Title
MONTHLY PROGRESS REPORT FOR APRIL STEAM STRIPPING PROJECT

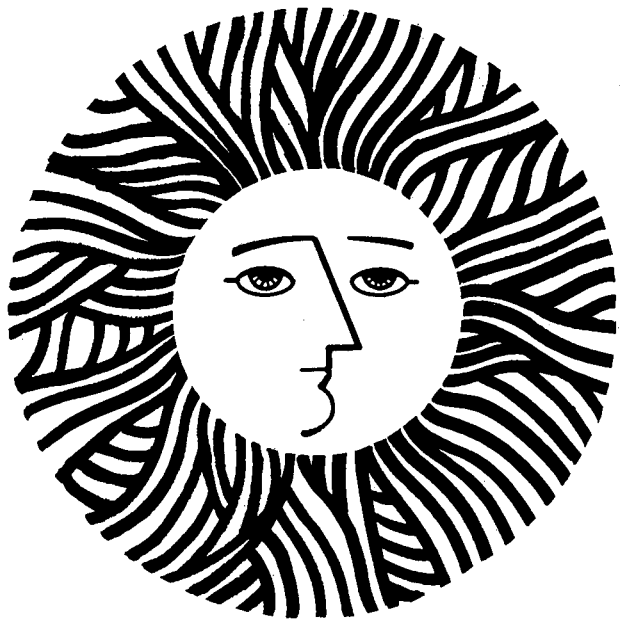
Authors
Sakaji, Richard
Jones, Bonnie
Pearson, Frank
et al.

Publication Date
1981-05-01

UC-90i
LBID-402 c.1

Lawrence Berkeley Laboratory
UNIVERSITY OF CALIFORNIA

ENERGY & ENVIRONMENT DIVISION



DISCLAIMER

LAWRENCE BERKELEY LABORATORY
Bldg.: Room: Ext.:

May 1, 1981

TO: Charles Grua

FROM: Richard Sakaji and Bonnie Jones; Frank Pearson and Christian Daughton (SERL)

RE: Monthly Progress Report for April
Steam Stripping Project
LBID-402

ANALYTICAL METHODS DEVELOPMENT

Ammonia Determination

The distillation/acidimetric titration method for ammonia determination (**Standard Methods**, 14th ed.) was investigated this month. Reproducibility attained for unfiltered Oxy-6 gas condensate samples was very good (relative standard deviation=1.05%; n=5). Samples of stripped gas condensate showed slightly more variability (rsd=4.37%; n=5) presumably because of the small titrant volumes required (1.10 to 1.20 mL). Appropriate adjustment of sample volumes in low-level determinations should improve the reproducibility.

Ammonia recovery from stripped gas condensate samples spiked with 250 to 50,000 ppm ammonia nitrogen (commercial ammonium sulfate standard) demonstrated that there were no significant losses of ammonia from the samples and no detectable interferences. Ammonia recovery was greater than 97%. Linear regression of ammonia added vs ammonia recovered yielded the line $y=1.01x + 91.0$ ($r^2=.999$). We have not yet determined whether volatile amines from our sample matrix contribute a positive interference by co-distilling with ammonia. Until this is determined, we cannot distinguish between ammonia and "distillable bases".

STEAM STRIPPER DESIGN

Preliminary Work

Fabrication of the 5' X 10' X 20' (wXdXht) support-structure for the steam stripper was completed.

Recommendations were made on the lengths of 8" O.D. stainless steel pipe for each of the process units. These lengths are: overheads condenser, 14'8"; bottoms receiver, 6'0"; they are to be cut from one 20'8" length of

pipe. The second length of pipe, between 19'6" and 20'6" long, will yield a 12'6" length for the steam generator, a 6'0" length for the feed preheater, and a length between 2'0" and 3'0" for the steam drier.

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