

DEFINITION OF STRATIGRAPHIC HETEROGENEITY USING DIPMETER LOGS

Monthly Report
July 1, 1990 through July 31, 1990

Prepared By:

THE UNIVERSITY OF UTAH RESEARCH INSTITUTE

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For

GAS RESEARCH INSTITUTE

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GRI August Monthly Report

2.0 Work Planned for the Month

Our industry workshop was held on July 19, and we planned to spend the first half of the month preparing for this meeting. Time following the workshop was designated for follow up with workshop participants and others who were not able to make the meeting.

3.0 Work Completed During August

On July 19, UURI held its industry workshop at the University Park Hotel in Salt Lake City. Attached to this report is a copy of the list of attendees and the meeting agenda. As can be seen in the agenda, the presentations introduced the problems presented by reservoir heterogeneity and then the results of our studies, which offer means of being able to identify and predict reservoir heterogeneity using borehole imaging techniques. Success of our program will result in increased efficiency of developing new reserves of natural gas.

At this time, Mobil and Unocal have committed to fund the project at \$25,000. Marathon geologists have recommended funding, but this must go through internal review, and it will be the end of August before we know anything. Phil Lowry of ARCO has been out of the office since our workshop, so they have not had a chance to discuss funding. Canadian Hunter and Shell have also indicated an interest in participation, but we have no formal committment.

Among the service companies, I have received a letter of interest from Res Tech. I also have verbal committments from Schlumberger, Halliburton, and Deformations, Inc.

The Utah State Energy Office is still working on an arrangement whereby they will sponsor the drilling of the two core holes as an in-kind contribution. Cost figures UURI has put together indicate that this contribution will be worth approximately \$100,000.

We are presently revising the statement of work for the next phase of the project. This revision is based on the results from the initial phase of the study and discussions with industry and GRI resulting from our workshop.

C. A. Bengtson is working on a manuscript on the Strat-SCAT approach to interpretation of borehole imaging logs.

4.0 Allied Investigations

None

5.0 Problems Encountered

None

6.0 Work Planned for Next Month

Next month we plan to begin additional data collection in the Ferron outcrops. A number of detailed stratigraphic sections will be done throughout a sedimentary facies, probably a distributary mouth bar. This data will be used to test statistical techniques for characterizing position within that facies.

**DEFINITION OF STRATIGRAPHIC HETEROGENEITY
USING BOREHOLE IMAGING**

July 19, 1990
8:00 am to 5:00 pm

University Park Hotel
Theater

AGENDA

- 8:00 Welcome
Dr. P. M. Wright
Vice President, UURI
- 8:05 Overview
Dr. Dennis L. Nielson
Associate Director, UURI
- 8:15 Purpose of the Workshop
Dr. A. W. Gorody
Senior Scientist, Gas Research Institute
- 8:30 Barriers to Natural Gas Reserve Growth
Dr. M. Lee Allison
Director, Utah Geological and Mineral Survey
- 9:00 The Upper Cretaceous Ferron Sandstone, East-central Utah
Dr. Marjorie A. Chan
Associate Professor, University of Utah
Research Associate, UURI
- 10:00 Break
- 10:15 The Ferron as a fluvial-dominated delta analog and problems in efficient hydrocarbon exploration
Paul B. Anderson
Consulting Geologist
Research Associate, UURI
- 10:45 Introduction to Dipmeter and Statistical Curvature Analysis Techniques
C. A. Bengtson
Consulting Geologist
Research Associate, UURI
- 11:30 Discussion
- 12:00 Lunch
- 1:00 Introduction to Stratigraphic Applications of SCAT (Strat-SCAT)
C. A. Bengtson

- 2:00 Field analysis of the Ferron Sandstone: Practical application of Strat-SCAT in a fluvio-deltaic gas-reservoir analog
Jeffrey B. Hulen
Senior Geologist, UURI
- 3:00 Break
- 3:15 Summary and Proposal for coring and logging the Ferron and application to gas exploration and development
Dennis L. Nielson
- 4:00 Discussion
A. W. Gorody
- 5:00 Adjourn

NAME	COMPANY	ADDRESS	PHONE NO.
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July 31, 1990

TO: Dennis Nielson
 FROM: M. Lee Allison *M. Lee Allison*
 RE: May, June, July time on GRI project

During the months of May, June, and July, 1990, I spent a total of 28 hours on the GRI-sponsored dipmeter project. Following are the daily amounts.

DATE	HOURS	
May 2	8	
" 9	1-1/2	
" 15	1	
" 18	1	May total 11-1/2 hours
July 11	1-1/2	
" 13	2	
" 16	2	
" 18	3	
" 19	8	July total 16-1/2 hours

Salary and benefits @ \$26.49 for 11-1/2 hours (May) =	\$304.64
G & A 30.2%	92.00
Salary and benefits @ \$27.34 for 16-1/2 hours (July) =	451.04
G & A 25.1%	113.21
Total	\$960.89

This is a contribution towards the project from UGMS.

University of Utah Research Institute

Accumulative Cost Control Graph

