶ SUBMIT AN APPROPRIATE ANALYSIS OF THE INJECTION FLUID. (SUBMIT ON SEPARATE SHEET)

DESCRIBE THE COMPATIBILITY OF THE PROPOSED INJECTION FLUID WITH THAT OF THE RECEIVING FORMATIONS, INCLUDING TOTAL DISSOLVED SOLIDS COMPARISONS

We have been using these injection fluids since the waterflood began with no issues. The formations respond to injection fluids. The injection fluids consist of recycled formation water and fresh water.

GIVE AN ACCURATE DESCRIPTION OF THE INJECTION ZONE INCLUDING LITHOLOGIC DESCRIPTIONS, GEOLOGIC NAME, THICKNESS, DEPTH, POROSITY, AND PERMEABILITY.

The upper, middle, and lower Squirrel Sandstone depth ranges from 500-600 feet with an average thickness of 90 feet. The upper Squirrel is generally 30 feet thick with 21% average porosity and 172 millidarcy's average permeability. The middle Squirrel is generally 20 feet thick with 22% average porosity and 1,000 millidarcy's average permeability. The lower Squirrel is generally 40 feet thick with 20.5% average porosity and 593 millidarcy's average permeability.

GIVE AN ACCURATE DESCRIPTION OF THE CONFINING ZONES INCLUDING LITHOLOGIC DESCRIPTION, GEOLOGIC NAME, THICKNESS, DEPTH, POROSITY, AND PERMEABILITY.

The confining layers of the Squirrel Sandstone consist of the the Fort Scott group above the sandstone and the Verdigris formation below the sandstone. The Fort Scott contains two prominent shales, the Blackwater Creek and the Excello, as well as the Blackjack Creek limestone that has a total thickness of 30-50 feet. The Verdigris formation consists of the the Ardmore limestone member and the Oakley shale with a total thickness of 20-40 feet. The zones are impermeable at less than 3% porosity.

SUBMIT ALL AVAILABLE LOGGING AND TESTING DATA ON THE WELL

GIVE A DETAILED DESCRIPTION OF ANY WELL NEEDING CORRECTIVE ACTION THAT PENETRATES THE INJECTION ZONE IN THE AREA OF REVIEW (1/2 MILE RADIUS AROUND WELL). INCLUDE THE REASON FOR AND PROPOSED CORRECTIVE ACTION.

No corrective action needed.

Benjamin Lease KRED

33 W.

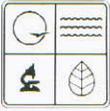
ADI 10-2

AD-20 (400#)

AD 16-2 (400#)

AD 9-2 (400#)





STATE OF MISSOURI
 MISSOURI DEPARTMENT OF NATURAL RESOURCES
 GEOLOGICAL SURVEY PROGRAM
INJECTION WELL LOCATION PLAT

RECEIVED

AUG 10 2012

FORM OGC-41

Mo Oil & Gas Council

OWNER'S NAME
 Kansas Resource Exploration & Development, LLC (K.R.E.D)

LEASE NAME
 Belton Unit - ADI 10-2

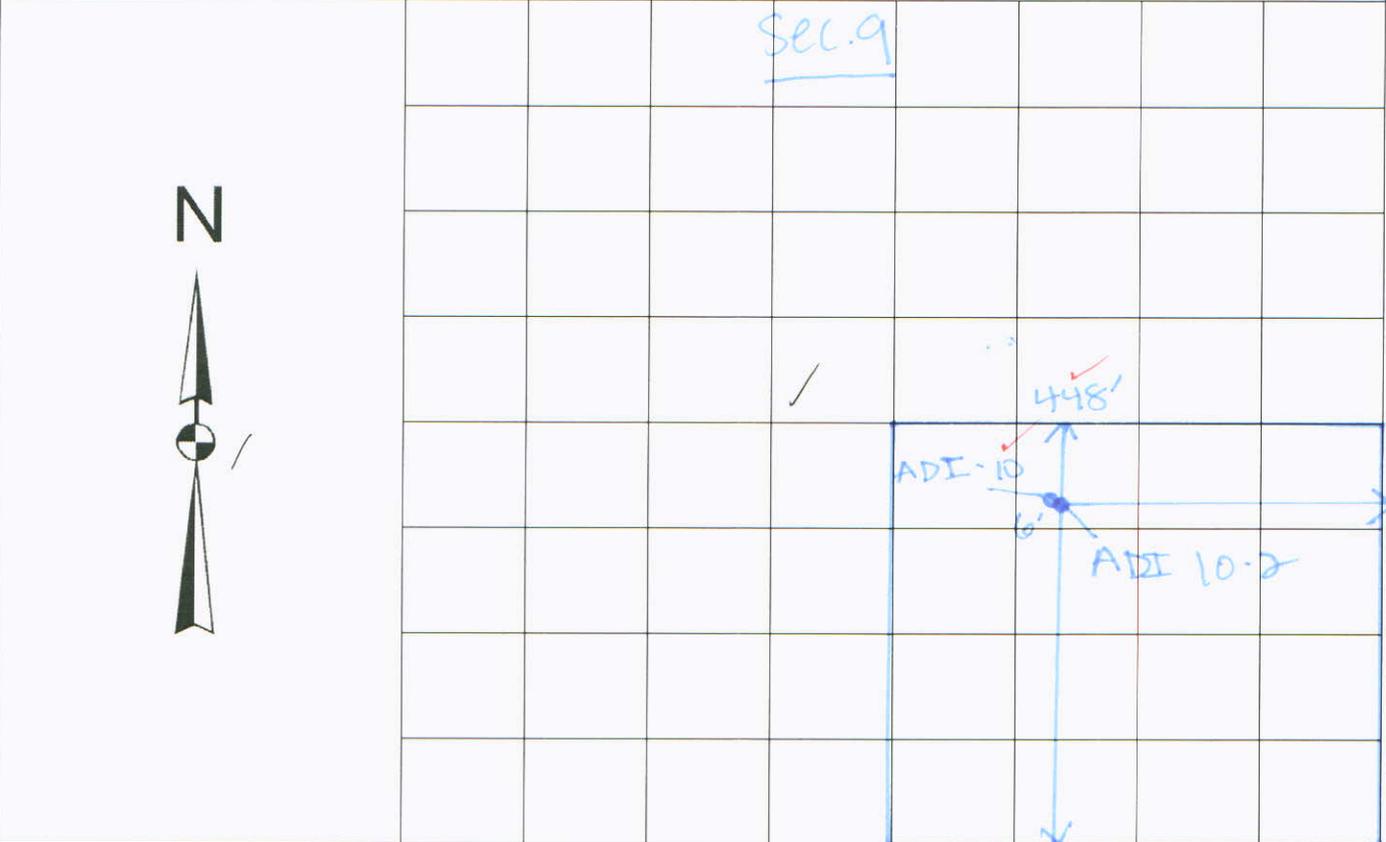
COUNTY
 Cass

WELL LOCATION (GIVE FOOTAGE FROM SECTION LINES)
 2192 ft. from North South section line 1690 ft. from East West section line

WELL LOCATION
 Sec. 9 Township 46 North Range 33 East West

LATITUDE
 N38° 49' 22.762"

LONGITUDE
 W94° 34' 20.225"



REMARKS
 Plat Map Scale - 1 Square = 660 feet
Special Project

INSTRUCTIONS

On the above plat, show distance of the proposed well from the two nearest section lines, the nearest lease line, and from the nearest well on the same lease completed in or drilling to the same reservoir. Do not confuse survey lines with lease lines. See rule 10 CSR 50-2.030 for survey requirements. Lease lines must be marked.

This is to certify that I have executed a survey to accurately locate oil and gas wells in accordance with 10 CSR 50-2.030 and that the results are correctly shown on the above plat.

REGISTERED LAND SURVEY NUMBER



Check Location

Select a coordinate format, enter a pair of coordinates in the boxes below it, and then press the SUBMIT button. Please be patient while your information is retrieved. Your coordinates will be converted to the other formats, the information on the right-hand side of the page will be filled in based on your coordinates, and a map will be generated. NOTE: All coordinates must use the North American Datum of 1983 (NAD83).

Universal Transverse Mercator
[Zone 15 North]

Easting
363510.8297876612 meters

Northing
4298308.04416108 meters

Decimal Degrees

Latitude
38.822989444444445 °

Longitude
-94.5722847222222 °

Degrees, Minutes and Seconds

Latitude Degrees
38 °

Latitude Minutes
49 '

Latitude Seconds
22.762 "

Longitude Degrees
-94 °

Longitude Minutes
34 '

Longitude Seconds
20.225 "

UTM Zone 15N [Easting, Northing]	[363510.8, 4298308.0] meters
Decimal Degrees [Lat, Lon]	[38.822989°, -94.572285°]
Deg, Min, Sec [Lat, Lon]	[38° 49' 22.7", -94° 34' 20.2"]
County Name	Cass
County FIPS Code	037
Legal Description	Section 09 T46N R33W
Municipality	Belton
House District	123
Senate District	31
Congressional District	5
MoDNR Region	Kansas City Regional Office
USGS 1:24,000 Quadrangle	Belton [38094-G5]
8 Digit Watershed	10300101 [Lower Missouri-Crooked]
10 Digit Watershed	1030010101 [Blue River]
12 Digit Watershed	103001010104 [Camp Branch-Blue River]
Special Well Drilling Area	Area 2
Ecological Drainage Unit	Central Plains/Blackwater/Lamine
Level III Ecoregion	Central Irregular Plains
Query Time	6.454 s

Rows with red text indicate that the input location is too close to a boundary to produce reliable results.

NOTE: A result of 'NO VALUE' is usually an indication that no data was found for the location. For example, not every point in Missouri will lie within a municipal boundary, so some will result in a 'NO VALUE'. If 'County Name' results in 'NO VALUE', your point probably lies outside the state.

Well ID: #005390

Elev. 100'

$\frac{P}{M}$: 229' elev. $P_c - M$: 345'

Well ID: #026255

P_c : 535'

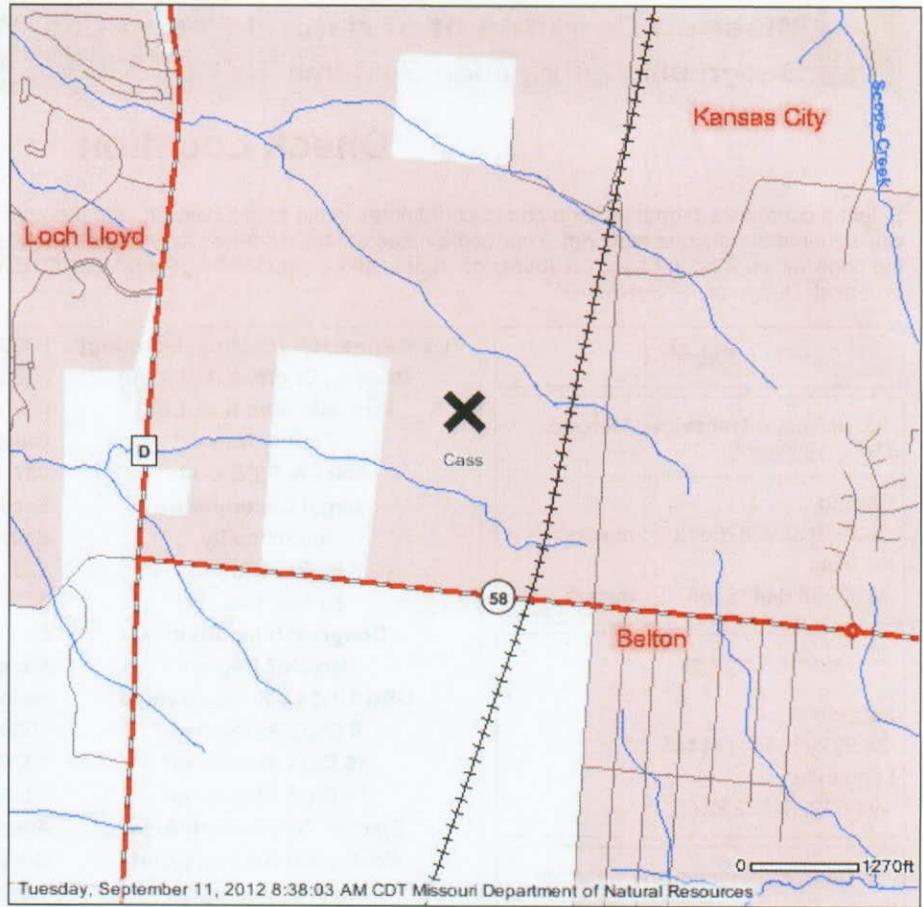
1083-535-345

$\Rightarrow \frac{P}{M} \sim 203'$ elev.

Metadata

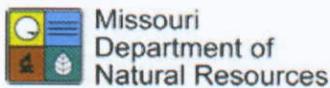
- Interstate Highways
- US Highways
- State Highways
- Railroad
- Major and Minor Roads
- County Boundary
- Lakes
- Major Rivers
- Rivers and Streams
- Missouri River
- Mississippi River
- Municipal

- Legend**
-  Interstate Highways
 -  US Highways
 -  State Highways
 -  Railroad
 -  Major and Minor Roads
 -  County Boundary
 -  Lakes
 -  Major Rivers
 -  Rivers and Streams
 -  Missouri River
 -  Mississippi River
 -  Municipal



View Scale 1:24,000

DISCLAIMER: Although this map has been compiled by the Missouri Department of Natural Resources, no warranty, expressed or implied, is made by the department as to the data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by the department in the use of these data or related materials.



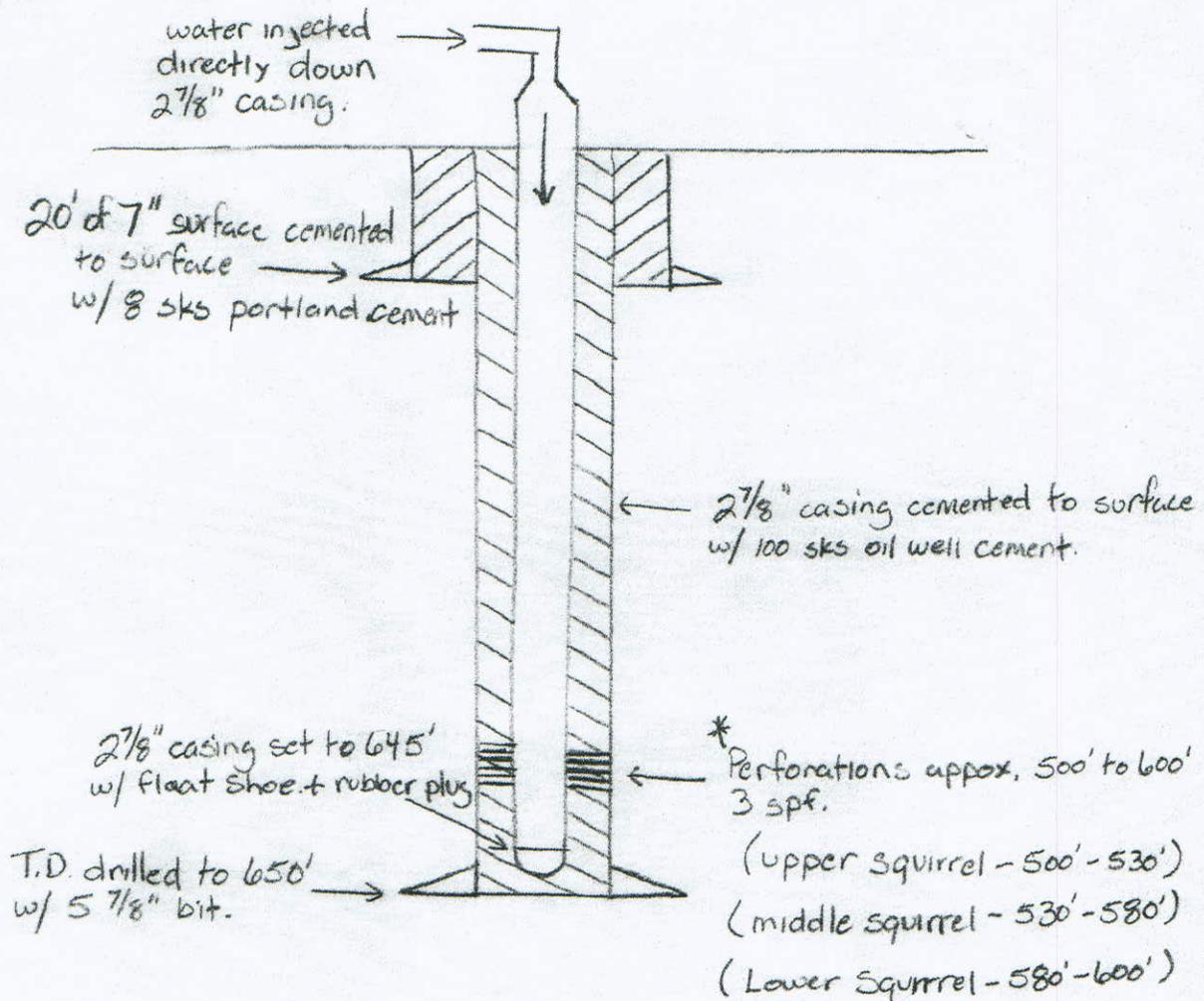
P.O. Box 176, Jefferson City, MO 65102
 800-361-4827 / 573-751-3443
 E-mail: contact@dnr.mo.gov



STATE OF MISSOURI
MISSOURI DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY PROGRAM
INJECTION WELL SCHEMATIC

OGC-11

COUNTY Cass	PERMIT NUMBER	OPERATOR Kansas Resource Exploration & Development	WELL NUMBER ADI 10-2
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* Upper, middle and lower Squirrel sections confined by shale and Limestone.

INSTRUCTIONS ON THE ABOVE SPACE DRAW A NEAT, ACCURATE SCHEMATIC DIAGRAM OF THE APPLICANT INJECTION WELL, INCLUDING THE FOLLOWING: CONFIGURATION OF WELLHEAD, TOTAL DEPTH OR PLUG BACK TOTAL DEPTH, DEPTH OF ALL INJECTION OR DISPOSAL INTERVALS, AND THEIR FORMATION NAMES, LITHOLOGY OF ALL FORMATIONS PENETRATED, DEPTHS OF THE TOPS AND BOTTOMS OF ALL CASING AND TUBING, SIZE AND GRADE OF ALL CASING AND TUBING, AND THE TYPE AND DEPTH OF PACKER, DEPTH, LOCATION, AND TYPE OF ALL CEMENT, DEPTH OF ALL PERFORATIONS AND SQUEEZE JOBS, AND GEOLOGIC NAME AND DEPTH TO BOTTOM OF ALL UNDERGROUND SOURCES OF DRINKING WATER WHICH MAY BE AFFECTED BY THE INJECTION. USE BACK IF ADDITIONAL SPACE IS NEEDED, OR ATTACH SHEET.

MO 780-0221 (8-06)

REMIT TWO (2) COPIES TO: GEOLOGICAL SURVEY PROGRAM, PO BOX 250, ROLLA, MO 65402 (573) 368-2143.
ONE (1) COPY WILL BE RETURNED.

Well Schematic, Continued

The surface casing is 7" in diameter and is new, limited service grade pipe. The 7" is drifted and tested to 7,000 lbs. and weighs at least 17 lbs. per foot. The surface casing will be set to a minimum depth of 20 feet and extend 6 inches above the surface. Approximately 8 sacks of Portland cement will be circulated to surface and will secure the well and ensure the contents of the well bore are sealed off from sources of drinking water. The production casing used is 2 7/8" EUE upset, drifted and tested to 7,000 lbs. No tubing will be ran in the injection wells, the injection fluid will be injected directly down the 2 7/8" casing. The total depth of the well will be approximately 650 feet drilled with a 5 5/8" bit. A 2 7/8" flapper type float shoe will be set at the base of the 2 7/8" casing pipe (645 feet) with centralizers installed to center the casing inside the well bore for better cement bonding. The 2 7/8" casing will be cemented from 650 feet to surface using a 2 7/8" rubber plug for displacing the cement. Approximately 100 sacks of high-grade Oil Well cement will be used to cement all wells. This cement will ensure that no contents of the pipe will leave the well bore. The top of the 2 7/8" casing will extend approximately one foot above ground level. After the cement has cured and effectively bonded to the 2 7/8" casing, perforations will be made in the Squirrel Sandstone formation from approximately 500-600 feet, depending on where the oil sand is present at this particular location. Wells will be shot with 3 perforations per foot where the squirrel sandstone oil reservoir is present and capable of water injection. No water sources are present at this depth and will not be affected by these perforations or the injection. The relevant sources of drinking water are located less than 20 feet below surface. The 7" surface pipe and durable Portland cement ensures these water sources will remain free from contamination from drilling and injection activity. Other sources of potential usable water may be present, however not always potable, in the Pennsylvanian and Mississippian formations located approximately 150 feet or deeper below the base of the Squirrel Sandstone.

The lithology of all formations penetrated by the wellbore are as follows:

<u>Formation</u>	<u>Total Depth (feet)</u>
Soil	0 – 2
Clay	2 – 6
Lime	6 – 28
Shale	28 – 49
Lime	49 – 64
Shale	64 – 69
Red Bed	69 – 78
Shale	78 – 82

Lime	82 – 87	
Shale	87 – 105	
Gray Sand	105 – 124	
Shale	124 – 128	
Lime	128 – 130	
Shale	130 – 147	
Lime	147 – 177	
Shale (Slate 183 – 184)	177 – 186	
Lime	186 – 204	
Shale (Slate 207 – 208)	204 – 209	
Lime	209 – 211	
Shale	211 – 214	
Lime “Hertha”	214 – 220	Top Pawnee Limestone
Shale	220 – 259	
Lime	259 – 260	
Gray Sand “Knobtown”	260 – 262	
Shale	262 – 324	
Gray Sand	324 – 329	
Shale	329 – 358	
Gray Sand	358 – 362	Base Pawnee Limestone
Shale	362 – 399	Top Labette Shale
Lime	399 – 401	
Shale	401 – 404	
Lime	404 – 406	
Shale (Slate 411 – 412)	406 – 417	
Lime	417 – 424	
Shale	424 – 427	
Gray Sand	427 – 431	Base Labette Shale

Shale	431 – 443	Top Fort Scott
Lime	443 – 448	BlackJack Creek Limestone
Shale (Slate 452 – 453)	448 – 469	Summit Coal
Gray Sand	469 – 471	Base Fort Scott
Sdy. Shale	471 – 501	
Very laminated Sand	501 – 502	Top - Squirrel Sandstone
Sandy Lime	502 – 503	
Slightly lamin. Sand	503 – 504	
Sandy Lime	504 – 505	
Solid Sand	505 – 506.5	
Shale	506.5 – 507	
Slightly lamin. Sand	507 – 507.5	
Sandy Shale	507.5 – 509.5	
Solid Sand	509.5 – 510.5	
Sandy Lime	510.5 – 511.5	
Solid Sand	511.5 – 515.5	
Sandy Lime	515.5 – 518	
Solid Sand	518 – 520	
Sandy Lime	520 – 521	
Solid Sand	521 – 525	
Sandy Lime	525 – 526	
Laminated Sand	526 – 527	
Sandy Shale	527 – 528.5	
Sandy Lime	528.5 – 530	
Solid Sand	530 – 533	
Sandy Lime	533 – 534	
Sandy Shale	534 – 535	
Slightly laminated Sand	535 – 536.5	

Sandy Lime	536.5 – 538	
Solid Sand	538 – 539	
Lime and Shells	539 – 541	
Sand lamin. w/ Sandy Lime	541 – 542	
Lime and Shells	542 – 543	
Solid Sand	543 – 544.5	
Sandy Lime and Shells	544.5 – 547.5	
Sand and Shells	547.5 – 548.5	
Lime and Shells	548.5 – 552	
Solid Sand	552 – 553	
Lime and Shells	553 – 555.5	
Sand and Shells	555.5 – 559.5	
Lime and Shells	559.5 – 563.5	
Solid Sand	563.5 – 582.5	
Slightly laminated	582.5 – 583.5	
Shale and Shells	583.5 – 587.5	
Solid Sand	587.5 – 590.5	
Sand and Shells	590.5 – 591.5	
Solid Sand	591.5 – 593	
Lime	593 – 593.5	
Very laminated Sand	593.5 – 596	Base – Squirrel Sandstone
Shale (Slate 610 – 611)	596 – 616	Top – Verdigris
Lime	616 – 617	Ardmore Limestone
Shale (Slate 621 – 622)	617 – 650	Oakley Shale

Belton Unit, Cass County, Missouri

Re: Closure Pressure

Attached is a reproduction from "*Production Operations, Vol. 2*" by Allen and Roberts describing the fracturing pressures in a reservoir.

The fracture propagation pressure is approximately the same as the closure pressure, although slightly higher. This difference is less significant in low pressure reservoirs such as the ones in the Cherokee Basin, consequently, they are considered to be the same. The fracture propagation pressure is the same as the instantaneous shut-in pressure (ISIP) experienced upon cessation of a hydraulic fracture treatment. The ISIP from a fracture procedure is the surface pressure measurement. Bottom-hole ISIP must be calculated by adding the surface ISIP and the product of the depth to mid-perforations (feet) and the pressure gradient of the fluid in the wellbore (psi/foot). For fresh water the fluid gradient is 0.434 psi/foot. Since the fluid in fracture operations is more dense than fresh water most engineers estimate the bottom-hole ISIP with a higher gradient. The state of Oklahoma uses a gradient of 0.50 psi/foot.

Utilizing ISIP's experienced at Belton, and a fresh water gradient of 0.434, the calculated bottom-hole ISIPs are:

WELL	DEPTH TO MID-PERF	ISIP (Surface)	ISIP (Perfs)
R32	626	400	672
R32	585	350	604
R31	600	400	660
R31	552	350	640
R47	620	325	594
AD20	536	400	633
AD20	582.5	400	653
AD9-2	610	400	665
AD9-2	507	400	620
AD16-2	544	400	636

The fracture propagation pressure is the pressure in which the aperture of the existing fractures can begin to be opened. An increase in injection rate is noted at this point on injection step-rate tests. At injection pressures at, or slightly above, the ISIP, the fractures in the immediate vicinity of the wellbore (inches) may be affected but not into the reservoir significantly. In actual injection operations of a waterflood at ISIP, fractures wouldn't be created beyond the region adjacent to the wellbore because of; 1) fluid leak-off into the formation, 2) the injection of a low viscosity fluid, and 3) the extremely low injection rates - far less than what is necessary to create a fracture.

minimum stress at the borehole, and must also overcome the tensile strength of the rock. This can be expressed as follows:

$$(P_i)_v = 3 \bar{\sigma}_{h_2} - \bar{\sigma}_{h_1} + S_h + P \quad (5)$$

where:

- $(P_i)_v$ = borehole pressure required to initiate vertical fracture
 $\bar{\sigma}_{h_1}$ = maximum principal horizontal matrix stress
 $\bar{\sigma}_{h_2}$ = minimum principal horizontal matrix stress
 S_h = horizontal tensile strength of rock
 P = formation pore pressure

Penetrating Fluid Reduces Breakdown Pressure—A penetrating fluid increases the area over which pressurized fluid contacts the formation and can reduce the pressure necessary to initiate fracturing.

Laboratory and theoretical work by Fairhurst and Haimson²¹ provides a basis for estimation of the magnitude of reduction in openhole. Generally reduction may be on the order of 25 to 40% in openhole.

Perforation Density and Orientation—Recent laboratory work in cased hole shows that breakdown or frac initiation pressure is affected by the number and arrangement of perforations.²²

The existence of casing and the arrangement of perforations have little effect on created fracture orientation, but breakdown pressure is reduced by increased number of perforations. The practice of perforating with all shots in a vertical line on one side of the casing, Figure 8-6 significantly increases

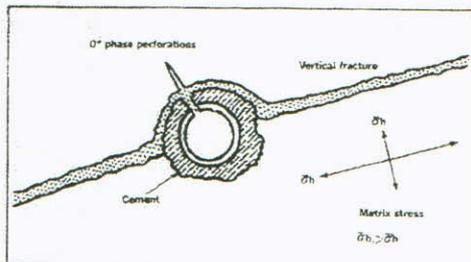


FIG. 8-6—Orientation of perforation vs. least horizontal matrix stress. Condition resulting in highest breakdown pressure.

breakdown pressure if the perforations happen to be oriented 90° to the azimuth of the vertical fracture plane. Orientation of perforations does not affect azimuth of the vertical fracture however.

Fracture Propagation

Once the fracture has been created and invaded by pressured fluid, the stress concentration near the wellbore is reduced, and the hydraulic pressure required to extend the fracture must merely overcome the component of the undisturbed stress field normal to the plane of the fracture.

Measuring Propagation Pressure and Frac Gradient—The fracture propagation pressure (and frac gradient) can be obtained during the fracturing operation by recording the wellhead pressure immediately after the pumps are shut down following injection into the fracture (Figure 8-7). Since the frac gradient is increased by increased pore pressure, this measurement should be made before the pore pressure is significantly raised by the injected frac fluid.

Wellhead instantaneous shut-in pressure, corrected to the hole bottom by adding the hydrostatic pressure of the wellbore fluid column, is the *fracture propagation pressure*. *Fracture gradient* is the fracture propagation pressure divided by the formation depth.

Measuring Rock Matrix Stress—The minimum horizontal rock matrix stress is then:

$$\bar{\sigma}_{h_1} = \text{propagation pressure} - \text{pore pressure}$$

This stress is of particular interest because it is the stress which propping agents must withstand in order to hold the fracture open. In actual practice pore pressure can be equated to static reservoir pressure provided fracture propagation pressure is measured before significant frac fluid is injected to raise the pore pressure level near the wellbore.

It should be noted that proppant in the critical area near the wellbore is subjected to more stress than that further away due to lower pore pressure near the wellbore in the producing process, Figure 8-8. This effect may be significant at high draw-down pressures.

Fracture Orientation

Fracture Propagates Perpendicular to Smallest Stress—Rocks fracture in a plane perpendicular to

Re: Injection Volumes

Injection volumes are determined by using analogy from previous squirrel sandstone water floods that contain similar reservoir characteristics. In the case of the Belton Unit we plan to inject 1 barrel of water for every 1 net foot of oil bearing sandstone. (assuming this rate does not exceed the maximum approved injection pressure) Depending on the duration and impact of the surrounding wells some injection wells may ultimately inject 3 barrels of water for every 1 net foot of oil bearing sandstone.

Due to the permeability variance of the reservoir we typically will not exceed 15' of perforations per injection well.

Example;

Year 1

15' perforations x 1 bbl/ft = 15 BPD injection rate

Year 2

15' perforations x 2 bbls/ft = 30 BPD injection rate

Year 3

15' perforations x 3 bbls/ft = 45 BPD injection rate

We typically do not exceed 3 bbls/ft injection rate, which is why we are requesting only 50 BPD rate.

AREA OF REVIEW WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other - specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPURRED	DATE COMPLETED	CONSTRUCTION
Belton Unit	R-1	569 FROM (N) (S) SEC LINE 2412 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	619'	O	04/08/1999	04/13/1999	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-2	1484 FROM (N) (S) SEC LINE 1024 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	600'	O	06/04/1999	06/10/1999	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-3	1434 FROM (N) (S) SEC LINE 2423 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	665'	O	02/29/2000	03/02/0200	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-4	5232 FROM (N) (S) SEC LINE 2073 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	680'	O	03/02/2000	03/07/2000	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-5	188 FROM (N) (S) SEC LINE 2406 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	639'	O	04/23/2000	04/25/2000	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-6	171 FROM (N) (S) SEC LINE 2890 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	608'	O	04/27/2000	04/28/2000	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-7	571 FROM (N) (S) SEC LINE 2901 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	646'	O	05/01/2000	05/02/2000	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-8	1023 FROM (N) (S) SEC LINE 2894 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	655'	O	05/05/2000	05/08/2000	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-9	1008 FROM (N) (S) SEC LINE 2418 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	651'	O	05/03/2000	05/05/2000	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump

AREA OF REVIEW WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other = specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPURRED	DATE COMPLETED	CONSTRUCTION
Belton Unit	R-10	1005 FROM (N/S) SEC LINE 1980 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	627'	O	05/15/2000	05/16/2000	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-11	567 FROM (N/S) SEC LINE 1966 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	626'	O	05/10/2000	05/12/2000	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-12	1022 FROM (N/S) SEC LINE 1951 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	642'	O	05/16/2000	05/18/2000	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-13	444 FROM (N/S) SEC LINE 1983 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	620'	O	05/22/2000	05/24/2000	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-14	174 FROM (N/S) SEC LINE 3330 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	637'	O	09/17/2001	09/19/2001	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-15	573 FROM (N/S) SEC LINE 3335 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	621'	O	12/15/2000	12/20/2000	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-16	3130 FROM (N/S) SEC LINE 3548 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	652.5'	O	10/13/2003	10/15/2003	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-17	3010 FROM (N/S) SEC LINE 1011 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	686'	O	01/29/2004	01/30/2004	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-18	3810 FROM (N/S) SEC LINE 1631 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	914.5'	O	01/07/2004	01/09/2004	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump

AREA OF REVIEW WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other - specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPULDED	DATE COMPLETED	CONSTRUCTION
Belton Unit	R-19	4132 FROM (N) SEC LINE 2070 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	621.5'	O	02/12/2004	02/13/2004	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-20	4080 FROM (N) SEC LINE 2045 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	661'	O	01/18/2008	01/22/2008	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-21	4160 FROM (N) SEC LINE 2045 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	635'	O	01/14/2008	01/16/2008	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-22	4160 FROM (N) SEC LINE 1605 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	660'	O	12/04/2008	N/A	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-23	3320 FROM (N) SEC LINE 2425 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	660'	O	U	N/A	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-24	3320 FROM (N) SEC LINE 2495 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	658'	O	01/25/2008	N/A	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-25	3320 FROM (N) SEC LINE 2045 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	660'	O	U	N/A	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	R-1	368 FROM (N) SEC LINE 2164 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	623'	Plugged	07/26/2000	08/31/2000	4 1/2" casing cemented to surface Plugged 623' - surface casing 623' to surface
Belton Unit	R-2	795 FROM (N) SEC LINE 2053 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	627'	I	U	U	4 1/2" casing cemented to surface

AREA OF REVIEW WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other - specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPURRED	DATE COMPLETED	CONSTRUCTION
Belton Unit	R1-3	117 FROM (N/S) SEC LINE 1072 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	635'	I	U	U	4 1/2" casing cemented to surface
Belton Unit	R1-4	127 FROM (N/S) SEC LINE 220 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	641'	I	08/25/2000	08/29/2000	4 1/2" casing cemented to surface
Belton Unit	R1-5	196 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	637'	I	U	U	4 1/2" casing cemented to surface
Belton Unit	R1-6	367 FROM (N/S) SEC LINE 2187 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	644'	Plugged	U	U	4 1/2" casing cemented to surface Plugged 10/27/11 - squeezed cement 10/21/11 to surface
Belton Unit	WSW-1	843 FROM (N/S) SEC LINE 3529 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	891'	W	04/16/2001	04/14/2001	
Belton Unit	C-18	110 FROM (N/S) SEC LINE 124 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	571'	Plugged	U	U	Squeezed
Belton Unit	RW-7	374 FROM (N/S) SEC LINE 3115 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	638'	Plugged	02/10/2004	02/11/2004	4 1/2" casing cemented to surface Plugged 10/27-11 - squeezed cement 10/21/11 to surface
Belton Unit	RW-8	3048 FROM (N/S) SEC LINE 2314 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	641.5'	I	02/12/2004	02/13/2004	4 1/2" casing cemented to surface
Belton Unit	RW-9	3505 FROM (N/S) SEC LINE 2330 FROM (E/W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	647.5'	I	01/13/2004	01/15/2004	4 1/2" casing cemented to surface

AREA OF REVIEW WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other - specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPULDED	DATE COMPLETED	CONSTRUCTION
Belton Unit	RW-10	4055 FROM (N) SEC LINE 2055 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	678'	I	02/02/2004	02/03/2004	4 1/2" casing cemented to surface
Belton Unit	RW-11	4111 FROM (N) SEC LINE 8283 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	652'	I	02/04/2004	02/06/2004	4 1/2" casing cemented to surface
Belton Unit	RW-13	3055 FROM (N) SEC LINE 1842 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	697'	I	02/06/2004	02/09/2004	4 1/2" casing cemented to surface
Belton Unit	RW-15	2180 FROM (N) SEC LINE 2205 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	660'	I	11/26/2008	N/A	4 1/2" casing cemented to surface
Belton Unit	RW-16	3190 FROM (N) SEC LINE 1825 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	660'	I	12/02/2008	N/A	4 1/2" casing cemented to surface
Belton Unit	RW-19	3510 FROM (N) SEC LINE 1805 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	661'	I	12/08/2008	N/A	4 1/2" casing cemented to surface
Belton Unit	AD-1	220 FROM (N) SEC LINE 2120 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	615'	O	12/03/2007	01/04/2008	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	AD-2	2000 FROM (N) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	657'	O	12/06/2007	12/10/2007	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	AD-3	3800 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	637'	O	08/31/1987	U	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump

AREA OF REVIEW WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other - specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPULDED	DATE COMPLETED	CONSTRUCTION
Belton Unit	AD-4	220 FROM (N) SEC LINE 1155 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	666'	O	07/14/1987	07/16/1987	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	AD-5	220 FROM (N) SEC LINE 1116 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	679'	O	06/21/1987	06/25/1987	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	AD-6	204 FROM (N) SEC LINE 5166 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	708'	O	01/31/2008	02/19/2008	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	AD-7	254 FROM (N) SEC LINE 2984 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	630'	O	12/12/2007	12/14/2007	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	AD-8	630 FROM (N) SEC LINE 3401 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	622'	O	05/14/1999	05/27/1999	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	AD-9	644 FROM (N) SEC LINE 3885 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	662'	Plugged	08/25/1987	1987	4 1/2" casing cemented to surface Squeezed cement into formation to surface on 04/04/2012
Belton Unit	AD-10	662 FROM (N) SEC LINE 1234 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	659'	O	05/25/1987	07/21/1987	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	AD-11	621 FROM (N) SEC LINE 1185 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	665'	Plugged	1987	1987	4 1/2" casing cemented to surface Squeezed cement into formation to surface on 03/19/2012
Belton Unit	AD-12	1210 FROM (N) SEC LINE 5807 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	710'	O	01/23/2008	02/26/2008	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump

AREA OF REVIEW WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other - specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPURRED	DATE COMPLETED	CONSTRUCTION
Belton Unit	AD-13	1100 FROM (N) SEC LINE 2420 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	700'	Plugged	12/21/2007	N/A	Cemented from bottom to top on 12/27/2007
Belton Unit	AD-14	1061 FROM (N) SEC LINE 3405 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	609'	O	04/21/1999	05/13/1999	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	AD-15	210 FROM (N) SEC LINE 3001 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	617'	O	11/13/1989	11/14/1989	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	AD-16	1100 FROM (N) SEC LINE 4225 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	666'	Plugged	07/23/1987	U-1987	4 1/2" casing cemented to surface Squeezed cement into formation to surface on 04/04/2012
Belton Unit	AD-17	1105 FROM (N) SEC LINE 4051 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	647'	O	U	U	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	AD-18	1100 FROM (N) SEC LINE 300 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	676.5'	O	01/02/2008	02/26/2008	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	AD-21	1535 FROM (N) SEC LINE 3809 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	656'	O	09/11/2003	09/12/2003	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	AD-22	1539 FROM (N) SEC LINE 4212 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	650'	O	06/13/1999	06/18/1999	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	AD-23	1541 FROM (N) SEC LINE 4044 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	644'	O	09/09/2003	09/11/2003	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump

AREA OF REVIEW WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other = specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPURRED	DATE COMPLETED	CONSTRUCTION
Belton Unit	AD-24	SEC 9 FROM (N) <u>34P</u> SEC LINE 300 FROM (E) (W) SEC LINE	K.R.E.D.	672.5	O	12/27/2007	02/06/2008	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	AD-28	SEC 9 T 46 NR 33W FROM (N) (S) SEC LINE FROM (E) (W) SEC LINE	K.R.E.D.	629'	O	07/08/1999	07/14/1999	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	AD-29	SEC 9 T 46 NR 33W FROM (N) (S) SEC LINE FROM (E) (W) SEC LINE	K.R.E.D.	625'	O	06/18/1999	07/07/1999	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	ADI-18	SEC 9 T 46 NR 33W FROM (N) (S) SEC LINE FROM (E) (W) SEC LINE	K.R.E.D.	651.5'	I	10/09/2003	10/10/2003	4 1/2" casing cemented to surface
Belton Unit	ADI-19	SEC 9 T 46 NR 33W FROM (N) (S) SEC LINE FROM (E) (W) SEC LINE	K.R.E.D.	654.5'	I	10/07/2003	10/08/2003	4 1/2" casing cemented to surface
Belton Unit	ADI-24	SEC 9 T 46 NR 33W FROM (N) (S) SEC LINE FROM (E) (W) SEC LINE	K.R.E.D.	662'	I	09/16/2003	09/17/2003	4 1/2" casing cemented to surface
Belton Unit	ADI-25	SEC 9 T 46 NR 33W FROM (N) (S) SEC LINE FROM (E) (W) SEC LINE	K.R.E.D.	651.5'	I	09/12/2003	09/15/2003	4 1/2" casing cemented to surface
Belton Unit	ADI-26	SEC 9 T 46 NR 33W FROM (N) (S) SEC LINE FROM (E) (W) SEC LINE	K.R.E.D.	650.5'	I	09/17/2003	09/19/2003	4 1/2" casing cemented to surface
Belton Unit	ADI-27	SEC 9 T 46 NR 33W FROM (N) (S) SEC LINE FROM (E) (W) SEC LINE	K.R.E.D.	674.1'	I	01/04/2008	04/16/2008	4 1/2" casing cemented to surface

AREA OF REVIEW WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other - specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPULDED	DATE COMPLETED	CONSTRUCTION
Belton Unit	ADI-30	880 FROM (N) SEC LINE 2260 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	627.7'	I	12/19/2007	04/16/2008	4 1/2" casing cemented to surface
Belton Unit	ADI-31	860 FROM (N) SEC LINE 2613 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D	633'	I	05/27/1999	06/04/1999	4 1/2" casing cemented to surface
Belton Unit	ADI-32	871 FROM (N) SEC LINE 1034 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D	649'	I	U	U	4 1/2" casing cemented to surface
Belton Unit	ADI-33	881 FROM (N) SEC LINE 4454 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D	642'	I	U	U	4 1/2" casing cemented to surface
Belton Unit	ADI-34	879 FROM (N) SEC LINE 4890 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D	663	I	U	U	4 1/2" casing cemented to surface
Belton Unit	ADI-37	440 FROM (N) SEC LINE 2300 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D	618.2	I	12/13/2007	04/16/2008	4 1/2" casing cemented to surface
Belton Unit	ADI-38	441 FROM (N) SEC LINE 1760 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D	668.9'	I	12/17/2007	04/16/2008	4 1/2" casing cemented to surface
Belton Unit	ADI-39	441 FROM (N) SEC LINE 4055 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D	631'	I	U	U	4 1/2" casing cemented to surface
Belton Unit	ADI-40	441 FROM (N) SEC LINE 4465 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D	664'	I	U	U	4 1/2" casing cemented to surface

AREA OF REVIEW WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other - specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPURRED	DATE COMPLETED	CONSTRUCTION
Belton Unit	AD1-41	442 FROM (N) SEC LINE 1409 FROM (E) SEC LINE	K.R.E.D.	600' est	I	✓	✓	4 1/2" casing cemented to surface
Belton Unit	OH-1	SEC. 16 T. 46 NR. 33W 2215 FROM (N) SEC LINE 2408 FROM (E) SEC LINE	K.R.E.D.	600' est	O	✓	✓	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	OH-2	SEC. 16 T. 46 NR. 33W 2201 FROM (N) SEC LINE 2051 FROM (E) SEC LINE	K.R.E.D.	600' est	O	✓	✓	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	OH-3	SEC. 16 T. 46 NR. 33W 1931 FROM (N) SEC LINE 2408 FROM (E) SEC LINE	K.R.E.D.	600' est	O	✓	✓	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	OH-4	SEC. 16 T. 46 NR. 33W 1940 FROM (N) SEC LINE 2576 FROM (E) SEC LINE	K.R.E.D.	600' est	O	✓	✓	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	OH-5	SEC. 16 T. 46 NR. 33W 833 FROM (N) SEC LINE 5124 FROM (E) SEC LINE	K.R.E.D.	600' est	O	✓	✓	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Belton Unit	OH-6	SEC. 16 T. 46 NR. 33W 919 FROM (N) SEC LINE 5216 FROM (E) SEC LINE	K.R.E.D.	600' est	Plugged	✓	✓	Squeezed cement into formation to surface
Belton Unit	OH-7	SEC. 16 T. 46 NR. 33W 753 FROM (N) SEC LINE 5100 FROM (E) SEC LINE	K.R.E.D.	600' est	Plugged	✓	✓	Squeezed cement into formation to surface
Belton Unit	OH-8	SEC. 16 T. 46 NR. 33W 138 FROM (N) SEC LINE 2931 FROM (E) SEC LINE	K.R.E.D.	600' est	Plugged	✓	✓	Squeezed cement into formation to surface

AREA OF REVIEW WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other - specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPULDED	DATE COMPLETED	CONSTRUCTION
Belton Unit	OH-9	604 FROM (N) (S) SEC LINE 5229 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	600' est	Plugged	U	U	Squeezed cement into formation to surface
Belton Unit	UK-1	1520 FROM (N) (S) SEC LINE 1300 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	U	Plugged	U	U	4 1/2" casing cemented to surface Squeezed cement into formation to surface on 04/17/2012
Belton Unit	UK-2	1374 FROM (N) (S) SEC LINE 1410 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	U	Plugged	U	U	4 1/2" casing cemented to surface Squeezed cement into formation to surface on 04/17/2012
Belton Unit	UK-3	1353 FROM (N) (S) SEC LINE 1391 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	U	O	U	U	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Clark-Berry	CB-1	1290 FROM (N) (S) SEC LINE 1259 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	625'	O	U	U	2 7/8" with 1" tubing and insert pump
Clark-Berry	CB-2	1226 FROM (N) (S) SEC LINE 1006 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	625'	O	U	U	2 7/8" with 1" tubing and insert pump
Clark-Berry	CB-3	1210 FROM (N) (S) SEC LINE 1022 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	625'	O	U	U	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Clark-Berry	CB-4	1281 FROM (N) (S) SEC LINE 1224 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	619'	O	U	U	4 1/2" casing cemented to surface 2 3/8" tubing 3/4" rods and insert pump
Clark-Berry	CB-1-1	1050 FROM (N) (S) SEC LINE 6211 FROM (E) (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	629'	I	U	U	4 1/2" casing cemented to surface

AREA OF REVIEW/WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPULDED	DATE COMPLETED	CONSTRUCTION
Belton Unit	R-26	5100 FROM (N) SEC LINE 3294 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D	643'	Plugged	03/08/2012	Not Complete	Set 21 feet of 8 5/8" surface pipe Squeezed cement from 643' to surface to plug well on 04/17/2012
Belton Unit	R-27	4870 FROM (N) SEC LINE 3818 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D	700'	O	04/06/2012		685' of 2 7/8" casing cemented to surface
Belton Unit	R-28	4451 FROM (N) SEC LINE 3814 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D	681'	O	04/10/2012	↑	656' of 2 7/8" casing cemented to surface
Belton Unit	R-29	4467 FROM (N) SEC LINE 1676 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D	750'	O	03/24/2012	05/10/2012	740' of 4 1/2" casing cemented to surface
Belton Unit	R-30	4563 FROM (N) SEC LINE 1134 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	750'	O	03/23/2012	04/30/2012	697' of 4 1/2" casing cemented to surface
Belton Unit	R-31	5268 FROM (N) SEC LINE 1202 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D	750'	O	03/27/2012	04/27/2012	740' of 4 1/2" casing cemented to surface
Belton Unit	R-32	4894 FROM (N) SEC LINE 1218 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	750'	O	03/14/2012	05/25/2012	743' of 4 1/2" casing cemented to surface
Belton Unit	R-33	4924 FROM (N) SEC LINE 1248 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	700'	O	03/21/2012	05/10/2012	663' of 4 1/2" casing cemented to surface
Belton Unit	R-36	5353 FROM (N) SEC LINE 1631 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D	760'	O	04/02/2012	04/30/2012	733.5' of 4 1/2" casing cemented to surface

AREA OF REVIEW WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPULDED	DATE COMPLETED	CONSTRUCTION
Belton Unit	R-41	3201 FROM (N) SEC LINE 3340 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	643'	O	06/12/2012	Not complete	of 4 1/2" casing cemented to surface
Belton Unit	R-42	3285 FROM (N) SEC LINE 3340 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	980'	O	06/06/2012	Not complete	687' of 4 1/2" casing cemented to surface
Belton Unit	R-43	3281 FROM (N) SEC LINE 3191 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	770'	O	05/09/2012	05/30/2012	740' of 4 1/2" casing cemented to surface
Belton Unit	R-44	3300 FROM (N) SEC LINE 3370 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	760'	O	05/11/2012	05/31/2012	727' of 4 1/2" casing cemented to surface
Belton Unit	R-47	3444 FROM (N) SEC LINE 3483 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	760'	O	05/08/2012	06/01/2012	728' of 4 1/2" casing cemented to surface
Belton Unit	R-48	3446 FROM (N) SEC LINE 3587 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	770'	O	07/18/2012	Not complete	750' of 2 7/8" casing cemented to surface
Belton Unit	R-49	3431 FROM (N) SEC LINE 3114 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	730'	O	06/30/2012	Not complete	718' of 2 7/8" casing cemented to surface
Belton Unit	R-51	3518 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	730'	O	06/08/2012	Not complete	700' of 4 1/2" casing cemented to surface
		FROM (N/S) SEC LINE FROM (E/W) SEC LINE SEC. T. N.R.						

AREA OF REVIEW WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other - specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPULDED	DATE COMPLETED	CONSTRUCTION
Belton Unit	RW-22	1145 FROM (N) SEC LINE 1087 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	730'	I	06/01/2012	Not Complete	696' of 2 7/8" casing cemented to surface
Belton Unit	RW-23	1128 FROM (N) SEC LINE 1133 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	730'	I	05/22/2012	07/06/2012	691' of 2 7/8" casing cemented to surface
Belton Unit	RW-24	1127 FROM (N) SEC LINE 1141 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	730'	I	05/30/2012	Not Complete	565' of 2 7/8" casing cemented to surface
Belton Unit	RW-25	5119 FROM (N) SEC LINE 1839 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	750'	I	05/18/2012	07/06/2012	711' of 2 7/8" casing cemented to surface
Belton Unit	RW-26	1148 FROM (N) SEC LINE 1885 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	730'	I	05/23/2012	07/17/2012	692' of 2 7/8" casing cemented to surface
Belton Unit	RW-27	1141 FROM (N) SEC LINE 2301 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	730'	I	05/29/2012	07/17/2012	682' of 2 7/8" casing cemented to surface
Belton Unit	RW-37	5126 FROM (N) SEC LINE 3208 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	720'	I	05/14/2012	07/09/2012	695' of 2 7/8" casing cemented to surface
Belton Unit	RW-38	5120 FROM (N) SEC LINE 3219 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	730'	I	07/03/2012	Not Complete	687' of 2 7/8" casing cemented to surface
Belton Unit	RW-39	5117 FROM (N) SEC LINE 2370 FROM (E) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	720'	I	05/16/2012	07/09/2012	686' of 2 7/8" casing cemented to surface

AREA OF REVIEW WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other - specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPULDED	DATE COMPLETED	CONSTRUCTION
Belton Unit	RW-48	5105 FROM (N) SEC LINE 2105 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	730'	I	07/03/2012	Not Complete	687' of 2 7/8" casing cemented to surface
Belton Unit	RW-43	4102 FROM (N) SEC LINE 2135 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	700'	I	06/14/2012	07/17/2012	672' of 2 7/8" casing cemented to surface
Belton Unit	RW-44	4105 FROM (N) SEC LINE 3185 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	730'	I	06/28/2012	Not Complete	690' of 2 7/8" casing cemented to surface
Belton Unit	RW-45	4201 FROM (N) SEC LINE 3173 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	730'	I	07/11/2012	Not Complete	684' of 2 7/8" casing cemented to surface
Belton Unit	RW-46	4205 FROM (N) SEC LINE 3184 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	730'	I	07/13/2012	Not Complete	687' of 2 7/8" casing cemented to surface
Belton Unit	RW-47	4207 FROM (N) SEC LINE 2113 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	730'	I	07/13/2012	Not Complete	689' of 2 7/8" casing cemented to surface
Belton Unit	RW-48	4208 FROM (N) SEC LINE 2115 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	730'	I	07/13/2012	Not Complete	681' of 2 7/8" casing cemented to surface
Belton Unit	RW-49	4201 FROM (N) SEC LINE 2112 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	730'	I	06/13/2012	07/17/2012	675' of 2 7/8" casing cemented to surface
Belton Unit	RW-50	4102 FROM (N) SEC LINE 2120 FROM (W) SEC LINE SEC. 16 T. 46 N.R. 33W	K.R.E.D.	730'	I	06/30/2012	Not Complete	659' of 2 7/8" casing cemented to surface

AREA OF REVIEW WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other - specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPULDED	DATE COMPLETED	CONSTRUCTION
Belton Unit	AD 9-2	463 FROM (N) SEC LINE FROM (W) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	760'	O	03/30/2012	05/07/2012	741' of 4 1/2" casing cemented to surface
Belton Unit	AD11-2	600 FROM (N) SEC LINE FROM (W) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	750'	O	03/12/2012	04/27/2012	737' of 4 1/2" casing cemented to surface
Belton Unit	AD16-2	1151 FROM (N) SEC LINE FROM (W) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	760'	O	03/28/2012	04/27/2012	739' of 4 1/2" casing cemented to surface
Belton Unit	AD-20	1520 FROM (N) SEC LINE FROM (W) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	760'	O	03/29/2012	06/11/2012	740' of 4 1/2" casing cemented to surface
Belton Unit	AD-26	1485 FROM (N) SEC LINE FROM (W) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	770'	O	04/05/2012	06/13/2012	745' of 4 1/2" casing cemented to surface
Belton Unit	AD-27	1414 FROM (N) SEC LINE FROM (W) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	760'	O	03/30/2012	06/13/2012	741' of 4 1/2" casing cemented to surface
Belton Unit	AD-31	2346 FROM (N) SEC LINE FROM (W) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	701'	O	04/12/2012	Not Complete	688' of 2 7/8" casing cemented to surface
Belton Unit	AD-32	1408 FROM (N) SEC LINE FROM (W) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	760'	O	04/06/2012	06/28/2012	745' of 4 1/2" casing cemented to surface
Belton Unit	AD-33	1435 FROM (N) SEC LINE FROM (W) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	760'	O	04/03/2012	07/04/2012	741' of 4 1/2" casing cemented to surface

AREA OF REVIEW WELLS (1/2 MILE RADIUS AROUND WELL) THAT PENETRATE THE INJECTION INTERVAL

INSTRUCTIONS

In the grid below, place the descriptions of area of review wells (1/2 mile radius around well) of public record that penetrate the proposed injection zone. Complete the following: lease name, well number, location, owner, depth in feet, type of well (Oil = O, Gas = G, Water = W, Injection = I, Strat Test = S, Unknown = U, Other - specify), date spudded, date completed, and construction of the well. Give a brief but accurate description of the well's construction including all plugging and/or completion of information, detailing the cement, casing, and subsurface casing information.

LEASE	WELL NO.	LOCATION	OWNER	DEPTH	TYPE	DATE SPURRED	DATE COMPLETED	CONSTRUCTION
Belton Unit	AD 3-2	268 FROM (N) SEC LINE 1544 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	770'	O	06/15/2012	Not complete	713' of 4 1/2" casing cemented to surface
Belton Unit	AD 4-2	256 FROM (N) SEC LINE 1125 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	770'	O	06/22/2012	complete	724' of 4 1/2" casing cemented to surface
Belton Unit	AD 5-2	124 FROM (N) SEC LINE 640 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	770'	O	06/20/2012	↑	721' of 4 1/2" casing cemented to surface
Belton Unit	AD-34	2435 FROM (N) SEC LINE 1074 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	700'	O	05/04/2012	07/09/2012	686' of 4 1/2" casing cemented to surface
Belton Unit	AD1-42	382 FROM (N) SEC LINE 444 FROM (E) SEC LINE SEC. 9 T. 46 N.R. 33W	K.R.E.D.	730'	I	07/19/2012	Not complete	686' of 2 7/8" casing cemented to surface
		FROM (N) SEC LINE FROM (E) SEC LINE SEC. T. N.R.						
		FROM (N) SEC LINE FROM (E) SEC LINE SEC. T. N.R.						
		FROM (N) SEC LINE FROM (E) SEC LINE SEC. T. N.R.						

AFFIDAVIT OF PUBLICATION

(Space above for recording information)

STATE OF MISSOURI
COUNTY OF CASS

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OK

I, Janis Anslinger, being duly sworn according that I am the Classified Ad Manager of the Cass County Missourian, a weekly newspaper of general circulation in the County of Cass, State of Missouri, where this newspaper has been admitted to the Post Office as second class matter in the City of Harrisonville, Missouri, and which newspaper has been published consecutively for a period of three years and has bona fide subscribers voluntarily engaged as subscribers and agreed to pay a stated price for a definite period of time, and that such newspaper complies with the provisions of Section 493.050, Revised Statutes Missouri 2000, and Section 593.10, Revised Statutes Missouri 2000. The affixed notice appeared in said newspaper in the following consecutive issues:

- 1st Insertion Vol 132 No 37 29 day of June 2012
- 2nd Insertion Vol _____ No _____ day of _____
- 3rd Insertion Vol _____ No _____ day of _____
- 4th Insertion Vol _____ No _____ day of _____
- 5th Insertion Vol _____ No _____ day of _____

Janis Anslinger
Janis Anslinger, Classified Ad Manager

Subscribed and sworn to before me on this 29 day of June 2012
Julie M. Hicks

JULIE M. HICKS
Notary Public, Notary Seal
State of Missouri
Cass County
Commission # 09727108
My Commission Expires June 12, 2013

Kansas Resource Exploration & Development, LLC, 9193 W 17th St., Ste 500, Overland Park, KS, 66214 has applied for 32 injection well permits to be drilled to an approximate depth of 650 feet. Safety water will be injected into the Squirrel Sandstone formation for an Enhanced Oil Recovery Project at the following locations:

- #RW-71 5,095' from S line/1,867' from E line, Section 16, Township 46N, Range 33W
- #RW-72 3,851' from S line/3,199' from E line, Section 16, Township 46N, Range 33W
- #RW-73 3,842' from S line/3,195' from E line, Section 16, Township 46N, Range 33W
- #RW-74 3,858' from S line/2,765' from E line, Section 16, Township 46N, Range 33W
- #RW-75 3,847' from S line/2,763' from E line, Section 16, Township 46N, Range 33W
- #RW-76 3,478' from S line/3,198' from E line, Section 16, Township 46N, Range 33W
- #RW-77 3,473' from S line/3,190' from E line, Section 16, Township 46N, Range 33W
- #RW-78 3,475' from S line/2,767' from E line, Section 16, Township 46N, Range 33W
- #RW-79 3,468' from S line/2,761' from E line, Section 16, Township 46N, Range 33W
- #RW-80 3,113' from S line/3,182' from E line, Section 16, Township 46N, Range 33W
- #RW-81 3,106' from S line/3,176' from E line, Section 16, Township 46N, Range 33W
- #RW-82 3,116' from S line/2,785' from E line, Section 16, Township 46N, Range 33W
- #RW-83 3,107' from S line/2,778' from E line, Section 9, Township 46N, Range 33W
- #ADI-2 2,610' from S line/2,105' from E line, Section 9, Township 46N, Range 33W
- #ADI-2-2 2,610' from S line/1,695' from E line, Section 9, Township 46N, Range 33W
- #ADI-3 2,614' from S line/1,692' from E line, Section 9, Township 46N, Range 33W
- #ADI-4 2,628' from S line/1,275' from E line, Section 9, Township 46N, Range 33W
- #ADI-4-2 2,622' from S line/1,275' from E line, Section 9, Township 46N, Range 33W
- #ADI-5 2,183' from S line/2,115' from E line, Section 9, Township 46N, Range 33W
- #ADI-9-2 2,178' from S line/1,695' from E line, Section 9, Township 46N, Range 33W
- #ADI-10 2,198' from S line/1,695' from E line, Section 9, Township 46N, Range 33W
- #ADI-10-2 2,192' from S line/1,690' from E line, Section 9, Township 46N, Range 33W
- #ADI-11 2,210' from S line/1,287' from E line, Section 9, Township 46N, Range 33W
- #ADI-11-2 2,206' from S line/1,285' from E line, Section 9, Township 46N, Range 33W
- #ADI-16 1,719' from S line/2,108' from E line, Section 9, Township 46N, Range 33W
- #ADI-16-2 1,714' from S line/2,105' from E line, Section 9, Township 46N, Range 33W
- #ADI-17 1,756' from S line/1,700' from E line, Section 9, Township 46N, Range 33W
- #ADI-17-2 1,752' from S line/1,695' from E line, Section 9, Township 46N, Range 33W
- #ADI-17-3 1,748' from S line/1,702' from E line, Section 9, Township 46N, Range 33W
- #ADI-23 1,794' from S line/2,071' from E line, Section 9, Township 46N, Range 33W
- #ADI-23-2 1,289' from S line/2,067' from E line, Section 9, Township 46N, Range 33W

Written comments or requests for additional information regarding such wells should be directed within fifteen (15) days of this notice to the address below:

State Geologist
Missouri Oil & Gas Council
P. O. Box 250
Rolla, MO 65401

MISSOURI Mechanical Integrity Test

Test Date: 3-6-2013

Operator: KRED
Address: _____

Contact: _____
Phone: _____

Lease: Belton Unit
County: Cass

Well No.: ADI-10-2
Permit No.: 21009
N38°49'23.0" N94°34'20.5"

TEST INFORMATION

Pressure Radioactive Tracer Survey Temperature Survey

	Run #1	Run #2	Run #3	Run #4
Start Time:	<u>1110</u>			
End Time:	<u>1142</u>			
Length of Test:	<u>32 m</u>			
Initial Pressure (PSI):	<u>600</u>			
Ending Pressure (PSI):	<u>610</u>			
Pressure Change:	<u>0</u>			

Fluid Used For Test (water, nitrogen, CO2, etc.): Air

Perforations: None - new well

Comments: X 433 =

The bottom of the tested zone is shut in with Rubber Plug at a depth of _____ feet.
In signing the form below, it is certified that the above indicated well was tested for mechanical integrity on the test date shown above.

Signature: [Handwritten Signature]
Operator, Contact Person or Approved Agent

Title

FOR INTERNAL USE ONLY

Results were: Satisfactory <input checked="" type="checkbox"/> Not Satisfactory <input type="checkbox"/>	Computer Update: <input checked="" type="checkbox"/>
Remarks: _____	
State Agent: <u>C. VIERRETH</u>	Witnessed: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
!! FILE WITH PERMIT !!	



STATE OF MISSOURI
MISSOURI DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY PROGRAM
WELL COMPLETION OR RECOMPLETION REPORT AND WELL LOG

FORM OGC-5

<input checked="" type="checkbox"/> NEW WELL <input type="checkbox"/> WORKOVER <input type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input checked="" type="checkbox"/> INJECTION <input type="checkbox"/> SAME RESERVOIR <input type="checkbox"/> DIFFERENT RESERVOIR <input type="checkbox"/> OIL <input type="checkbox"/> GAS <input type="checkbox"/> DRY									
OWNER Kansas Resource Exploration & Development, LLC					ADDRESS 9393 W. 110th St., Ste #500, Overland Park, KS 66210				
LEASE NAME Belton Unit					WELL NUMBER ADI 10-2				
LOCATION OF WELL		SEC TWN RNG		OR		BLOCK AND SURVEY		LATITUDE	LONGITUDE
Sec. 9 Twp 46 North, Rng 33		<input type="checkbox"/> East <input checked="" type="checkbox"/> West		OR 2192 ft. from <input type="checkbox"/> North <input checked="" type="checkbox"/> South 1690 ft. from <input checked="" type="checkbox"/> East <input type="checkbox"/> West				N 38 49 22.76 W 94 34 20.22	
COUNTY Cass		PERMIT NUMBER (OGC-3 OR OGC-31) 037-21009							
DATE SPUDDED 1-21-2013		DATE TOTAL DEPTH REACHED 1-25-2013		DATE COMPLETED READY TO PRODUCE OR INJECT 3-15-2013		ELEVATION (DF, RKR, RT, OR Gr.) FEET 1083'		ELEVATION OF CASING HD. FLANGE 1083' FEET	
TOTAL DEPTH 750'		PLUG BACK TOTAL DEPTH 672.10'							
PRODUCING OR INJECTION INTERVAL(S) FOR THIS COMPLETION 591-605					ROTARY TOOLS USED (INTERVAL) 0 TO 750			CABLE TOOLS USED (INTERVAL) N/A	
WAS THIS WELL DIRECTIONALLY DRILLED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		WAS DIRECTIONAL SURVEY MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		DRILLING FLUID USED <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		WAS COPY OF DIRECTIONAL SURVEY FILED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		DATE FILED N/A	
TYPE OF ELECTRICAL OR OTHER LOGS RUN (JUST LOGS FILED WITH THE STATE GEOLOGIST) Gamma Ray/Neutron/CCL								DATE FILED 02/19/2014	
CASING RECORD									
CASING (REPORT ALL STRINGS SET IN WELL - CONDUCTOR, SURFACE, INTERMEDIATE, PRODUCING, ETC.)									
PURPOSE	SIZE HOLE DRILLED	SIZE CASING SET	WEIGHT (LB. FT)	DEPTH SET	SACKS CEMENT	AMOUNT PULLED			
Surface	9 7/8"	7"	17#	21.20'	6	0			
Longstring	5 7/8"	2 7/8"	6.5#	696.95'	73	0			
TUBING RECORD					LINER RECORD				
SIZE	DEPTH SET	PACKER SET AT	SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN		
N/A INCH	N/A FEET	N/A FEET	N/A INCH	N/A FEET	N/A FEET	N/A	N/A FEET		
PERFORATION RECORD					ACID, SHOT, FRACTURE, CEMENT SQUEEZE RECORD				
NUMBER PER FEET	SIZE AND TYPE	DEPTH INTERVAL		AMOUNT AND KIND OF MATERIAL USED		DEPTH INTERVAL			
3	2" DML RTG	591-605		150 gal 7.5% HCL		591-605			
INITIAL PRODUCTION									
DATE OF FIRST PRODUCTION OR INJECTION			PRODUCING METHOD (INDICATE IF FLOWING, GAS LIFT, OR PUMPING - IF PUMPING, SHOW SIZE AND TYPE OF PUMP.)						
DATE OF TEST	HOURS TESTED	CHOKE SIZE	OIL PRODUCED DURING TEST	GAS PRODUCED DURING TEST		WATER PRODUCED DURING TEST		OIL GRAVITY	
			BBLS	MCF		BBLS		API (CORR.)	
TUBING PRESSURE	CASING PRESSURE	CALCULATED RATE OF PRODUCTION PER 24 HOURS		OIL	GAS	WATER		GAS OIL RATIO	
				BBLS	MCF	BBLS		0	
DISPOSITION OF GAS (STATE WHETHER VENTED, USED FOR FUEL OR SOLD)									
METHOD OF DISPOSAL OF MUD PIT CONTENTS Air Dry									
Chief Operating Officer Kansas Resource Exploration and Development, LLC CERTIFICATE: I, the Undersigned, state that I am the _____ of the _____ (Company), and that I am authorized by said company to make this report, and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.									
DATE 02/19/2014		SIGNATURE 							

INSTRUCTIONS: Attach drillers log or other acceptable log of well.

* Show all important zones of porosity, detail of all cores, and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

DETAIL OF FORMATIONS PENETRATED

FORMATION	TOP	BOTTOM	DESCRIPTION (SEE * ABOVE)
See Attached Logs			

Belton Unit ADI-10-2

<u>Thickness of Strata</u>	<u>Formation</u>	<u>Total</u>
11	soil & clay	11
32	lime	43
26	shale	69
11	lime	80
19	shale	99
5	lime	104
14	shale	118
8	silty shale	126
10	shale	136
3	lime	139
10	silty shale	149
18	shale	167
3	lime	170
10	shale	180
2	lime	182
2	shale	184
11	lime	195
11	shale	206
17	lime	223
4	shale	227
1	lime	228
4	shale	232
6	lime	238
7	shale	245
3	sand	248
92	shale	340
6	broken sand	346
28	shale	374
1	lime	375
43	shale	418
5	lime	423
13	shale	436
6	lime	442
20	shale	462
4	lime	466
7	shale	473
2	broken sand	475
1	oil sand	476
1	broken sand	477
41	shale	518

base of the Kansas City *Base Pawnee*

green, no oil

green & brown, light bleeding

Base Labette shale

oil show Higginsville lime

Summit coal

Blackjack creek lime

Mulky coal

Top Squirrel Sand

Belton Unit ADI-10-2

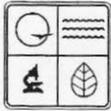
1	coal	519	
16	shale	535	
3	silty shale	538	
4	shale	542	
2	broken sand	544	
7	silty shale	551	
1	broken sand	552	
1	shale	553	
1	broken sand	554	brown sand & shale, light bleeding
2	oil sand	556	brown, ok bleeding
1	broken sand	557	brown sand & shale, ok bleeding
2	silty shale	559	
6	broken sand	565	brown sand & shale, ok bleeding
4	oil sand	569	brown, good bleeding
2	shale	571	
4	broken sand	575	sand & shale, good bleeding
9	oil sand	584	brown, good bleeding
3	broken sand	587	brown & grey, good bleeding
18	oil sand	605	brown, good bleeding
10	silty shale	615	
1	grey sand	616	
1	broken sand	617	brown & grey, ok bleeding
2	oil sand	619	brown, good bleeding
5	sand	624	black & grey, ok oil show Base Squirrel sand
1	coal	625	
40	shale	665	
1	coal	666	
37	shale	703	
1	coal	704	
26	shale	730	TD Verdigris, Oakley

Drilled a 9 7/8" hole to 22.4'
 Drilled a 5 5/8" hole to 730'

Set 22.4' of 7" surface casing cemented with 6 sacks of cement

Set 694.8' of 2 7/8" 8 round upset tubing with 3 centralizers, 1 clamp, 1 float shoe, 1 baffle

Set baffle at 31.1' from bottom of tally.



STATE OF MISSOURI
MISSOURI DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY PROGRAM
INJECTION WELL MONITORING REPORT

RECEIVED
FORM OGC-12

MAR 03 2014

INSTRUCTIONS		Record Injection Rate and Injection Pressure at least monthly with the results submitted annually.		
MONTH	INJECTION RATE – bpd/gpm	INJECTION PRESSURE – psig	DATE MEASUREMENT TAKEN	REMARKS
(01) January				
(02) February				
(03) March	31 pbd	100	March 15, 2013	Turned on March 15, 2013
(04) April	32 bpd	100	April 1, 2013	
(05) May	33. bpd	100	May 1, 2013	
(06) June	30 bpd	100	June 1, 2013	
(07) July	30 bpd	100	July 1, 2013	
(08) August	31 bpd	100	August 1, 2013	
(09) September	29 bpd	100	September 1, 2013	
(10) October	32 bpd	100	October 1, 2013	
(11) November	31 bpd	100	November 1, 2013	
(12) December	30 bpd	100	December 1, 2013	

Mo Oil & Gas Council