

TO	J. P. Sandstedt W. Miringoff	AT	Piscataway Burlington	DATE	May 21, 1976
FROM	E. J. Schuetz	AT	Piscataway	COPY TO	J. Jacob J. Poarch P. Scheiner
SUBJECT	DEI-509: VCM ADSORPTION SYSTEM, BURLINGTON				

Attached is a tabulated summary of the six cases considered in the preliminary study requested at the May 7th meeting. Basis for the work is the four process streams shown on Mr. Scheiner's flowsheet.

The six cases studied attempt to show the relative effect of the various streams on unit size, cost and peak and average utility requirements.

The costs shown assume receipt at battery limits of process streams at required temperature and pressures, and availability of all utilities in the quantities specified.

The results should be used most judiciously, since the final design is highly dependent upon better definition of stream composition and completion of the work currently in progress at Flemington and Pasadena directed at studying the effects of a number of other variables.

E. J. Schuetz
E. J. Schuetz

EJS:lvph
Att.

BY E. J. S. DATE 5/18/76 SUBJECT VCM ADSORPTION UNITS SHEET NO. OF
 CHKD. BY DATE @ BURLINGTON - JOB NO. DEI-509
 PRELIMINARY STUDY

CASE	SYSTEM ARRANGEMENT	CARBON REQ BED D.MEN.	EQUIP. COST INSTALL. COST	UTILITY REQUIREMENTS					REMARKS																									
				150PSIG STEAM LBS/Hr.	90°F COOLING H ₂ O 20° RISE - GPM	40°F COOLING H ₂ O 15° RISE - GPM	NITROGEN SCFM	REGEN BLOWER																										
I		3 x 10,800 LBS 6'8" φ x 10'	\$ 770,000	3450 - MAX 1100 - AVG.	300 - MAX 110 - AVG.	135 - MAX 26 - AVG.	250 - MAX 415 - AVG.	130 HP - REQ 150 HP - INST. 72 KW - AVG.	1. STREAM (A) - REC. SYST VENT STREAM (B) - HO/CO STRIPPERS STREAM (C) - COPOLY. REACT REC. STREAM (D) - DISP. STRIPPERS 2. STREAM COMPOSITION PER P. SCHWENKER'S FLOW SHEET DATED 5/7/76.																									
II		3 x 4600 LBS 4'6" φ x 10'	\$ 460,000	1450 - MAX 450 - AVG.	130 - MAX 50 - AVG.	56 - MAX 11 - AVG.	125 - MAX 47 - AVG.	50 HP - REQ. 60 HP - INST. 32 KW - AVG.	<table><tr><th>STREAM</th><th>TOT. VCM PER CYC.</th><th>TOT. VCM PER DAY</th><th>MIN. CONC. PPM</th><th>MAX. CONC. PPM</th></tr><tr><td>(A)</td><td>125</td><td>500</td><td>10000</td><td></td></tr><tr><td>(B)</td><td>1</td><td>4</td><td>500</td><td></td></tr><tr><td>(C)</td><td>75</td><td>300</td><td>500</td><td></td></tr><tr><td>(D)</td><td>360</td><td>850</td><td>10000</td><td></td></tr></table>	STREAM	TOT. VCM PER CYC.	TOT. VCM PER DAY	MIN. CONC. PPM	MAX. CONC. PPM	(A)	125	500	10000		(B)	1	4	500		(C)	75	300	500		(D)	360	850	10000	
STREAM	TOT. VCM PER CYC.	TOT. VCM PER DAY	MIN. CONC. PPM	MAX. CONC. PPM																														
(A)	125	500	10000																															
(B)	1	4	500																															
(C)	75	300	500																															
(D)	360	850	10000																															
III		3 x 7900 LBS 5'10" φ x 10'	\$ 640,000	2550 - MAX 820 - AVG.	225 - MAX 70 - AVG.	180 - MAX 20 - AVG.	200 - MAX 410 - AVG.	95 HP - REQ 100 HP - INST. 55 KW - AVG.	3. ALL STREAMS RECEIVED AT BATTERY LIMITS @ 2.5 PSIG + 80°F 4. ADSORPTION CYCLE ASSUMED TO BE 6 HOURS 5. REGENERATION - STEAMING - 90 MIN DRAINING - 200 MIN COOLING - 70 MIN TOTAL - 360 MIN = 6 HRS																									
IV		3 x 1700 LBS 2'8" φ x 10'	\$ 255,000	590 - MAX 185 - AVG.	50 - MAX 20 - AVG.	23 - MAX 5 - AVG.	60 - MAX 43 - AVG.	20 HP - REQ 25 HP - INST. 11 KW - AVG.																										
V		2 x 3000 LBS 3'6" φ x 10'	\$ 210,000	960 - MAX 310 - AVG.	85 - MAX 30 - AVG.	38 - MAX 8 - AVG.	75 - MAX 44 - AVG.	36 HP - REQ 40 HP - INST. 23 KW - AVG.																										
VI		2 x 5800 LBS 5'0" φ x 10'	\$ 295,000	1960 - MAX 625 - AVG.	175 - MAX 65 - AVG.	75 - MAX 15 - AVG.	150 - MAX 48 - AVG.	70 HP - REQ 75 HP - INST. 46 KW - AVG.																										

COLORITE 017453