

# SLURRY HYDROCRACKER PROJECT

## Appendix D - Drawings

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**DATE:** April 9<sup>th</sup>, 2020

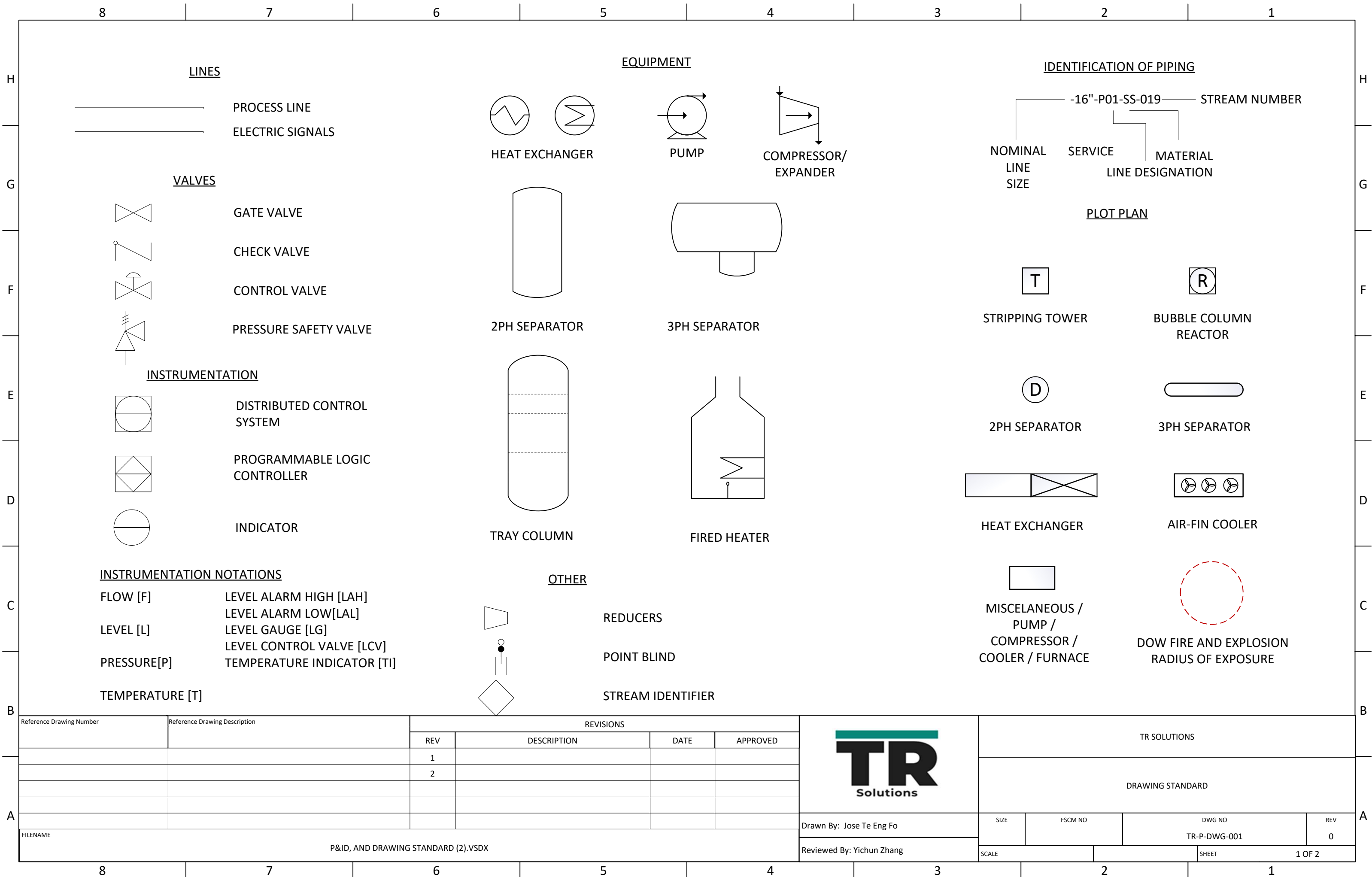
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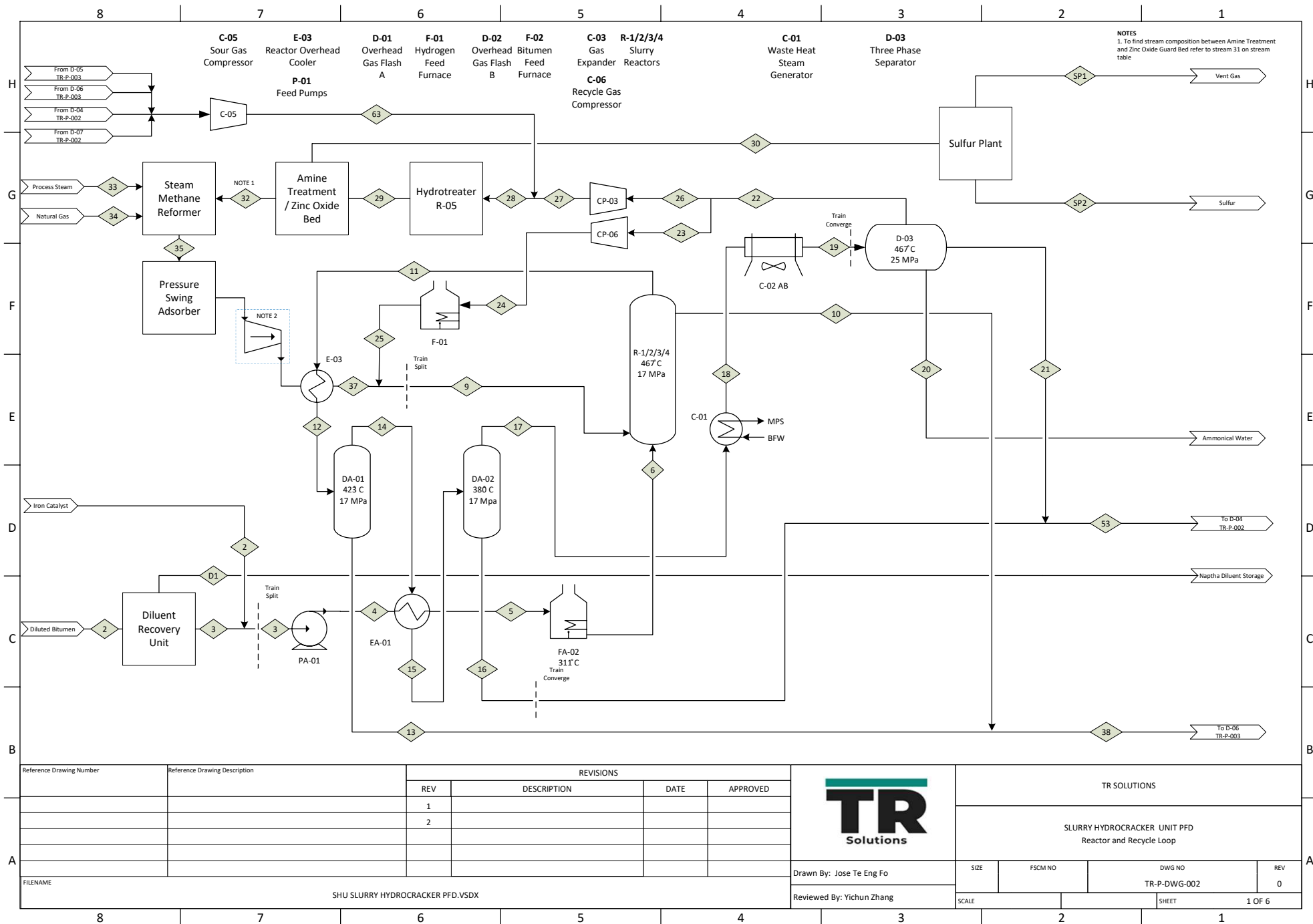
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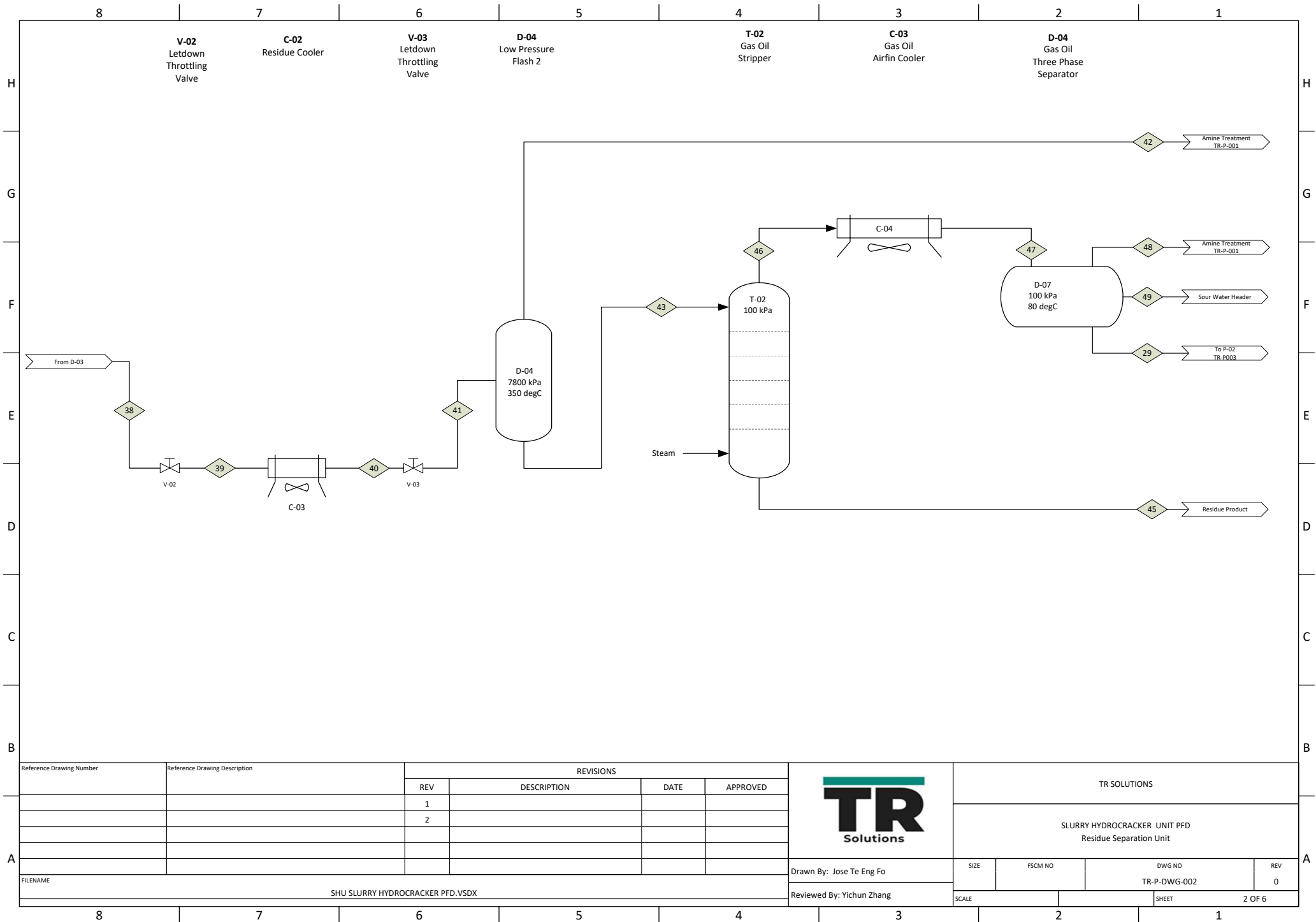
## **D.1 SUMMMARY**

Appendix D contains the files and information with the included drawing package of the proposed facility design. The drawing standard has a complete list of symbology that are utilized across all drawings. The PFD attached outlines all process steam with the corresponding detailed stream table. A process and instrumentation diagram (P&ID) with line list is also included.

## **D.2 DRAWING STANDARDS / PROCESS FLOW DIAGRAM**




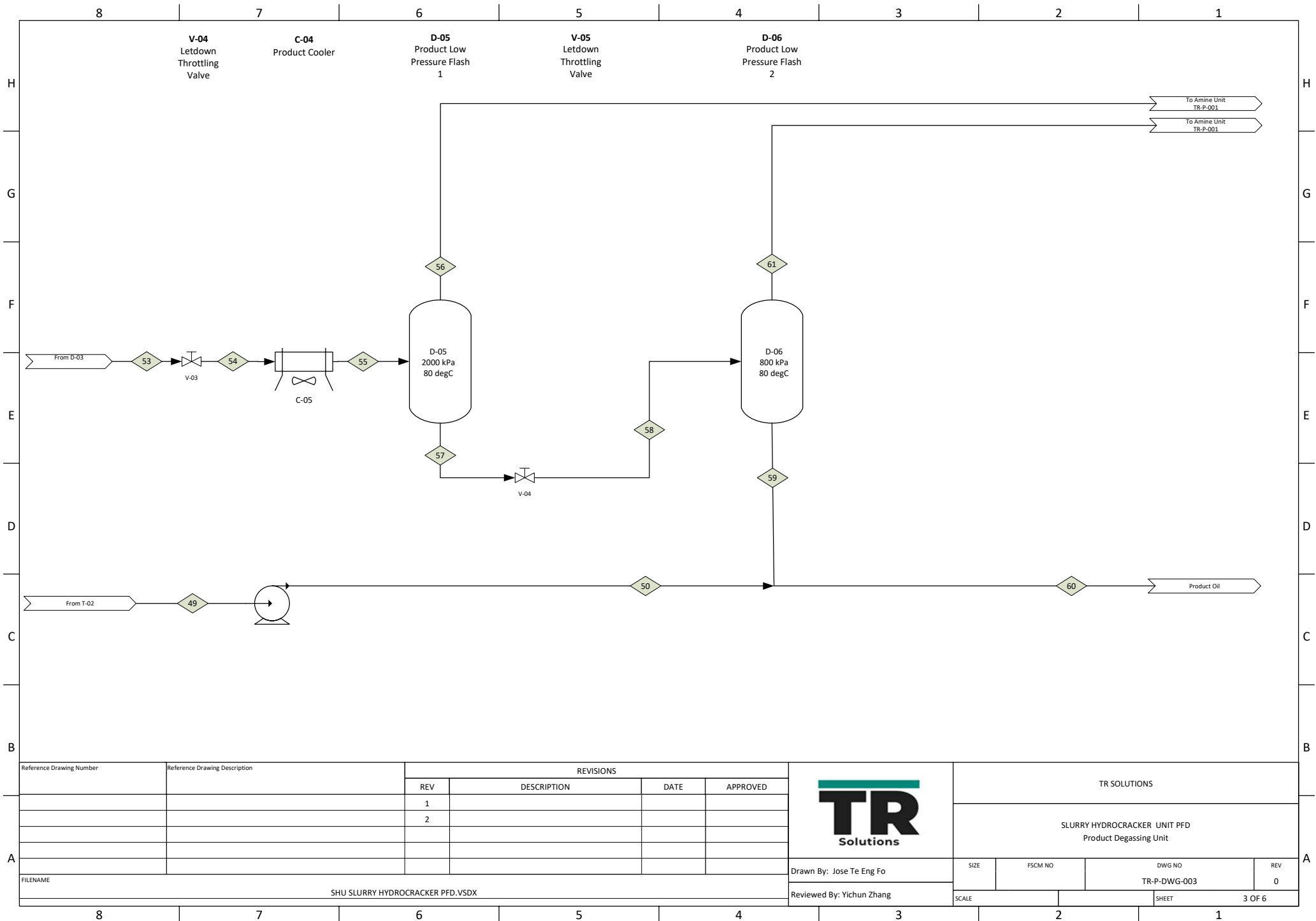


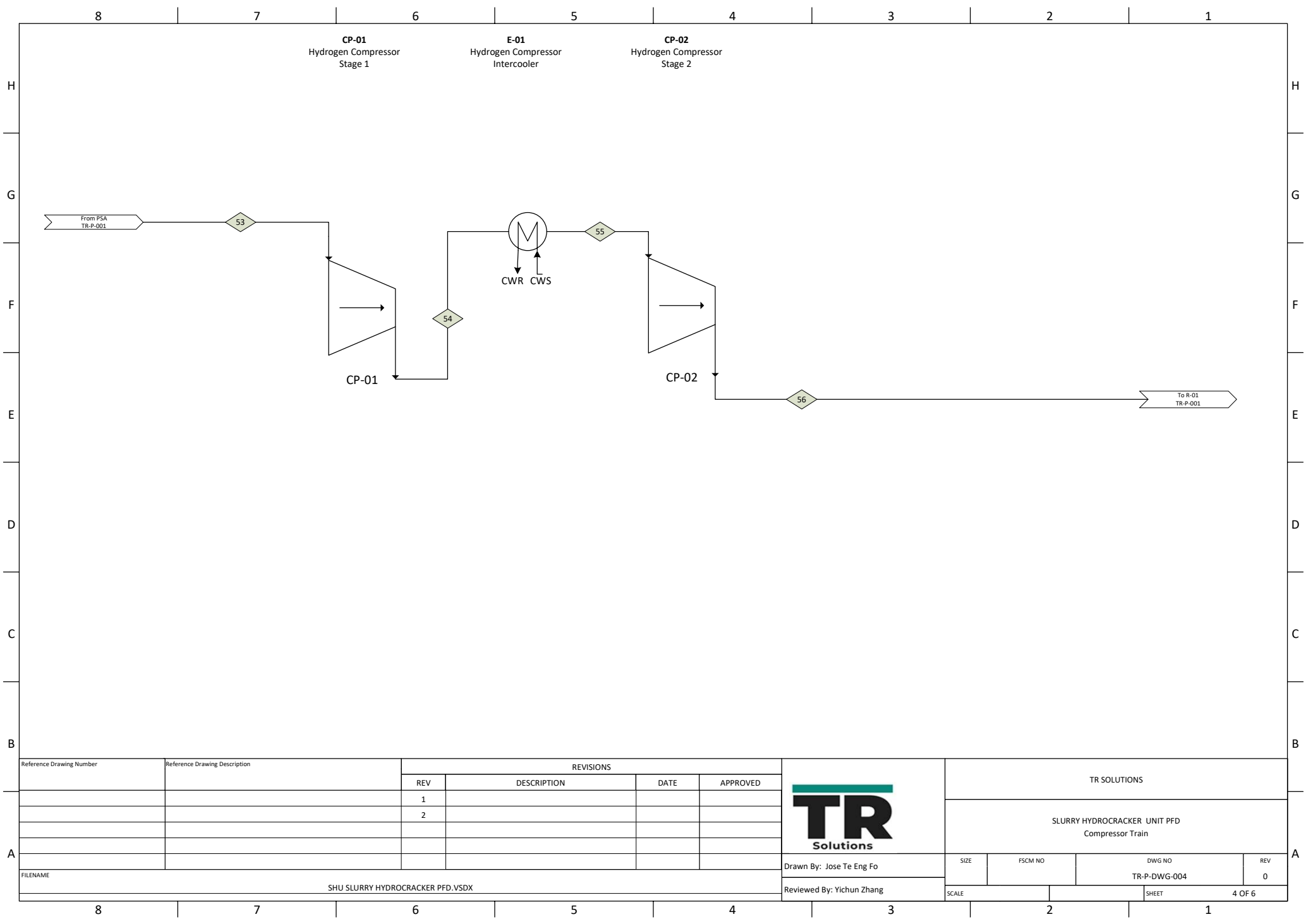


Reference Drawing Number	Reference Drawing Description	REVISIONS			
		REV	DESCRIPTION	DATE	APPROVED
		1			
		2			

FILENAME	SHU SLURRY HYDROCRACKER PFD.VSDX
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	TR SOLUTIONS			
	SLURRY HYDROCRACKER UNIT PFD Residue Separation Unit			
Drawn By: Jose Te Eng Fo		SIZE	FSCM NO	DWG NO
Reviewed By: Yichun Zhang				TR-P-DWG-002
		SCALE		SHEET
				2 OF 6





Reference Drawing Number	Reference Drawing Description	REVISIONS				TR SOLUTIONS			
		REV	DESCRIPTION	DATE	APPROVED				
		1				SLURRY HYDROCRACKER UNIT PFD Compressor Train			
		2							
FILENAME: SHU SLURRY HYDROCRACKER PFD.VSDX						Drawn By: Jose Te Eng Fo		DWG NO: TR-P-DWG-004	
						Reviewed By: Yichun Zhang		REV: 0	
						SCALE:		SHEET: 4 OF 6	



[illegible]

Components	S9	S10	S11	S12	S13	S14	S15	S16
T (°C)	354.8	466.9	466.9	450.0	450.0	450.0	380.0	380.0
P (kPa)	17000.00	17000.00	17000.00	16900.00	16900.00	16900.00	16800.00	16800.00
Vapour Fraction (-)	1.00	1.00E+00	1.00	0.9990	0.00	1.00	0.9660	0.00
Mole Flow (k-mol/h)	38643.07	50.37	31985.51	31985.51	30.76	31954.75	31954.75	1085.75
Mass Flow (kg/h)	180228.8	9175.69	843223.9	843223.9	10164.10	833059.8	833060	187409.5
Mass Fraction (-)								
HYDROGEN	0.3809	2.28E-04	0.0498	0.0498	0.0011	0.0504	0.0504	0.0028
METHANE	0.2700	0.0006	0.0895	0.0895	0.0025	0.0905	0.0905	0.0066
ETHANE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PROPANE	0.0795	0.0003	0.0357	0.0357	0.0016	0.0361	0.0361	0.0043
n-BUTANE	0.0569	0.0004	0.0368	0.0368	0.0020	0.0372	0.0372	0.0055
CARBON MONOXIDE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CARBON DIOXIDE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NITROGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WATER	0.0078	4.98E-05	0.0057	0.0057	2.23E-04	0.0058	0.0058	5.37E-04
AMMONIA	0.0071	2.45E-05	0.0032	0.0032	1.12E-04	0.0033	0.0033	2.95E-04
HYDROGEN SULFIDE	0.1524	0.0006	0.0600	0.0600	0.0025	0.0607	0.0607	0.0063
IRON (II) SULFATE	0.00	0.73	0.00	0.00	0.00	0.00	0.00	0.00
SULFUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-HEXANE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Paraffin_C6	0.0229	0.0006	0.0398	0.0398	0.0030	0.0402	0.0402	0.0085
HC_Paraffin_C7	0.0113	0.0007	0.0369	0.0369	0.0032	0.0373	0.0373	0.0092
HC_Paraffin_C8	0.0054	0.0008	0.0353	0.0353	0.0036	0.0357	0.0357	0.0103
HC_Paraffin_C9	0.0026	0.0009	0.0344	0.0344	0.0040	0.0348	0.0348	0.0117
HC_Paraffin_C10-C14	9.30E-04	0.0034	0.0933	0.0933	0.0161	0.0943	0.0943	0.0485
HC_Paraffin_C15-C19	3.93E-05	0.0106	0.1475	0.1475	0.0508	0.1487	0.1487	0.1496
HC_Paraffin_C20-C35	5.52E-08	0.0414	0.1751	0.1751	0.2024	0.1748	0.1748	0.4243
HC_Paraffin_C36+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_C6	9.14E-04	5.86E-05	0.0028	0.0028	2.71E-04	0.0028	0.0028	7.41E-04
HC_Aromatic_C7	4.86E-04	7.47E-05	0.0030	0.0030	3.46E-04	0.0030	0.0030	9.55E-04
HC_Aromatic_C8	2.61E-04	9.61E-05	0.0032	0.0032	4.46E-04	0.0033	0.0033	0.0012
HC_Aromatic_C9	1.39E-04	1.22E-04	0.0035	0.0035	5.67E-04	0.0035	0.0035	0.0016
HC_Aromatic_C10-C14	6.93E-05	0.0007	0.0124	0.0124	0.0031	0.0126	0.0126	0.0085
HC_Aromatic_C15-C19	5.21E-06	0.0031	0.0297	0.0297	0.0147	0.0299	0.0299	0.0382
HC_Aromatic_C20-C35	2.31E-08	0.0248	0.0752	0.0752	0.1202	0.0747	0.0747	0.2043
HC_Aromatic_C36+	8.99E-18	0.0432	0.0049	0.0049	0.1482	0.0032	0.0032	0.0140
HC_Aromatic_Dehy_C10-C14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C15-C19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C20-C35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C36+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_AromaticN_C7	1.38E-05	2.11E-06	8.46E-05	8.46E-05	9.79E-06	8.56E-05	8.56E-05	2.70E-05
HC_AromaticN_C8	7.35E-06	2.80E-06	9.40E-05	9.40E-05	1.30E-05	9.50E-05	9.50E-05	3.60E-05
HC_AromaticN_C9	3.93E-06	3.68E-06	1.05E-04	1.05E-04	1.72E-05	1.06E-04	1.06E-04	4.77E-05
HC_AromaticN_C10-C14	6.88E-07	7.56E-06	1.38E-04	1.38E-04	3.55E-05	1.39E-04	1.39E-04	9.77E-05
HC_AromaticN_C15-C19	3.17E-08	2.31E-05	2.06E-04	2.06E-04	1.10E-04	2.08E-04	2.08E-04	2.76E-04
HC_AromaticN_C20-C35	9.75E-11	1.29E-04	3.54E-04	3.54E-04	6.24E-04	3.51E-04	3.51E-04	9.91E-04
HC_AromaticN_C36+	7.27E-20	0.0135	0.0010	0.0010	0.0394	5.44E-04	5.44E-04	0.0024
HC_AromaticS_C7	1.52E-04	2.32E-05	9.29E-04	9.29E-04	1.07E-04	9.39E-04	9.39E-04	2.97E-04
HC_AromaticS_C8	8.06E-05	3.06E-05	0.0010	0.0010	1.42E-04	0.0010	0.0010	3.95E-04
HC_AromaticS_C9	4.30E-05	4.03E-05	0.0011	0.0011	1.88E-04	0.0012	0.0012	5.21E-04
HC_AromaticS_C10-C14	7.47E-06	8.22E-05	0.0015	0.0015	3.85E-04	0.0015	0.0015	0.0011
HC_AromaticS_C15-C19	3.40E-07	2.48E-04	0.0022	0.0022	0.0012	0.0022	0.0022	0.0030
HC_AromaticS_C20-C35	1.02E-09	0.0014	0.0037	0.0037	0.0065	0.0037	0.0037	0.0104
HC_AromaticS_C36+	6.83E-19	0.1267	0.0095	0.0095	0.3702	0.0051	0.0051	0.0225

Components	S17	S18	S19	S20	S21	S22	S23	S24
T (°C)	380.0	<b>240.0</b>	70.0	70.0	70.0	70.0	70.0	72.7
P (kPa)	16800.00	16750.00	16700.00	16700.00	16700.00	16700.00	16700.00	17100.00
Vapour Fraction (-)	1.00	0.9361	0.8660	0.00	0.00	1.00	1.00	1.00
Mole Flow (k-mol/h)	30869.00	30869.29	30869.00	144.83	3991.25	26732.92	18713.04	18713.04
Mass Flow (kg/h)	645650.3	645646.0	645650.3	2608.63	442967.2	200074.6	140052.2	140052.2
Mass Fraction (-)								
HYDROGEN	0.0642	0.0642	0.0642	1.77E-04	0.0017	0.2033	0.2033	0.2033
METHANE	0.1149	0.1149	0.1149	1.06E-06	0.0105	0.3475	0.3475	0.3475
ETHANE	0.00	0.00	0.00	0.00E+00	0.00	0.00	0.00	0.00
PROPANE	0.0454	0.0454	0.0454	1.80E-10	0.0199	0.1023	0.1023	0.1023
n-BUTANE	0.0464	0.0464	0.0464	5.03E-12	0.0347	0.0732	0.0732	0.0732
CARBON MONOXIDE	0.00	0.00	0.00	0.00E+00	0.00	0.00	0.00	0.00
CARBON DIOXIDE	0.00	0.00	0.00	0.00E+00	0.00	0.00	0.00	0.00
NITROGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WATER	0.0073	0.0073	0.0073	0.9505	5.19E-04	0.0101	0.0101	0.0101
AMMONIA	0.0041	0.0041	0.0041	0.0416	0.0016	0.0092	0.0092	0.0092
HYDROGEN SULFIDE	0.0765	0.0765	0.0765	0.0077	0.0229	0.1961	0.1961	0.1961
IRON (II) SULFATE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SULFUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-HEXANE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Paraffin_C6	0.0494	0.0494	0.0494	2.92E-15	0.0587	0.0295	0.0295	0.0295
HC_Paraffin_C7	0.0455	0.0455	0.0455	6.69E-18	0.0598	0.0145	0.0145	0.0145
HC_Paraffin_C8	0.0431	0.0431	0.0431	1.27E-20	0.0596	0.0070	0.0070	0.0070
HC_Paraffin_C9	0.0414	0.0414	0.0414	1.82E-23	0.0589	0.0034	0.0034	0.0034
HC_Paraffin_C10-C14	0.1076	0.1076	0.1076	1.29E-31	0.1563	0.0012	0.0012	0.0012
HC_Paraffin_C15-C19	0.1485	0.1485	0.1485	3.94E-44	0.2164	5.06E-05	5.06E-05	5.06E-05
HC_Paraffin_C20-C35	0.1023	0.1023	0.1023	1.37E-44	0.1491	7.10E-08	7.10E-08	7.10E-08
HC_Paraffin_C36+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_C6	0.0034	0.0034	0.0034	1.25E-09	0.0045	0.0012	0.0012	0.0012
HC_Aromatic_C7	0.0036	0.0036	0.0036	4.50E-11	0.0050	6.26E-04	6.26E-04	6.26E-04
HC_Aromatic_C8	0.0039	0.0039	0.0039	1.81E-12	0.0055	3.36E-04	3.36E-04	3.36E-04
HC_Aromatic_C9	0.0041	0.0041	0.0041	7.53E-14	0.0059	1.79E-04	1.79E-04	1.79E-04
HC_Aromatic_C10-C14	0.0137	0.0137	0.0137	3.89E-17	0.0200	8.92E-05	8.92E-05	8.92E-05
HC_Aromatic_C15-C19	0.0275	0.0275	0.0275	2.88E-23	0.0400	6.70E-06	6.70E-06	6.70E-06
HC_Aromatic_C20-C35	0.0370	0.0370	0.0370	5.30E-34	0.0540	2.97E-08	2.97E-08	2.97E-08
HC_Aromatic_C36+	5.26E-05	5.26E-05	5.26E-05	7.08E-48	7.66E-05	1.16E-17	1.16E-17	1.16E-17
HC_Aromatic_Dehy_C10-C14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C15-C19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C20-C35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C36+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_AromaticN_C7	1.03E-04	1.03E-04	1.03E-04	1.20E-12	1.41E-04	1.78E-05	1.78E-05	1.78E-05
HC_AromaticN_C8	1.12E-04	1.12E-04	1.12E-04	9.07E-14	1.59E-04	9.46E-06	9.46E-06	9.46E-06
HC_AromaticN_C9	1.23E-04	1.23E-04	1.23E-04	7.31E-15	1.76E-04	5.06E-06	5.06E-06	5.06E-06
HC_AromaticN_C10-C14	1.51E-04	1.51E-04	1.51E-04	8.93E-18	2.20E-04	8.85E-07	8.85E-07	8.85E-07
HC_AromaticN_C15-C19	1.88E-04	1.88E-04	1.88E-04	1.29E-22	2.74E-04	4.08E-08	4.08E-08	4.08E-08
HC_AromaticN_C20-C35	1.65E-04	1.65E-04	1.65E-04	1.41E-30	2.41E-04	1.25E-10	1.25E-10	1.25E-10
HC_AromaticN_C36+	5.33E-06	5.33E-06	5.33E-06	1.44E-48	7.77E-06	9.36E-20	9.36E-20	9.36E-20
HC_AromaticS_C7	0.0011	0.0011	0.0011	1.32E-11	0.0016	1.95E-04	1.95E-04	1.95E-04
HC_AromaticS_C8	0.0012	0.0012	0.0012	9.94E-13	0.0017	1.04E-04	1.04E-04	1.04E-04
HC_AromaticS_C9	0.0013	0.0013	0.0013	7.99E-14	0.0019	5.53E-05	5.53E-05	5.53E-05
HC_AromaticS_C10-C14	0.0016	0.0016	0.0016	9.70E-17	0.0024	9.61E-06	9.61E-06	9.61E-06
HC_AromaticS_C15-C19	0.0020	0.0020	0.0020	1.38E-21	0.0029	4.37E-07	4.37E-07	4.37E-07
HC_AromaticS_C20-C35	0.0017	0.0017	0.0017	1.48E-29	0.0025	1.31E-09	1.31E-09	1.31E-09
HC_AromaticS_C36+	5.01E-05	5.01E-05	5.01E-05	1.35E-47	7.30E-05	8.79E-19	8.79E-19	8.79E-19

Components	S25	S26	S27	S28	S29	S30	S31	S32
T (°C)	366.0	70.0	10.1	119.0	50.0	75.0	40.0	36.6
P (kPa)	17000.00	16700.00	5500.00	5500.00	5500.00	25000.00	5400.00	2600.00
Vapour Fraction (-)	1.00	1.00	0.9908	1.0000	0.9969	0.00E+00	1.0000	1.0000
Mole Flow (k-mol/h)	18713.08	8019.88	8019.88	9620.80	9310.50	726.21	8584.29	8584.29
Mass Flow (kg/h)	140052.3							
Mass Fraction (-)	1	60022.37	60022.37	93067.01	93067.00	22732.04	70334.97	70334.97
HYDROGEN	0.2033	0.2033	0.2033	0.1450	0.1271	5.00E-04	0.1681	0.1681
METHANE	0.3475	0.3475	0.3475	0.2864	0.3911	0.0017	0.5169	0.5169
ETHANE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PROPANE	0.1023	0.1023	0.1023	0.1306	0.1306	6.95E-04	0.1725	0.1725
n-BUTANE	0.0732	0.0732	0.0732	0.1060	0.1060	5.67E-04	0.1401	0.1401
CARBON MONOXIDE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CARBON DIOXIDE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NITROGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WATER	0.0101	0.0101	0.0101	0.0105	0.0105	0.0357	0.0024	0.0024
AMMONIA	0.0092	0.0092	0.0092	0.0116	0.0116	0.0475	0.00	0.00
HYDROGEN SULFIDE	0.1961	0.1961	0.1961	0.2229	0.2231	0.9134	0.00	0.00
IRON (II) SULFATE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SULFUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-HEXANE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Paraffin_C6	0.0295	0.0295	0.0295	0.0449	0.00	0.00	0.00	0.00
HC_Paraffin_C7	0.0145	0.0145	0.0145	0.0213	0.00	0.00	0.00	0.00
HC_Paraffin_C8	0.0070	0.0070	0.0070	0.0098	0.00	0.00	0.00	0.00
HC_Paraffin_C9	0.0034	0.0034	0.0034	0.0045	0.00	0.00	0.00	0.00
HC_Paraffin_C10-C14	0.0012	0.0012	0.0012	0.0015	0.00	0.00	0.00	0.00
HC_Paraffin_C15-C19	5.06E-05	5.06E-05	5.06E-05	1.78E-04	0.00	0.00	0.00	0.00
HC_Paraffin_C20-C35	7.10E-08	7.10E-08	7.10E-08	5.73E-05	0.00	0.00	0.00	0.00
HC_Paraffin_C36+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_C6	0.0012	0.0012	0.0012	0.0020	0.00	0.00	0.00	0.00
HC_Aromatic_C7	6.26E-04	6.26E-04	6.26E-04	0.0010	0.00	0.00	0.00	0.00
HC_Aromatic_C8	3.36E-04	3.36E-04	3.36E-04	5.45E-04	0.00	0.00	0.00	0.00
HC_Aromatic_C9	1.79E-04	1.79E-04	1.79E-04	2.85E-04	0.00	0.00	0.00	0.00
HC_Aromatic_C10-C14	8.92E-05	8.92E-05	8.92E-05	1.47E-04	0.00	0.00	0.00	0.00
HC_Aromatic_C15-C19	6.70E-06	6.70E-06	6.70E-06	3.53E-05	0.00	0.00	0.00	0.00
HC_Aromatic_C20-C35	2.97E-08	2.97E-08	2.97E-08	2.90E-05	0.00	0.00	0.00	0.00
HC_Aromatic_C36+	1.16E-17	1.16E-17	1.16E-17	1.46E-07	1.46E-07	0.00	1.93E-07	1.93E-07
HC_Aromatic_Dehy_C10-C14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C15-C19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C20-C35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C36+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_AromaticN_C7	1.78E-05	1.78E-05	1.78E-05	2.96E-05	0.00	0.00	0.00	0.00
HC_AromaticN_C8	9.46E-06	9.46E-06	9.46E-06	1.54E-05	0.00	0.00	0.00	0.00
HC_AromaticN_C9	5.06E-06	5.06E-06	5.06E-06	8.15E-06	0.00	0.00	0	0.00
HC_AromaticN_C10-C14	8.85E-07	8.85E-07	8.85E-07	1.51E-06	1.51E-06	0.00	2.00E-06	2.00E-06
HC_AromaticN_C15-C19	4.08E-08	4.08E-08	4.08E-08	2.39E-07	2.39E-07	0.00	3.16E-07	3.16E-07
HC_AromaticN_C20-C35	1.25E-10	1.25E-10	1.25E-10	1.37E-07	1.37E-07	0.00	1.82E-07	1.82E-07
HC_AromaticN_C36+	9.36E-20	9.36E-20	9.36E-20	1.99E-08	1.99E-08	0.00	2.64E-08	2.64E-08
HC_AromaticS_C7	1.95E-04	1.95E-04	1.95E-04	3.25E-04	0.00	0.00	0.00	0.00
HC_AromaticS_C8	1.04E-04	1.04E-04	1.04E-04	1.69E-04	0.00	0.00	0.00	0.00
HC_AromaticS_C9	5.53E-05	5.53E-05	5.53E-05	8.91E-05	0.00	0.00	0.00	0.00
HC_AromaticS_C10-C14	9.61E-06	9.61E-06	9.61E-06	1.65E-05	0.00	0.00	0.00	0.00
HC_AromaticS_C15-C19	4.37E-07	4.37E-07	4.37E-07	2.57E-06	2.57E-06	0.00	3.40E-06	3.40E-06
HC_AromaticS_C20-C35	1.31E-09	1.31E-09	1.31E-09	1.44E-06	1.44E-06	0.00	1.90E-06	1.90E-06
HC_AromaticS_C36+	8.79E-19	8.79E-19	8.79E-19	1.87E-07	1.87E-07	0.00	2.48E-07	2.48E-07

Components	S33	S34	S35	S36	S37	S38	S39	S40
T (°C)	300.0	200.0	80.0	80.0	342.0	453.3	455.3	350.0
P (kPa)	2600.00	2600.00	500.00	2100.00	17000.00	16900.00	7900.00	7900.00
Vapour Fraction (-)	1.00	1.00	1.0000	1.00	1.00	0.0011	0.1857	0.1867
Mole Flow (k-mol/h)	7715.67	2162.32	10551.84	19929.99	19929.99	81.13	81.13	81.13
Mass Flow (kg/h)	139000	39845.00	207918.1	40176.46	40176.46	19339.80	19339.8	19339.80
Mass Fraction (-)								
HYDROGEN	0.00	0.00	0.0341	1.00	1.00	0.0007	0.0007	0.0007
METHANE	0.00	0.7835	0.0201	0.00	0.00	0.0016	0.0016	0.0016
ETHANE	0.00	0.0816	1.81E-06	0.00	0.00	0.00	0.00	0.00
PROPANE	0.00	0.0718	1.51E-11	0.00	0.00	0.0010	0.0010	0.0010
n-BUTANE	0.00	0.0631	5.94E-12	0.00	0.00	0.0013	0.0013	0.0013
CARBON MONOXIDE	0.00	0.00	0.6938	0.00	0.00	0.00	0.00	0.00
CARBON DIOXIDE	0.00	0.00	0.1884	0.00	0.00	0.00	0.00	0.00
NITROGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WATER	1.00	0.00	0.0637	0.00	0.00	1.41E-04	1.41E-04	1.41E-04
AMMONIA	0.00	0.00	0.00	0.00	0.00	7.05E-05	7.05E-05	7.05E-05
HYDROGEN SULFIDE	0.00	0.00	0.00	0.00	0.00	0.0016	0.0016	0.0016
IRON (II) SULFATE	0.00	0.00	0.00	0.00	0.00	0.34	0.34	0.34
SULFUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-HEXANE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Paraffin_C6	0.00	0.00	0.00	0.00	0.00	0.0019	0.0019	0.0019
HC_Paraffin_C7	0.00	0.00	0.00	0.00	0.00	0.0020	0.0020	0.0020
HC_Paraffin_C8	0.00	0.00	0.00	0.00	0.00	0.0022	0.0022	0.0022
HC_Paraffin_C9	0.00	0.00	0.00	0.00	0.00	0.0025	0.0025	0.0025
HC_Paraffin_C10-C14	0.00	0.00	0.00	0.00	0.00	0.0101	0.0101	0.0101
HC_Paraffin_C15-C19	0.00	0.00	0.00	0.00	0.00	0.0317	0.0317	0.0317
HC_Paraffin_C20-C35	0.00	0.00	0.00	0.00	0.00	0.1260	0.1260	0.1260
HC_Paraffin_C36+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_C6	0.00	0.00	0.00	0.00	0.00	1.70E-04	1.70E-04	1.70E-04
HC_Aromatic_C7	0.00	0.00	0.00	0.00	0.00	2.17E-04	2.17E-04	2.17E-04
HC_Aromatic_C8	0.00	0.00	0.00	0.00	0.00	2.80E-04	2.80E-04	2.80E-04
HC_Aromatic_C9	0.00	0.00	0.00	0.00	0.00	3.55E-04	3.55E-04	3.55E-04
HC_Aromatic_C10-C14	0.00	0.00	0.00	0.00	0.00	0.0019	0.0019	0.0019
HC_Aromatic_C15-C19	0.00	0.00	0.00	0.00	0.00	0.0092	0.0092	0.0092
HC_Aromatic_C20-C35	0.00	0.00	0.00	0.00	0.00	0.0749	0.0749	0.0749
HC_Aromatic_C36+	0.00	0.00	5.23E-14	0.00	0.00	0.0984	0.0984	0.0984
HC_Aromatic_Dehy_C10-C14	0.00	0.00	0.00E+00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C15-C19	0.00	0.00	0.00E+00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C20-C35	0.00	0.00	0.00E+00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C36+	0.00	0.00	0.00E+00	0.00	0.00	0.00	0.00	0.00
HC_AromaticN_C7	0.00	0.00	0.00E+00	0.00	0.00	6.15E-06	6.15E-06	6.15E-06
HC_AromaticN_C8	0.00	0.00	0.00E+00	0.00	0.00	8.15E-06	8.15E-06	8.15E-06
HC_AromaticN_C9	0.00	0.00	0.00E+00	0.00	0.00	1.08E-05	1.08E-05	1.08E-05
HC_AromaticN_C10-C14	0.00	0.00	6.78E-07	0.00	0.00	2.22E-05	2.22E-05	2.22E-05
HC_AromaticN_C15-C19	0.00	0.00	1.07E-07	0.00	0.00	6.85E-05	6.85E-05	6.85E-05
HC_AromaticN_C20-C35	0.00	0.00	5.92E-08	0.00	0.00	3.89E-04	3.89E-04	3.89E-04
HC_AromaticN_C36+	0.00	0.00	8.90E-09	0.00	0.00	0.0271	0.0271	0.0271
HC_AromaticS_C7	0.00	0.00	0.00	0.00	0.00	6.75E-05	6.75E-05	6.75E-05
HC_AromaticS_C8	0.00	0.00	0.00	0.00	0.00	8.93E-05	8.93E-05	8.93E-05
HC_AromaticS_C9	0.00	0.00	0.00	0.00	0.00	1.18E-04	1.18E-04	1.18E-04
HC_AromaticS_C10-C14	0.00	0.00	0.00	0.00	0.00	2.42E-04	2.42E-04	2.42E-04
HC_AromaticS_C15-C19	0.00	0.00	1.15E-06	0.00	0.00	0.0007	0.0007	0.0007
HC_AromaticS_C20-C35	0.00	0.00	6.20E-07	0.00	0.00	0.0041	0.0041	0.0041
HC_AromaticS_C36+	0.00	0.00	1.33E-14	0.00	0.00	0.2547	0.2547	0.2547

Components	S41	S42	S43	S44	S45	S46	S47	S48
T (°C)	350.0	350.0	350.0	100.0	197.2	319.0	<b>80.0</b>	80.0
P (kPa)	7800.00	7800.00	7800.00	100.00	100.00	100.00	90.00	90.00
Vapour Fraction (-)	0.1881	1.00	0.00	1.00	2.21E-08	1.0000	0.0310	1.00
Mole Flow (k-mol/h)	81.13	7.02	74.11	249.79	53.56	270.34	270.34	8.38
Mass Flow (kg/h)	19339.8							
Mass Fraction (-)	0	126.88	19212.92	4500.00	14424.41	9288.51	9288.51	175.28
HYDROGEN	0.0007	0.0719	1.90E-04	0.00	2.23E-27	3.93E-04	3.93E-04	0.0208
METHANE	0.0016	0.1465	6.46E-04	0.00	7.65E-25	0.0013	0.0013	0.0704
ETHANE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PROPANE	0.0010	0.0631	5.78E-04	0.00	1.97E-22	0.0012	0.0012	0.0599
n-BUTANE	0.0013	0.0644	0.0008	0.00	4.27E-21	0.0017	0.0017	0.0787
CARBON MONOXIDE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CARBON DIOXIDE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NITROGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WATER	1.41E-04	0.0099	7.63E-05	1.00	7.58E-05	0.4845	0.4845	0.4522
AMMONIA	7.05E-05	0.0053	3.61E-05	0.00	5.66E-24	7.47E-05	7.47E-05	0.0011
HYDROGEN SULFIDE	0.0016	0.1075	0.0009	0.00	2.87E-22	0.0019	0.0019	0.0944
IRON (II) SULFATE	0.34	0.00	0.35	0.00	4.61E-01	0.00	0.00	0.00
SULFUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-HEXANE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Paraffin_C6	0.0019	0.0650	0.0015	0.00	5.97E-19	0.0030	0.0030	0.0847
HC_Paraffin_C7	0.0020	0.0570	0.0017	0.00	5.28E-18	0.0034	0.0034	0.0576
HC_Paraffin_C8	0.0022	0.0509	0.0019	0.00	4.88E-17	0.0039	0.0039	0.0343
HC_Paraffin_C9	0.0025	0.0459	0.0022	0.00	4.56E-16	0.0046	0.0046	0.0187
HC_Paraffin_C10-C14	0.0101	0.0973	0.0095	0.00	6.78E-13	0.0197	0.0197	0.0080
HC_Paraffin_C15-C19	0.0317	0.0933	0.0313	0.00	5.07E-08	0.0647	0.0647	4.19E-04
HC_Paraffin_C20-C35	0.1260	0.0420	0.1266	0.00	0.0239	0.2248	0.2248	9.89E-07
HC_Paraffin_C36+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_C6	1.70E-04	0.0045	1.42E-04	0.00	4.58E-19	2.93E-04	2.93E-04	0.0058
HC_Aromatic_C7	2.17E-04	0.0045	1.89E-04	0.00	5.43E-18	3.92E-04	3.92E-04	0.0042
HC_Aromatic_C8	2.80E-04	0.0045	2.52E-04	0.00	5.74E-17	5.22E-04	5.22E-04	0.0028
HC_Aromatic_C9	3.55E-04	0.0045	3.28E-04	0.00	5.47E-16	6.79E-04	6.79E-04	0.0017
HC_Aromatic_C10-C14	0.0019	0.0125	0.0019	0.00	6.11E-13	0.0038	0.0038	0.0011
HC_Aromatic_C15-C19	0.0092	0.0191	0.0091	0.00	1.56E-08	0.0189	0.0189	1.39E-04
HC_Aromatic_C20-C35	0.0749	0.0213	0.0753	0.00	0.0054	0.1473	0.1473	1.61E-06
HC_Aromatic_C36+	0.0984	1.07E-04	0.0990	0.00	0.1315	5.55E-04	5.55E-04	1.78E-16
HC_Aromatic_Dehy_C10-C14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C15-C19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C20-C35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C36+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_AromaticN_C7	6.15E-06	1.26E-04	5.35E-06	0.00	1.53E-19	1.11E-05	1.11E-05	1.19E-04
HC_AromaticN_C8	8.15E-06	1.30E-04	7.35E-06	0.00	1.80E-18	1.52E-05	1.52E-05	7.91E-05
HC_AromaticN_C9	1.08E-05	1.33E-04	9.95E-06	0.00	1.93E-17	2.06E-05	2.06E-05	4.96E-05
HC_AromaticN_C10-C14	2.22E-05	1.37E-04	2.15E-05	0.00	9.76E-15	4.44E-05	4.44E-05	1.22E-05
HC_AromaticN_C15-C19	6.85E-05	1.31E-04	6.81E-05	0.00	1.66E-10	1.41E-04	1.41E-04	9.96E-07
HC_AromaticN_C20-C35	3.89E-04	1.01E-04	3.91E-04	0.00	3.13E-05	7.61E-04	7.61E-04	9.19E-09
HC_AromaticN_C36+	0.0271	1.46E-05	0.0273	0.00	0.0363	7.43E-05	7.43E-05	2.21E-18
HC_AromaticS_C7	6.75E-05	0.0014	5.88E-05	0.00	1.67E-18	1.22E-04	1.22E-04	0.0013
HC_AromaticS_C8	8.93E-05	0.0014	8.05E-05	0.00	1.97E-17	1.67E-04	1.67E-04	8.67E-04
HC_AromaticS_C9	1.18E-04	0.0015	1.09E-04	0.00	2.11E-16	2.25E-04	2.25E-04	5.42E-04
HC_AromaticS_C10-C14	2.42E-04	0.0015	2.33E-04	0.00	1.06E-13	4.83E-04	4.83E-04	1.33E-04
HC_AromaticS_C15-C19	0.0007	0.0014	0.0007	0.00	1.79E-09	0.0015	0.0015	1.07E-05
HC_AromaticS_C20-C35	0.0041	0.0011	0.0041	0.00	3.27E-04	0.0080	0.0080	9.61E-08
HC_AromaticS_C36+	0.2547	1.37E-04	0.2564	0.00	0.3410	6.98E-04	6.98E-04	2.08E-17

Components	S49	S50	S51	S52	S53	S54	S55	S56
T (°C)	80.0	80.1	80.0	75.9	172.8	173.0	80.0	80.0
P (kPa)	90.00	490.00	90.00	90.00	16700.00	2000.00	2000.00	2000.00
Vapour Fraction (-)	0.00	0.00	0.00	0.0048	0.0018	0.3498	0.2481	1.00
Mole Flow (k-mol/h)	16.59	16.59	245.37	390.19	5077.00	5077.00	5077.00	1259.58
Mass Flow (kg/h)	4692.76	4692.76	4420.47	7029.10	630376.6	630376.6	630376.6	20832.69
Mass Fraction (-)								
HYDROGEN	1.04E-06	1.04E-06	2.63E-07	6.59E-05	0.0020	0.0020	0.0020	0.0585
METHANE	1.58E-05	1.58E-05	4.15E-09	3.97E-07	0.0094	0.0094	0.0094	0.2337
ETHANE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PROPANE	1.29E-04	1.29E-04	2.92E-12	6.87E-11	0.0153	0.0153	0.0153	0.1664
n-BUTANE	4.98E-04	4.98E-04	1.82E-13	1.98E-12	0.0260	0.0260	0.0260	0.1341
CARBON MONOXIDE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CARBON DIOXIDE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NITROGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WATER	3.15E-04	3.15E-04	0.9998	0.9815	5.24E-04	5.24E-04	5.24E-04	0.0101
AMMONIA	1.86E-06	1.86E-06	1.11E-04	0.0155	0.0012	0.0012	0.0012	0.0151
HYDROGEN SULFIDE	1.06E-04	1.06E-04	7.80E-05	0.0029	0.0180	0.0180	0.0180	0.2771
IRON (II) SULFATE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SULFUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-HEXANE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Paraffin_C6	0.0029	0.0029	3.46E-16	1.30E-15	0.0438	0.0438	0.0438	0.0554
HC_Paraffin_C7	0.0046	0.0046	1.32E-18	3.31E-18	0.0448	0.0448	0.0448	0.0255
HC_Paraffin_C8	0.0065	0.0065	3.72E-21	7.06E-21	0.0450	0.0450	0.0450	0.0114
HC_Paraffin_C9	0.0084	0.0084	7.28E-24	1.13E-23	0.0449	0.0449	0.0449	0.0051
HC_Paraffin_C10-C14	0.0387	0.0387	1.06E-31	1.15E-31	0.1242	0.1242	0.1242	0.0015
HC_Paraffin_C15-C19	0.1280	0.1280	6.02E-44	5.25E-44	0.1965	0.1965	0.1965	4.50E-05
HC_Paraffin_C20-C35	0.4449	0.4449	1.05E-43	7.08E-44	0.2310	0.2310	0.2310	4.76E-08
HC_Paraffin_C36+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_C6	3.62E-04	3.62E-04	1.77E-10	5.75E-10	0.0034	0.0034	0.0034	0.0026
HC_Aromatic_C7	6.18E-04	6.18E-04	9.79E-12	2.29E-11	0.0038	0.0038	0.0038	0.0013
HC_Aromatic_C8	9.29E-04	9.29E-04	5.40E-13	1.01E-12	0.0042	0.0042	0.0042	6.87E-04
HC_Aromatic_C9	0.0013	0.0013	2.90E-14	4.62E-14	0.0046	0.0046	0.0046	3.51E-04
HC_Aromatic_C10-C14	0.0076	0.0076	2.68E-17	3.13E-17	0.0166	0.0166	0.0166	1.60E-04
HC_Aromatic_C15-C19	0.0374	0.0374	4.99E-23	4.21E-23	0.0395	0.0395	0.0395	1.13E-05
HC_Aromatic_C20-C35	0.2915	0.2915	4.90E-33	3.28E-33	0.0987	0.0987	0.0987	6.17E-08
HC_Aromatic_C36+	0.0011	0.0011	2.58E-46	1.65E-46	0.0042	0.0042	0.0042	2.33E-16
HC_Aromatic_Dehy_C10-C14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C15-C19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C20-C35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C36+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_AromaticN_C7	1.75E-05	1.75E-05	2.61E-13	6.09E-13	1.07E-04	1.07E-04	1.07E-04	3.79E-05
HC_AromaticN_C8	2.71E-05	2.71E-05	2.70E-14	5.07E-14	1.22E-04	1.22E-04	1.22E-04	1.95E-05
HC_AromaticN_C9	3.89E-05	3.89E-05	2.80E-15	4.47E-15	1.38E-04	1.38E-04	1.38E-04	1.01E-05
HC_AromaticN_C10-C14	8.75E-05	8.75E-05	6.05E-18	7.12E-18	1.84E-04	1.84E-04	1.84E-04	1.66E-06
HC_AromaticN_C15-C19	2.79E-04	2.79E-04	2.20E-22	1.86E-22	2.74E-04	2.74E-04	2.74E-04	7.64E-08
HC_AromaticN_C20-C35	0.0015	0.0015	1.22E-29	8.19E-30	4.64E-04	4.64E-04	4.64E-04	3.29E-10
HC_AromaticN_C36+	1.47E-04	1.47E-04	6.72E-47	4.28E-47	7.19E-04	7.19E-04	7.19E-04	4.90E-18
HC_AromaticS_C7	1.92E-04	1.92E-04	2.87E-12	6.69E-12	0.0012	0.0012	0.0012	4.16E-04
HC_AromaticS_C8	2.97E-04	2.97E-04	2.96E-13	5.55E-13	0.0013	0.0013	0.0013	2.14E-04
HC_AromaticS_C9	4.25E-04	4.25E-04	3.06E-14	4.89E-14	0.0015	0.0015	0.0015	1.10E-04
HC_AromaticS_C10-C14	9.50E-04	9.50E-04	6.57E-17	7.73E-17	0.0020	0.0020	0.0020	1.81E-05
HC_AromaticS_C15-C19	0.0030	0.0030	2.36E-21	2.00E-21	0.0029	0.0029	0.0029	8.20E-07
HC_AromaticS_C20-C35	0.0158	0.0158	1.28E-28	8.57E-29	0.0049	0.0049	0.0049	3.45E-09
HC_AromaticS_C36+	0.0014	0.0014	6.31E-46	4.02E-46	0.0068	0.0068	0.0068	4.60E-17

Components	S57	S58	S59	S60	S61	S62	S63
T (°C)	80.0	78.2	78.2	78.2	78.2	76.0	<b>460.0</b>
P (kPa)	2000.00	400.00	400.00	400.00	400.00	90.00	<b>5500.00</b>
Vapour Fraction (-)	0.00	0.0854	0.00	0.00	1.00	1.00	1.00
Mole Flow (k-mol/h)	3817.42	3817.42	3491.47	3508.07	325.95	1600.93	1600.93
Mass Flow (kg/h)	609543.9	609543.9	597634.1	602326.9	11909.79	33044.64	33044.6
Mass Fraction (-)							
HYDROGEN	1.04E-04	1.04E-04	3.78E-06	3.75E-06	0.0051	0.0391	0.0391
METHANE	0.0017	0.0017	2.39E-04	2.37E-04	0.0754	0.1754	0.1754
ETHANE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PROPANE	0.0101	0.0101	0.0061	0.0060	0.2119	0.1819	0.1819
n-BUTANE	0.0223	0.0223	0.0183	0.0181	0.2234	0.1657	0.1657
CARBON MONOXIDE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CARBON DIOXIDE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NITROGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WATER	1.96E-04	1.96E-04	6.13E-05	6.33E-05	0.0069	0.0113	0.0113
AMMONIA	7.43E-04	7.43E-04	4.04E-04	4.00E-04	0.0178	0.0160	0.0160
HYDROGEN SULFIDE	0.0091	0.0091	0.0040	0.0040	0.2662	0.2716	0.2716
IRON (II) SULFATE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SULFUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n-HEXANE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Paraffin_C6	0.0434	0.0434	0.0422	0.0419	0.1031	0.0728	0.0728
HC_Paraffin_C7	0.0454	0.0454	0.0454	0.0451	0.0470	0.0335	0.0335
HC_Paraffin_C8	0.0461	0.0461	0.0466	0.0463	0.0205	0.0150	0.0150
HC_Paraffin_C9	0.0462	0.0462	0.0470	0.0467	0.0089	0.0067	0.0067
HC_Paraffin_C10-C14	0.1284	0.1284	0.1309	0.1302	0.0023	0.0022	0.0022
HC_Paraffin_C15-C19	0.2032	0.2032	0.2073	0.2067	5.87E-05	4.10E-04	4.10E-04
HC_Paraffin_C20-C35	0.2388	0.2388	0.2436	0.2452	4.38E-08	1.61E-04	1.61E-04
HC_Paraffin_C36+	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_C6	0.0034	0.0034	0.0034	0.0033	0.0051	0.0035	0.0035
HC_Aromatic_C7	0.0039	0.0039	0.0039	0.0039	0.0025	0.0018	0.0018
HC_Aromatic_C8	0.0044	0.0044	0.0044	0.0044	0.0013	9.26E-04	9.26E-04
HC_Aromatic_C9	0.0048	0.0048	0.0049	0.0048	6.38E-04	4.78E-04	4.78E-04
HC_Aromatic_C10-C14	0.0171	0.0171	0.0175	0.0174	2.70E-04	2.53E-04	2.53E-04
HC_Aromatic_C15-C19	0.0408	0.0408	0.0416	0.0416	1.67E-05	8.72E-05	8.72E-05
HC_Aromatic_C20-C35	0.1021	0.1021	0.1041	0.1056	7.29E-08	8.17E-05	8.17E-05
HC_Aromatic_C36+	0.0044	0.0044	0.0044	0.0044	1.49E-16	4.10E-07	4.10E-07
HC_Aromatic_Dehy_C10-C14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C15-C19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C20-C35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_Aromatic_Dehy_C36+	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HC_AromaticN_C7	1.10E-04	1.10E-04	1.11E-04	1.10E-04	7.22E-05	5.11E-05	5.11E-05
HC_AromaticN_C8	1.26E-04	1.26E-04	1.28E-04	1.27E-04	3.64E-05	2.63E-05	2.63E-05
HC_AromaticN_C9	1.42E-04	1.42E-04	1.45E-04	1.44E-04	1.84E-05	1.38E-05	1.38E-05
HC_AromaticN_C10-C14	1.90E-04	1.90E-04	1.94E-04	1.93E-04	2.82E-06	2.66E-06	2.66E-06
HC_AromaticN_C15-C19	2.84E-04	2.84E-04	2.89E-04	2.89E-04	1.15E-07	6.00E-07	6.00E-07
HC_AromaticN_C20-C35	4.80E-04	4.80E-04	4.89E-04	4.97E-04	4.04E-10	3.87E-07	3.87E-07
HC_AromaticN_C36+	7.43E-04	7.43E-04	7.58E-04	7.53E-04	3.25E-18	5.61E-08	5.61E-08
HC_AromaticS_C7	0.0012	0.0012	0.0012	0.0012	7.93E-04	5.61E-04	5.61E-04
HC_AromaticS_C8	0.0014	0.0014	0.0014	0.0014	3.98E-04	2.88E-04	2.88E-04
HC_AromaticS_C9	0.0016	0.0016	0.0016	0.0016	2.01E-04	1.50E-04	1.50E-04
HC_AromaticS_C10-C14	0.0021	0.0021	0.0021	0.0021	3.06E-05	2.89E-05	2.89E-05
HC_AromaticS_C15-C19	0.0030	0.0030	0.0031	0.0031	1.23E-06	6.43E-06	6.43E-06
HC_AromaticS_C20-C35	0.0050	0.0050	0.0051	0.0052	4.22E-09	4.05E-06	4.05E-06
HC_AromaticS_C36+	0.0070	0.0070	0.0071	0.0071	3.06E-17	5.27E-07	5.27E-07



Components	CT-S01	CT-S02	CT-S03	CP-S01
T (°C)	245.3	80.0	250.0	100.0
P (kPa)	5985.00	5885.00	17100.00	100.00
Vapour Fraction (-)	1.00	1.00	1.00	1.00
Mole Flow (k·mol/h)	19930.0	19929.99	19929.99	1407.48
Mass Flow (kg/h)	40176.5	40176.46	40176.46	23796.96
Mass Fraction (-)				
HYDROGEN	1.00	1.00	1.00	0.06
METHANE	0.00	0.00	0.00	0.00
ETHANE	0.00	0.00	0.00	0.00
PROPANE	0.00	0.00	0.00	0.00
n-BUTANE	0.00	0.00	0.00	0.00
CARBON MONOXIDE	0.00	0.00	0.00	0.00
CARBON DIOXIDE	0.00	0.00	0.00	0.01
NITROGEN	0.00	0.00	0.00	0.04
WATER	0.00	0.00	0.00	0.05
AMMONIA	0.00	0.00	0.00	0.00
HYDROGEN SULFIDE	0.00	0.00	0.00	0.00
IRON (II) SULFATE	0.00	0.00	0.00	0.00
SULFUR	0.00	0.00	0.00	0.85
n-HEXANE	0.00	0.00	0.00	0.00
HC Paraffin_C6	0.00	0.00	0.00	0.00
HC Paraffin_C7	0.00	0.00	0.00	0.00
HC Paraffin_C8	0.00	0.00	0.00	0.00
HC Paraffin_C9	0.00	0.00	0.00	0.00
HC Paraffin_C10-C14	0.00	0.00	0.00	0.00
HC Paraffin_C15-C19	0.00	0.00	0.00	0.00
HC Paraffin_C20-C35	0.00	0.00	0.00	0.00
HC Paraffin_C36+	0.00	0.00	0.00	0.00
HC Aromatic_C6	0.00	0.00	0.00	0.00
HC Aromatic_C7	0.00	0.00	0.00	0.00
HC Aromatic_C8	0.00	0.00	0.00	0.00
HC Aromatic_C9	0.00	0.00	0.00	0.00
HC Aromatic_C10-C14	0.00	0.00	0.00	0.00
HC Aromatic_C15-C19	0.00	0.00	0.00	0.00
HC Aromatic_C20-C35	0.00	0.00	0.00	0.00
HC Aromatic_C36+	0.00	0.00	0.00	0.00
HC Aromatic_Dehy_C10-C14	0.00	0.00	0.00	0.00
HC Aromatic_Dehy_C15-C19	0.00	0.00	0.00	0.00
HC Aromatic_Dehy_C20-C35	0.00	0.00	0.00	0.00
HC Aromatic_Dehy_C36+	0.00	0.00	0.00	0.00
HC AromaticN_C7	0.00	0.00	0.00	0.00
HC AromaticN_C8	0.00	0.00	0.00	0.00
HC AromaticN_C9	0.00	0.00	0.00	0.00
HC AromaticN_C10-C14	0.00	0.00	0.00	0.00
HC AromaticN_C15-C19	0.00	0.00	0.00	0.00
HC AromaticN_C20-C35	0.00	0.00	0.00	0.00
HC AromaticN_C36+	0.00	0.00	0.00	0.00
HC AromaticS_C7	0.00	0.00	0.00	0.00
HC AromaticS_C8	0.00	0.00	0.00	0.00
HC AromaticS_C9	0.00	0.00	0.00	0.00
HC AromaticS_C10-C14	0.00	0.00	0.00	0.00
HC AromaticS_C15-C19	0.00	0.00	0.00	0.00
HC AromaticS_C20-C35	0.00	0.00	0.00	0.00
HC AromaticS_C36+	0.00	0.00	0.00	0.00

### **D.3 PROCESS & INSTRUMENTATION DIAGRAM**



### D.3.1 P&ID Line Designation

Table D2. P&ID line designation table.

#	Line Designation			Description			Mechanical				Operating Conditions	
	Line #	Spec	Line Size	From	To	Service	Pipe Schedule	E.T	Pipe Material	Insulation	Temp (°C)	Pressure (kPaa)
1	P-01	P	16"	Cooler CB-01	Cooler CB-02	Petro	120	Y	S.S	Cell Glass	270	16900
2	P-02	P	14"	From Cooler CB-02	To Mixpoint (Line 1 and 2)	Petro	100	Y	S.S	Cell Glass	70	16800
3	P-03	P	18"	From Mixpoint (Line 1 and 2)	To D-03	Petro	100	Y	S.S	Cell Glass	70	16800
4	P-04	P	12"	From D-03	Gas Expander EX-01	Petro	100	Y	S.S	Cell Glass	70	16800
5	P-05	P	8"	From D-03	Low Pressure Separator D-04	Petro	100	Y	S.S	Cell Glass	70	16800
6	W-01	W	1"	From D-03	Wastewater Drain	Water	40	Y	S.S	Cell Glass	70	16800

### D.4 PLOT PLAN

