

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 CHUZA OIL COMPANY FOR APPROVAL OF A NON-  
STANDARD PROJECT AREA PURSUANT TO NMAC 19.15.16.1 et seq., IN THE  
NORTHEAST HOGBACK UNIT, SAN JUAN COUNTY, NEW MEXICO.

CASE NO. 14853  
ORDER NO. R-13607

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a. m. on June 7, 2012 at Santa Fe, New Mexico, before Examiner William V. Jones.

NOW, on this 31<sup>st</sup> day of July, 2012, 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, Chuza Oil Company, ("Chuza" or "Applicant") [OGRID 279508], seeks approval of a project area comprising its entire Northeast Hogback Unit in order to more efficiently develop oil reserves with horizontal wells from the Gallup formation, Horseshoe-Gallup Oil Pool (Pool Code 32870).

(3) The Northeast Hogback Unit was formed in 1959 to include 10,571.86 acres, more or less, of state and federal lands. The unit agreement was approved in principle by the Commission on October 19, 1959 by Order No. R-1494 in Case No. 1769. Since that time, the Northeast Hogback Unit has been contracted several times and currently covers 2,431.2 acres, more or less, of (only) federal acreage within San Juan County, New Mexico as follows:

Township 30 North, Range 16 West, NMPM

USA NM 04444      Section 10:    N/2 SE/4

USA NM 077281      Section 10:    Lots 3 and 4 (W/2 SW/4), E/2 SW/4, NE/4

USA NM 077284	Section 10:	S/2 SE/4
USA NM 077282	Section 11:	NW/4, N/2 SW/4, SW/4 SW/4
USA NM 077283	Section 11:	SE/4 SW/4
USA NM 05859	Section 13:	S/2 SW/4
USA SF 081298-A	Section 13:	NW/4 SE/4
USA SF 081299-A	Section 13:	W/2 NW/4, N/2 SW/4, SW/4 SE/4
USA NM 04444	Section 14:	W/2 NE/4
USA SF 081299-A	Section 14:	E/2 NE/4
USA NM 04407	Section 14:	NW/4
USA NM 04407-A	Section 14:	N/2 SW/4, SE/4
USA NM 06686	Section 15:	E/2 NE/4
USA NM 04443	Section 15:	Lots 1, 2, 3, 4 (W/2 W/2), E/2 W/2, W/2 E/2, NE/4 SE/4
USA NM 04443	Section 22:	NW/4
USA NM 04443-B	Section 23:	NE/4 NE/4
USA NM 04443-B	Section 24:	NW/4 NE/4
USA NM 04407-A	Section 24:	N/2 NW/4

(4) Commission Order No. R-1080 in Case No. 1329, dated November 1, 1957, created the Horseshoe-Gallup Oil Pool (Pool Code 32870) with the discovery well being the Horseshoe Canyon "B" Well No. 1 (API No. 30-045-10002), located in Unit D of Section 3, Township 30 North, Range 16 West, NMPM, San Juan County, New Mexico. The well was completed within a 40 foot thick Gallup formation sand interval with the top perforation at 1610 feet. This pool has been expanded by the Division since that date into portions of 5 townships.

(5) The Horseshoe-Gallup Oil Pool has no special pool rules and is therefore governed by statewide rules for development of oil wells including Rule NMAC 19.15.15.9A which mandates 40-acre oil spacing and proration units containing up to four (vertical) wells per spacing unit with wells located no closer than 330 feet from the boundary of said spacing unit. Rule NMAC 19.15.16.15 governing horizontal wells statewide allows an unlimited number of horizontal wells per spacing and proration unit or per project area.

(6) Chuza presented land, geology, and engineering testimony and exhibits showing the following:

(a) The acreage currently within the Northeast Hogback Unit is only federal and all previously included State and Fee acreage has been contracted out. In addition, the entire unit is contained within the Gallup Sandstone oil participating area ("PA"). The two sandstones within the Gallup formation have been the only producing intervals within this unit and will be the target formations of the planned horizontal drilling. Chuza is not targeting the Mancos shale at this time.

(b) Chuza Oil Company owns 100 percent of the working interest in this unit. The federal royalty for all leases within the Unit is 12.5 percent and there are many ORRI owners.

(c) Chuza has submitted an updated Plan of Development containing its plans to drill and test pilot holes and then drill horizontal wells to the U.S. Bureau of Land Management's Farmington Field Office ("BLM"). Chuza reported that the BLM supports its application in this case.

(d) The depth from surface to the top of the uppermost Gallup formation sandstone ranges from 1500 feet in the northwestern portion of the unit to over 3000 feet in the southeastern portion. Oil gravity is approximately 41 API, there have been no recognizable oil-water contacts, and existing water saturation is approximately 40 percent. The sands have a relatively low porosity of 12 percent and permeabilities range from 1 to 40 millidarcies. All vertically completed wells must be hydraulically fractured. Vertical wells have not adequately developed this reservoir.

(e) Chuza intends to drill the permitted Northeast Hogback Unit Well Nos. 73 and 74 vertically through the two Gallup sandstones. At least one of these wells will be cored with an oriented core barrel and stress tests will be done on the recovered portion of the core. These two wells will be kicked off and drilled perpendicular to the determined fracture direction. The expected direction of drilling will be northeast to southwest or on-strike with the formation. Chuza will then determine if these horizontal Gallup Sand wells must or should be hydraulically fractured.

(f) Chuza is asking in this case to form a project area consisting of the entire unit in order to drill and produce horizontal wells or horizontal laterals at optimum azimuth directions, well density, surface and bottomhole well locations, and well lengths as determined in part by the data to be gathered from these initial pilot holes and horizontal wells.

(g) In addition, the relief requested will ease the burden of forming individual well project areas and non-standard location exceptions through the administrative process. Within the Project Area, Chuza wants the freedom to place wells without consideration of location requirements provided in Division rules for oil well development. In contrast to development using smaller project areas, this method would result in more of the reservoir being contacted by horizontal wells.

(h) Chuza did not specifically ask in its application for an increase in the 80 barrels of oil per day, 2000 limiting gas oil ratio, depth bracket allowable for each 40-acre spacing and proration unit. Chuza only asked at the hearing for the unit wide Project Area allowable to be computed by multiplying all 40-acre oil

spacing units within the Project Area times 80 and these total barrels be produced by all wells completed within the Project Area in any proportion.

(i) Chuza did maintain that the drawdown created near-wellbore by a horizontal well is not as severe as that created near a vertical well; therefore, there is less likelihood of creation of a radius near the wellbore with free-gas saturation, resulting in loss of solution gas drive energy and bypassed or non-recovered oil.

(j) Chuza suggested that an operator should always monitor any oil well capable of high production to ensure the produced gas oil ratio does not rapidly increase, signaling a rise or breakout in free-gas saturation in the reservoir and possible loss of energy and therefore reserves.

(7) The Commission on July 13, 1961, with Order No. R-2026 in Case No. 2317, created the Northeast Hogback Pressure Maintenance project and allowed injection of water into 20 wells for purposes of pressure support. Special Rules were created with that order setting methods of allocating and limiting production and injection allowable.

(8) Division records also show administrative orders PMX-192 in 1997 and PMX-249 in 2008 extended this project by adding three additional injection wells. There are currently three wells classified as injection wells within this unit. Chuza did not comment on this pressure maintenance project at the hearing or mention how horizontal drilling would affect it.

(9) Chuza did not advertise in its case specifically for an increase in the depth bracket allowable nor did it have the evidence at the hearing to specifically show that any particular increase in the allowable would not result in waste of reservoir energy or resulting reserves. Without results of any one horizontal well's production, that sort of evidence would be unavailable. This Gallup sand is not a shale reservoir, controlled only by fractures, and where recovery is clearly and directly attributable to the size of the hydraulic fracture treatment. After horizontal wells are drilled and produced, the evidence supporting any increase in allowable could be gathered.

(10) At the hearing, there was discussion of allowing the existing depth bracket allowable per 40-acre spacing and proration unit to be multiplied by the number of 40-acre tracts within this total Project Area and this total rate to be produced from any completed well in the Project Area in any proportion. This proposal does not address the issue of possible damage to reserves due to a concentrated reservoir drawdown near the first acres completed within this much larger Project Area.

(11) As before, the evidence for unlimited allowable or even any specific allowable over the existing depth bracket allowable has not yet been gathered, presented to all operators within this Horseshoe-Gallup Oil Pool and proposed at hearing. Allowing creation of a large project area with approval of – in effect – an unlimited production allowable without presenting evidence and proposing this to the other operators within

this pool would not be consistent with conservation of resources and protection of correlative rights. In addition, there is existing Order No. R-2026 which has language regulating allowable production and injection and was not addressed or mentioned in the presentation of this case.

(12) As with any vertically drilled well, the horizontal wells drilled in this Project Area should have a defined number of 40-acre, quarter-quarter sections penetrated and completed and filed with the Division on form C-102 along with the application to drill. Those quarter-quarter sections should be credited equally by acreage with the production from such well and the compliance therefore monitored with the existing depth bracket allowable.

(13) Subsection L of Rule NMAC 19.15.16.7 (Definitions for Part 16 Drilling and Production), defines a "Project Area" as meaning an area the operator designates on form C-102 that could be comprised of (among other things) a participating area in a federal unit. Subsection M of that rule further defines a project area formed in this manner as a "standard project area".

(14) Chuza has satisfied the requirements in the rules to form a Standard Project Area. Since New Mexico State lands are not included in this proposed Project Area, the requirement for written consent of the Commissioner of Public Lands does not apply. Being an exploratory unit, all acreage included in the unit was included voluntarily. In addition, per subsection F of NMAC 19.15.16.15, Chuza has obtained voluntary agreement of the mineral estate.

(15) Chuza presented notice of its intention to form a Project Area to both owners directly surrounding this unit and to all interest owners within the unit including all ORRI owners. No other operator or party appeared in this case or otherwise opposed this application.

(16) Correlative rights are protected in this case due to the participating area within this federal unit having, in effect, undivided or common ownership; therefore, there are no adversely affected persons within this unit resulting from the relief requested.

(17) Once a project area for horizontal drilling is created, the statewide rules for horizontal wells specify that within any Project Area created for horizontal drilling, there shall be no internal well location setbacks, but setbacks still exist to the outside edges of the Project Area. Chuza intends to maintain the 330 foot oil well "set-backs" from the outer boundaries of the Northeast Hogback Unit – therefore surrounding mineral owners' correlative rights are also protected.

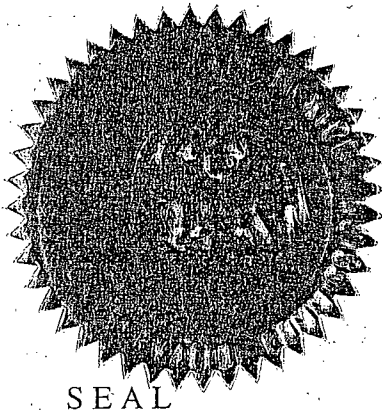
(18) The designation of this entire participating area as one Standard Project Area as proposed by Chuza in this case will prevent lands within 330 feet of the edges of smaller Project Areas from remaining undrilled, causing waste.

(19) This proposal is in the best interests of conservation and should be approved in order to prevent waste and protect correlative rights.

**IT IS THEREFORE ORDERED THAT:**

- (1) The application of Chuza Oil Company ("Chuza") is hereby approved.
- (2) The Northeast Hogback Unit (Gallup Sands) Project Area is recognized as a voluntary Standard Project Area including all lands within the Gallup Sands Participating Area of the Northeast Hogback Unit.
- (3) Horizontal oil wells drilled or to be drilled and completed in the Gallup Sands within this Project Area shall be granted relief from location exceptions. Vertical wells shall be regulated as before based on statewide rules.
- (4) This well location exception does not apply to project wells completed within 330 feet of any outer boundary of the Northeast Hogback Unit (Gallup Sands) Project Area unless an exception is granted by the Division Director on a well by well basis through administrative application.
- (5) The operator of this unit shall continue to file form C-102's showing the quarter-quarters penetrated and completed in each horizontal well. Each completed quarter-quarter shall be allocated production from the well based on its percentage of total acreage completed in that well. The oil and casing head gas depth bracket allowable for any developed 40-acre quarter-quarter section shall be maintained as in statewide rules unless and until changed by the creation of Special Pool Rules for the Horseshoe-Gallup Oil Pool.
- (6) 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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OIL CONSERVATION DIVISION

A handwritten signature in cursive script, appearing to read "Jami Bailey".

JAMI BAILEY  
Director