

PROJECT FACT SHEET

CONTRACT TITLE: Applications of Advanced Petroleum Production Technology and Water Alternating Gas Injection - Class 1

ID NUMBER: DE-FC22-93BC14955

CONTRACTOR: American Oil Recovery, Inc.

B & R CODE: AC1010000

ADDR: 4666 Faries Parkway

P.O. Box 1470

Decatur, IL 62525

DOE PROGRAM MANAGER:

NAME: Guido Dehoratiis

PHONE: (202) 586-7296

CONTRACT PROJECT MANAGER:

NAME: Michael R. Baroni

PHONE: (217) 424-7276

FAX: (217) 424-5978

DOE PROJECT MANAGER:

NAME: Edith C. Allison

LOCATION: BPO

PHONE: (918) 337-4390

CONTRACT PERFORMANCE PERIOD:

01/01/1993 to 03/31/1995

PROJECT SITE:

Mattoon, IL

PROGRAM: Field Demonstrations

RESEARCH AREA: Class 1

FUNDING (1000'S)	DOE	CONTRACTOR	TOTAL
PRIOR FISCAL YRS	702	702	1,404
FISCAL YR 1996	0	0	0
FUTURE FUNDS	0	0	0
TOTAL EST'D FUNDS	702	702	1,404

OBJECTIVE: This two year project in the Mattoon Oil Field, Illinois, aims to characterize the Cypress Sandstone and design and implement water- alternating- gas (WAG) injection utilizing carbon dioxide. This project emphasizes the development of a numerical model that will be used to select test sites for the demonstrations. WAG will be compared to waterflooding and cyclic gas injection in different parts of the reservoir.

METRICS/PERFORMANCE:

Products developed:

PROJECT DESCRIPTION:

Background: This project is being performed under contract number DE-FC22-93BC14955 as part of the US DOE's Class I Oil Program: Near Term Activities.

Work to be performed: The objective of this two year project, located in the Mattoon Oil Field, Illinois, is to continue reservoir characterization of the Facies-Defined Waterflood Subunits (FDWS) of the Cypress Sandstone, at a depth of 1800', and design and implement water-alternating-gas (WAG) injection utilizing carbon dioxide. The producibility problems are permeability variation and poor sweep efficiency. Part 1 of the project focuses on the development of a new numerical model that will be used to select test sites for the demonstration in Part 2. Included in Part 1 of the project is the drilling of an infill well/core hole and the testing of two FDWS that will be used to update the model. Part 2 involves the field implementation of WAG. The proposed Technology Transfer Plan includes outreach activity such as seminars, workshops, and field trips. TPO: Gene Pauling

PROJECT STATUS:

Current Work: Ongoing; Notice of project conclusion at end of first phase. A draft final report is being prepared for submittal to DOE.

Scheduled Milestones:

Cooperative agreement awarded December 29, 1992

12/92

Accomplishments: Approximately 85 to 90 percent of the reservoir geology is complete including detailed stratigraphic cross sections, structure maps, isopach maps, lithofacies maps and 3-D reservoir computer model using STRATAMODEL software. Five distinct facies defined waterflood sub-units (FDWS) have been identified and injectivity tests using carbon dioxide are well under way. Nearly six thousand tons have been injected so far. These tests are providing preliminary information, based on well response, concerning permeability variations and sweep efficiencies within the FDWS, and the data is being fed into a 3-D compositional simulator computer model which will be continuously updated throughout the life of the project. The simulator will be used to verify and enhance our reservoir characterization work and aid in the site selection and design of the WAG scheduled for part two. Laboratory testing such as produced gas analysis and oil PVT tests are nearing completion as well. The site of our infill well/core hole has been narrowed down based upon the results of our reservoir geology and injectivity tests and we expect to commence drilling in July. A full 100 foot core will be analyzed, including routine core analysis, thin sections and SEM/EDX analysis with the results used to update both the STRATAMODEL and 3-D simulator model.