Water Flood Well

Form OGC - 3

MISSOURI OIL AND GAS COUNCIL

APPLICATION FOR PERMIT TO DRILL, DEEPEN OR PLUG BACK

APPLICATION TO DRILL ☒ DEEPEN ☐ PLUG BACK ☐

NAME OF COMPANY OR OPERATOR Emery Energy, Inc. DATE 10-9-81

Box 519 (Address) Osawatomie (City) Kansas (State) 66064

DESCRIPTION OF WELL AND LEASE

Name of lease	Well number	Elevation (ground)
Asjes	B-3	1078.7

WELL LOCATION (give footage from section lines)
356 ft. from (N) (S) sec. line 1012 ft. from (E) (W) sec. line

WELL LOCATION Section 4 Township 46N Range 33W County Cass

Nearest distance from proposed location to property or lease line: 35 feet

Distance from proposed location to nearest drilling, completed or applied – for well on the same lease: _____ feet

Proposed depth	Rotary or Cable tools	Approx. date work will start
680'	Rotary	10-13-81

Number of acres in lease: 110

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 McGown Drilling Address Mound City, Kansas

No. of Wells: producing _____ inactive _____ abandoned _____

Status of Bond

Single Well ☐ Amt. _____ Blanket Bond ☒ Amt. 20,000 ☒ ON FILE ☐ ATTACHED

Remarks: (If this is an application to deepen or plug back, briefly describe work to be done, giving present producing zone and expected new producing zone) use back of form if needed.

Proposed casing program:

amt.	size	wt./ft.	cem.
20'	7"	30#	yes
660'	2-3/8	4.5	yes

Approved casing – To be filled in by State Geologist

amt.	size	wt./ft.	cem.

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.

Signature Devon M. Hurst

Permit Number: 20223

Approval Date: 10/28/81

Approved By: J.R.S. Wallace B. Howe

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

Remit two copies to: Missouri Oil and Gas Council P.O. Box 250 Rolla, Mo. 65401
One will be returned for driller's signature

DISPOSAL WELL (into Produced Fm)

☐ SAMPLES REQUIRED

☒ SAMPLES NOT REQUIRED

WATER SAMPLES REQUIRED @:

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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.

This permit originally issued to Emery Energy, Inc. [illegible]

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

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 Tom Oil Co. DATE 12/6/85

Route 4 (Address) Paola (City) KS 66071 (State)

DESCRIPTION OF WELL AND LEASE

Name of lease	Well number	Elevation (ground)
Asjes	B-3	1078.7

WELL LOCATION (give footage from section lines)

356 ft. from (N) (S) sec line 1012 ft. from (E) (W) sec line

WELL LOCATION Section 4 Township 46N Range 33W

COUNTY CASS

Nearest distance from proposed location to property or lease line 35 feet

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

Proposed depth	Rotary or Cable tools	Drilling Contractor, name and address	Approx. date work will start
680			see note

Number of acres in lease 110

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 _____

Address _____

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

Proposed casing program

amt.	size	wt/ft	cem.
20'	7"	30#	yes
660'	2-3/8"	4.5	yes

Approved casing – To be filled in by State Geologist

amt.	size	wt/ft	cem.
✓	✓	✓	✓
✓	✓	✓	✓

I, the undersigned, state that I am the Partner of the Tom Oil (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 _____

Permit Number 20223

Approved Date 12/9/85

Approved by Wallace B. Howe BVN

☐ SAMPLES REQUIRED ☑ SAMPLES NOT REQUIRED

WATER SAMPLES REQUIRED @ _____

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

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.

R/1/84

MISSOURI OIL AND GAS COUNCIL

Form OGC-5

WELL COMPLETION OR RECOMPLETION REPORT AND WELL LOG

Disposal Well

New Well [X] Work-Over [ ] Deepen [ ] Plug Back [ ] Same Reservoir [ ] Different Reservoir [ ] Oil [ ] Gas [ ] Dry [ ]

Disposal Well

Owner: Emery Energy, Inc.	Address: Box 519, Osawatomie, Ks. 66064
Lease Name: Everett Asjes	Well Number: B-3
Location: 356' FNL & 1012' FEL	Sec. — TWP-Range or Block & Survey: Sec. 4, 46N, 33W
County: Cass	Permit number (OGC3 number): 20223

Date spudded	Date total depth reached	Date completed, ready to produce	Elevation (DF, RKB, RT, or Gr.) feet	Elevation of casing hd. flange feet
11-5-81	11-5-81		1078.7 Gr.	same as surface

Total depth	P B T D
640'	635'

Producing interval (s) for this completion	Rotary tools used (interval)	Cable tools used (interval)
555-602	From 0 to TD; Drilling Fluid used air, water	From ... to none

Was this well directionally drilled?	Was directional survey made?	Was copy of directional survey filed?	Date filed
no	no	no	N/A

Type of electrical or other logs run (list logs filed with the State Geologist): Gamma Ray, Neutron

Date filed: 3-23-82

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	Amt pulled
surface	9"	6¼"		17.5	none	
Prod.	5¼"	2"		637'	83 & 4	sx gel

TUBING RECORD			LINER RECORD				
Size	Depth set	Packer set at	Size	Top	Bottom	Sacks cement	Screen (ft.)
1" in.	none ft.	ft.	in.	none ft.	ft.		

PERFORATION RECORD			ACID, SHOT, FRACTURE, CEMENT SQUEEZE RECORD	
Number per ft.	Size & type	Depth Interval	Am't. & kind of material used	Depth Interval
14 Shots	1-11/16	gl., 555-556-557-	Water Gel - 3	Sand 20-40- 1
558-559-560=595-596-597-598-599-600-			Clay Stab.- 10	Sand 10-20- 0
601 & 602				555 to 602

INITIAL PRODUCTION

Date of first production	Producing method (indicate if flowing, gas lift or pumping—if pumping, show size & type of pump:)
	Disposal Well

Date of test	Hrs. tested	Choke size	Oil prod. during test bbls.	Gas prod. during test MCF	Water prod. during test bbls.	Oil gravity API (Corr.)

Tubing pressure	Casing pressure	Cal'ted rate of Production per 24 hrs.	Oil bbls.	Gas MCF	Water bbls.	Gas—oil ratio

Disposition of gas (state whether vented, used for fuel or sold):

Method of disposal of mud pit contents:

CERTIFICATE: I, the undersigned, state that I am the V-President of the Emery Energy, Inc. (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.

Fracked twice:
Clay Stab.- 10
Sand 20-40- 10
Sand 10-20- 15
Sand 8 -12- 5
~~Salt -~~ 1

Depth Interval 555-560 & 595 to 602

Devon M. Hurst

Signature Devon M. Hurst

DMH/cg

Remit two copies: one will be returned

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Thickness of Strata	Formation	Total Depth	Remarks
6	soil	0-6	
40	lime	46	
30	shale	76	
10	lime	86	
26	shale	112	
8	lime	120	
48	shale	168	
30	lime	198	
5	carb shale	203	
22	lime	225	
5	carb shale	230	
10	lime	240	
3	shale	243	
7	sand	250	
32	shale	282	
3	sand	285	
55	shale	340	
15	sand	355	
17	shale	373	
22	sand	395	
12	shale	407	
21	sand	428	
12	shale	440	
12	lime	452	
10	sand	462	
11	shale	473	

Thickness of Strata	Formation	Total Depth	Remarks
5	lime	478	
4	Carb. shale	482	
16	sand	498	
55	shale	553	
8	sand	561	Perfs - 555 - 556 - 557 - 558 -
19	shale	580	559 - 560 - 595 - 596 - 597 -
24	sand	604	598 - 599 - 600 - 601 & 602
36	shale	640	Total Depth

MECHANICAL INTEGRITY TEST REPORT

Test Date: 6-10-03

Operator: TOWN OIL COMPANY
Contact Person: Lester Town
Address: 16205 West 287th St. Paola, Ks. 66071
Phone: 913-294-2125

Lease ASJES Well # B-3
County CASS Permit # 20223

TEST INFORMATION:

Type MIT: Pressure ✓ Radioactive Tracer Survey___ Temperature Survey___

	Run #1	Run #2	Run #3
Start Time:	11:20	12:08	
End Time:	12:00	12:40	
Length of Test: (Start Time minus End Time)			
Initial Pressure (PSI):	200#	290 *	
Ending Pressure (PSI):	150#	220	
Pressure Change: (Initial Pressure minus Ending Pressure)	50	60	

Fluid used for test (water, nitrogen, CO2, ect.): air

Comments about test: stabalized @ 220

555 (-92) x .433 = 200 # (463)(.433)

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

Signed: Sterling Hamaker EOR
Operator Contact Person or Approved Agent — Title

DO NOT WRITE BELOW THIS LINE

Results were: Satisfactory ✓ Not Satisfactory___
State Agent: [signature] Witnessed: Yes ✓ No___
REMARKS:
Computer Update ✓ FILE WITH PERMIT!

OGC Misc Form 1

MECHANICAL INTEGRITY TEST REPORT

Test Date: 10/23/98

Operator: Town Oil Co.
Contact Person: Lester Town.
Address: 16205 W 287th St. Paola KS 66071
Phone: 913-294-2125

Lease Asjes Well # B-3
County Cass Permit # 20223

TEST INFORMATION:

Type MIT: Pressure X Radioactive Tracer Survey___ Temperature Survey___

	Run #1	Run #2	Run #3
Start Time:	1045		
End Time:	1115		
Length of Test: (Start Time minus End Time)	30 min		
Initial Pressure (PSI):	150		
Ending Pressure (PSI):	140		
Pressure Change: (Initial Pressure minus Ending Pressure)	-10 #		

Fluid used for test (water, nitrogen, CO2, ect.): air

Comments about test: perf - 555'-602'

The bottom of the tested zone is shut in with packer at a depth of 505' ft. In signing the form below, it is certified that the above indicated well was tested for mechanical integrity on the date shown at the top of this page.

Signed: Lester Town — Operator Contact Person or Approved Agent

Operator — Title

DO NOT WRITE BELOW THIS LINE

Results were: Satisfactory ✓ Not Satisfactory___
State Agent: [illegible] Witnessed: Yes X No___
REMARKS:
Computer Update [illegible] FILE WITH PERMIT!

OGC Misc Form 1

MECHANICAL INTEGRITY TEST REPORT

Test Date: 10 Aug 1993

Operator: Town Oil Co.
Contact Person: Lester Town
Address: 16205 West 287th St. Paola, Kansas 66071
Phone: 913-294-2125

Lease ASJES Well # B-3
County CASS Permit # 20223

TEST INFORMATION:

Type MIT: Pressure___ Radioactive Tracer Survey___ Temperature Survey___

	Run #1	Run #2	Run #3
Start Time:	0900		
End Time:	0935		
Length of Test: (Start Time minus End Time)	35 min		
Initial Pressure (PSI):	260		
Ending Pressure (PSI):	260		
Pressure Change: (Initial Pressure minus Ending Pressure)			

Fluid used for test (water, nitrogen, CO2, ect.): Air

Comments about test: Perf At, 555-602 Fluid Depression Test
Well Full of Fluid 555 X .43 = 238, + 22# Back Pressure = 260#

Fluid Depression Test

The bottom of the tested zone is shut in with Float Shoe & Cement at a depth of 555 ft. In signing the form below, it is certified that the above indicated well was tested for mechanical integrity on the date shown at the top of this page.

Signed: Stacy P. Hambuckle — Operator Contact Person or Approved Agent

EOR — Title

DO NOT WRITE BELOW THIS LINE

Results were: Satisfactory ✓ Not Satisfactory___
State Agent: E. K. Witnessed: Yes___ No ✓
REMARKS:
Computer Update 9/2/93 CK FILE WITH PERMIT!

OGC Misc Form 1

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Nite (913) 294-3228
Nite (913) 755-3980

GARNETT
(913) 448-5915

Log Book

Well No. B-3 Disposal Well

Farm Ogles

Missouri (State) Cass (County)

4 (Section) 46N (Township) 33W (Range)

For Emery Energy, Inc (Well Owner)

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Kenneth R. Johnson, Inc.

Oil-Gas-Water-Industrial Supplies

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Nite (913) 294-3228
Nite (913) 755-3980

GARNETT
(913) 448-5915

Ayres Farm: Cass County

Mo State; Well No. B-3

Elevation 1078.7 Ground Level

Commenced Spuding 11-5-81, 19

Finished Drilling 11-5, 19 81

Driller's Name Mike Tooter

Driller's Name Richard Hurst

Driller's Name Larry Bickenstaff

Tool Dresser's Name Wayne Evans

Tool Dresser's Name Karl Belden

Tool Dresser's Name

Contractor's Name N & H Drilling, Inc.

4	46 N	33 W
(Section)	(Township)	(Range)

Distance from North line, 356 ft.

Distance from East line, 1012 ft.

CASING AND TUBING RECORD

10" Set		10" Pulled	
8" Set		8" Pulled	
6¼" Set		6¼" Pulled	
4" Set	637'	4" Pulled	
2" Set	17.5'	2" Pulled	

Rules of Thumb

CEMENTING ANNULUS

2" ID — 6¼" —1 Sack .....5.8'

2" ID — 8" — 1 Sack.....3.1'

3" ID — 8" — 1 Sack.....3.5'

4" ID — 8" — 1 Sack.....4.0'

CAPACITY

2" — 1 BBL. equals.....256'

2½"— 1 BBL. equals.....164'

3" — 1 BBL. equals.....115'

4" — 1 BBL. equals..... 64'

4 ⅞"— 1 BBL. equals..... 43'

6¼"— 1 BBL. equals..... 26'

8" — 1 BBL. equals..... 16'

WATER — CEMENT RATIO

5.5 gals. to 1 sack — 2½ hours to thicken slurry

7.7 gals. to 1 sack — 2 hours to thicken slurry

Thickness of Strata	Formation	Total Depth	Remarks
6	soil	0-6	
40	lime	46	
30	shale	76	
10	lime	86	
26	shale	112	
8	lime	120	
48	shale	168	
30	lime	198	
5	carb shale	203	
22	lime	225	
5	carb shale	230	
10	lime	240	
3	shale	243	
7	sand	250	
32	shale	282	
3	sand	285	
55	shale	340	
15	sand	355	
17	shale	373	
22	sand	395	
12	shale	407	
21	sand	428	
12	shale	440	
12	lime	452	
10	sand	462	
11	shale	473	

Thickness of Strata	Formation	Total Depth	Remarks
5	lime	478	
4	carb. shale	482	
16	sand	498	
55	shale	553	
8	sand	561	Perfs - 555 - 556 - 557 - 558 -
19	shale	580	559 - 560 - 595 - 596 - 597 -
24	sand	604	598 - 599 - 600 - 601 & 602
36	shale	640	Total Depth

Short Cuts

TANK CAPACITY

BBLS. (42 gal.) equals D^2x.14xh

D equals diameter in feet.

h equals height in feet.

BARRELS PER DAY

Multiply gals. per minute x 34.2

HP equals BPH x PSI x .0004

BPH — barrels per hour

PSI — pounds square inch

TO FIGURE PUMP DRIVES

* D — Diameter of Pump Sheave
* d — Diameter of Engine Sheave

SPM — Strokes per Minute

RPM — Engine Speed

R — Gear Box Ratio

* C — Shaft Center Distance

D — RPMxd over SPMxR

d — SPMxRxD over RPM

SPM — RPMxD over RxD

R — RPMxd over SPMxD

BELT LENGTH — $2C + 1.57(D + d) + \frac{(D - d)^2}{4C}$

*Need these to figure belt length

TO FIGURE AMPS: $\frac{\text{WATTS}}{\text{VOLTS}} = \text{AMPS}$

746 WATTS equal 1 HP

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

FORM [illegible]

TOTAL P.02

INSTRUCTIONS ▸ RECORD INJECTION RATE AND INJECTION PRESSURE AT LEAST MONTHLY WITH THE RESULTS SUBMITTED ANNUALLY.

COUNTY	PERMIT NUMBER	OPERATOR	WELL NUMBER
Cass	037-20223	Town Oil Co.	Asjes B-3

MONTH	INJECTION RATE - bpd/gpm	INJECTION PRESSURE - psig	DATE MEASUREMENT TAKEN	REMARKS
(01) JAN.	10	240	1-28-06	
(02) FEB.	10	240	2-28-06	
(03) MARCH	10	240	3-28-06	
(04) APRIL	10	240	4-28-06	
(05) MAY	10	240	5-28-06	
(06) JUNE	10	240	6-28-06	
(07) JULY	10	240	7-28-06	
(08) AUG.	10	240	8-28-06	
(09) SEPT.	10	240	9-28-06	
(10) OCT.	10	240	10-28-06	
(11) NOV.	10	240	11-28-06	
(12) DEC.	10	240	12-28-06	

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Mo Oil & Gas Council

MO 780-0898 (6-05)

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY PROGRAM

INJECTION WELL MONITORING REPORT

FORM OGC-12

INSTRUCTIONS ▸ RECORD INJECTION RATE AND INJECTION PRESSURE AT LEAST MONTHLY WITH THE RESULTS SUBMITTED ANNUALLY.

COUNTY	PERMIT NUMBER	OPERATOR	WELL NUMBER
CASS	20223	TOWN OIL COMPANY	ASJES B-3

MONTH	INJECTION RATE - bpd/gpm	INJECTION PRESSURE - psig	DATE MEASUREMENT TAKEN	REMARKS
(01) JAN.	10	240	1-31-08	RECEIVED
(02) FEB.	10	240	2-28-08	JAN 23 2009
(03) MARCH	10	240	3-31-08	Mo Oil & Gas Council
(04) APRIL	10	240	4-30-08	
(05) MAY	10	240	5-31-08	
(06) JUNE	10	240	6-30-08	
(07) JULY	10	240	7-31-08	
(08) AUG.	10	240	8-31-08	
(09) SEPT.	10	240	9-30-08	
(10) OCT.	10	240	10-31-08	
(11) NOV.	10	240	11-30-08	
(12) DEC.	10	240	12-31-08	

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GEOLOGICAL SURVEY PROGRAM

INJECTION WELL MONITORING REPORT

INSTRUCTIONS ▸	RECORD INJECTION RATE AND INJECTION PRESSURE AT LEAST MONTHLY WITH THE RESULTS SUBMITTED ANNUALLY.			
COUNTY		PERMIT NUMBER	OPERATOR	WELL NUMBER
CASS		20223	TOWN OIL COMPANY	ASJES B-3

MONTH	INJECTION RATE - bpd/gpm	INJECTION PRESSURE - psig	DATE MEASUREMENT TAKEN	REMARKS
(01) JAN.	10	240	1-31-09	RECEIVED
(02) FEB.	10	240	2-28-09	JAN 25 2010
(03) MARCH	10	240	3-31-09	Mo Oil & Gas Council
(04) APRIL	10	240	4-30-09	
(05) MAY	10	240	5-31-09	
(06) JUNE	10	240	6-30-09	
(07) JULY	10	240	7-31-09	
(08) AUG.	10	240	8-31-09	
(09) SEPT.	10	240	9-30-09	
(10) OCT.	10	240	10-31-09	
(11) NOV.	10	240	11-30-09	
(12) DEC.	10	240	12-31-09	

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