

Simulated PVT Study

Generated with whitson+

Oil Sample

Well: SPE-DATA-REPOSITORY-DATASET-1-WELL-4-K

Field: Jesus - Support

calcid: 787d73ff-40e1-4251-83c2-77a180a18a56

12 August 2025

1. Fluid Analysis Results

Table 1: Reservoir Conditions

Reservoir Pressure	6600	psia
Reservoir Temperature	237.716614	F

Table 3: Fluid Properties at Reservoir Conditions

Density	43.97889283	lbm/ft3
Viscosity	0.536	cp

Table 4: Fluid Properties at Saturation Conditions

Bubble Point Pressure	2875.456564	psia
Density	41.38650452	lbm/ft3
Viscosity	0.326	cp
Formation Volume Factor (Bo) **	1.470	bbl/STB
Solution GOR (Rs) **	750	scf/STB

Table 5: Stock Tank Oil Properties

Density **	52.11309248	lbm/ft3
API Gravity **	37.84	API

** Properties from multi-stage separator test

Table 2: Composition of Reservoir Fluid

Component	mol%
N2	0.00
CO2	0.00
H2S	0.00
C1	37.53
C2	10.04
C3	7.66
I-C4	1.04
N-C4	4.44
I-C5	1.74
N-C5	2.20
C6	3.26
C7	3.28
C8	4.03
C9	2.72
C10	2.24
C11	1.74
C12	1.40
C13	1.45
C14	1.24
C15	1.17
C16	0.92
C17	0.86
C18	0.84
C19	0.76
C20	0.62
C21	0.57
C22	0.52
C23	0.48
C24	0.44
C25	0.42
C26	0.39
C27	0.37
C28	0.35
C29	0.33
C30+	4.96
Total	100.00

2. Single Stage Flash (SSF)

Table 6: Single Stage Flash of Reservoir Fluid at Standard Conditions

Pressure	Temperature	GOR	Separator Volume Factor	Specific Gravity for Flashed Gas	Oil Molecular Weight	Oil Density	Stock Tank Oil Gravity
(psia)	(F)	(scf/bbl)	(bbl/STB)	(air=1)	(-)	(lbm/ft ³)	(API)
2875.45656	237.7	0	1.535	-	98.49	41.386505	-
14.695943	60.0	841.95218	1.000	0.945	211.01	52.705681	35.94

It is common for the PVT laboratory to use a higher temperature for the SSF and the main reason for that is so the final oil is thermally stable at room temperature.

Table 6b: Single Stage Flash of Reservoir Fluid to 1 atm and 140 F

Pressure	Temperature	GOR	Separator Volume Factor	Specific Gravity for Flashed Gas	Oil Molecular Weight	Oil Density	Stock Tank Oil Gravity
(psia)	(F)	(scf/bbl)	(bbl/STB)	(air=1)	(-)	(lbm/ft ³)	(API)
2875.45656	237.7	0	1.678	-	98.49	41.386505	-
14.695943	140.0	1003.1786	1.021	1.137	238.97	52.50953	-
14.695943	60.0	0	1.000	-	238.97	53.610	33.11

2. Compositional Analysis of Reservoir Fluid from SSF

Table 7: Compositional Analysis Data

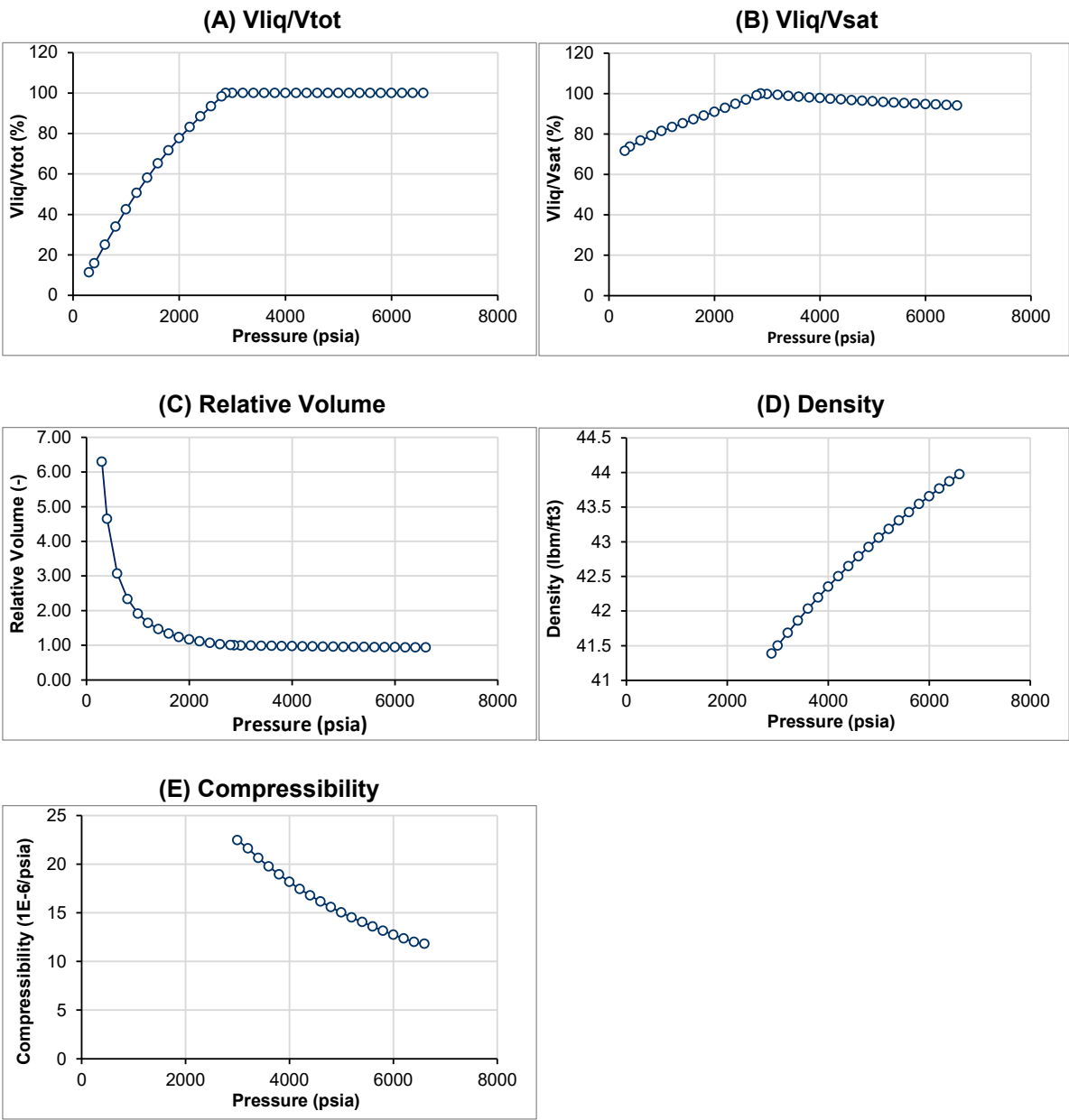
Component	MW -	mol-%			mass-%		
		Flashed Gas	Flashed Liquid	Reservoir Fluid	Flashed Gas	Flashed Liquid	Reservoir Fluid
N2	28.0	0.00	0.00	0.00	0.00	0.00	0.00
CO2	44.0	0.00	0.00	0.00	0.00	0.00	0.00
H2S	34.1	0.00	0.00	0.00	0.00	0.00	0.00
C1	16.0	61.07	0.29	37.53	35.80	0.02	6.11
C2	30.1	16.00	0.61	10.04	17.58	0.09	3.06
C3	44.1	11.43	1.70	7.66	18.41	0.36	3.43
I-C4	58.1	1.36	0.53	1.04	2.89	0.15	0.61
N-C4	58.1	5.32	3.04	4.44	11.29	0.84	2.62
I-C5	72.2	1.44	2.21	1.74	3.79	0.75	1.27
N-C5	72.2	1.55	3.23	2.20	4.09	1.10	1.61
C6	84.0	1.17	6.57	3.26	3.59	2.62	2.78
C7	97.8	0.44	7.78	3.28	1.56	3.60	3.26
C8	111.7	0.18	10.12	4.03	0.74	5.36	4.57
C9	125.7	0.04	6.95	2.72	0.18	4.14	3.47
C10	139.7	0.01	5.76	2.24	0.05	3.82	3.18
C11	153.7	0.00	4.49	1.74	0.02	3.27	2.72
C12	167.7	0.00	3.62	1.40	0.00	2.87	2.39
C13	181.7	0.00	3.74	1.45	0.00	3.22	2.67
C14	195.6	0.00	3.20	1.24	0.00	2.97	2.46
C15	209.6	0.00	3.01	1.17	0.00	2.99	2.48
C16	223.6	0.00	2.39	0.92	0.00	2.53	2.10
C17	237.5	0.00	2.22	0.86	0.00	2.50	2.07
C18	251.5	0.00	2.18	0.84	0.00	2.59	2.15
C19	265.5	0.00	1.95	0.76	0.00	2.46	2.04
C20	279.4	0.00	1.59	0.62	0.00	2.11	1.75
C21	293.4	0.00	1.48	0.57	0.00	2.05	1.71
C22	307.3	0.00	1.35	0.52	0.00	1.97	1.64
C23	321.3	0.00	1.25	0.48	0.00	1.90	1.58
C24	335.2	0.00	1.14	0.44	0.00	1.81	1.50
C25	349.2	0.00	1.07	0.42	0.00	1.78	1.47
C26	363.2	0.00	1.01	0.39	0.00	1.73	1.44
C27	377.1	0.00	0.96	0.37	0.00	1.71	1.42
C28	391.1	0.00	0.90	0.35	0.00	1.66	1.38
C29	405.0	0.00	0.84	0.33	0.00	1.61	1.34
C30+	550.0	0.00	12.82	4.96	0.00	33.41	27.72
Total	-	100.00	100.00	100.00	100.00	100.00	100.00

3. Constant Composition Expansion (CCE)

Table 8: Constant Composition Expansion (CCE) at Reservoir Temperature

	Pressure	Vliq/Vtot	Vliq/Vsat	Rel Volume	Oil Viscosity	Density	Compressibility
	(psia)	(%)	(%)	Vr=V/Vsat	(cp)	(lbm/ft3)	(1E-6/psia)
Pres	6600	100.00	94.11	0.941	0.536	43.97889283	11.80
	6400	100.00	94.33	0.943	0.525	43.87508013	11.99
	6200	100.00	94.56	0.946	0.514	43.76838822	12.36
	6000	100.00	94.80	0.948	0.502	43.6586735	12.75
	5800	100.00	95.04	0.950	0.491	43.54578147	13.15
	5600	100.00	95.30	0.953	0.480	43.42954551	13.58
	5400	100.00	95.56	0.956	0.468	43.30978566	14.04
	5200	100.00	95.83	0.958	0.457	43.18630704	14.52
	5000	100.00	96.12	0.961	0.446	43.05889819	15.04
	4800	100.00	96.41	0.964	0.434	42.9273291	15.58
	4600	100.00	96.72	0.967	0.423	42.79134891	16.16
	4400	100.00	97.04	0.970	0.412	42.65068332	16.78
	4200	100.00	97.37	0.974	0.401	42.50503146	17.45
	4000	100.00	97.72	0.977	0.389	42.35406234	18.16
	3800	100.00	98.08	0.981	0.378	42.19741059	18.92
	3600	100.00	98.46	0.985	0.367	42.03467143	19.75
	3400	100.00	98.86	0.989	0.355	41.86539465	20.64
	3200	100.00	99.27	0.993	0.344	41.68907743	21.60
	3000	100.00	99.71	0.997	0.333	41.50515562	22.46
Psat	2875.456564	100.00	100.00	1.000	0.326	41.38650452	
	2800	98.23	99.13	1.009	0.334		
	2600	93.45	96.93	1.037	0.356		
	2400	88.47	94.84	1.072	0.380		
	2200	83.21	92.85	1.116	0.406		
	2000	77.61	90.92	1.172	0.436		
	1800	71.60	89.04	1.244	0.468		
	1600	65.13	87.18	1.339	0.504		
	1400	58.14	85.32	1.467	0.544		
	1200	50.60	83.40	1.648	0.591		
	1000	42.51	81.40	1.915	0.647		
	800	33.92	79.22	2.336	0.714		
	600	24.94	76.74	3.077	0.800		
	400	15.84	73.65	4.651	0.920		
	300	11.37	71.65	6.302	1.004		

Figure 1: Plots Constant Composition Expansion (CCE)



4. Differential Liberation Expansion (DLE)

Notes:

** Z factor and gas gravity for incipient gas at the bubblepoint.

*** Simulated depletion down to atmospheric pressure is a single flash calculation. Laboratory depletion to atmospheric pressure will likely be a bleeding process that will result in less shrinkage than a single flash. Therefore, the simulated final stage flash leads to Rsd and Bod values that will be greater than laboratory values (at all pressures). This discrepancy can become significant at higher temperatures and for lighter oils (higher API).

Table 9: Differential Liberation Expansion (DLE) at Reservoir Temperature

Psat**	Pressure	Solution Gas Oil Ratio	Relative Oil Volume	Oil Density	Gas Z Factor	Incremental Gas Gravity
		Rsd	Bod		Z	
	(psia)	(scf/residual-bbl)	(bbl/residual-bbl)	(lbm/ft3)	-	(air=1)
	2875.456564	1088	1.733	41.38650452	0.849	0.839
	2800	1059	1.718	41.55732332	0.848	0.835
	2600	985	1.679	42.01074552	0.845	0.826
	2400	914	1.643	42.46642726	0.845	0.818
	2200	847	1.608	42.92507169	0.845	0.812
	2000	782	1.574	43.38738803	0.848	0.808
	1800	720	1.542	43.85415921	0.851	0.806
	1600	661	1.511	44.3263459	0.857	0.808
	1400	603	1.481	44.80526163	0.863	0.812
	1200	547	1.451	45.29289359	0.871	0.822
	1000	492	1.421	45.79255322	0.880	0.838
	800	438	1.392	46.31037955	0.891	0.866
	600	383	1.361	46.85952016	0.902	0.915
	400	324	1.326	47.47568381	0.916	1.008
	200	248	1.277	48.3151013	0.932	1.237
***	14.69594301	0	1.051	51.222427	0.983	2.323
Residual	14.69594301	0	1.000	53.84256055		

Table 10: Compositions from Differential Liberation Expansion (DLE) Test

Removed gas compositions, mol-%. *Residual oil at standard conditions (1 atm, 60 F)

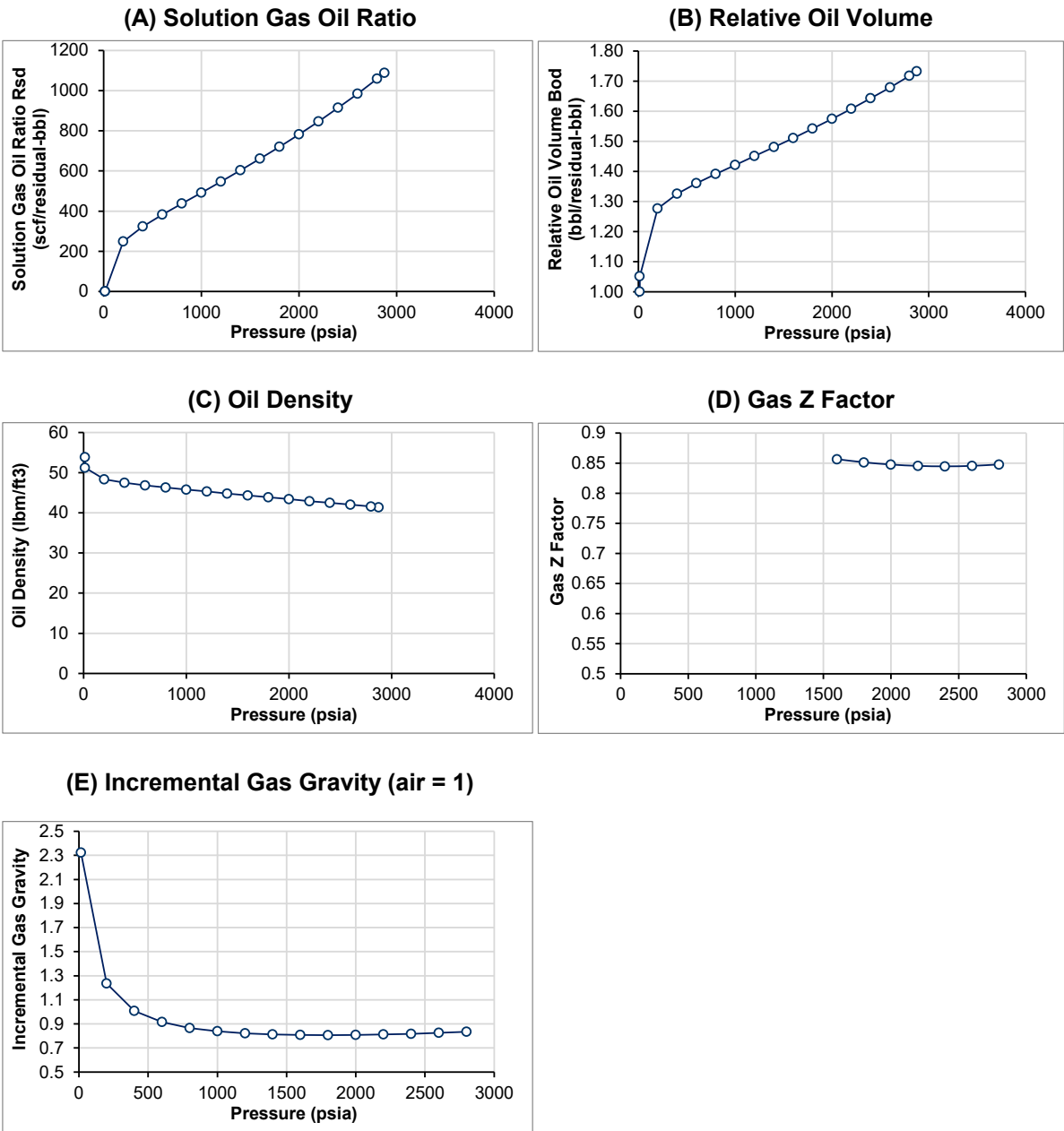
Notes:

1. First column is the incipient gas at bubblepoint.

2. Last column (*) is stock tank oil at standard conditions (1 atm, 60 F)

Pres (psia)	2875	2800	2600	2400	2200	2000	1800	1600	1400	1200	1000	800	600	400	200	14.7	14.7*
N2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
H2S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C1	75.70	75.77	75.90	75.93	75.85	75.63	75.22	74.58	73.61	72.19	70.10	66.92	61.81	52.73	33.96	4.35	0.01
C2	10.83	10.88	11.03	11.22	11.45	11.75	12.12	12.60	13.21	14.02	15.12	16.67	18.94	22.46	27.08	11.50	0.14
C3	5.80	5.81	5.83	5.88	5.95	6.06	6.22	6.43	6.74	7.18	7.82	8.80	10.40	13.35	19.95	18.16	0.50
I-C4	0.63	0.63	0.62	0.62	0.62	0.62	0.63	0.65	0.67	0.70	0.76	0.85	1.01	1.32	2.12	3.27	0.17
N-C4	2.37	2.36	2.34	2.32	2.31	2.32	2.34	2.39	2.46	2.59	2.79	3.12	3.70	4.86	8.03	15.03	0.96
I-C5	0.73	0.72	0.71	0.69	0.68	0.67	0.66	0.66	0.67	0.70	0.74	0.81	0.95	1.24	2.10	6.44	0.77
N-C5	0.86	0.85	0.83	0.80	0.79	0.77	0.76	0.76	0.77	0.79	0.83	0.91	1.07	1.39	2.36	8.21	1.16
C6	0.93	0.91	0.87	0.83	0.80	0.77	0.75	0.74	0.73	0.74	0.76	0.82	0.94	1.21	2.06	11.29	3.15
C7	0.67	0.65	0.61	0.58	0.54	0.52	0.49	0.47	0.46	0.45	0.46	0.48	0.54	0.68	1.13	8.93	5.14
C8	0.61	0.60	0.55	0.50	0.47	0.43	0.40	0.37	0.35	0.34	0.33	0.34	0.37	0.46	0.74	7.40	8.70
C9	0.31	0.30	0.27	0.24	0.22	0.20	0.18	0.16	0.15	0.14	0.14	0.13	0.14	0.17	0.27	3.00	7.14
C10	0.19	0.19	0.16	0.14	0.13	0.11	0.10	0.09	0.08	0.07	0.07	0.06	0.07	0.08	0.12	1.37	6.57
C11	0.11	0.11	0.09	0.08	0.07	0.06	0.05	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.05	0.57	5.42
C12	0.07	0.07	0.06	0.05	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.02	0.24	4.51
C13	0.06	0.05	0.04	0.04	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.13	4.74
C14	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	4.4E-3	4.0E-3	4.0E-3	0.01	0.06	4.10
C15	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01	4.6E-3	3.6E-3	3.0E-3	2.5E-3	2.2E-3	2.1E-3	2.7E-3	0.03	3.88
C16	0.02	0.01	0.01	0.01	0.01	0.01	4.1E-3	3.1E-3	2.4E-3	1.8E-3	1.4E-3	1.2E-3	1.0E-3	9.6E-4	1.2E-3	0.01	3.08
C17	0.01	0.01	0.01	0.01	4.7E-3	3.5E-3	2.6E-3	1.9E-3	1.5E-3	1.1E-3	8.4E-4	6.6E-4	5.5E-4	5.1E-4	6.1E-4	0.01	2.87
C18	0.01	0.01	0.01	4.5E-3	3.3E-3	2.4E-3	1.8E-3	1.3E-3	9.4E-4	6.9E-4	5.1E-4	3.9E-4	3.2E-4	2.9E-4	3.3E-4	2.9E-3	2.82
C19	0.01	0.01	4.2E-3	3.0E-3	2.2E-3	1.6E-3	1.1E-3	7.9E-4	5.6E-4	4.0E-4	2.9E-4	2.2E-4	1.7E-4	1.5E-4	1.7E-4	1.4E-3	2.53
C20	4.0E-3	3.6E-3	2.6E-3	1.8E-3	1.3E-3	9.1E-4	6.3E-4	4.4E-4	3.0E-4	2.1E-4	1.5E-4	1.1E-4	8.3E-5	7.0E-5	7.6E-5	6.1E-4	2.07
C21	2.9E-3	2.6E-3	1.8E-3	1.3E-3	8.8E-4	6.1E-4	4.1E-4	2.8E-4	1.9E-4	1.3E-4	8.8E-5	6.2E-5	4.6E-5	3.8E-5	4.0E-5	3.1E-4	1.92
C22	2.1E-3	1.8E-3	1.3E-3	8.8E-4	6.0E-4	4.0E-4	2.7E-4	1.8E-4	1.2E-4	7.7E-5	5.1E-5	3.5E-5	2.6E-5	2.0E-5	2.1E-5	1.5E-4	1.75
C23	1.5E-3	1.3E-3	9.1E-4	6.1E-4	4.0E-4	2.7E-4	1.7E-4	1.1E-4	7.2E-5	4.6E-5	3.0E-5	2.0E-5	1.4E-5	1.1E-5	1.1E-5	7.6E-5	1.62
C24	1.1E-3	9.5E-4	6.4E-4	4.2E-4	2.7E-4	1.8E-4	1.1E-4	7.1E-5	4.4E-5	2.8E-5	1.8E-5	1.2E-5	8.0E-6	6.0E-6	5.7E-6	3.9E-5	1.48
C25	8.2E-4	7.0E-4	4.6E-4	3.0E-4	1.9E-4	1.2E-4	7.5E-5	4.6E-5	2.8E-5	1.7E-5	1.1E-5	6.9E-6	4.6E-6	3.4E-6	3.1E-6	2.0E-5	1.39
C26	6.1E-4	5.2E-4	3.3E-4	2.1E-4	1.3E-4	8.2E-5	5.0E-5	3.0E-5	1.8E-5	1.1E-5	6.6E-6	4.1E-6	2.7E-6	1.9E-6	1.7E-6	1.0E-5	1.30
C27	4.6E-4	3.9E-4	2.5E-4	1.5E-4	9.4E-5	5.7E-5	3.4E-5	2.0E-5	1.2E-5	6.9E-6	4.1E-6	2.5E-6	1.6E-6	1.1E-6	9.5E-7	5.6E-6	1.24
C28	3.4E-4	2.9E-4	1.8E-4	1.1E-4	6.6E-5	3.9E-5	2.3E-5	1.3E-5	7.6E-6	4.4E-6	2.5E-6	1.5E-6	9.2E-7	6.2E-7	5.2E-7	3.0E-6	1.16
C29	2.5E-4	2.1E-4	1.3E-4	7.9E-5	4.6E-5	2.7E-5	1.5E-5	8.7E-6	4.9E-6	2.8E-6	1.6E-6	9.0E-7	5.4E-7	3.6E-7	2.9E-7	1.6E-6	1.09
C30+	4.1E-4	3.2E-4	1.7E-4	8.5E-5	4.2E-5	2.0E-5	9.5E-6	4.4E-6	2.0E-6	9.1E-7	4.1E-7	1.9E-7	9.0E-8	4.6E-8	2.8E-8	1.0E-7	16.62
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Figure 2: Plots Differential Liberation Expansion (DLE)



5. Separator Test

Table 11: Multi-stage Separator Test

The multi-stage separator test provides fluid properties such as GOR, density and oil formation volume factor at separator test conditions

	Pressure	Temperature	GOR ¹	GOR ²	Separator Volume Factor ³	Specific Gravity Flashed Gas	Oil Density	Stock Tank Oil Gravity
	(psia)	(F)	(scf/STB)	(scf/bbl)	(bbl/STB)	(air=1)	(lbm/ft3)	(API)
Psat	2875.5	237.7	0	0	1.470	-	41.386505	-
-	100.0	100.0	710.2	686.5	1.034	0.833	51.030325	-
Stock tank	14.7	60.0	39.8	39.8	1.000	1.251	52.113092	37.842

¹Volume of gas liberated at standard conditions per volume of stock-tank oil at standard conditions
²Volume of gas liberated at standard conditions per volume of oil at indicated pressure and temperature
³Volume of oil at indicated pressure and temperature per volume of stock-tank oil at standard conditions

Figure 3: Plots Multi-stage Separator Test

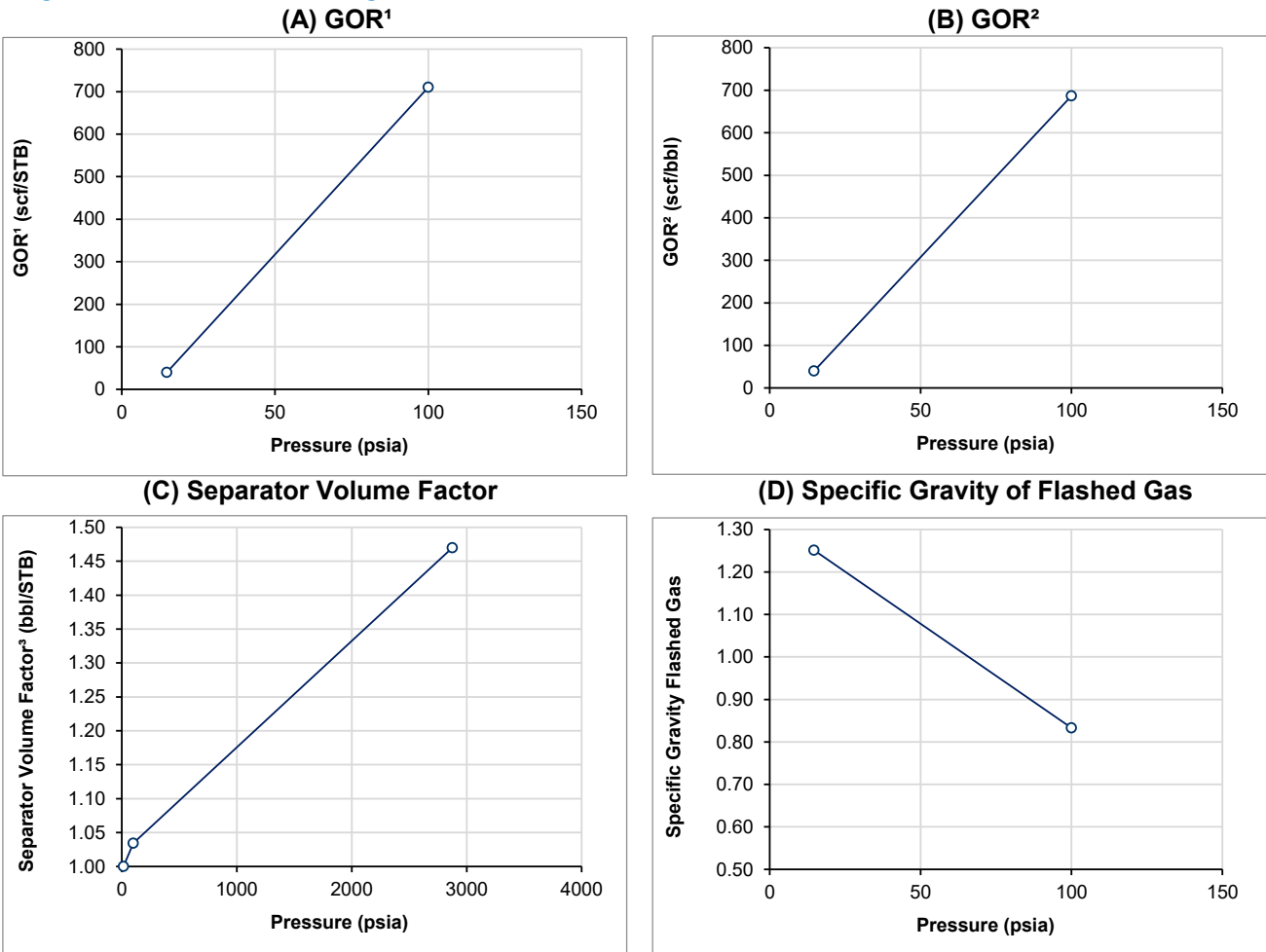


Table 12: Compositions from Multi-stage Separator Test

Removed gas compositions mol-%.

Notes:

1. First column is the incipient gas at bubblepoint.
2. Last column (*) is stock tank oil at standard conditions (1 atm, 60 F)

Pres (psia)	2875	100	14.7	14.7*
N2	0.00	0.00	0.00	0.00
CO2	0.00	0.00	0.00	0.00
H2S	0.00	0.00	0.00	0.00
C1	75.70	67.90	27.47	0.13
C2	10.83	16.20	27.72	1.07
C3	5.80	9.58	26.43	3.93
I-C4	0.63	0.91	2.77	1.08
N-C4	2.37	3.22	9.79	5.58
I-C5	0.73	0.69	1.98	3.03
N-C5	0.86	0.71	1.97	4.09
C6	0.93	0.48	1.23	6.89
C7	0.67	0.19	0.42	7.36
C8	0.61	0.09	0.17	9.24
C9	0.31	0.02	0.04	6.29
C10	0.19	0.01	0.01	5.20
C11	0.11	2.0E-3	2.5E-3	4.04
C12	0.07	6.2E-4	6.5E-4	3.26
C13	0.06	2.5E-4	2.3E-4	3.37
C14	0.04	8.3E-5	6.5E-5	2.89
C15	0.03	3.1E-5	2.1E-5	2.71
C16	0.02	9.6E-6	5.6E-6	2.15
C17	0.01	3.6E-6	1.8E-6	2.00
C18	0.01	1.4E-6	6.2E-7	1.96
C19	0.01	5.2E-7	2.0E-7	1.76
C20	4.0E-3	1.7E-7	5.7E-8	1.44
C21	2.9E-3	6.7E-8	1.9E-8	1.33
C22	2.1E-3	2.6E-8	6.3E-9	1.22
C23	1.5E-3	1.0E-8	2.1E-9	1.12
C24	1.1E-3	3.9E-9	0.00	1.03
C25	8.2E-4	1.6E-9	0.00	0.97
C26	6.1E-4	0.00	0.00	0.91
C27	4.6E-4	0.00	0.00	0.86
C28	3.4E-4	0.00	0.00	0.81
C29	2.5E-4	0.00	0.00	0.76
C30+	4.1E-4	0.00	0.00	11.54
Total	100.00	100.00	100.00	100.00

6. Constant Volume Depletion (CVD)

Table 13: Constant Volume Depletion at Reservoir Temperature

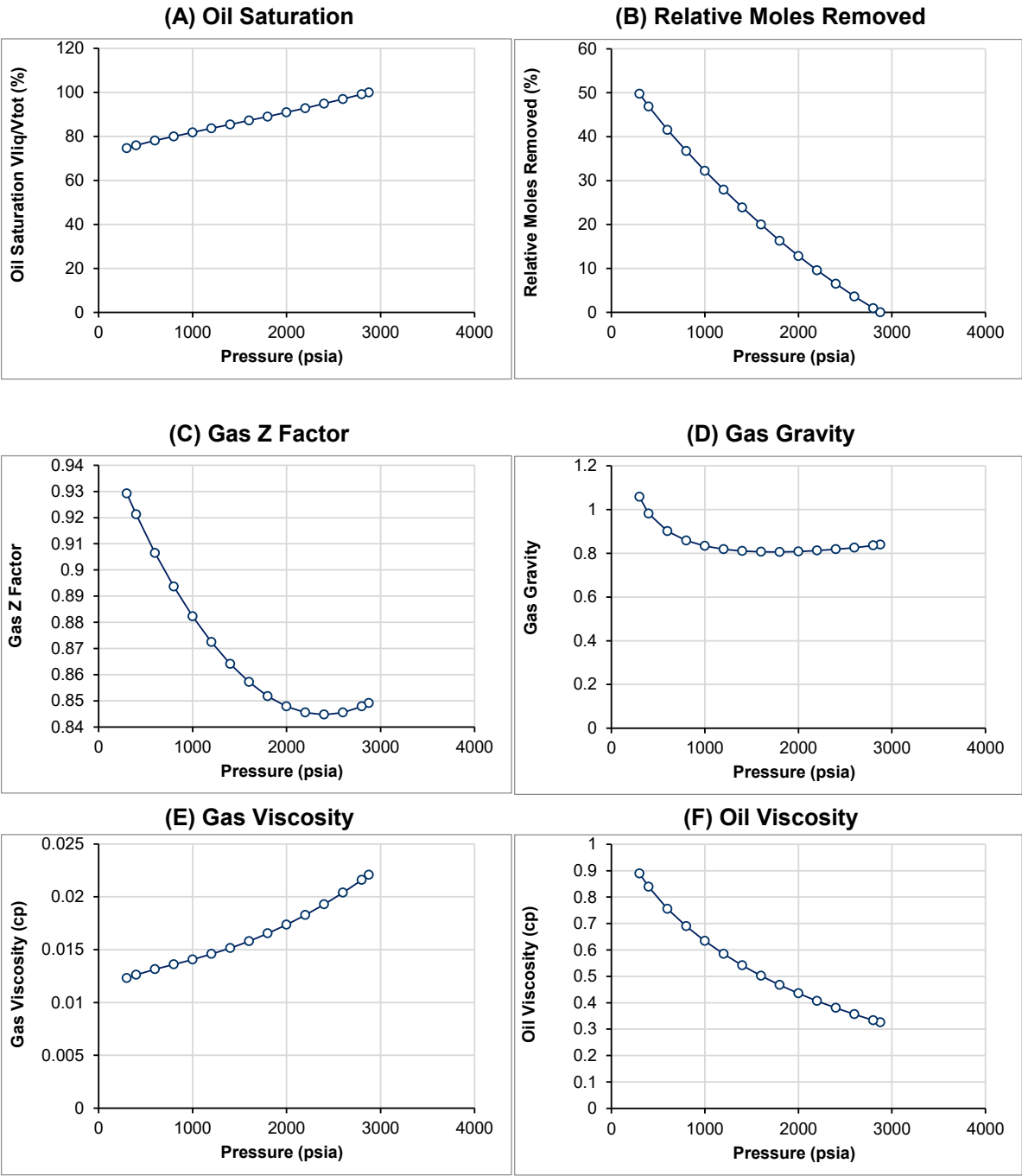
	Pressure	Oil Saturation	Relative Moles Removed	Gas Z Factor	Gas Gravity	Gas Viscosity	Oil Viscosity
	(psia)	Vliq/Vtot (%)	(%)	Z	-	(cp)	(cp)
P _{sat}	2875.457	100.00	0.00	0.849	0.839	0.022080	0.32558
	2800	99.13	0.96	0.848	0.835	0.021599	0.33357
	2600	96.92	3.64	0.845	0.826	0.020391	0.35590
	2400	94.82	6.51	0.845	0.818	0.019280	0.38014
	2200	92.82	9.59	0.846	0.812	0.018268	0.40655
	2000	90.89	12.86	0.848	0.808	0.017353	0.43545
	1800	89.02	16.33	0.852	0.806	0.016533	0.46719
	1600	87.19	20.00	0.857	0.806	0.015804	0.50222
	1400	85.40	23.87	0.864	0.810	0.015158	0.54108
	1200	83.62	27.94	0.872	0.819	0.014584	0.58448
	1000	81.83	32.22	0.882	0.833	0.014071	0.63341
	800	80.00	36.75	0.894	0.858	0.013599	0.68944
	600	78.06	41.58	0.906	0.900	0.013138	0.75550
	400	75.86	46.91	0.921	0.981	0.012626	0.83856
	300	74.63	49.82	0.929	1.057	0.012299	0.88919

Table 14: Compositions from Constant Volume Depletion (CVD) Test

Removed gas compositions, mol-%. *Residual oil at last CVD stage

Pres (psia)	2875.5	2800	2600	2400	2200	2000	1800	1600	1400	1200	1000	800	600	400	300	300.0*
N2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
H2S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C1	75.70	75.77	75.90	75.94	75.88	75.68	75.33	74.76	73.92	72.69	70.90	68.22	64.01	56.73	50.32	3.34
C2	10.83	10.88	11.03	11.21	11.43	11.70	12.04	12.45	12.98	13.65	14.54	15.73	17.39	19.77	21.51	4.70
C3	5.80	5.81	5.83	5.88	5.95	6.05	6.19	6.40	6.68	7.08	7.65	8.51	9.87	12.30	14.49	6.85
I-C4	0.63	0.63	0.62	0.62	0.62	0.62	0.63	0.64	0.67	0.70	0.75	0.84	0.98	1.26	1.52	1.25
N-C4	2.37	2.36	2.34	2.32	2.31	2.32	2.34	2.38	2.46	2.58	2.77	3.08	3.62	4.69	5.73	5.82
I-C5	0.73	0.72	0.71	0.69	0.68	0.67	0.66	0.66	0.67	0.70	0.74	0.81	0.94	1.22	1.51	2.70
N-C5	0.86	0.85	0.83	0.80	0.79	0.77	0.76	0.76	0.77	0.79	0.83	0.91	1.06	1.37	1.69	3.55
C6	0.93	0.91	0.87	0.84	0.80	0.77	0.75	0.74	0.73	0.74	0.76	0.82	0.94	1.21	1.49	5.84
C7	0.67	0.65	0.61	0.58	0.54	0.52	0.49	0.47	0.46	0.45	0.46	0.48	0.54	0.68	0.83	6.28
C8	0.61	0.60	0.55	0.50	0.47	0.43	0.40	0.37	0.35	0.34	0.33	0.34	0.37	0.46	0.55	8.00
C9	0.31	0.30	0.27	0.24	0.22	0.20	0.18	0.16	0.15	0.14	0.14	0.13	0.14	0.17	0.20	5.51
C10	0.19	0.19	0.16	0.14	0.13	0.11	0.10	0.09	0.08	0.07	0.07	0.06	0.07	0.08	0.09	4.60
C11	0.11	0.11	0.09	0.08	0.07	0.06	0.05	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.04	3.61
C12	0.07	0.07	0.06	0.05	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.02	2.92
C13	0.06	0.05	0.04	0.04	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	3.03
C14	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	4.3E-3	3.9E-3	4.0E-3	4.3E-3	2.60
C15	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01	4.6E-3	3.6E-3	2.9E-3	2.4E-3	2.1E-3	2.1E-3	2.3E-3	2.45
C16	0.02	0.01	0.01	0.01	0.01	0.01	4.1E-3	3.1E-3	2.4E-3	1.8E-3	1.4E-3	1.2E-3	9.9E-4	9.4E-4	9.9E-4	1.94
C17	0.01	0.01	0.01	0.01	4.7E-3	3.5E-3	2.6E-3	1.9E-3	1.4E-3	1.1E-3	8.3E-4	6.5E-4	5.4E-4	5.0E-4	5.1E-4	1.80
C18	0.01	0.01	0.01	4.5E-3	3.3E-3	2.4E-3	1.8E-3	1.3E-3	9.3E-4	6.8E-4	5.1E-4	3.9E-4	3.1E-4	2.8E-4	2.8E-4	1.77
C19	0.01	0.01	4.2E-3	3.0E-3	2.2E-3	1.6E-3	1.1E-3	7.8E-4	5.5E-4	3.9E-4	2.9E-4	2.1E-4	1.7E-4	1.4E-4	1.4E-4	1.59
C20	4.0E-3	3.6E-3	2.6E-3	1.8E-3	1.3E-3	9.1E-4	6.3E-4	4.4E-4	3.0E-4	2.1E-4	1.5E-4	1.1E-4	8.1E-5	6.8E-5	6.7E-5	1.30
C21	2.9E-3	2.6E-3	1.8E-3	1.3E-3	8.8E-4	6.0E-4	4.1E-4	2.8E-4	1.9E-4	1.3E-4	8.6E-5	6.1E-5	4.5E-5	3.7E-5	3.6E-5	1.20
C22	2.1E-3	1.8E-3	1.3E-3	8.8E-4	5.9E-4	4.0E-4	2.6E-4	1.7E-4	1.1E-4	7.5E-5	5.0E-5	3.5E-5	2.5E-5	2.0E-5	1.9E-5	1.10
C23	1.5E-3	1.3E-3	9.1E-4	6.1E-4	4.0E-4	2.6E-4	1.7E-4	1.1E-4	7.1E-5	4.6E-5	3.0E-5	2.0E-5	1.4E-5	1.1E-5	1.0E-5	1.01
C24	1.1E-3	9.5E-4	6.4E-4	4.2E-4	2.7E-4	1.8E-4	1.1E-4	7.0E-5	4.4E-5	2.8E-5	1.7E-5	1.1E-5	7.7E-6	5.8E-6	5.4E-6	0.93
C25	8.2E-4	7.0E-4	4.6E-4	3.0E-4	1.9E-4	1.2E-4	7.4E-5	4.6E-5	2.8E-5	1.7E-5	1.1E-5	6.7E-6	4.4E-6	3.2E-6	3.0E-6	0.87
C26	6.1E-4	5.2E-4	3.3E-4	2.1E-4	1.3E-4	8.2E-5	5.0E-5	3.0E-5	1.8E-5	1.1E-5	6.5E-6	4.0E-6	2.6E-6	1.8E-6	1.6E-6	0.82
C27	4.6E-4	3.9E-4	2.5E-4	1.5E-4	9.4E-5	5.7E-5	3.4E-5	2.0E-5	1.2E-5	6.8E-6	4.0E-6	2.4E-6	1.5E-6	1.0E-6	9.3E-7	0.78
C28	3.4E-4	2.9E-4	1.8E-4	1.1E-4	6.6E-5	3.9E-5	2.3E-5	1.3E-5	7.5E-6	4.3E-6	2.5E-6	1.4E-6	8.8E-7	5.9E-7	5.2E-7	0.73
C29	2.5E-4	2.1E-4	1.3E-4	7.9E-5	4.6E-5	2.7E-5	1.5E-5	8.6E-6	4.8E-6	2.7E-6	1.5E-6	8.7E-7	5.2E-7	3.4E-7	2.9E-7	0.68
C30+	4.1E-4	3.2E-4	1.7E-4	8.5E-5	4.2E-5	2.0E-5	9.4E-6	4.3E-6	2.0E-6	8.8E-7	3.9E-7	1.8E-7	8.4E-8	4.2E-8	3.2E-8	10.43
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Figure 4: Plots for Constant Volume Depletion (CVD)



7. Viscosity Test (DLE)

Table 15: Viscosity Test at Reservoir Temperature

Pressure (psia)	Oil Viscosity (cp)	Gas Viscosity (cp)
6600	0.536	
6400	0.525	
6200	0.514	
6000	0.502	
5800	0.491	
5600	0.480	
5400	0.468	
5200	0.457	
5000	0.446	
4800	0.434	
4600	0.423	
4400	0.412	
4200	0.401	
4000	0.389	
3800	0.378	
3600	0.367	
3400	0.355	
3200	0.344	
3000	0.333	
2875.456564	0.326	
2800	0.334	0.0216
2600	0.356	0.0204
2400	0.380	0.0193
2200	0.407	0.0183
2000	0.435	0.0174
1800	0.467	0.0165
1600	0.501	0.0158
1400	0.539	0.0152
1200	0.581	0.0146
1000	0.627	0.0141
800	0.679	0.0136
600	0.740	0.0131
400	0.814	0.0126
200	0.930	0.0118
14.69594301	1.568	0.0097
14.69594301	2.922	

7. Viscosity Test (DLE)

Figure 5: Plots for Viscosity Test at Reservoir Temperature

