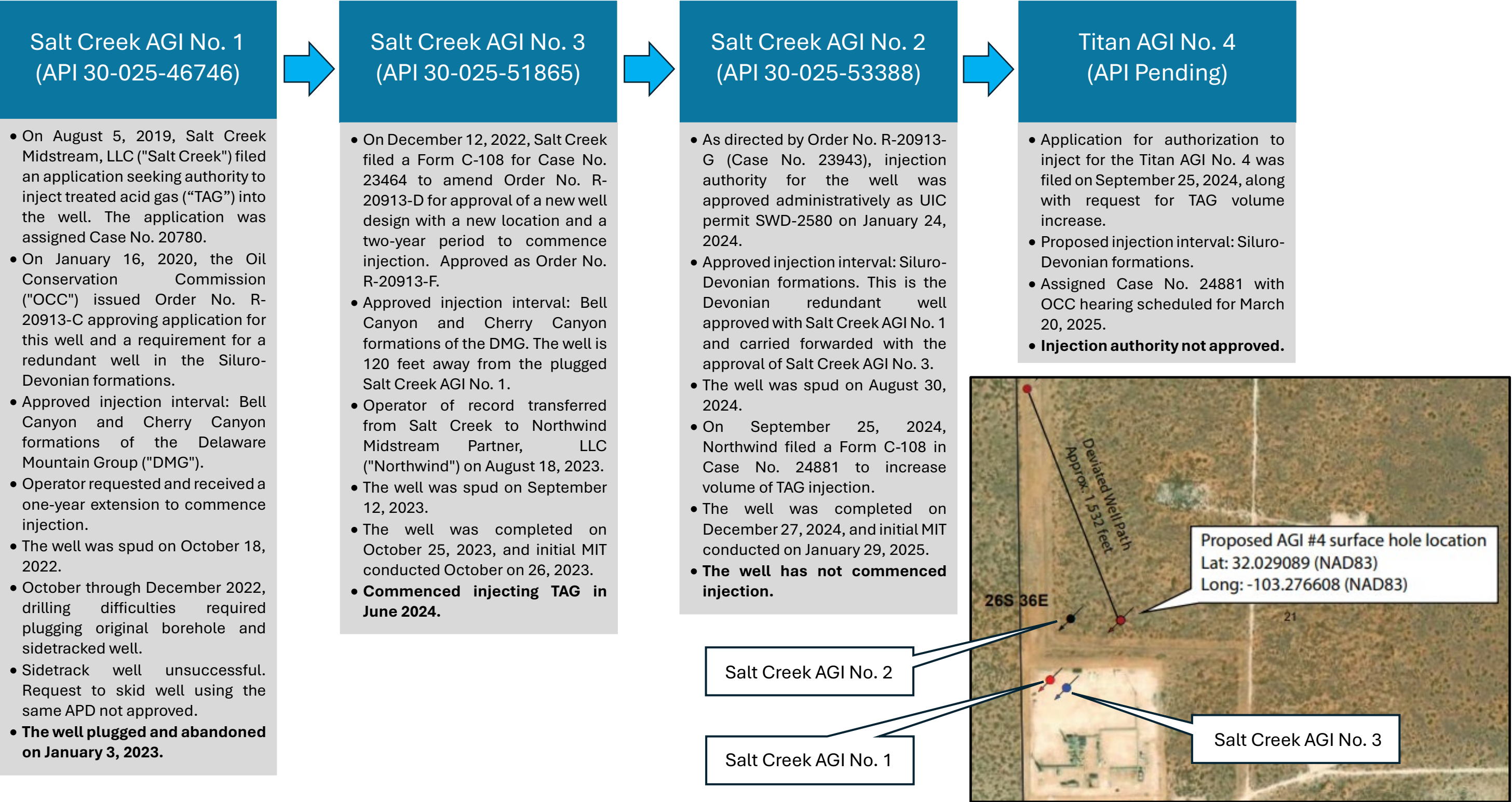




Case No. 24881; OCD Exhibit No. 1

Summary of UIC Class II Acid Gas Injection Wells Permitted for the Northwind Midstream Gas Processing Facility





State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division

## **CASE NO. 24881, OCD Exhibit No. 2**

### **OCD Recommended Conditions of Approval for Acid Gas Injection Wells:**

OCD recommends these conditions of approval for acid gas injection (“AGI”) wells in addition to the general requirements for all UIC Class II wells issued under Rule 15.19.26 NMAC - *Injection*.

1. Operator shall conduct an annual mechanical integrity test (MIT) on the proposed well.
2. Operator shall conduct continuous monitoring of surface treated acid gas (TAG) injection pressure, temperature, rate, surface annular pressure, and bottom-hole (or “end of tubing”) temperatures and pressures in the tubing and the annulus.
3. Operator shall conduct step-rate and fall-off tests on the completed well before commencing injection. Operator may adjust the maximum surface injection pressure for the well after these tests with the approval of the OCD.
4. Operator shall maintain a maintenance log, including the volume of annular fluid (diesel) with corrosion inhibiting and biocide additives replaced in the annulus of the well.
5. Operator shall establish temperature parameters for injected fluid, install and maintain temperature-activated controls to govern the temperature of injected fluid, and install and maintain an alarm system for the controls to indicate exceedance of the parameters.
6. Operator shall report on a quarterly basis the summary data for injection parameters monitored under the permit, subject to OCD approval of annual reports after one year of operation upon request by Operator.
7. Operator shall equip the well with a pressure-limiting device and a one-way safety valve (with the appropriate interior drift diameter) on the tubing approximately 100 feet to 250 feet below the surface.
8. Operator shall use a corrosion-inhibiting diesel with a biocide component as the annular fluid of the well.
9. Operator shall circulate cement for all casing to the surface.
10. Well construction shall be designed for exposure to corrosive environment including, but not limited to, casing, casing cement, tubing, and the packer in proximity of injection interval.



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11. Since the new AGI well penetrates the Delaware Mountain Group which is a TAG disposal interval of an adjacent AGI well, the portion of the well construction that extends through this zone shall be constructed using corrosion-resistant materials for both casing and cement.
12. Prior to commencing injection, Operator shall obtain OCD's approval a hydrogen-sulfide contingency plan that complies with Rule 19.15.11.9 NMAC.
13. The hydrogen sulfide contingency plan shall include all wells, whether active or plugged and abandoned, that penetrate the injection zone of the new AGI well and fall within the area of review and the outer boundary of the TAG plume. Operator shall provide a monitoring program (as part of the contingency plan) to detect hydrogen sulfide and carbon dioxide concentrations in both soil and air in the vicinity of the wellheads of plugged wells .
14. No later than thirty (30) days prior to commencing injection, Operator shall obtain OCD's approval of immediate notification parameters for annulus pressure and tubing and casing differential pressure at a set injection temperature.
15. No later than forty-five (45) days after Operator completes drilling the well, Operator shall submit to OCD's district office the well drilling logs including mudlogs, electric logs, daily reports, and the static bottom-hole pressure measured at completion of drilling the well.
16. No later than forty-five (45) days after completion of the well, Operator shall submit to OCD the final reservoir evaluation and confirm that the open-hole portion of the well does not intersect the fault plane of any identified fault that occurs within the approved injection interval.
17. No later than ninety (90) days after commencing injection, and no less frequently than annually thereafter, Operator shall consult with OCD regarding the immediate notification parameters. If OCD determines that the immediate notification parameters should be modified, Operator shall provide modified parameters within thirty (30) days of notification for review by OCD.
18. No later than thirty (30) days after the fifth (5<sup>th</sup>) year of injection, Operator shall submit to OCD a report summarizing the well's performance including injected volumes by fluid type, reservoir pressures, the models calibrated using that information and seismic modeling.

End of Conditions of Approval

## **Exhibit 1**

**Million Gebremichael**  
**Petroleum Engineer**  
**UIC Group, Oil Conservation Division, EMNRD**

### **PROFESSIONAL EXPERIENCE**

More than 12 years of professional experience working both for oil and gas companies and provincial government of Alberta oil and gas regulatory department and state of New Mexico Oil Conservation Division- UIC group.

#### **Current Employment:**

**Oil Conservation Division; Engineering Bureau; Underground Injection Control (UIC) Group (August 2022 to Present)**

##### **Petroleum Specialist - Advanced**

Responsibilities include conducting engineering and geological evaluation of authorization to inject (permit) applications for UIC Class II wells: saltwater disposal, pressure maintenance, enhanced oil recovery and acid gas injection wells. This includes processing of applications submitted through E-permitting, assessment of applications for administrative completeness and preparation of a final UIC permit for approval by the Director based on the findings of the technical review. Support the Administrative Permitting Group within the Engineering Bureau by reviewing sundry notices and subsequent reports for activities involving UIC Class II wells. Participate as a technical examiner at Division hearings and as a technical witness on behalf of the OCD at Commission hearings. Review the results of well testing such as mechanical integrity tests (MIT), step-rate tests (SRT), falloff tests, Bradenhead tests and injection surveys to provide comments and recommendations. Also conduct periodic reviews and monitoring of UIC Class II wells to ensure compliance with permit conditions. All of these activities require interaction with a diverse group of stakeholders (i.e. industry, individuals, government agencies, and NGO's) to make impartial decisions affecting stakeholders based on the requirements of the Oil and Gas Act and NMAC.

#### **Prior Employment as Petroleum Engineer:**

**Salnat Geological Consulting (January 2021 to August 2022)**

**Shell Canada, Limited (May 2012 to February 2018)**

**Encana Corporation (October 2011 to May 2012)**

**Alberta Energy Regulator (January 2009 to October 2011)**

Summary of experiences and work requirements from these prior employers which is applicable to the current position:

- Applied production engineering principles and computer models to carry out well surveillance tasks to find short term and long-term optimization opportunities.
- Experienced in well intervention to mitigate production bottlenecks: liquid loading mitigation (plunger lift optimization), wax maintenance, swabbing, chemicals and solvents, methanol injections to prevent hydration formations, plunger's optimization, backside foam injection, built and maintained pi process book and exception-based tools for daily surveillance.
- Perform engineering review and approval of all underground injection wells



workovers.

- Provide orientation and job to new employees.
- Compiled well testing procedures and coordinated asset well-testing campaigns: well integrity test (WIT), subsurface integrity test (SIT), packer integrity testing, well suspension compliance, production casing integrity, tubing tests and surface casing vent flow.
- Calculated well operating pressure envelopes and maximum allowable annulus surface pressure (MAASP) for production and injection wells to make sure wells are operating safely and compliant with regulatory requirement.
- Experienced in Well Reservoir Facilities Management (WRFM) surveillance work.
- Experienced in reserve determination utilizing Volumetric, Decline Curve Analysis and Material Balance Techniques
- Experienced in reservoir engineering principles employed by regulatory jurisdictions- Pool Delineation schemes and Pressure studies, determining and writing notices to operators on Commingling, Good Production Practices (GPP) and Maximum Rate Limitation Orders (MRL)
- Experienced in implementing regulatory requirement for hydraulic fracturing by adhering to respective regulatory directives by applying AccuMap to determine wells (active and idle) within injection zone and dispatching notices to other operators to take appropriate preventative measures during the operation.
- Experienced in data mining and analyzing utilizing software programs like AccuMap, ARC GIS, SharePoint, compiling data from various sources.

### **SPECIALIZED TRAINING:**

Courses provided through Shell International [Canada, USA, and the Netherlands]:

- Well Reservoir and Facility Management (2014) (Online)
- Artificial Lift Foundation Course (2015) Houston, Texas, USA
- Production Chemistry for Unconventional Gas assets (2016), Calgary, Canada
- Well Reservoir and Facility Management Advanced Course (2016), Calgary, Canada
- Production Technology Foundation Course A-well and production System Modelling (2016), Rijswijk, Netherlands
- Material and Corrosion for Unconventional Wells (2016), Calgary, Canada
- Advanced Well Integrity (2017), Houston, Texas
- Production Technology Foundation Course B (Well Construction) (2017), Houston, Texas, USA
- Production Technology for Unconventionals (2017) Calgary, Canada
- (Underground Water Quality Council of America)-UWQC-Credit Certificate (2022)
- (Underground Water Quality Council of America)-UWQC-Credit Certificate (2023)
- Injection-Wells-and-Sustainable-Energy-Systems-Top-Energy-Training (2024)

### **EDUCATION:**

Bachelor's degree, Petroleum Engineering, (2012)  
Southern Alberta Polytechnic, Canada.

Core courses include Reservoir Engineering, Reservoir Simulation, Production and Completion Engineering, Drilling Engineering, Geology, Formation Evaluation, Phase Behaviors, Petrophysics and Petroleum Economics.