Cancelled 3/22/95 KWB

Missouri Oil and Gas Council — Form OGC-3I

INJECTION WELL PERMIT APPLICATION: to drill, deepen, plug back, or convert an existing well

APPLICATION TO DRILL ☒ DEEPEN ☐ PLUG BACK ☐ CONVERSION ☐

NAME OF COMPANY OR OPERATOR Town Oil Co. DATE 3-2-84

Rt. 4 (Address) Paola (City) Kansas (State)

DESCRIPTION OF WELL AND LEASE

Name of lease	Well number	Elevation (ground)
Walton	10-W	1055' TM

WELL LOCATION (give footage from section lines): 2080 ft. from (N) (~~S~~) sec line; 2667 ft. from (E) (~~W~~) sec line

WELL LOCATION: Section 4 Township 46 Range 33 — COUNTY: Cass

Nearest distance from proposed location to property or lease line 155 feet

Distance from proposed location to nearest drilling, completed or applied — for well on the same lease 210 feet

Proposed depth	Rotary or Cable tools	Drilling Contractor, name and address	Approx. date work will start
600	Rotary	Town Oil Co.	When approved

Number of acres in lease: approx 85

Number of wells on lease, including this well, completed in or drilling to this reservoir: _____

Number of abandoned wells on lease: _____

If lease purchased with one or more wells drilled, from whom purchased?

Name Harry Knoche

Address Belton, Mo.

No of Wells: producing _____ injection _____ inactive _____ abandoned _____

Status of Bond: Single Well ☐ Amt. _____ Blanket Bond ☒ Amt. $20,000 — ☒ ON FILE ☐ ATTACHED

Outline Proposed Stimulation Program

Water injection and secondary recovery

Proposed casing program

amt.	size	wt/ft	cem.
600	2"	3.75	to surface

Approved casing — To be filled in by State Geologist

amt.	size	wt/ft	cem.
600	2"	3.75	to surface

I, the undersigned, state that I am the Partner of the Town Oil Co. (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 Michael Brown

Permit Number #20456

Approved Date 4/25/84

Approved by Wallace B. Howe KD

Note: This Permit not transferable to any other person or to any other location

☒ SAMPLES REQUIRED ☐ SAMPLES NOT REQUIRED

WATER SAMPLES REQUIRED @ _____

RECEIVED APR 09 1984 MO. OIL & GAS COUNCIL

Remit two copies to: Missouri Oil and Gas Council, P.O. Box 250, Rolla, MO 65401

One will be returned for driller's signature

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.

3/12/82

I Lester Town of the Town Oil Co.

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 Michael Town

Date 3-2-84

Proposed Operations Data

Proposed average daily injection, pressure 400 psig, rate 25 bpd/~~gpm~~ volume 300 bbl/~~gal~~

Approved average daily injection, (to be filled in by State Geologist). pressure 400 psig, rate 25 bpd/~~gpm~~, volume 300 bbl/~~gal~~

Proposed maximum daily injection, pressure ~~700~~ psig, rate 50 bpd/~~gpm~~, volume 1000 bbl/~~gal~~

Approved maximum daily injection, (to be filled in by State Geologist). pressure 600 psig, rate 50 bpd/~~gpm~~, volume 1000 bbl/~~gal~~

Estimated fracture pressure/gradient of injection zone breakdown 800 psi/foot

Describe the source of the injection fluid produced and fresh water

Submit an appropriate analysis of the injection fluid. (Submit on separate sheet).

See enclosed water analysis report

Describe the compatibility of the proposed injected fluid with that of the receiving formations, including total dissolved solids comparisons.

Same

Give an accurate description of the injection zone including lithologic descriptions, geologic name, thickness, depth, porosity, and permeabllity.

See the enclosed driller's log, gamma ray and core analysis

Give an accurate description of the confining zones including lithologic description, geologic name, thickness, depth, porosity, and permeability.

See the enclosed driller's log, gamma ray and core analysis

Submit all available logging and testing data on the well.

Give a detailed description of any well needing corrective action which penetrates the injection zone in the area of review (½ mile radius around well). Include the reason for and proposed corrective action.

None

RECEIVED
APR 09 1984
MO. OIL & GAS COUNCIL

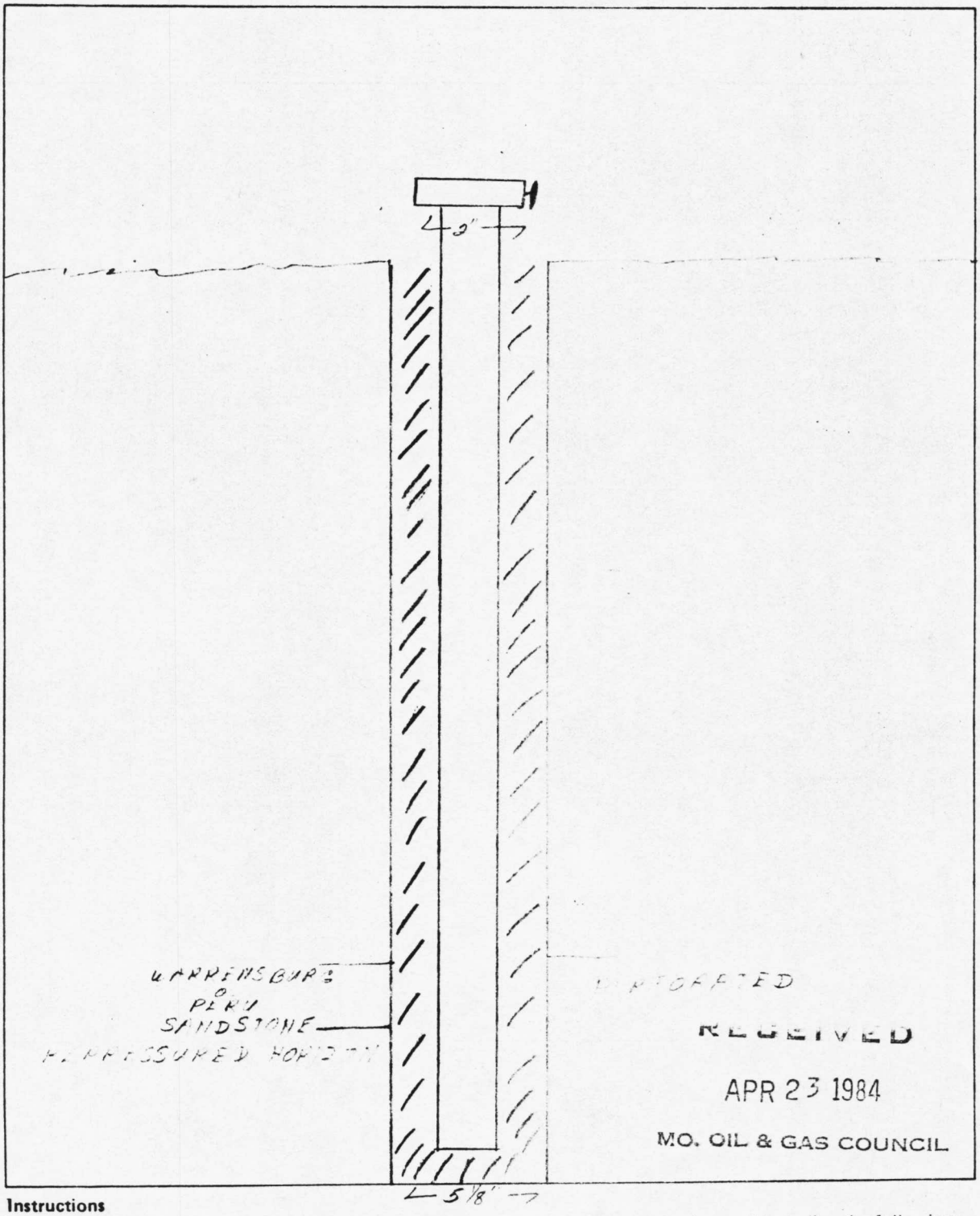
#20456

County Jackson Permit # _____ Operator Town Oil Well # _____

Missouri Oil and Gas Council

Form OGC-11

INJECTION WELL SCHEMATIC



RECEIVED
APR 23 1984
MO. OIL & GAS COUNCIL

Instructions

On the above space draw a neat accurate schematic diagram of the applicant injection well including the following: configuration of well head, 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.

#20456

3/12/82

#2 0456

Area of Review Wells (½ mile radius around well) that Penetrate the Injection Interval

Lease	Well #	Location	Owner	Depth	Type	Date Spudded	Date Completed	Construction
Beary	54A	165' from (N)(S) sec. line 1652.25' from (E)(W) sec. line Sec. 4 T. 46 N. R. 33W	Emery Energy	640	O	1/81	1/81	Surface 9" hole 7" casing 20.583' Production 6¼" hole 4" casing 629.80'
Beary	54C	546.4 from (N)(S) sec. line 1652.2 from (E)(W) sec. line Sec. 4 T. 46 N. R. 33W	Emery Energy	640	O	12/80	12/80	Surface 9" hole 7" casing 21.583' Production 6¼' hole 4" casing 630.6'
Beary	54C1	546.6 from (N)(S) sec. line 1652.2' from (E)(W) sec. line Sec. 4 T. 46 N. R. 33W	Emery Energy	520	O	1/81	1/81	Surface: 9" hole 7" casing 21.67' Production 6¼" hole 4" casing 462.50'
Beary	54E	930.2' from (N)(S) sec. line 1652.2' from (E)(W) sec. line Sec. 4 T. 46 N. R. 33W	Emery Energy	640	O	1/81	1/81	Surface 9" hole 7" casing 20.75' Production: 6¼" hole 4" casing 628.35'
Beary	B-55	355 from (N)(S) sec. line 1542 from (E)(W) sec. line Sec. 4 T. 46 N. R. 33W	Emery Energy	640	O	1/81	1/81	Surface 9" hole 7" casing 21.42' Production 6¼" hole 4" casing 628.70'
		____ from (N)(S) sec. line ____ from (E)(W) sec. line Sec. ____ T. ____ N. R. ____						
		____ from (N)(S) sec. line ____ from (E)(W) sec. line Sec. ____ T. ____ N. R. ____						
		____ from (N)(S) sec. line ____ from (E)(W) sec. line Sec. ____ T. ____ N. R. ____						

Attach additional sheets if necessary

Instructions

In the above grid place the descriptions of area of review wells (½ 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 information, detailing the cement, casing, and subsurface casing information.

#20456

Area of Review Wells (½ mile radius around well) that Penetrate the Injection Interval

Lease	Well #	Location	Owner	Depth	Type	Date Spudded	Date Completed	Construction
Walton	5W	1201' from (N)(~~S~~) sec. line 2200 from (E)(~~W~~) sec. line Sec. 4 T. 46 N. R. 33W	Town Oil	600	O	2/82	2/82	Surface: 9" hole 6¼" casing 20.9' Production: 5 1/8" hole 2" casing 592'
Walton	6W	1555' from (N)(~~S~~) sec. line 2330 from (E)(~~W~~) sec. line Sec. 4 T. 46 N. R. 33W	Town Oil	593	O	9/77	9/77	Surface: 6¼" casing 20' Production: 2" casing 573'
Walton	8W	1580' from (N)(~~S~~) sec. line 1595 from (E)(~~W~~) sec. line Sec. 4 T. 46 N. R. 33W	Town Oil	614	O	9/77	9/77	Surface: 6¼" casing 18' Production: 2" casing 612'
Walton	20	2229' from (N)(~~S~~) sec. line 2383' from (E)(~~W~~) sec. line Sec. 4 T. 46 N. R. 33W	Town Oil	550	O	2/76	2/76	Surface: 8" hole 8" casing 20' Intermediate 8" hole 6¼" casing 456' Producing: 6¼" hole 4½" casing 535'
Walton	22	1413' from (N)(~~S~~) sec. line 1775' from (E)(~~W~~) sec. line Sec. 4 T. 46N N. R. 33W	Town Oil	594	O	8/76	8/76	Surface 8" hole 8" casing 23' Production: 6½" hole 4¼" casing 570'
Walton	24	164' from (N)(S) sec. line 2505' from (~~E~~)(W) sec. line Sec. 4 T. 46 N. R. 33W	Town Oil	620	O	1/81	1/81	Surface: 8 5/8" hole 6¼" casing 21' Production: 5¼" hole 2" casing 620'
Walton	25	165' from (N)(~~S~~) sec. line 2835' from (~~E~~)(W) sec. line Sec. 4 T. 46 N. R. 33W	Town Oil	620	O	11/80	11/80	Surface 8 5/8" hole 6¼" casing 21' Production: 5¼" 2" casing 610'
Walton	26	165' from (N)(~~S~~) sec. line 2140' from (E)(~~W~~) sec. line Sec. 4 T. 46 N. R. 33W	Town Oil	620	O	10/80	10/80	Surface: 8 5/8" hole 6¼" casing 22' Production: 5¼" hole 2" casing 600'

Attach additional sheets if necessary

Instructions

In the above grid place the descriptions of area of review wells (½ 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 information, detailing the cement, casing, and subsurface casing information.

#20456

Area of Review Wells (½ mile radius around well) that Penetrate the Injection Interval

Lease	Well #	Location	Owner	Depth	Type	Date Spudded	Date Completed	Construction
Walton	29	495' from (N)(S) sec. line 2140' from (E)(W) sec. line Sec. 4 T. 46 N. R. 33W	Town Oil	608	O	9/77	10/77	Surface: 7" casing 74' Production: 4" casing 596'
Walton	31	1261' from (N)(S) sec. line 1517' from (E)(W) sec. line Sec. 4 T. 46 N. R. 33W	Town Oil	590	O	1/81	2/81	Surface: 8 5/8" hole 6¼" casing 21' Production: 5¼" hole 2" casing 502'
Walton	32	1258' from (N)(S) sec. line 1847' from (E)(W) sec. line Sec. 4 T. 46 N. R. 33W	Town Oil	600	O	2/82	2/82	Surface: 9" hole 6¼" casing 20' Production: 5 1/8" hole 2" casing 588.05'
Walton	37	2221 from (N)(S) sec. line 1518 from (E)(W) sec. line Sec. 4 T. 46 N. R. 33W	Town Oil	595	O	3/82	3/82	Surface: 9" hole 6¼" casing 20.5' Production: 5 1/8" hole 6¼" casing 595.20
Asjes	C-4	547' from (N)(S) sec. line 882' from (E)(W) sec. line Sec 4 T. 46 N. R 33W	Emery Energy	639	O	11/81	11/81	Surface: 9" hole 6¼" casing 20' Production: 5¼" hole 2" casing 640'
Asjes	C-6	547' from (N)(S) sec. line 559' from (E)(W) sec. line Sec. 4 T. 46 N. R. 33W	Emery Energy	634	O	7/81	7/81	Surface: 9" hole 6¼" casing 20' Production: 5¼" hole 2" casing 636.5'
Asjes	C-8	547' from (N)(S) sec. line 18' from (E)(W) sec. line Sec. 4 T. 46 N. R. 33W	Emery Energy	670	O	7/81	7/81	Surface: 9" hole 6¼" casing 22' Production: 5¼" hole 2" casing 660'
Asjes	C-10	54' from (N)(S) sec. line 159' from (E)(W) sec. line Sec. 4 T. 46 N. R 33W	Emery Energy	636	O	9/81	9/81	Surface: 9" hole 6¼" casing 20' Production: 5¼" hole 2" casing 636.5'

Attach additional sheets if necessary

Instructions

In the above grid place the descriptions of area of review wells (½ 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 information, detailing the cement, casing, and subsurface casing information.

#20456

Area of Review Wells (½ mile radius around well) that Penetrate the Injection Interval

Lease	Well #	Location	Owner	Depth	Type	Date Spudded	Date Completed	Construction
Asjes	E-4	812' from (N)(X)(S) sec. line 882' from (E)(X)(W) sec. line Sec. 4 T. 46 N. R. 33N	Emery Energy	629	O	11/81	11/81	Surface: 9" hole 6¼" casing 20' Production: 5¼" hole 2" casing 640'
Asjes	G-2	1306.5' from (N)(X)(S) sec. line 1187.5' from (E)(X)(W) sec. line Sec. 4 T. 46 N. R. 33W	Emery Energy	669.4	O	11/81	11/81	Surface: 9" hole 6¼" casing 20' Production: 5¼" hole 2" casing 670'
Asjes	G-4	1303' from (N)(X)(S) sec. line 972' from (E)(X)(W) sec. line Sec. 4 T. 46 N. R. 33W	Emery Energy	666.0	O	11/81	11/81	Surface: 9" hole 6¼" casing 17.6' Production: 5¼" hole 2" casing 670'
Beary	A-52	165' from (N)(X)(S) sec. line 1872' from (E)(X)(W) sec. line Sec. 4 T. 46 N. R. 33W	Emery Energy	642	O	1/81	1/81	Surface: 9" hole 7" casing 21' Production 6¼" hole 4" casing 628.4'
Beary	52C	546.46' from (N)(X)(S) sec. line 1872.25' from (E)(X)(W) sec. line Sec. 4 T. 46 N. R. 33W	Emery Energy	640	O	1/81	1/81	Surface: 9" hole 7" casing 35' Production: 6¼" hole 4" casing 627.80'
Beary	E-52	927.92' from (N)(X)(S) sec. line 1872.25' from (E)(X)(W) sec. line Sec. 4 T. 46 N. R. 33W	Emery Energy	641	O	1/81	1/81	Surface: 9" hole 7" casing 21.853' Production: 6¼" hole 4" casing 628.35'
Beary	53B	355.73' from (N)(X)(S) sec. line 1762.25' from (E)(X)(W) sec. line Sec. 4 T. 46 N. R. 33W	Emery Energy	640	O	1/81	1/81	Surface: 9" hole 7" casing 21.583" Production: 6¼" hole 4" casing 630.85'
Beary		738.19' from (N)(X)(S) sec. line 1762.25' from (E)(X)(W) sec. line Sec. 4 T. 46 N. R. 33W	Emery Energy	640	O	1/81	1/81	Surface: 9" hole 7" casing 20.9' Production: 6¼" hole 4" casing 627.5'

Attach additional sheets if necessary

Instructions

In the above grid place the descriptions of area of review wells (½ 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 information, detailing the cement, casing, and subsurface casing information.

NALCO

REPORT OF WATER ANALYSIS

Company Town Oil Company

Date 5-4-81
Analysis No.
Sampling Date 5-3-81
Date Sample Rec'd.

Sample Marked Walton

DISSOLVED SOLIDS			RESULTS AS COMPOUNDS	
Cations	mg/l	meq/l		mg/l
Sodium, Na (Calc.)	6,969	303	as NaCl	
Calcium, Ca	560	28	as $CaCO_3$	1,400
Magnesium, Mg	194	16	as $CaCO_3$	800
Barium, Ba	5	0	as $BaSO_4$	9
Cations Total	7,728	347		
Anions				
Chloride, Cl	11,897	336	as NaCl	19,600
Sulfate, SO_4	0	0	as Na_2SO_4	0
Carbonate, CO_3	0	0	as $CaCO_3$	0
Bicarbonate, HCO_3	688	11	as $CaCO_3$	564
Anions Total	12,585	347		
Total Dissolved Solids (Calc.)	20,313			
Total Iron, Fe	.15		as Fe	.15
Acidity to Phenolphthalein, CO_2	95		as $CaCO_3$	216

OTHER PROPERTIES		$CaCO_3$ STABILITY INDEX
pH	7.9	@ 70° F.
Specific Gravity	1.003	@ 120° F.
Turbidity (JTU)		@ 160° F.
		Method of Stiff & Davis

Remarks:

NALCO CHEMICAL COMPANY
VISCO CHEMICALS
P O BOX 87 • SUGAR LAND, TEXAS 77478

NALCO trademarks of Nalco Chemical Company

S-24A