

BEFORE THE INDUSTRIAL COMMISSION
OF THE STATE OF NORTH DAKOTA

CASE NO. 29451
(CONTINUED)
ORDER NO. 32251

IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSION TO CONSIDER THE APPLICATION OF DAKOTA GASIFICATION COMPANY 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 DAKOTA GASIFICATION COMPANY STORAGE FACILITY LOCATED IN SECTIONS 5, 6, 7, 8, 17, 18, 19, TOWNSHIP 145 NORTH, RANGE 87 WEST, SECTIONS 1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 22, 23, 24, TOWNSHIP 145 NORTH, RANGE 88 WEST, SECTIONS 30, 31, 32, TOWNSHIP 146 NORTH, RANGE 87 WEST, SECTIONS 25, 26, 27, 33, 34, 35, 36, TOWNSHIP 146 NORTH, RANGE 88 WEST, MERCER 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 originally came on for hearing at 9:00 a.m. on the 20th day of July, 2022. The Commission entered Order No. 32021 on October 5, 2022 continuing this matter for one hundred and seventy (170) days or until further order of the Commission.

(2) Case No. 29451 is a motion of the Commission determining the amalgamation of storage reservoir pore space, pursuant to a Storage Agreement by Dakota Gasification Company (DGC) for use of pore space falling within portions of Sections 25, 26, 27, 33, 34, 35, and 36, Township

146 North, Range 88 West, Sections 30, 31, and 32, Township 146 North, Range 87 West, Sections 1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 22, 23, and 24, Township 145 North, Range 88 West, and Sections 5, 6, 7, 8, 17, 18, and 19, Township 145 North, Range 87 West, Mercer County, North Dakota, in the Broom Creek Formation, 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) 38-22-10.

(3) Case Nos. 29451, 29450, and 29452 were combined for the purposes of hearing.

(4) Case No. 29450, also on today's docket, is an application by DGC for an order authorizing geologic storage of carbon dioxide from the Great Plains Synfuels Plant in the amalgamated pore space of the Broom Creek Formation in portions of Sections 25, 26, 27, 33, 34, 35, and 36, Township 146 North, Range 88 West, Sections 30, 31, and 32, Township 146 North, Range 87 West, Sections 1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 22, 23, and 24, Township 145 North, Range 88 West, and Sections 5, 6, 7, 8, 17, 18, and 19, Township 145 North, Range 87 West, Mercer County, North Dakota, pursuant to North Dakota Administrative Code (NDAC) Chapter 43-05-01.

(5) Case No. 29452, also on today's docket, is a motion of the Commission to determine the amount of financial responsibility for the geologic storage of carbon dioxide from the Great Plains Synfuels Plant located in portions of Sections 25, 26, 27, 33, 34, 35, and 36, Township 146 North, Range 88 West, Sections 30, 31, and 32, Township 146 North, Range 87 West, Sections 1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 22, 23, and 24, Township 145 North, Range 88 West, and Sections 5, 6, 7, 8, 17, 18, and 19, Township 145 North, Range 87 West, Mercer 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 DGC. Such information was received on August 8, 2022 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, DGC, 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 June 8, 2022, and the comment period for written comments ended at 5:00 PM CDT July 19, 2022. The hearing was open to the public to appear and provide comments.

(9) Order No. 32250 entered in Case No. 29450 created the DGC Beulah Broom Creek Storage Facility #1.

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

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

TOWNSHIP 146 NORTH, RANGE 88 WEST

ALL OF SECTIONS 35 AND 36, THE S/2 OF SECTION 25, THE S/2 OF SECTION 26, THE SE/4 OF SECTION 27, THE SE/4 OF SECTION 33, AND THE S/2, AND NE/4 OF SECTION 34,

TOWNSHIP 146 NORTH, RANGE 87 WEST

ALL OF SECTION 31, THE S/2 OF SECTION 30, AND THE SW/4 OF SECTION 32,

TOWNSHIP 145 NORTH, RANGE 88 WEST

ALL OF SECTIONS 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23 AND 24, THE E/2 OF SECTION 4, THE E/2 OF SECTION 9, AND THE E/2 OF SECTION 16,

TOWNSHIP 145 NORTH, RANGE 87 WEST

ALL OF SECTIONS 6, 7, 18 AND 19, THE W/2 OF SECTION 5, THE W/2 OF SECTION 8, AND THE W/2 OF SECTION 17.

ALL IN MERCER COUNTY AND COMPRISING OF 15,979.20 ACRES, MORE OR LESS.

(12) DGC 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. DGC did not find instances of pore space being severed from the surface estate that was 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. DGC testified Coteau Properties and DGC own the pore space where the injection wells are to be located. DGC indicates that the majority of carbon dioxide stored will remain in close proximity to the well

bores for an extended period of time, making Coteau Properties and DGC the primary beneficiary of a pore volume formula. Computational modeling performed by DGC and the Commission supports DGC'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) DGC 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 DGC'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) 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.

(18) 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.

(19) Pursuant to NDAC Section 43-05-01-08(2)(e), the required notice given by DGC 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.

(20) 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 DGC Beulah Broom Creek Storage Facility #1 in Mercer 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 Mercer County, North Dakota:

TOWNSHIP 146 NORTH, RANGE 88 WEST

ALL OF SECTIONS 35 AND 36, THE S/2 OF SECTION 25, THE S/2 OF SECTION 26, THE SE/4 OF SECTION 27, THE SE/4 OF SECTION 33, AND THE S/2, AND NE/4 OF SECTION 34,

TOWNSHIP 146 NORTH, RANGE 87 WEST

ALL OF SECTION 31, THE S/2 OF SECTION 30, AND THE SW/4 OF SECTION 32,

TOWNSHIP 145 NORTH, RANGE 88 WEST

ALL OF SECTIONS 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23 AND 24, THE E/2 OF SECTION 4, THE E/2 OF SECTION 9, AND THE E/2 OF SECTION 16,

TOWNSHIP 145 NORTH, RANGE 87 WEST

ALL OF SECTIONS 6, 7, 18 AND 19, THE W/2 OF SECTION 5, THE W/2 OF SECTION 8, AND THE W/2 OF SECTION 17.

ALL IN MERCER COUNTY AND COMPRISING OF 15,979.20 ACRES, MORE OR LESS.

(4) The storage reservoir containing the amalgamated pore space is hereby defined as the stratigraphic interval from below the top of the Opeche Formation, found at a depth of 6,132 feet below the Kelly Bushing, to above the base of the Amsden Formation, found at a depth of 6,839 feet below the Kelly Bushing, as identified by the laterolog gamma ray log run in the Herrmann #1 well (File No. 4177), located in the NE/4 SW/4 of Section 17, Township 145 North, Range 88 West, Mercer County, North Dakota.

(5) 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 Coteau #1 well (File No. 38379), located 555 feet from the south line and 460 feet from the west line of Section 1, Township 145 North, Range 88 West, Mercer County, North Dakota; the Coteau #2 well (File No. 38916), located 424 feet from the south line and 805 feet from the west line of Section 2, Township 145 North, Range 88 West, Mercer County, North Dakota; the Coteau #3 well (File No. 38917), located 2,462 feet from the south line and 2,391 feet from the east line of Section 2, Township 145 North, Range 88 West, Mercer County, North Dakota; the Coteau #4 well (File No. 38918), located 1,641 feet from the south line and 2,421 feet from the west line of Section 1, Township 145 North, Range 88 West, Mercer County, North Dakota; the Coteau #5 well (File No. 39418), located 1,408 feet from the south line and 1,138 feet from the east line of Section 12, Township 145 North, Range 88 West, Mercer County, North Dakota; and the proposed Coteau #6 well, to be located approximately 688 feet from the south line and 2,037 feet from the east line of Section 11, Township 145 North, Range 88 West, Mercer County, North Dakota; provided, however, that prior to the commencement of such injection the operator shall obtain such permits as are required under NDAC Chapter 43-05-01.

(6) 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.

(7) DGC shall provide an affidavit affirming it has complied with Article 14.2 of the Storage Agreement and the Storage Agreement has not been terminated. The effective date of the amalgamation of pore space in the lands hereinbefore described in paragraph (3) above shall be provided by order of the Director of the North Dakota Oil and Gas Division after said affidavit is received by the Commission.

(8) No well, other than those proposed in Case No. 29450, shall be hereafter drilled and completed in or injected into in the amalgamated pore space, as defined herein, without order of the Commission after due notice and hearing.

(9) This order shall be reviewed when a review of Order No. 32250 is conducted.

(10) 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 24th day of January 2023.

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA

/s/ Doug Burgum, Governor

/s/ Drew H. Wrigley, Attorney General

/s/ Doug Goehring, Agriculture Commissioner