

BEFORE THE INDUSTRIAL COMMISSION
OF THE STATE OF NORTH DAKOTA

CASE NO. 29889
ORDER NO. 32475

IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSION TO CONSIDER THE AMALGAMATION OF THE STORAGE RESERVOIR PORE SPACE, IN WHICH THE COMMISSION MAY REQUIRE THAT THE PORE SPACE OWNED BY NONCONSENTING OWNERS BE INCLUDED IN THE GEOLOGIC STORAGE FACILITY AND SUBJECT TO GEOLOGIC STORAGE, AS REQUIRED TO OPERATE THE BLUE FLINT SEQUESTER COMPANY, LLC STORAGE FACILITY LOCATED IN SECTIONS 11, 12, 13, 14, AND 24, TOWNSHIP 145 NORTH, RANGE 83 WEST AND SECTIONS 6, 7, 8, 17, 18, AND 19, TOWNSHIP 145 NORTH, RANGE 82 WEST, MCLEAN COUNTY, NORTH DAKOTA, IN THE BROOM CREEK FORMATION, PURSUANT TO NORTH DAKOTA CENTURY CODE SECTION 38-22-10.

ORDER OF THE COMMISSION

THE COMMISSION FINDS:

- (1) This cause came on for hearing at 9:00 a.m. on the 21st day of March, 2023.
- (2) Case No. 29889 is a motion of the Commission to consider the amalgamation of storage reservoir pore space, pursuant to a Storage Agreement by Blue Flint Sequester Company, LLC (Blue Flint) for use of pore space falling within portions of Sections 11, 12, 13, 14, and 24, Township 145 North, Range 83 West, and Sections 6, 7, 8, 17, 18, and 19, Township 145 North, Range 82 West, McLean County, North Dakota, in the Broom Creek Formation, and to determine it has been signed, ratified, or approved by owners of interest owning at least sixty percent of the pore space interest within said lands, pursuant to North Dakota Century Code (NDCC) Section 38-22-10.
- (3) Case Nos. 29889, 29888, and 29890 were combined for purposes of hearing.

(4) Case No. 29888, also on the March 21, 2023 docket, is an application by Blue Flint for an order requesting consideration for the geologic storage of carbon dioxide in the Broom Creek Formation from the Blue Flint Ethanol (BFE) facility in the storage facility located in Sections 11, 12, 13, 14, and 24, Township 145 North, Range 83 West, and Sections 6, 7, 8, 17, 18, and 19, Township 145 North, Range 82 West, McLean County, North Dakota, pursuant to North Dakota Administrative Code (NDAC) Chapter 43-05-01.

(5) Case No. 29890, also on the March 21, 2023 docket, is a motion of the Commission to consider to determine the amount of financial responsibility to be required of Blue Flint for the geologic storage of carbon dioxide from the BFE facility in the storage facility located in Sections 11, 12, 13, 14, and 24, Township 145 North, Range 83 West and Sections 6, 7, 8, 17, 18, and 19, Township 145 North, Range 82 West, McLean County, North Dakota, in the Broom Creek Formation, pursuant to NDAC Section 43-05-01-09.1

(6) The record in these matters was left open to receive additional information from Blue Flint. Such information was received on May 1, 2023, and the record was closed.

(7) Pursuant to NDCC Section 38-22-06 and NDAC Section 43-05-01-08, the notice of filing of the application and petition and the time and place of hearing thereof was given, and that at least 45 days prior to the hearing, Blue Flint, as the applicant, did give notice of the time and place of said hearing and the Commission has accepted the notice as adequate, and that the applicant did, at least 45 days prior to the hearing, file with the Commission engineering, geological, and other technical exhibits to be used and which were used at said hearing, and that the notice so given did specify that such material was filed with the Commission; that due public notice having been given, as required by law, the Commission has jurisdiction of this cause and the subject matter.

(8) The Commission gave at least a thirty-day public notice and comment period for the draft storage facility permit and issued all notices using methods required of all entities under NDCC Section 38-22-06 and NDAC Section 43-05-01-08. Publication was made February 1, 2023, and the comment period for written comments ended at 5:00 PM CDT March 20, 2023. The hearing was open to the public to appear and provide comments.

(9) Order No. 32474 entered in Case No. 29888 created the Blue Flint Underwood Broom Creek Storage Facility #1.

(10) The plan for amalgamation proposed by Blue Flint includes a Storage Agreement for the Broom Creek Formation for certain lands in McLean County, North Dakota.

(11) The area proposed to be included within the amalgamation area of the storage facility is as follows:

TOWNSHIP 145 NORTH, RANGE 83 WEST
ALL OF SECTIONS 12 AND 13, THE SE/4 OF SECTION 11, THE NE/4 OF SECTION 14,
AND THE NE/4 OF SECTION 24,

TOWNSHIP 145 NORTH, RANGE 82 WEST

ALL OF SECTIONS 7, 8, 17, AND 18, THE S/2 OF SECTION 6, AND THE N/2 OF SECTION 19.

ALL IN MCLEAN COUNTY AND COMPRISING OF 4,953.71 ACRES, MORE OR LESS.

(12) Blue Flint is proposing a one-phase formula for the calculation of tract participation, allocating 100% to surface acres.

“Surface acres” means the number of acres within each respective tract.

(13) Pursuant to NDCC Section 47-31-03, title to pore space in all strata underlying surface lands and waters is vested in the owner of the overlying surface estate.

No pore space has been leased out by pore space owners prior to this agreement. Blue Flint did not find instances of pore space being severed from the surface estate as allowed prior to April 9, 2009.

(14) A one-phase formula based on surface acres will fairly compensate owners farther away from the injection well that will eventually have pore space occupied by carbon dioxide. Blue Flint testified The Falkirk Mining Company owns the pore space where the injection well is located. Blue Flint indicates that the majority of carbon dioxide stored will remain in close proximity to the wellbore for an extended period of time, making The Falkirk Mining Company the primary beneficiary of a pore volume formula. Computational modeling performed by Blue Flint and the Commission supports Blue Flint’s assessment.

The Commission believes capillary trapping, relative permeability hysteresis, and a lack of local area history matching data from injection of carbon dioxide into the saline Broom Creek Formation reservoir provides reasonable doubt for the utility of a pore volume formula. The Commission believes the 100% weighting on surface acreage is acceptable and that the one-phase formula is protective of correlative rights and should not be modified.

(15) Blue Flint delineated the tracts to be utilized through computational modeling based on site characterization as required by NDAC Section 43-05-01-05.1. The data acquired during site characterization as well as the reservoir model and all inputs were provided to the Commission. The Commission evaluated the storage reservoir utilizing data acquired during site characterization and other publicly available data before performing computational simulation. The Commission concludes that Blue Flint’s inclusion of pore space that will be affected by the project has been adequately delineated.

(16) The Storage Agreement contains fair, reasonable, and equitable provisions for:

- (a) The amalgamation of pore space interests for the storage of carbon dioxide within said pore spaces of the storage reservoir.

- (b) The division of interest or formula for the apportionment and allocation of carbon dioxide to be stored.
- (c) The measurement of quantity of carbon dioxide injected into the pore spaces underlying the delineated storage facility.
- (d) The enlargement or reduction of the delineation of pore space utilized for geologic storage of carbon dioxide which may be warranted by review pursuant to NDAC Section 43-05-01-05.1(4).
- (e) The time when the Storage Agreement shall become effective.
- (f) The time when, conditions under, and the method by which the Storage Agreement shall be or may be terminated and its affairs wound up.

(17) Blue Flint testified that Article 14.2 is insignificant to the Storage Agreement because over sixty percent of the pore space owners have executed a pore space lease and recommended that the language be stricken from the Storage Agreement.

(18) Such amalgamation of the storage reservoir's pore space and the Storage Agreement are in the public interest, and require procedures that promote, in a manner fair to all interested, cooperative management, thereby ensuring the maximum use of natural resources, and that said Storage Agreement, as contained therein, appears to conform and comply with the provisions and requirements of NDCC Section 38-22-08.

(19) NDCC Section 38-22-10 provides that the Commission may require that the pore space owned by nonconsenting owners be included in a storage facility and subject to geological storage, if a storage operator does not obtain the consent of all persons who own the storage reservoir's pore space.

(20) Pursuant to NDAC Section 43-05-01-08(2)(e), the required notice given by Blue Flint included a statement that amalgamation of the storage reservoir's pore space is required to operate the storage facility, that the Commission may require that the pore space owned by nonconsenting owners be included in the storage facility and subject to geologic storage, and that the amalgamation of pore space will be considered at the hearing.

(21) The approval of this application is in the public interest by promoting the policy stated in NDCC Section 38-22-01.

IT IS THEREFORE ORDERED:

(1) The amalgamation of pore space in the Blue Flint Underwood Broom Creek Storage Facility #1 in McLean County, North Dakota, is hereby approved.

(2) The Storage Agreement for the Broom Creek Formation is hereby incorporated in this order by reference insofar as the Commission has jurisdiction and said Storage Agreement for the amalgamated pore space therein is approved; and that if said Storage Agreement does not in all respects conform to and comply with the provisions and requirements under NDCC Chapter 38-22, the statute shall prevail.

(3) The amalgamated pore space is hereby defined as the following described tracts of land in McLean County, North Dakota:

TOWNSHIP 145 NORTH, RANGE 83 WEST

ALL OF SECTIONS 12 AND 13, THE SE/4 OF SECTION 11, THE NE/4 OF SECTION 14, AND THE NE/4 OF SECTION 24,

TOWNSHIP 145 NORTH, RANGE 82 WEST

ALL OF SECTIONS 7, 8, 17, AND 18, THE S/2 OF SECTION 6, AND THE N/2 OF SECTION 19.

ALL IN MCLEAN COUNTY AND COMPRISING OF 4,953.71 ACRES, MORE OR LESS.

(4) The Storage Agreement for the Broom Creek Formation identified the storage reservoir as the interval containing the amalgamated pore space defined as the stratigraphic interval from below the top of the Picard Member of the Piper Formation, found at an average depth of 4,553 feet, to above the base of the Amsden Formation, found at an average depth of 5,053 feet, as identified within the limits of the facility area, hereinbefore described in paragraph (3) above, by the well logging suite performed on the MAG #1 well (File No. 37833) and from a 3D seismic survey.

(5) The Commission defines the storage reservoir containing the amalgamated pore space as the stratigraphic interval from below the top of the Picard Member of the Piper Formation, found at a depth of 4,558 feet below the Kelly Bushing, to above the base of the Amsden Formation, found at a depth of 5,035 feet below the Kelly Bushing, as identified by the Array Induction Gamma log run performed in the MAG #1 well (File No. 37833), located in LOT 1 of Section 18, Township 145 North, Range 82 West, McLean County, North Dakota.

(6) The injection of carbon dioxide into the amalgamated pore space by the operator for the purpose of storage of carbon dioxide is authorized through the MAG #1 well (File No. 37833), located 295 feet from the north line and 740 feet from the west line of Section 18, Township 145 North, Range 82 West, McLean County, North Dakota; provided, however, that prior to the commencement of such injection the operator shall obtain permits as required under NDAC Chapter 43-05-01.

(7) The termination of the amalgamation of lands hereinbefore described in paragraph (3) above shall be as prescribed in the Storage Agreement or at project completion as provided by NDCC Section 38-22-17; and that notwithstanding any provisions to the contrary, in the event that the operator fails to commence or ceases storage operations, the Commission, upon its own motion,

after notice and hearing, may consider rescinding this order, or any portion thereof, so that this order of amalgamation will terminate and cease to exist.

(8) The effective date of the amalgamation of pore space in the lands hereinbefore described in paragraph (3) above shall be at 7:00 a.m. on the 1st day of June, 2023.

(9) No well, other than those proposed in Order No. 32474, shall be hereafter drilled and completed in or inject into the amalgamated pore space, as defined herein, or otherwise penetrate the amalgamated pore space, without order of the Commission after due notice and hearing.

(10) This order shall be reviewed when a review of Order No. 32474 is conducted.

(11) This order shall cover all of the amalgamated pore space, as defined herein, and continues in full force and effect until further order of the Commission.

Dated this 25th day of May, 2023.

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA

/s/ Doug Burgum, Governor

/s/ Drew H. Wrigley, Attorney General

/s/ Doug Goehring, Agriculture Commissioner