

PROJECT OVERVIEW

The North Square Lake Unit (NSLU) is located in Eddy County, and produces from the Grayburg-San Andres interval.

GP II Energy began the evaluation of redeveloping the North Square Lake Unit (NSLU) in May of 1997. Initial interest in the project area was based on the recently completed infill project to reduce flood pattern size in the eight sections immediately offsetting the unit to the south. This downspacing to provide for waterflooding on a reduced well density is operated by Devon.

Both the NSLU and Devon acreage were part of common cooperative floods that occurred in the 1960's. Refer to Exhibit J for the original 160-acre injection patterns developed on the NSLU and Devon acreage. The red dashed lines on the Devon acreage represent the new recently formed downspaced 40-acre five-spot patterns.

In February of 1999, GP II Energy brought the proposed statutory NSLU to a hearing in front of the New Mexico Oil Conservation Commission. An order was entered on June 17, 1999 (No. 11207) approving formation of the unit, subject to proper ratification.

Due to the number of overriding royalty owners (167), the ratification process was not complete until November 1999. The required number of ratifications were then forwarded to the New Mexico Oil Conservation Division, New Mexico State Land Office and the Bureau of Land Management. GP II Energy received final approval of the North Square Lake Unit from the State Land Office on December 20, 1999, by fax of letter dated December 17, 1999. GP II Energy received final approval of the North Square Lake Unit from the Bureau of Land Management on December 21, 1999 by fax of letter dated December 21, 1999. The 6125-acre statutory North Square Lake Unit became effective on January 1, 2000.

REDUCED DENSITY WATERFLOOD ANALYSIS

In order to facilitate reserve analysis of the proposed unit area (Exhibit A), and expected recoveries from reduced density waterflooding, a volumetric model was built, based on log estimates and available core data.

Seven wells within the proposed unit area conventionally cored various portions of the Lovington, Premier, Metex and Loco Hills intervals. Figure 1 is a summary of the core analysis from these wells. Figure 1a through Figure 1g is the actual core analysis reports from these wells.

Based on the available core analysis, a porosity cut off of 10% is used to pick net feet of pay from logs. Additionally, a water saturation of 40% and a formation volume factor (Boi) of 1.27 was selected to use for volumetric calculations.

One hundred and five logs were evaluated within the unit area to determine net feet of pay. Exhibit B is a cross section key for representative logs covering the unitized acreage as well as Devon's acreage south of the unit area. The cross sections are available for review upon request.

Exhibits C, D, E, and F are isopachs for the Loco Hills, Metex, Premier, and Lovington intervals respectively. Exhibit G is a composite isopach of all four intervals.

For reserve evaluation purposes, the unit area was broken up into 115 individual five-spot patterns that would result from a 40-acre reduced density waterflood. Exhibit H is a pattern key map for the unit area.

Each pattern was evaluated for remaining recoverable reserves based on net feet of pay and prior recovery. Exhibits I and J are bubble maps of cum oil and cum injection for both the unit area and Devon acreage.

Figure 2 is a table summarizing the reserve analysis for each of the 115 five-spot patterns. The average feet of pay, with porosity greater than 10% for the 115 patterns, is 38'. Original oil in place for the 115 patterns is calculated to be 64.85 million barrels. Cumulative production from the 115 patterns is 8.95 million barrels representing a recovery to date of 13.8%. Cumulative injection to date for the 115 patterns is 30.5 million barrels of water, while cumulative water production from the 115 patterns is 10.8 million barrels. For purposes of estimating remaining recoverable reserves for each pattern, an ultimate recovery of 27.5% was used. This represents a 1:1 recovery of operations to date. Remaining recoverable reserves for the unit is 8.8 million barrels of oil. Exhibit K is a bubble map of remaining recoverable reserves for each of the 115 patterns. Exhibit L is a map of completion conformance for existing wells in the proposed unit area.

This compares favorably with the actual results of Devon's development immediately offsetting the unit to the south. The unit is structurally strike to the Devon acreage. Exhibit M is a structure map of the San Andres covering the unit and Devon's acreage. Devon drilled 106 new 40-acre reduced density locations. The average EUR for these 106 wells is 82 MBO.

PROJECT DEVELOPMENT

In addition to the normal considerations in managing the development of a waterflood project, two additional items pointed out by the regulatory authorities were incorporated in the plan of development for the North Square Lake Unit.

The Commissioner of Public Lands requested that GP II Energy attempt to minimize the amount of off-lease or make-up water required during waterflood operations.

This is best facilitated by developing as much produced water on the lease prior to initiating injection, as Devon did on their project.

Additionally, the NMOCD requested that due to the number of vintage wellbores that would be utilized in downspacing the waterflood, that GP II should consider developing the project in phases to allow for a more manageable evaluation process of these wellbores located in the "areas of review" required in the C-108 application.

Both these requests in conjunction with the normal needs of new modern reservoir data lends development of the project in concentrated areas of the field on a phase basis.

The attached C-108 application represents wellbores to be involved in Phase I of the North Square Lake Unit. Phase I will involve reducing the density of 10 patterns, and activating 23 injection wells associated with these patterns (Exhibit N). There are 95 separate wells located within these 23 injection wells' "area of review". The ten reduced density pattern producers were permitted in March 2000.

