

LBID-435
UC 91



Lawrence Berkeley Laboratory

UNIVERSITY OF CALIFORNIA

ENERGY & ENVIRONMENT DIVISION

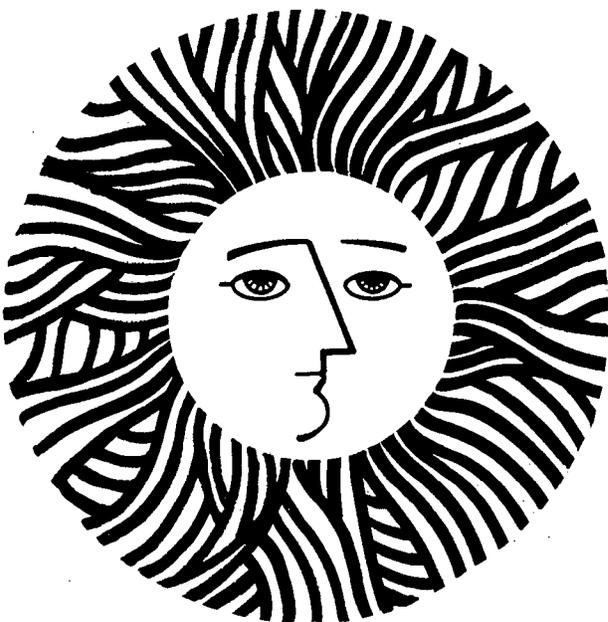
RECEIVED
LAWRENCE
BERKELEY LABORATORY

OCT 26 1981

LIBRARY AND
DOCUMENTS SECTION

For Reference

Not to be taken from this room



LBID-435
.1

DISCLAIMER

This document was prepared as an account of work sponsored by the United States Government. While this document is believed to contain correct information, neither the United States Government nor any agency thereof, nor the Regents of the University of California, nor any of their employees, makes any warranty, express or implied, or assumes any legal responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by its trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof, or the Regents of the University of California. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof or the Regents of the University of California.

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.

Reference to a company or product name does not imply approval or recommendation of the product by the University of California or the U.S. Department of Energy to the exclusion of others that may be suitable.

TECHNICAL INFORMATION DEPARTMENT
LAWRENCE BERKELEY LABORATORY
UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA 94720