Scan Code: 07/17

Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

UIC Permit No. 06S126#P5###
Well No. ????????

AUTHORIZATION TO CONVERT A WELL TO AN INJECTION WELL UNDER THE UIC PROGRAM OSAGE MINERAL RESERVE

or

AUTHORIZATION TO CONSTRUCT AN INJECTION WELL UNDER THE UIC PROGRAM OSAGE MINERAL RESERVE

or

AUTHORIZATION TO CHANGE A CLASS II INJECTION WELL PREVIOUSLY AUTHORIZED BY RULE UNDER THE UIC PROGRAM OSAGE MINERAL RESERVE

In compliance with the provisions of the Safe Drinking Water Act, (hereafter referred to as "the Act" or "SDWA") as amended (42 U.S.C. §300f et seq.),

[Operator Name and Address]

is authorized to [construct a/convert a well to a/change an authorized by rule] Class II [salt water disposal/enhanced oil recovery] injection well. This well is located at:

feet from the ????? line and #### feet from the ????? line, ????????? Quarter, Section ##, Township ##N, Range ##E into the injection interval at a depth of #### feet to #### feet below land surface in the [formation name] in accordance with the construction and operation requirements, injection pressure limits, reporting and monitoring requirements, and other conditions set forth in Parts I and II of this permit and the Osage Class II Underground Injection Control Program and Regulations.

Unless authorization to inject is granted, this permit shall remain in effect for one year from the effective date shown below. Authorization to inject fluids into the well shall be granted only upon compliance with permit conditions, I.A.1., I.A.2., I.A.3., ????, and I.B.1. Authorization to inject fluids into the well may be verbally granted by the Chief, Ground Water/UIC Section or by written "Authorization to Inject" from the Director, Water Quality Protection Division (6WQ). Upon authorization to inject, this permit shall remain in effect until the well is plugged or the permit is terminated.

This permit shall become effective on

Prepared by	Issued on
_____	
Bill Hurlbut	Miguel I. Flores
Geologist	Director
Ground Water/UIC Section	Water Quality Protection Division

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Part I. SPECIAL PERMIT CONDITIONS

A. Construction Requirements

1. Surface casing shall be set at #### feet below land surface and cemented back to the surface. The long string casing shall be set at #### feet below land surface and cemented [back to the surface] with ### sacks of cement.

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* Additionally, the long string casing shall be cemented from #### feet (50 feet below the base of the Underground Source of Drinking Water (USDW)) back to [the land surface/ ### feet below land surface].

* A bridge plug shall be set inside the casing between #### and #### feet below the land surface.

* In addition, the open perforations between #### and #### feet below land surface shall be sealed with cement.

* The well shall be constructed as follows:

Casing O.D. (in.)	Setting Depth (ft.)	Cement Interval (ft. below land surface)

The permittee shall notify the Director, Water Quality Protection Division (WQPD) if well construction differs from requirements shown above. Changes to construction requirements may be approved, in writing, by the Chief, Ground Water/UIC Section.

2. The well shall be equipped with standard female fittings with cut-off valves connected to the tubing and the tubing/casing annulus so that the injection pressure and annulus pressure may be measured by an EPA representative by attaching a gauge having a standard male fitting.

3. Tubing and packer shall be installed. The packer shall be run on the tubing and set inside the casing between #### and #### feet of depth below the land surface.

4. The permittee must assure that the well(s) listed below is/are properly plugged within 90 days of the effective date of this permit to prevent fluid migration from the [injection interval] into a USDW. Plugging shall be accomplished according to procedures set forth in 40 CFR §147.2905 or as directed by the Osage UIC office. If the permittee cannot locate and plug any of the wells listed below, a monitor well shall be drilled to the base of the lowermost USDW. Such monitor wells shall be located no more than five feet from the recorded location of the unlocatable well. Monitoring and reporting shall be conducted according to conditions I.B.#., I.B.#., I.B.#., and I.B.#.

?? Quarter, Section ##, Township ##N, Range ##E

5. The permittee must notify the Osage UIC office prior to performing the remedial action in Special Permit Condition I.A.4., to allow EPA to observe the work.

B. Operating Requirements

1. Authorization to inject will not be granted until the permittee shows to the satisfaction of the Director, Water Quality Protection Division, pursuant to 40 CFR §147.2920(b)(1)(i) that the well has mechanical integrity. The well's mechanical integrity must be demonstrated prior to the start of injection and at least every [three/five] years thereafter. The permittee must notify the Osage UIC office at least five (5) days prior to mechanical integrity testing so that an EPA representative can witness the test.

or

1. Authorization to inject will not be granted until the permittee shows to the satisfaction of the Director, Water Quality Protection Division, pursuant to 40 CFR §147.2920(b)(1)(i) that the well has mechanical integrity. Mechanical integrity must be demonstrated at least every five years thereafter. The long string casing/tubing annulus must be filled with a corrosion inhibiting fluid. Following the initial mechanical integrity test demonstration, the permittee shall maintain at all times a positive pressure (p > O) on the well annulus. The permittee must record and report all instances in which he adds fluid or pressure to the annulus or "bleeds off" fluid or pressure from the annulus. Such reports must be submitted in accordance with permit condition II.L.4. Annulus and injection pressure must be monitored monthly and reported annually also in accordance with condition II.L.4. of this permit.

2. Injection pressure at the wellhead shall not exceed ### psig.

3. The permittee is authorized to inject salt water/other fluids for enhanced oil recovery/for disposal.

4. Injection volume shall be limited to ##### barrels per month.

* For Arbuckle and Mississippian wells with injection pressure.

5. The operator shall obtain a static fluid level annually. The static fluid level will be obtained after a minimum 24 hour shut-in period and reported to EPA, Region 6, Source Water Protection Branch, 6WQ-S.

OPTIONS

FOR SINGLE PRODUCER AND INJECTOR

*. Injection volume shall be limited to #### barrels per month in excess of the total liquids (oil and water) produced from well number ##, located ####' F?L, ####' F?L' ??/4 Sec. ##, T ##N, R ##E. The permittee shall monitor the monthly production (oil and water) from well number ## and report production volumes to EPA annually on the annual operating report. The permittee shall also submit a written report to the Regional Administrator, describing the status change of any offset well located within 1/4 mile of the proposed injection well. The written report shall be provided within 30 days after the permittee becomes aware of the

circumstances.

FOR MULTIPLE PRODUCERS AND INJECTORS

*. Injection volume shall be limited to #### barrels per month in excess of the total liquids (oil and water) produced from the [Formation Name] formation within 1/4 mile of the well less the water injected in the same formation within 1/4 mile of the well.

The above referenced wells and their current status are listed in the table below:

Well No.	Status	Location - Osage County, Oklahoma
##	Producer	####' F?L, ####' F?L, ??/4, Sec. ##, T ##N, R ##E
##	Injector	####' F?L, ####' F?L, ??/4, Sec. ##, T ##N, R ##E

*. The permittee shall monitor the monthly production (oil and water) for the wells listed in special permit condition I.B.4. The permittee shall report production volumes for the wells to EPA annually on the annual operating report. The permittee shall also submit a written report to the Regional Administrator, describing the status change of any offset well located within 1/4 mile of the proposed injection well. The written report shall be provided within 30 days after the permittee becomes aware of the circumstances.

OPTIONS

* The permittee shall monitor static fluid level in the following well(s) at least once a month.

?? Quarter, Section ##, Township ##N, Range ##E

The monitoring results shall be reported to the Regional Administrator according to the reporting requirements in condition I.B.5.

* The permittee shall measure static water level and collect at least one sample from each monitor well drilled according to condition I.A.4. to determine baseline groundwater conditions. The sample shall be collected immediately after monitor well completion. Samples shall be analyzed for chlorides and total dissolved solids according to procedures set out in the most recent edition of Standard Methods for the Examination of Water and Wastewater. The permittee shall submit these fluid level and chemical sampling results to the Osage UIC office within 30 days of completion.

* The permittee shall monitor static fluid level monthly and collect annual samples from any monitor well drilled according to condition I.A.4. Fluid samples will be analyzed for total dissolved solids and chlorides according to procedures in the most recent edition of Standard Methods for the Examination of Water and Wastewater. Monitoring results shall be reported to the RA with the annual operating report required in condition II.L.4.

* The permittee shall report to the Osage UIC office any monitoring results which show either fluid level rises in any 6 consecutive monthly measurements or concentrations of chlorides or total dissolved solids greater than ten percent above baseline concentrations determined according to condition I.B.#. The report shall be provided orally within 24 hours of the time the permittee becomes aware of the circumstances. A written report shall be provided within five days of the time the permittee becomes aware of the circumstances. The permittee shall take any corrective action necessary to protect USDWs.

* The permittee shall submit to the RA a copy of a signed BIA Form 139 showing the required plugging has been completed for each well listed in Special Permit Condition I.A.4. For those unlocated wells for which a monitor well was drilled, in lieu of a BIA Form 139, the permittee shall submit a report to the RA of date drilled, construction details, lithology of the lowermost USDW, and location of the well. All required forms and reports shall be submitted within 30 days of completion of the remedial action.