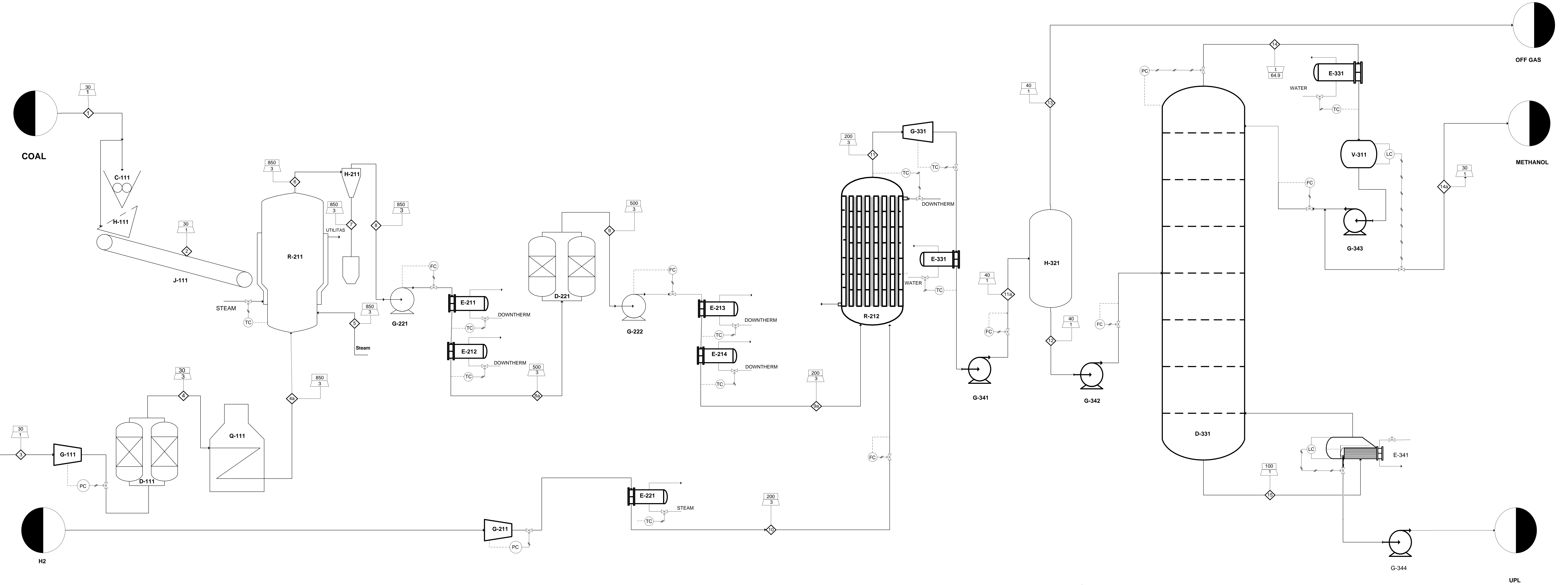


PROCESS ENGINEERING FLOW DIAGRAM PABRIK METHANOL DARI GASIFIKASI BATUBARA KAPASITAS 200.000 TON/TAHUN

C-111	H-111	J-111	G-111	D-111	Q-111	R-211	H-211	H-211	E-221	E-222	D-221	G-222	E-223	E-224	R-212	G-331	E-231	G-341	H-331	G-342	D-331	E-331	V-311	G-343	E-341	G-344
Coal Feed Crusher	Screenner	Coal Feed Conveyor	Air Feed Compressor	Pressure Swing Adsorber	Oxygen Feed Furnace	Reactor	Cyclon Char Removal	Syngas Blower	Syngas Cooler	Syngas Cooler	Adsorber	Syngas Blower	Syngas Cooler	Syngas Cooler	Reactor	Expander	Product Condenser	Product Pump	Separator	Methanol Pump	Methanol Distilation Column	Methanol Condenser	Methanol Reflux Drum	Methanol Reflux Pump	Methanol Distillation Reboiler	Methanol Product Pump



Stream Number	Units	1	2	3	4	4a	5	6	7	8	8a	9	9a	10	11	11a	12	13	14	15	
Vapor Phase		1	1	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	
Temperature	°C	30.0000	30.0000	30.0000	30.0000	850.0000	850.0000	850.0000	850.0000	850.0000	500.0000	200.0000	200.0000	200.0000	40.0000	40.0000	40.0000	40.0000	64.0000	100.0000	
Pressure	atm	1.0000	1.0000	1.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Total Mass Flowrate	kg/h	61206.5800	30603.2900	241591.1151	50734.1342	50734.1342	14205.5576	95542.9817	9807.7963	85735.1854	85735.1854	85557.4920	85557.4920	200.0000	144146.9566	144146.9566	35043.5154	109103.4412	25252.5220	9790.9888	
Component Mass Flow Rate																					
batubara		61206.5800	30603.2900																		
co								10771.5213	107.7152126	10663.80605	10663.8061	10663.8061	10663.8061		394.5608	394.5608		394.5608			
co2								65638.3136	656.3831359	64981.93045	64981.9305	64848.66039	64848.6604		46397.0983	46397.0983		46397.0983			
o2				50734.13416	50734.1342	50734.1342		2009.6798	20.096798	1989.583002	1989.5830	1989.5830	1989.5830		1989.5830	1989.5830		1989.5830			
h2								5320.3455	53.20345528	5267.142073	5267.1421	5267.1421	5267.1421	200.0000	574.8852378	574.8852378		574.8852			
h2o								14205.5576	2210.2099	22.10209878	2188.10779	2188.1078	2188.1078	2188.1078	9790.993642	9790.993642	9790.9936		37.8790	9753.1100	
h2s								44.8721	0.44872074	44.42335322	44.4234				59147.1210	59147.1210		59147.1210			
n2			190856.9809																		
ch4								606.2553	6.06255253	600.1927028	600.1927	600.1927	600.1927		600.1927	600.1927		600.1927			
ash								8941.7843	8941.7843												
CH3OH															25252.5218	25252.5218	25252.5218		25214.6430	37.8788	
Total		61206.5800	30603.2900	241591.1151	50734.1342	50734.1342	14205.5576	95542.9817	9807.7963	85735.1854	85735.1854	85557.4920	85557.4920	200.0000	144146.9566	144146.9566	35043.5154	109103.4412	25252.5220	9790.9888	

KETERANGAN SIMBOL

SIMBOL	KETERANGAN
FC	Flow Controller
LC	Level Controller
PC	Pressure Controller
TC	Temperature Controller
◇	Stream ID
□	Temperature, °C
▭	Pressure, atm
⊗	Control Valve
---	Electric Connection
---	Piping
---	Pneumatic

KETERANGAN ALAT

KODE	KETERANGAN
C	CRUSHER
G1	COMPRESSORE
G2	BLOWER
G3	EXPANDER
G4	PUMP
E1	COOLER
E2	HEATER
E3	CONDENSOR
E4	REBOILER
D1	PRESSURE SWING ADSORBER
D2	ADSORBER
Q	FURNACE
R	REACTOR
H1	CYCLONE
H2	SEPARATOR

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PABRIK METHANOL DARI GASIFIKASI BATUBARA
KAPASITAS 200.000 TON/TAHUN**

Dikerjakan oleh :

1. MARINA HAPRIANTI	(13 521 003)
2. FIRMAN ADITYA DARMAWAN P	(13 521 104)

Dosen Pembimbing :

1. Ir. ASMANTO SUBAGYO, M.Sc.	
2. AJENG YULIANTI DWI LESTARI, S.T., M.T	