STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED
BY THE OIL CONSERVATION DIVISION
FOR THE PURPOSE OF CONSIDERING:

APPLICATION OF AGAVE ENERGY COMPANY FOR APPROVAL OF AN ACID GAS INJECTION WELL, EDDY COUNTY, NEW MEXICO.

CASE NO. 14601
ORDER NO. R-13371

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a. m. on February 17, 2011 at Santa Fe, New Mexico before Examiner Richard Ezeanyim.

NOW, on this 14th day of March, 2011, the Division Director, having considered the testimony, the record and the recommendations of the Examiner,

FINDS THAT:

(1) Due public notice has been given, and the Division has jurisdiction of this case and of the subject matter.

(2) The applicant, Agave Energy Company ("Agave" or "Applicant"), seeks authority to inject acid gas (hydrogen sulfide and carbon dioxide) into the Devonian, Fusselman, and Montoya formations, at a depth interval approximately 9,930 feet to 10,500 feet below the surface, through the Metropolis Disposal Well No. 1 (API No. 30-015-31905), which it proposes to re-complete at a location 1650 feet from the South line and 1650 feet from the West line (Unit K) of Section 36, Township 18 South, Range 25 East, NMPM, Eddy County, New Mexico. The purpose of the injection is to dispose of acid gas and carbon dioxide from Agave's Dagger Draw Gas Processing Plant, sequester carbon dioxide and reduce greenhouse emissions.

(3) Notice of this application was given to adjacent operators, surface owner, and other interest owners. No party appeared at the hearing to oppose the application.

The Applicant appeared at the hearing and offered the following testimony:

(4) The proposed acid gas injection well is a better solution to reducing

greenhouse gas emissions by sequestering carbon dioxide (CO2) rather than venting into the atmosphere. Agave also needs to expand the plant's treating capabilities to continue to accept the increasing CO2 content of typical wellhead gas. Agave proposed this acid gas injection well to meet that need as well as to ensure future compliance with air quality regulations, reduce potential for plant upset and assure the long-term viability of the plant.

(5) Agave conducted a geologic study to find a suitable formation for acid gas injection and concluded that the Devonian, the Fusselman, and the Montoya formations exhibit high porosity and permeability to accept acid gas injection. The Devonian, the Fusselman, and the Montoya formations are sealed on top by the Mississippian Caprock, which is a sequence of the Barnett and Woodford shales and the recrystallized Chester Limestone. The Caprock is a sequence of low porosity recrystallized limestone which is an effective barrier above the injection zone. The suitability of the Devonian, Fusselman, and Montoya formations has also been demonstrated by many years of successful injection of produced water by several nearby saltwater disposal wells.

(6) The well is completed with the surface casing set at 400 feet, the intermediate casing at 1,200 feet, and the production casing at 9,927 feet, all circulated to the surface. The re-completed well will also include a subsurface safety valve on the production tubing to assure that fluid cannot flow back out of the well. In addition, the annular space between the production tubing and the well bore will be filled with diesel as an inert fluid as a further safety measure.

(7) Agave proposes to inject at a maximum injection pressure of approximately 3280 psi and a maximum injection rate of 205 barrels of treated acid gas per day.

(8) There are six fresh water wells within the one-mile area of review which produce water from the Roswell basin. The deepest of these wells extends to 450 feet below the surface. The surface and the intermediate casing strings for the AGI well will extend to 400 feet and 1,200 feet respectively which are well below all of the fresh water zones thereby negating any potential impact by the AGI well.

(9) The Devonian, Fusselman, and Montoya formations in this area are not productive of any hydrocarbons.

(10) No wells (including producing and plugged and abandoned wells) penetrated the Mississippian Caprock or the injection zone within the one-mile area of review (AOR). There are no faults or geologic connections in this area.

(11) The surface at the proposed injection site is owned by Agave Energy and therefore Agave has all necessary easements and other rights for its surface facilities.

The Division Concludes as follows:

(12) The acid gas injection (AGI) well will be adequately constructed to prevent movement of the injected fluid from the injection zone to the surface.

(13) The applicant should use a H2S and CO2 resistant cement for this project to address the highly corrosive environment.

(14) Since water is heavier than the acid gas, the pressure gradient of the injected fluid should be allowed to be slightly greater than the Division's normal pressure gradient of 0.2 pounds per square inch per foot (psi/ft) without fracturing the formation. The applicant's request to grant a maximum surface injection pressure of 3280 psi should be approved.

(15) The proposed injection operation as proposed by the applicant can be conducted in a safe and responsible manner, without causing waste, impairing correlative rights or endangering fresh water, public health or the environment.

(16) The proposed operation is an environmentally superior means of disposing of the acid gas wastes generated at the Dagger Draw Gas Processing Plant because it will provide for the sequestration of greenhouse gases.

(17) The application should be approved.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Agave Energy Company ("Agave" or "Applicant"), is hereby authorized to inject acid gas (hydrogen sulfide and carbon dioxide) into the Devonian, Fusselman, and Montoya formations, at a depth interval approximately 9,930 feet to 10,500 feet below the surface, through 2-7/8 inch tubing set in a packer located approximately 9,854 feet in the Metropolis Disposal Well No. 1 (API No. 30-015-31905), which it proposes to re-complete at a location 1650 feet from the South line and 1650 feet from the West line (Unit K) of Section 36, Township 18 South, Range 25 East, NMPM, Eddy County, New Mexico. The purpose of the injection is to dispose of acid gas and carbon dioxide from Agave's Dagger Draw Gas Processing Plant, sequester carbon dioxide and reduce greenhouse emissions.

(2) The operator of the well shall take all steps necessary to insure that the injected acid gas enters the proposed injection interval and does not escape to other formations or onto the surface.

(3) The operator shall use 2-7/8 inch corrosion-resistant L-80 tubing set in a nickel based packer or **any other corrosive-resistant materials**.

(4) A one-way subsurface automatic safety valve shall be placed on the injection tubing 250 feet below the surface to prevent the injected acid gas from migrating upwards in case of an upset or emergency.

(5) The well shall be constructed substantially in accordance with the description in the Injection Well Data Sheet attached to Form C-108 filed by the applicant in this case. The surface and the intermediate casing shall be set at 400 feet and 1,200 feet, respectively, and there shall be a total of three casing strings, all with cement circulated to the surface.

(6) During recompletion operations, the operator shall monitor the well for hydrocarbon shows. Any hydrocarbon shows within the Devonian, Fusselman, and Montoya formations shall be reported to the Division prior to commencement of injection operations.

(7) The operator shall submit a letter setting forth the estimated static bottomhole pressure of the injection formations to the Division's Artesia District Office prior to commencement of injection operations.

(8) After installation of the injection tubing and prior to commencing injection operations, and at least once **every two years thereafter,** the operator shall pressure test the casing from the surface to the packer-setting depth to assure casing integrity. Further, the operator shall monitor pressure on the backside using continuous chart recorder or digital equivalent to immediately detect any leakage in the casing.

(9) Prior to injecting acid gas, the casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge or approved leak-detection device to detect any leakage in the casing, tubing or packer.

(10) The operator shall record injection rates and pressures on a continuous basis and report the readings annually, or more often if requested, to the Engineering Bureau in the Division's Santa Fe Office and to the Division's Artesia District Office. Each such report shall include the well name, location, API Number and the number of this order.

(11) The injection well or system shall be equipped with a pressure limiting device that will limit wellhead pressure on the injection well to no more than **3280 psi** while injecting acid gas. The operator shall maintain the injection fluid in the non-corrosive phase with minimum pressure regulating devices as necessary.

(12) The Director of the Division may authorize an increase in the injection pressure upon a proper showing that such higher pressure will not result in the migration of the injected gases from the permitted injection formation. Such showing shall consist at least of a valid step-rate test run in accordance with procedures acceptable to the

Division. Any step-rate test shall be run with an inert fluid such as produced water, and not with acid gas.

(13) The operator shall notify the Artesia District Office of the Division of the time of the setting of the tubing and packer and of any mechanical integrity test so such operations can be witnessed or inspected.

(14) Without limitation on the duties of the operator as provided in Division Rules 19.15.30 and 19.15.29, the operator shall immediately notify the Artesia District Office of the Division of any failure of the tubing, casing or packer in the well, or of any leakage or release of water, oil or gas from or around any produced or plugged and abandoned well in the area, and shall take such measures as may be timely and necessary to correct such failure or leakage.

(15) Applicant has received approval by the Division's Environmental Bureau of a hydrogen sulfide contingency plan that complies with Division Rule 11.

(16) The operator shall submit monthly reports of injection volumes on Form C-115, in accordance with Division Rules 19.15.26.13 and 19.15.7.24.

(17) The injection authority herein granted shall terminate **two years** after the effective date of this order **if the operator has not commenced injection operations** pursuant hereto. **The operator shall advise the Division if there are any changes in the area of review wells within this 2-year period before commencing injection operations.** The Division Director, upon written request of the operator, may extend this time for good cause demonstrated by satisfactory evidence if application for extension is made within the two-year period. The injection authority shall also terminate ***ipso-facto*, one year after injection operations into the well have ceased.**

(18) The injection authority granted under this order is **not** transferable except upon Division approval. The Division may require the operator to demonstrate mechanical integrity of the injection well that will be transferred prior to approving transfer of authority to inject.

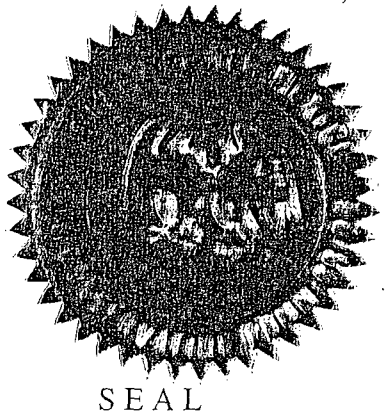
(19) The Division may revoke this injection permit at any time after notice and hearing if the operator is in violation of Rule 19.15.5.9 NMAC.

(20) Compliance with this order does not relieve the operator of the obligation to comply with other applicable federal, state or local laws or rules, or to exercise due care for the protection of fresh water, public health and safety and the environment.

(21) The Division Director may amend this order by administrative order, after proper notice and the absence of protest.

(22) Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



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STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

DANIEL SANCHEZ
ActingDirector