

 HALDOR TOPSØE A/S JOB NO: S-00800		AGIP PETROLI TARANTO PLUS PROJECT ULSD HYDROTREATER START OF RUN				NO.	S-00800	
						REV.	0	
						PAGE	2 of 9	
						DATE	01-Sep-05	
Stream	Name	1000	1004	1010	1015	1100	1110	
Phase		Liquid	Liquid	Liquid	Liquid	Mixed	Mixed	
Total Stream Properties								
Rate	KG-MOL/HR	1058.97	1058.97	984.84	74.13	4210.13	4210.13	
	KG/HR	233311	233311	216979	16332	243929	243929	
Std. Liquid Rate	M ³ /HR	271.01	271.01	252.04	18.97	367.84	367.84	
Temperature	°C	50.0	52.4	200.4	200.4	326.5	340.2	
Pressure	KG/CM2G	5.00	77.00	71.80	71.80	70.80	67.80	
Molecular Weight		220.32	220.32	220.32	220.32	57.94	57.94	
Enthalpy	M*WATT	4.91	5.75	25.03	1.88	62.42	65.92	
	KCAL/KG	18.09	21.18	99.20	99.20	220.04	232.36	
Weight Fraction Vapor		0.0000	0.0000	0.0000	0.0000	0.1940	0.2383	
Critical pressure		19.933	19.933	19.933	19.933	16.877	16.877	
Vapor Phase Properties								
Rate	KG-MOL/HR	0.00	0.00	0.00	0.00	3224.09	3283.69	
	KG/HR	N/A	N/A	N/A	N/A	47320.9	58126.3	
	M3/HR	N/A	N/A	N/A	N/A	2390.78	2596.26	
Std. Vapor Rate	NM3/HR	N/A	N/A	N/A	N/A	72264.68	73600.49	
Std. Vapor Density	KG/M3	N/A	N/A	N/A	N/A	0.6548	0.7898	
Z factor		N/A	N/A	N/A	N/A	1.0327	1.0308	
Molecular Weight		N/A	N/A	N/A	N/A	14.677	17.702	
Enthalpy	KCAL/KG	N/A	N/A	N/A	N/A	375.06	360.43	
Entropy	KCAL/KG-C	N/A	N/A	N/A	N/A	3.15	2.87	
CP	KCAL/KG-C	N/A	N/A	N/A	N/A	0.970	0.915	
Cp/Cv Ratio		N/A	N/A	N/A	N/A	1.174	1.152	
Density	KG/M3	N/A	N/A	N/A	N/A	19.793	22.388	
Thermal Conductivity	W/M-C	N/A	N/A	N/A	N/A	0.1810	0.1884	
Viscosity	CP	N/A	N/A	N/A	N/A	0.0209	0.0216	
Liquid Phase Properties								
Rate	KG-MOL/HR	1058.97	1058.97	984.84	74.13	986.04	926.45	
	KG/HR	233311.1	233311.1	216979.3	16331.8	196608.3	185802.9	
	M3/HR	277.87	275.43	286.76	21.58	317.66	307.91	
Std. Liquid Rate	M3/HR	271.01	271.01	252.04	18.97	230.71	217.81	
Std. Liquid Density	KG/M3	860.90	860.90	860.90	860.90	852.20	853.04	
Specific Gravity (H ₂ O=1.0)		0.8618	0.8618	0.8618	0.8618	0.8530	0.8539	
Molecular Weight		220.32	220.32	220.32	220.32	199.39	200.55	
Enthalpy	KCAL/KG	18.09	21.18	99.20	99.20	182.73	192.29	
Entropy	KCAL/KG-C	1.108	1.110	1.306	1.306	1.489	1.507	
CP	KCAL/KG-C	0.458	0.459	0.595	0.595	0.698	0.709	
True Vapor Pressure (@ 100 F)	KG/CM2	0.00	0.00	0.00	0.00	N/A	N/A	
Density	KG/M3	839.65	847.07	756.65	756.65	618.93	603.42	
Surface Tension	DYNE/CM	28.774	28.576	16.675	16.675	7.152	6.460	
Thermal Conductivity	W/M-C	107.5538	110.4851	88.8176	88.8176	60.9361	59.4317	
Viscosity	CP	2.1383	2.2885	0.4062	0.4062	0.1373	0.1284	
Composition								
Component	Mass Rate	KG/HR						
H2O			0.00	0.00	0.00	0.00	148.63	148.63
NH3			0.00	0.00	0.00	0.00	0.00	0.00
H2S			0.00	0.00	0.00	0.00	101.64	101.64
H2			0.00	0.00	0.00	0.00	5937.34	5937.34
C1			0.00	0.00	0.00	0.00	1961.24	1961.24
C2			0.00	0.00	0.00	0.00	1016.59	1016.59
C3			0.00	0.00	0.00	0.00	450.58	450.58
IC4			0.00	0.00	0.00	0.00	90.55	90.55
NC4			0.00	0.00	0.00	0.00	144.18	144.18
IPENTANE			0.00	0.00	0.00	0.00	0.00	0.00
N2			0.00	0.00	0.00	0.00	655.54	655.54
CO			0.00	0.00	0.00	0.00	0.00	0.00
CO2			0.00	0.00	0.00	0.00	0.00	0.00
MDEA			0.00	0.00	0.00	0.00	0.13	0.13
NAPHTHA(39-170)			0.00	0.00	0.00	0.00	96.23	96.23
DIESEL(170+)			233311.11	233311.11	216979.32	16331.78	233326.54	233326.54
Component	Molar weight	KG/KG-MOL						
NAPHTHA			N/A	N/A	N/A	N/A	95.8	95.8
DIESEL(150+)			220.3	220.3	220.3	220.3	220.3	220.3


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 HALDOR TOPSØE A/S JOB NO: S-00800		AGIP PETROLI				NO. S-00800	
		TARANTO PLUS PROJECT				REV. 0	
		ULSD HYDROTREATER				PAGE 3 of 9	
		START OF RUN				DATE 01-Sep-05	
Stream Name		1260	1600	1660	1680	2000	2100
Phase		Liquid	Mixed	Vapor	Mixed	Vapor	Vapor
Total Stream Properties							
Rate	KG-MOL/HR	1099.63	5113.38	4013.76	4538.28	1089.96	1089.96
	KG/HR	213221	249812	36591	46052	2301	2301
Std. Liquid Rate	M ³ /HR	257.22	404.26	147.04	156.53	31.57	31.57
Temperature	°C	260.0	378.3	260.0	136.0	40.0	112.2
Pressure	KG/CM2G	62.50	65.00	62.50	61.60	20.00	73.00
Molecular Weight		193.90	48.85	9.12	10.15	2.11	2.11
Enthalpy	M*WATT	35.01	83.67	16.45	13.31	1.03	1.69
	KCAL/KG	141.17	287.98	386.51	248.55	385.13	632.98
Weight Fraction Vapor		0.0000	0.6439	1.0000	0.5080	1.0000	1.0000
Critical pressure		19.894	18.594	18.238	42.167	13.386	13.386
Vapor Phase Properties							
Rate	KG-MOL/HR	0.00	4646.31	4013.76	4142.15	1089.96	1089.96
	KG/HR	N/A	160843.3	36590.9	23393.2	2300.8	2300.8
	M3/HR	N/A	4024.09	2985.24	2380.50	1465.26	507.01
Std. Vapor Rate	NM3/HR	N/A	104142.47	89964.30	92842.13	24430.26	24430.26
Std. Vapor Density	KG/M3	N/A	1.5445	0.4067	0.2520	0.0942	0.0942
Z factor		N/A	1.0194	1.0284	1.0206	1.0127	1.0395
Molecular Weight		N/A	34.617	9.116	5.648	2.111	2.111
Enthalpy	KCAL/KG	N/A	322.24	386.51	409.36	385.13	632.98
Entropy	KCAL/KG-C	N/A	2.24	4.13	5.52	12.78	12.24
CP	KCAL/KG-C	N/A	0.795	1.129	1.385	3.291	3.340
Cp/Cv Ratio		N/A	1.098	1.249	1.366	1.404	1.398
Density	KG/M3	N/A	39.970	12.257	9.827	1.570	4.538
Thermal Conductivity	W/M-C	N/A	0.1937	0.1449	0.1000	0.1447	0.1714
Viscosity	CP	N/A	0.0225	0.0179	0.0131	0.0082	0.0094
Liquid Phase Properties							
Rate	KG-MOL/HR	1099.63	467.07	0.00	396.13	0.00	0.00
	KG/HR	213220.6	88968.2	N/A	22658.3	N/A	N/A
	M3/HR	325.13	165.05	N/A	29.70	N/A	N/A
Std. Liquid Rate	M3/HR	257.22	107.34	N/A	26.71	N/A	N/A
Std. Liquid Density	KG/M3	828.96	828.85	N/A	848.18	N/A	N/A
Specific Gravity (H ₂ O=1.0)		0.8298	0.8297	N/A	0.8490	N/A	N/A
Molecular Weight		193.90	190.48	N/A	57.20	N/A	N/A
Enthalpy	KCAL/KG	141.17	226.04	N/A	82.54	N/A	N/A
Entropy	KCAL/KG-C	1.430	1.596	N/A	1.283	N/A	N/A
CP	KCAL/KG-C	0.659	0.763	N/A	0.654	N/A	N/A
True Vapor Pressure (@ 100 F)	KG/CM2	150.73	N/A	N/A	N/A	N/A	N/A
Density	KG/M3	655.80	539.04	N/A	763.03	N/A	N/A
Surface Tension	DYNE/CM	10.210	3.649	N/A	17.993	N/A	N/A
Thermal Conductivity	W/M-C	70.9403	54.5685	N/A	139.7070	N/A	N/A
Viscosity	CP	0.1814	0.1007	N/A	0.2576	N/A	N/A
Composition							
Component Mass Rate	KG/HR						
H2O		21.66	230.98	209.33	9637.77	0.00	0.00
NH3		8.15	79.44	71.29	78.43	0.00	0.00
H2S		319.04	3108.92	2789.88	2814.90	0.00	0.00
H2		188.25	7248.10	7059.84	7059.84	2186.36	2186.36
C1		147.80	3166.69	3018.89	3018.89	54.21	54.21
C2		140.15	1746.30	1606.15	1606.15	32.77	32.77
C3		108.47	890.52	782.05	782.05	0.00	0.00
IC4		35.28	212.09	176.81	176.81	0.00	0.00
NC4		64.60	366.92	302.32	302.32	0.00	0.00
IPENTANE		0.00	0.00	0.00	0.00	0.00	0.00
N2		24.24	1018.70	994.46	994.46	27.48	27.48
CO		0.00	0.00	0.00	0.00	0.00	0.00
CO2		0.00	0.00	0.00	0.00	0.00	0.00
MDEA		0.18	0.21	0.03	0.03	0.00	0.00
NAPHTHA(39-170)		2458.40	4547.54	2089.14	2089.14	0.00	0.00
DIESEL(170+)		209704.41	227195.14	17490.73	17490.73	0.00	0.00
Component Molar weight	KG/KG-MOL						
NAPHTHA		113.3	111.6	109.6	109.6	N/A	N/A
DIESEL(150+)		219.7	217.1	190.0	190.0	N/A	N/A


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		TARANTO PLUS PROJECT				REV. 0	
		ULSD HYDROTREATER				PAGE 4 of 9	
		START OF RUN				DATE 01-Sep-05	
Stream Name		2230	2250	2260	3000	3005	3006
Phase		Vapor	Vapor	Vapor	Vapor	Vapor	Vapor
Total Stream Properties							
Rate	KG-MOL/HR	3874.15	3806.93	0.00	3806.93	3806.93	4896.89
	KG/HR	16438	14200	0	14200	14200	16500
Std. Liquid Rate	M ³ /HR	121.92	118.91	0.00	118.91	118.91	150.49
Temperature	°C	45.0	63.0	63.0	63.0	85.5	91.2
Pressure	KG/CM2G	61.00	60.50	60.35	60.35	73.00	73.00
Molecular Weight		4.24	3.73	3.73	3.73	3.73	3.37
Enthalpy	M*WATT	4.49	4.81	0.00	4.81	5.56	7.26
	KCAL/KG	235.05	291.46	291.46	291.46	336.80	378.10
Weight Fraction Vapor		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Critical pressure		17.530	16.555	16.555	16.555	16.555	15.850
Vapor Phase Properties							
Rate	KG-MOL/HR	3874.15	3806.93	0.00	3806.93	3806.93	4896.89
	KG/HR	16438.2	14199.6	0.0	14199.6	14199.6	16500.4
	M3/HR	1771.69	1855.14	0.00	1859.62	1649.96	2155.98
Std. Vapor Rate	NM3/HR	86835.12	85328.55	0.02	85328.54	85328.54	109758.80
Std. Vapor Density	KG/M3	0.1893	0.1664	0.1664	0.1664	0.1664	0.1503
Z factor		1.0342	1.0347	1.0346	1.0346	1.0405	1.0405
Molecular Weight		4.243	3.730	3.730	3.730	3.730	3.370
Enthalpy	KCAL/KG	235.05	291.46	291.46	291.46	336.80	378.10
Entropy	KCAL/KG-C	6.45	7.35	7.35	7.35	7.38	8.07
CP	KCAL/KG-C	1.734	1.971	1.971	1.971	1.985	2.175
Cp/Cv Ratio		1.395	1.388	1.388	1.388	1.384	1.386
Density	KG/M3	9.278	7.654	7.636	7.636	8.606	7.653
Thermal Conductivity	W/M-C	0.1046	0.1653	0.1159	0.1159	0.1228	0.1308
Viscosity	CP	0.0107	0.0106	0.0105	0.0105	0.0110	0.0107
Liquid Phase Properties							
Rate	KG-MOL/HR	0.00	0.00	0.00	0.00	0.00	0.00
	KG/HR	N/A	N/A	N/A	N/A	N/A	N/A
	M3/HR	N/A	N/A	N/A	N/A	N/A	N/A
Std. Liquid Rate	M3/HR	N/A	N/A	N/A	N/A	N/A	N/A
Std. Liquid Density	KG/M3	N/A	N/A	N/A	N/A	N/A	N/A
Specific Gravity (H ₂ O=1.0)		N/A	N/A	N/A	N/A	N/A	N/A
Molecular Weight		N/A	N/A	N/A	N/A	N/A	N/A
Enthalpy	KCAL/KG	N/A	N/A	N/A	N/A	N/A	N/A
Entropy	KCAL/KG-C	N/A	N/A	N/A	N/A	N/A	N/A
CP	KCAL/KG-C	N/A	N/A	N/A	N/A	N/A	N/A
True Vapor Pressure (@ 100 F)	KG/CM2	N/A	N/A	N/A	N/A	N/A	N/A
Density	KG/M3	N/A	N/A	N/A	N/A	N/A	N/A
Surface Tension	DYNE/CM	N/A	N/A	N/A	N/A	N/A	N/A
Thermal Conductivity	W/M-C	N/A	N/A	N/A	N/A	N/A	N/A
Viscosity	CP	N/A	N/A	N/A	N/A	N/A	N/A
Composition							
Component Mass Rate	KG/HR						
H2O		111.05	230.98	0.00	230.98	230.98	230.98
NH3		0.74	0.01	0.00	0.01	0.01	0.01
H2S		2498.59	157.95	0.00	157.95	157.95	157.95
H2		7049.98	7040.21	0.00	7040.21	7040.21	9226.58
C1		2995.88	2993.54	0.00	2993.54	2993.54	3047.74
C2		1549.10	1546.99	0.00	1546.99	1546.99	1579.77
C3		701.16	700.20	0.00	700.20	700.20	700.20
IC4		140.88	140.72	0.00	140.72	140.72	140.72
NC4		224.48	224.05	0.00	224.05	224.05	224.05
IPENTANE		0.00	0.00	0.00	0.00	0.00	0.00
N2		992.76	991.22	0.00	991.22	991.22	1018.70
CO		0.00	0.00	0.00	0.00	0.00	0.00
CO2		0.00	0.00	0.00	0.00	0.00	0.00
MDEA		0.00	0.21	0.00	0.21	0.21	0.21
NAPHTHA(39-170)		149.57	149.55	0.00	149.55	149.55	149.55
DIESEL(170+)		24.00	24.00	0.00	24.00	24.00	24.00
Component Molar weight	KG/KG-MOL						
NAPHTHA		95.8	95.8	95.8	95.8	95.8	95.8
DIESEL(150+)		146.5	146.5	146.5	146.5	146.5	146.5


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		TARANTO PLUS PROJECT				REV.	0
		ULSD HYDROTREATER				PAGE	5 of 9
		START OF RUN				DATE	01-Sep-05
Stream	Name	3010	3035	3045	3100	4000	4010
Phase		Vapor	Vapor	Mixed	Mixed	Mixed	Vapor
Total Stream Properties							
Rate	KG-MOL/HR	1735.72	3151.17	538.67	53.64	125.46	529.91
	KG/HR	5849	10618	9777	5899	19837	20929
Std. Liquid Rate	M ³ /HR	53.34	96.84	9.90	7.83	24.71	29.59
Temperature	°C	91.2	205.0	45.0	45.5	230.0	158.0
Pressure	KG/CM2G	73.00	72.60	4.00	7.00	9.60	7.70
Molecular Weight		3.37	3.37	18.15	109.98	158.11	39.50
Enthalpy	M*WATT	2.57	7.75	0.47	0.14	2.88	6.60
	KCAL/KG	378.10	627.53	41.13	20.91	124.66	270.95
Weight Fraction Vapor		1.0000	1.0000	0.0114	0.0000	0.0410	1.0000
Critical pressure		15.850	15.850	223.130	31.153	25.965	125.022
Vapor Phase Properties							
Rate	KG-MOL/HR	1735.72	3151.17	3.75	0.02	15.42	529.91
	KG/HR	5848.7	10618.1	111.4	0.2	813.3	20929.5
	M3/HR	764.20	1817.38	24.84	0.07	66.33	2438.55
Std. Vapor Rate	NM3/HR	38904.47	70630.18	84.11	0.43	345.58	11877.44
Std. Vapor Density	KG/M3	0.1503	0.1503	1.3243	0.5159	2.3536	1.7621
Z factor		1.0405	1.0329	0.9818	0.9988	0.9682	0.9694
Molecular Weight		3.370	3.370	29.683	11.562	52.753	39.496
Enthalpy	KCAL/KG	378.10	627.53	140.54	156.78	197.77	270.95
Entropy	KCAL/KG-C	8.07	8.66	1.58	3.29	1.63	1.50
CP	KCAL/KG-C	2.175	2.207	0.277	0.753	0.567	0.522
Cp/Cv Ratio		1.386	1.370	1.350	1.306	1.086	1.129
Density	KG/M3	7.653	5.843	4.484	2.999	12.263	8.583
Thermal Conductivity	W/M-C	0.1308	0.1626	0.0295	0.0552	0.0596	0.0381
Viscosity	CP	0.0107	0.0126	0.0130	0.0125	0.0150	0.0131
Liquid Phase Properties							
Rate	KG-MOL/HR	0.00	0.00	534.91	53.62	110.04	0.00
	KG/HR	N/A	N/A	9665.4	5898.5	19023.2	N/A
	M3/HR	N/A	N/A	10.00	8.08	29.43	N/A
Std. Liquid Rate	M3/HR	N/A	N/A	9.75	7.83	23.42	N/A
Std. Liquid Density	KG/M3	N/A	N/A	991.75	753.25	812.35	N/A
Specific Gravity (H ₂ O=1.0)		N/A	N/A	0.9927	0.7540	0.8131	N/A
Molecular Weight		N/A	N/A	18.07	110.01	172.87	N/A
Enthalpy	KCAL/KG	N/A	N/A	39.98	20.90	121.53	N/A
Entropy	KCAL/KG-C	N/A	N/A	1.264	0.901	1.319	N/A
CP	KCAL/KG-C	N/A	N/A	1.069	0.509	0.650	N/A
True Vapor Pressure (@ 100 F)	KG/CM2	N/A	N/A	N/A	N/A	N/A	N/A
Density	KG/M3	N/A	N/A	966.47	730.40	646.29	N/A
Surface Tension	DYNE/CM	N/A	N/A	68.158	21.181	10.680	N/A
Thermal Conductivity	W/M-C	N/A	N/A	276.3543	120.6373	77.3366	N/A
Viscosity	CP	N/A	N/A	0.4775	0.4169	0.1928	N/A
Composition							
Component Mass Rate	KG/HR						
H2O		81.87	148.63	9518.84	3.49	7.94	4672.29
NH3		0.00	0.00	77.63	0.00	0.06	8.22
H2S		55.99	101.64	178.50	34.52	137.74	521.57
H2		3270.40	5937.34	0.90	0.36	8.96	197.89
C1		1080.29	1961.24	0.41	2.05	22.61	174.25
C2		559.96	1016.59	0.27	11.97	56.77	219.38
C3		248.19	450.58	0.09	34.37	80.80	253.77
IC4		49.88	90.55	0.01	25.64	35.92	119.32
NC4		79.42	144.18	0.05	66.14	77.79	266.49
IPENTANE		0.00	0.00	0.00	0.00	0.00	0.00
N2		361.08	655.54	0.08	0.07	1.63	25.99
CO		0.00	0.00	0.00	0.00	0.00	0.00
CO2		0.00	0.00	0.00	0.00	0.00	0.00
MDEA		0.07	0.13	0.00	0.00	0.03	0.00
NAPHTHA(39-170)		53.01	96.23	0.00	4283.52	1939.57	10868.83
DIESEL(170+)		8.51	15.44	0.00	1436.61	17466.74	3601.48
Component Molar weight	KG/KG-MOL						
NAPHTHA		95.8	95.8	72.8	110.8	110.8	110.5
DIESEL(150+)		146.5	146.5	132.2	134.4	190.1	134.4


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 HALDOR TOPSØE A/S JOB NO: S-00800		AGIP PETROLI				S-00800	
		TARANTO PLUS PROJECT				NO.	0
		ULSD HYDROTREATER				REV.	6 of 9
		START OF RUN				PAGE	01-Sep-05
Stream	Name	4020	4040	4050	4060	4070	4100
Phase		Mixed	Vapor	Liquid	Liquid	Mixed	Mixed
Total Stream Properties							
Rate	KG-MOL/HR	529.91	137.49	267.00	134.16	134.16	80.52
	KG/HR	20929	1512	4810	14754	14754	8856
Std. Liquid Rate	M ³ /HR	29.59	5.32	4.82	19.59	19.59	11.76
Temperature	°C	45.0	45.0	40.0	45.0	45.5	45.5
Pressure	KG/CM2G	7.40	6.50	3.50	7.40	15.00	14.20
Molecular Weight		39.50	11.00	18.01	109.98	109.98	109.98
Enthalpy	M*WATT	0.88	0.28	0.21	0.35	0.36	0.22
	KCAL/KG	36.14	159.03	36.71	20.64	21.13	21.13
Weight Fraction Vapor		0.0730	1.0000	0.0000	0.0000	0.0000	0.0000
Critical pressure		125.022	28.886	225.553	31.153	31.153	31.153
Vapor Phase Properties							
Rate	KG-MOL/HR	138.01	137.49	0.00	0.00	0.00	0.00
	KG/HR	1527.8	1512.1	N/A	N/A	N/A	N/A
	M3/HR	502.06	570.19	N/A	N/A	N/A	N/A
Std. Vapor Rate	NM3/HR	3093.42	3081.78	N/A	N/A	N/A	N/A
Std. Vapor Density	KG/M3	0.4939	0.4907	N/A	N/A	N/A	N/A
Z factor		0.9980	0.9994	N/A	N/A	N/A	N/A
Molecular Weight		11.070	10.998	N/A	N/A	N/A	N/A
Enthalpy	KCAL/KG	158.78	159.03	N/A	N/A	N/A	N/A
Entropy	KCAL/KG-C	3.39	3.43	N/A	N/A	N/A	N/A
CP	KCAL/KG-C	0.775	0.780	N/A	N/A	N/A	N/A
Cp/Cv Ratio		1.312	1.311	N/A	N/A	N/A	N/A
Density	KG/M3	3.043	2.652	N/A	N/A	N/A	N/A
Thermal Conductivity	W/M-C	0.0568	0.0570	N/A	N/A	N/A	N/A
Viscosity	CP	0.0125	0.0125	N/A	N/A	N/A	N/A
Liquid Phase Properties							
Rate	KG-MOL/HR	391.90	0.00	267.00	134.16	134.16	80.52
	KG/HR	19401.6	N/A	4810.0	14754.4	14754.4	8855.7
	M3/HR	24.97	N/A	4.92	20.34	20.17	12.11
Std. Liquid Rate	M3/HR	24.25	N/A	4.82	19.59	19.59	11.76
Std. Liquid Density	KG/M3	800.11	N/A	998.57	753.21	753.21	753.21
Specific Gravity (H ₂ O=1.0)		0.8009	N/A	0.9996	0.7540	0.7540	0.7540
Molecular Weight		49.51	N/A	18.01	109.98	109.98	109.98
Enthalpy	KCAL/KG	26.48	N/A	36.71	20.64	21.15	21.15
Entropy	KCAL/KG-C	0.990	N/A	1.243	0.900	0.900	0.901
CP	KCAL/KG-C	0.576	N/A	1.041	0.509	0.486	0.486
True Vapor Pressure (@ 100 F)	KG/CM2	N/A	N/A	0.07	7.41	N/A	N/A
Density	KG/M3	777.01	N/A	977.59	725.41	731.37	731.24
Surface Tension	DYNE/CM	25.474	N/A	69.594	21.319	21.178	21.174
Thermal Conductivity	W/M-C	171.4460	N/A	279.6835	120.7915	121.0026	120.9480
Viscosity	CP	0.4267	N/A	0.5044	0.4190	0.4218	0.4212
Composition							
Component	Mass Rate	KG/HR					
H2O		4672.29	32.68	4810.00	8.73	8.73	5.24
NH3		8.22	0.02	0.00	0.01	0.01	0.01
H2S		521.57	411.55	0.00	86.36	86.36	51.83
H2		197.89	196.95	0.00	0.90	0.90	0.54
C1		174.25	169.09	0.00	5.12	5.12	3.07
C2		219.38	189.39	0.00	29.93	29.93	17.97
C3		253.77	167.77	0.00	85.96	85.96	51.60
IC4		119.32	55.18	0.00	64.13	64.13	38.49
NC4		266.49	101.03	0.00	165.43	165.43	99.29
IPENTANE		0.00	0.00	0.00	0.00	0.00	0.00
N2		25.99	25.83	0.00	0.16	0.16	0.10
CO		0.00	0.00	0.00	0.00	0.00	0.00
CO2		0.00	0.00	0.00	0.00	0.00	0.00
MDEA		0.00	0.00	0.00	0.00	0.00	0.00
NAPHTHA(39-170)		10868.83	154.52	0.00	10714.32	10714.32	6430.79
DIESEL(170+)		3601.48	8.12	0.00	3593.36	3593.36	2156.76
Component	Molar weight	KG/KG-MOL					
NAPHTHA		110.5	96.8	N/A	110.8	110.8	110.8
DIESEL(150+)		134.4	133.0	N/A	134.4	134.4	134.4


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 HALDOR TOPSØE A/S JOB NO: S-00800		AGIP PETROLI				NO. S-00800	
		TARANTO PLUS PROJECT				REV. 0	
		ULSD HYDROTREATER				PAGE 7 of 9	
		START OF RUN				DATE 01-Sep-05	
Stream	Name	4130	4135	4200	4210	4214	4220
Phase		Liquid	Mixed	Liquid	Mixed	Mixed	Mixed
Total Stream Properties							
Rate	KG-MOL/HR	258.26	525.26	1095.58	1095.58	1095.58	1095.58
	KG/HR	4663	9473	228597	228597	228597	228597
Std. Liquid Rate	M ³ /HR	4.68	9.50	272.44	272.44	272.44	272.44
Temperature	°C	45.0	42.5	255.2	105.0	105.3	30.0
Pressure	KG/CM2G	7.40	3.50	7.85	6.25	15.00	13.80
Molecular Weight		18.06	18.03	208.65	208.65	208.65	208.65
Enthalpy	M*WATT	0.23	0.43	35.97	12.34	12.44	2.69
	KCAL/KG	41.54	39.09	135.30	46.42	46.79	10.12
Weight Fraction Vapor		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Critical pressure		224.968	225.265	27.044	27.044	27.044	27.044
Vapor Phase Properties							
Rate	KG-MOL/HR	0.00	0.00	0.00	0.00	0.00	0.00
	KG/HR	N/A	0.0	N/A	N/A	N/A	N/A
	M3/HR	N/A	0.01	N/A	N/A	N/A	N/A
Std. Vapor Rate	NM3/HR	N/A	0.04	N/A	N/A	N/A	N/A
Std. Vapor Density	KG/M3	N/A	0.4395	N/A	N/A	N/A	N/A
Z factor		N/A	0.9999	N/A	N/A	N/A	N/A
Molecular Weight		N/A	9.851	N/A	N/A	N/A	N/A
Enthalpy	KCAL/KG	N/A	174.67	N/A	N/A	N/A	N/A
Entropy	KCAL/KG-C	N/A	3.86	N/A	N/A	N/A	N/A
CP	KCAL/KG-C	N/A	0.827	N/A	N/A	N/A	N/A
Cp/Cv Ratio		N/A	1.327	N/A	N/A	N/A	N/A
Density	KG/M3	N/A	1.289	N/A	N/A	N/A	N/A
Thermal Conductivity	W/M-C	N/A	0.0578	N/A	N/A	N/A	N/A
Viscosity	CP	N/A	0.0122	N/A	N/A	N/A	N/A
Liquid Phase Properties							
Rate	KG-MOL/HR	258.26	525.26	1095.58	1095.58	1095.58	1095.58
	KG/HR	4662.9	9472.9	228597.3	228597.3	228597.3	228597.3
	M3/HR	4.73	9.59	339.69	291.67	291.14	274.81
Std. Liquid Rate	M3/HR	4.68	9.50	272.44	272.44	272.44	272.44
Std. Liquid Density	KG/M3	995.98	997.30	839.07	839.07	839.07	839.07
Specific Gravity (H ₂ O=1.0)		0.9970	0.9983	0.8399	0.8399	0.8399	0.8399
Molecular Weight		18.06	18.03	208.65	208.65	208.65	208.65
Enthalpy	KCAL/KG	41.54	39.08	135.30	47.43	47.81	10.41
Entropy	KCAL/KG-C	1.261	1.252	1.405	1.208	1.209	1.101
CP	KCAL/KG-C	1.041	1.041	0.660	0.522	0.522	0.451
True Vapor Pressure (@ 100 F)	KG/CM2	7.62	N/A	0.07	N/A	N/A	N/A
Density	KG/M3	984.94	987.78	672.95	783.75	785.18	831.84
Surface Tension	DYNE/CM	33.871	34.236	12.285	24.679	24.656	31.137
Thermal Conductivity	W/M-C	276.9439	278.2607	75.9279	100.4343	100.9540	111.9579
Viscosity	CP	0.4828	0.4922	0.2278	0.8052	0.8131	2.7576
Composition							
Component	Mass Rate	KG/HR					
H2O		4630.87	9440.87	763.87	763.87	763.87	763.87
NH3		8.19	8.19	0.00	0.00	0.00	0.00
H2S		23.66	23.66	0.00	0.00	0.00	0.00
H2		0.04	0.04	0.00	0.00	0.00	0.00
C1		0.04	0.04	0.00	0.00	0.00	0.00
C2		0.06	0.06	0.00	0.00	0.00	0.00
C3		0.03	0.03	0.00	0.00	0.00	0.00
IC4		0.01	0.01	0.00	0.00	0.00	0.00
NC4		0.04	0.04	0.01	0.01	0.01	0.01
IPENTANE		0.00	0.00	0.00	0.00	0.00	0.00
N2		0.00	0.00	0.00	0.00	0.00	0.00
CO		0.00	0.00	0.00	0.00	0.00	0.00
CO2		0.00	0.00	0.00	0.00	0.00	0.00
MDEA		0.00	0.00	0.21	0.21	0.21	0.21
NAPHTHA(39-170)		0.00	0.00	1567.63	1567.63	1567.63	1567.63
DIESEL(170+)		0.00	0.00	226265.61	226265.61	226265.61	226265.61
Component	Molar weight	KG/KG-MOL					
NAPHTHA		73.1	73.1	116.6	116.6	116.6	116.6
DIESEL(150+)		131.5	131.5	217.6	217.6	217.6	217.6

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 HALDOR TOPSØE A/S JOB NO: S-00800		AGIP PETROLI				NO. S-00800	
		TARANTO PLUS PROJECT				REV. 0	
		ULSD HYDROTREATER				PAGE 8 of 9	
		START OF RUN				DATE 01-Sep-05	
Stream	Name	4240	4250	6000	7000	8010	8510
Phase		Water	Liquid	Vapor	Liquid	Liquid	Mixed
Total Stream Properties							
Rate	KG-MOL/HR	41.43	1054.15	299.75	524.52	1358.04	1425.26
	KG/HR	746	227851	5400	9461	39625	41863
Std. Liquid Rate	M ³ /HR	0.75	271.69	5.41	9.49	38.92	41.93
Temperature	°C	30.0	45.0	260.0	45.0	50.0	60.6
Pressure	KG/CM2G	13.70	8.00	16.80	65.00	50.00	58.00
Molecular Weight		18.01	216.15	18.01	18.04	29.18	29.37
Enthalpy	M*WATT	0.03	3.63	4.41	0.51	3.45	3.98
	KCAL/KG	30.34	13.68	702.52	45.90	74.91	81.81
Weight Fraction Vapor		0.0000	0.0000	1.0000	0.0000	0.0000	0.0003
Critical pressure		225.553	19.241	225.553	225.278	204.914	198.681
Vapor Phase Properties							
Rate	KG-MOL/HR	0.00	0.00	299.75	0.00	0.00	1.27
	KG/HR	N/A	N/A	5400.0	N/A	N/A	11.7
	M3/HR	N/A	N/A	761.23	N/A	N/A	0.63
Std. Vapor Rate	NM3/HR	N/A	N/A	6718.60	N/A	N/A	28.50
Std. Vapor Density	KG/M3	N/A	N/A	0.8037	N/A	N/A	0.4092
Z factor		N/A	N/A	0.9439	N/A	N/A	1.0111
Molecular Weight		N/A	N/A	18.015	N/A	N/A	9.172
Enthalpy	KCAL/KG	N/A	N/A	702.52	N/A	N/A	184.12
Entropy	KCAL/KG-C	N/A	N/A	1.60	N/A	N/A	3.38
CP	KCAL/KG-C	N/A	N/A	0.567	N/A	N/A	0.843
Cp/Cv Ratio		N/A	N/A	1.381	N/A	N/A	1.410
Density	KG/M3	N/A	N/A	7.094	N/A	N/A	18.594
Thermal Conductivity	W/M-C	N/A	N/A	0.0392	N/A	N/A	0.0721
Viscosity	CP	N/A	N/A	0.0187	N/A	N/A	0.0138
Liquid Phase Properties							
Rate	KG-MOL/HR	41.43	1054.15	0.00	524.52	1358.04	1423.98
	KG/HR	746.4	227850.9	N/A	9460.6	39624.7	41851.6
	M3/HR	0.75	277.47	N/A	9.72	40.07	43.58
Std. Liquid Rate	M3/HR	0.75	271.69	N/A	9.49	38.92	41.88
Std. Liquid Density	KG/M3	998.57	838.63	N/A	997.40	1018.06	999.22
Specific Gravity (H ₂ O=1.0)		0.9996	0.8395	N/A	0.9984	1.0191	1.0002
Molecular Weight		18.01	216.15	N/A	18.04	29.18	29.39
Enthalpy	KCAL/KG	N/A	13.68	N/A	45.90	74.91	81.79
Entropy	KCAL/KG-C	N/A	1.118	N/A	1.270	1.671	1.671
CP	KCAL/KG-C	0.997	0.518	N/A	0.861	0.913	0.892
True Vapor Pressure (@ 100 F)	KG/CM2	N/A	0.03	N/A	1.20	0.18	N/A
Density	KG/M3	996.28	821.17	N/A	973.25	989.00	960.42
Surface Tension	DYNE/CM	71.020	28.307	N/A	33.931	64.381	59.757
Thermal Conductivity	W/M-C	617.1818	109.2849	N/A	278.3202	223.7124	215.9669
Viscosity	CP	0.7969	2.0567	N/A	0.5198	0.5345	0.4663
Composition							
Component Mass Rate	KG/HR						
H2O		746.40	17.46	5400.00	9428.45	21742.61	21622.68
NH3		0.00	0.00	0.00	7.15	0.00	0.74
H2S		0.00	0.00	0.00	25.03	50.99	2391.63
H2		0.00	0.00	0.00	0.00	0.00	9.77
C1		0.00	0.00	0.00	0.00	0.00	2.34
C2		0.00	0.00	0.00	0.00	0.00	2.11
C3		0.00	0.00	0.00	0.00	0.00	0.96
IC4		0.00	0.00	0.00	0.00	0.00	0.16
NC4		0.00	0.01	0.00	0.00	0.00	0.43
IPENTANE		0.00	0.00	0.00	0.00	0.00	0.00
N2		0.00	0.00	0.00	0.00	0.00	1.53
CO		0.00	0.00	0.00	0.00	0.00	0.00
CO2		0.00	0.00	0.00	0.00	0.00	0.00
MDEA		0.00	0.21	0.00	0.00	17831.13	17830.92
NAPHTHA(39-170)		0.00	1567.63	0.00	0.00	0.00	0.02
DIESEL(170+)		0.00	226265.62	0.00	0.00	0.00	0.00
Component Molar weight	KG/KG-MOL						
NAPHTHA		N/A	116.6	N/A	N/A	N/A	77.4
DIESEL(150+)		N/A	217.6	N/A	N/A	N/A	134.0

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 HALDOR TOPSØE A/S JOB NO: S-00800		AGIP PETROLI TARANTO PLUS PROJECT ULSD HYDROTREATER START OF RUN				NO.	S-00800
						REV.	0
						PAGE	9 of 9
						DATE	01-Sep-05
Stream Name		9000	9020	9030	9050		
Phase		Liquid	Mixed	Vapor	Water		
Total Stream Properties							
Rate	KG-MOL/HR	444.07	444.07	444.07	444.07		
	KG/HR	8000	8000	8000	8000		
Std. Liquid Rate	M ³ /HR	8.01	8.01	8.01	8.01		
Temperature	°C	100.0	240.6	260.0	100.0		
Pressure	KG/CM2G	45.00	34.40	16.80	35.00		
Molecular Weight		18.01	18.01	18.01	18.01		
Enthalpy	M*WATT	0.91	5.95	6.55	0.94		
	KCAL/KG	98.11	639.96	704.15	100.68		
Weight Fraction Vapor		0.0000	0.9293	1.0000	0.0000		
Critical pressure		225.553	225.553	225.553	225.553		
Vapor Phase Properties							
Rate	KG-MOL/HR	0.00	412.69	444.07	0.00		
	KG/HR	N/A	7434.6	8000.0	N/A		
	M3/HR	N/A	440.52	1134.41	N/A		
Std. Vapor Rate	NM3/HR	N/A	9250.06	9953.47	N/A		
Std. Vapor Density	KG/M3	N/A	0.8037	0.8037	N/A		
Z factor		N/A	0.8431	0.9495	N/A		
Molecular Weight		N/A	18.015	18.015	N/A		
Enthalpy	KCAL/KG	N/A	669.73	704.15	N/A		
Entropy	KCAL/KG-C	N/A	1.47	2.72	N/A		
CP	KCAL/KG-C	N/A	0.842	0.500	N/A		
Cp/Cv Ratio		N/A	1.589	1.377	N/A		
Density	KG/M3	N/A	16.877	7.052	N/A		
Thermal Conductivity	W/M-C	N/A	0.0372	0.0393	N/A		
Viscosity	CP	N/A	0.0179	0.0151	N/A		
Liquid Phase Properties							
Rate	KG-MOL/HR	444.07	31.38	0.00	444.07		
	KG/HR	8000.0	565.4	N/A	8000.0		
	M3/HR	8.65	0.70	N/A	8.33		
Std. Liquid Rate	M3/HR	8.01	0.57	N/A	8.01		
Std. Liquid Density	KG/M3	998.57	998.57	N/A	998.57		
Specific Gravity (H ₂ O=1.0)		0.9996	0.9996	N/A	0.9996		
Molecular Weight		18.01	18.01	N/A	18.01		
Enthalpy	KCAL/KG	98.11	N/A	N/A	N/A		
Entropy	KCAL/KG-C	1.419	N/A	N/A	N/A		
CP	KCAL/KG-C	0.987	1.138	N/A	1.005		
True Vapor Pressure (@ 100 F)	KG/CM2	0.07	N/A	N/A	N/A		
Density	KG/M3	924.92	812.79	N/A	959.88		
Surface Tension	DYNE/CM	59.287	28.106	N/A	59.287		
Thermal Conductivity	W/M-C	252.6965	629.2560	N/A	678.8812		
Viscosity	CP	0.3333	0.1112	N/A	0.2791		
Composition							
Component Mass Rate	KG/HR						
H2O		7999.99	7999.99	7999.99	7999.99		
NH3		0.00	0.00	0.00	0.00		
H2S		0.00	0.00	0.00	0.00		
H2		0.00	0.00	0.00	0.00		
C1		0.00	0.00	0.00	0.00		
C2		0.00	0.00	0.00	0.00		
C3		0.00	0.00	0.00	0.00		
IC4		0.00	0.00	0.00	0.00		
NC4		0.00	0.00	0.00	0.00		
IPENTANE		0.00	0.00	0.00	0.00		
N2		0.00	0.00	0.00	0.00		
CO		0.00	0.00	0.00	0.00		
CO2		0.00	0.00	0.00	0.00		
MDEA		0.00	0.00	0.00	0.00		
NAPHTHA(39-170)		0.00	0.00	0.00	0.00		
DIESEL(170+)		0.00	0.00	0.00	0.00		
Component Molar weight	KG/KG-MOL						
NAPHTHA		N/A	N/A	N/A	N/A		
DIESEL(150+)		N/A	N/A	N/A	N/A		

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