

## II. EQUIPMENT AND METHOD OF OPERATION

The catalyst, equipment, and method of operation were identical with Run 49 as described in Partial Report No. 37<sup>1/</sup> except that the feed rate was reduced to two-thirds the value previously used. Operating conditions were:

Pressure	400 psig
Temperature	650 °F.
Bed Depth	22 feet
Fresh Feed	10 MCFH
Recycle Ratio	1/1

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<sup>1/</sup>Experiment No. TDC-802, January 10, 1951.



TABLE I

## SUMMARY OF YIELD DATA

Alan Wood Catalyst, 400 psig, 650°F.

Period	Hours on Stream	Average Catalyst Age, Hrs.	Rates, MCFH		Inlet Velocity Ft/Sec.	Bed Depth Ft.	Space Velocity v/hr/v	Yield of C <sub>3</sub> +, #/MCF of H <sub>2</sub> +CO Fed	Yield Basis <sup>1</sup> Brownsville Bbl/Day
			Fresh Feed	Re-Cycle					
51-A	8	8	9.5	10.6	0.66	18.5	732	10.43	8212
B	32		10.4	10.9	0.66	20.0	755	9.81	7637
C	56		11.4	11.7	0.71	19.6	843	9.40	7337
D	80		10.8	11.5	0.69	19.1	819	9.76	7659
E	104		10.7	12.0	0.69	19.8	777	9.51	7496
51-1	266	174	10.2	11.4	0.65	21.7	683	9.53	7129
51-2	450	272	10.4	11.3	0.67	22.6	664	9.08	6940
51-3	643	377	9.7	10.8	0.62	24.2	578	9.08	6819
51-4 <sup>(2)</sup>	782	438	10.1	12.3	0.68	23.6	624	8.30	6158
51-5	854	470	10.1	11.9	0.66	22.9	644	8.72	6608
48-1	190	137	16.5	17.2	1.08	11.2	2143	7.04	5308
49-1	341	192	15.4	15.5	1.04	21.0	1074	8.37	6386
49-2	497	298	15.9	23.5	1.36	19.0	1214	8.21	6277
46-1	204	168	16.6	18.7	1.07	8.55	2825	5.76	4227
46-2	369	183	16.9	17.7	1.05	10.55	2314	6.46	4805
46-3	537	162	16.4	17.2	1.05	10.99	2178	6.64	5003
Stanolind Run D-201									
29-1	21		3.62	3.75	0.47	12.5	851	9.95	7783
2	47		3.60	3.68	0.46	12.3	866	9.63	7576
3	119		3.62	3.64	0.46	11.8	922	8.71	6498
4	191		3.63	3.58	0.46	11.8	926	8.54	6397
5	263		3.65	3.66	0.48	11.0	1003	8.49	6285
6	349		3.54	3.61	0.55	11.8	904	8.54	6098
7	456		3.60	3.64	0.51	11.8	906	8.48	6356
8	481		3.62	3.60	0.45	11.5	946	8.31	6123
9	652		3.59	3.60	0.46	11.3	966	7.91	5933
10	695		3.61	3.64	0.47	11.8	922	8.02	6229

(1) Indicated production basis Brownsville Design Feed Rate

(2) Water Injected into Combined Feed.

These conditions were held essentially constant throughout the run. During the periods BB and CC, fresh feed rates were reduced to 7 MCFH and in periods FF through KK (Hours 643-782) water was injected into the feed preheater at a rate of 30 lbs./hr., corresponding to 6 mole per cent of the fresh feed. This approximates the quantity which would be present if raw synthesis gas were fed directly from the generator to the reactor.