B. DETAILED DATA FOR STANOLIND RUN D-201-29 ALAN WOOD CATALYST

SUMMARY OF SYNTHESIS RUN NO. D-201-29

Period	1	2	3	4	5	6	7	8	9	10	Average		Montebello Run 49 L/P	
Hours	21	47	119	191	263	349	456	481	652	695			221-341	
Press., Psig														
Temp. °F.														
Flow Rates-SCFH														
Fresh Feed	3617	3601	3622	3630	3649	3544	3602	3620	3593	3607	3608		15294	
Recycle	3717	3640	3610	3584	3635	3584	3644	3585	3575	3622	3620		15699	
Wet Gas (Adj.)	925	929	1047	1154	1246	1190	1249	1281	1310	1180	1151		5691	
Catalyst Data (by Δp) #/CF	112	(121)	130	134	132	119	117	113	112	109	120		119	
Weight, lbs.	449	478	492	508	466	451	443	417	406	413	452		1612	
Vol.-Cu. Ft.	4.01	3.95	3.79	3.79	3.53	3.79	3.79	3.69	3.63	3.79	3.78		13.43	
Depth.-Ft.	12.5	12.3	11.8	11.8	11.0	11.8	11.8	11.5	11.3	11.8	11.8		20.35	
Feed Rates-H_2+CO														
SCFH	3411	3421	3495	3510	3540	3427	3433	3493	3507	3495	3473		14727	
SCFH/Sq.Ft.	10625	10657	10888	10935	11027	10676	10695	10882	10925	10888	10820		22313	
SCFH/CF Cat.	851	866	922	926	1003	904	906	946	966	922	921		1097	
SCFH/# Cat.	7.60	7.16	7.10	6.91	7.60	7.60	7.75	8.38	8.64	8.46	7.72		9.13	
Recycle Ratio	1.03	1.61	1.00	0.99	1.00	1.01	1.01	0.99	1.00	1.00	1.00		1.03	
Inlet Vel.Ft/Sec.	0.47	0.46	0.46	0.46	0.48	0.55	0.51	0.45	0.46	0.47	0.48		1.01	
Ratio of H_2/CO in Fresh Feed	1.92	1.90	2.04	1.89	1.92	1.96	1.94	1.90	1.87	1.97			1.61	
Combined Feed	2.81		3.10				2.81	2.70					2.03	
Wet Gas	12.8	6.9	20.5	5.6	5.8	5.95	6.77	5.91	5.55	6.34			3.10	
Consumed	1.69	1.67	1.73	1.58	1.55	1.60	1.55	1.51	1.47	1.62			1.37	
Yields/MCF of CO+H_2 Fed	lbs. / gal.	lbs. / gal.	lbs. / gal.	lbs. / gal.	lbs. / gal.	lbs. / gal.	lbs. / gal.	lbs. / gal.	lbs. / gal.	lbs. / gal.	lbs. / gal.	lbs. / gal.	lbs. / gal.	lbs. / gal.
C_3	1.475 / .343	1.310 / .303	1.791 / .416	1.487 / .345	1.508 / .350	1.524 / .353	1.418 / .329	1.471 / .342	1.258 / .291	1.344 / .312			1.120 / .260	
C_4	1.038 / .209	1.088 / .219	0.935 / .187	0.929 / .182	0.986 / .198	1.083 / .218	1.052 / .212	1.016 / .204	0.901 / .182	1.018 / .205			1.060 / .213	
C_5	0.431 / .079	0.450 / .083	0.441 / .081	0.399 / .073	0.297 / .054	0.468 / .086	0.449 / .082	0.501 / .092	0.479 / .088	0.501 / .092			0.540 / .100	
C_6	0.147 / .027	0.146 / .026	0.143 / .026	0.097 / .017	0.048 / .008	0.103 / .019	0.122 / .022	0.120 / .022	0.265 / .048	0.169 / .030			0.132 / .024	
C_3 - C_6														
400 EP														
C_3 - 400 EP														
400+														
WS Chem	1.000 / .125	1.082 / .135	1.030 / .129	1.182 / .148	1.178 / .147	1.238 / .155	1.148 / .143	1.122 / .140	1.178 / .147	1.147 / .143			0.915 / .115	
Total C_3+	9.946 / 1.697	9.626 / 1.638	8.712 / 1.523	8.536 / 1.465	8.487 / 1.458	8.535 / 1.476	8.481 / 1.456	8.310 / 1.430	7.913 / 1.348	8.015 / 1.368			8.418 / 1.427	
C_1	1.572	0.488	2.014	1.248	1.297	1.284	1.317	1.248	1.195	1.339			0.946	
C_2	0.898	0.830	1.255	1.011	1.051	1.071	1.025	1.025	1.130	1.139			0.868	
C_1 + C_2	2.469	1.318	3.270	2.259	2.348	2.354	2.342	2.273	2.224	2.478			1.815	
Total C_1+	12.414	10.945	11.982	10.795	10.835	10.889	10.823	10.583	10.137	10.493			10.233	
CO_2	4.375	4.168	5.402	6.570	6.204	6.506	6.191	6.564	7.052	6.258			8.173	
Net Water	10.890	11.640	8.961	9.105	8.727	9.256	9.000	8.648	8.403	8.925			8.234	
Shift Ratio $\frac{(H_2)(CO_2)}{(H_2O)(CO)}$							10.1	9.1					6.6	
Conv.Basis F.F.														
CO %	97.9	95.1	98.3	92.3	91.3	91.8	92.6	91.2	90.2	92.6			85.8	
H_2 %	85.9	83.9	82.8	77.2	73.7	74.9	74.1	72.5	70.8	76.3			72.7	
H_2 + CO %	90.0	87.8	87.9	82.5	79.7	80.6	80.4	79.0	77.5	81.8			77.7	
Selectivity % $\frac{C_3+}{C_1+}$	80.1	88.0	72.7	79.1	78.3	78.4	78.4	78.5	78.1	76.4			82.3	
Weight Bal. %	90.5	86.0	98.8	94.3		93.5	93.3	93.2	96.3	97.5			96.3	

THE TEXAS COMPANY — MONTEBELLO LABORATORY
YIELD CALCULATIONS

RUN NO. D-201-29-1
HOURS 21

	FRESH FEED %	FRESH FEED m/hr	FRESH FEED #/hr	WET GAS %	WET GAS At. Wt. Balance m/hr	WET GAS At. Wt. Balance #/hr	RECYCLE m/hr	COMBINED FEED m/hr	EFFLUENT m/hr	NET CHANGE m/hr	NET CHANGE #/hr	YIELD BASIS H_2+CO FED: CONDENSATE #/MCF	CONDENSATE #/gal	CONDENSATE gal/hr	CONDENSATE gal/MCF	POLYMER #/hr	POLYMER #/MCF	POLYMER #/gal	POLYMER gal/hr	POLYMER gal/MCF	% Unsats.
CO 28.010	32.3	3.078	86.22	2.667	0.065	1.82	0.272	3.143	0.337	- 3.013						%	gph	#/hr.	%	gph	
H_2 2.016	62.0	5.909	11.91	34.099	0.831	1.68	3.506	9.415	4.337	- 5.078					400	75	2.219		98.0	2.175	
CO_2 44.010	2.1	0.200	8.80	22.117	0.539	23.72	2.181	2.381	2.720	0.339	14.92	4.375			400/550	16	0.473		91.4	0.432	
N_2 28.016	0.3	0.029	0.81	1.477	0.036	1.01	0.147	0.176	0.183						550+	9	0.266		114.6	0.305	
CH_4 16.042	3.3	0.315	5.05	26.631	0.649	10.41	2.704	3.019	3.353	0.334	5.36	1.572									
C_2H_4 28.052				3.118	0.076	2.13	0.303	0.303	0.379	0.076	2.13	0.625			C_3^-	56.0		2.50			71.0
C_2H_6 30.068				1.272	0.031	0.93	0.122	0.122	0.153	0.031	0.93	0.273			Poly	Gaso		2.19		0.366	
C_1+C_2											8.42	2.469			Poly	Tar		0.31		0.041	
C_3H_6 42.078				4.350	0.106	4.46	0.359	0.359	0.465	0.106	4.46	1.308	4.32	1.032	0.303			6.28		RVP	89.1
C_3H_8 44.094				0.533	0.013	0.57	0.044	0.044	0.057	0.013	0.57	0.167	4.24	0.135	0.040	C_4H_8			0.162	68.0	
C_4H_8 56.104				2.257	0.055	3.08	0.141	0.141	0.196	0.055	3.08	0.903	5.00	0.616	0.181	C_4Poly		6.10	0.332	1.5	87.3
C_4H_{10} 58.120				0.328	0.008	0.46	0.021	0.021	0.029	0.008	0.46	0.135	4.86	0.096	0.028	C_4H_{10}		4.86	0.096	68.0	
C_5H_{10} 70.130				0.862	0.021	1.47	0.068	0.068	0.089	0.021	1.47	0.431	5.45	0.270	0.079	C_4Free	Gaso	5.45	2.902	5.8	
C_5H_{12} 72.146													5.28			C_4Poly	Tar	5.28	0.037		
C_6H_{12} 84.156				0.246	0.006	0.50	0.022	0.022	0.028	0.006	0.50	0.147	5.54	0.091	0.027			5.54			
C_3-C_6											10.54	3.090		2.240	0.657						
TOTAL		9.531	112.79		2.437	52.24	9.891	19.422	14.612									gal/hr.	gal/MCF	BPD	
H_2+CO		8.987	3410.6 S.C.F.H.		0.896		3.778	12.558	4.674	8.091						Gasoline		3.492	1.0239	5551	
H_2/CO		1.92	293206		12.8		12.9	2.99	12.9	1.69						Diesel		0.432	0.1267	687	
																Waxy Btms		0.305	0.0894	485	
																Poly Tar		0.078	0.0229	124	
																Total		4.307	1.2628	6846	
																WS Chem		0.589	0.1727	937	
																Total		4.896	1.4355	7783	

CUMULATIVE TOTALS

	H_2+CO,MCF	Catalyst #	C_3+, gal	gal/MCF	gal/#
Previous Total					
Current Period					
New Total					

EFFLUENT

SHIFT RATIO 16.98 $\frac{(H_2)(CO_2)}{(H_2O)(CO)}$

RECOVERED OIL	0.133*	18.67	5.474	6.310	2.959	0.868
TOTAL OIL		29.21	8.564		5.199	1.524
WATER SOLUBLE CHEMICALS	0.089*	4.71	1.382	8.0	0.589	0.172
TOTAL LIQUID PRODUCTS C_3+		33.92	9.946		5.788	1.697
NET WATER	2.062*	37.14	10.890			
GROSS WATER						
HYDROCARBON TOTAL—C_1+		42.34	12.414			

FRESH FEED CONVERSION — %				TOTAL FEED CONVERSION — %			SELECTIVITY
Contraction	CO	H_2	H_2+CO	CO	H_2	CO+H_2	C_3+/C_1+
74.43	97.89	85.94	90.03	95.86	53.94	64.43	80.11

Form ML-11

*Included in Reactor Effluent Total

g/M3 = 16.91 × #/MCF.
cc/M3 = 141.3 × gal/MCF.

RATE CALCULATIONS

HOURS 21

GAS ANALYSES

HOUR				AVERAGE
FRESH FEED				
CO 28.010	32.3			
H_2 2.016	62.0			
CO_2 44.010	2.1			
N_2 28.016	0.3			
CH_4 16.042	3.3			
			M. W.	11.835
			H_2O 18.016	
			BALANCE	

WET GAS		Stab. Vent		
CO 28.010	2.75	0.9		
H_2 2.016	35.45	1.9		
CO_2 44.010	22.05	24.1		
N_2 28.016	1.49	0.8		
CH_4 16.042	27.34	9.7		
C_2H_4 28.052	3.06	4.6		
C_2H_6 30.068	1.23	2.4		
C_3H_6 42.078	3.63	21.7		
C_3H_8 44.094	0.45	2.9		
C_4H_8 56.104	1.43	22.5		
C_4H_{10} 58.120	0.21	2.9		
C_5H_{10} 70.130	0.69	5.0		
C_5H_{12} 72.146				
C_6H_{12} 84.156	0.22	0.6		
	20.540	43.419	M. W.	

GENERATOR BALANCE

HOUR	M/HR	C	H	O		Mol %	M/Hr	C	H	O
					O_2 32.000					
					CO 28.010					
					H_2 2.016					
					CO_2 44.010					
					N_2 28.016					
					CH_4 16.042					
					C_2H_4 28.052					
					C_2H_6 30.068					
					C_3H_6 44.094					
					C_4H_{10} 58.120					
					TOTAL					

WEIGHT BALANCE

	#/hr Measured	At. Wt. Balance
WET GAS Stab. Vent	4.21	
	37.54	48.07
OIL	18.67	
WATER WSC	4.71	
	37.14	
TOTAL	102.07	
FRESH FEED	112.80	
WEIGHT BALANCE	90.49	
WET GAS FACTOR	1.2874	
INDICATED LOSS—S C F H		

GAS FLOW RATES

	VTR	PRESSURE	TEMP.	S. C. F. H.	M. W.	M/HR
FRESH FEED				3617		9.531
WET GAS		Corrected		888		2.340
		Observed		690		1.818
RECYCLE				3717		9.794
~~XXXXX~~ Stab. Vent				37		0.097
NATURAL GAS						
OXYGEN						
STEAM						

LIQUID PRODUCT RATES

HOUR	GAGE	GAL.	°F	FACTOR	GAL. AT 60	API° #/GAL.	#	# HR GAL HR
OIL						55.2		
WATER		#/hr.	% Chem	#/Hr Chem	Net H_2O			
	H_2O	40.55	8.4	3.41	37.14			
	Gas	30.38	2.1	0.64				
	Oil	13.17	5.0	0.66				
	WSC			4.71				

THE TEXAS COMPANY — MONTEBELLO LABORATORY
YIELD CALCULATIONS

RUN NO. D-201-29-2
HOURS 47

	FRESH FEED			WET GAS			RECYCLE	COMBINED FEED	EFFLUENT	NET CHANGE		YIELD BASIS H_2+CO FED									
					At. Wt. Balance							CONDENSATE				POLYMER					%
	%	m/hr	#/hr	%	m/hr	#/hr	m/hr	m/hr	m/hr	m/hr	#/hr	#/MCF	#/gal	gal/hr	gal/MCF	#/hr	#/MCF	#/gal	gal/hr	gal/MCF	Unsats.
CO 28.010	32.8	3.112	87.17	6.250	0.153	4.28	0.634	3.746	0.787	- 2.959						%	gph	#/hr.	%	gph	
H_2 2.016	62.2	5.902	11.90	42.933	1.051	2.19	4.360	10.262	5.411	- 4.851					400	75	2.123		98.0	2.081	
CO_2 44.010	1.8	0.171	7.53	20.221	0.495	21.78	1.949	2.120	2.444	0.324	14.26	4.168			400/550	16	0.453		91.4	0.414	
N_2 28.016	1.2	0.114	3.19	6.413	0.157	4.40	0.630	0.744	0.787						550+	9	0.255		114.6	0.292	
CH_4 16.042	2.0	0.190	3.05	12.010	0.294	4.72	1.199	1.389	1.493	0.104	1.67	0.488									
C_2H_4 28.052				2.819	0.069	1.94	0.265	0.265	0.334	0.069	1.94	0.567			C3=	55.2		2.16			69.7
C_2H_6 30.068				1.225	0.030	0.90	0.115	0.115	0.145	0.030	0.90	0.263			Poly	Gaso		1.90		0.317	
C_1+C_2											4.51	1.318						0.26		0.035	
C_3H_6 42.078				3.799	0.093	3.91	0.289	0.289	0.382	0.093	3.91	1.143	4.32	0.905	0.264			6.25		RVP	87.7
C_3H_8 44.094				0.531	0.013	0.57	0.042	0.042	0.055	0.013	0.57	0.167	4.24	0.134	0.039	C4H8			0.134	68.0	
C_4H_8 56.104				2.288	0.056	3.14	0.117	0.117	0.173	0.056	3.14	0.918	5.00	0.628	0.184	C4 Poly		6.10	0.361	1.5	84.8
C_4H_{10} 58.120				0.408	0.010	0.58	0.024	0.024	0.034	0.010	0.58	0.170	4.86	0.119	0.035	C4H10		4.86	0.119	68.0	
C_5H_{10} 70.130				0.899	0.022	1.54	0.059	0.059	0.081	0.022	1.54	0.450	5.48	0.283	0.083	C4Free Gaso		5.48	2.771	5.8	
C_5H_{12} 72.146													5.25			C4Poly Tar		5.25	0.041		
C_6H_{12} 84.156				0.245	0.006	0.50	0.019	0.019	0.025	0.006	0.50	0.146	5.54	0.090	0.026			5.54			
C_3-C_6											10.24	2.993		2.159	0.631						
TOTAL		9.489			2.448	50.45	9.703	19.192	14.581									gal/hr.	gal/MCF	BPD	
H_2+CO		9.014	3420.8 S.C.F.H.		1.204		4.994	14.008	6.198	7.810						Gasoline		3.385	0.9895	5365	
H_2/CO		1.90	292329		6.87		6.88	2.74	6.88	1.67						Diesel		0.414	0.1210	656	
							EFFLUENT	RECOVERED OIL		0.127*	17.78	5.198	6.28	2.831	0.828	WaxyBtms		0.292	0.0854	463	
							SHIFT RATIO	TOTAL OIL			28.02	8.191		4.990	1.459	Poly Tar		0.076	0.0222	120	
							7.60 $\frac{(H_2)(CO_2)}{(H_2O)(CO)}$	WATER SOLUBLE CHEMICALS		0.093*	4.91	1.435		0.613	0.179	Total		4.167	1.2181	6604	
								TOTAL LIQUID PRODUCTS C_3+			32.93	9.626		5.603	1.638	WSChem		0.613	0.1792	971	
								NET WATER		2.210*	39.82	11.640				Total		4.780	1.3973	7576	
								GROSS WATER													
								HYDROCARBON TOTAL—C_1+			37.44	10.945									

CUMULATIVE TOTALS

	H_2+CO,MCF	Catalyst #	C_3+, gal	gal/MCF	gal/#
Previous Total					
Current Period					
New Total					

FRESH FEED CONVERSION — %				TOTAL FEED CONVERSION — %			SELECTIVITY
Contraction	CO	H_2	H_2+CO	CO	H_2	CO+H_2	C_3+/C_1+
74.20	95.08	82.19	86.64	78.99	47.27	55.75	87.95

Form ML-11

*Included in Reactor Effluent Total

g/M3 = 16.91 × #/MCF.
cc/M3 = 141.3 × gal/MCF.

RATE CALCULATIONS

HOURS 47

	GAS ANALYSES			
HOUR				AVERAGE
FRESH FEED				
CO 28.010	32.8			
H_2 2.016	62.2			
CO_2 44.010	1.8			
N_2 28.016	1.2			
CH_4 16.042	2.0			
			M. W.	11.890
			H_2O 18.016	
			BALANCE	

GENERATOR BALANCE								
M/HR	C	H	O		Mol %	M/Hr	C	H	O
				O_2 32.000					
				CO 28.010					
				H_2 2.016					
				CO_2 44.010					
				N_2 28.016					
				CH_4 16.042					
				C_2H_6 30.068					
				C_3H_8 44.094					
				C_4H_{10} 58.120					
				TOTAL					

WEIGHT BALANCE		
	#/hr Measured	At. Wt. Balance
WET GAS Stab. Vent	5.07 29.49	45.25
OIL	17.78	
WATER WSC	4.91 39.82	
TOTAL	97.07	
FRESH FEED	112.83	
WEIGHT BALANCE	86.03	
WET GAS FACTOR	1.5344	
INDICATED LOSS—S C F H		

WET GAS		Stab. Vent	
CO 28.010	6.53	0.8	
H_2 2.016	44.93	2.2	
CO_2 44.010	20.09	23.2	
N_2 28.016	6.49	1.5	
CH_4 16.042	12.36	4.5	
C_2H_4 28.052	2.73	5.1	
C_2H_6 33.068	1.19	2.5	
C_3H_6 42.078	2.98	20.9	
C_3H_8 44.094	0.43	2.8	
C_4H_8 56.104	1.21	24.9	
C_4H_{10} 58.120	0.25	3.5	
C_5H_{10} 70.130	0.61	7.2	
C_5H_{12} 72.146			
C_6H_{12} 84.156	0.20	0.9	
	19.3649	45.643	M. W.

GAS FLOW RATES							
	$\sqrt{H}$	PRESSURE	TEMP.	S. C. F. H.	M. W.	M/HR	
FRESH FEED				3601		9.489	
WET GAS		Corrected		887		2.337	
		Observed		578		1.523	
RECYCLE				3640		9.592	
XXXXX Stab. Vent.				42		0.111	
NATURAL GAS							
OXYGEN							
STEAM							

LIQUID PRODUCT RATES									
HOUR	GAGE	GAL.	°F	FACTOR	GAL. AT 60	API° #/GAL.	#	#/HR GAL/HR
OIL						56.1		
WATER		#/hr.	% Chem	#/hr. Chem	Net H2O			
	H2O	43.52	8.5	3.70	39.82			
	Gas	32.19	1.9	0.61				
	Oil	13.44	4.5	0.60				
	WSC			4.91				

THE TEXAS COMPANY — MONTEBELLO LABORATORY

YIELD CALCULATIONS

RUN NO. D-201-29-3
HOURS 119

	FRESH FEED			WET GAS	At. Wt. Balance		RECYCLE	COMBINED FEED	EFFLUENT	NET CHANGE		YIELD BASIS H_2+CO FED									
												CONDENSATE				POLYMER					%
	%	m/hr	#/hr	%	m/hr	#/hr	m/hr	m/hr	m/hr	m/hr	#/hr	#/MCF	#/gal	gal/hr	gal/MCF	#/hr	#/MCF	#/gal	gal/hr	gal/MCF	Unsats.
CO 28.010	31.7	3.025	84.73	1.885	0.052	1.46	0.184	3.209	0.236	- 2.973						%	gph	#/hr.	%	gph	
H_2 2.016	64.8	6.185	12.47	38.565	1.064	2.14	3.779	9.964	4.843	- 5.121					400	75	1.692		98.0	1.658	
CO_2 44.010	1.7	0.162	7.13	21.421	0.591	26.01	2.055	2.217	2.646	0.429	18.88	5.402			400/550	16	0.361		91.4	0.330	
N_2 28.016	0.8	0.076	2.13	4.712	0.130	3.64	0.462	0.538	0.592						550+	9	0.203		114.6	0.233	
CH_4 16.042	1.0	0.096	1.54	19.391	0.535	8.58	1.890	1.986	2.425	0.439	7.04	2.014									
C_2H_6 28.052				3.770	0.104	2.92	0.358	0.358	0.462	0.104	2.92	0.835			C_3^-	49.5		2.66			68.0
C_2H_4 30.068				1.776	0.049	1.47	0.167	0.167	1.943	0.049	1.47	0.420			Poly	Gaso		2.33		0.389	
C_1+C_2											11.43	3.270			Poly	Tar		0.33		0.044	
C_3H_6 42.078				4.639	0.128	5.38	0.394	0.394	0.522	0.128	5.38	1.539	4.32	1.245	0.356			6.25			86.5
C_3H_8 44.094				0.725	0.020	0.88	0.063	0.063	0.083	0.020	0.88	0.252	4.24	0.208	0.060	C_4H_8			0.150	68.0	
C_4H_8 56.104				1.885	0.052	2.92	0.129	0.129	0.181	0.052	2.92	0.835	5.00	0.584	0.167	C_4 Poly		6.10	0.318	1.5	89.7
C_4H_{10} 58.120				0.217	0.006	0.35	0.013	0.013	0.019	0.006	0.35	0.100	4.86	0.072	0.020	C_4H_{10}		4.86	0.072	68.0	
C_5H_{10} 70.130				0.797	0.022	1.54	0.065	0.065	0.087	0.022	1.54	0.441	5.45	0.283	0.081	C_4Free Gaso		5.45	2.420	5.8	
C_5H_{12} 72.146													5.25			C_4Poly Tar		5.25	0.036		
C_6H_{12} 84.156				0.217	0.006	0.50	0.020	0.020	0.026	0.006	0.50	0.143	5.54	0.090	0.026			5.54			
C_3-C_6											11.57	3.310		2.482	0.710						
TOTAL		9.544	108.00		2.739	57.79	9.579	19.123									gal/hr.		gal/MCF	BPD	
H_2+CO		9.210	3495.2 S.C.F.H.		1.116		3.963	13.173	5.079	8.094						Gasoline	2.960		0.8469	4592	
H_2/CO		2.04	286107		20.46		20.5	3.24	20.5	1.72						Diesel	0.330		0.0944	512	
EFFLUENT									RECOVERED OIL	0.101*	14.19	4.060	6.290	2.256	0.645	Waxy Btms	0.233		0.0667	362	
SHIFT RATIO									TOTAL OIL		25.76	7.370		4.738	1.356	Poly Tar	0.080		0.0229	124	
$\frac{31.2}{(H_2)(CO_2)}{(H_2O)(CO)}$									WATER SOLUBLE CHEMICALS	0.088*	4.69	1.342		0.586	0.168	Total	3.803		1.0308	5589	
									TOTAL LIQUID PRODUCTS C_3+		30.45	8.712		5.324	1.524	WSChem	0.586		0.1677	909	
									NET WATER	1.738*	31.32	8.961				Total	4.189		1.1985	6498	
									GROSS WATER												
									HYDROCARBON TOTAL—C_1+		41.88	11.882									

CUMULATIVE TOTALS

	H_2+CO,MCF	Catalyst #	C_3+, gal	gal/MCF	gal/#
Previous Total					
Current Period					
New Total					

FRESH FEED CONVERSION — %				TOTAL FEED CONVERSION — %			SELECTIVITY
Contraction	CO	H_2	H_2+CO	CO	H_2	CO+H_2	C_3+/C_1+
71.09	98.28	82.80	87.88	92.65	51.40	61.44	72.71

Form ML-11

*Included in Reactor Effluent Total

g/M3 = 16.91 × = MCF
cc/M3 = 141.3 × gal/MCF

RATE CALCULATIONS

HOURS 119

	GAS ANALYSES			
HOUR				AVERAGE
FRESH FEED				
CO 28.010	31.7			
H_2 2.016	64.8			
CO_2 44.010	1.7			
N_2 28.016	0.8			
CH_4 16.042	1.0			
			M. W.	11.318
			H_2O 18.016	
			BALANCE	
WET GAS		Stab. Vent		
CO 28.010	1.92			
H_2 2.016	39.45	1.7		
CO_2 44.010	21.45	20.5		
N_2 28.016	4.82	0.3		
CH_4 16.042	19.73	6.1		
C_2H_6 28.052	3.74	5.6		
C_2H_4 33.068	1.74	3.2		
C_3H_6 42.078	4.11	26.5		
C_3H_8 44.094	0.66	3.1		
C_4H_8 56.104	1.35	23.8		
C_4H_{10} 58.120	0.14	3.6		
C_5H_{10} 70.130	0.68	4.7		
C_5H_{12} 72.146				
C_6H_{12} 84.156	0.21	0.9		
	20.3733	44.668	M. W.	

GENERATOR BALANCE									
M/HR	C	H	O		Mol %	M/Hr	C	H	O
				O_2 32.000					
				CO 28.010					
				H_2 2.016					
				CO_2 44.010					
				N_2 28.016					
				CH_4 16.042					
				C_2H_6 30.068					
				C_3H_8 44.094					
				C_4H_{10} 58.120					
				TOTAL					

GAS FLOW RATES						
	√h	PRESSURE	TEMP.	S. C. F. H.	M. W.	M/HR
FRESH FEED				3622		9.544
WET GAS		Corrected		1022		2.693
		Observed		997		2.627
RECYCLE				3610		9.513
~~EXHST~~ Stab.Vent				25		0.066
NATURAL GAS						
OXYGEN						
STEAM						

WEIGHT BALANCE	# hr Measured	At. Wt. Balance
WET GAS Stab. Vent	2.95	
	53.52	54.37
OIL	14.19	
WATER WSC	4.39	
	31.32	
TOTAL	106.67	
FRESH FEED	108.02	
WEIGHT BALANCE	98.75	
WET GAS FACTOR	1.0252	
INDICATED LOSS—S C F H		

LIQUID PRODUCT RATES									
HOUR	GAGE	GAL.	°F	FACTOR	GAL. AT 60	API° # GAL.	#	# HR GAL HR.
OIL						55.8		
WATER		#/hr.	% Chem	#/hr. Chem.	Net H2O			
	H2O	34.92	10.3	3.60	31.32			
	Gas	35.33	1.9	0.67				
	Oil	8.16	5.2	0.42				
	WSC			4.69				

THE TEXAS COMPANY — MONTEBELLO LABORATORY
YIELD CALCULATIONS

RUN NO. D-201-29-4
HOURS 191

	FRESH FEED %	FRESH FEED m/hr	FRESH FEED #/hr	WET GAS %	WET GAS At. Wt. Balance m/hr	WET GAS At. Wt. Balance #/hr	RECYCLE m/hr	COMBINED FEED m/hr	EFFLUENT m/hr	NET CHANGE m/hr	NET CHANGE #/hr
CO 28.010	33.5	3.204	89.74	8.125	0.247	6.92	0.783	3.987	1.030	- 2.957	
H_2 2.016	63.2	6.045	12.19	45.263	1.376	2.77	4.377	10.422	5.753	- 4.669	
CO_2 44.010	1.6	0.153	6.73	22.270	0.677	29.79	2.098	2.251	2.775	0.524	23.06
N_2 28.016	1.2	0.115	3.22	2.928	0.089	2.49	0.281	0.396	0.370		
CH_4 16.042	1.5	0.048	0.77	10.559	0.321	5.15	1.013	1.057	1.334	0.273	4.38
C_2H_4 28.052				2.862	0.087	2.44	0.264	0.264	0.351	0.087	2.44
C_2H_6 30.068				1.217	0.037	1.11	0.112	0.112	0.149	0.037	1.11
C_1+C_2											7.93
C_3H_6 42.078				3.421	0.104	4.38	0.278	0.278	0.382	0.104	4.38
C_3H_8 44.094				0.625	0.019	0.84	0.052	0.052	0.071	0.019	0.84
C_4H_8 56.104				1.743	0.053	2.97	0.107	0.107	0.160	0.053	2.97
C_4H_{10} 58.120				0.165	0.005	0.29	0.016	0.016	0.021	0.005	0.29
C_5H_{10} 70.130				0.657	0.020	1.40	0.050	0.050	0.070	0.020	1.40
C_5H_{12} 72.146											
C_6H_{12} 84.156				0.132	0.004	0.34	0.012	0.012	0.016	0.004	0.34
C_3-C_4											10.22
TOTAL		9.565	112.65		3.040	60.89	9.444	19.009	14.460		
H_2+CO		9.249	3510 S.C.F.H.		1.623		5.160	14.409	6.783	7.626	
H_2/CO		1.89	284901		5.57		5.59	2.61	5.59	1.58	

YIELD BASIS H_2+CO FED — CONDENSATE #/MCF	#/gal	gal/hr	gal/MCF	POLYMER #/hr	#/MCF	#/gal	gal/hr	gal/MCF	% Unsats.
				%	gph	#/hr.	%	gph	
			400	75	1.734		98.0	1.699	
6.570			400/550	15	0.347		91.4	0.317	
			550+	10	0.231		114.6	0.265	
1.248									
0.695			C_3^-	45.1		1.975			70.2
0.316			Poly Gaso			1.73	0.289		
2.259			Poly Tar			0.245	0.033		
1.248	4.32	1.014	0.289			6.25		RVP	84.6
0.239	4.24	0.198	0.056	C_4H_8			0.166	68.0	
0.846	5.00	0.594	0.169	C_4Poly		6.10	0.313	1.5	91.4
0.083	4.86	0.046	0.013	C_4H_{10}		4.86	0.046	68.0	
0.399	5.45	0.257	0.073	C_4Free Gaso		5.45	2.306	5.8	
	5.25			C_4Poly Tar		5.25	0.036		
0.097	5.54	0.061	0.017			5.54			
2.912		2.170	0.618						
					gal./hr.		gal/MCF	BPD	
				Gasoline	2.831		0.8066	4373	
				Diesel	0.317		0.0903	490	
4.122	6.257	2.312	0.659	WaxyBtms	0.265		0.0755	409	
7.034		4.482	1.277	Poly Tar	0.069		0.0197	107	
1.502		0.659	0.188	Total	3.482		0.9920	5379	
8.536		5.141	1.465	WSChem	0.659		0.1877	1018	
9.105				Total	4.141		1.1798	6397	
10.795									

CUMULATIVE TOTALS	H_2+CO,MCF	Catalyst #	C_3+, gal	gal/MCF	gal/#
Previous Total					
Current Period					
New Total					

EFFLUENT SHIFT RATIO 8.73 $\frac{(H_2)(CO_2)}{(H_2O)(CO)}$

RECOVERED OIL	0.103*	14.47	
TOTAL OIL		24.69	
WATER SOLUBLE CHEMICALS	0.099*	5.27	
TOTAL LIQUID PRODUCTS C_3+		29.96	
NET WATER	1.774*	31.96	
GROSS WATER			
HYDROCARBON TOTAL—C_1+		37.89	

FRESH FEED CONVERSION — % Contraction	CO	H_2	H_2+CO	TOTAL FEED CONVERSION — % CO	H_2	CO+H_2	SELECTIVITY C_3+/C_1+
68.22	92.29	77.24	82.45	74.17	44.80	52.93	79.07

Form ML-11

*Included in Reactor Effluent Total

g/M3 = 16.91 × # MCF.
cc/M3 = 141.3 × gal/MCF

RATE CALCULATIONS

HOURS 191

GAS ANALYSES HOUR				AVERAGE
FRESH FEED				
CO 28.010	33.5			
H_2 2.016	63.2			
CO_2 44.010	1.6			
N_2 28.016	1.2			
CH_4 16.042	0.5			
			M. W.	11.778
			H_2O 18.016	
			BALANCE	
WET GAS		Stab. Vent		
CO 28.010	8.29	1.4		
H_2 2.016	46.35	2.2		
CO_2 44.010	22.21	25.1		
N_2 28.016	2.98	0.9		
CH_4 16.042	10.73	4.3		
C_2H_4 28.052	2.80	5.4		
C_2H_6 33.068	1.19	2.8		
C_3H_6 42.078	2.94	22.1		
C_3H_8 44.094	0.55	3.5		
C_4H_8 56.104	1.13	26.1		
C_4H_{10} 58.120	0.17	0.5		
C_5H_{10} 70.130	0.53	5.7		
C_5H_{12} 72.146				
C_6H_{12} 84.156	0.13			
	19.424	44.555	M. W.	

GENERATOR BALANCE	M/HR	C	H	O		Mol %	M/Hr	C	H	O
					O_2 32.000					
					CO 28.010					
					H_2 2.016					
					CO_2 44.010					
					N_2 28.016					
					CH_4 16.042					
					C_2H_4 30.068					
					C_3H_8 44.094					
					C_4H_{10} 58.120					
					TOTAL					

WEIGHT BALANCE	# hr Measured	At. Wt. Balance
WET GAS Stab. Vent	3.39	
	51.09	57.57
OIL	14.47	
WATER WSC	5.27	
	31.96	
TOTAL	106.18	
FRESH FEED	112.66	
WEIGHT BALANCE	94.25	
WET GAS FACTOR	1.1268	
INDICATED LOSS—S C F H		

GAS FLOW RATES	√H	PRESSURE	TEMP.	S. C. F. H.	M. W.	M/HR
FRESH FEED				3630		9.565
WET GAS		Corrected		1125		2.964
		Observed		998		2.630
RECYCLE				3584		9.444
~~XXXX~~ Stab. Vent				29		0.076
NATURAL GAS						
OXYGEN						
STEAM						

HOUR	GAGE	GAL.	°F	FACTOR	GAL. AT 60	API° #/GAL.	#	# HR GAL HR
OIL						56.7		
WATER		#/hr.	% Chem	#/hr. Chem	Net H_2O			
	H_2O	36.11	11.5	4.15	31.96			
	Gas	37.37	1.4	0.52				
	Oil	10.69	5.5	0.60				
	WSC			5.27				

LIQUID PRODUCT RATES

THE TEXAS COMPANY — MONTEBELLO LABORATORY
YIELD CALCULATIONS

RUN NO. D-201-29-5
HOURS 263

	FRESH FEED %	FRESH FEED m/hr	FRESH FEED #/hr	WET GAS %	WET GAS At. Wt. Balance m/hr	WET GAS At. Wt. Balance #/hr	RECYCLE m/hr	COMBINED FEED m/hr	EFFLUENT m/hr	NET CHANGE m/hr	NET CHANGE #/hr	YIELD BASIS H_2+CO FED CONDENSATE #/MCF	CONDENSATE #/gal	CONDENSATE gal/hr	CONDENSATE gal/MCF	POLYMER #/hr	POLYMER #/MCF	POLYMER #/gal	POLYMER gal/hr	POLYMER gal/MCF	% Unsats.
CO 28.010	33.2	3.192	89.41		0.278	7.79	0.835	4.027	1.113	- 2.914						%	gph	#/hr.	%	gph	
H_2 2.016	63.8	6.135	12.37		1.614	3.25	4.859	10.994	6.473	- 4.521					400	75	1.750		98.0	1.715	
CO_2 44.010	1.7	0.163	7.17		0.662	29.13	1.936	2.099	2.598	0.599	21.96	6.204			400/550	16	0.373		91.4	0.341	
N_2 28.016	0.5	0.048	1.34		0.032	0.90	0.094	0.142	0.126						550+	9	0.210		114.6	0.241	
CH_4 16.042	0.8	0.077	- 1.24		0.363	5.82	1.084	1.161	1.447	0.286	4.59	1.297									
C_2H_4 28.052					0.092	2.58	0.264	0.264	0.356	0.092	2.58	0.729			C_3^-	42.3		1.90			70.8
C_2H_6 30.068					0.038	1.14	0.109	0.109	0.147	0.038	1.14	0.322			Poly	Gaso		1.66		0.278	
C_1+C_2											8.31	2.348						0.24		0.032	
C_3H_6 42.078					0.107	4.50	0.267	0.267	0.374	0.107	4.50	1.271	4.32	1.042	0.294			6.25		RVP	84.9
C_3H_8 44.094					0.019	0.84	0.050	0.050	0.069	0.019	0.84	0.237	4.24	0.198	0.056	C_4H_8			0.116	68.0	
C_4H_8 56.104					0.054	3.03	0.098	0.098	0.152	0.054	3.03	0.856	5.00	0.606	0.171	C_4Poly		6.10	0.358	1.5	87.1
C_4H_{10} 58.120					0.008	0.45	0.014	0.014	0.022	0.008	0.45	0.130	4.86	0.096	0.027	C_4H_{10}		4.86	0.096	68.0	
C_5H_{10} 70.130					0.015	1.05	0.039	0.039	0.044	0.015	1.05	0.297	5.45	0.193	0.054	C_4Free	Gaso	5.45	2.216	5.8	
C_5H_{12} 72.146													5.25			C_4Poly	Tar	5.25	0.041		
C_6H_{12} 84.156					0.002	0.17	0.008	0.008	0.010	0.002	0.17	0.048	5.54	0.030	0.008			5.54			
C_3-C_6											10.05	2.839		2.165	0.612						
TOTAL		9.615	111.53		3.284	60.66	9.657	19.272	14.861								gal/hr.		gal/MCF	BPD	
H_2+CO		9.327	3539.6 S.C.F.H.		1.892		5.694	15.021	7.586	- 7.435						Gasoline	2.786		0.7871	4267	
H_2/CO		1.92	282518		5.81		5.82	2.73	5.82	1.55						Diesel	0.341		0.0963	522	

CUMULATIVE TOTALS	H_2+CO,MCF	Catalyst #	C_3+, gal	gal/MCF	gal/#
Previous Total					
Current Period					
New Total					

EFFLUENT									
SHIFT RATIO 8.81 $\frac{(H_2)(CO_2)}{(H_2O)(CO)}$	RECOVERED OIL	0.105*	14.69	4.150	6.296	2.333	0.659	WaxyBtms	0.241	0.0681	369
	TOTAL OIL		24.74	6.959		4.498	1.271	Poly Tar	0.073	0.0206	112
	WATER SOLUBLE CHEMICALS	0.100*	5.30	1.498		0.662	0.187	Total	3.441	0.9721	5270
	TOTAL LIQUID PRODUCTS C_3+		30.04	8.487		5.160	1.458	WSChem	0.662	0.1870	1015
	NET WATER	1.715*	30.89	8.727				Total	4.103	1.1592	6285
	GROSS WATER										
	HYDROCARBON TOTAL—C_1+		38.35	10.835							

FRESH FEED CONVERSION — %				TOTAL FEED CONVERSION — %			SELECTIVITY
Contraction	CO	H_2	H_2+CO	CO	H_2	CO+H_2	C_3+/C_1+
65.85	91.29	73.69	79.71	72.36	41.12	49.50	78.33

Form ML-11

*Included in Reactor Effluent Total

g/M3 = 16.91 × #/MCF.
cc/M3 = 141.3 × gal/MCF.

HOURS 263

RATE CALCULATIONS

GAS ANALYSES HOUR				AVERAGE
FRESH FEED				
CO 28.010	33.2			
H_2 2.016	63.8			
CO_2 44.010	1.7			
N_2 28.016	0.5			
CH_4 16.042	0.8			
			M. W.	11.60211
			H_2O 18.016	
			BALANCE	

GENERATOR BALANCE M/HR	C	H	O		Mol %	M/Hr	C	H	O
				O_2 32.000					
				CO 28.010					
				H_2 2.016					
				CO_2 44.010					
				N_2 28.016					
				CH_4 16.042					
				C_2H_6 30.068					
				C_3H_8 44.094					
				C_4H_{10} 58.120					
				TOTAL					

WEIGHT BALANCE	# hr Measured	At. Wt. Balance
WET GAS Stab. Vent	3.51	
	51.28	57.16
OIL	14.69	
WATER WSC	5.30	
	30.89	
TOTAL	105.67	
FRESH FEED	111.55	
WEIGHT BALANCE	94.73	
WET GAS FACTOR	1.11466	
INDICATED LOSS—S C F H		

WET GAS		Stab. Vent	
CO 28.010	8.65	0.8	
H_2 2.016	50.32	2.2	
CO_2 44.010	20.05	24.4	
N_2 28.016	0.97	0.9	
CH_4 16.042	11.22	4.1	
C_2H_4 28.052	2.73	5.4	
C_2H_6 33.068	1.13	2.7	
C_3H_6 42.078	2.77	23.1	
C_3H_8 44.094	0.52	2.9	
C_4H_8 56.104	1.02	26.9	
C_4H_{10} 58.120	0.14	4.0	
C_5H_{10} 70.130	0.40	2.6	
C_5H_{12} 72.146			
C_6H_{12} 84.156	0.08		
	17.8349	44.4823	M. W.

GAS FLOW RATES	$\sqrt{H}$	PRESSURE	TEMP.	S. C. F. H.	M. W.	M/HR
FRESH FEED				3649		9.615
WET GAS		Corrected		1216		3.205
		Observed		1091		2.875
RECYCLE				3635		9.578
~~XXXX~~ Stab. Vent				30		0.079
NATURAL GAS						
OXYGEN						
STEAM						

LIQUID PRODUCT RATES HOUR	GAGE	GAL.	°F	FACTOR	GAL. AT 60	API° #/GAL.	#	# HR GAL HR
OIL						55.6		
		#/hr.	% Chem.	#/hr. Chem.	Net H20			
WATER	H20	35.06	11.9	4.17	30.89			
	Gas	39.69	1.4	0.56				
	Oil	9.66	5.9	0.57				
	WSC			5.30				

THE TEXAS COMPANY — MONTEBELLO LABORATORY

YIELD CALCULATIONS

RUN NO. D-201-29-6
HOURS 349

	FRESH FEED			WET GAS			RECYCLE	COMBINED FEED	EFFLUENT	NET CHANGE		YIELD BASIS H_2+CO FED									
					At. Wt. Balance							CONDENSATE				POLYMER					%
	%	m/hr	#/hr	%	m/hr	#/hr	m/hr	m/hr	m/hr	m/hr	#/hr	#/MCF	#/gal	gal/hr	gal/MCF	#/hr	#/MCF	#/gal	gal/hr	gal/MCF	Unsats.
CO 28.010	32.7	3.054	85.54		0.252	7.06	0.777	3.831	1.029	- 2.802						%	gph	#/hr.	%	gph	
H_2 2.016	64.0	5.977	12.05		1.500	3.02	4.629	10.606	6.129	- 4.477					400	75	1.490		98.0	1.460	
CO_2 44.010	1.8	0.168	7.39		0.654	28.78	1.976	2.144	2.630	0.486	21.39	6.506			400/550	16	0.318		91.4	0.291	
N_2 28.016	1.1	0.103	2.89		0.097	2.72	0.298	0.401	0.395						550+	9	0.179		114.6	0.205	
CH_4 16.042	0.4	0.037	0.59		0.300	4.81	0.923	0.960	1.223	0.263	4.22	1.284									
C_2H_4 28.052					0.085	2.38	0.252	0.252	0.337	0.085	2.38	0.724			C_3^-	43.0		1.79			69.1
C_2H_6 30.068					0.038	1.14	0.114	0.114	0.152	0.038	1.14	0.347			Poly	Gaso		1.57		0.262	
C_1+C_2											7.74	2.354			Poly	Tar		0.22		0.029	
C_3H_6 42.078					0.099	4.17	0.269	0.269	0.368	0.099	4.17	1.268	4.32	0.964	0.293			6.25			83.8
C_3H_8 44.094					0.019	0.84	0.052	0.052	0.071	0.019	0.84	0.256	4.24	0.198	0.060	C_4H_8			0.072		
C_4H_8 56.104					0.052	2.92	0.114	0.114	0.166	0.052	2.92	0.888	5.00	0.584	0.178	C_4Poly		6.10	0.375		82.5
C_4H_{10} 58.120					0.011	0.64	0.028	0.028	0.039	0.011	0.64	0.195	4.86	0.132	0.040	C_4H_{10}		4.86	0.132		
C_5H_{10} 70.130					0.022	1.54	0.056	0.056	0.078	0.022	1.54	0.468	5.45	0.283	0.086	C_4Free	Gaso	5.45	2.066		
C_5H_{12} 72.146													5.25			C_4Poly	Tar	5.25	0.042		
C_6H_{12} 84.156					0.004	0.34	0.012	0.012	0.016	0.004	0.34	0.103	5.54	0.061	0.019			5.54			
C_3-C_6											10.45	3.178		2.222	0.676						
TOTAL		9.339	108.46		3.135	60.36	9.502	18.841									gal/hr.		gal/MCF	BPD	
H_2+CO		9.031	3427.3 S.C.F.H.		1.752		5.406	14.437	7.158	- 7.279						Gasoline	2.645		0.7717	4185	
H_2/CO		1.96	2917748		5.95		5.96	2.77	5.96	1.60						Diesel	0.291		0.0849	460	
EFFLUENT									RECOVERED OIL	0.089*	12.47	5.793	6.276	1.987	0.604	WaxyBtms	0.205		0.0598	324	
SHIFT RATIO									TOTAL OIL		22.92	6.972		4.209	1.280	Poly Tar	0.071		0.0207	112	
9.27 $\frac{(H_2)(CO_2)}{(H_2O)(CO)}$									WATER SOLUBLE CHEMICALS	0.097*	5.14	1.563		0.643	0.196	Total	3.212		0.3372	5081	
									TOTAL LIQUID PRODUCTS C_3+		28.06	8.535		4.852	1.476	WSChem	0.643		0.1876	1017	
									NET WATER	1.689*	30.43	9.256				Total	3.855		1.1248	6098	
									GROSS WATER												
									HYDROCARBON TOTAL—C_1+		35.80	10.889									

CUMULATIVE TOTALS

	H_2+CO,MCF	Catalyst #	C_3+, gal	gal/MCF	gal/#
Previous Total					
Current Period					
New Total					

FRESH FEED CONVERSION — %				TOTAL FEED CONVERSION — %			SELECTIVITY
Contraction	CO	H_2	H_2+CO	CO	H_2	CO+H_2	C_3+/C_1+
66.43	91.75	74.90	80.60	73.14	42.21	50.42	78.38

Form ML-11

*Included in Reactor Effluent Total

g/M3 = 16.91 × # /MCF.
cc/M3 = 141.3 × gal/MCF.

RATE CALCULATIONS

HOURS 349

	GAS ANALYSES			
HOUR				AVERAGE
FRESH FEED				
CO 28.010	32.7			
H_2 2.016	64.0			
CO_2 44.010	1.8			
N_2 28.016	1.1			
CH_4 16.042	0.4			
			M. W.	11.6140
			H_2O 18.016	
			BALANCE	
WET GAS		Stab. Vent		
CO 28.010	8.18	0.9		
H_2 2.016	48.72	2.2		
CO_2 44.010	20.80	23.7		
N_2 28.016	3.14	0.9		
CH_4 16.042	9.71	3.4		
C_2H_4 28.052	2.65	5.3		
C_2H_6 33.068	1.20	2.6		
C_3H_6 42.078	2.83	21.2		
C_3H_8 44.094	0.55	3.1		
C_4H_8 56.104	1.20	26.7		
C_4H_{10} 58.120	0.30	3.9		
C_5H_{10} 70.130	0.59	5.9		
C_5H_{12} 72.146				
C_6H_{12} 84.156	0.13	0.2		
	18.7732	45.633	M. W.	

GENERATOR BALANCE									
M/HR	C	H	O		Mol %	M/Hr	C	H	O
				O_2 32.000					
				CO 28.010					
				H_2 2.016					
				CO_2 44.010					
				N_2 28.016					
				CH_4 16.042					
				C_2H_6 30.068					
				C_3H_8 44.094					
				C_4H_{10} 58.120					
				TOTAL					

GAS FLOW RATES							
	$\sqrt{H}$	PRESSURE	TEMP.	S. C. F. H.	M. W.	M/HR
FRESH FEED				3544		9.339
WET GAS		Corrected		1168		3.077
		Observed		1025		2.701
RECYCLE				3584		9.444
~~XXXX~~ Stab. Vent				22		0.058
NATURAL GAS						
OXYGEN						
STEAM						

WEIGHT BALANCE	# hr Measured	At. Wt. Balance
WET GAS Stab. Vent	2.65	
	50.71	57.77
OIL	12.47	
WATER WSC	5.14	
	30.43	
TOTAL	101.40	
FRESH FEED	108.46	
WEIGHT BALANCE	93.49	
WET GAS FACTOR	1.13922	
INDICATED LOSS—S C F H		

HOUR	GAGE	GAL.	°F	FACTOR	GAL. AT 60	API° #/GAL.	#	# HR GAL HR
OIL						56.2		
WATER		#/ hr.	% Chem	#/hr. Chem.	Net H2O			
	H_2O	34.50	11.8	4.07	30.43			
	Gas	35.31	1.7	0.60				
	Oil	8.32	5.6	0.47				
	WSC			5.14				

LIQUID PRODUCT RATES

THE TEXAS COMPANY — MONTEBELLO LABORATORY
YIELD CALCULATIONS

RUN NO. D-201-29-7
HOURS 456

	FRESH FEED			WET GAS			RECYCLE	COMBINED FEED	EFFLUENT	NET CHANGE		YIELD BASIS H_2+CO FED									
					At. Wt. Balance							CONDENSATE				POLYMER					%
	%	m/hr	#/hr	%	m/hr	#/hr	m/hr	m/hr	m/hr	m/hr	#/hr	#/MCF	#/gal	gal/hr	gal/MCF	#/hr	#/MCF	#/gal	gal/hr	gal/MCF	Unsats.
CO 28.010	32.4	3.075	86.13		0.228	6.39	0.677	3.782	0.905	- 2.847	-79.74					%	gph	#/hr.	%	gph	
H_2 2.016	62.9	5.970	12.04		1.544	3.11	4.581	10.551	6.125	- 4.426	- 8.93				400	75	1.596		98.0	1.564	
CO_2 44.010	1.8	0.171	7.53		0.654	28.78	1.902	2.073	2.556	0.483	21.25	6.191			400/550	16	0.340		91.4	0.311	
N_2 28.016	0.6	0.057	1.60		0.035	0.98	0.101	0.158	0.136	0.022	0.62				550+	9	0.192		114.6	0.220	
CH_4 16.042	2.3	0.218	3.50		0.500	8.02	1.476	1.694	1.976	0.282	4.52	1.317									
C_2H_4 28.052					0.085	2.38	0.243	0.243	0.328	0.085	2.38	0.693			C_3^-	41.5		1.75			69.1
C_2H_6 30.068					0.038	1.14	0.110	0.110	0.148	0.038	1.14	0.332			Poly Gaso			1.53		0.256	
C_1+C_2											8.04	2.342						0.22		0.029	
C_3H_6 42.078					0.100	4.21	0.261	0.261	0.361	0.100	4.21	1.226	4.32	0.974	0.284			6.25			87.0
C_3H_8 44.094					0.015	0.66	0.038	0.038	0.053	0.015	0.66	0.192	4.24	0.156	0.045	C4Ha			0.094		
C_4H_8 56.104					0.054	3.03	0.118	0.118	0.172	0.054	3.03	0.883	5.00	0.606	0.177	C4Poly		6.10	0.375		84.4
C_4H_{10} 58.120					0.010	0.58	0.023	0.023	0.033	0.010	0.58	0.159	4.86	0.119	0.035	C4H10		4.86	0.119		
C_5H_{10} 70.130					0.022	1.54	0.058	0.058	0.080	0.022	1.54	0.449	5.45	0.283	0.082	C4Free Gaso		5.45	2.179		
C_5H_{12} 72.146													5.25			C4Poly Tar		5.25	0.042		
C_6H_{12} 84.156					0.005	0.42	0.013	0.013	0.018	0.005	0.42	0.122	5.54	0.076	0.022			5.54			
C_3-C_6											10.44	3.041		2.214	0.645						
TOTAL		9.491	110.80		3.290		9.602	19.093	14.801												
H_2+CO		9.045	3433 S.C.F.H.		1.772		5.258	14.303	7.030	- 7.273							gal/hr.		gal/MCF	BPD	
H_2/CO		1.94	29133		6.77			2.81		1.55						Gasoline	2.767		0.8061	4370	

CUMULATIVE TOTALS	H_2+CO,MCF	Catalyst #	C_3+, gal	gal/MCF	gal/#
Previous Total					
Current Period					
New Total					

EFFLUENT SHIFT RATIO											
10.1 $(H_2)(CO_2)$ / $(H_2O)(CO)$	RECOVERED OIL	0.096*	13.43	3.912	6.31	2.128	0.620	Diesel	0.311	0.0906	491
	TOTAL OIL		23.87	6.954		4.342	1.265	WaxyBtms	0.220	0.0641	348
	WATER SOLUBLE CHEMICALS	0.099*	5.24	1.527		0.655	0.191	Poly Tar	0.071	0.0207	112
	TOTAL LIQUID PRODUCTS C_3+		29.11	8.481		4.997	1.456	Total	3.369	0.9815	5321
	NET WATER	1.714*	30.89	9.000				WSChem	0.655	0.1908	1034
	GROSS WATER							Total	4.024	1.1723	6356
	HYDROCARBON TOTAL—C_1+		37.15	10.823							

FRESH FEED CONVERSION — %				TOTAL FEED CONVERSION — %			SELECTIVITY
Contraction	CO	H_2	H_2+CO	CO	H_2	CO+H_2	C_3+/C_1+
65.34	92.58	74.14	80.41	75.88	41.95	50.85	78.35

Form ML-11

*Included in Reactor Effluent Total

g/M3 = 16.91 × #/MCF.
cc/M3 = 141.3 × gal/MCF

HOURS 456

RATE CALCULATIONS

	GAS ANALYSES			
HOUR				AVERAGE
FRESH FEED				
CO 28.010	32.4			
H_2 2.016	62.9			
CO_2 44.010	1.8			
N_2 28.016	0.6			
CH_4 16.042	2.3			
			M. W.	11.6725
			H_2O 18.016	
			BALANCE	

GENERATOR BALANCE									
M/HR	C	H	O		Mol %	M/Hr	C	H	O
				O_2 32.000					
				CO 28.010					
				H_2 2.016					
				CO_2 44.010					
				N_2 28.016					
				CH_4 16.042					
				C_2H_6 30.068					
				C_3H_8 44.094					
				C_4H_{10} 58.120					
				TOTAL					

WEIGHT BALANCE		
	#/hr Measured	At. Wt. Balance
WET GAS Stab. Vent	2.47	
WET GAS	51.30	58.75
OIL	13.43	
WATER WSC	5.24	
WATER	30.89	
TOTAL	103.33	
FRESH FEED	110.78	
WEIGHT BALANCE	93.27	
WET GAS FACTOR	1.14522	
INDICATED LOSS—S C F H		

WET GAS		Stab. Vent
CO 28.010	7.05	
H_2 2.016	47.71	2.3
CO_2 44.010	19.81	24.0
N_2 28.016	1.05	1.0
CH_4 16.042	15.37	5.6
C_2H_4 28.052	2.53	4.8
C_2H_6 30.068	1.15	2.7
C_3H_6 42.078	2.72	21.7
C_3H_8 44.094	0.40	3.0
C_4H_8 56.104	1.23	25.4
C_4H_{10} 58.120	0.24	3.8
C_5H_{10} 70.130	0.60	5.2
C_5H_{12} 72.146		
C_6H_{12} 84.156	0.14	0.5
	18.1593	44.926

M. W.

GAS FLOW RATES						
	$\sqrt{H}$	PRESSURE	TEMP.	S. C. F. H.	M. W.	M/HR
FRESH FEED				3602		9.491
WET GAS		Corrected		1228		3.235
		Observed		1072		2.825
RECYCLE				3644		9.602
~~XXXXX~~ Stab.Vent				21		0.055
NATURAL GAS						
OXYGEN						
STEAM						

	HOUR	GAGE	GAL.	°F	FACTOR	GAL. AT 60	API° #/GAL.	#	# HR GAL HR
	OIL						55.2		
			#/hr.	% Chem	#/hr. Chem.	Net H2O			
	WATER	H2O	34.83	11.3	3.94	30.89			
		Gas	38.89	2.0	0.78				
		Oil	8.94	5.8	0.52				
		WSC			5.24				

LIQUID PRODUCT RATES

THE TEXAS COMPANY — MONTEBELLO LABORATORY
YIELD CALCULATIONS

RUN NO. D-201-29-8
HOURS 481

	FRESH FEED			WET GAS			RECYCLE	COMBINED FEED	EFFLUENT	NET CHANGE		YIELD BASIS H_2+CO FED									
					At. Wt. Balance							CONDENSATE				POLYMER					%
	%	m/hr	#/hr	%	m/hr	#/hr	m/hr	m/hr	m/hr	m/hr	#/hr	#/MCF	#/gal	gal/hr	gal/MCF	#/hr	#/MCF	#/gal	gal/hr	gal/MCF	Unsats.
CO 28.010	33.3	3.176	88.96		0.280	7.94	0.790	3.966	1.070	- 2.896	- 81.12					%	gph	#/hr	%	gph	
H_2 2.016	63.2	6.029	12.15		1.656	3.34	4.680	10.709	6.336	- 4.373	8.81				400	75	1.523		98.0	1.492	
CO_2 44.010	1.7	0.162	7.13		0.683	30.06	1.899	2.061	2.582	0.521	22.93	6.564			400/550	16	0.325		91.4	0.297	
N_2 28.016	0.9	0.086	2.41		0.079	2.21	0.224	0.310	0.303	0.007	0.20				550+	9	0.183		114.6	0.210	
CH_4 16.042	0.9	0.086	1.38		0.358	5.74	1.008	1.094	1.366	0.272	4.36	1.248									
C_2H_4 28.052					0.088	2.47	0.240	0.240	0.328	0.088	2.47	0.707			C_3^-	40.1		1.64			70.4
C_2H_6 30.068					0.037	1.11	0.103	0.103	0.140	0.037	1.11	0.318			Poly Gaso			1.44		0.240	
C_1+C_2											7.94	2.273			Poly Ter			0.20		0.027	
C_3H_6 42.078					0.097	4.08	0.248	0.248	0.345	0.097	4.08	1.168	4.32	0.944	0.270			6.25			80.2
C_3H_8 44.094					0.024	1.06	0.065	0.065	0.089	0.024	1.06	0.303	4.24	0.250	0.072	C_4H_8			0.090		
C_4H_8 56.104					0.053	2.97	0.117	0.117	0.170	0.053	2.97	0.850	5.00	0.594	0.170	C_4Poly		6.10	0.369		84.1
C_4H_{10} 58.120					0.010	0.58	0.023	0.023	0.033	0.010	0.58	0.166	4.86	0.119	0.034	C_4H_{10}		4.86	0.119		
C_5H_{10} 70.130					0.025	1.75	0.063	0.063	0.088	0.025	1.75	0.501	5.45	0.321	0.092	C_4Free Gaso		5.45	2.129		
C_5H_{12} 72.146													5.25			C_4Poly		5.25	0.041		
C_6H_{12} 84.156					0.005	0.42	0.013	0.013	0.018	0.005	0.42	0.120	5.54	0.076	0.022			5.54			
C_3-C_6											10.86	3.109		2.304	0.660						
TOTAL		9.539	112.03		3.395	63.63	9.473	19.012	14.737								gal/hr.		gal/MCF	BPD	
H_2+CO		9.205	3493 S.C.F.H.		1.936		5.470	14.675	7.406	- 7.269						Gasoline	2.707		0.7749	4201	
H_2/CO		1.90	2862625		5.91			2.70		1.51						Diesel	0.297		0.0850	461	

CUMULATIVE TOTALS	H_2+CO,MCF	Catalyst #	C_3+, gal	gal/MCF	gal/#
Previous Total					
Current Period					
New Total					

EFFLUENT											
RECOVERED OIL	0.092*	12.87	3.684	6.34	2.030	0.581	WaxyBtms	0.210		0.0601	326
TOTAL OIL		23.73	6.793		4.334	1.241	Poly Ter	0.068		0.0195	106
WATER SOLUBLE CHEMICALS	0.100*	5.30	1.517	8.0	0.662	0.189	Total	3.282		0.9395	5094
TOTAL LIQUID PRODUCTS C_3+		29.03	8.310		4.996	1.430	WSChem	0.663		0.1898	1029
NET WATER	1.677*	30.21	8.648				Total	3.945		1.1293	6123
GROSS WATER											
HYDROCARBON TOTAL—C_1+		36.97	10.583								

SHIFT RATIO: 9.1 $\frac{(H_2)(CO_2)}{(H_2O)(CO)}$

FRESH FEED CONVERSION — %				TOTAL FEED CONVERSION — %			SELECTIVITY
Contraction	CO	H_2	H_2+CO	CO	H_2	CO+H_2	C_3+/C_1+
64.41	91.18	72.53	78.97	73.02	40.83	49.53	78.52

Form ML-11

*Included in Reactor Effluent Total

g/M3 = 16.91 × #/MCF.
cc/M3 = 141.3 × gal/MCF

HOURS 481

RATE CALCULATIONS

	GAS ANALYSES			
HOUR				AVERAGE
FRESH FEED				
CO 28.010	33.3			
H_2 2.016	63.2			
CO_2 44.010	1.7			
N_2 28.016	0.9			
CH_4 16.042	0.9			
			M. W.	
			H_2O 18.016	
			BALANCE	
WET GAS		Stab. Vent		
CO 28.010	8.34	1.0		
H_2 2.016	49.40	2.8		
CO_2 44.010	20.05	25.4		
N_2 28.016	2.37	0.3		
CH_4 16.042	10.64	4.2		
C_2H_4 28.052	2.53	5.8		
C_2H_6 30.068	1.09	2.5		
C_3H_6 42.078	2.62	20.0		
C_3H_8 44.094	0.69	2.7		
C_4H_8 56.104	1.23	24.6		
C_4H_{10} 58.120	0.24	3.6		
C_5H_{10} 70.130	0.66	6.2		
C_5H_{12} 72.146				
C_6H_{12} 84.156	0.14	0.9		
	18.38118	45.257	M. W.	

GENERATOR BALANCE									
M/HR	C	H	O		Mol %	M/Hr	C	H	O
				O_2 32.000					
				CO 28.010					
				H_2 2.016					
				CO_2 44.010					
				N_2 28.016					
				CH_4 16.042					
				C_2H_6 30.068					
				C_3H_8 44.094					
				C_4H_{10} 58.120					
				TOTAL					

GAS FLOW RATES							
	$\sqrt{h}$	PRESSURE	TEMP.	S. C. F. H.	M. W.	M/HR
FRESH FEED				3620		9.539
WET GAS		Corrected		1271		3.348
		Observed		1114		2.935
RECYCLE				3585		9.473
XXXXX Stab.Vent				18		0.047
NATURAL GAS						
OXYGEN						
STEAM						

WEIGHT BALANCE	#/hr Measured	At. Wt. Balance
WET GAS Stab.vent	2.13	
	53.95	61.54
OIL	12.87	
WATER WSC	5.30	
	30.21	
TOTAL	104.46	
FRESH FEED	112.05	
WEIGHT BALANCE	93.23	
WET GAS FACTOR	1.14068	
INDICATED LOSS—S C F H		

LIQUID PRODUCT RATES								
HOUR	GAGE	GAL.	°F	FACTOR	GAL. AT 60	API° #/GAL.	#	#/HR GAL/HR
OIL								
WATER		#/hr.	% Chem	#/hr. Chem.	Net H_2O			
	H_2O	34.13	11.5	3.92	30.21			
	Gas	45.49	1.9	0.86				
	Oil	8.74	5.9	0.52				
	WSG			5.30				

THE TEXAS COMPANY — MONTEBELLO LABORATORY
YIELD CALCULATIONS

RUN NO. D-201-29-9
HOURS 652

	FRESH FEED			WET GAS			RECYCLE	COMBINED FEED	EFFLUENT	NET CHANGE		YIELD BASIS H_2+CO FED									
					At. Wt. Balance							CONDENSATE				POLYMER					%
	%	m/hr	#/hr	%	m/hr	#/hr	m/hr	m/hr	m/hr	m/hr	#/hr	#/MCF	#/gal	gal/hr	gal/MCF	#/hr	#/MCF	#/gal	gal/hr	gal/MCF	Unsats.
CO 28.010	34.0	3.219	90.16		0.317	8.88	0.883	3.536	1.200	- 2.902						%	gph	#/hr.	%	gph	
H_2 2.016	63.6	6.022	12.14		1.759	3.55	4.897	10.921	6.656	- 4.263					400	75	1.438		98.0	1.409	
CO_2 44.010	1.5	0.142	6.25		0.704	30.98	1.923	2.065	2.627	0.562	24.73	7.052			400/550	16	0.307		91.4	0.281	
N_2 28.016	0.3	0.028	0.78		0.032	0.90	0.089	0.117	0.121						550+	9	0.173		114.6	0.198	
CH_4 16.042	0.6	0.057	0.91		0.318	5.10	0.882	0.939	1.200	0.261	4.19	1.195									
C_2H_4 28.052					0.087	2.44	0.234	0.234	0.321	0.087	2.44	0.696			C_3^-	39.2		1.49			69.0
C_2H_6 30.068					0.039	1.17	0.106	0.106	0.145	0.039	1.17	0.334			Poly	Gaso		1.30		0.217	
C_1+C_2											7.80	2.224			Poly	Tar		0.19		0.025	
C_3H_6 42.078					0.090	3.79	0.222	0.222	0.312	0.090	3.79	1.081	4.32	0.877	0.250			6.25			86.5
C_3H_8 44.094					0.014	0.62	0.035	0.035	0.049	0.014	0.62	0.177	4.24	0.143	0.041	C_4H_8			0.068		
C_4H_8 56.104					0.045	2.52	0.089	0.089	0.134	0.045	2.52	0.719	5.00	0.504	0.144	C_4Poly		6.10	0.319		80.4
C_4H_{10} 58.120					0.011	0.64	0.025	0.025	0.036	0.011	0.64	0.182	4.86	0.132	0.038	C_4H_{10}		4.86	0.132		
C_5H_{10} 70.130					0.024	1.68	0.058	0.058	0.082	0.024	1.68	0.479	5.45	0.309	0.088	C_4Free Gaso		5.45	2.102		
C_5H_{12} 72.146													5.25			C_4Poly Tar		5.25	0.036		
C_6H_{12} 84.156					0.011	0.93	0.031	0.031	0.042	0.011	0.93	0.265	5.54	0.167	0.048			5.54			
C_3-C_6											10.18	2.903		2.132	0.608						
TOTAL		9.468	110.24		3.451	63.20	9.473	18.941										gal/hr.	gal/MCF	BPD	
H_2+CO		9.241	3507 S.C.F.H.		2.076		5.780	14.457	7.856	7.165						Gasoline		2.621	0.7474	4052	
H_2/CO		1.87	285147		5.55		5.55	3.09	5.55	1.47						Diesel		0.281	0.0801	434	
EFFLUENT									RECOVERED OIL	0.087*	12.15	3.464	6.337	1.917	0.547	WaxyBtms		0.198	0.0565	306	
									TOTAL OIL		22.33	6.367		4.049	1.155	Poly Tar		0.061	0.0174	94	
									WATER SOLUBLE CHEMICALS	0.102*	5.42	1.546		0.677	0.193	Total		3.161	0.9013	4886	
									TOTAL LIQUID PRODUCTS C_3+		27.75	7.913		4.726	1.348	WSChem		0.677	0.1930	1046	
									NET WATER	1.636*	29.47	8.403				Total		3.838	1.0944	5933	
									GROSS WATER												
									HYDROCARBON TOTAL—C_1+		35.55	10.137									

CUMULATIVE TOTALS

	H_2+CO,MCF	Catalyst #	C_3+, gal	gal/MCF	gal/#
Previous Total					
Current Period					
New Total					

SHIFT RATIO 8.91 $(H_2)(CO_2)$ $(H_2O)(CO)$

FRESH FEED CONVERSION — %				TOTAL FEED CONVERSION — %			SELECTIVITY
Contraction	CO	H_2	H_2+CO	CO	H_2	CO+H_2	C_3+ / C_1+
63.55	90.15	70.79	77.53	82.07	39.04	49.56	78.06

Form ML-11

*Included in Reactor Effluent Total

g/M3 = 16.91 × #/MCF.
cc/M3 = 141.3 × gal/MCF.

HOURS 652

RATE CALCULATIONS

GAS ANALYSES				
HOUR				AVERAGE
FRESH FEED				
CO 28.010	34.0			
H_2 2.016	63.6			
CO_2 44.010	1.5			
N_2 28.016	0.3			
CH_4 16.042	0.6			
			M. W.	11.6460
			H_2O 18.016	
			BALANCE	
WET GAS				
CO 28.010	9.32	1.3		
H_2 2.016	51.69	2.8		
CO_2 44.010	20.30	26.1		
N_2 28.016	0.94	0.7		
CH_4 16.042	9.31	3.9		
C_2H_4 28.052	2.47	5.1		
C_2H_6 33.068	1.12	2.7		
C_3H_6 42.078	2.34	20.1		
C_3H_8 44.094	0.37	2.8		
C_4H_8 56.104	0.94	24.9		
C_4H_{10} 58.120	0.26	3.9		
C_5H_{10} 70.130	0.61	5.3		
C_5H_{12} 72.146				
C_6H_{12} 84.156	0.33	0.4		
	17.9049	44.9538	M. W.	

GENERATOR BALANCE									
M/HR	C	H	O		Mol %	M/Hr	C	H	O
				O_2 32.000					
				CO 28.010					
				H_2 2.016					
				CO_2 44.010					
				N_2 28.016					
				CH_4 16.042					
				C_2H_6 30.068					
				C_3H_8 44.094					
				C_4H_{10} 58.120					
				TOTAL					

GAS FLOW RATES						
	$\sqrt{H}$	PRESSURE	TEMP.	S. C. F. H.	M. W.	M/HR
FRESH FEED				3593		9.468
WET GAS		Corrected		1290		3.398
		Observed		1204		3.172
RECYCLE				3575		9.420
~~EXHX~~ Stab.Vent				20		0.053
NATURAL GAS						
OXYGEN						
STEAM						

WEIGHT BALANCE	# hr Measured	At. Wt. Balance
WET GAS Stab. Vent	2.38	
	56.79	60.84
OIL	12.15	
WATER WSC	5.42	
	29.47	
TOTAL	106.21	
FRESH FEED	110.26	
WEIGHT BALANCE	96.33	
WET GAS FACTOR	1.07131	
INDICATED LOSS—S C F H		

LIQUID PRODUCT RATES									
HOUR	GAGE	GAL.	°F	FACTOR	GAL. AT 60	API° #/GAL.	#	# HR GAL HR
OIL						54.4		
		#/hr.	% Chem	#/hr. Chem.	Nat H_2O			
WATER	H_2O	33.60	12.3	4.13	29.47			
	Gas	37.23	2.0	0.74				
	Oil	8.07	6.8	0.55				
	WSC			5.42				

THE TEXAS COMPANY — MONTEBELLO LABORATORY
YIELD CALCULATIONS

RUN NO. D-201-29-10
HOURS 695

	FRESH FEED %	FRESH FEED m/hr	FRESH FEED #/hr	WET GAS %	WET GAS At. Wt. Balance m/hr	WET GAS At. Wt. Balance #/hr	RECYCLE m/hr	COMBINED FEED m/hr	EFFLUENT m/hr	NET CHANGE m/hr	NET CHANGE #/hr	YIELD BASIS H_2+CO FED CONDENSATE #/MCF	CONDENSATE #/gal	CONDENSATE gal/hr	CONDENSATE gal/MCF	POLYMER #/hr	POLYMER #/MCF	POLYMER #/gal	POLYMER gal/hr	POLYMER gal/MCF	% Unsats.
CO 28.010		3.098			0.229		0.718	3.816	0.947	- 2.869						%	gph	#/hr.	%	gph	
H_2 2.016		6.111			1.451		4.552	10.663	6.003	- 4.660					400	75	1.412		98.0	1.384	
CO_2 44.010		0.162			0.659		2.025	2.187	2.684	0.497	21.87	6.258			400/550	16	0.301		91.4	0.275	
N_2 28.016		0.095			0.096		0.298	0.393	0.394						5504	9	0.169		114.5	0.194	
CH_4 16.042		0.038			0.330		1.029	1.067	1.359	0.292	4.68	1.339									
C_2H_4 28.052					0.096		0.294	0.294	0.390	0.096	2.69	0.770			C_3^-	44.0		1.80			69.1
C_2H_6 30.068					0.043		0.129	0.129	0.172	0.043	1.29	0.369			Poly Gaso			1.58		0.263	
C_1+C_2											8.66	2.478			Poly Tar			0.22		0.029	
C_3H_6 42.078					0.097		0.297	0.297	0.394	0.097	4.08	1.167	4.32	0.945	0.270			6.25			37.4
C_3H_8 44.094					0.014		0.039	0.039	0.053	0.014	0.62	0.177	4.24	0.146	0.042	C_4H_8			0.062	68.0	
C_4H_8 56.104					0.051		0.121	0.121	0.172	0.051	2.86	0.818	5.00	0.572	0.164	C_4Poly		6.10	0.373	1.5	81.0
C_4H_{10} 58.120					0.012		0.031	0.031	0.043	0.012	0.70	0.200	4.86	0.144	0.041	C_4H_{10}		4.86	0.144	68.0	
C_5H_{10} 70.130					0.025		0.070	0.070	0.095	0.025	1.75	0.501	5.45	0.322	0.092	C_4Free Gaso		5.45	2.075	5.8	
C_5H_{12} 72.146													5.25			C_4Poly Tar		5.25	0.042		
C_6H_{12} 84.156					0.007		0.022	0.022	0.029	0.007	0.59	0.169	5.54	0.106	0.030			5.54			
C_3-C_6											10.60	3.033		2.235	0.640						
TOTAL		9.504			3.109		9.597	12.613									gal/hr.		gal/MCF	BPD	
H_2+CO		9.209	3494.8 S.C.F.H.		1.680		5.270	14.479	6.950	- 7.529						Gasoline	2.654		0.8058	4364	
H_2/CO		1.97	286138		6.34		6.34	2.79	6.34	1.62						Diesel	0.275		0.0786	426	
									RECOVERED OIL	0.086*	12.11	3.465	6.430	1.883	0.539	WaxyBtms	0.194		0.0555	301
									TOTAL OIL		22.71	6.498		4.118	1.178	Poly Tar	0.071		0.0203	110
									WATER SOLUBLE CHEMICALS	0.100*	5.30	1.517		0.662	0.190	Total	3.194		0.9602	5201
									TOTAL LIQUID PRODUCTS C_3+		28.01	8.015		4.780	1.368	WSChem	0.663		0.1897	1028
									NET WATER	1.731*	31.19	8.925				Total	3.857		1.1499	6229
									GROSS WATER												
									HYDROCARBON TOTAL—C_1+		36.67	10.493									

CUMULATIVE TOTALS

	H_2+CO,MCF	Catalyst #	C_3+, gal	gal/MCF	gal/#
Previous Total					
Current Period					
New Total					

EFFLUENT SHIFT RATIO $\frac{(H_2)(CO_2)}{(H_2O)(CO)}$ 9.82

FRESH FEED CONVERSION — %				TOTAL FEED CONVERSION — %			SELECTIVITY
Contraction	CO	H_2	H_2+CO	CO	H_2	$CO+H_2$	C_3+/C_1+
67.29	92.61	76.26	81.76				76.38

Form ML-11

*Included in Reactor Effluent Total

g/M3 = 16.91 × #/MCF.
cc/M3 = 141.3 × gal/MCF

RATE CALCULATIONS

HOURS 695

HOUR	GAS ANALYSES			AVERAGE
FRESH FEED				
CO 28.010	32.6			
H_2 2.016	64.3			
CO_2 44.010	1.7			
N_2 28.016	1.0			
CH_4 16.042	0.4			
			M. W.	11.52005
			H_2O 18.016	
			BALANCE	

GENERATOR BALANCE	M/HR	C	H	O		Mol %	M/Hr	C	H	O
					O_2 32.000					
					CO 28.010					
					H_2 2.016					
					CO_2 44.010					
					N_2 28.016					
					CH_4 16.042					
					C_2H_4 30.068					
					C_3H_8 44.094					
					C_4H_{10} 58.120					
					TOTAL					

WEIGHT BALANCE	#/hr Measured	At. Wt. Balance
WET GAS Stab.Vent	2.36	
	55.31	58.53
OIL	12.11	
WATER WSC	5.30	
	31.19	
TOTAL	106.77	
FRESH FEED	109.49	
WEIGHT BALANCE	97.52	
WET GAS FACTOR	1.04873	
INDICATED LOSS—S C F H		

WET GAS		Stab. Vent
CO 28.010	7.48	1.0
H_2 2.016	47.43	2.9
CO_2 44.010	21.10	27.2
N_2 28.016	3.11	1.0
CH_4 16.042	10.72	3.9
C_2H_4 28.052	3.06	5.2
C_2H_6 30.068	1.34	3.2
C_3H_6 42.078	2.31	20.1
C_3H_8 44.094	0.41	3.0
C_4H_8 56.104	1.26	23.3
C_4H_{10} 58.120	0.32	3.5
C_5H_{10} 70.130	0.73	5.2
C_5H_{12} 72.146		
C_6H_{12} 84.156	0.23	0.5
	19.15133	44.5904 M. W.

GAS FLOW RATES	$\sqrt{H}$	PRESSURE	TEMP.	S. C. F. H.	M. W.	M/HR
FRESH FEED				3607		9.504
WET GAS		Corrected		1160		3.056
		Observed		1106		2.914
RECYCLE				3622		9.544
~~XXXXX~~ Stab.Vent.				20		0.053
NATURAL GAS						
OXYGEN						
STEAM						

HOUR	GAGE	GAL.
OIL		
		#/hr.
WATER	H20	35.20
	Gas	33.70
	Oil	5.66
	WSC	

LIQUID PRODUCT RATES	°F	FACTOR	GAL. AT 60	API° #/GAL.	#	# HR GAL HR
				51.7		
	% Chem	#/hr. Chem.	Net H20			
	11.4	4.01	31.19			
	2.7	0.91				
	6.7	0.38				
		5.30				