

STATE OF NEW YORK: DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the matter of the proposed order of field-wide well spacing rules and the integration of interests pursuant to Environmental Conservation Law (ECL) §§23-0501 and 23-0901 for the

**GLODES CORNERS ROAD FIELD,
STEUBEN COUNTY, NEW YORK**

**AFFIDAVIT:
RULINGS
After Public Hearing
and
ORDER of Further
Proceedings**

**File No.
DMN 99-1
(Glodes Cors. Rd. Field)**

BRADLEY J. FIELD, being duly sworn, deposes and says as follows:

1. I am the Director of the Bureau of Oil and Gas Regulation in the Division of Mineral Resources of the Department of Environmental Conservation in Albany, New York. I have served in this capacity for approximately three years. Prior to that time, I was the Chief of the Division's Program Development Section and a Mineral Resources Specialist III. I have worked in the Division for fourteen and one-half years. Prior work experience includes reservoir engineering positions with Getty Oil Company in Bakersfield, California and Marathon Oil Company in Midland, Texas and Bridgeport, Illinois. I am a registered Professional Engineer in California and Pennsylvania. I have a Bachelor of Science Degree in Petroleum and Natural Gas Engineering from Penn State University.

2. As the Director of the Bureau of Oil and Gas Regulation, I am responsible for administration of permitting, compliance, and enforcement programs pertaining to oil, gas and solution mining development, and underground gas storage. This includes review and approval of gas well field spacing plans in order to maximize recovery of the state's resources while ensuring

that correlative rights are protected. My previous positions with the Division also included duties related to these programs.

3. I am familiar with the circumstances surrounding the development of fieldwide well spacing for the Glodes Corners Road Field in Steuben County, New York.

4. In the Administrative Law Judge's (ALJ) Ruling After Public Hearing in the matter of the Glodes Corners Road Field, dated October 28, 1999 ("the Ruling"), the ALJ ordered further proceedings, subject to the Commissioner's determination of any appeals regarding the proposed units. In the ALJ's Order of Further Proceedings, he ruled on two items ("Rulings 1 and 2") as follows:

- i. The proposed minimum 5280 foot spacing and 240 acre unit size requirements and their compliance with applicable statutory requirements need to be substantiated on the record.
- ii. The size, shape and location of the proposed units and their compliance with statutory requirements need to be substantiated on the record. In this regard, the substantiation should address the particular concerns over inclusion or exclusion of particular parcels of land from units which were voiced by Mr. Covert (and Mr. Squires as his attorney), Mr. Cronk, Mr. Fox, Mr. Bedient, Mr. Spence, and Mr. Pizura.

5. The ALJ further directed Department Staff to place on the record the information specified in Rulings 1 and 2 through "prefiled testimony" as that term is described in 6 NYCRR 624.7(e). This Affidavit, an executed Stipulation between the Department and Columbia Natural Resources ("Columbia"), dated January 25, 2000, and the Report of Columbia Natural Resources,

Inc. on Glodes Corners Road Field (the “GCR Report”) are submitted as directed in the ALJ’s Rulings as “prefiled testimony.”

The Proposed 5280-Foot Spacing and 240-Acre Unit Size

6. In their respective draft stipulations submitted into the record at the public hearings on June 22, 1999, identified as Exhibits 6(G) and 7(G), both the Department and Columbia proposed that extension wells be located at least 5,280 feet from existing Glodes Corners Road Field wells. This is supported by the analysis contained in the GCR Report. The wells currently producing in the Glodes Corners Road Field are located approximately 5,280 feet apart in the east-west direction. This is supported by the drainage characteristics of the gas reservoir as explained in the GCR Report. In the north-south direction, existing field wells are approximately 2,000 feet apart, which is less than the recommended 5,280-foot minimum spacing for extension wells. Reservoir characteristics outside the present field limits are unknown. Therefore, minimum spacing for extension wells of 5,280 feet, with closer spacing and infill wells allowed upon adequate justification, best meets the statutory mandate to prevent waste of the resource. An executed Stipulation between the Department and Columbia dated January 25, 2000, embodies a process whereby an applicant who desires to drill an infill well or an extension well closer than 5,280 feet from an existing well in the field must submit, for Department approval, technical information which explains why the proposed well would not adversely affect the productive performance of existing wells. Exhibit A to this executed Stipulation is a Glodes Corners Road Field unit map which supersedes Exhibit 5(G) in the record of these proceedings. The two westernmost units have been removed from the unit map to reflect the lack of productive reservoir in this portion of the field demonstrated by the Prattsburg Town Farm well which was

drilled as a dry hole. This well has been plugged and abandoned by Columbia. A total of 14 units is now proposed for the field, down from the original 16 units.

7. The Department's draft Stipulation, identified as Exhibit 6(G) in the record of these proceedings, advocated a minimum unit size for future wells of 240 acres. This value is closer to the upper limit of the units proposed for the existing wells in the Glodes Corners Road Field and was advanced by the Department based on the particular well performance characteristics in the center of the field. The proposed units for the Gray and Levandowski wells are 211.52 acres and 232.5 acres, respectively. Limiting the minimum unit size for extension wells to a value somewhat larger than 232.5 acres would conservatively address the provisions of the Environmental Conservation Law (ECL) §23-0501.4, which requires that units shall be no smaller than the maximum area that can be drained by one well. However, the majority of the units proposed for the field are between 160 and 200 acres. As provided by Belden & Blake Corporation through testimony, by Columbia in its draft Stipulation, identified as Exhibit 7(G) in the record of these proceedings, and in the GCR Report, it is a supportable position that the minimum unit size be set for future extension wells at 150 acres. A minimum unit size of 150 acres satisfies ECL §23-0501.3, which requires that spacing units shall be of approximately uniform size and shape for the entire pool. The Department is not averse to this minimum value, so long as Department approval provisions for all future wells and units are included with any final Commissioner's Order for extension wells in the Glodes Corners Road Field. Therefore to resolve this issue, the Department has executed a Stipulation with Columbia, signed and dated January 25, 2000, which includes these and other provisions.

Size, Shape and Location of Proposed Units

Covert No. 1 (API # 31-101-21689-01)

8. It is proposed that a 198.53 acre unit be established around the Covert No. 1 well as shown on Exhibit A to the January 25, 2000 Stipulation. The size and shape of this unit is supported by the geology in the area and the expected ultimate gas recovery from this well and similar wells in the field including adjacent wells shown on Exhibit A. The shape of the unit conforms to Columbia's geologic interpretation of the graben feature in this part of the field, shown on Exhibit B(G) to the GCR report. In the GCR Report, Columbia describes the western terminus of the productive reservoir, and thus the western boundary of the Covert No. 1 unit, as a loss of the graben feature near a transcurrent fault. Exhibit B(G) to the GCR report shows that this occurs at a location west of Mr. Covert's property boundary and supports the contention that the gas reservoir extends beneath lands not owned by Mr. Covert. Columbia's seismic coverage in the area is very good, as shown on Exhibit A(G) to the GCR report. Thus the shape and the western boundary of the Covert No. 1 well unit is well defined by Columbia's geophysical analysis. To the east of the Covert No. 1 is the Kozak No. 1 well. Mr. Covert has characterized this well as "dry" and "useless" due to its low productivity, and asserted that there is no productive reservoir east of the Covert No. 1. In the GCR Report, Columbia explains that the Kozak No. 1 is currently completed in a lower zone for testing and evaluation, and that the productive horizon, which is currently producing gas in both the Covert No. 1 and the Gray No. 1 wells, has not yet been completed in the Kozak No. 1 well. The Department agrees with Columbia's assessment that gas production in the Kozak No. 1 well will increase when the well is recompleted in this zone. Furthermore, neither Columbia nor any other party has identified any faulting or other geologic feature that would limit the eastern boundary of the Covert No. 1 unit. Because the same productive reservoir has been identified in both the Covert No. 1 and Kozak No. 1 wells, it is therefore consistent and practical to select a unit boundary at the approximate

midpoint between the two wells. The shape of the reservoir can be further confirmed by estimating the size of the reservoir drained by the Covert No. 1 well. Columbia has performed material balance and volumetric calculations based on gas production and reservoir characteristics for the Covert No. 1 well. I have reviewed the confidential material balance calculations provided by Columbia which support expected total gas recovery from the Covert No. 1 well which is comparable to the Gray No. 1 and Levandowski No. 1 wells. The size of the proposed units is justified by this comparison of expected gas recovery. Based on the analysis described above, the Department concurs with Columbia that establishing a unit which contained only Mr. Covert's property would not satisfy ECL §23-0501.4, which requires that no unit be smaller than the area drained by the well.

Covert No. 2 (API # 31-101-22768)

9. The Covert No. 2 well was placed into production pursuant to a Commissioner's Order dated December 7, 1999, which adopted the provisions of a signed Stipulation between Columbia and the Department dated November 23, 1999. A 231.81 acre unit is proposed for this well, as shown on Exhibit A to the January 25, 2000 Stipulation. Columbia's geologic and geophysical analysis contained in the GCR Report supports the size and shape of the unit. As with the Covert No. 1 unit, the upturn to the northwest and the western terminus of the unit are dictated by the shape of the graben and the existence of a transcurrent fault. The southern boundary is selected along the southern edge of the graben. The eastern boundary is chosen at the midpoint between the Covert No. 2 and the Levandowski No. 1 wells. Gas beneath Mr. Cronk's property will most likely be produced from the Covert No. 2 well due to its location in the southern tier of the graben; therefore, Mr. Cronk's property should be included in the unit with the Covert No. 2 well.

Fox No. 1 (API # 31-101-21706)

10. The analysis provided by Columbia in the GCR Report indicates that there is no evidence to support Mr. Fox's contention that the drainage area and thus the western unit boundary for the Fox No. 1 well terminates at Gay Road. No technical data to dispute Columbia's analysis has been submitted by any party. Because the productive reservoir is continuous through this area, the western unit boundary was selected by Columbia at the midpoint between two producing wells. This methodology is applied consistently throughout the field and maintains the continuity and uniformity of the units in conformance with ECL §23-0501.3.

Pizura No. 1 (API # 31-101-21692) and Bergstresser No. 1 (API # 31-101-21710)

11. Columbia's geologic analysis surrounding the establishment of the western boundary of the Bergstresser No. 1 unit is included in the GCR Report. A tear fault identified on seismic lines run directly through the area in question defines the western unit boundary. Seismic data further indicates that the graben feature deviates from a general east-west trend as shown on the graben map attached to the GCR Report as Exhibit B(G). This deviation further determines the shape of the Pizura No. 1 unit. In addition, Columbia has conducted pressure transient testing of the Bergstresser No. 1 well which revealed pressure behavior indicative of a bounded or confined reservoir. This indicates that the well is located close to barriers in the reservoir, such as the tear fault and the graben limits previously described. While the absolute location of the western drainage area limit can not be determined from the pressure test, the Department concurs with Columbia that the pressure test does corroborate its geologic interpretation. Furthermore, it is not unreasonable to expect the Bergstresser No. 1 well to recover gas from properties at the far eastern portions of the proposed unit if the reservoir is limited or restricted to the west. No technical information has been presented which supports shifting or reorienting the Bergstresser

No. 1 unit. Except for the western location within the proposed unit of the well itself, the 170.44 acre unit proposed for the Bergstresser No. 1 satisfies the uniformity provision of ECL §23-0501.3.

12. As set forth in this Affidavit, the executed Stipulation, and the GCR Report, Department Staff's proposal for well spacing and compulsory integration in the Glodes Corners Road Field satisfies its statutory mandates under ECL Article 23.

Bradley J. Field
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Sworn to before me
this 27 day of January, 2000

Notary Public