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MONTHLY PROGRESS REPORT FOR JULY. STEAM STRIPPING PROJECT

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Publication Date

1981-07-01

LBID-435
UC 91



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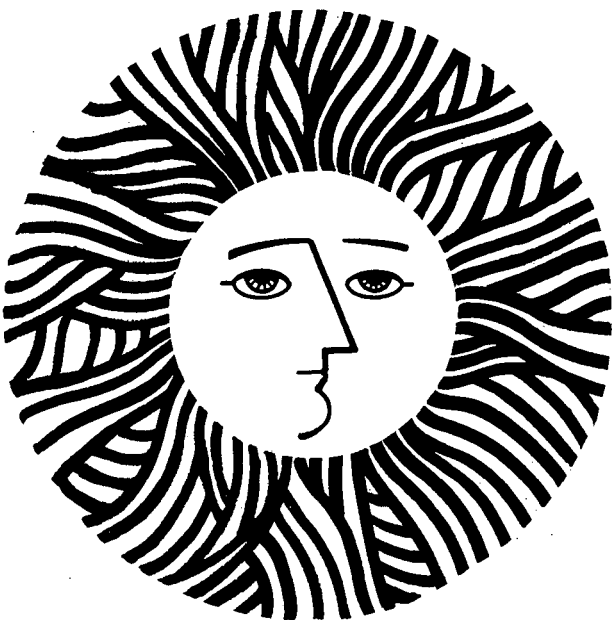
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July 31, 1981

TO: Charles Grua

FROM: Richard H. Sakaji, Bonnie Jones, and Jerome F. Thomas;
Frank Pearson and Christian G. Daughton (SEEHRL)

RE: Monthly Progress Report for July
Steam Stripping Project
LBID-435

ANALYTICAL METHODS DEVELOPMENT

Ammonia Determination

Replicate studies of the phenate method for the determination of ammonia in Oxy-6 gas condensate revealed that the use of 20-microliter Microcaps (the method described by Weatherburn) for sampling yielded more reproducible results than automatic pipettes (e.g. 1.4% vs. 2.9% rsd). Several Microcap sizes were tried, but for both collection technique and sample volume, the 20-microliter size was found to be most suitable for our work.

Using the Microcap sampling technique with the phenate method, the ammonia nitrogen concentrations in Oxy-6 gas condensate and retort water were 6759 ppm (rsd = 1.4%) and 1089 ppm (rsd = 1.2%), respectively. Ammonia concentration of sour water from a near-commercial surface retorting operation using the phenate method was 2279 ppm (rsd=1.4%, n=10).

STEAM STRIPPER DESIGN

Fabrication

The stainless steel pipe for the steam generating system, feed preheater, and condenser arrived this month. The stainless steel flanges that were drilled and tapped last month were welded onto each of these units. The stainless steel tubing for the heat transfer system arrived and is being coiled prior to installation. Minor revisions, such as repositioning the temperature probes, were made in the steam stripper design. The drilling and tapping for the water-level indicator also was started this month.

LITERATURE REVIEW

We have started to survey the literature for ammonia and carbon dioxide solubility data. Extensive literature on ammonia and carbon dioxide absorption and desorption in packed-bed reactors is being reviewed for

possible application to our research.

DATA REDUCTION

A computer program is being written for our microcomputer to minimize the time required for reducing data from the steam stripper. The program will calculate material balances, steam flow, number of transfer units, and the height equivalent to a transfer unit from the data of a given run of the steam stripper.

This report was done with support from the Department of Energy. Any conclusions or opinions expressed in this report represent solely those of the author(s) and not necessarily those of The Regents of the University of California, the Lawrence Berkeley Laboratory or the Department of Energy.

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