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Memorandum M-1293

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Digital Computer Laboratory  
Massachusetts Institute of Technology  
Cambridge, Massachusetts

SUBJECT: PROGRESS REPORT, PROJECT 6751, MARCH 1 to OCTOBER 1, 1951

To: J. W. Forrester

From: C. W. Adams, J. D. Porter and E. S. Kopley

Date: October 2, 1951

Abstract: During this period we have been working on problems proposed by the Carter Oil Company and by the Humble Oil Company. We have had personal visits and inquiries from members of these companies and of the Magnolia Petroleum Company (Socony-Vacuum), the Continental Oil Company, and the Gulf Research and Development Company. At the Industrial Liaison Office Conference on May 2 and 3, many of the participants exhibited interest and requested copies of R-196, a report on programming for WWI. These reports have been sent out by our librarian.

The problem that we have undertaken for the Carter Oil Company (previously described in M-1181) is an analysis of the depletion of an oil reservoir. On June 5, 1951, Dr. W. A. Bruce, assistant director in charge of production research for Carter, visited our laboratory. He discussed briefly a new problem that he would like us to consider at some future time and he agreed to accelerate the exchange of information between his laboratory and ours. Dr. D. R. Shreve, who is supervising the problem for Carter, visited our laboratory from August 6 to 17. During that period we were able to determine exactly what results Carter desired. We also discussed our programs with Shreve. These programs have been run, adjusted, and finally on September 12 a successful run was made completing this phase of the problem. These results have been sent to Shreve for analysis.

During the week of August 20-24, Dr. H. Rachford of the Humble Oil Company visited our laboratory. The problem he desired to solve was the determination from experimental data of a set of parameters occurring in Volkenstein's equation for the adsorption of gas molecules on a surface at a given pressure and under isothermal conditions. Rachford attempted to do his own programming but, unfortunately, his program was not workable. We have helped him rewrite his program and he will return to Cambridge as soon as he can.

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We have had a number of visitors from the Magnolia Petroleum Company. However, they have not proposed any specific problems. Previous to this report period (February 20, 1951) Mr. Killingsworth visited us to obtain general information about Whirlwind. On May 7, 1951, Dr. Aronofsky, who had attended the Industrial Liaison Conference, returned to discuss the application of Whirlwind to reservoir production problems. On June 8, 1951, D. H. Clewell, assistant director of the Magnolia Lab, visited us to discuss the application of Whirlwind to underground exploration problems. On August 30, 1951, N. Stevens stopped by to ask various questions on behalf of Dr. Reicheitz. These questions were concerned mainly with our handling of Carter's reservoir problem.

On March 16, 1951, Dr. Kaufman and Mr. Doty of the Geophysical Research Department of the Continental Oil Company visited us to discuss the application of Whirlwind to underground oil problems.

On September 20, 1951, E. A. Eckhardt of the Gulf Research and Development Company visited Whirlwind to obtain general information and to make a tour of the building. During his visit we discussed our work with Carter and compared our results with those obtainable from W. A. Bruce's electrical analyzer. Mr. Eckhardt suggested that it would be desirable to have a conference to discuss the possible application of WWI to their problems.

Signed C. W. Adams  
C. W. Adams

Signed J. D. Porter  
J. D. Porter

Signed Edwin S. Kopley  
E. S. Kopley

CWA:JDP:ESK/cm