

State of Colorado Oil and Gas Conservation Commission

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FOR OGCC USE ONLY

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Date Received:

UNDERGROUND INJECTION FORMATION PERMIT APPLICATION

Per Rule 325, this form shall be submitted with all required attachments.

A Form 31 – Intent shall be submitted and approved prior to completing an injection zone.

A Form 31 – Subsequent shall be submitted following collection of water samples and injectivity test (if performed) and must be approved prior to injection in any new injection facility.

NOTE: Per Rule 324B, an aquifer exemption is required for any injection formation with water quality less than 10,000 mg/L total dissolved solids (TDS). Contact the Commission for further requirements if the TDS as determined by water analysis for the injection zone is less than 10,000 mg/L.

Form 31 Type

Intent

Subsequent

UIC Facility ID 0

UIC Facility ID Required for Subsequent Form 31

UIC FACILITY INFORMATION

Facility Name and Number: EWS 4

County: WELD

Facility Location: NWSW / 17 / 2N / 63W / 6

Field Name and Number: WATTENBERG 90750

Facility Type: Enhanced Recovery

Disposal

Simultaneous Disposal

Single or Multiple Well Facility? Single

Multiple

Proposed Injection Program (Required):

Two wells, EWS 4 and EWS 4a, will be drilled and linked to the EWS facility #4 by buried lines. Both wells will be completed in the Denver Basin Combined Disposal Zone, which at this site will consist of every formation from the top of the Lyons into the middle of the Fountain. The facility will take a variety of Class II waste, including produced water, flowback water, used workover fluids, and exempt gas plant waste.

OPERATOR INFORMATION

OGCC Operator Number: 10580

Contact Name and Telephone:

Name of Operator: EXPEDITION WATER SOLUTIONS COLORADO LLC

Name: Jeremiah Demuth

Address: 1023 39TH AVENUE SUITE E

Phone: (303) 290-9414 Fax: ()

City: GREELEY State: CO Zip: 80634

Email: jdemuth@petrotek.com

INJECTED FLUID TYPE

All injected fluids must be Exempt E&P waste per RCRA Subpart C.

(Check all that apply.)

Produced Water

Natural Gas

CO2

Drilling Fluids

Exempt Gas Plant Waste

Used Workover Fluids

Flowback Fluids

Other Fluids (describe):

Commercial Disposal Facility

Yes

No

Commercial UIC Bond Surety ID:

Commercial Facility Description: Describe the physical region of the facility, the details of the operations, and the type of fluids to be injected.

The EWS Facility #4 will serve the Greater Wattenberg area and the surrounding fields. The facility will accept for injection the following fluids: produced water, drilling fluids, flowback fluids, exempt gas plant waste, and used workover fluids. The EWS 4 and 4A wells will be linked to the EWS Location #4 by buried pipelines. This will allow the two vertical wells to have a standoff of one mile from each other. An unloading station will be constructed at the EWS Facility #4 where there will be water and oil tanks. Produced water will be pumped through buried 4" heavy duty pipelines to the EWS 4 and 4A wells.

PROPOSED INJECTION FORMATIONS

FORMATION (Name): ADMIRE Porosity: 0 %
 Formation TDS: 15000 mg/L Frac Gradient: 0.69 psi/ft Permeability: 52 mD
 Proposed Stimulation Program: Acid Frac Treatment None

FORMATION (Name): AMAZON Porosity: 8 %
 Formation TDS: 15000 mg/L Frac Gradient: 0.69 psi/ft Permeability: 52 mD
 Proposed Stimulation Program: Acid Frac Treatment None

FORMATION (Name): COUNCIL GROVE Porosity: 7 %
 Formation TDS: 15000 mg/L Frac Gradient: 0.69 psi/ft Permeability: 52 mD
 Proposed Stimulation Program: Acid Frac Treatment None

FORMATION (Name): DENVER BASIN COMBINED DISPOSAL ZONE Porosity: %
 Formation TDS: mg/L Frac Gradient: 0.69 psi/ft Permeability: 52 mD
 Proposed Stimulation Program: Acid Frac Treatment None

FORMATION (Name): FOUNTAIN Porosity: 0 %
 Formation TDS: 14000 mg/L Frac Gradient: 0.69 psi/ft Permeability: 52 mD
 Proposed Stimulation Program: Acid Frac Treatment None

FORMATION (Name): LOWER SATANKA Porosity: 0 %
 Formation TDS: 11000 mg/L Frac Gradient: 0.69 psi/ft Permeability: 52 mD
 Proposed Stimulation Program: Acid Frac Treatment None

FORMATION (Name): LYONS Porosity: 5 %
 Formation TDS: 11000 mg/L Frac Gradient: 0.69 psi/ft Permeability: 52 mD
 Proposed Stimulation Program: Acid Frac Treatment None

FORMATION (Name): MISSOURI Porosity: 3 %
 Formation TDS: 14000 mg/L Frac Gradient: 0.69 psi/ft Permeability: 52 mD
 Proposed Stimulation Program: Acid Frac Treatment None

FORMATION (Name): VIRGIL Porosity: 15 %
 Formation TDS: 14000 mg/L Frac Gradient: 0.69 psi/ft Permeability: 52 mD
 Proposed Stimulation Program: Acid Frac Treatment None

FORMATION (Name): WOLFCAMP Porosity: 5 %
 Formation TDS: 15000 mg/L Frac Gradient: 0.69 psi/ft Permeability: 52 mD
 Proposed Stimulation Program: Acid Frac Treatment None

ANTICIPATED FACILITY OPERATIONS CONDITIONS

Under normal operating conditions, estimated TOTAL fluid injection rates and pressures for this facility:

FOR WATER: Daily Injection Rate Range From 20000 to 30000 bbls/day
 Surface Injection Pressure Range From 2200 to 2600 psi

FOR GAS: Daily Injection Rate Range From _____ to _____ mcf/day
 Surface Injection Pressue Range From _____ to _____ psi

Estimated Initial Injection Date: 2/27/2017

AREA OF REVIEW OIL and GAS WELL EVALUATION SUMMARY

Review all existing wells within 1/2 mile for injection formation isolation.

Area Review Date: 9/14/2016

Total number of Oil & Gas Wells within Area of Review:

11

ABANDONED WELLS (All wells that have been plugged: PA and DA status))

Total within Area of Review	3
Number To Be Re-Plugged	0

ACTIVE WELLS (All wells that have not been plugged: AC, DG, DM, IJ, PR, SU, SI, TA, WO, XX, UN status)

Total within Area of Review	8
Number Requiring Casing Repair	0
Number To Be Plugged	0

Operator's Area of Review Contact Email: jdemuth@petrotek.com

No Wells within 2,640'

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Jeremiah Demuth Signed: _____

Title: Engineering Technician Date: _____

COGCC Approved: _____ Date: _____

Form 31 - Intent Expiration Date: _____

Per Rule 325.o, a 90 day extension of the Expiration Date may be requested via a Sundry Notice, Form 4 submitted prior to Form 31- Intent expiration

Order Number: _____ UIC FACILITY ID: 0

CONDITIONS OF APPROVAL, IF ANY:

COA Type	Description

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
401109256	OFFSET WELL EVALUATION
401126332	LIST OF MINERAL OWNERS ¼-MILE
401126334	NOTICE TO SURFACE & MINERAL OWNERS
401126335	CERTIFIED MAIL RECEIPT(S)
401126336	REMEDIAL CORRECTION PLAN FOR WELLS ¼-MILE
401131259	WELLBORE DIAGRAM-PROPOSED
401131260	WELLBORE DIAGRAM-PROPOSED
401131263	MAP OF MINERAL OWNERS ¼-MILE
401131264	LIST OF SURFACE OWNERS ¼-MILE
401131265	MAP OF O&G WELLS IN AREA OF REVIEW
401131266	MAP OF SURFACE OWNERS ¼-MILE
401131343	LIST OF WATER WELLS ¼-MILE

Total Attach: 12 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>

Total: 0 comment(s)