

BPO PROJECT FACT SHEET

CONTRACT TITLE: Reservoir Characterization for Numerical Simulation

DATE: 7/84

CONTRACTOR: University of Texas
ADDRESS: P.O. Box 7726
 Austin, TX 78712

PRINCIPAL INVESTIGATOR: Dr. Larry W. Lake (312) 567-3040

LOCATION OF PROJECT: Austin, Texas

CONTRACT AGREEMENT NUMBER: DE-AS19-82BC10744

PERIOD OF PERFORMANCE: April 1982 - December 1984

PROCESS INFORMATION	COST INFORMATION (\$000's)	MANAGEMENT INFORMATION
RESEARCH AREA: Light Oil	DOE OTHER	PROGRAM: Enhanced Oil Recovery
OBJECTIVE: Conduct generic technology base R&D activities and assist industry in obtaining a better understanding of the mechanisms and behavior of advanced and novel EOR processes for light oil.	PREV FY FY82 48 FY83 50 FY84 100 TOTAL 198	B&R: AC151010
	CAPITAL	PROJECT MGR (ETC): Keith Westhusing
	CURRENT FY N/A	LOCATION: BPO
	TOTAL N/A	TELEPHONE NO.: FTS 745-4411 (918) 336-2400
		PROGRAM MGR (HQ): George Stosur
		TELEPHONE NO.: FTS 233-2877 (301) 353-2877

PROJECT DESCRIPTION

The objective of this research is to develop computerized procedures by which a good reservoir description for numerical simulation can be achieved, taking into account all measured properties in all wells. For reservoirs of various origins, the importance of the magnitude, variability and mode of these input parameters will be studied. The goal is to arrive at a general reservoir descriptor (GRD), which can be applied to any field, and whose output is the input for a numerical model with user-supplied geometry.

PROJECT STATUS

The project is currently in Phase IV. Which began in October 1983 and is proceeding on schedule. A detailed geologic evaluation of an outcrop section near Rangely, Colo. has been done to evaluate reservoir geologic detail possible in numerical simulation. Numerous core plugs were taken for defining physical parameters of use in the simulation.

BPO PROJECT FACT SHEET

BACKGROUND

One of the most important factors afflicting simulation results is the reservoir description. This is because knowledge and use of reservoir properties in simulator model cells have a direct impact on the distribution and flow of fluids. In numerical models, each cell is assigned specific values for properties such as size, porosity, permeability, saturations, and elevation. In order to have confidence in simulation results, it is essential to have confidence in the input parameters defined by deterministic sample points (wellbore data & core data) and methods determined for interpolating between data points.

MAJOR ACCOMPLISHMENTS

Phases I and II have been completed. Accomplishments in Phase I included scales and measurement of heterogeneity; petrophysical relationships; and recognition and classification of rock, fluid, and geometry parameters. Accomplishments under Phase II included streamlining of input of deterministic parameters to fit a gridded format; interpolation procedures between observation points; and internal probabilistic elements in deterministic parameters. Field work to establish geologic parameters usable in reservoir description for numerical simulation has been done. Translation to usable input parameters continues.

MAJOR MILESTONES

- | | | |
|-------------|---|-------|
| ● Phase I | Establishing principles for identification, accumulation, and editing of all available information. | 06/83 |
| ● Phase II | Decision on possible deterministic parameters to be modeled. | 06/83 |
| ● Phase III | Decision on possible probabilistic parameters to be modeled. | 12/83 |
| ● Phase IV | Application of established principles and techniques under I-III. | 12/84 |

ACTIVITY SCHEDULE

ACTIVITY

CY80 | CY81 | CY82 | CY83 | CY84 | CY85 | CY86 | CY87 | CY88 | CY89 | CY90

