




 <p><i>Oil Industries' Engineering and Construction</i></p>	<p>Sirri Island Gas Gathering & NGL Recovery Project</p>			 <p><i>Iranian Offshore Oil Company</i></p>
	<p>NGL FRACTIONATION</p>			<p>Contract Number: 3223-82-3-FG</p>
Project No.: 212	Doc. No.: SIRB-14-PR-TA-0001	Rev: 4	Date: May 31/05	Page 1

NGL FRACTIONATION

4	May 31/05	Approved for Basic Package	JMC	CK	DW
3	Dec. 20/04	Approved for Design	EM	CK	
2	Nov. 5/04	Approved for Design	CK	EM	DW
1	Oct. 8/04	Issued for Approval	CK	EM/JC	DW
0	Sept. 17/04	Issued for Comments	CK	EM	DW
Rev.	Issue Date	Purpose of Issue	Prepared	Checked	Approved

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 Oil Industries' Engineering and Construction	Sirri Island Gas Gathering & NGL Recovery Project	 Iranian Offshore Oil Company		
	NGL FRACTIONATION	Contract Number: 3223-82-3-FG		
Project No.: 212	Doc. No.: SIRB-14-PR-TA-0001	Rev: 4	Date: May 31/05	Page 2

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Simulation File Name: SIRB-00-PR-SI-0001 Rev.5 Case 1 Part 1.hsc
Operating Case: Case 1 - Summer, Full Flow
Unit: Unit 14, NGL Fractionation
Reference PFD: SIRB-14-PR-PF-0001,2 Rev. 4
Date: May 31/05

Stream ID		133	133.1	134	135	136
Stream Name		14-C-101 Overheads	From 14-E-101 to 14-D-102	14-C-101 Reflux	Vapour from 14-D-101	To 13-E-101
Vapour Fraction		1.0000	0.6897	0.0000	1.0000	0.9948
Temperature	C	-3.3	-15.0	-15.0	-15.0	-22.5
Pressure	bar_g	28.84	28.50	28.50	28.50	22.00
Total Molar Flow Rate	kgmole/h	2312.0	2312.0	717.4	1594.6	1598.7
Enthalpy	kJ/kgmole	-97915	-101335	-108667	-98038	-97992
Molecular Weight		26.7	26.7	30.5	24.9	24.9
Vapour Mass Flow Rate	kg/h	61614	39711	0	39711	39543
Vapour Std Gas Flow	MMSCFD	54664.8	37703.5	0.1	37703.3	37604.9
Vapour Mass Density	kg/m3	49.08	46.61	46.61	46.61	35.14
Vapour Viscosity	cP	0.011	0.010	0.010	0.010	0.010
Liquid Mass Flow	kg/h		21903	21903		258
Liquid Std Flow rate	m³/h		62.8	62.8		0.7
Liquid Specific Gravity			0.435	0.435		0.459
Liquid Mass Density	kg/m3		434.9	434.9		458.7
Liquid Surface Tension	dyne/cm		5.51	5.51		6.67
Liquid Viscosity	cP		0.071	0.071		0.082
Methane	Mole Frac.	0.3464	0.3464	0.1335	0.4421	0.4427
Ethane	Mole Frac.	0.5499	0.5499	0.7000	0.4823	0.4818
Propane	Mole Frac.	0.0629	0.0629	0.1367	0.0297	0.0298
i-Butane	Mole Frac.	0.0001	0.0001	0.0004	0.0000	0.0000
n-Butane	Mole Frac.	0.0000	0.0000	0.0001	0.0000	0.0000
i-Pentane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
n-Pentane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
n-Hexane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C6*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C7*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C8*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C9*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C10*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0010	0.0010	0.0002	0.0013	0.0014
CO2	Mole Frac.	0.0397	0.0397	0.0292	0.0445	0.0444
H2S	Mole Frac.	5.11E-06	5.11E-06	6.33E-06	4.56E-06	4.53E-06
M-Mercaptan	Mole Frac.	1.11E-07	1.11E-07	2.77E-07	3.65E-08	3.59E-08
COS	Mole Frac.	6.44E-08	6.44E-08	1.28E-07	3.56E-08	3.91E-08

Stream ID		207	208	209	210	210.1
Stream Name		LTS Liquids From 13-E-101	DeC1 Liquid From 13-P-101 A/B	From 14- C-101 to 14-C- 102	14-C-102 Overheads to 14-A-101	From 14- A-101 to 14-D- 102
Vapour Fraction		0.4836	0.0000	0.2581	1.0000	0.0000
Temperature	C	8.0	11.4	88.4	58.1	55.0
Pressure	bar_g	30.35	31.03	21.00	19.21	19.00
Total Molar Flow Rate	kgmole/h	1857.8	604.6	867.8	1752.5	1752.5
Enthalpy	kJ/kgmole	-112790	-116754	-124814	-104146	-116268
Molecular Weight		34.3	35.8	52.7	44.2	44.2
Vapour Mass Flow Rate	kg/h	21404		10916	77476	
Vapour Std Gas Flow	MMSCFD	21241.9		5295.1	41435.7	
Vapour Mass Density	kg/m3	38.99		51.75	47.30	
Vapour Viscosity	cP	0.011		0.011	0.010	
Liquid Mass Flow	kg/h	42368	21671	34817		77476
Liquid Std Flow rate	m³/h	83.4	48.7	61.5		152.4
Liquid Specific Gravity		0.519	0.458	0.454		0.441
Liquid Mass Density	kg/m3	519.3	457.9	454.5		440.5
Liquid Surface Tension	dyne/cm	8.17	4.35	3.27		3.59
Liquid Viscosity	cP	0.118	0.077	0.080		0.075
Methane	Mole Frac.	0.3795	0.0000	0.0000	0.0000	0.0000
Ethane	Mole Frac.	0.2064	0.6408	0.0020	0.0035	0.0035
Propane	Mole Frac.	0.2082	0.2774	0.5844	0.9850	0.9850
i-Butane	Mole Frac.	0.0412	0.0184	0.1009	0.0102	0.0102
n-Butane	Mole Frac.	0.0739	0.0231	0.1742	0.0013	0.0013
i-Pentane	Mole Frac.	0.0209	0.0028	0.0466	0.0000	0.0000
n-Pentane	Mole Frac.	0.0205	0.0020	0.0453	0.0000	0.0000
n-Hexane	Mole Frac.	0.0007	0.0000	0.0015	0.0000	0.0000
P-C6*	Mole Frac.	0.0118	0.0004	0.0255	0.0000	0.0000
P-C7*	Mole Frac.	0.0058	0.0001	0.0124	0.0000	0.0000
P-C8*	Mole Frac.	0.0025	0.0000	0.0053	0.0000	0.0000
P-C9*	Mole Frac.	0.0006	0.0000	0.0013	0.0000	0.0000
P-C10*	Mole Frac.	0.0001	0.0000	0.0003	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0001	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0012	0.0000	0.0000	0.0000	0.0000
CO2	Mole Frac.	0.0269	0.0348	0.0000	0.0000	0.0000
H2S	Mole Frac.	2.11E-06	5.59E-06	3.22E-08	5.46E-08	5.46E-08
M-Mercaptan	Mole Frac.	5.91E-06	3.39E-06	1.49E-05	1.41E-05	1.41E-05
COS	Mole Frac.	8.14E-08	1.71E-07	2.28E-07	3.87E-07	3.87E-07

Stream ID		211	212	214	215	215.1
Stream Name		14-C-102 Reflux	C3 Product to Rundown Cooling	From 14- C-102 to 14-C- 103	14-C-103 Overheads to 14-A-102	From 14- A-102 to 14-D- 103
Vapour Fraction		0.0000	0.0000	0.1826	1.0000	0.0000
Temperature	C	55.0	55.0	115.6	70.4	55.0
Pressure	bar_g	19.00	19.00	15.00	8.03	7.69
Total Molar Flow Rate	kgmole/h	1241.4	511.1	356.7	673.8	673.8
Enthalpy	kJ/kgmole	-116268	-116266	-143013	-125691	-145385
Molecular Weight		44.2	44.2	64.9	58.0	58.0
Vapour Mass Flow Rate	kg/h			3989	39053	
Vapour Std Gas Flow	MMSCFD			1539.7	15932.4	
Vapour Mass Density	kg/m3			41.71	22.56	
Vapour Viscosity	cP			0.011	0.009	
Liquid Mass Flow	kg/h	54882	22594	19150		39053
Liquid Std Flow rate	m³/h	108.0	44.5	31.2		67.8
Liquid Specific Gravity		0.441	0.440	0.481		0.527
Liquid Mass Density	kg/m3	440.5	440.5	480.6		526.7
Liquid Surface Tension	dyne/cm	3.59	3.59	4.01		7.88
Liquid Viscosity	cP	0.075	0.075	0.092		0.126
Methane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Ethane	Mole Frac.	0.0035	0.0035	0.0000	0.0000	0.0000
Propane	Mole Frac.	0.9850	0.9850	0.0106	0.0159	0.0159
i-Butane	Mole Frac.	0.0102	0.0102	0.2309	0.3482	0.3482
n-Butane	Mole Frac.	0.0013	0.0013	0.4219	0.6318	0.6318
i-Pentane	Mole Frac.	0.0000	0.0000	0.1135	0.0038	0.0038
n-Pentane	Mole Frac.	0.0000	0.0000	0.1103	0.0003	0.0003
n-Hexane	Mole Frac.	0.0000	0.0000	0.0036	0.0000	0.0000
P-C6*	Mole Frac.	0.0000	0.0000	0.0621	0.0000	0.0000
P-C7*	Mole Frac.	0.0000	0.0000	0.0302	0.0000	0.0000
P-C8*	Mole Frac.	0.0000	0.0000	0.0129	0.0000	0.0000
P-C9*	Mole Frac.	0.0000	0.0000	0.0032	0.0000	0.0000
P-C10*	Mole Frac.	0.0000	0.0000	0.0007	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0002	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
CO2	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2S	Mole Frac.	5.46E-08	5.46E-08	1.30E-14	1.97E-14	1.97E-14
M-Mercaptan	Mole Frac.	1.41E-05	1.41E-05	1.61E-05	2.43E-05	2.43E-05
COS	Mole Frac.	3.87E-07	3.87E-07	4.51E-10	6.81E-10	6.81E-10

Stream ID		216	217	219	220	220.1
Stream Name		14-C-103 Reflux	C4 Product to Rundown Cooling	From 14- C-103 to 14-C- 104	14-C-104 Overheads to 14-A-103	From 14- A-103 to 14-D- 104
Vapour Fraction		0.0000	0.0000	0.0850	1.0000	0.0000
Temperature	C	55.0	55.0	123.5	95.7	55.0
Pressure	bar_g	7.69	7.69	6.89	4.91	4.70
Total Molar Flow Rate	kgmole/h	437.5	236.4	120.3	185.5	185.5
Enthalpy	kJ/kgmole	-145385	-145383	-163191	-142238	-170963
Molecular Weight		58.0	58.0	78.4	72.0	72.0
Vapour Mass Flow Rate	kg/h			762	13353	
Vapour Std Gas Flow	MMSCFD			241.9	4384.9	
Vapour Mass Density	kg/m3			21.67	16.30	
Vapour Viscosity	cP			0.009	0.009	
Liquid Mass Flow	kg/h	25353	13700	8676		13353
Liquid Std Flow rate	m³/h	44.0	23.8	13.1		21.2
Liquid Specific Gravity		0.527	0.527	0.539		0.587
Liquid Mass Density	kg/m3	526.7	526.7	539.3		586.9
Liquid Surface Tension	dyne/cm	7.88	7.88	6.60		11.54
Liquid Viscosity	cP	0.126	0.126	0.118		0.166
Methane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Ethane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Propane	Mole Frac.	0.0159	0.0159	0.0000	0.0000	0.0000
i-Butane	Mole Frac.	0.3482	0.3482	0.0005	0.0007	0.0007
n-Butane	Mole Frac.	0.6318	0.6318	0.0095	0.0145	0.0145
i-Pentane	Mole Frac.	0.0038	0.0038	0.3289	0.4984	0.4984
n-Pentane	Mole Frac.	0.0003	0.0003	0.3266	0.4810	0.4810
n-Hexane	Mole Frac.	0.0000	0.0000	0.0106	0.0002	0.0002
P-C6*	Mole Frac.	0.0000	0.0000	0.1841	0.0051	0.0051
P-C7*	Mole Frac.	0.0000	0.0000	0.0894	0.0000	0.0000
P-C8*	Mole Frac.	0.0000	0.0000	0.0383	0.0000	0.0000
P-C9*	Mole Frac.	0.0000	0.0000	0.0095	0.0000	0.0000
P-C10*	Mole Frac.	0.0000	0.0000	0.0021	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0005	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0001	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
CO2	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2S	Mole Frac.	1.97E-14	1.97E-14	8.74E-24	1.33E-23	1.33E-23
M-Mercaptan	Mole Frac.	2.43E-05	2.43E-05	2.54E-09	3.87E-09	3.87E-09
COS	Mole Frac.	6.81E-10	6.81E-10	1.82E-16	2.77E-16	2.77E-16

Stream ID		221	222	225	912	913
Stream Name		14-C-104 Reflux	C5 Product to Rundown Cooling	Condensate Product to Storage	Propane to E-101	Propane Vapour from 14- E-101
Vapour Fraction		0.0000	0.0000	0.0000	0.0000	1.0000
Temperature	C	55.0	55.0	60.1	20.5	-17.8
Pressure	bar_g	4.70	4.70	1.03	7.41	1.52
Total Molar Flow Rate	kgmole/h	106.5	78.9	41.4	592.4	592.4
Enthalpy	kJ/kgmole	-170963	-170961	-192624	-121074	-107726
Molecular Weight		72.0	72.0	90.7	44.3	44.3
Vapour Mass Flow Rate	kg/h				0	26243
Vapour Std Gas Flow	MMSCFD				0.0	14007.1
Vapour Mass Density	kg/m3				18.15	5.66
Vapour Viscosity	cP				0.008	0.007
Liquid Mass Flow	kg/h	7671	5682	3757	26243	
Liquid Std Flow rate	m³/h	12.2	9.0	5.3	51.6	
Liquid Specific Gravity		0.587	0.587	0.666	0.501	
Liquid Mass Density	kg/m3	586.9	586.9	666.0	500.6	
Liquid Surface Tension	dyne/cm	11.54	11.53	15.50	7.48	
Liquid Viscosity	cP	0.166	0.166	0.267	0.105	
Methane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Ethane	Mole Frac.	0.0000	0.0000	0.0000	0.0019	0.0019
Propane	Mole Frac.	0.0000	0.0000	0.0000	0.9817	0.9817
i-Butane	Mole Frac.	0.0007	0.0007	0.0000	0.0116	0.0116
n-Butane	Mole Frac.	0.0145	0.0145	0.0000	0.0048	0.0048
i-Pentane	Mole Frac.	0.4984	0.4984	0.0059	0.0000	0.0000
n-Pentane	Mole Frac.	0.4810	0.4810	0.0321	0.0000	0.0000
n-Hexane	Mole Frac.	0.0002	0.0002	0.0303	0.0000	0.0000
P-C6*	Mole Frac.	0.0051	0.0051	0.5252	0.0000	0.0000
P-C7*	Mole Frac.	0.0000	0.0000	0.2598	0.0000	0.0000
P-C8*	Mole Frac.	0.0000	0.0000	0.1112	0.0000	0.0000
P-C9*	Mole Frac.	0.0000	0.0000	0.0275	0.0000	0.0000
P-C10*	Mole Frac.	0.0000	0.0000	0.0062	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0013	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0002	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0001	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
CO2	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2S	Mole Frac.	1.33E-23	1.33E-23	1.00E-30	0.00E+00	0.00E+00
M-Mercaptan	Mole Frac.	3.87E-09	3.87E-09	5.93E-16	0.00E+00	0.00E+00
COS	Mole Frac.	2.77E-16	2.77E-16	1.10E-25	0.00E+00	0.00E+00

Simulation File Name: SIRB-00-PR-SI-0002 Rev.5 Case 2 Part 1.hsc
Operating Case: Case 2 - Summer, Turndown
Unit: Unit 14, NGL Fractionation
Reference PFD: N/A
Date: May 31/05

Stream ID		133	133.1	134	135	136
Stream Name		14-C-101 Overheads	From 14-E-101 to 14 D-102	14-C-101 Reflux	Vapour from 14- D-101	To 13-E-101
Vapour Fraction		1.0000	0.7218	0.0000	1.0000	0.9957
Temperature	C	-4.0	-15.0	-15.0	-15.0	-19.8
Pressure	bar_g	28.84	28.50	28.50	28.50	24.14
Total Molar Flow Rate	kgmole/h	696.5	696.5	193.8	502.7	503.3
Enthalpy	kJ/kgmole	-98933	-102034	-109603	-99117	-99121
Molecular Weight		26.5	26.5	30.7	24.9	24.9
Vapour Mass Flow Rate	kg/h	18481	12534	0	12534	12484
Vapour Std Gas Flow	MMSCFD	16468.4	11886.5	0.0	11886.4	11848.8
Vapour Mass Density	kg/m3	48.78	46.56	46.56	46.56	38.79
Vapour Viscosity	cP	0.011	0.010	0.010	0.010	0.010
Liquid Mass Flow	kg/h		5946	5946		68
Liquid Std Flow rate	m³/h		16.9	16.9		0.2
Liquid Specific Gravity			0.437	0.437		0.453
Liquid Mass Density	kg/m3		437.2	437.2		452.8
Liquid Surface Tension	dyne/cm		5.58	5.58		6.32
Liquid Viscosity	cP		0.072	0.072		0.079
Methane	Mole Frac.	0.3586	0.3586	0.1340	0.4452	0.4447
Ethane	Mole Frac.	0.5336	0.5336	0.6884	0.4740	0.4747
Propane	Mole Frac.	0.0631	0.0631	0.1454	0.0314	0.0313
i-Butane	Mole Frac.	0.0002	0.0002	0.0005	0.0000	0.0000
n-Butane	Mole Frac.	0.0000	0.0000	0.0001	0.0000	0.0000
i-Pentane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
n-Pentane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
n-Hexane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C6*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C7*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C8*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C9*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C10*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0010	0.0010	0.0001	0.0013	0.0013
CO2	Mole Frac.	0.0434	0.0434	0.0315	0.0480	0.0480
H2S	Mole Frac.	3.86E-06	3.86E-06	4.84E-06	3.48E-06	3.32E-06
M-Mercaptan	Mole Frac.	9.51E-08	9.51E-08	2.55E-07	3.33E-08	1.96E-15
COS	Mole Frac.	9.19E-08	9.19E-08	1.93E-07	5.31E-08	5.31E-08

Stream ID		207	208	209	210	210.1
Stream Name		LTS Liquids From 13-E-101	DeC1 Liquid From 13-P-101 A/B	From 14- C-101 to 14-C- 102	14-C-102 Overheads to 14-A-101	From 14- A-101 to 14-D- 102
Vapour Fraction		0.4613	0.0000	0.2582	1.0000	0.0000
Temperature	C	2.0	11.2	88.8	58.1	55.0
Pressure	bar_g	30.35	31.03	21.00	19.21	19.00
Total Molar Flow Rate	kgmole/h	568.1	195.1	260.5	526.3	526.3
Enthalpy	kJ/kgmole	-113064	-119619	-124972	-104147	-116268
Molecular Weight		34.0	35.7	52.8	44.2	44.2
Vapour Mass Flow Rate	kg/h	6022		3283	23268	
Vapour Std Gas Flow	MMSCFD	6196.5		1590.1	12444.2	
Vapour Mass Density	kg/m3	38.34		51.75	47.30	
Vapour Viscosity	cP	0.011		0.011	0.010	
Liquid Mass Flow	kg/h	13312	6961	10478	<empty>	23268
Liquid Std Flow rate	m³/h	26.5	15.7	18.5	<empty>	45.8
Liquid Specific Gravity		0.524	0.457	0.455	<empty>	0.441
Liquid Mass Density	kg/m3	523.5	456.9	454.8	<empty>	440.5
Liquid Surface Tension	dyne/cm	8.57	4.31	3.27	<empty>	3.59
Liquid Viscosity	cP	0.122	0.076	0.080	<empty>	0.075
Methane	Mole Frac.	0.3906	0.0099	0.0000	0.0000	0.0000
Ethane	Mole Frac.	0.2038	0.6307	0.0020	0.0035	0.0035
Propane	Mole Frac.	0.2015	0.2685	0.5800	0.9850	0.9850
i-Butane	Mole Frac.	0.0409	0.0179	0.1026	0.0102	0.0102
n-Butane	Mole Frac.	0.0722	0.0220	0.1740	0.0013	0.0013
i-Pentane	Mole Frac.	0.0208	0.0027	0.0474	0.0000	0.0000
n-Pentane	Mole Frac.	0.0203	0.0020	0.0458	0.0000	0.0000
n-Hexane	Mole Frac.	0.0005	0.0000	0.0011	0.0000	0.0000
P-C6*	Mole Frac.	0.0124	0.0004	0.0272	0.0000	0.0000
P-C7*	Mole Frac.	0.0059	0.0001	0.0130	0.0000	0.0000
P-C8*	Mole Frac.	0.0025	0.0000	0.0054	0.0000	0.0000
P-C9*	Mole Frac.	0.0006	0.0000	0.0012	0.0000	0.0000
P-C10*	Mole Frac.	0.0001	0.0000	0.0002	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0011	0.0000	0.0000	0.0000	0.0000
CO2	Mole Frac.	0.0267	0.0458	0.0000	0.0000	0.0000
H2S	Mole Frac.	1.63E-06	4.26E-06	2.48E-08	4.24E-08	4.24E-08
M-Mercaptan	Mole Frac.	4.42E-06	2.42E-06	1.14E-05	1.08E-05	1.08E-05
COS	Mole Frac.	1.25E-07	2.46E-07	3.54E-07	6.05E-07	6.05E-07

Stream ID		211	212	214	215	215.1
Stream Name		14-C-102 Reflux	C3 Product to Rundown Cooling	From 14- C-102 to 14-C- 103	14-C-103 Overheads to 14-A-102	From 14- A-102 to 14-D- 103
Vapour Fraction		0.0000	0.0000	0.1826	1.0000	0.0000
Temperature	C	55.0	55.0	115.9	70.3	55.0
Pressure	bar_g	19.00	19.00	15.00	8.03	7.69
Total Molar Flow Rate	kgmole/h	374.1	152.2	108.3	203.9	203.9
Enthalpy	kJ/kgmole	-116268	-116267	-143073	-125734	-145414
Molecular Weight		44.2	44.2	64.9	58.0	58.0
Vapour Mass Flow Rate	kg/h			1212	11816	
Vapour Std Gas Flow	MMSCFD			467.4	4820.6	
Vapour Mass Density	kg/m3			41.72	22.56	
Vapour Viscosity	cP			0.011	0.009	
Liquid Mass Flow	kg/h	16538	6729	5820	<empty>	11816
Liquid Std Flow rate	m³/h	32.5	13.2	9.5	<empty>	20.5
Liquid Specific Gravity		0.441	0.440	0.481	<empty>	0.527
Liquid Mass Density	kg/m3	440.5	440.5	480.7	<empty>	526.6
Liquid Surface Tension	dyne/cm	3.59	3.59	4.01	<empty>	7.87
Liquid Viscosity	cP	0.075	0.075	0.092	<empty>	0.126
Methane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Ethane	Mole Frac.	0.0035	0.0035	0.0000	0.0000	0.0000
Propane	Mole Frac.	0.9850	0.9850	0.0105	0.0160	0.0160
i-Butane	Mole Frac.	0.0102	0.0102	0.2325	0.3526	0.3526
n-Butane	Mole Frac.	0.0013	0.0013	0.4167	0.6274	0.6274
i-Pentane	Mole Frac.	0.0000	0.0000	0.1141	0.0038	0.0038
n-Pentane	Mole Frac.	0.0000	0.0000	0.1101	0.0002	0.0002
n-Hexane	Mole Frac.	0.0000	0.0000	0.0027	0.0000	0.0000
P-C6*	Mole Frac.	0.0000	0.0000	0.0655	0.0000	0.0000
P-C7*	Mole Frac.	0.0000	0.0000	0.0312	0.0000	0.0000
P-C8*	Mole Frac.	0.0000	0.0000	0.0129	0.0000	0.0000
P-C9*	Mole Frac.	0.0000	0.0000	0.0030	0.0000	0.0000
P-C10*	Mole Frac.	0.0000	0.0000	0.0006	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0001	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
CO2	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2S	Mole Frac.	4.24E-08	4.24E-08	1.02E-14	1.55E-14	1.55E-14
M-Mercaptan	Mole Frac.	1.08E-05	1.08E-05	1.22E-05	1.86E-05	1.86E-05
COS	Mole Frac.	6.05E-07	6.05E-07	7.03E-10	1.07E-09	1.07E-09

Stream ID		216	217	219	220	220.1
Stream Name		14-C-103 Reflux	C4 Product to Rundown Cooling	From 14- C-103 to 14-C- 104	14-C-104 Overheads to 14-A-103	From 14- A-103 to 14-D- 104
Vapour Fraction		0.0000	0.0000	0.0000	1.0000	0.0000
Temperature	C	55.0	55.0	55.0	95.7	55.0
Pressure	bar_g	7.69	7.69	7.69	4.91	4.70
Total Molar Flow Rate	kgmole/h	132.5	71.3	132.5	56.5	56.5
Enthalpy	kJ/kgmole	-145414	-145413	-145414	-142249	-170974
Molecular Weight		58.0	58.0	58.0	72.0	72.0
Vapour Mass Flow Rate	kg/h				4065	
Vapour Std Gas Flow	MMSCFD				1335.0	
Vapour Mass Density	kg/m3				16.30	
Vapour Viscosity	cP				0.009	
Liquid Mass Flow	kg/h	7680	4135	7681		4065
Liquid Std Flow rate	m³/h	13.3	7.2	13.3		6.5
Liquid Specific Gravity		0.527	0.527	0.527		0.587
Liquid Mass Density	kg/m3	526.6	526.6	526.6		586.9
Liquid Surface Tension	dyne/cm	7.87	7.87	7.87		11.53
Liquid Viscosity	cP	0.126	0.126	0.126		0.166
Methane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Ethane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Propane	Mole Frac.	0.0160	0.0160	0.0160	0.0000	0.0000
i-Butane	Mole Frac.	0.3526	0.3526	0.3526	0.0007	0.0007
n-Butane	Mole Frac.	0.6274	0.6274	0.6274	0.0146	0.0146
i-Pentane	Mole Frac.	0.0038	0.0038	0.0038	0.4999	0.4999
n-Pentane	Mole Frac.	0.0002	0.0002	0.0002	0.4789	0.4789
n-Hexane	Mole Frac.	0.0000	0.0000	0.0000	0.0002	0.0002
P-C6*	Mole Frac.	0.0000	0.0000	0.0000	0.0056	0.0056
P-C7*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C8*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C9*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C10*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
CO2	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2S	Mole Frac.	1.55E-14	1.55E-14	1.55E-14	1.08E-23	1.08E-23
M-Mercaptan	Mole Frac.	1.86E-05	1.86E-05	1.86E-05	3.01E-09	3.01E-09
COS	Mole Frac.	1.07E-09	1.07E-09	1.07E-09	4.45E-16	4.45E-16

Stream ID		221	222	225	912	913
Stream Name		14-C-104 Reflux	C5 Product to Rundown Cooling	Condensate Product to Storage	Propane to E-101	Propane Vapour from 14- E-101
Vapour Fraction		0.0000	0.0000	0.0000	0.0000	1.0000
Temperature	C	55.0	55.0	55.1	20.5	-17.8
Pressure	bar_g	4.70	4.70	1.03	7.40	1.52
Total Molar Flow Rate	kgmole/h	32.4	24.0	12.9	161.8	161.8
Enthalpy	kJ/kgmole	-170974	-170972	-193036	-121075	-107726
Molecular Weight		72.0	72.0	90.5	44.3	44.3
Vapour Mass Flow Rate	kg/h				0	7167
Vapour Std Gas Flow	MMSCFD				0.0	3825.4
Vapour Mass Density	kg/m3				18.15	5.66
Vapour Viscosity	cP				0.008	0.007
Liquid Mass Flow	kg/h	2335	1730	1167	7167	
Liquid Std Flow rate	m³/h	3.7	2.8	1.6	14.1	
Liquid Specific Gravity		0.587	0.587	0.670	0.501	
Liquid Mass Density	kg/m3	586.9	586.9	670.5	500.6	
Liquid Surface Tension	dyne/cm	11.53	11.53	15.96	7.48	
Liquid Viscosity	cP	0.166	0.166	0.277	0.105	
Methane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Ethane	Mole Frac.	0.0000	0.0000	0.0000	0.0019	0.0019
Propane	Mole Frac.	0.0000	0.0000	0.0000	0.9817	0.9817
i-Butane	Mole Frac.	0.0007	0.0007	0.0000	0.0116	0.0116
n-Butane	Mole Frac.	0.0146	0.0146	0.0000	0.0048	0.0048
i-Pentane	Mole Frac.	0.4999	0.4999	0.0058	0.0000	0.0000
n-Pentane	Mole Frac.	0.4789	0.4789	0.0310	0.0000	0.0000
n-Hexane	Mole Frac.	0.0002	0.0002	0.0219	0.0000	0.0000
P-C6*	Mole Frac.	0.0056	0.0056	0.5398	0.0000	0.0000
P-C7*	Mole Frac.	0.0000	0.0000	0.2619	0.0000	0.0000
P-C8*	Mole Frac.	0.0000	0.0000	0.1086	0.0000	0.0000
P-C9*	Mole Frac.	0.0000	0.0000	0.0249	0.0000	0.0000
P-C10*	Mole Frac.	0.0000	0.0000	0.0048	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0009	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0001	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0001	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
CO2	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2S	Mole Frac.	1.08E-23	1.08E-23	6.06E-36	0.00E+00	0.00E+00
M-Mercaptan	Mole Frac.	3.01E-09	3.01E-09	4.66E-16	0.00E+00	0.00E+00
COS	Mole Frac.	4.45E-16	4.45E-16	1.80E-25	0.00E+00	0.00E+00

Simulation File Name: SIRB-00-PR-SI-0003 Rev.5 Case 3 Part 1.hsc
Operating Case: Case 3 - Winter, Full Flow
Unit: Unit 14, NGL Fractionation
Reference PFD: SIRB-14-PR-PF-0003,4 Rev. 5
Date: May 31/05

Stream ID		133	133.1	134	135	136
Stream Name		14-C-101 Overheads	From 14-E-101 to 14-D-102	14-C-101 Reflux	Vapour from 14-D-101	To 13-E-101
Vapour Fraction		1.0000	0.6924	0.0000	1.0000	0.9948
Temperature	C	-3.7	-15.0	-15.0	-15.0	-22.5
Pressure	bar_g	28.84	28.50	28.50	28.50	22.00
Total Molar Flow Rate	kgmole/h	2239.0	2239.0	688.8	1550.1	1550.5
Enthalpy	kJ/kgmole	-97288	-100647	-108006	-97377	-97217
Molecular Weight		26.6	26.6	30.4	24.9	24.9
Vapour Mass Flow Rate	kg/h	59544	38605	0	38604	38347
Vapour Std Gas Flow	MMSCFD	52938.8	36652.5	0.4	36651.9	36468.3
Vapour Mass Density	kg/m3	49.18	46.71	46.71	46.71	35.22
Vapour Viscosity	cP	0.011	0.010	0.010	0.010	0.010
Liquid Mass Flow	kg/h		20940	20940		251
Liquid Std Flow rate	m³/h		60.6	60.6		0.7
Liquid Specific Gravity			0.433	0.433		0.457
Liquid Mass Density	kg/m3		433.0	433.0		456.5
Liquid Surface Tension	dyne/cm		5.44	5.44		6.59
Liquid Viscosity	cP		0.071	0.071		0.081
Methane	Mole Frac.	0.3441	0.3441	0.1328	0.4381	0.4381
Ethane	Mole Frac.	0.5583	0.5583	0.7110	0.4904	0.4909
Propane	Mole Frac.	0.0586	0.0586	0.1279	0.0279	0.0277
i-Butane	Mole Frac.	0.0001	0.0001	0.0004	0.0000	0.0000
n-Butane	Mole Frac.	0.0000	0.0000	0.0001	0.0000	0.0000
i-Pentane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
n-Pentane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
n-Hexane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C6*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C7*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C8*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C9*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C10*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0010	0.0010	0.0002	0.0013	0.0013
CO2	Mole Frac.	0.0378	0.0378	0.0277	0.0423	0.0418
H2S	Mole Frac.	1.81E-05	1.81E-05	2.24E-05	1.62E-05	9.36E-05
M-Mercaptan	Mole Frac.	5.63E-08	5.63E-08	1.41E-07	1.87E-08	1.86E-08
COS	Mole Frac.	1.32E-08	1.32E-08	2.64E-08	7.38E-09	7.57E-09

Stream ID		207	208	209	210	210.1
Stream Name		LTS Liquids From 13-E-101	DeC1 Liquid From 13-P-101 A/B	From 14- C-101 to 14-C- 102	14-C-102 Overheads to 14-A-101	From 14- A-101 to 14-D- 102
Vapour Fraction		0.4496	0.0000	0.2581	1.0000	0.0000
Temperature	C	4.0	11.4	88.2	58.1	55.0
Pressure	bar_g	30.35	31.03	21.00	19.21	19.00
Total Molar Flow Rate	kgmole/h	1803.8	601.6	855.3	1728.8	1728.8
Enthalpy	kJ/kgmole	-113040	-116408	-124713	-104147	-116268
Molecular Weight		34.4	35.8	52.6	44.2	44.2
Vapour Mass Flow Rate	kg/h	18867		10750	76431	
Vapour Std Gas Flow	MMSCFD	19177.0		5218.9	40877.0	
Vapour Mass Density	kg/m3	38.60		51.76	47.30	
Vapour Viscosity	cP	0.011		0.011	0.010	
Liquid Mass Flow	kg/h	43202	21543	34258		76431
Liquid Std Flow rate	m³/h	85.9	48.4	60.6		150.4
Liquid Specific Gravity		0.520	0.457	0.454		0.441
Liquid Mass Density	kg/m3	520.3	457.3	454.2		440.5
Liquid Surface Tension	dyne/cm	8.38	4.33	3.26		3.59
Liquid Viscosity	cP	0.120	0.077	0.080		0.075
Methane	Mole Frac.	0.3764	0.0001	0.0000	0.0000	0.0000
Ethane	Mole Frac.	0.2078	0.6435	0.0021	0.0035	0.0035
Propane	Mole Frac.	0.2105	0.2754	0.5871	0.9850	0.9850
i-Butane	Mole Frac.	0.0416	0.0186	0.1009	0.0102	0.0102
n-Butane	Mole Frac.	0.0743	0.0233	0.1730	0.0013	0.0013
i-Pentane	Mole Frac.	0.0210	0.0028	0.0463	0.0000	0.0000
n-Pentane	Mole Frac.	0.0207	0.0020	0.0450	0.0000	0.0000
n-Hexane	Mole Frac.	0.0007	0.0000	0.0014	0.0000	0.0000
P-C6*	Mole Frac.	0.0119	0.0004	0.0254	0.0000	0.0000
P-C7*	Mole Frac.	0.0058	0.0001	0.0123	0.0000	0.0000
P-C8*	Mole Frac.	0.0022	0.0000	0.0047	0.0000	0.0000
P-C9*	Mole Frac.	0.0007	0.0000	0.0014	0.0000	0.0000
P-C10*	Mole Frac.	0.0001	0.0000	0.0003	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0001	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0011	0.0000	0.0000	0.0000	0.0000
CO2	Mole Frac.	0.0251	0.0337	0.0000	0.0000	0.0000
H2S	Mole Frac.	6.53E-06	2.23E-05	9.86E-08	1.67E-07	1.67E-07
M-Mercaptan	Mole Frac.	3.09E-06	1.78E-06	7.74E-06	7.30E-06	7.30E-06
COS	Mole Frac.	1.87E-08	3.67E-08	5.19E-08	8.76E-08	8.76E-08

Stream ID		211	212	214	215	215.1
Stream Name		14-C-102 Reflux	C3 Product to Rundown Cooling	From 14- C-102 to 14-C- 103	14-C-103 Overheads to 14-A-102	From 14- A-102 to 14-D- 103
Vapour Fraction		0.0000	0.0000	0.1826	1.0000	0.0000
Temperature	C	55.0	55.0	115.5	70.3	55.0
Pressure	bar_g	19.00	19.00	15.00	8.03	7.69
Total Molar Flow Rate	kgmole/h	1222.8	506.0	349.3	660.1	660.1
Enthalpy	kJ/kgmole	-116268	-116266	-142961	-125707	-145396
Molecular Weight		44.2	44.2	64.8	58.0	58.0
Vapour Mass Flow Rate	kg/h			3905	38255	
Vapour Std Gas Flow	MMSCFD			1507.7	15606.7	
Vapour Mass Density	kg/m3			41.73	22.56	
Vapour Viscosity	cP			0.011	0.009	
Liquid Mass Flow	kg/h	54060	22371	18731		38255
Liquid Std Flow rate	m³/h	106.4	44.0	30.6		66.4
Liquid Specific Gravity		0.441	0.440	0.480		0.527
Liquid Mass Density	kg/m3	440.5	440.5	480.4		526.7
Liquid Surface Tension	dyne/cm	3.59	3.59	4.01		7.88
Liquid Viscosity	cP	0.075	0.075	0.092		0.126
Methane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Ethane	Mole Frac.	0.0035	0.0035	0.0000	0.0000	0.0000
Propane	Mole Frac.	0.9850	0.9850	0.0106	0.0159	0.0159
i-Butane	Mole Frac.	0.0102	0.0102	0.2322	0.3495	0.3495
n-Butane	Mole Frac.	0.0013	0.0013	0.4218	0.6305	0.6305
i-Pentane	Mole Frac.	0.0000	0.0000	0.1135	0.0038	0.0038
n-Pentane	Mole Frac.	0.0000	0.0000	0.1102	0.0003	0.0003
n-Hexane	Mole Frac.	0.0000	0.0000	0.0035	0.0000	0.0000
P-C6*	Mole Frac.	0.0000	0.0000	0.0621	0.0000	0.0000
P-C7*	Mole Frac.	0.0000	0.0000	0.0302	0.0000	0.0000
P-C8*	Mole Frac.	0.0000	0.0000	0.0116	0.0000	0.0000
P-C9*	Mole Frac.	0.0000	0.0000	0.0034	0.0000	0.0000
P-C10*	Mole Frac.	0.0000	0.0000	0.0007	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0002	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
CO2	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2S	Mole Frac.	1.67E-07	1.67E-07	3.94E-14	5.94E-14	5.94E-14
M-Mercaptan	Mole Frac.	7.30E-06	7.30E-06	8.39E-06	1.26E-05	1.26E-05
COS	Mole Frac.	8.76E-08	8.76E-08	1.02E-10	1.54E-10	1.54E-10

Stream ID		216	217	219	220	220.1
Stream Name		14-C-103 Reflux	C4 Product to Rundown Cooling	From 14- C-103 to 14-C- 104	14-C-104 Overheads to 14-A-103	From 14- A-103 to 14-D- 104
Vapour Fraction		0.0000	0.0000	0.0850	1.0000	0.0000
Temperature	C	55.0	55.0	123.4	95.7	55.0
Pressure	bar_g	7.69	7.69	6.89	4.91	4.70
Total Molar Flow Rate	kgmole/h	428.2	231.9	117.4	179.6	179.6
Enthalpy	kJ/kgmole	-145396	-145395	-163093	-142276	-170981
Molecular Weight		58.0	58.0	78.4	72.0	72.0
Vapour Mass Flow Rate	kg/h			743	12928	
Vapour Std Gas Flow	MMSCFD			235.9	4245.9	
Vapour Mass Density	kg/m3			21.68	16.30	
Vapour Viscosity	cP			0.009	0.009	
Liquid Mass Flow	kg/h	24815	13440	8453		12928
Liquid Std Flow rate	m³/h	43.1	23.3	12.8		20.6
Liquid Specific Gravity		0.527	0.527	0.539		0.587
Liquid Mass Density	kg/m3	526.7	526.7	539.0		586.8
Liquid Surface Tension	dyne/cm	7.88	7.88	6.59		11.53
Liquid Viscosity	cP	0.126	0.126	0.118		0.166
Methane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Ethane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Propane	Mole Frac.	0.0159	0.0159	0.0000	0.0000	0.0000
i-Butane	Mole Frac.	0.3495	0.3495	0.0005	0.0007	0.0007
n-Butane	Mole Frac.	0.6305	0.6305	0.0095	0.0146	0.0146
i-Pentane	Mole Frac.	0.0038	0.0038	0.3302	0.5023	0.5023
n-Pentane	Mole Frac.	0.0003	0.0003	0.3274	0.4774	0.4774
n-Hexane	Mole Frac.	0.0000	0.0000	0.0103	0.0002	0.0002
P-C6*	Mole Frac.	0.0000	0.0000	0.1849	0.0047	0.0047
P-C7*	Mole Frac.	0.0000	0.0000	0.0898	0.0000	0.0000
P-C8*	Mole Frac.	0.0000	0.0000	0.0344	0.0000	0.0000
P-C9*	Mole Frac.	0.0000	0.0000	0.0101	0.0000	0.0000
P-C10*	Mole Frac.	0.0000	0.0000	0.0022	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0005	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0001	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
CO2	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2S	Mole Frac.	5.94E-14	5.94E-14	2.64E-23	4.05E-23	4.05E-23
M-Mercaptan	Mole Frac.	1.26E-05	1.26E-05	1.32E-09	2.02E-09	2.02E-09
COS	Mole Frac.	1.54E-10	1.54E-10	4.11E-17	6.31E-17	6.31E-17

Stream ID		221	222	225	912	913
Stream Name		14-C-104 Reflux	C5 Product to Rundown Cooling	Condensate Product to Storage	Propane to E-101	Propane Vapour from 14- E-101
Vapour Fraction		0.0000	0.0000	0.0000	0.0000	1.0000
Temperature	C	55.0	55.0	55.1	20.5	-17.8
Pressure	bar_g	4.70	4.70	1.03	7.40	1.52
Total Molar Flow Rate	kgmole/h	103.2	76.4	40.9	563.3	563.3
Enthalpy	kJ/kgmole	-170981	-170980	-192889	-121076	-107726
Molecular Weight		72.0	72.0	90.2	44.3	44.3
Vapour Mass Flow Rate	kg/h				0	24953
Vapour Std Gas Flow	MMSCFD				0.0	13318.5
Vapour Mass Density	kg/m3				18.15	5.66
Vapour Viscosity	cP				0.008	0.007
Liquid Mass Flow	kg/h	7427	5501	3695	24953	
Liquid Std Flow rate	m³/h	11.8	8.8	5.2	49.0	
Liquid Specific Gravity		0.587	0.587	0.669	0.501	
Liquid Mass Density	kg/m3	586.8	586.8	669.1	500.6	
Liquid Surface Tension	dyne/cm	11.53	11.53	15.89	7.48	
Liquid Viscosity	cP	0.166	0.166	0.275	0.105	
Methane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Ethane	Mole Frac.	0.0000	0.0000	0.0000	0.0019	0.0019
Propane	Mole Frac.	0.0000	0.0000	0.0000	0.9817	0.9817
i-Butane	Mole Frac.	0.0007	0.0007	0.0000	0.0116	0.0116
n-Butane	Mole Frac.	0.0146	0.0146	0.0000	0.0048	0.0048
i-Pentane	Mole Frac.	0.5023	0.5023	0.0090	0.0000	0.0000
n-Pentane	Mole Frac.	0.4774	0.4774	0.0475	0.0000	0.0000
n-Hexane	Mole Frac.	0.0002	0.0002	0.0292	0.0000	0.0000
P-C6*	Mole Frac.	0.0047	0.0047	0.5212	0.0000	0.0000
P-C7*	Mole Frac.	0.0000	0.0000	0.2575	0.0000	0.0000
P-C8*	Mole Frac.	0.0000	0.0000	0.0987	0.0000	0.0000
P-C9*	Mole Frac.	0.0000	0.0000	0.0290	0.0000	0.0000
P-C10*	Mole Frac.	0.0000	0.0000	0.0063	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0014	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0002	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
CO2	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2S	Mole Frac.	4.05E-23	4.05E-23	1.00E-30	0.00E+00	0.00E+00
M-Mercaptan	Mole Frac.	2.02E-09	2.02E-09	4.22E-16	0.00E+00	0.00E+00
COS	Mole Frac.	6.31E-17	6.31E-17	3.24E-26	0.00E+00	0.00E+00

Simulation File Name: SIRB-00-PR-SI-0004 Rev.5 Case 4 Part 1.hsc
Operating Case: Case 4 - Winter, Turndown
Unit: Unit 14, NGL Fractionation
Reference PFD: N/A
Date: May 31/05

Stream ID		133	133.1	134	135	136
Stream Name		14-C-101 Overheads	From 14-E-101 to 14 D-102	14-C-101 Reflux	Vapour from 14- D-101	To 13-E-101
Vapour Fraction		1.0000	0.7168	0.0000	1.0000	0.9957
Temperature	C	-3.5	-15.0	-15.0	-15.0	-19.8
Pressure	bar_g	28.84	28.50	28.50	28.50	24.14
Total Molar Flow Rate	kgmole/h	677.3	677.3	191.8	485.5	485.1
Enthalpy	kJ/kgmole	-98754	-101939	-109662	-98888	-98892
Molecular Weight		26.5	26.5	30.8	24.9	24.9
Vapour Mass Flow Rate	kg/h	17980	12076	0	12076	12001
Vapour Std Gas Flow	MMSCFD	16015.5	11480.0	0.0	11479.9	11421.5
Vapour Mass Density	kg/m3	48.60	46.34	46.34	46.34	38.60
Vapour Viscosity	cP	0.011	0.010	0.010	0.010	0.010
Liquid Mass Flow	kg/h		5904	5904		65
Liquid Std Flow rate	m³/h		16.7	16.7		0.2
Liquid Specific Gravity			0.438	0.438		0.454
Liquid Mass Density	kg/m3		438.2	438.2		453.9
Liquid Surface Tension	dyne/cm		5.63	5.63		6.38
Liquid Viscosity	cP		0.072	0.072		0.079
Methane	Mole Frac.	0.3614	0.3614	0.1352	0.4507	0.4507
Ethane	Mole Frac.	0.5274	0.5274	0.6793	0.4674	0.4675
Propane	Mole Frac.	0.0673	0.0673	0.1537	0.0331	0.0331
i-Butane	Mole Frac.	0.0002	0.0002	0.0005	0.0000	0.0000
n-Butane	Mole Frac.	0.0001	0.0001	0.0002	0.0000	0.0000
i-Pentane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
n-Pentane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
n-Hexane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C6*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C7*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C8*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C9*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C10*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0010	0.0010	0.0001	0.0013	0.0013
CO2	Mole Frac.	0.0427	0.0427	0.0310	0.0474	0.0474
H2S	Mole Frac.	2.76E-06	2.76E-06	3.46E-06	2.48E-06	2.58E-06
M-Mercaptan	Mole Frac.	3.80E-08	3.80E-08	1.01E-07	1.31E-08	2.72E-16
COS	Mole Frac.	4.14E-09	4.14E-09	8.62E-09	2.37E-09	7.15E-15

Stream ID		207	208	209	210	210.1
Stream Name		LTS Liquids From 13-E-101	DeC1 Liquid From 13-P-101 A/B	From 14- C-101 to 14-C- 102	14-C-102 Overheads to 14-A-101	From 14- A-101 to 14-D- 102
Vapour Fraction		0.4576	0.0000	0.2582	1.0000	0.0000
Temperature	C	2.0	11.2	88.7	58.1	55.0
Pressure	bar_g	30.35	31.03	21.00	19.21	19.00
Total Molar Flow Rate	kgmole/h	556.9	185.9	257.3	520.2	520.2
Enthalpy	kJ/kgmole	-113101	-119595	-124897	-104148	-116269
Molecular Weight		34.1	35.9	52.8	44.2	44.2
Vapour Mass Flow Rate	kg/h	5858		3241	22999	
Vapour Std Gas Flow	MMSCFD	6024.7		1570.5	12300.4	
Vapour Mass Density	kg/m3	38.37		51.76	47.30	
Vapour Viscosity	cP	0.011		0.011	0.010	
Liquid Mass Flow	kg/h	13123	6671	10335		22999
Liquid Std Flow rate	m³/h	26.1	15.0	18.2		45.3
Liquid Specific Gravity		0.523	0.458	0.455		0.441
Liquid Mass Density	kg/m3	523.0	458.1	454.6		440.5
Liquid Surface Tension	dyne/cm	8.55	4.43	3.27		3.59
Liquid Viscosity	cP	0.122	0.077	0.080		0.075
Methane	Mole Frac.	0.3883	0.0140	0.0000	0.0000	0.0000
Ethane	Mole Frac.	0.2047	0.6106	0.0020	0.0035	0.0035
Propane	Mole Frac.	0.2029	0.2838	0.5818	0.9850	0.9850
i-Butane	Mole Frac.	0.0412	0.0189	0.1027	0.0102	0.0102
n-Butane	Mole Frac.	0.0722	0.0231	0.1730	0.0013	0.0013
i-Pentane	Mole Frac.	0.0209	0.0029	0.0472	0.0000	0.0000
n-Pentane	Mole Frac.	0.0204	0.0020	0.0455	0.0000	0.0000
n-Hexane	Mole Frac.	0.0005	0.0000	0.0011	0.0000	0.0000
P-C6*	Mole Frac.	0.0124	0.0004	0.0272	0.0000	0.0000
P-C7*	Mole Frac.	0.0060	0.0001	0.0130	0.0000	0.0000
P-C8*	Mole Frac.	0.0022	0.0000	0.0048	0.0000	0.0000
P-C9*	Mole Frac.	0.0006	0.0000	0.0013	0.0000	0.0000
P-C10*	Mole Frac.	0.0001	0.0000	0.0002	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0011	0.0000	0.0000	0.0000	0.0000
CO2	Mole Frac.	0.0265	0.0442	0.0000	0.0000	0.0000
H2S	Mole Frac.	1.17E-06	2.99E-06	1.78E-08	3.04E-08	3.04E-08
M-Mercaptan	Mole Frac.	1.68E-06	9.66E-07	4.32E-06	4.08E-06	4.08E-06
COS	Mole Frac.	7.81E-09	1.03E-08	1.98E-08	3.38E-08	3.38E-08

Stream ID		211	212	214	215	215.1
Stream Name		14-C-102 Reflux	C3 Product to Rundown Cooling	From 14- C-102 to 14-C- 103	14-C-103 Overheads to 14-A-102	From 14- A-102 to 14-D- 103
Vapour Fraction		0.0000	0.0000	0.1826	1.0000	0.0000
Temperature	C	55.0	55.0	115.8	70.3	55.0
Pressure	bar_g	19.00	19.00	15.00	8.03	7.69
Total Molar Flow Rate	kgmole/h	369.4	150.8	106.4	200.5	200.5
Enthalpy	kJ/kgmole	-116269	-116267	-143025	-125751	-145425
Molecular Weight		44.2	44.2	64.9	58.0	58.0
Vapour Mass Flow Rate	kg/h			1191	11620	
Vapour Std Gas Flow	MMSCFD			459.6	4740.4	
Vapour Mass Density	kg/m3			41.73	22.57	
Vapour Viscosity	cP			0.011	0.009	
Liquid Mass Flow	kg/h	16332	6667	5717		11620
Liquid Std Flow rate	m³/h	32.1	13.1	9.3		20.2
Liquid Specific Gravity		0.441	0.440	0.481		0.527
Liquid Mass Density	kg/m3	440.5	440.5	480.5		526.6
Liquid Surface Tension	dyne/cm	3.59	3.59	4.01		7.87
Liquid Viscosity	cP	0.075	0.075	0.092		0.126
Methane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Ethane	Mole Frac.	0.0035	0.0035	0.0000	0.0000	0.0000
Propane	Mole Frac.	0.9850	0.9850	0.0105	0.0159	0.0159
i-Butane	Mole Frac.	0.0102	0.0102	0.2338	0.3540	0.3540
n-Butane	Mole Frac.	0.0013	0.0013	0.4163	0.6260	0.6260
i-Pentane	Mole Frac.	0.0000	0.0000	0.1141	0.0038	0.0038
n-Pentane	Mole Frac.	0.0000	0.0000	0.1100	0.0003	0.0003
n-Hexane	Mole Frac.	0.0000	0.0000	0.0026	0.0000	0.0000
P-C6*	Mole Frac.	0.0000	0.0000	0.0656	0.0000	0.0000
P-C7*	Mole Frac.	0.0000	0.0000	0.0314	0.0000	0.0000
P-C8*	Mole Frac.	0.0000	0.0000	0.0116	0.0000	0.0000
P-C9*	Mole Frac.	0.0000	0.0000	0.0032	0.0000	0.0000
P-C10*	Mole Frac.	0.0000	0.0000	0.0005	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0001	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
CO2	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2S	Mole Frac.	3.04E-08	3.04E-08	7.28E-15	1.10E-14	1.10E-14
M-Mercaptan	Mole Frac.	4.08E-06	4.08E-06	4.65E-06	7.05E-06	7.05E-06
COS	Mole Frac.	3.38E-08	3.38E-08	3.93E-11	5.95E-11	5.95E-11

Stream ID		216	217	219	220	220.1
Stream Name		14-C-103 Reflux	C4 Product to Rundown Cooling	From 14- C-103 to 14-C- 104	14-C-104 Overheads to 14-A-103	From 14- A-103 to 14-D- 104
Vapour Fraction		0.0000	0.0000	0.0850	1.0000	0.0000
Temperature	C	55.0	55.0	123.6	95.7	55.0
Pressure	bar_g	7.69	7.69	6.89	4.91	4.70
Total Molar Flow Rate	kgmole/h	130.2	70.2	36.2	55.5	55.5
Enthalpy	kJ/kgmole	-145425	-145424	-162952	-142254	-170976
Molecular Weight		58.0	58.0	78.4	72.0	72.0
Vapour Mass Flow Rate	kg/h			229	3994	
Vapour Std Gas Flow	MMSCFD			72.8	1311.6	
Vapour Mass Density	kg/m3			21.69	16.30	
Vapour Viscosity	cP			0.009	0.009	
Liquid Mass Flow	kg/h	7548	4071	2608		3994
Liquid Std Flow rate	m³/h	13.1	7.1	3.9		6.4
Liquid Specific Gravity		0.527	0.527	0.539		0.587
Liquid Mass Density	kg/m3	526.6	526.6	539.0		586.9
Liquid Surface Tension	dyne/cm	7.87	7.87	6.59		11.53
Liquid Viscosity	cP	0.126	0.126	0.118		0.166
Methane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Ethane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Propane	Mole Frac.	0.0159	0.0159	0.0000	0.0000	0.0000
i-Butane	Mole Frac.	0.3540	0.3540	0.0005	0.0007	0.0007
n-Butane	Mole Frac.	0.6260	0.6260	0.0095	0.0146	0.0146
i-Pentane	Mole Frac.	0.0038	0.0038	0.3283	0.5003	0.5003
n-Pentane	Mole Frac.	0.0003	0.0003	0.3231	0.4787	0.4787
n-Hexane	Mole Frac.	0.0000	0.0000	0.0076	0.0002	0.0002
P-C6*	Mole Frac.	0.0000	0.0000	0.1930	0.0056	0.0056
P-C7*	Mole Frac.	0.0000	0.0000	0.0924	0.0000	0.0000
P-C8*	Mole Frac.	0.0000	0.0000	0.0342	0.0000	0.0000
P-C9*	Mole Frac.	0.0000	0.0000	0.0094	0.0000	0.0000
P-C10*	Mole Frac.	0.0000	0.0000	0.0016	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0002	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
CO2	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2S	Mole Frac.	1.10E-14	1.10E-14	4.99E-24	7.66E-24	7.66E-24
M-Mercaptan	Mole Frac.	7.05E-06	7.05E-06	7.44E-10	1.14E-09	1.14E-09
COS	Mole Frac.	5.95E-11	5.95E-11	1.62E-17	2.48E-17	2.48E-17

Stream ID		221	222	225	912	913
Stream Name		14-C-104 Reflux	C5 Product to Rundown Cooling	Condensate Product to Storage	Propane to E-101	Propane Vapour from 14- E-101
Vapour Fraction		0.0000	0.0000	0.0000	0.0000	1.0000
Temperature	C	55.0	55.0	55.1	20.5	-17.8
Pressure	bar_g	4.70	4.70	1.03	7.40	1.52
Total Molar Flow Rate	kgmole/h	31.9	23.6	12.6	161.6	161.6
Enthalpy	kJ/kgmole	-170976	-170975	-192699	-121076	-107726
Molecular Weight		72.0	72.0	90.3	44.3	44.3
Vapour Mass Flow Rate	kg/h				0	7159
Vapour Std Gas Flow	MMSCFD				0.0	3820.8
Vapour Mass Density	kg/m3				18.15	5.66
Vapour Viscosity	cP				0.008	0.007
Liquid Mass Flow	kg/h	2295	1700	1137	7159	
Liquid Std Flow rate	m³/h	3.7	2.7	1.6	14.1	
Liquid Specific Gravity		0.587	0.587	0.670	0.501	
Liquid Mass Density	kg/m3	586.9	586.9	670.0	500.6	
Liquid Surface Tension	dyne/cm	11.53	11.53	15.93	7.48	
Liquid Viscosity	cP	0.166	0.166	0.276	0.105	
Methane	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Ethane	Mole Frac.	0.0000	0.0000	0.0000	0.0019	0.0019
Propane	Mole Frac.	0.0000	0.0000	0.0000	0.9817	0.9817
i-Butane	Mole Frac.	0.0007	0.0007	0.0000	0.0116	0.0116
n-Butane	Mole Frac.	0.0146	0.0146	0.0000	0.0048	0.0048
i-Pentane	Mole Frac.	0.5003	0.5003	0.0059	0.0000	0.0000
n-Pentane	Mole Frac.	0.4787	0.4787	0.0315	0.0000	0.0000
n-Hexane	Mole Frac.	0.0002	0.0002	0.0216	0.0000	0.0000
P-C6*	Mole Frac.	0.0056	0.0056	0.5445	0.0000	0.0000
P-C7*	Mole Frac.	0.0000	0.0000	0.2658	0.0000	0.0000
P-C8*	Mole Frac.	0.0000	0.0000	0.0984	0.0000	0.0000
P-C9*	Mole Frac.	0.0000	0.0000	0.0271	0.0000	0.0000
P-C10*	Mole Frac.	0.0000	0.0000	0.0046	0.0000	0.0000
P-C11*	Mole Frac.	0.0000	0.0000	0.0006	0.0000	0.0000
P-C12*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C13*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C14*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C15*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
P-C16*	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2O	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrogen	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
CO2	Mole Frac.	0.0000	0.0000	0.0000	0.0000	0.0000
H2S	Mole Frac.	7.66E-24	7.66E-24	1.00E-30	0.00E+00	0.00E+00
M-Mercaptan	Mole Frac.	1.14E-09	1.14E-09	1.77E-16	0.00E+00	0.00E+00
COS	Mole Frac.	2.48E-17	2.48E-17	1.00E-26	0.00E+00	0.00E+00