PhazeComp-Generated LaTeX Report Template

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Zick Technologies, Inc.

January 3, 2026

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4. Conclusions

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Nomenclature

References

Tables

Table 1: Component Properties for Characterization "SCN for MWs and SGs"

Component	LMW	MW	SG
N2		28.014	0.28339
CO2		44.010	0.76193
C1		16.043	0.14609
C2		30.070	0.32976
C3		44.097	0.50977
I-C4		58.123	0.57043
N-C4		58.123	0.59055
I-C5		72.150	0.62952
N-C5		72.150	0.63585
C6	77.714	84.751	0.69921
C7	91.551	98.595	0.72940
C8	105.403	112.460	0.75398
C9	119.362	126.496	0.77457
C10	133.445	140.601	0.79195
C11	147.592	154.767	0.80682
C12	161.797	168.989	0.81967
C13	176.052	183.259	0.83088
C14	190.351	197.571	0.84075
C15	204.687	211.919	0.84950
C16	219.058	226.301	0.85730
C17	233.458	240.711	0.86430
C18	247.886	255.149	0.87063
C19	262.339	269.611	0.87636
C20	276.815	284.096	0.88158
C21	291.313	298.601	0.88635
C22	305.830	313.126	0.89074
C23	320.366	327.669	0.89477
C24	334.920	342.230	0.89850
C25	349.491	356.807	0.90196
C26	364.077	371.400	0.90517
C27	378.678	386.007	0.90817
C28	393.293	400.628	0.91096
C29	407.922	415.262	0.91358
C30+	422.563	602.891	0.93649

Table 2: Mixture "Lab3_Reported_Mud" Compositions

Component	**Mole Fractions**	**Mass Fractions**
C10	0.000745	0.000450
C11	0.006677	0.004435
C12	0.024545	0.017801
C13	0.062217	0.048932
C14	0.088766	0.075265
C15	0.137659	0.125199
C16	0.162262	0.157589
C17	0.195969	0.202445
C18	0.180583	0.197740
C19	0.096804	0.112010
C20	0.029970	0.036541
C21	0.005801	0.007433
C22	0.001717	0.002307
C23	0.001901	0.002674
C24	0.000516	0.000757
C25	0.000753	0.001153
C26	0.000134	0.000213
C27	0.000267	0.000442
C28	0.000195	0.000335
C29	0.000296	0.000528
C30+	0.002222	0.005749
MW		**233.01**

Table 3: Mixture "Lab3_MDT1_Contaminated" Compositions

Component	Mole Fractions	Mass Fractions
N2	0.001755	0.000480
CO2	0.012850	0.005520
C1	0.443321	0.069419
C2	0.054820	0.016090
C3	0.054017	0.023250
I-C4	0.009289	0.005270
N-C4	0.027621	0.015670
I-C5	0.011246	0.007920
N-C5	0.016188	0.011400
C6	0.023742	0.019640
C7	0.033044	0.031800
C8	0.034454	0.037820
C9	0.027375	0.033800
C10	0.024272	0.033310
C11	0.019409	0.029320
C12	0.017012	0.028060
C13	0.017141	0.030660
C14	0.016298	0.031430
C15	0.015050	0.031130
C16	0.013319	0.029420
C17	0.012454	0.029260
C18	0.011412	0.028420
C19	0.009827	0.025860
C20	0.007703	0.021360
C21	0.006420	0.018710
C22	0.005903	0.018040
C23	0.005481	0.017530
C24	0.004748	0.015860
C25	0.004370	0.015220
C26	0.004080	0.014790
C27	0.004087	0.015400
C28	0.003810	0.014900
C29	0.003368	0.013650
C30+	0.044115	0.259597
MW		**102.45**

Table 4: Mixture "Lab3_MDT1_Decontaminated" Compositions

Component	Mole Fractions	Mass Fractions
N2	0.001783	0.000497
CO2	0.013049	0.005718
C1	0.450175	0.071909
C2	0.055668	0.016667
C3	0.054852	0.024084
I-C4	0.009433	0.005459
N-C4	0.028048	0.016232
I-C5	0.011420	0.008204
N-C5	0.016438	0.011809
C6	0.024109	0.020344
C7	0.033555	0.032940
C8	0.034987	0.039176
C9	0.027798	0.035012
C10	0.024636	0.034488
C11	0.019606	0.030212
C12	0.016895	0.028428
C13	0.016444	0.030004
C14	0.015178	0.029857
C15	0.013154	0.027755
C16	0.011016	0.024822
C17	0.009616	0.023047
C18	0.008796	0.022346
C19	0.008482	0.022769
C20	0.007359	0.020815
C21	0.006429	0.019114
C22	0.005967	0.018604
C23	0.005536	0.018063
C24	0.004813	0.016402
C25	0.004426	0.015724
C26	0.004141	0.015313
C27	0.004146	0.015936
C28	0.003866	0.015422
C29	0.003415	0.014121
C30+	0.044763	0.268703
MW		**100.43**

Table 5: Mixture "Lab3_MDT2_Contaminated" Compositions

Component	Mole Fractions	Mass Fractions
N2	0.002125	0.000600
CO2	0.011044	0.004899
C1	0.449515	0.072685
C2	0.057070	0.017297
C3	0.055563	0.024695
I-C4	0.009728	0.005699
N-C4	0.027307	0.015997
I-C5	0.011136	0.008098
N-C5	0.015948	0.011598
C6	0.023760	0.020296
C7	0.032799	0.032593
C8	0.035812	0.040592
C9	0.027446	0.034993
C10	0.024693	0.034993
C11	0.019741	0.030794
C12	0.017316	0.029494
C13	0.016726	0.030894
C14	0.014862	0.029594
C15	0.013996	0.029894
C16	0.011791	0.026895
C17	0.010344	0.025095
C18	0.009953	0.025595
C19	0.009235	0.025095
C20	0.007577	0.021696
C21	0.006843	0.020596
C22	0.006019	0.018996
C23	0.005631	0.018596
C24	0.005072	0.017497
C25	0.004671	0.016797
C26	0.004354	0.016297
C27	0.004446	0.017297
C28	0.003665	0.014797
C29	0.003798	0.015897
C30+	0.040015	0.243151
MW		**99.22**

Table 6: Mixture "Lab3_MDT2_Decontaminated" Compositions

Component	**Mole Fractions**	**Mass Fractions**
N2	0.002133	0.000606
CO2	0.011088	0.004945
C1	0.451304	0.073368
C2	0.057297	0.017459
C3	0.055784	0.024927
I-C4	0.009767	0.005752
N-C4	0.027415	0.016147
I-C5	0.011181	0.008174
N-C5	0.016012	0.011707
C6	0.023855	0.020487
C7	0.032930	0.032900
C8	0.035954	0.040973
C9	0.027556	0.035322
C10	0.024788	0.035318
C11	0.019793	0.031041
C12	0.017288	0.029604
C13	0.016545	0.030724
C14	0.014568	0.029165
C15	0.013504	0.028999
C16	0.011193	0.025667
C17	0.009605	0.023429
C18	0.009274	0.023978
C19	0.008886	0.024278
C20	0.007488	0.021556
C21	0.006848	0.020720
C22	0.006036	0.019153
C23	0.005646	0.018746
C24	0.005091	0.017654
C25	0.004686	0.016944
C26	0.004370	0.016448
C27	0.004462	0.017455
C28	0.003678	0.014933
C29	0.003812	0.016041
C30+	0.040165	0.245382
MW		**98.68**

Table 7: Mixture "Lab3_MDT3_Contaminated" Compositions

Component	Mole Fractions	Mass Fractions
N2	0.001778	0.000500
CO2	0.011315	0.005002
C1	0.454433	0.073222
C2	0.056638	0.017105
C3	0.055109	0.024407
I-C4	0.009253	0.005402
N-C4	0.026731	0.015605
I-C5	0.010905	0.007902
N-C5	0.015737	0.011403
C6	0.023738	0.020206
C7	0.032729	0.032410
C8	0.035867	0.040512
C9	0.027242	0.034610
C10	0.024368	0.034410
C11	0.019370	0.030109
C12	0.016915	0.028709
C13	0.016304	0.030009
C14	0.014518	0.028809
C15	0.013582	0.028909
C16	0.011487	0.026108
C17	0.010054	0.024307
C18	0.009642	0.024707
C19	0.008977	0.024307
C20	0.007362	0.021006
C21	0.006638	0.019906
C22	0.005853	0.018406
C23	0.005471	0.018005
C24	0.004947	0.017005
C25	0.004634	0.016605
C26	0.004130	0.015405
C27	0.004154	0.016105
C28	0.003754	0.015105
C29	0.003694	0.015405
C30+	0.042671	0.258378
MW		**99.57**

Table 8: Mixture "Lab3_MDT3_Decontaminated" Compositions

Component	Mole Fractions	Mass Fractions
N2	0.001785	0.000505
CO2	0.011360	0.005048
C1	0.456224	0.073901
C2	0.056861	0.017264
C3	0.055327	0.024634
I-C4	0.009290	0.005452
N-C4	0.026837	0.015749
I-C5	0.010948	0.007976
N-C5	0.015799	0.011509
C6	0.023832	0.020393
C7	0.032858	0.032710
C8	0.036009	0.040888
C9	0.027350	0.034931
C10	0.024461	0.034725
C11	0.019420	0.030347
C12	0.016885	0.028810
C13	0.016123	0.029833
C14	0.014226	0.028378
C15	0.013093	0.028016
C16	0.010892	0.024888
C17	0.009321	0.022655
C18	0.008968	0.023103
C19	0.008630	0.023494
C20	0.007273	0.020862
C21	0.006641	0.020022
C22	0.005869	0.018555
C23	0.005485	0.018148
C24	0.004965	0.017156
C25	0.004649	0.016748
C26	0.004146	0.015546
C27	0.004169	0.016250
C28	0.003768	0.015242
C29	0.003707	0.015543
C30+	0.042830	0.260721
MW		**99.04**

Table 9: Essential Properties for Characterization "SCN EOS"

Component	MW	Tc (K)	Pc (bar)	AF	VTran	ZcVis	Pchor
N2	28.014	126.200	33.9800	0.03700	−0.16758	0.29178	59.10
CO2	44.010	304.120	73.7400	0.22500	0.00191	0.27433	80.00
C1	16.043	190.560	45.9900	0.01100	−0.14996	0.28620	71.00
C2	30.070	305.320	48.7200	0.09900	−0.06280	0.27924	111.00
C3	44.097	369.830	42.4800	0.15200	−0.06381	0.27630	151.00
I-C4	58.123	407.850	36.4000	0.18600	−0.06197	0.28199	188.80
N-C4	58.123	425.120	37.9600	0.20000	−0.05393	0.27385	191.00
I-C5	72.150	460.390	33.8100	0.22900	−0.05646	0.27231	227.40
N-C5	72.150	469.700	33.7000	0.25200	−0.02928	0.26837	231.00
C6	84.751	513.482	33.2738	0.24565	−0.02474	0.26937	238.40
C7	98.595	548.497	30.6745	0.28230	−0.00820	0.26601	271.63
C8	112.460	579.790	28.5096	0.31809	0.00569	0.26355	304.90
C9	126.496	608.034	26.6688	0.35344	0.01630	0.26245	338.59
C10	140.601	633.638	25.0637	0.38879	0.02551	0.26199	372.44
C11	154.767	656.967	23.6311	0.42388	0.03435	0.26176	406.44
C12	168.989	678.316	22.3540	0.45897	0.04232	0.26179	440.57
C13	183.259	697.934	21.2080	0.49064	0.04953	0.26197	474.82
C14	197.571	716.029	20.1739	0.52385	0.05608	0.26228	509.17
C15	211.919	732.779	19.2368	0.55665	0.06201	0.26269	543.61
C16	226.301	748.334	18.3843	0.58899	0.06737	0.26317	578.12
C17	240.711	762.825	17.6062	0.62084	0.07220	0.26373	612.71
C18	255.149	776.364	16.8937	0.65216	0.07653	0.26434	647.36
C19	269.611	789.048	16.2394	0.68294	0.08039	0.26501	682.07
C20	284.096	800.961	15.6367	0.71317	0.08382	0.26574	716.83
C21	298.601	812.177	15.0802	0.74282	0.08685	0.26650	751.64
C22	313.126	822.761	14.5650	0.77191	0.08951	0.26732	786.50
C23	327.669	832.769	14.0868	0.80042	0.09182	0.26817	821.41
C24	342.230	842.251	13.6419	0.82836	0.09381	0.26905	856.35
C25	356.807	851.252	13.2271	0.85573	0.09551	0.26997	891.34
C26	371.400	859.812	12.8394	0.88254	0.09695	0.27092	926.36
C27	386.007	867.964	12.4764	0.90880	0.09815	0.27190	961.42
C28	400.628	875.742	12.1357	0.93451	0.09912	0.27289	996.51
C29	415.262	883.172	11.8154	0.95969	0.09990	0.27391	1031.63
C30+	602.891	956.060	8.9383	1.23877	0.09875	0.28765	1481.94

Table 10: Binary Interaction Parameters for Characterization "SCN EOS"

	N2	**CO2**	**C1**	**C2**	**C3**
CO2	−0.01200				
C1	0.03600	0.09600			
C2	0.10000	0.10000	0.00189		
C3	0.10000	0.10000	0.00622	0.00024	
I-C4	0.10000	0.10000	0.01188	0.00081	0.00017
N-C4	0.10000	0.10000	0.01118	0.00073	0.00014
I-C5	0.10000	0.10000	0.01602	0.00131	0.00044
N-C5	0.10000	0.10000	0.01626	0.00134	0.00046
C6	0.10000	0.10000	0.01934	0.00174	0.00070
C7	0.10000	0.10000	0.02346	0.00230	0.00107
C8	0.10000	0.10000	0.02735	0.00285	0.00145
C9	0.10000	0.10000	0.03102	0.00338	0.00184
C10	0.10000	0.10000	0.03451	0.00390	0.00223
C11	0.10000	0.10000	0.03785	0.00441	0.00262
C12	0.10000	0.10000	0.04105	0.00490	0.00301
C13	0.10000	0.10000	0.04409	0.00537	0.00338
C14	0.10000	0.10000	0.04700	0.00583	0.00375
C15	0.10000	0.10000	0.04977	0.00627	0.00411
C16	0.10000	0.10000	0.05241	0.00670	0.00446
C17	0.10000	0.10000	0.05492	0.00711	0.00480
C18	0.10000	0.10000	0.05732	0.00750	0.00512
C19	0.10000	0.10000	0.05960	0.00788	0.00544
C20	0.10000	0.10000	0.06178	0.00824	0.00574
C21	0.10000	0.10000	0.06385	0.00858	0.00603
C22	0.10000	0.10000	0.06583	0.00892	0.00631
C23	0.10000	0.10000	0.06772	0.00923	0.00659
C24	0.10000	0.10000	0.06952	0.00954	0.00685
C25	0.10000	0.10000	0.07125	0.00983	0.00710
C26	0.10000	0.10000	0.07290	0.01011	0.00734
C27	0.10000	0.10000	0.07448	0.01039	0.00757
C28	0.10000	0.10000	0.07599	0.01065	0.00780
C29	0.10000	0.10000	0.07744	0.01090	0.00802
C30+	0.12652	0.12652	0.11841	0.03996	0.03676

Table 10: Binary Interaction Parameters for Characterization "SCN EOS" (cont.)

	I-C4	**N-C4**	**I-C5**	**N-C5**	**C6**
N-C4	0.00000				
I-C5	0.00006	0.00008			
N-C5	0.00007	0.00009	0.00000		
C6	0.00018	0.00022	0.00003	0.00003	
C7	0.00038	0.00044	0.00014	0.00013	0.00004
C8	0.00062	0.00070	0.00030	0.00028	0.00014
C9	0.00089	0.00098	0.00049	0.00047	0.00027
C10	0.00117	0.00127	0.00070	0.00068	0.00044
C11	0.00145	0.00156	0.00092	0.00090	0.00062
C12	0.00174	0.00186	0.00116	0.00113	0.00082
C13	0.00203	0.00217	0.00140	0.00137	0.00102
C14	0.00232	0.00246	0.00164	0.00161	0.00123
C15	0.00261	0.00276	0.00188	0.00185	0.00144
C16	0.00289	0.00305	0.00212	0.00209	0.00165
C17	0.00317	0.00333	0.00236	0.00232	0.00186
C18	0.00343	0.00360	0.00259	0.00255	0.00207
C19	0.00369	0.00387	0.00282	0.00278	0.00227
C20	0.00395	0.00413	0.00304	0.00300	0.00247
C21	0.00419	0.00438	0.00326	0.00321	0.00267
C22	0.00443	0.00462	0.00347	0.00342	0.00286
C23	0.00466	0.00485	0.00367	0.00362	0.00304
C24	0.00488	0.00508	0.00387	0.00382	0.00322
C25	0.00509	0.00530	0.00406	0.00401	0.00340
C26	0.00530	0.00551	0.00425	0.00420	0.00357
C27	0.00550	0.00571	0.00443	0.00438	0.00374
C28	0.00569	0.00591	0.00460	0.00455	0.00390
C29	0.00588	0.00610	0.00477	0.00472	0.00405
C30+	0.03434	0.03459	0.03307	0.03300	0.03222

Table 10: Binary Interaction Parameters for Characterization "SCN EOS" (cont.)

	C7	**C8**	**C9**	**C10**	**C11**
C8	0.00003				
C9	0.00011	0.00002			
C10	0.00021	0.00008	0.00002		
C11	0.00035	0.00017	0.00007	0.00002	
C12	0.00050	0.00028	0.00014	0.00006	0.00001
C13	0.00066	0.00041	0.00024	0.00012	0.00005
C14	0.00083	0.00054	0.00034	0.00020	0.00010
C15	0.00100	0.00069	0.00046	0.00029	0.00017
C16	0.00118	0.00084	0.00058	0.00039	0.00025
C17	0.00136	0.00099	0.00071	0.00050	0.00033
C18	0.00154	0.00114	0.00084	0.00061	0.00043
C19	0.00172	0.00130	0.00097	0.00072	0.00052
C20	0.00189	0.00145	0.00110	0.00084	0.00062
C21	0.00206	0.00160	0.00124	0.00095	0.00072
C22	0.00223	0.00175	0.00137	0.00107	0.00082
C23	0.00240	0.00189	0.00150	0.00118	0.00093
C24	0.00256	0.00204	0.00163	0.00130	0.00103
C25	0.00271	0.00218	0.00175	0.00141	0.00113
C26	0.00287	0.00232	0.00188	0.00152	0.00123
C27	0.00302	0.00245	0.00200	0.00163	0.00133
C28	0.00316	0.00258	0.00212	0.00174	0.00142
C29	0.00330	0.00271	0.00224	0.00185	0.00152
C30+	0.03133	0.03062	0.03003	0.02954	0.02912

Table 10: Binary Interaction Parameters for Characterization "SCN EOS" (cont.)

	C12	**C13**	**C14**	**C15**	**C16**
C13	0.00001				
C14	0.00004	0.00001			
C15	0.00009	0.00004	0.00001		
C16	0.00015	0.00008	0.00003	0.00001	
C17	0.00021	0.00013	0.00007	0.00003	0.00001
C18	0.00029	0.00019	0.00011	0.00006	0.00002
C19	0.00037	0.00025	0.00016	0.00010	0.00005
C20	0.00045	0.00032	0.00022	0.00014	0.00008
C21	0.00054	0.00039	0.00028	0.00019	0.00012
C22	0.00063	0.00047	0.00034	0.00024	0.00017
C23	0.00072	0.00055	0.00041	0.00030	0.00022
C24	0.00081	0.00063	0.00048	0.00036	0.00027
C25	0.00090	0.00071	0.00055	0.00042	0.00032
C26	0.00099	0.00079	0.00062	0.00048	0.00037
C27	0.00107	0.00087	0.00069	0.00055	0.00043
C28	0.00116	0.00094	0.00076	0.00061	0.00048
C29	0.00125	0.00102	0.00083	0.00067	0.00054
C30+	0.02876	0.02846	0.02819	0.02797	0.02777

Table 10: Binary Interaction Parameters for Characterization "SCN EOS" (cont.)

	C17	**C18**	**C19**	**C20**	**C21**
C18	0.00001				
C19	0.00002	0.00000			
C20	0.00004	0.00002	0.00000		
C21	0.00007	0.00004	0.00002	0.00000	
C22	0.00011	0.00006	0.00003	0.00001	0.00000
C23	0.00015	0.00010	0.00006	0.00003	0.00001
C24	0.00019	0.00013	0.00008	0.00005	0.00003
C25	0.00023	0.00017	0.00012	0.00008	0.00005
C26	0.00028	0.00021	0.00015	0.00010	0.00007
C27	0.00033	0.00025	0.00019	0.00013	0.00009
C28	0.00038	0.00029	0.00022	0.00017	0.00012
C29	0.00043	0.00034	0.00026	0.00020	0.00015
C30+	0.02760	0.02745	0.02732	0.02721	0.02711

Table 10: Binary Interaction Parameters for Characterization "SCN EOS" (cont.)

	C22	**C23**	**C24**	**C25**	**C26**
C23	0.00000				
C24	0.00001	0.00000			
C25	0.00002	0.00001	0.00000		
C26	0.00004	0.00002	0.00001	0.00000	
C27	0.00006	0.00004	0.00002	0.00001	0.00000
C28	0.00008	0.00005	0.00003	0.00002	0.00001
C29	0.00011	0.00007	0.00005	0.00003	0.00002
C30+	0.02702	0.02695	0.02689	0.02683	0.02678

Table 10: Binary Interaction Parameters for Characterization "SCN EOS" (cont.)

	C27	**C28**	**C29**
C28	0.00000		
C29	0.00001	0.00000	
C30+	0.02674	0.02670	0.02667

Table 11: Additional Properties for Characterization "SCN EOS"

Component	SG	Tb (C)	Zc	Visc (cp)
N2	0.28339	−195.90291	0.29178	
CO2	0.76193	−88.26608	0.27433	
C1	0.14609	−161.59338	0.28620	
C2	0.32976	−88.71667	0.27924	
C3	0.50977	−42.21618	0.27630	
I-C4	0.57043	−11.65811	0.28199	
N-C4	0.59055	−0.51619	0.27385	
I-C5	0.62952	28.01296	0.27231	
N-C5	0.63585	36.18684	0.26837	
C6	0.69921	64.83930	0.26937	
C7	0.72940	94.25535	0.26470	0.24179
C8	0.75398	121.35092	0.26056	0.30668
C9	0.77457	146.51023	0.25684	0.38391
C10	0.79195	169.99044	0.25345	0.47469
C11	0.80682	191.98102	0.25031	0.58034
C12	0.81967	212.63178	0.24738	0.70219
C13	0.83088	232.06704	0.24461	0.84156
C14	0.84075	250.39330	0.24195	0.99969
C15	0.84950	267.70376	0.23940	1.17782
C16	0.85730	284.08099	0.23692	1.37713
C17	0.86430	299.59884	0.23450	1.59874
C18	0.87063	314.32372	0.23213	1.84376
C19	0.87636	328.31560	0.22981	2.11321
C20	0.88158	341.62882	0.22754	2.40810
C21	0.88635	354.31270	0.22531	2.72939
C22	0.89074	366.41217	0.22311	3.07797
C23	0.89477	377.96816	0.22096	3.45472
C24	0.89850	389.01807	0.21884	3.86047
C25	0.90196	399.59611	0.21676	4.29600
C26	0.90517	409.73362	0.21472	4.76208
C27	0.90817	419.45935	0.21272	5.25943
C28	0.91096	428.79974	0.21075	5.78874
C29	0.91358	437.77907	0.20882	6.35070
C30+	0.93649	528.47876	0.18723	16.63862

Table 12: Mixture "Lab1_Oil_Analysis_1" Compositions

Component	Mole Fractions	Mass Fractions
N2	0.003056	0.000795
CO2	0.020013	0.008176
C1	0.452604	0.067402
C2	0.054715	0.015272
C3	0.047222	0.019330
I-C4	0.007591	0.004096
N-C4	0.020604	0.011117
I-C5	0.008084	0.005414
N-C5	0.011830	0.007923
C6	0.019433	0.015288
C7	0.023648	0.021643
C8	0.034839	0.036370
C9	0.029556	0.034705
C10	0.028128	0.036712
C11	0.022754	0.032689
C12	0.020663	0.032414
C13	0.018452	0.031389
C14	0.015738	0.028863
C15	0.015525	0.030539
C16	0.012089	0.025395
C17	0.010677	0.023857
C18	0.009989	0.023659
C19	0.009328	0.023346
C20	0.007348	0.019378
C21	0.005284	0.014647
C22	0.004801	0.013956
C23	0.005549	0.016879
C24	0.005054	0.016054
C25	0.004194	0.013892
C26	0.004384	0.015112
C27	0.003343	0.011979
C28	0.004010	0.014913
C29	0.003531	0.013612
C30+	0.055963	0.313189
MW		**107.73**

Table 13: Mixture "Lab1_Oil_Analysis_2" Compositions

Component	Mole Fractions	Mass Fractions
N2	0.001875	0.000493
CO2	0.012433	0.005141
C1	0.439100	0.066181
C2	0.055257	0.015610
C3	0.052396	0.021707
I-C4	0.009374	0.005119
N-C4	0.027530	0.015033
I-C5	0.011644	0.007892
N-C5	0.017564	0.011905
C6	0.031332	0.024947
C7	0.031656	0.029322
C8	0.038464	0.040638
C9	0.026339	0.031301
C10	0.024253	0.032036
C11	0.018932	0.027527
C12	0.016922	0.026865
C13	0.016301	0.028065
C14	0.013095	0.024306
C15	0.013045	0.025971
C16	0.011325	0.024078
C17	0.009035	0.020432
C18	0.008930	0.021407
C19	0.008182	0.020723
C20	0.006591	0.017590
C21	0.005193	0.014567
C22	0.005959	0.017530
C23	0.004884	0.015034
C24	0.005440	0.017490
C25	0.004675	0.015671
C26	0.004483	0.015642
C27	0.004302	0.015602
C28	0.004492	0.016905
C29	0.003916	0.015279
C30+	0.055083	0.311989
MW		**106.44**

Table 14: Mixture "Lab1_Recombined_Oil" Compositions

Component	Mole Fractions	Mass Fractions
N2	0.001831	0.000497
CO2	0.012171	0.005192
C1	0.447874	0.069647
C2	0.053987	0.015735
C3	0.051282	0.021920
I-C4	0.009187	0.005176
N-C4	0.027068	0.015250
I-C5	0.011501	0.008043
N-C5	0.017423	0.012185
C6	0.031192	0.025624
C7	0.031681	0.030277
C8	0.038604	0.042082
C9	0.026455	0.032437
C10	0.024341	0.033173
C11	0.018970	0.028459
C12	0.016914	0.027706
C13	0.016296	0.028947
C14	0.013136	0.025156
C15	0.013055	0.026816
C16	0.011335	0.024865
C17	0.009004	0.021007
C18	0.008921	0.022062
C19	0.008174	0.021361
C20	0.006630	0.018256
C21	0.005183	0.015001
C22	0.005963	0.018099
C23	0.004939	0.015686
C24	0.005440	0.018046
C25	0.004698	0.016250
C26	0.004512	0.016243
C27	0.004263	0.015951
C28	0.004521	0.017556
C29	0.003889	0.015655
C30+	0.049563	0.289641
MW		**103.17**

Table 15: Mixture "Lab2_Recombined_Oil" Compositions

Component	Mole Fractions	Mass Fractions
N2	0.001368	0.000376
CO2	0.009143	0.003950
C1	0.467590	0.073633
C2	0.051614	0.015234
C3	0.049969	0.021629
I-C4	0.008901	0.005078
N-C4	0.026043	0.014858
I-C5	0.011287	0.007993
N-C5	0.016731	0.011849
C6	0.024057	0.020013
C7	0.033297	0.032224
C8	0.034262	0.037821
C9	0.027113	0.033665
C10	0.024209	0.033411
C11	0.020486	0.031121
C12	0.017279	0.028662
C13	0.015227	0.027390
C14	0.014605	0.028323
C15	0.011822	0.024592
C16	0.010689	0.023744
C17	0.009224	0.021793
C18	0.008837	0.022133
C19	0.008459	0.022387
C20	0.006903	0.019249
C21	0.006191	0.018147
C22	0.005711	0.017553
C23	0.004957	0.015942
C24	0.004645	0.015603
C25	0.004407	0.015434
C26	0.003838	0.013992
C27	0.003559	0.013483
C28	0.003213	0.012635
C29	0.003058	0.012466
C30+	0.051306	0.303616
MW		**101.88**

Table 16: Mixture "Lab2_Reported_Slimtube_Oil" Compositions

Component	Mole Fractions	Mass Fractions
N2	0.008579	0.002300
CO2	0.011634	0.004900
C1	0.450066	0.069100
C2	0.055947	0.016100
C3	0.053790	0.022700
I-C4	0.008809	0.004900
N-C4	0.025528	0.014200
I-C5	0.010717	0.007400
N-C5	0.015352	0.010600
C6	0.021823	0.017700
C7	0.032112	0.030300
C8	0.034286	0.036900
C9	0.027920	0.033800
C10	0.022444	0.030200
C11	0.018567	0.027500
C12	0.016448	0.026600
C13	0.015680	0.027500
C14	0.014015	0.026500
C15	0.013214	0.026800
C16	0.011497	0.024900
C17	0.009637	0.022200
C18	0.009583	0.023400
C19	0.009030	0.023300
C20	0.007062	0.019200
C21	0.006439	0.018400
C22	0.005907	0.017700
C23	0.005453	0.017100
C24	0.004977	0.016300
C25	0.004715	0.016100
C26	0.004136	0.014700
C27	0.003952	0.014600
C28	0.003782	0.014500
C29	0.003724	0.014800
C30+	0.053174	0.306800
MW		**104.49**

Table 17: Mixture "Lab2_Slimtube_Oil" Compositions

Component	Mole Fractions	Mass Fractions
N2	0.011518	0.003115
CO2	0.015573	0.006617
C1	0.429767	0.066564
C2	0.074598	0.021656
C3	0.070387	0.029966
I-C4	0.011123	0.006241
N-C4	0.031535	0.017695
I-C5	0.012146	0.008460
N-C5	0.016843	0.011732
C6	0.021372	0.017486
C7	0.028830	0.027442
C8	0.029604	0.032142
C9	0.023761	0.029018
C10	0.019005	0.025797
C11	0.015694	0.023450
C12	0.013895	0.022669
C13	0.013244	0.023431
C14	0.011837	0.022578
C15	0.011160	0.022833
C16	0.009710	0.021214
C17	0.008139	0.018914
C18	0.008093	0.019936
C19	0.007626	0.019851
C20	0.005964	0.016358
C21	0.005438	0.015676
C22	0.004988	0.015080
C23	0.004605	0.014569
C24	0.004203	0.013887
C25	0.003982	0.013717
C26	0.003493	0.012524
C27	0.003338	0.012439
C28	0.003194	0.012353
C29	0.003145	0.012609
C30+	0.062191	0.361982
MW		**103.58**

Table 18: Essential Properties for Characterization "Pseudo EOS"

Component	MW	Tc (K)	Pc (bar)	AF	VTran	ZcVis	Pchor
CO2	44.010	304.120	73.7400	0.22500	0.00191	0.27433	80.00
C1+N2	16.093	190.241	45.9329	0.01106	−0.15003	0.28622	70.95
C2	30.070	305.320	48.7200	0.09900	−0.06280	0.27924	111.00
C3	44.097	369.830	42.4800	0.15200	−0.06381	0.27630	151.00
C4	58.123	420.683	37.5591	0.19639	−0.05600	0.27595	190.43
C5	72.150	465.930	33.7480	0.24260	−0.04027	0.26996	229.52
C6	84.751	513.482	33.2738	0.24565	−0.02474	0.26937	238.40
C7	98.595	548.497	30.6745	0.28230	−0.00820	0.26601	271.63
C8-C9	118.581	592.340	27.6658	0.33368	0.01061	0.26304	319.59
C10-C13	159.400	663.669	23.1757	0.43592	0.03740	0.26188	417.56
C14-C19	228.734	750.257	18.2311	0.59485	0.06836	0.26346	583.96
C20-C29	340.077	840.051	13.7004	0.82375	0.09298	0.26936	851.18
C30+	602.891	956.060	8.9383	1.23877	0.09875	0.28765	1481.94

Table 19: Binary Interaction Parameters for Characterization "Pseudo EOS"

	CO2	C1+N2	C2	C3
C1+N2	0.09563			
C2	0.10000	0.00205		
C3	0.10000	0.00637	0.00024	
C4	0.10000	0.01149	0.00075	0.00015
C5	0.10000	0.01629	0.00133	0.00045
C6	0.10000	0.01946	0.00174	0.00070
C7	0.10000	0.02357	0.00230	0.00107
C8-C9	0.09999	0.02913	0.00309	0.00163
C10-C13	0.09998	0.03919	0.00459	0.00276
C14-C19	0.09998	0.05309	0.00679	0.00454
C20-C29	0.09998	0.06945	0.00952	0.00683
C30+	0.12652	0.11835	0.03996	0.03676

Table 19: Binary Interaction Parameters for Characterization "Pseudo EOS" (cont.)

	C4	C5	C6	C7
C5	0.00008			
C6	0.00021	0.00003		
C7	0.00042	0.00013	0.00004	
C8-C9	0.00080	0.00037	0.00019	0.00006
C10-C13	0.00165	0.00100	0.00069	0.00040
C14-C19	0.00307	0.00216	0.00170	0.00122
C20-C29	0.00501	0.00383	0.00321	0.00254
C30+	0.03453	0.03303	0.03222	0.03133

Table 19: Binary Interaction Parameters for Characterization "Pseudo EOS" (cont.)

	C8-C9	**C10-C13**	**C14-C19**	**C20-C29**
C10-C13	0.00015			
C14-C19	0.00074	0.00022		
C20-C29	0.00183	0.00093	0.00024	
C30+	0.03034	0.02898	0.02773	0.02689

Table 20: Additional Properties for Characterization "Pseudo EOS"

Component	**SG**	**Tb (C)**	**Zc**	**Visc (cp)**
CO2	0.76193	−88.2661	0.27433	
C1+N2	0.14661	−161.7620	0.28622	
C2	0.32976	−88.7167	0.27924	
C3	0.50977	−42.2162	0.27630	
C4	0.58558	−3.3840	0.27595	
C5	0.63331	32.8644	0.26996	
C6	0.69921	64.8393	0.26937	
C7	0.72940	94.2554	0.26470	0.24179
C8-C9	0.76343	132.4893	0.25883	0.33954
C10-C13	0.81119	198.6204	0.24913	0.62222
C14-C19	0.85848	286.3968	0.23615	1.42514
C20-C29	0.89790	386.7482	0.21859	3.84733
C30+	0.93649	528.4788	0.18723	16.63862

Table 21: Mixture "Lab1_Recombined_Oil" Compositions

Component	**Mole Fractions**	**Mass Fractions**
CO2	0.012166	0.005192
C1+N2	0.449485	0.070144
C2	0.053964	0.015735
C3	0.051261	0.021920
C4	0.036240	0.020426
C5	0.028912	0.020228
C6	0.031179	0.025624
C7	0.031668	0.030277
C8-C9	0.064806	0.074519
C10-C13	0.076524	0.118284
C14-C19	0.063690	0.141268
C20-C29	0.050562	0.166742
C30+	0.049543	0.289641
MW		**103.12**

Table 22: Lab1 Single-Stage Separation

Temp (C)	Pres (barg)	GOR (sm3/m3)	
		Expt	Calc
15.000	0.0	137.00	140.35
RMS % Err			2.44
Ave % Bias			2.44

Table 23: Mixture "Lab1_Swelling_Gas" Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.015288	0.026200
C1+N2	0.688555	0.431501
C2	0.108113	0.126594
C3	0.094324	0.161970
C4	0.044464	0.100638
C5	0.019284	0.054181
C6	0.029972	0.098916
MW		**25.68**

Table 24: Lab2 Separator Test #1

Temp (C)	Pres (barg)	Tot Vol 2 (m3)		Cum GOR (sm3/m3)		Liq Den (kg/m3)	
		Expt	Calc	Expt	Calc	Expt	Calc
38.000	40.000	1.0990	1.1041	92.66	91.35		806.01
38.000	12.500	1.0580	1.0643	113.43	110.05		822.14
15.000	0.000	1.0000	1.0114	136.58	128.99	843.80	845.76
RMS % Err			0.56		2.13		0.23
Ave % Bias			0.60		−2.23		0.23

Table 25: Lab2 Separator Test #2

Temp (C)	Pres (barg)	Tot Vol 2 (m3)		Cum GOR (sm3/m3)		Liq Den (kg/m3)	
		Expt	Calc	Expt	Calc	Expt	Calc
38.000	40.000	1.1020	1.1096	92.16	91.35		806.01
15.000	0.000	1.0000	1.0035	137.33	133.88	848.10	848.96
RMS % Err			0.66		0.97		0.10
Ave % Bias			0.60		−1.07		0.10

Table 26: Lab2 Separator Test #3

Temp (C)	Pres (barg)	Tot Vol 2 (m3)		Cum GOR (sm3/m3)		Liq Den (kg/m3)	
		Expt	Calc	Expt	Calc	Expt	Calc
74.000	9.6800	1.0620	1.0650	132.73	130.05		821.38
74.000	3.2200	1.0520	1.0544	137.62	134.70		825.41
15.000	0.0000	1.0000	1.0193	149.12	140.37	853.40	852.47
RMS % Err			0.55		2.37		0.11
Ave % Bias			0.52		−2.53		−0.11

Table 27: Lab2 Separation of Slimtube Sample

Temp (F)	Pres (psig)	Cum GOR (scf/bbl)		Rel Vol 2		Liq Den (g/cm3)	
		Expt	Calc	Expt	Calc	Expt	Calc
68.000	0.0	878.00	888.10		0.67058	0.86280	0.86387
60.000	0.0	881.00	889.77	0.67100	0.66932	0.86600	0.86549
RMS % Err			1.07		0.25		0.10
Ave % Bias			1.07		−0.25		0.03

Table 28: Mixture "Lab3_MDT1_Oil" Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.012847	0.005520
C1+N2	0.444878	0.069899
C2	0.054806	0.016090
C3	0.054003	0.023250
C4	0.036900	0.020940
C5	0.027427	0.019320
C6	0.023736	0.019640
C7	0.033035	0.031800
C8-C9	0.061862	0.071619
C10-C13	0.077975	0.121349
C14-C19	0.078596	0.175518
C20-C29	0.049833	0.165458
C30+	0.044103	0.259597
MW		**102.43**

Table 29: Separation of Lab3_MDT1_Oil

Temp (C)	Pres (bar)	GOR (sm3/m3)		Liq Den (g/cm3)	
		Expt	**Calc**	**Expt**	**Calc**
15.000	1.0000	145.20	140.55	0.85300	0.85251
RMS % Err			3.21		0.06
Ave % Bias			−3.21		−0.06

Table 30: Mixture "Lab3_Surface_Oil" Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.013819	0.006176
C1+N2	0.469434	0.076722
C2	0.056363	0.017212
C3	0.054641	0.024470
C4	0.036089	0.021303
C5	0.026004	0.019053
C6	0.022222	0.019126
C7	0.031286	0.031326
C8-C9	0.059586	0.071757
C10-C13	0.071726	0.116111
C14-C19	0.064395	0.149586
C20-C29	0.049098	0.169571
C30+	0.045337	0.277587
MW		**98.47**

Table 31: Separation of Lab3_Surface_Oil

Temp (C)	Pres (psig)	GOR (sm3/m3)		Liq Den (g/cm3)	
		Expt	**Calc**	**Expt**	**Calc**
15.000	0.0	156.00	155.75	0.85880	0.85516
RMS % Err			0.16		0.42
Ave % Bias			−0.16		−0.42

Table 32: Mixture "Lab3_Swelling_Gas" Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.013499	0.025838
C1+N2	0.755126	0.528530
C2	0.088091	0.115207
C3	0.080692	0.154757
C4	0.041696	0.105403
C5	0.014899	0.046751
C6	0.003660	0.013492
C7	0.002337	0.010023
MW		**22.99**

Table 33: Mixture "Lab3_MDT2_Oil" Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011040	0.004899
C1+N2	0.451647	0.073285
C2	0.057049	0.017297
C3	0.055542	0.024695
C4	0.037021	0.021696
C5	0.027075	0.019696
C6	0.023751	0.020296
C7	0.032787	0.032593
C8-C9	0.063218	0.075585
C10-C13	0.078507	0.126175
C14-C19	0.070316	0.162168
C20-C29	0.052047	0.178464
C30+	0.040000	0.243151
MW		**99.18**

Table 34: Single-Stage Separation of Lab3_MDT2_Oil

Temp (C)	**Pres (kPa)**	**GOR (sm3/m3)**		**Liq Den (g/cm3)**		**Liq MW**	
		Expt	**Calc**	**Expt**	**Calc**	**Expt**	**Calc**
15.000	101.33	154.50	147.86	0.85930	0.85060	225.00	220.35
RMS % Err			4.30		1.01		2.07
Ave % Bias			−4.30		−1.01		−2.07

Table 34: Single-Stage Separation of Lab3_MDT2_Oil (cont.)

Temp (C)	**Pres (kPa)**	**C1 y (%)**		**C2 y (%)**		**C4+ y (%)**	
		Expt	**Calc**	**Expt**	**Calc**	**Expt**	**Calc**
15.000	101.33	70.770	72.537	9.0000	9.0225	9.7000	8.1255
RMS % Err			2.50		0.25		16.23
Ave % Bias			2.50		0.25		−16.23

Table 35: Multi-Stage Separation of Lab3_MDT2_Oil

Temp (C)	**Pres (kPa)**	**Liq Vol (m3)**		**Cum GOR (sm3/m3)**		**Liq Den (g/cm3)**	
		Expt	**Calc**	**Expt**	**Calc**	**Expt**	**Calc**
67.000	1599.6	1.1040	1.0820	114.50	121.45	0.80300	0.81023
85.000	179.0	1.0770	1.0311	132.10	143.43	0.79500	0.81939
15.000	101.3	1.0000	0.9930	142.20	148.93	0.85700	0.85080
RMS % Err			2.69		6.05		1.76
Ave % Bias			−2.26		5.86		0.99

Table 35: Multi-Stage Separation of Lab3_MDT2_Oil (cont.)

Temp (C)	**Pres (kPa)**	**C1 y (%)**		**C2 y (%)**		**C4+ y (%)**	
		Expt	**Calc**	**Expt**	**Calc**	**Expt**	**Calc**
67.000	1599.6	78.172	77.958	8.751	8.585	4.392	4.856
85.000	179.0	28.398	28.099	11.531	12.314	38.405	37.105
15.000	101.3		70.126		9.245		8.923
RMS % Err			0.33		4.91		2.54
Ave % Bias			−0.33		2.68		−1.09

Table 36: Mixture "Lab3_MDT3_Oil" Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011315	0.005002
C1+N2	0.456096	0.073722
C2	0.056636	0.017105
C3	0.055107	0.024407
C4	0.035983	0.021006
C5	0.026641	0.019306
C6	0.023738	0.020206
C7	0.032728	0.032410
C8-C9	0.063075	0.075123
C10-C13	0.076975	0.123237
C14-C19	0.068403	0.157147
C20-C29	0.050634	0.172952
C30+	0.042669	0.258378
MW		**99.56**

Table 37: Single-Stage Separation of Lab3_MDT3_Oil

Temp (C)	Pres (kPa)	GOR (sm3/m3)		Liq Den (g/cm3)		Liq MW	
		Expt	**Calc**	**Expt**	**Calc**	**Expt**	**Calc**
15.000	101.33	149.80	148.30	0.85830	0.85209	228.00	223.27
RMS % Err			1.00		0.72		2.07
Ave % Bias			−1.00		−0.72		−2.07

Table 37: Single-Stage Separation of Lab3_MDT3_Oil (cont.)

Temp (C)	Pres (kPa)	C1 y (%)		C2 y (%)		C4+ y (%)	
		Expt	**Calc**	**Expt**	**Calc**	**Expt**	**Calc**
15.000	101.33	72.450	72.855	9.0200	8.9114	8.1500	7.9812
RMS % Err			0.56		1.20		2.07
Ave % Bias			0.56		−1.20		−2.07

Table 38: Mixture "Average_3356.6_m_Oil" Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011826	0.005237
C1+N2	0.454478	0.073595
C2	0.056614	0.017130
C3	0.055324	0.024548
C4	0.036928	0.021597
C5	0.027263	0.019793
C6	0.023931	0.020408
C7	0.033112	0.032850
C8-C9	0.063220	0.075434
C10-C13	0.077629	0.124512
C14-C19	0.066135	0.152215
C20-C29	0.050968	0.174411
C30+	0.042573	0.258268
MW		**99.38**

Table 39: Mixture "Predicted_3200_m_Oil" Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011826	0.005363
C1+N2	0.459366	0.076174
C2	0.057009	0.017664
C3	0.055640	0.025282
C4	0.037095	0.022216
C5	0.027353	0.020335
C6	0.023950	0.020915
C7	0.033087	0.033613
C8-C9	0.063030	0.077014
C10-C13	0.077045	0.126543
C14-C19	0.065143	0.153535
C20-C29	0.049623	0.173887
C30+	0.039834	0.247460
MW		**97.05**

Table 40: Mixture "Predicted_MDT2_Oil" Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011826	0.005267
C1+N2	0.455660	0.074213
C2	0.056710	0.017258
C3	0.055401	0.024725
C4	0.036969	0.021746
C5	0.027286	0.019924
C6	0.023936	0.020531
C7	0.033107	0.033035
C8-C9	0.063177	0.075818
C10-C13	0.077491	0.125009
C14-C19	0.065898	0.152546
C20-C29	0.050643	0.174301
C30+	0.041896	0.255627
MW		**98.81**

Table 41: Mixture "Predicted_MDT3_Oil" Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011826	0.005245
C1+N2	0.454776	0.073751
C2	0.056638	0.017162
C3	0.055343	0.024593
C4	0.036938	0.021635
C5	0.027269	0.019826
C6	0.023932	0.020439
C7	0.033111	0.032897
C8-C9	0.063209	0.075531
C10-C13	0.077594	0.124637
C14-C19	0.066075	0.152299
C20-C29	0.050886	0.174385
C30+	0.042401	0.257601
MW		**99.24**

Table 42: Mixture "Predicted_3350_m_Oil" Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011826	0.005242
C1+N2	0.454665	0.073693
C2	0.056629	0.017150
C3	0.055336	0.024576
C4	0.036934	0.021621
C5	0.027267	0.019814
C6	0.023932	0.020427
C7	0.033111	0.032879
C8-C9	0.063213	0.075495
C10-C13	0.077607	0.124591
C14-C19	0.066097	0.152268
C20-C29	0.050917	0.174395
C30+	0.042465	0.257851
MW		**99.29**

Table 43: Mixture "Predicted_MDT1_Oil" Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011826	0.005200
C1+N2	0.453009	0.072833
C2	0.056494	0.016971
C3	0.055226	0.024330
C4	0.036875	0.021412
C5	0.027234	0.019630
C6	0.023924	0.020256
C7	0.033117	0.032620
C8-C9	0.063271	0.074956
C10-C13	0.077797	0.123889
C14-C19	0.066427	0.151794
C20-C29	0.051371	0.174532
C30+	0.043429	0.261577
MW		**100.10**

Table 44: Mixture "Predicted_3500_m_Oil" Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011826	0.005126
C1+N2	0.450088	0.071333
C2	0.056253	0.016659
C3	0.055030	0.023898
C4	0.036768	0.021047
C5	0.027174	0.019308
C6	0.023907	0.019953
C7	0.033123	0.032162
C8-C9	0.063366	0.073999
C10-C13	0.078120	0.122633
C14-C19	0.066999	0.150923
C20-C29	0.052169	0.174722
C30+	0.045178	0.268237
MW		**101.54**

Table 45: Mixture "Lab1_Slimtube_Gas" Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.021994	0.037298
C1+N2	0.665804	0.412877
C2	0.115668	0.134024
C3	0.107970	0.183463
C4	0.046687	0.104564
C5	0.018495	0.051419
C6	0.023381	0.076355
MW		**25.95**

Table 46: Mixture "Lab2_Slimtube_Gas" Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.013599	0.025836
C1+N2	0.752726	0.522939
C2	0.087991	0.114222
C3	0.081692	0.155512
C4	0.040596	0.101861
C5	0.015398	0.047961
C6	0.003965	0.014507
C7	0.004032	0.017163
MW		**23.16**

Figures

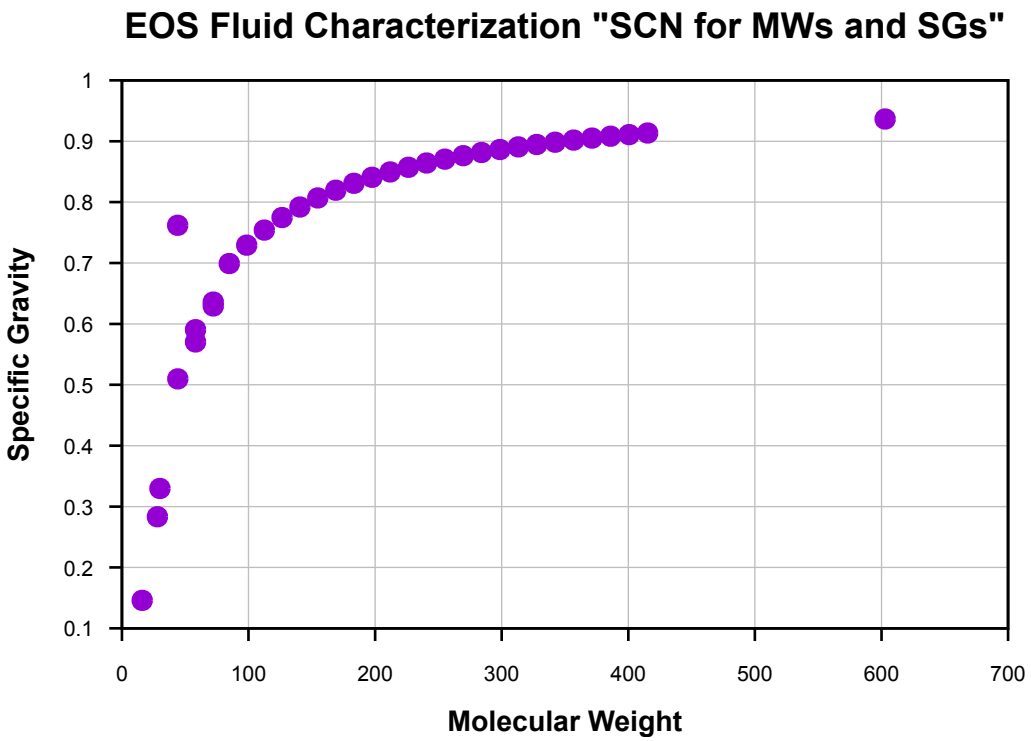

Figure 1: Specific Gravity vs. Molecular Weight for EOS Fluid Characterization "SCN for MWs and SGs."

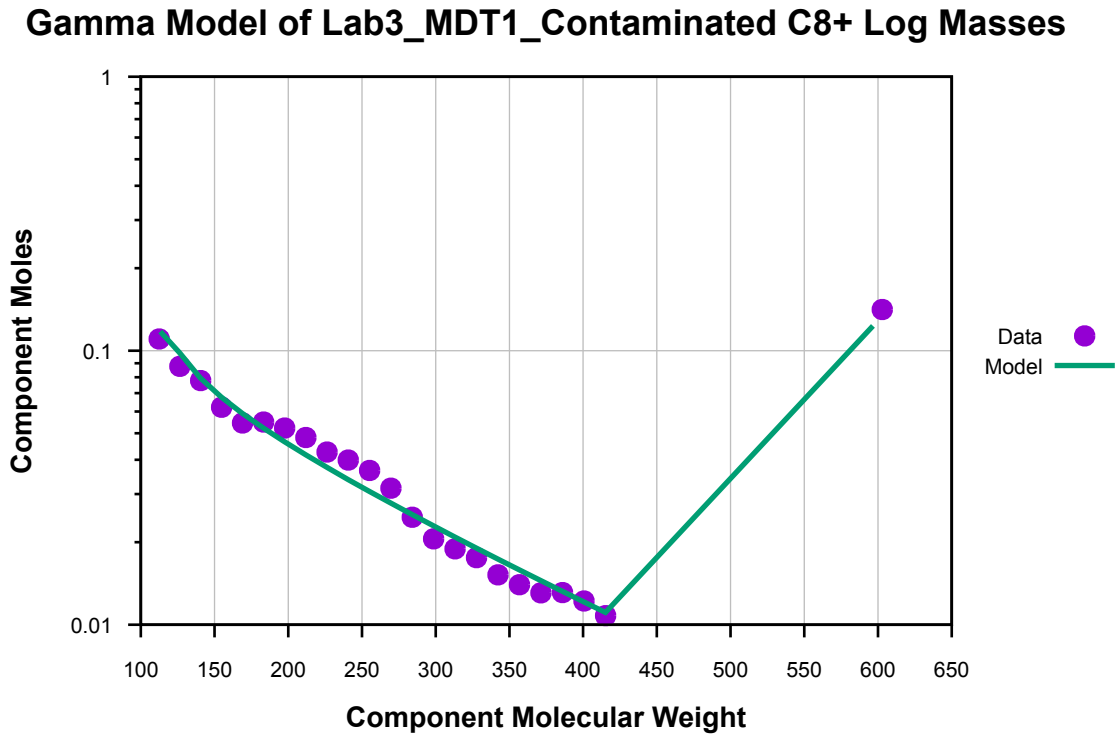

Figure 2: Molar Gamma Model of Lab3_MDT1_Contaminated C8+ Log Masses. Gamma Shape = 0.76467, Average = 251.59, Bound = 108.63, Origin = 108.63.

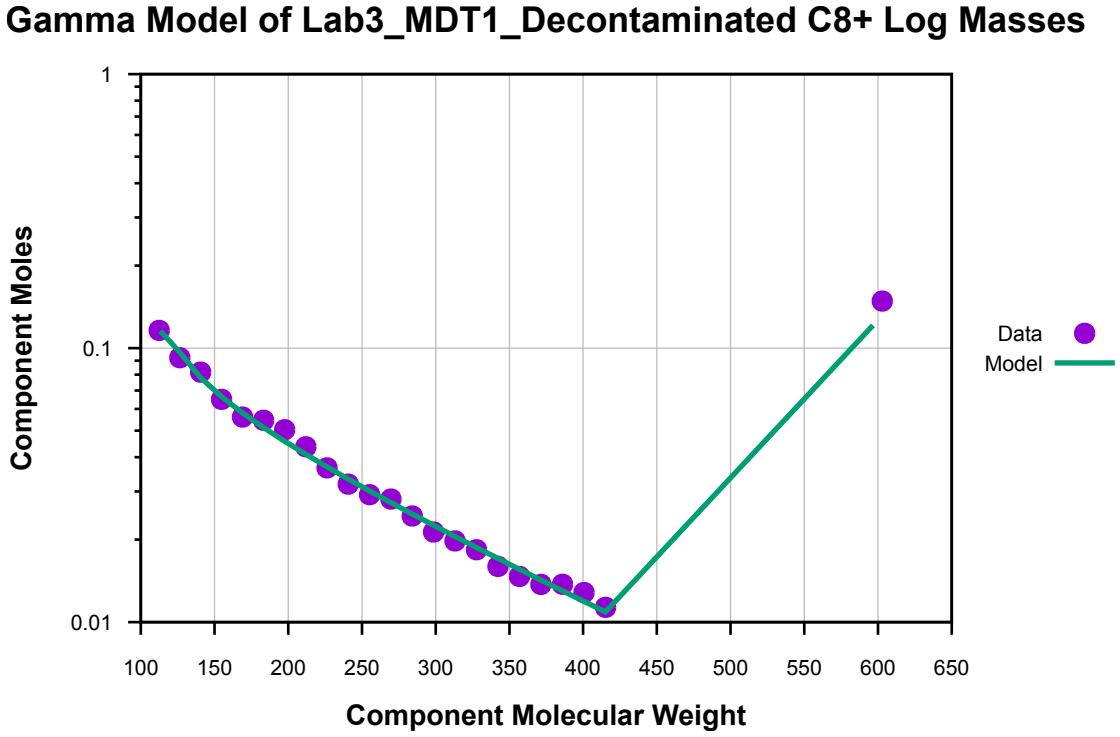

Figure 3: Molar Gamma Model of Lab3_MDT1_Decontaminated C8+ Log Masses. Gamma Shape = 0.76467, Average = 251.59, Bound = 108.63, Origin = 108.63.

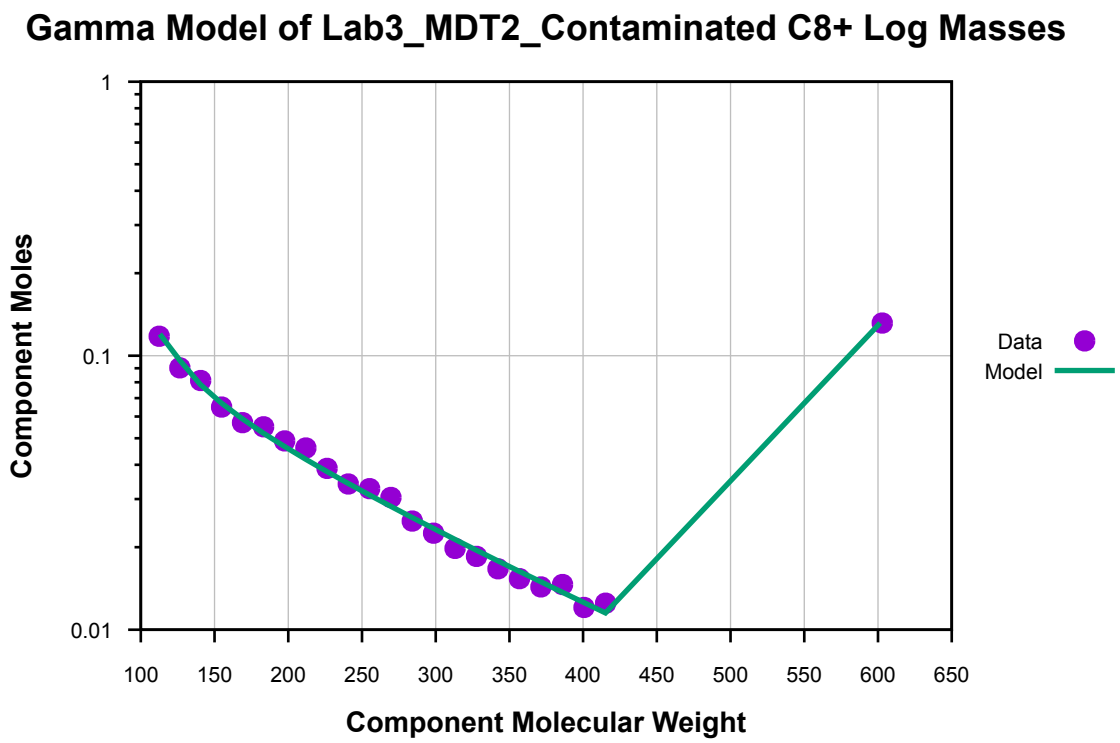

Figure 4: Molar Gamma Model of Lab3_MDT2_Contaminated C8+ Log Masses. Gamma Shape = 0.76763, Average = 255.67, Bound = 108.11, Origin = 108.11.

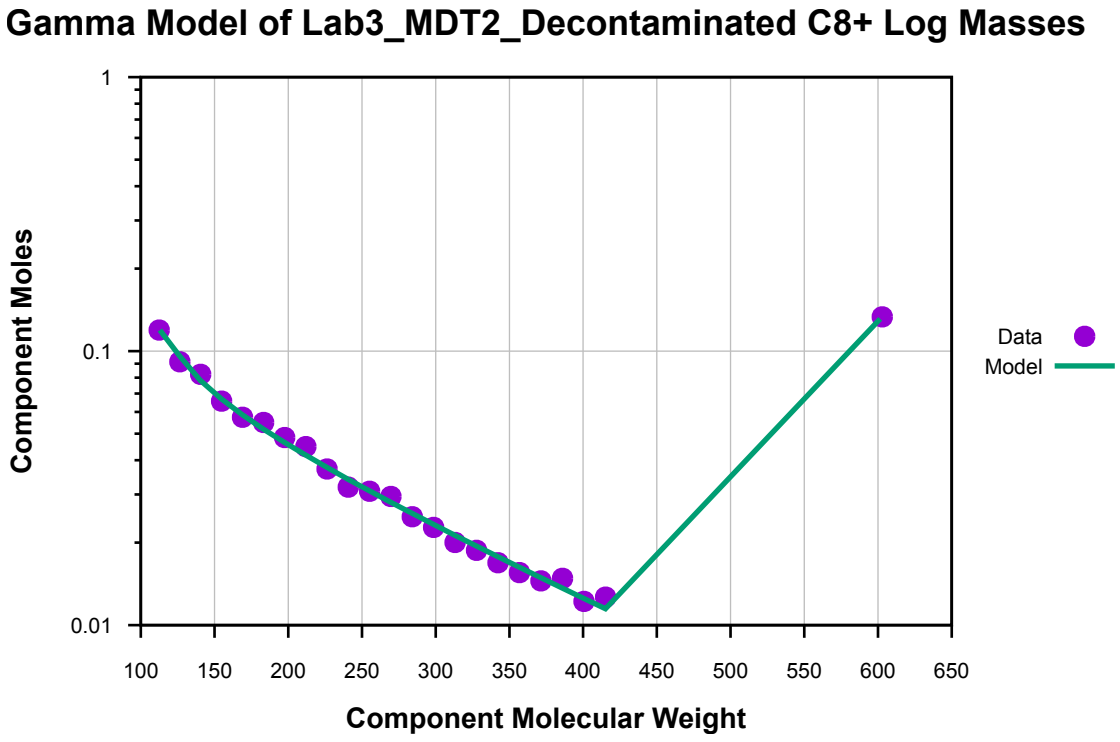

Figure 5: Molar Gamma Model of Lab3_MDT2_Decontaminated C8+ Log Masses. Gamma Shape = 0.76763, Average = 255.67, Bound = 108.11, Origin = 108.11.

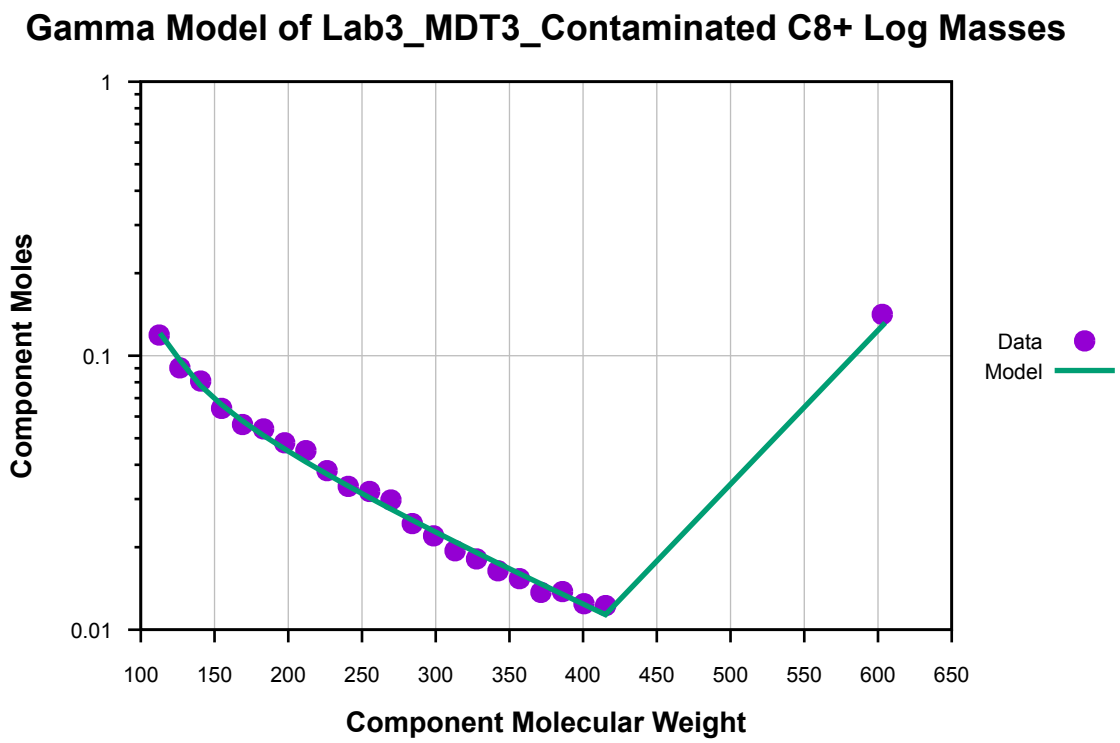

Figure 6: Molar Gamma Model of Lab3_MDT3_Contaminated C8+ Log Masses. Gamma Shape = 0.7494, Average = 256.21, Bound = 108.41, Origin = 108.41.

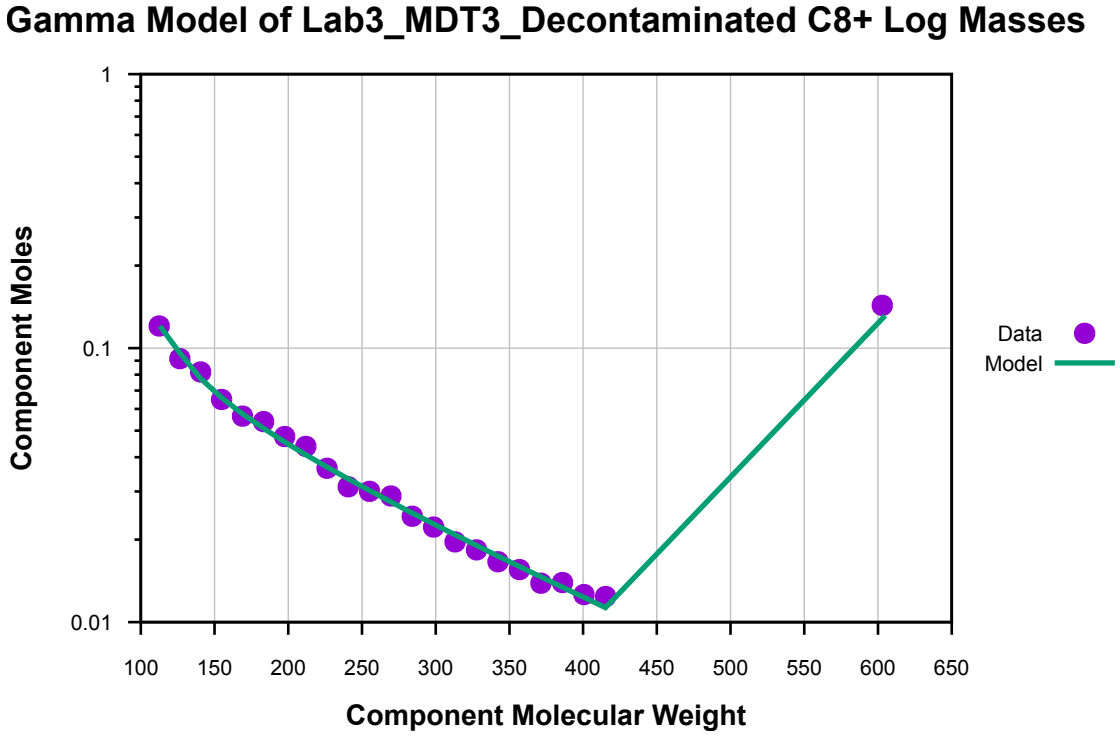

Figure 7: Molar Gamma Model of Lab3_MDT3_Decontaminated C8+ Log Masses. Gamma Shape = 0.7494, Average = 256.21, Bound = 108.41, Origin = 108.41.

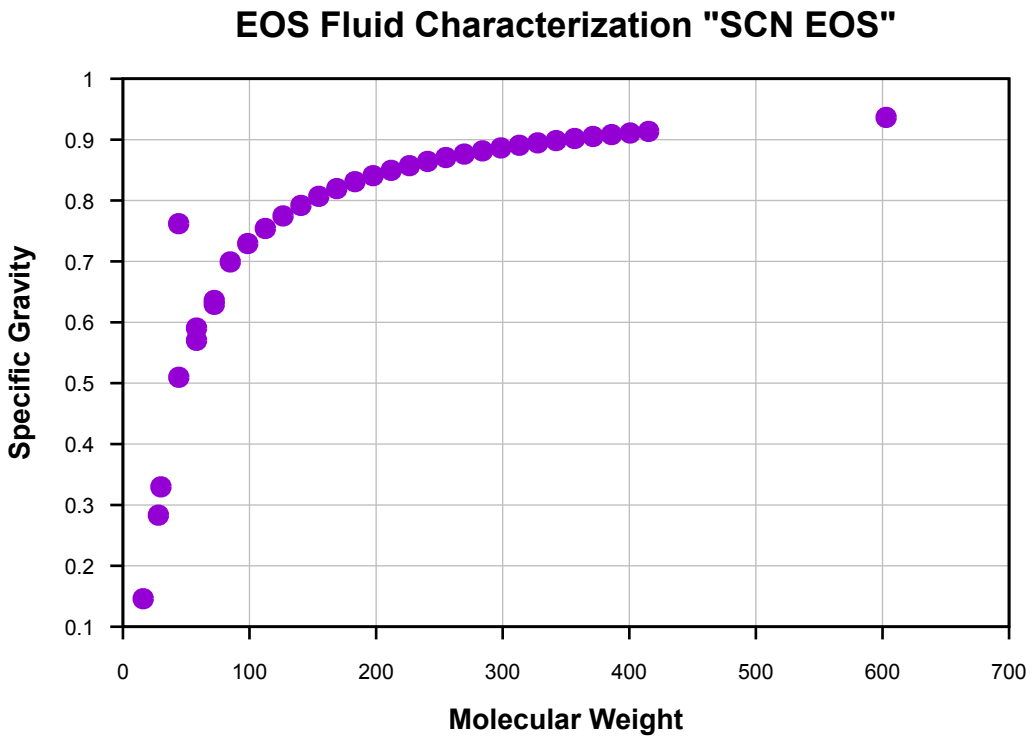

Figure 8: Specific Gravity vs. Molecular Weight for EOS Fluid Characterization "SCN EOS."

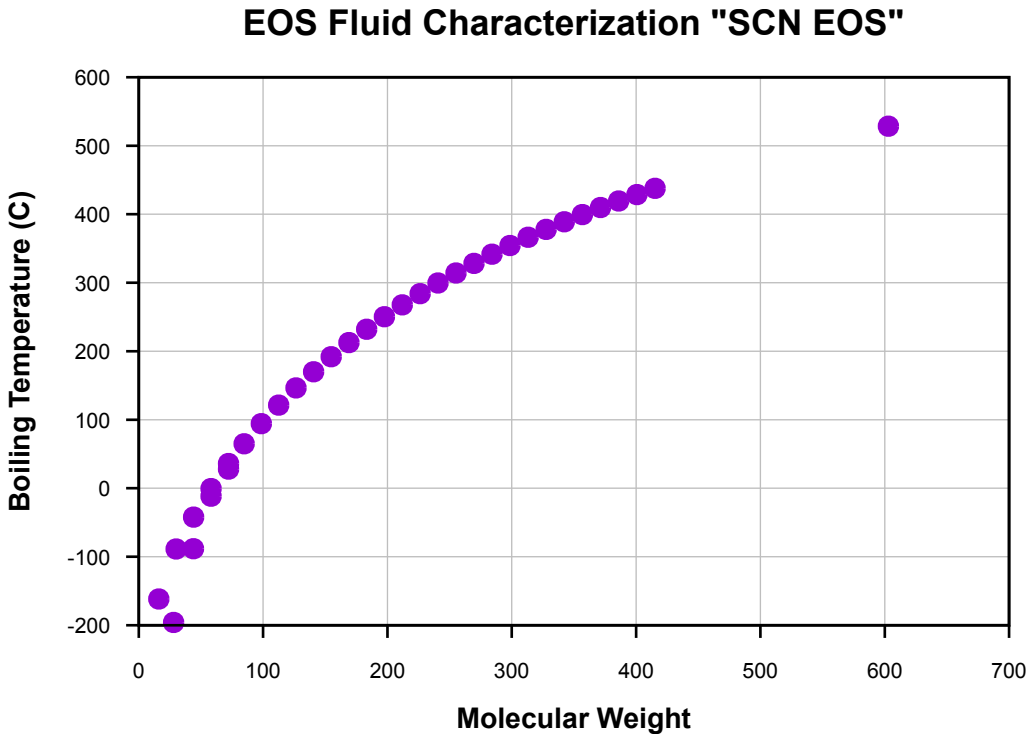

Figure 9: Boiling Temperature vs. Molecular Weight for EOS Fluid Characterization "SCN EOS."

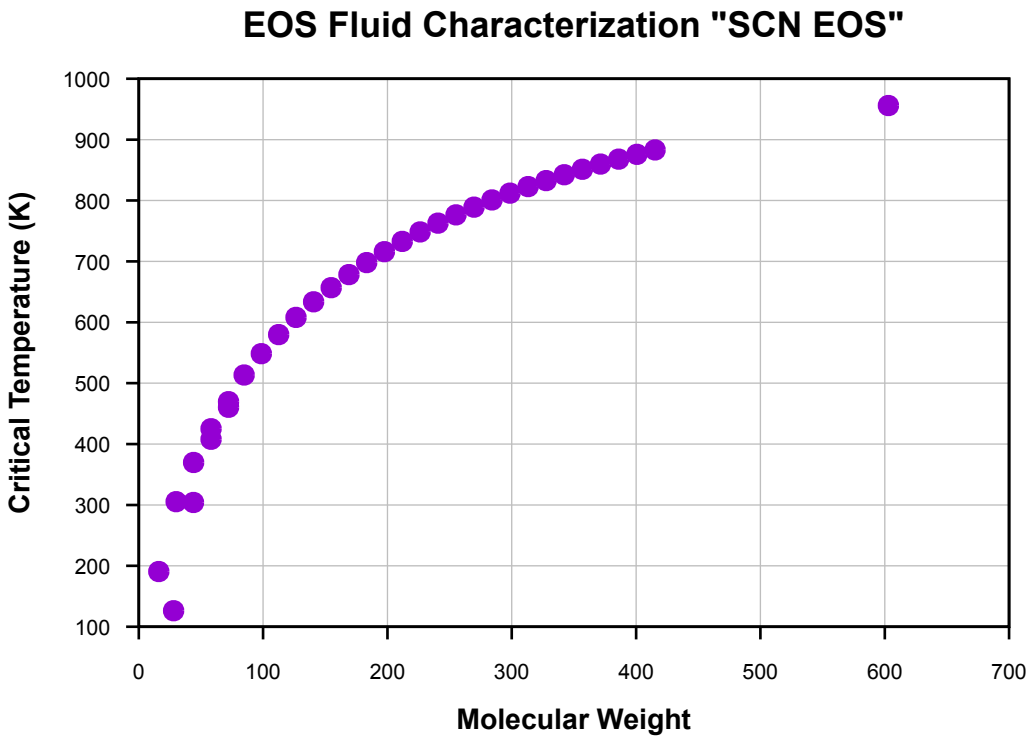

Figure 10: Critical Temperature vs. Molecular Weight for EOS Fluid Characterization "SCN EOS."

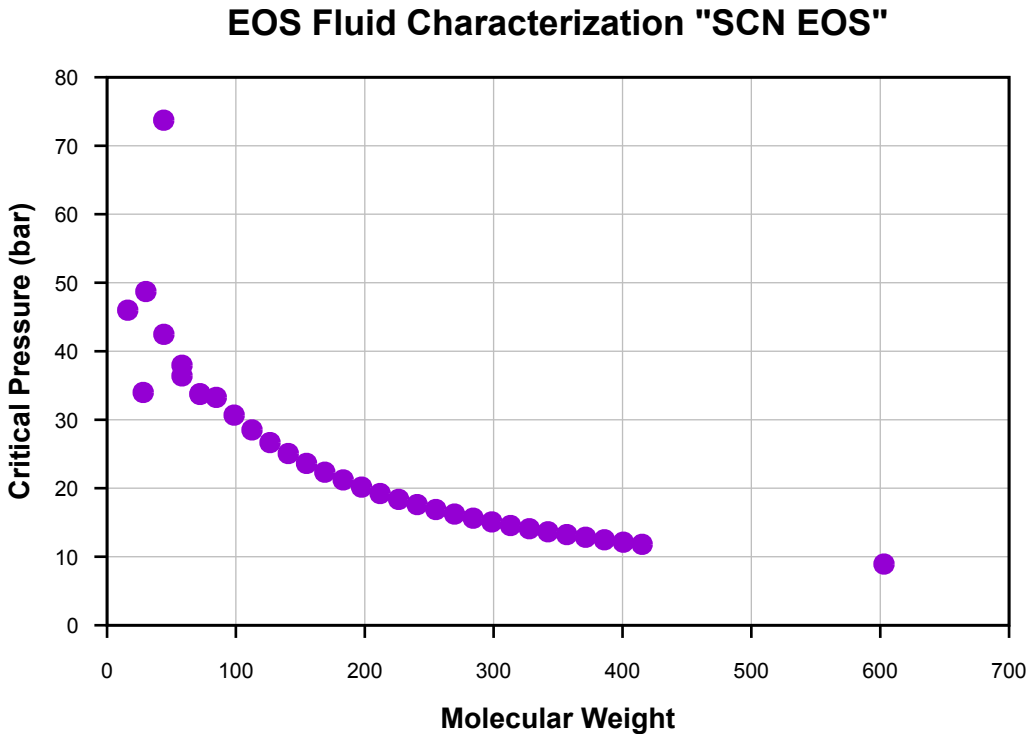

Figure 11: Critical Pressure vs. Molecular Weight for EOS Fluid Characterization "SCN EOS."

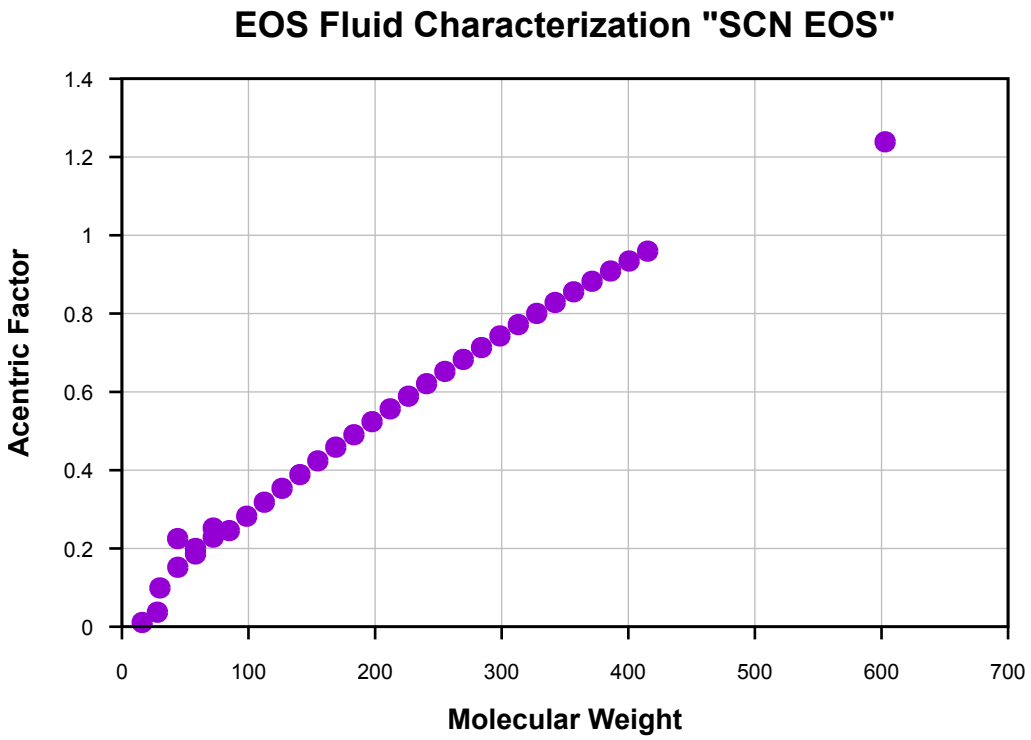

Figure 12: Acentric Factor vs. Molecular Weight for EOS Fluid Characterization "SCN EOS."

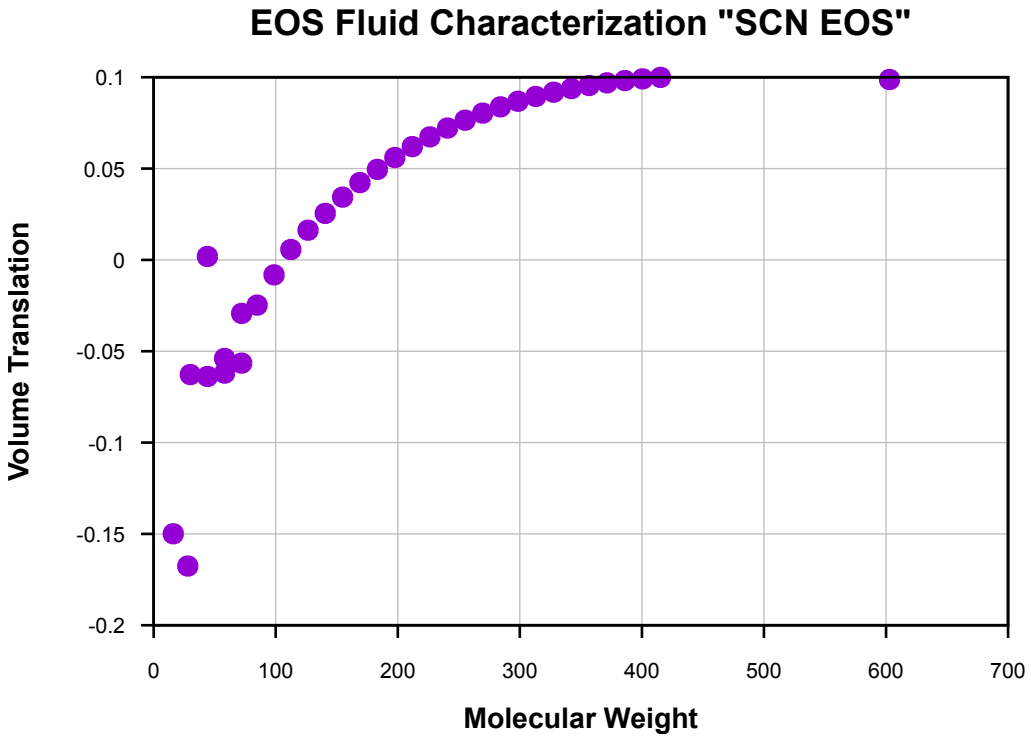

Figure 13: Volume Translation vs. Molecular Weight for EOS Fluid Characterization "SCN EOS."

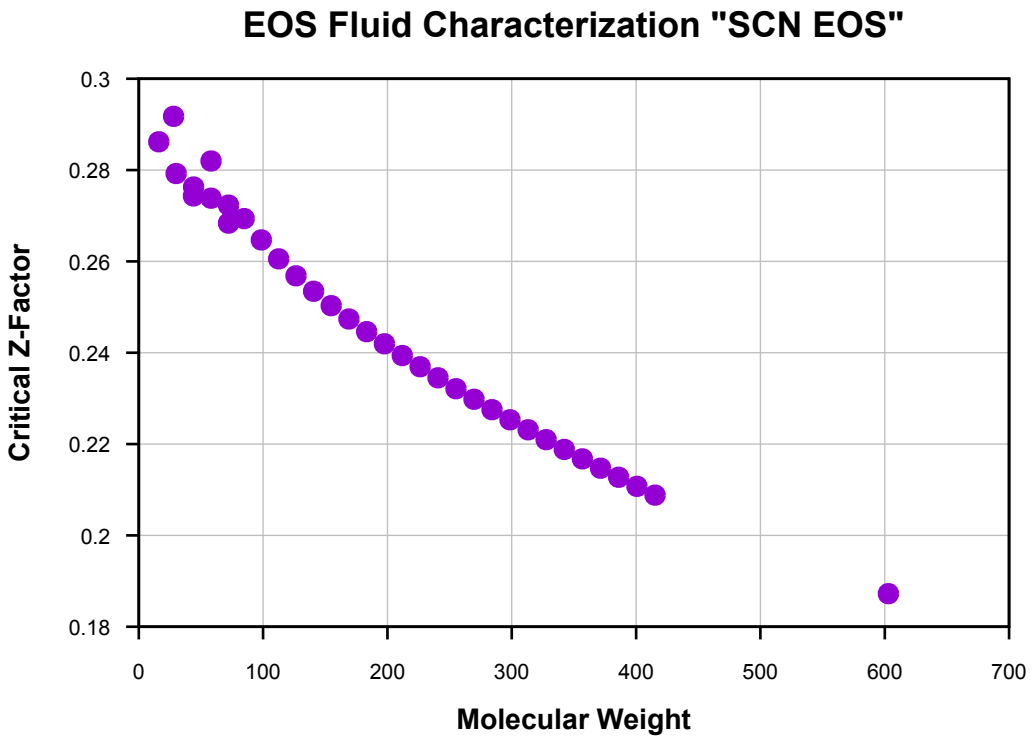

Figure 14: Critical Z-Factor vs. Molecular Weight for EOS Fluid Characterization "SCN EOS."

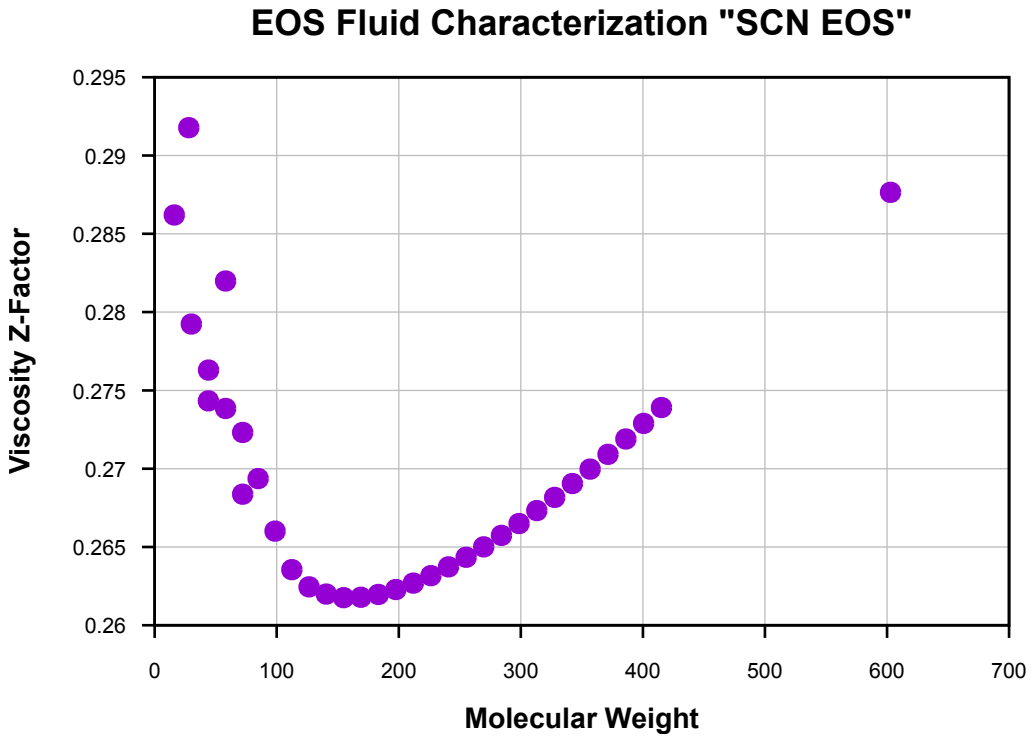

Figure 15: Viscosity Z-Factor vs. Molecular Weight for EOS Fluid Characterization "SCN EOS."

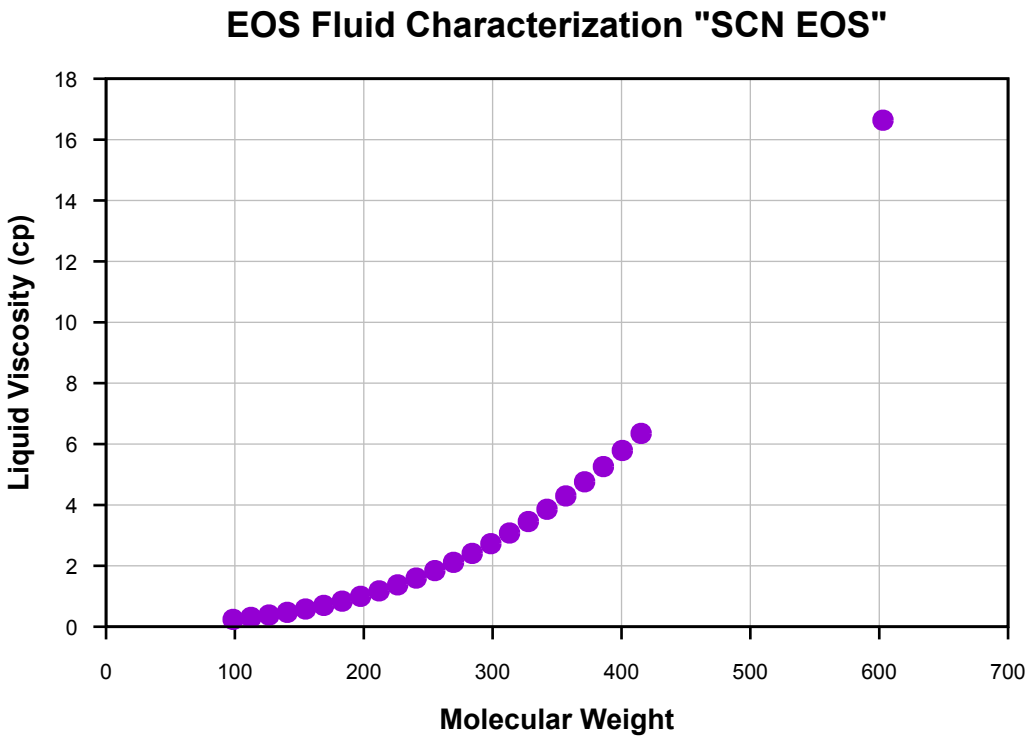

Figure 16: Liquid Viscosity vs. Molecular Weight for EOS Fluid Characterization "SCN EOS."

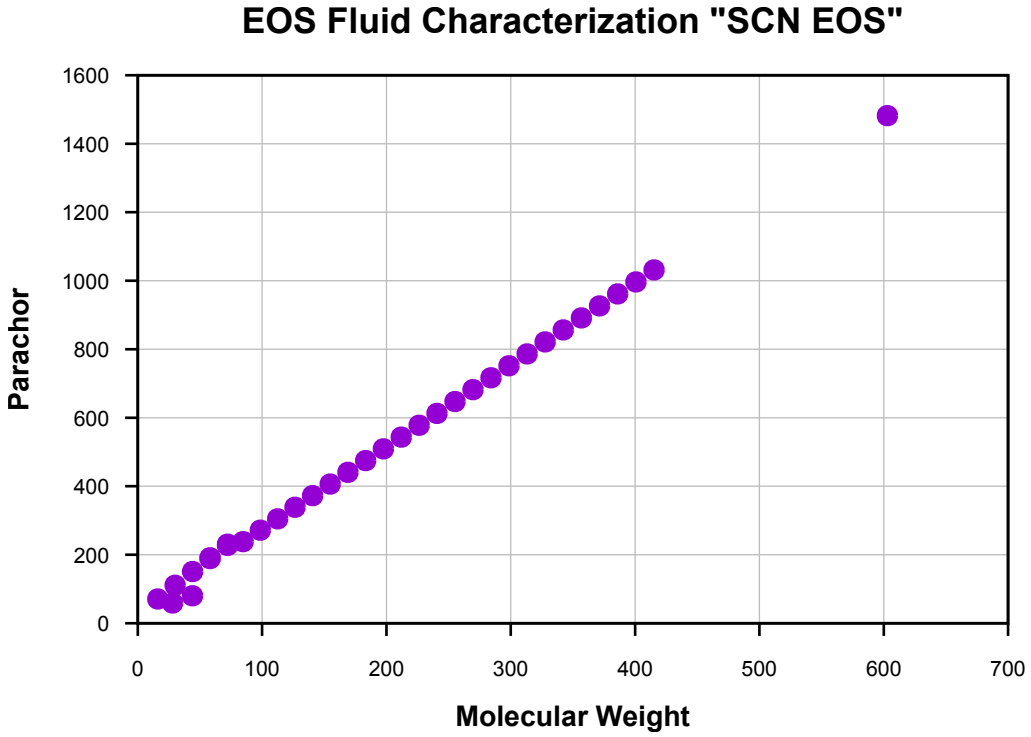

Figure 17: Parachor vs. Molecular Weight for EOS Fluid Characterization "SCN EOS."

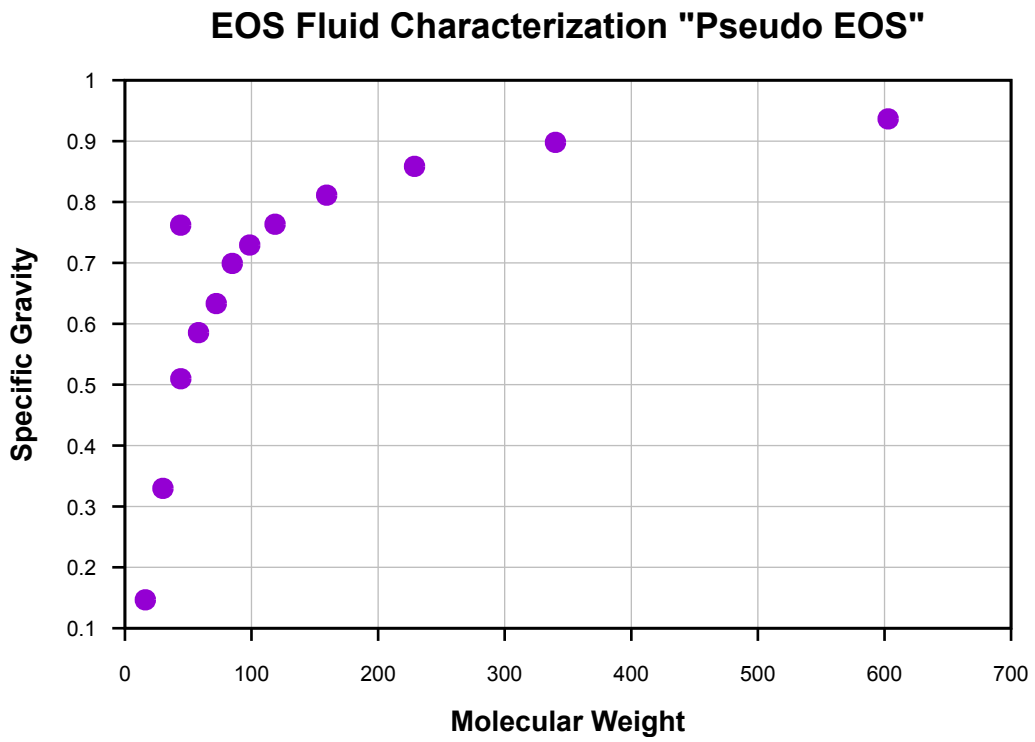

Figure 18: Specific Gravity vs. Molecular Weight for EOS Fluid Characterization "Pseudo EOS."

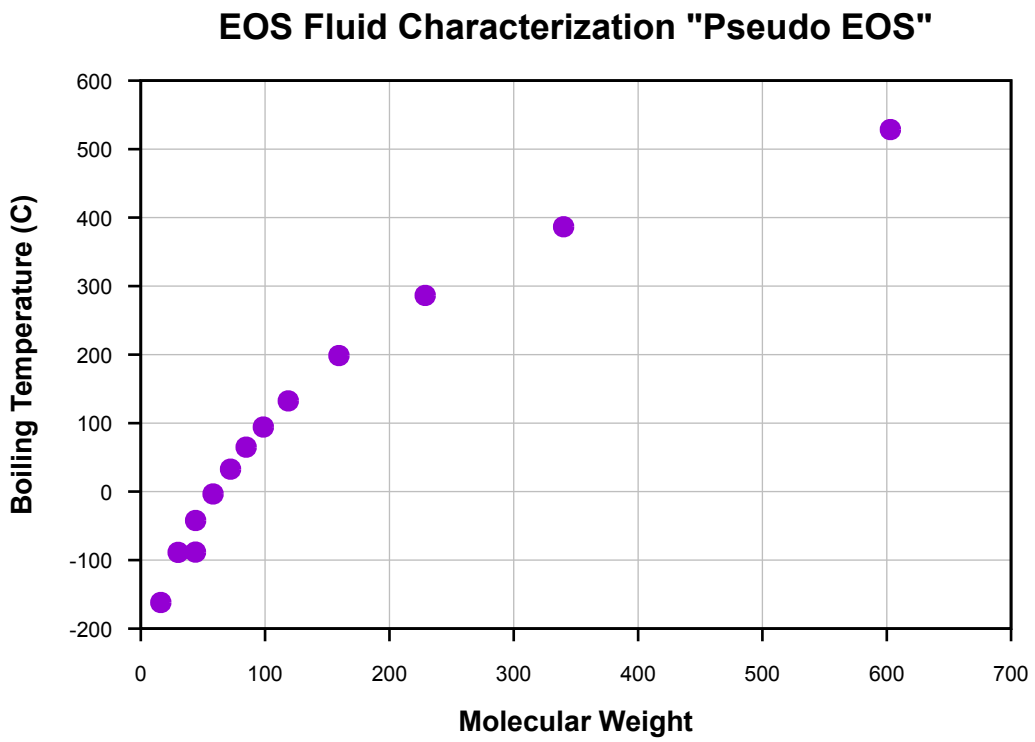

Figure 19: Boiling Temperature vs. Molecular Weight for EOS Fluid Characterization "Pseudo EOS."

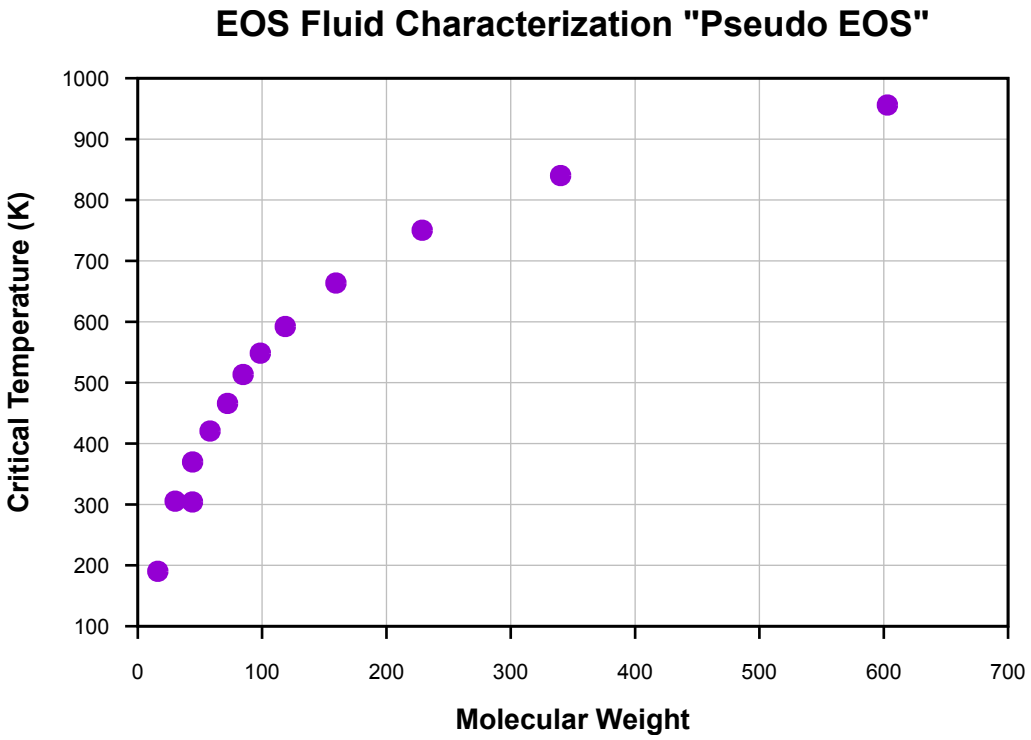

Figure 20: Critical Temperature vs. Molecular Weight for EOS Fluid Characterization "Pseudo EOS."

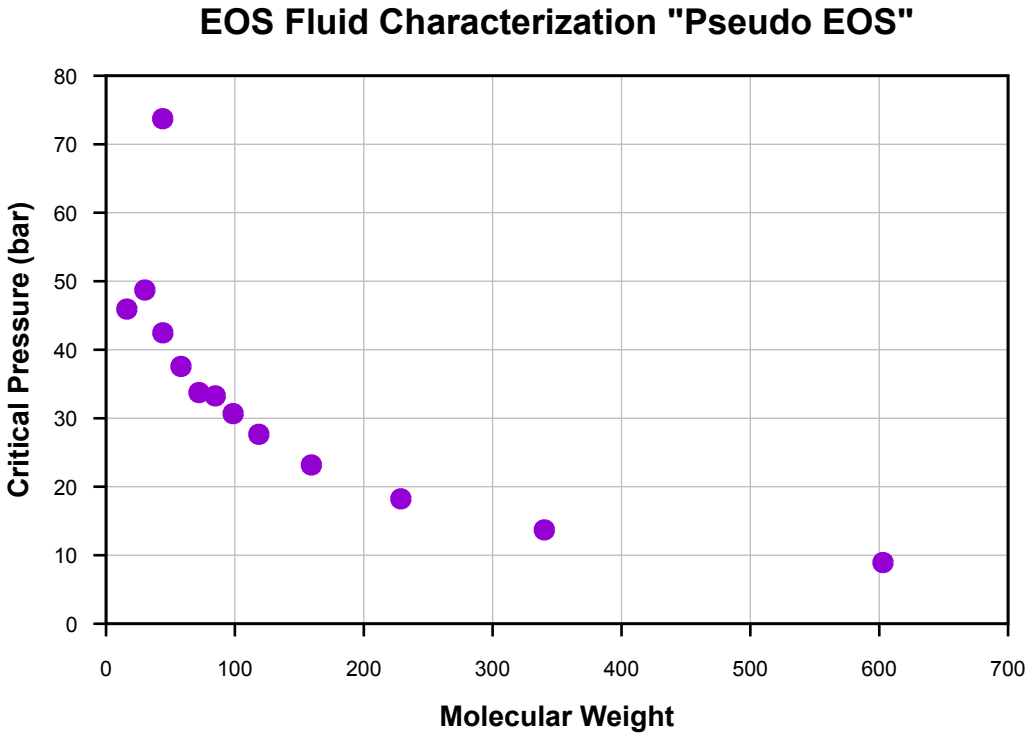

Figure 21: Critical Pressure vs. Molecular Weight for EOS Fluid Characterization "Pseudo EOS."

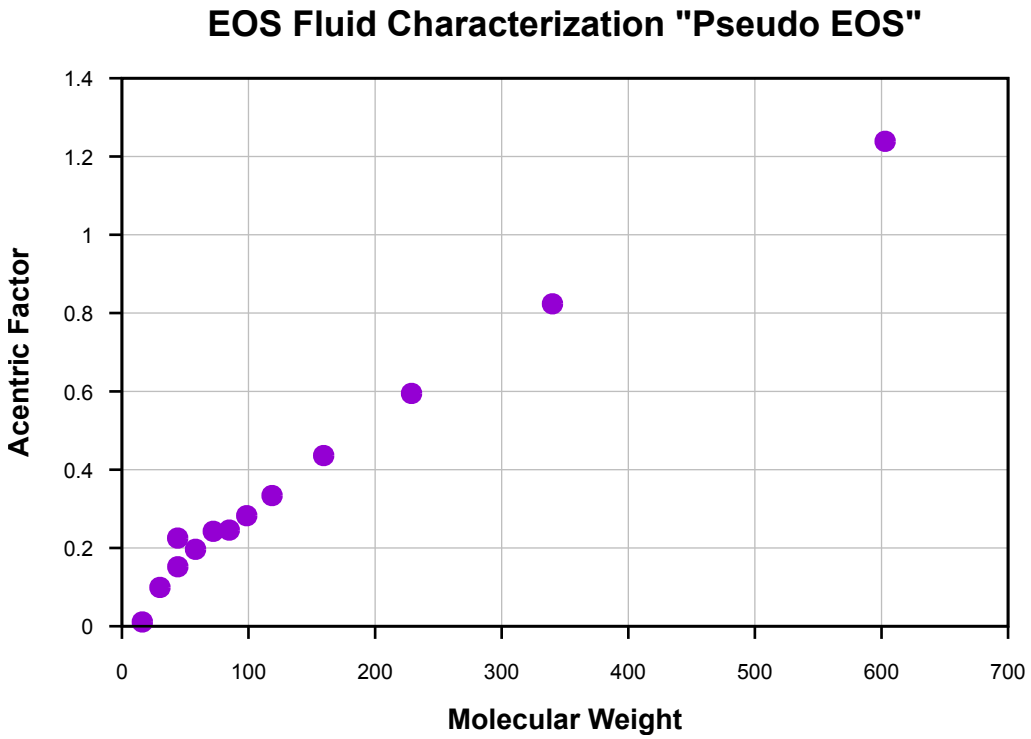

Figure 22: Acentric Factor vs. Molecular Weight for EOS Fluid Characterization "Pseudo EOS."

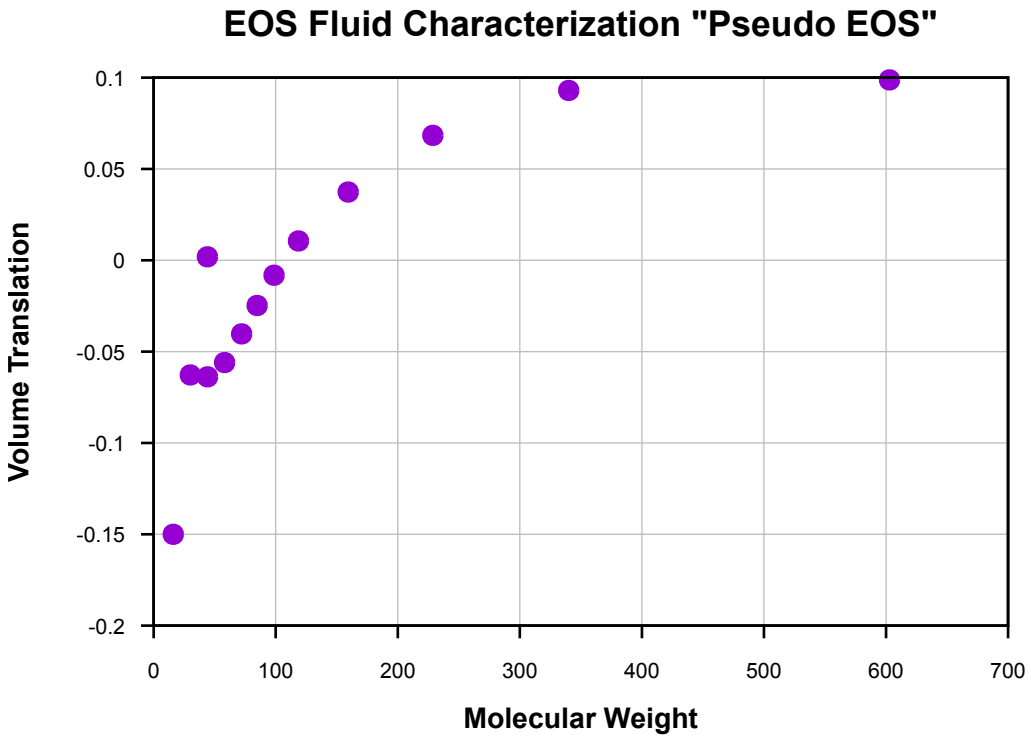

Figure 23: Volume Translation vs. Molecular Weight for EOS Fluid Characterization "Pseudo EOS."

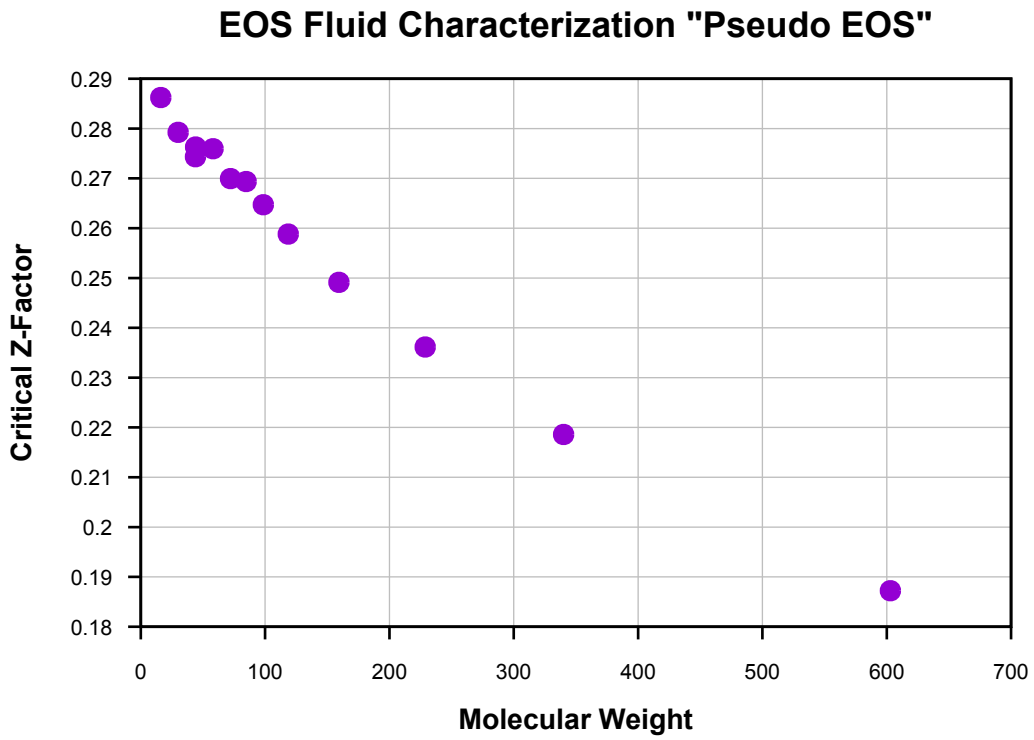

Figure 24: Critical Z-Factor vs. Molecular Weight for EOS Fluid Characterization "Pseudo EOS."

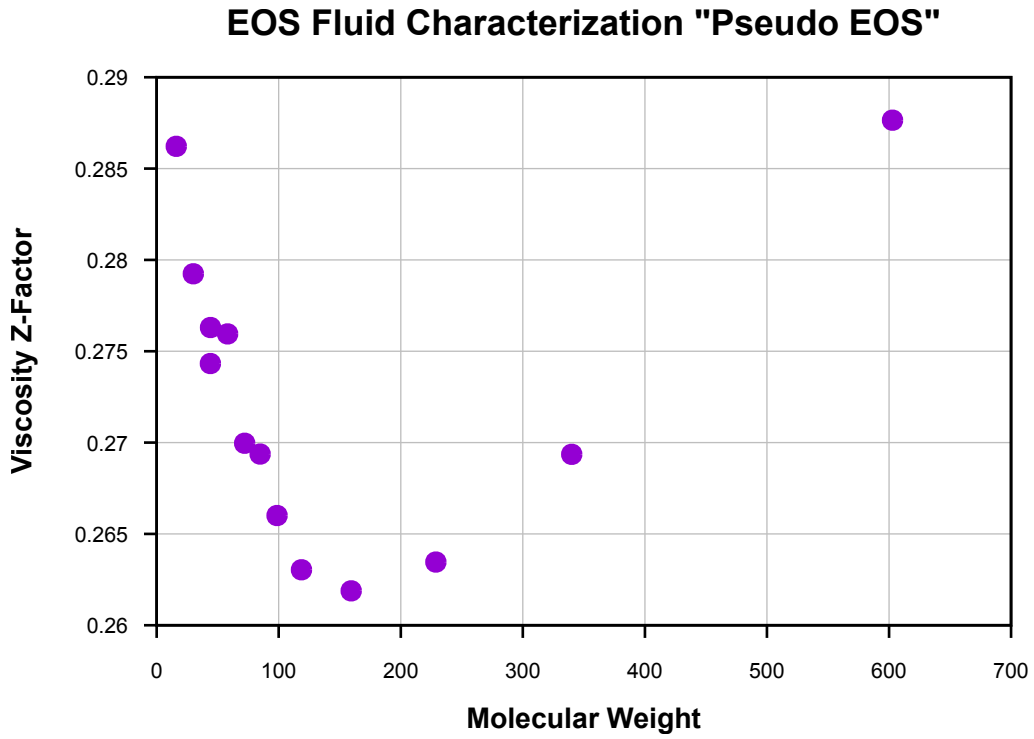

Figure 25: Viscosity Z-Factor vs. Molecular Weight for EOS Fluid Characterization "Pseudo EOS."

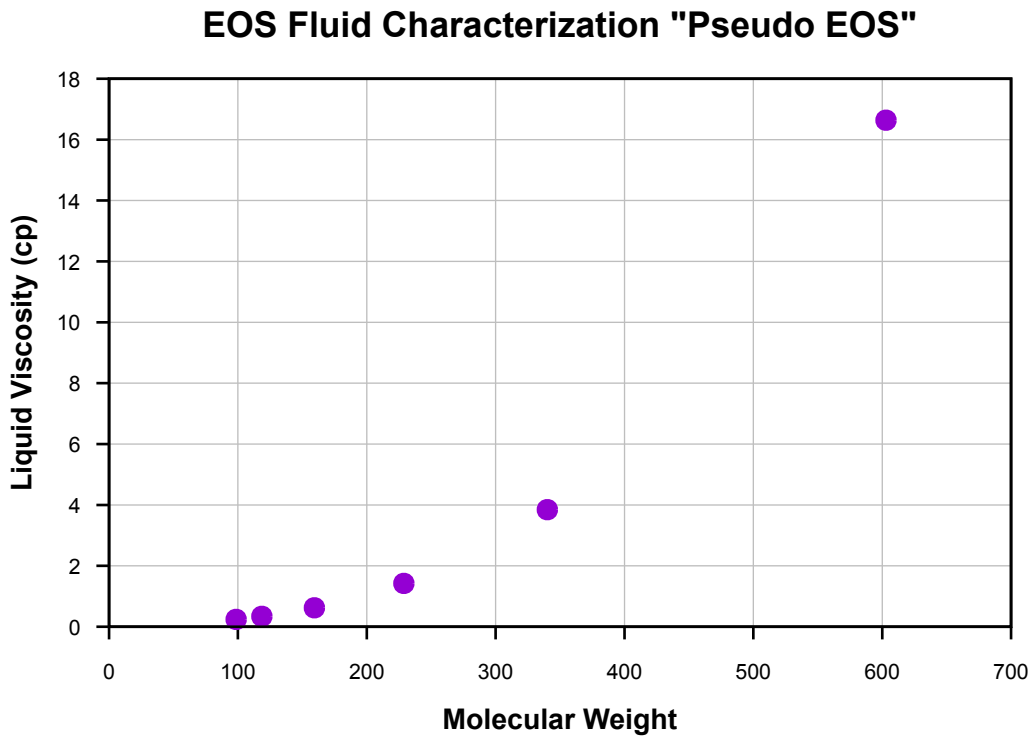

Figure 26: Liquid Viscosity vs. Molecular Weight for EOS Fluid Characterization "Pseudo EOS."

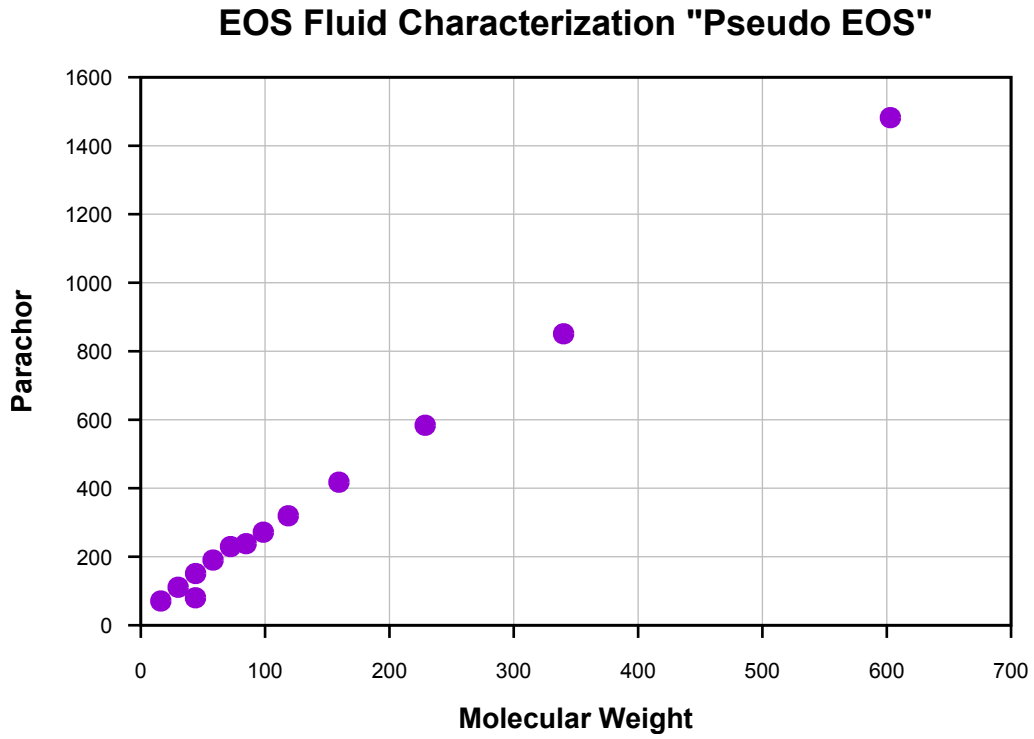

Figure 27: Parachor vs. Molecular Weight for EOS Fluid Characterization "Pseudo EOS."

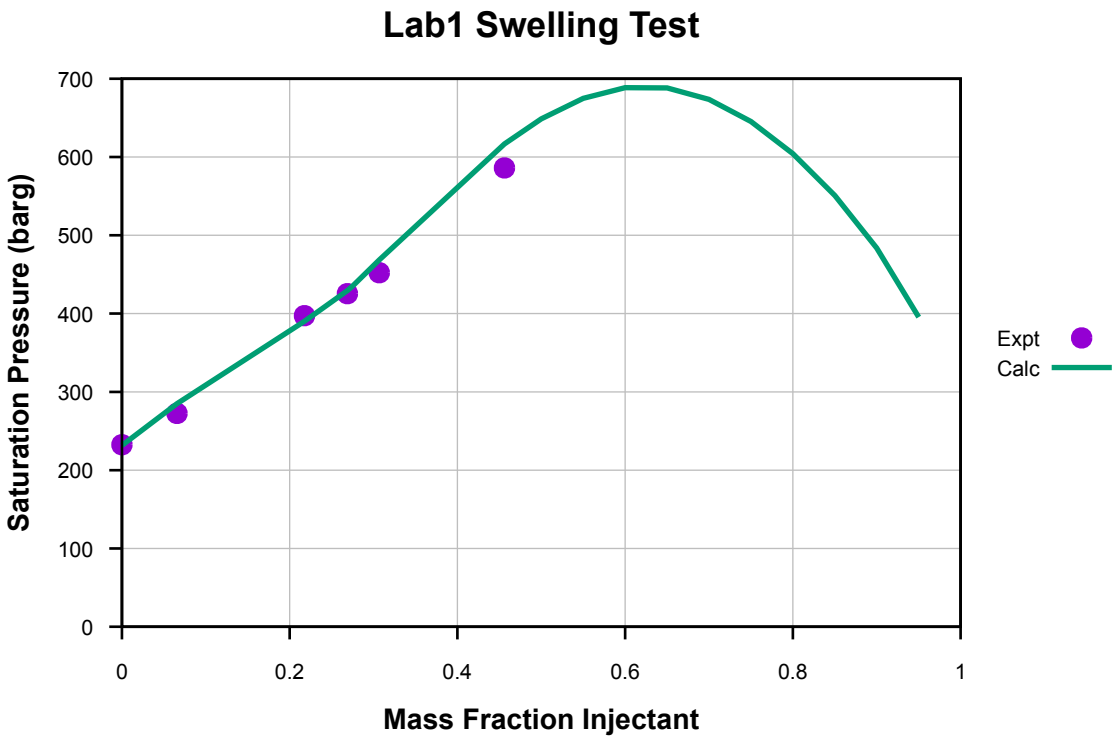

Figure 28: Saturation Pressure vs. Mass Fraction Injectant for Lab1 Swelling Test.

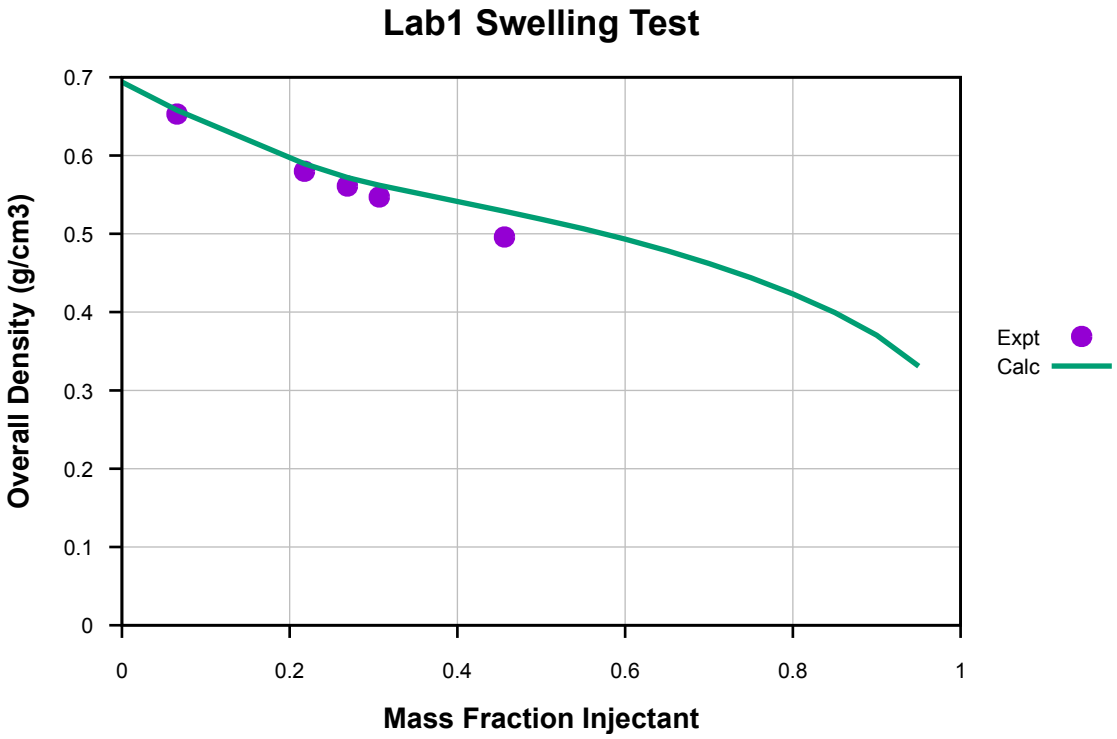

Figure 29: Overall Density vs. Mass Fraction Injectant for Lab1 Swelling Test.

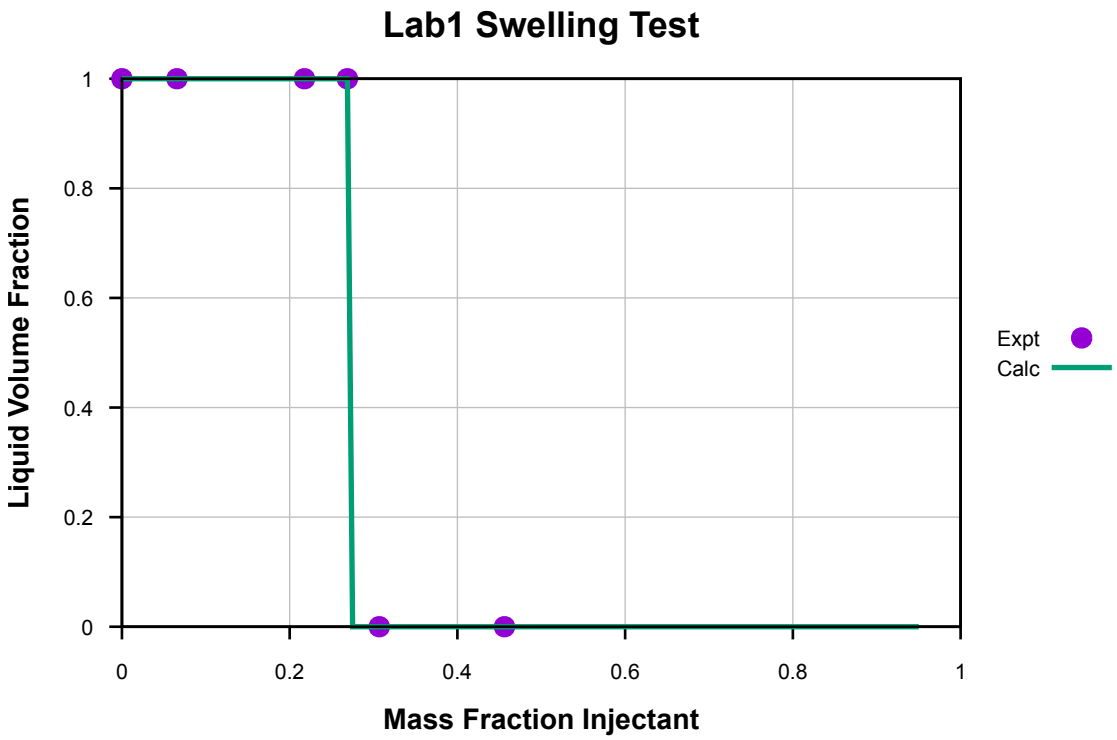

Figure 30: Liquid Volume Fraction vs. Mass Fraction Injectant for Lab1 Swelling Test.

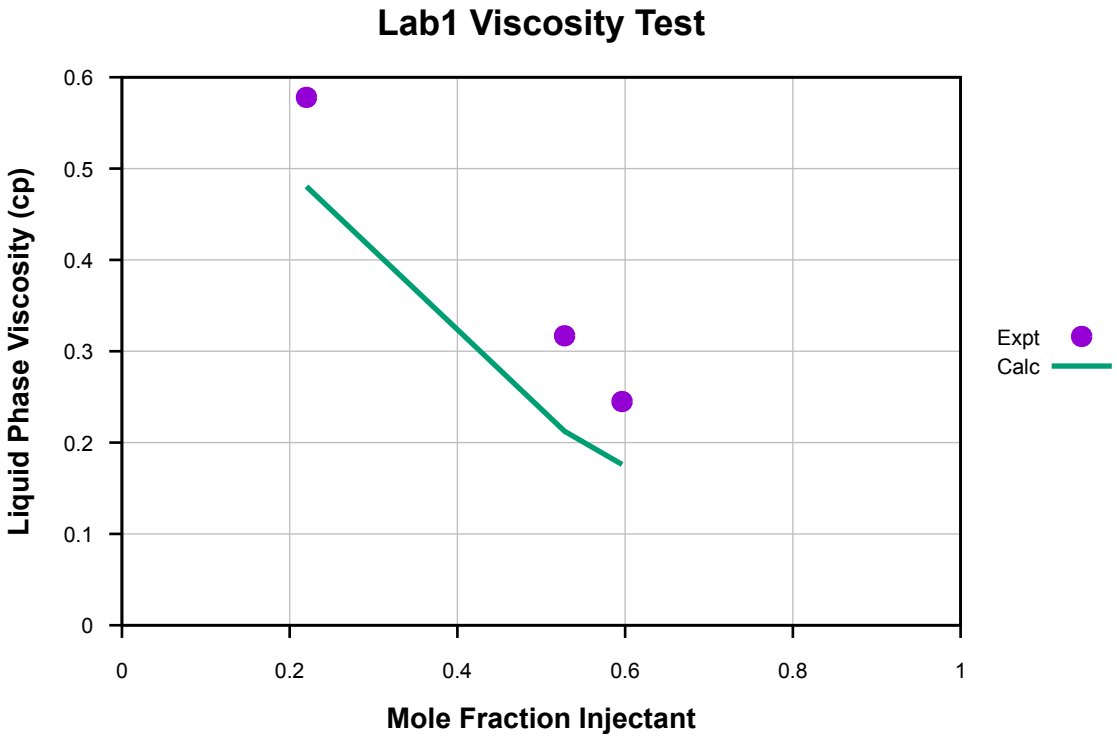

Figure 31: Liquid Phase Viscosity vs. Mole Fraction Injectant for Lab1 Viscosity Test.

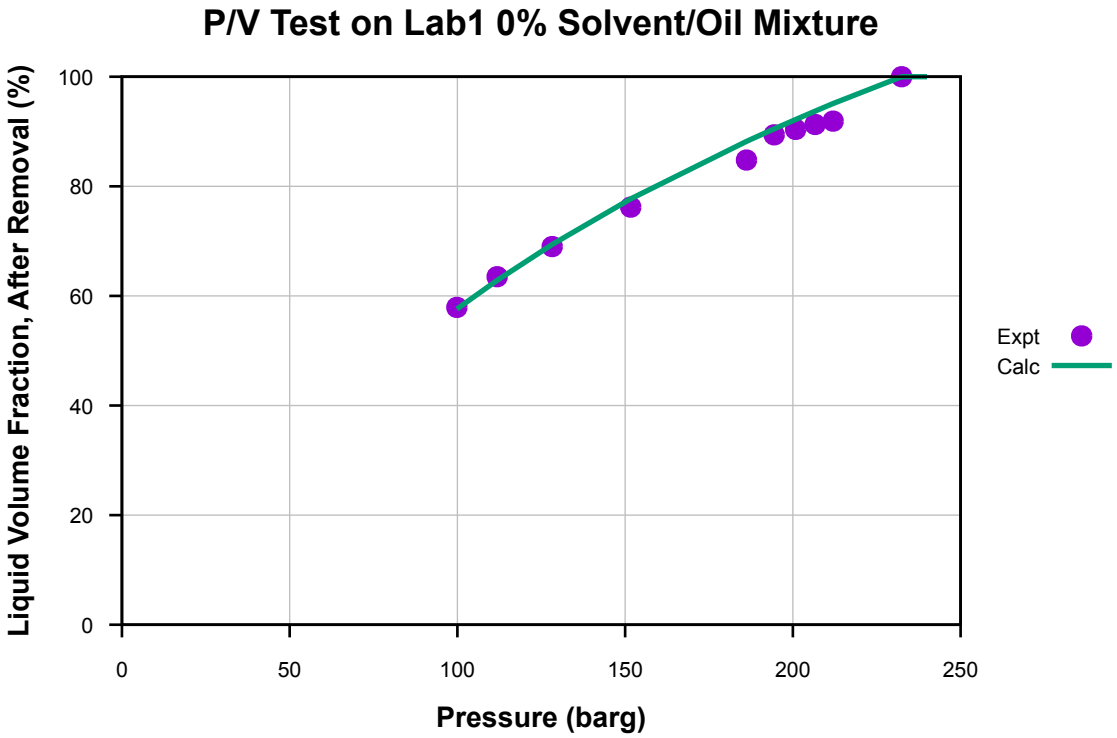

Figure 32: Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 0% Solvent/Oil Mixture.

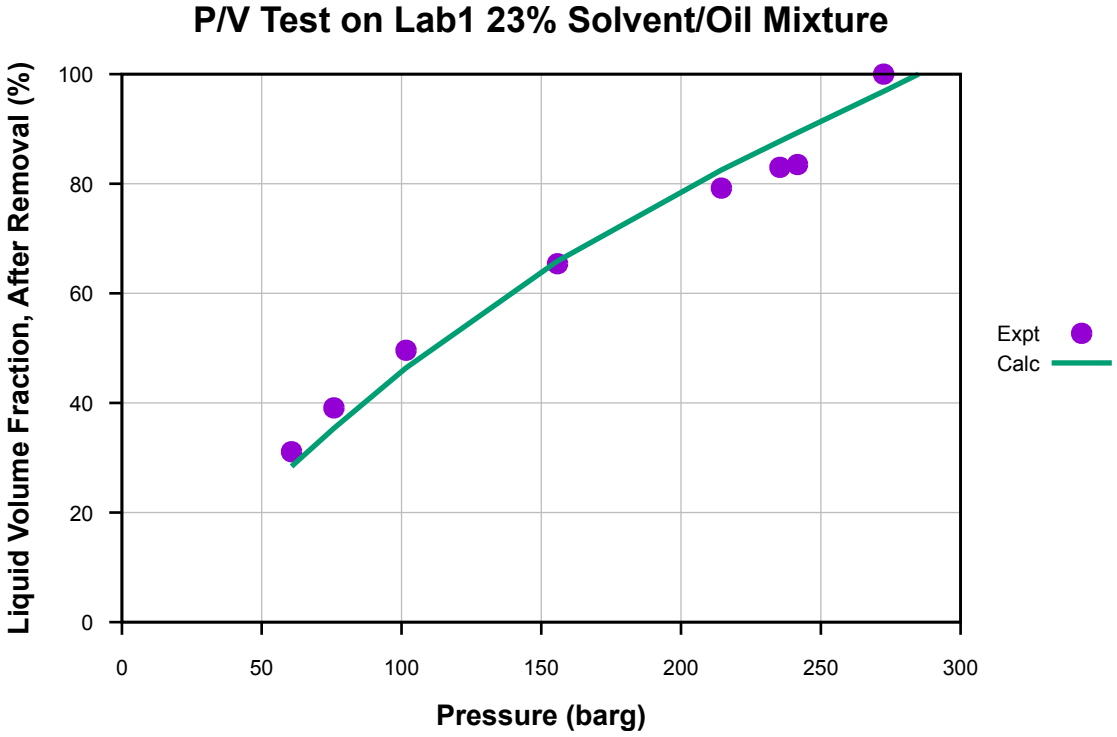

Figure 33: Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 23% Solvent/Oil Mixture.

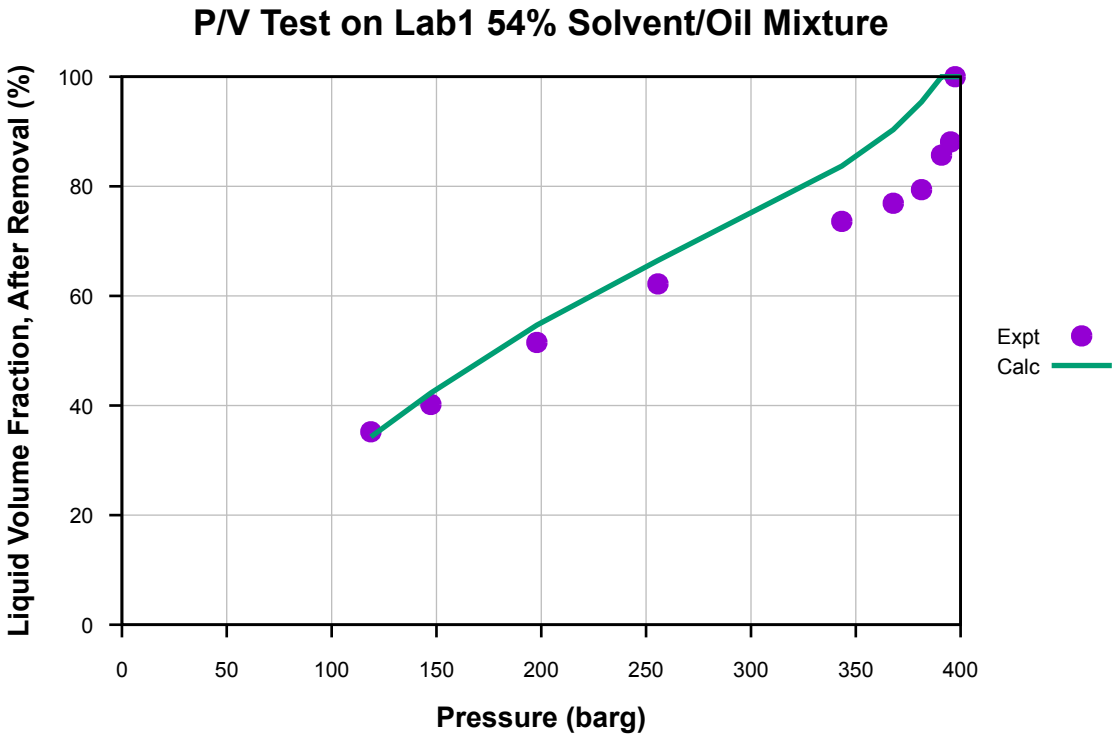

Figure 34: Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 54% Solvent/Oil Mixture.

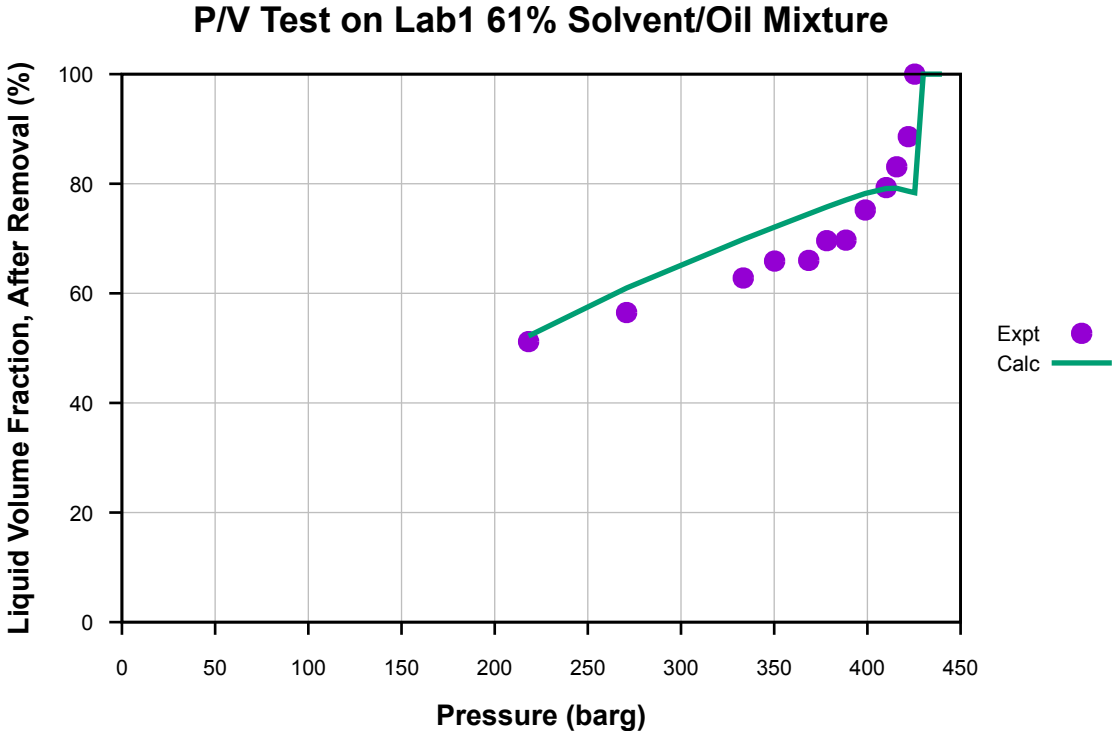

Figure 35: Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 61% Solvent/Oil Mixture.

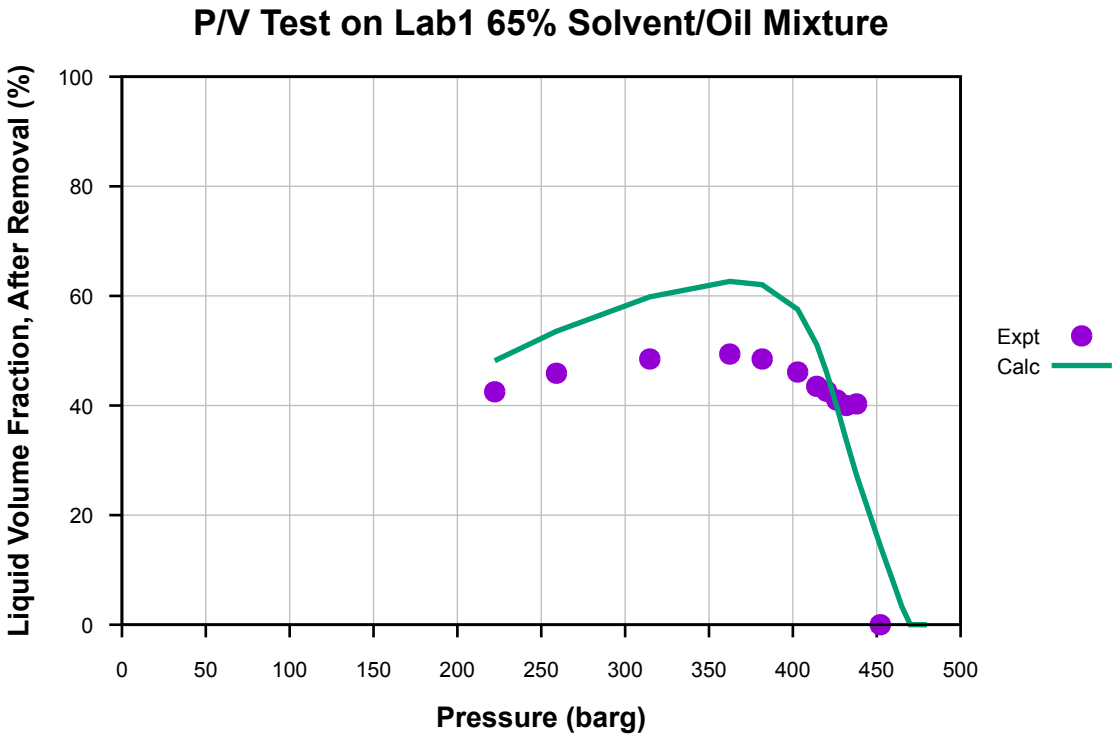

Figure 36: Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 65% Solvent/Oil Mixture.

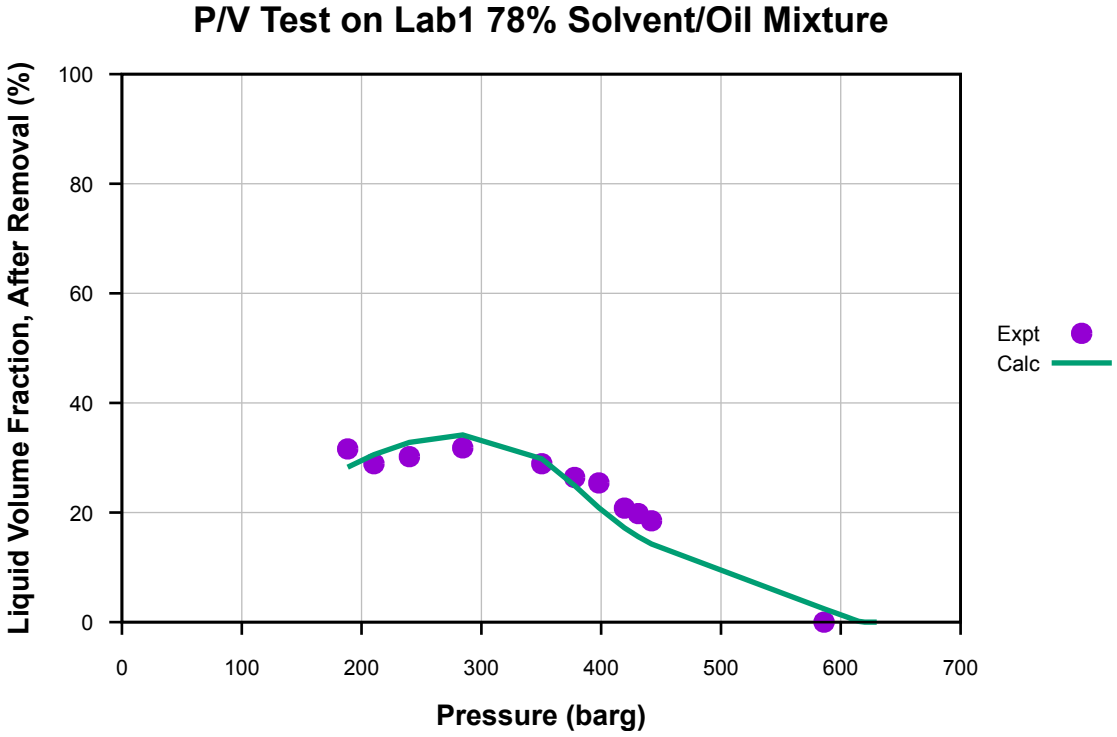

Figure 37: Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 78% Solvent/Oil Mixture.

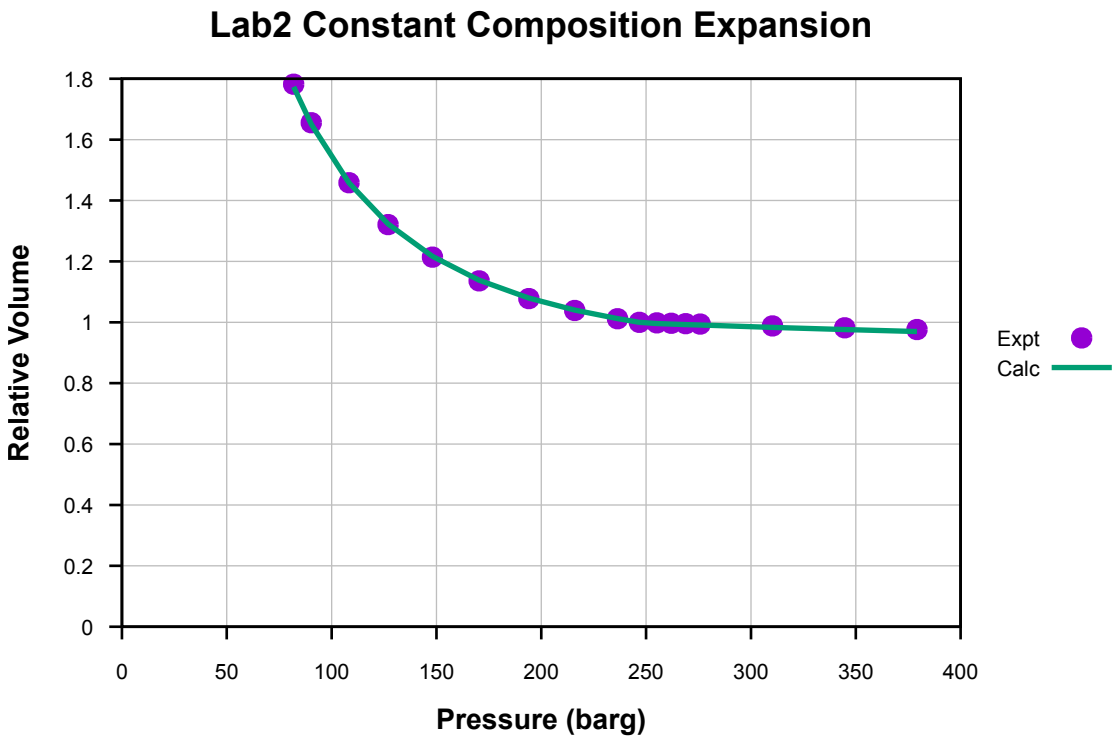

Figure 38: Relative Volume vs. Pressure for Lab2 Constant Composition Expansion.

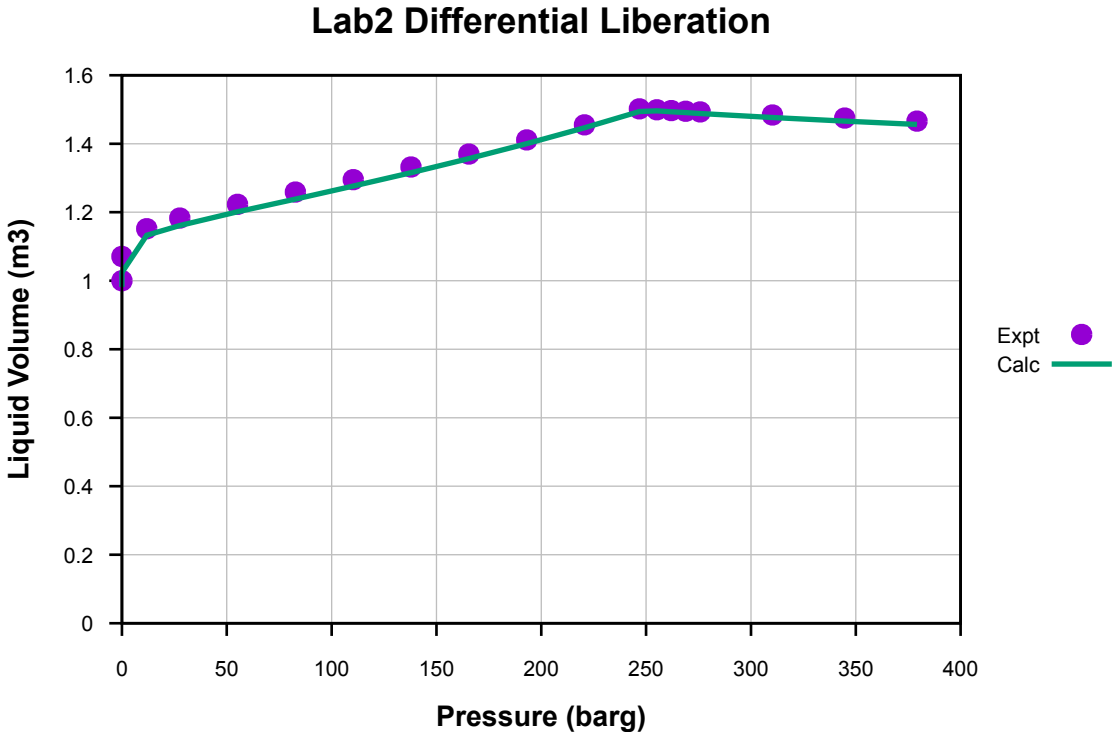

Figure 39: Liquid Volume vs. Pressure for Lab2 Differential Liberation.

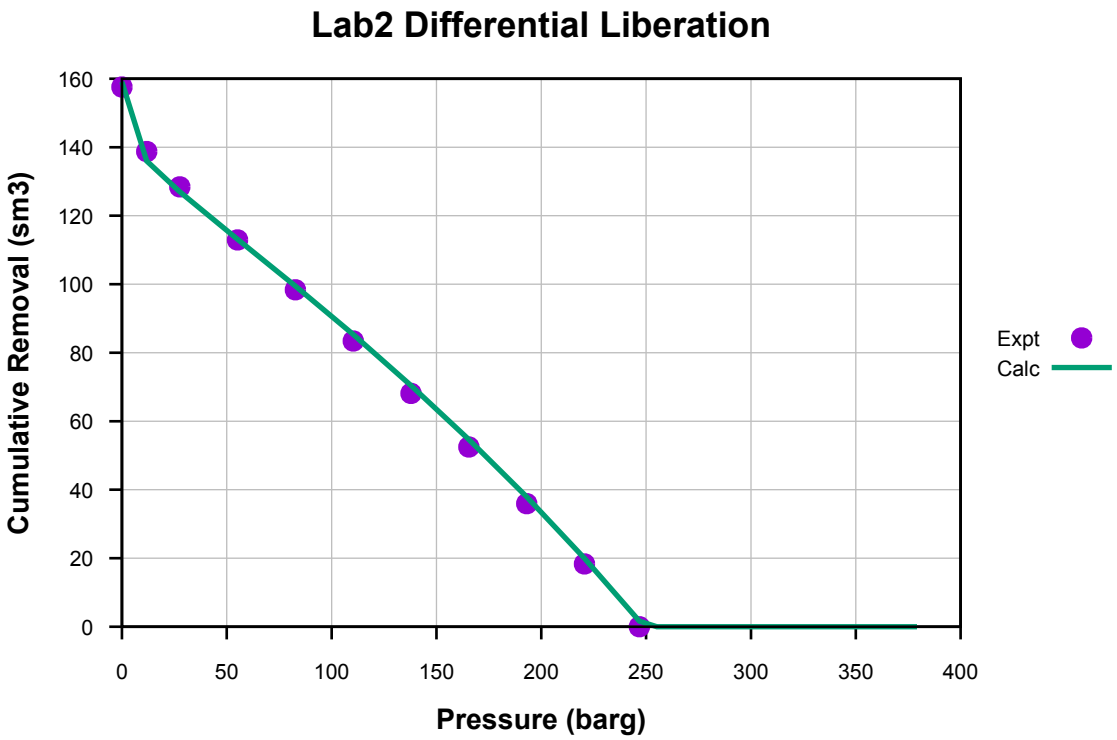

Figure 40: Cumulative Removal vs. Pressure for Lab2 Differential Liberation.

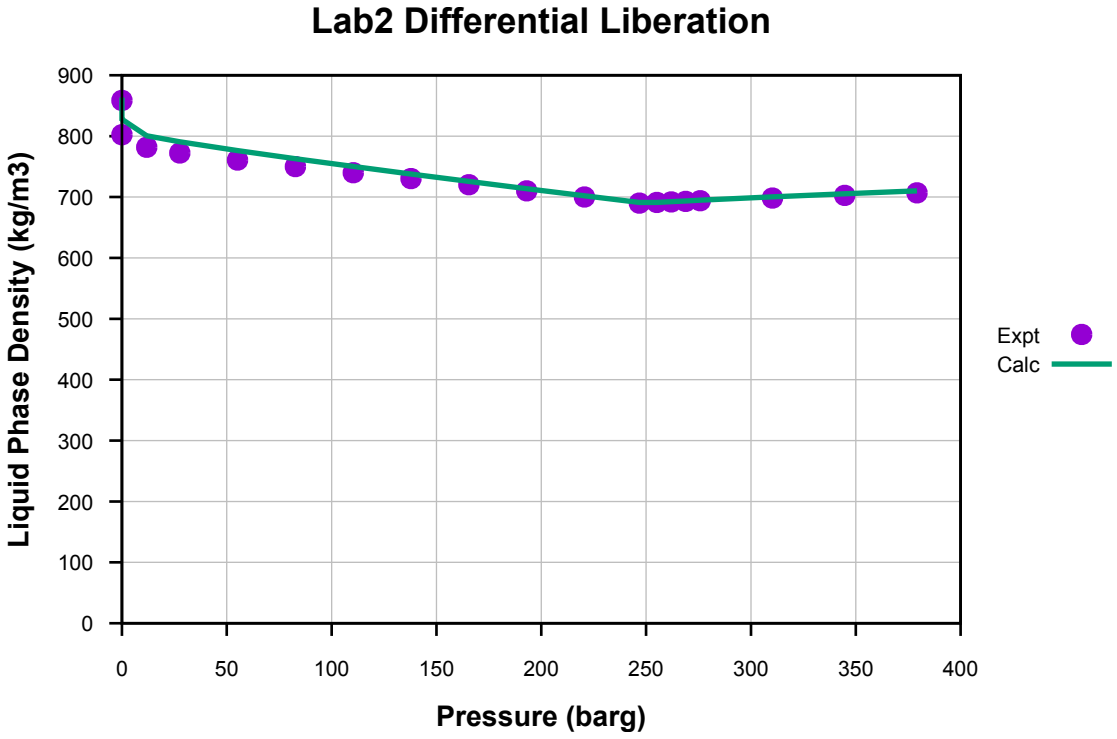

Figure 41: Liquid Phase Density vs. Pressure for Lab2 Differential Liberation.

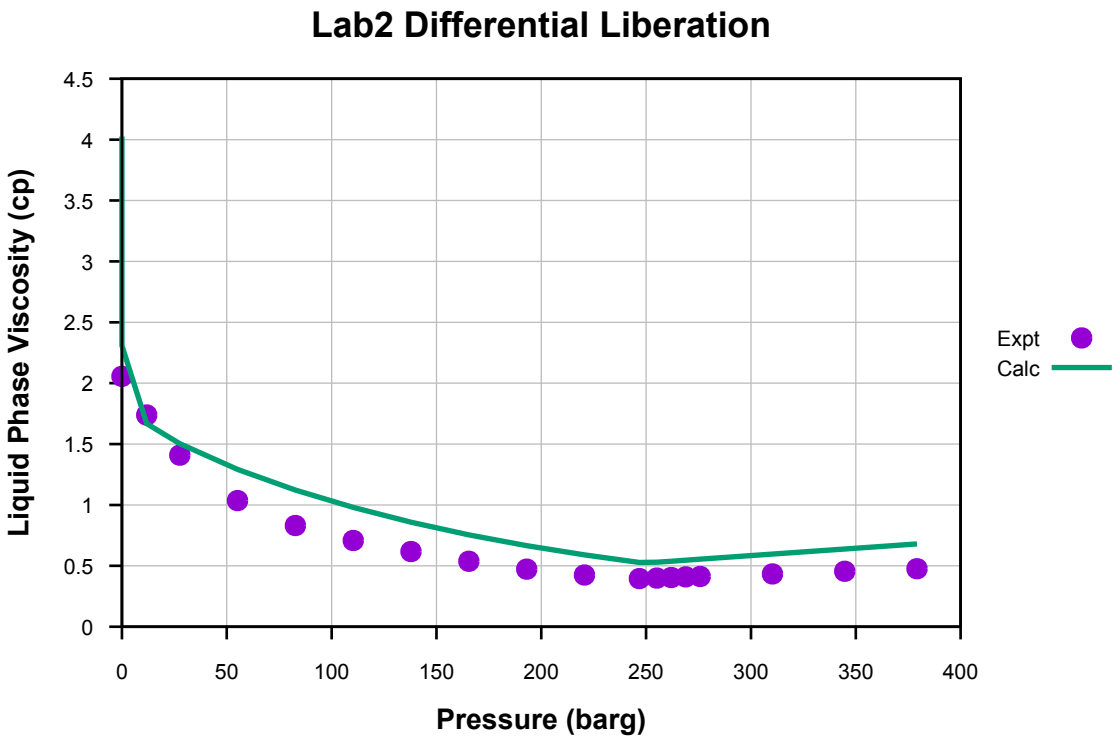

Figure 42: Liquid Phase Viscosity vs. Pressure for Lab2 Differential Liberation.

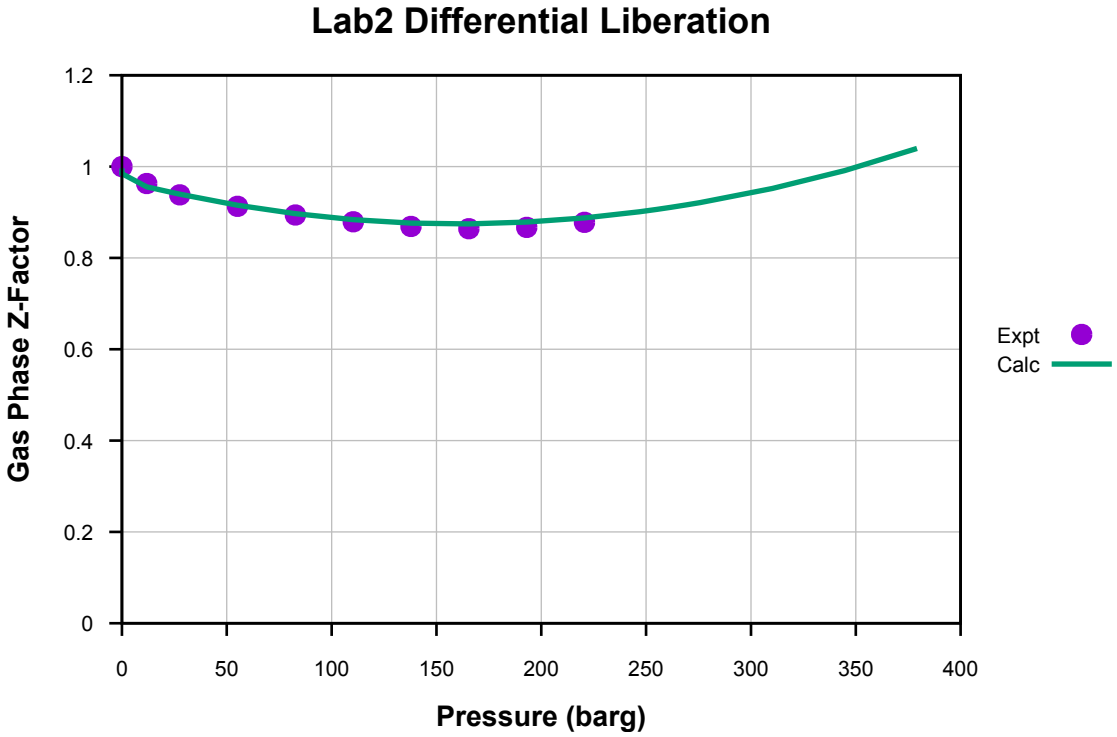

Figure 43: Gas Phase Z-Factor vs. Pressure for Lab2 Differential Liberation.

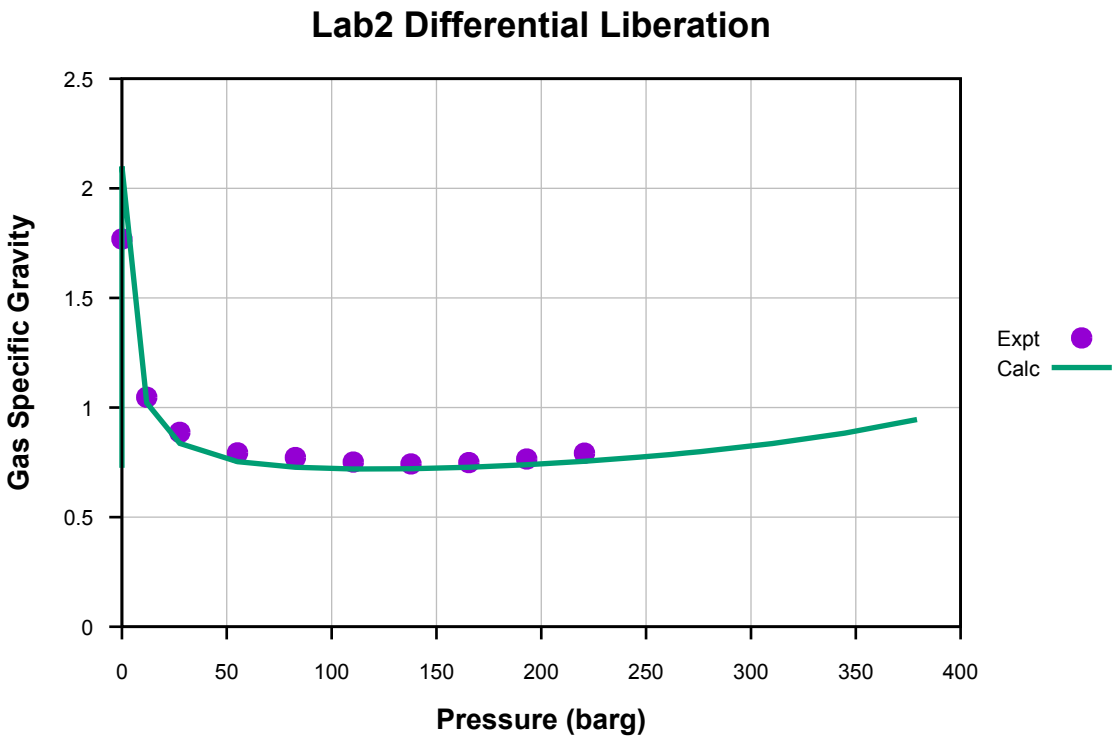

Figure 44: Gas Specific Gravity vs. Pressure for Lab2 Differential Liberation.

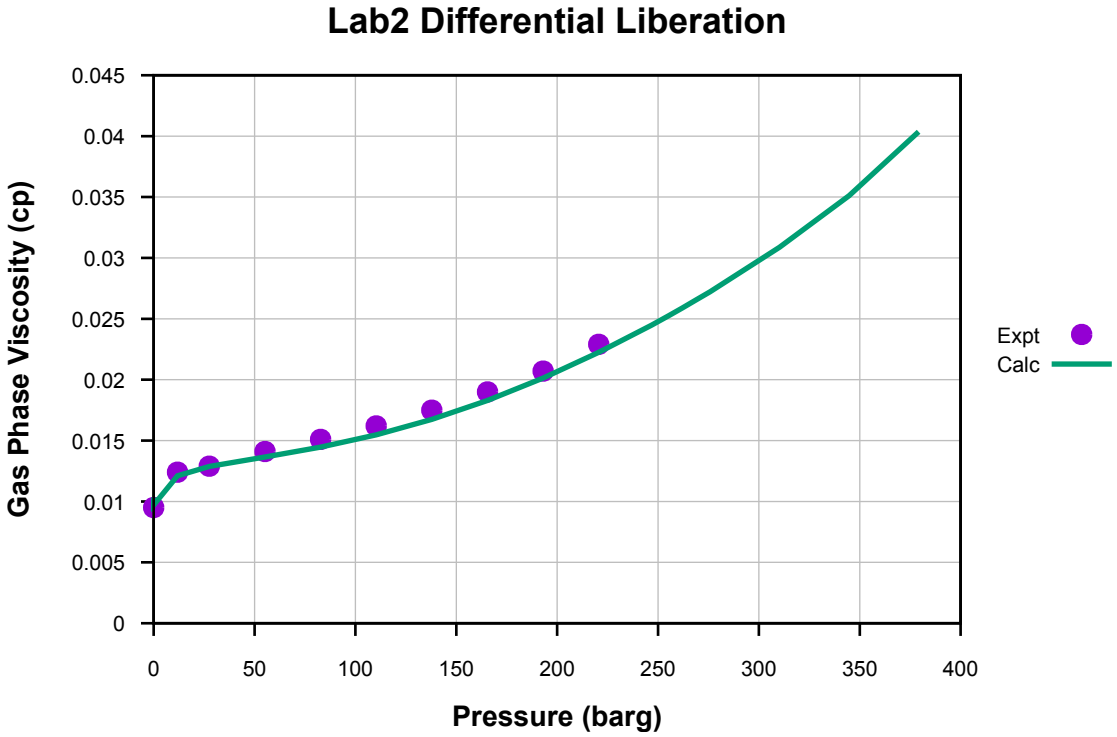

Figure 45: Gas Phase Viscosity vs. Pressure for Lab2 Differential Liberation.

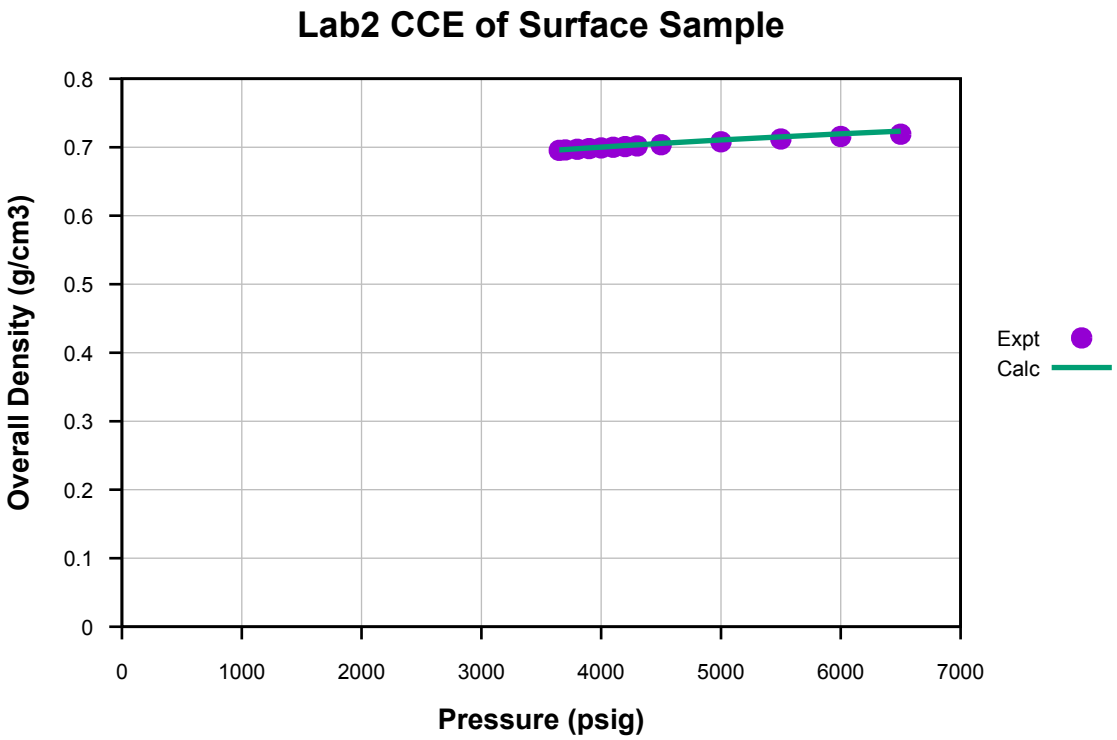

Figure 46: Overall Density vs. Pressure for Lab2 CCE of Surface Sample.

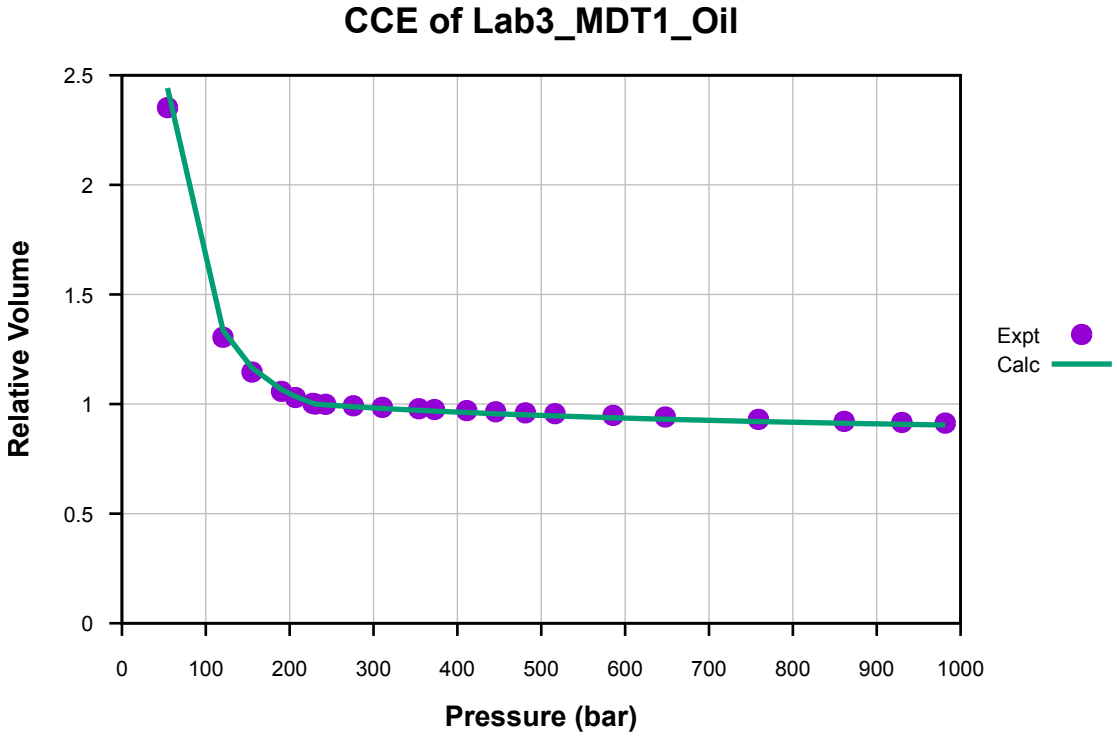

Figure 47: Relative Volume vs. Pressure for CCE of Lab3_MDT1_Oil.

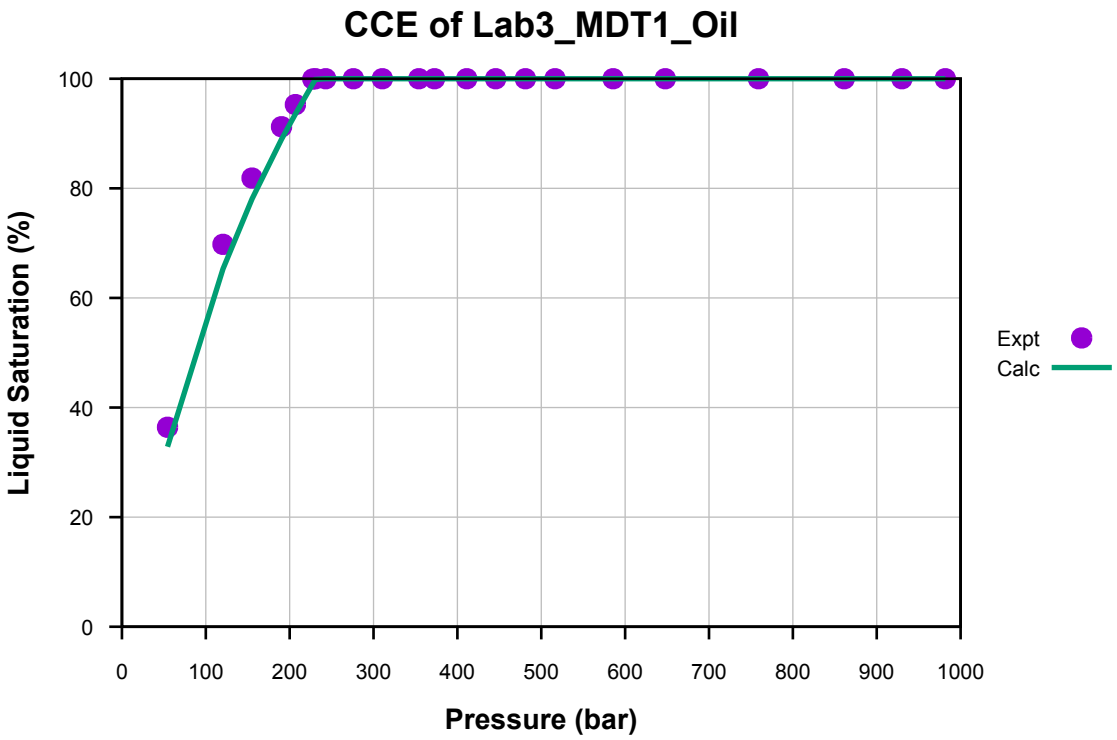

Figure 48: Liquid Saturation vs. Pressure for CCE of Lab3_MDT1_Oil.

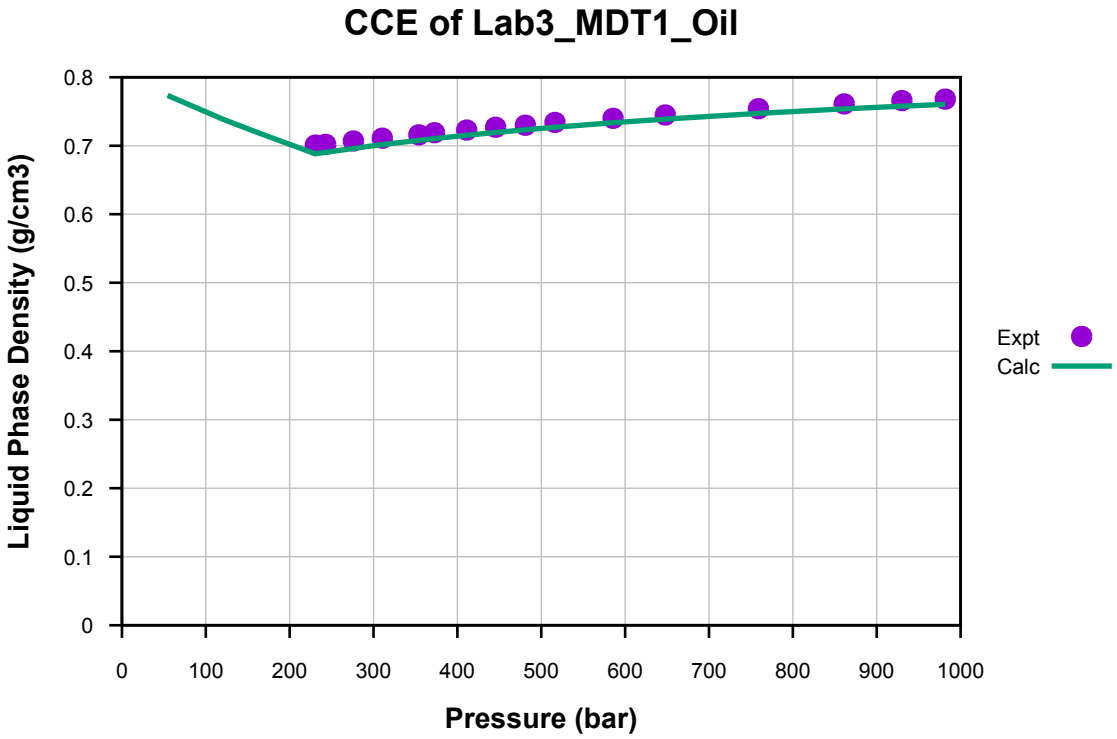

Figure 49: Liquid Phase Density vs. Pressure for CCE of Lab3_MDT1_Oil.

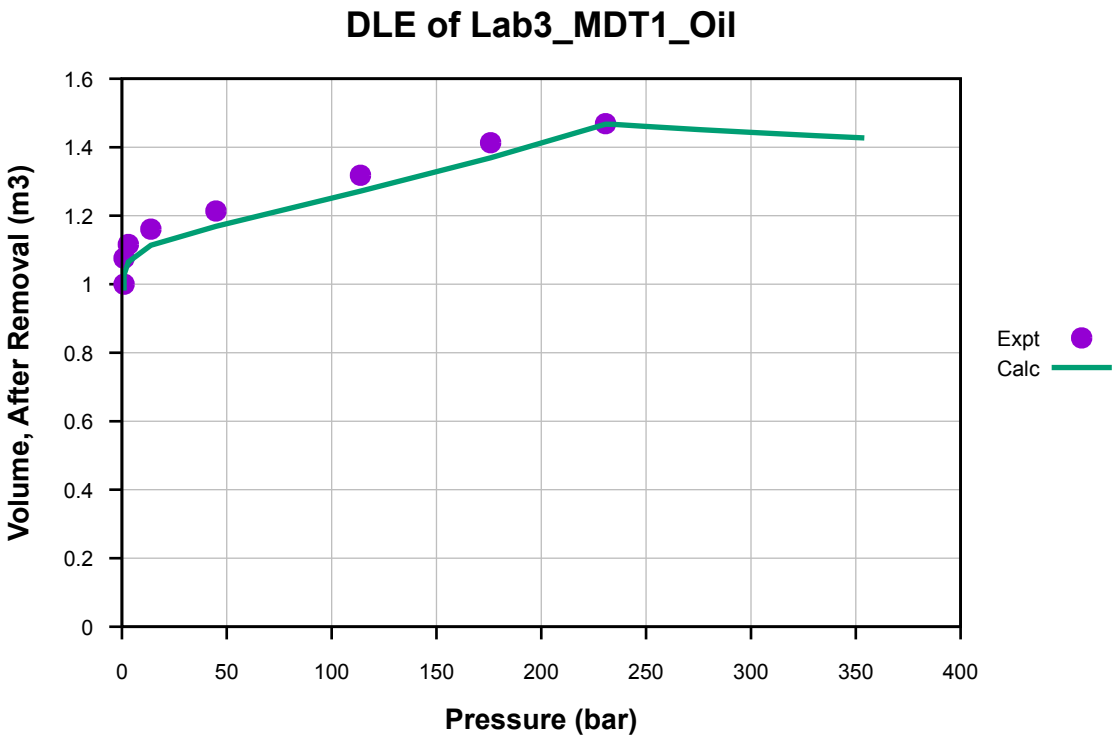

Figure 50: Volume, After Removal, vs. Pressure for DLE of Lab3_MDT1_Oil.

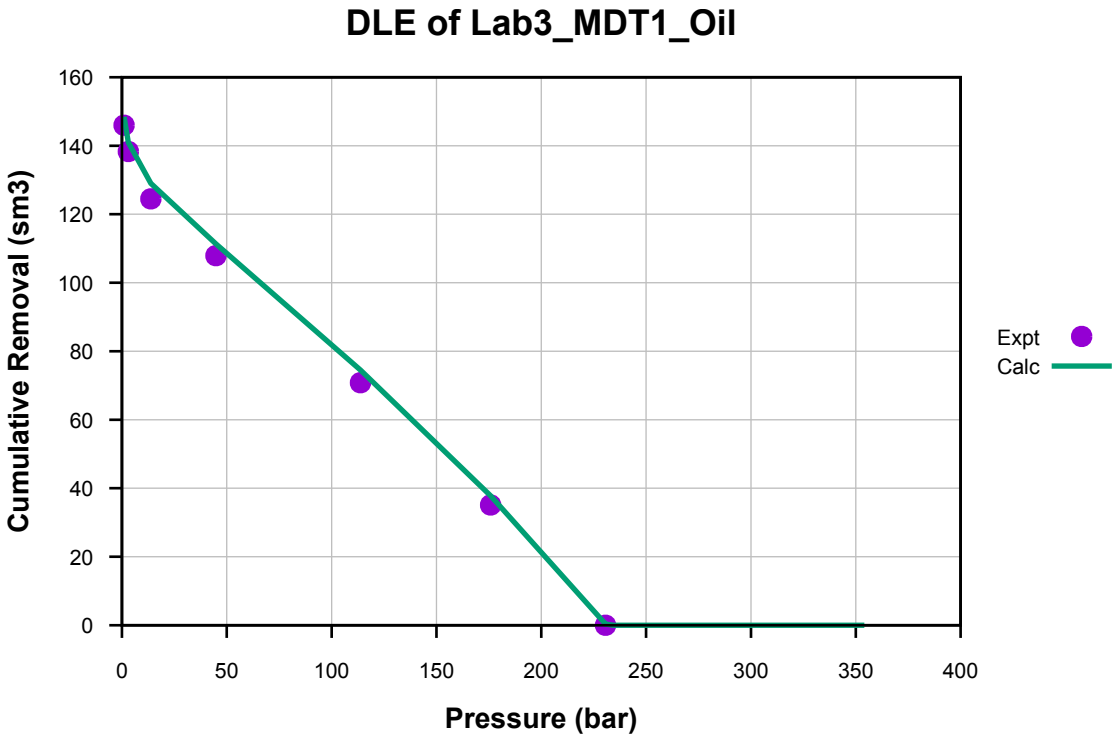

Figure 51: Cumulative Removal vs. Pressure for DLE of Lab3_MDT1_Oil.

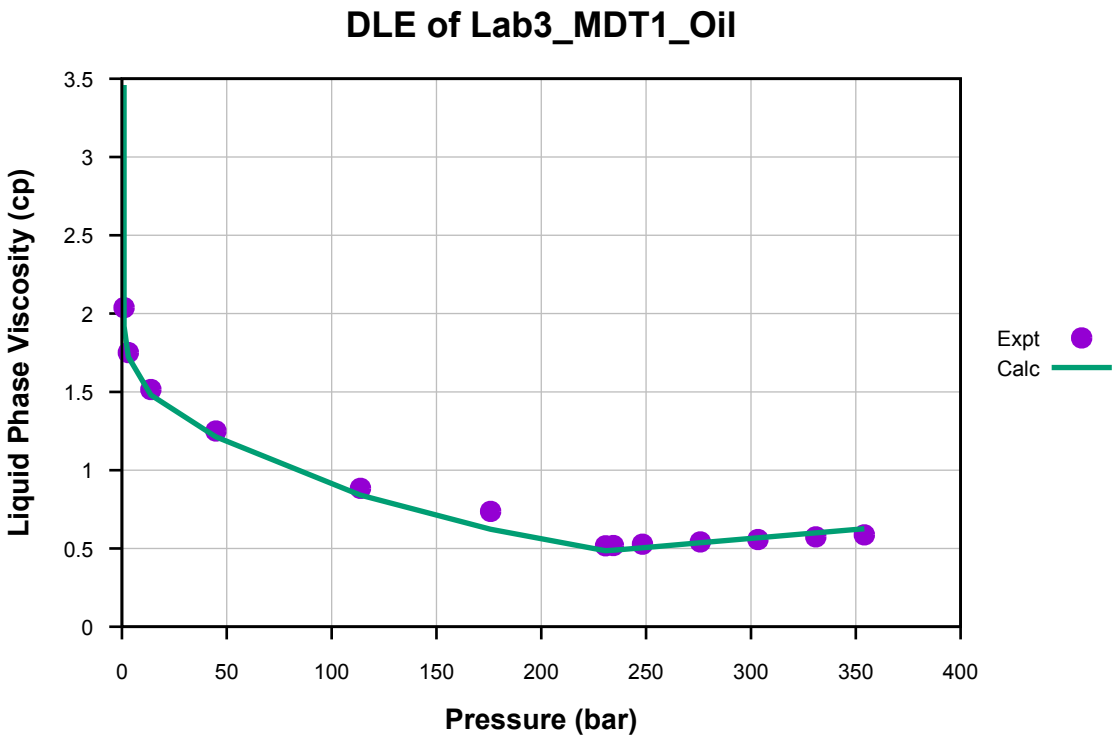

Figure 52: Liquid Phase Viscosity vs. Pressure for DLE of Lab3_MDT1_Oil.

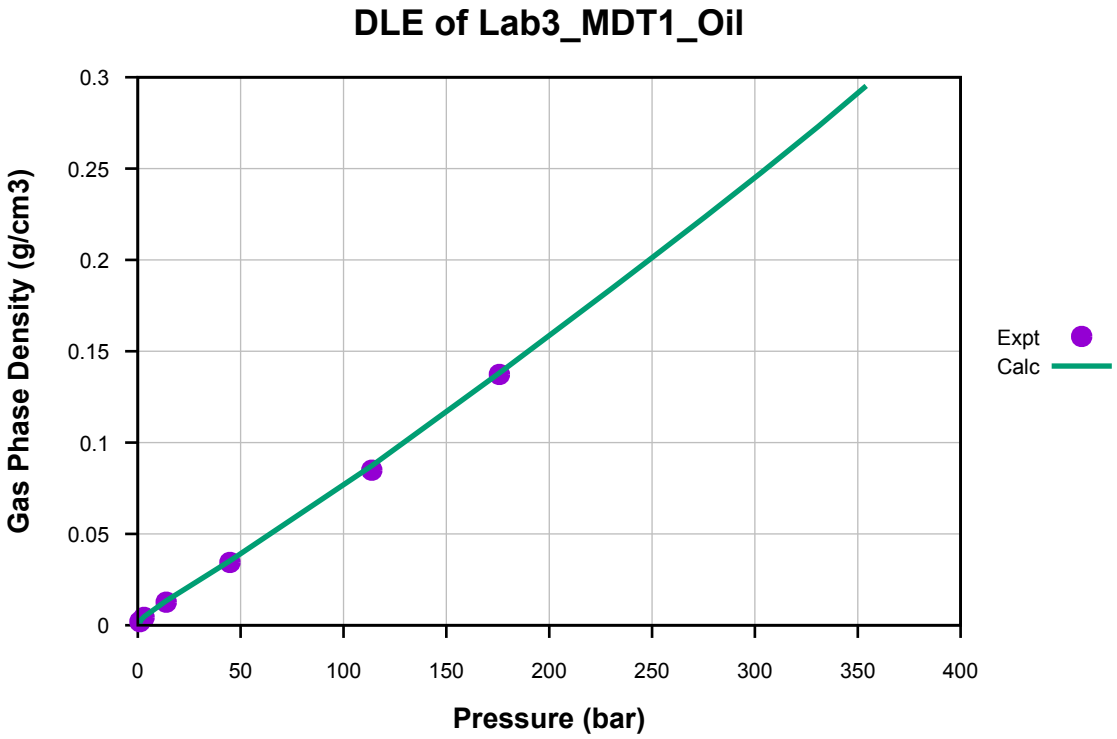

Figure 53: Gas Phase Density vs. Pressure for DLE of Lab3_MDT1_Oil.

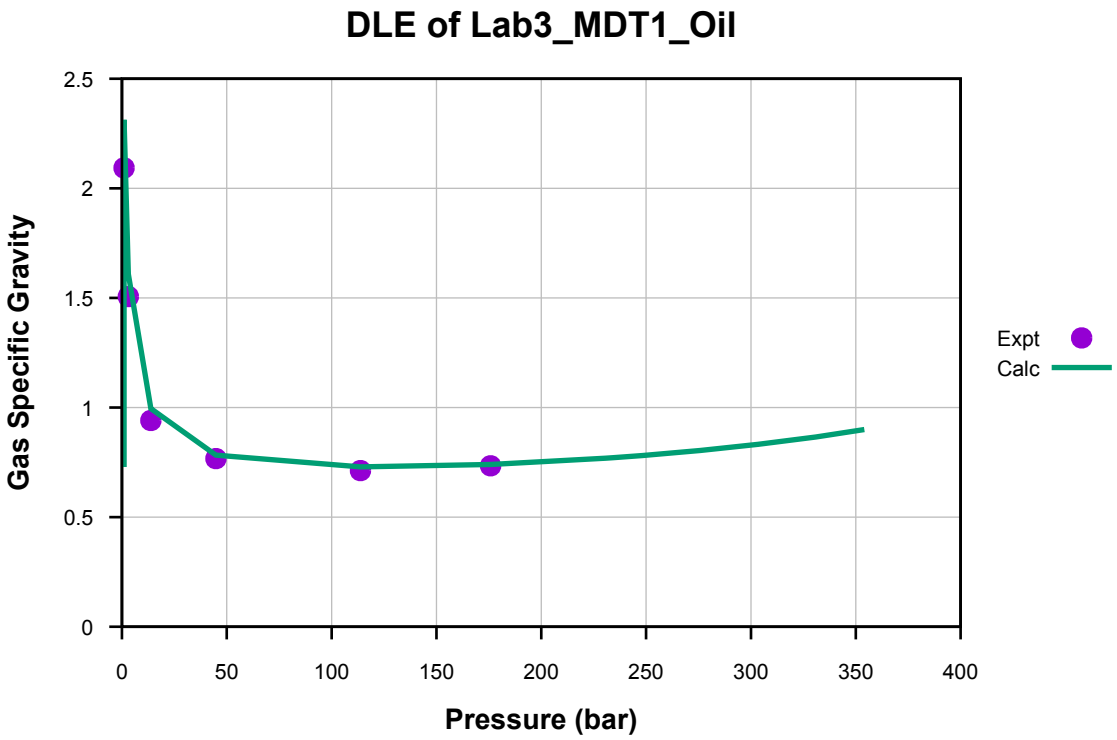

Figure 54: Gas Specific Gravity vs. Pressure for DLE of Lab3_MDT1_Oil.

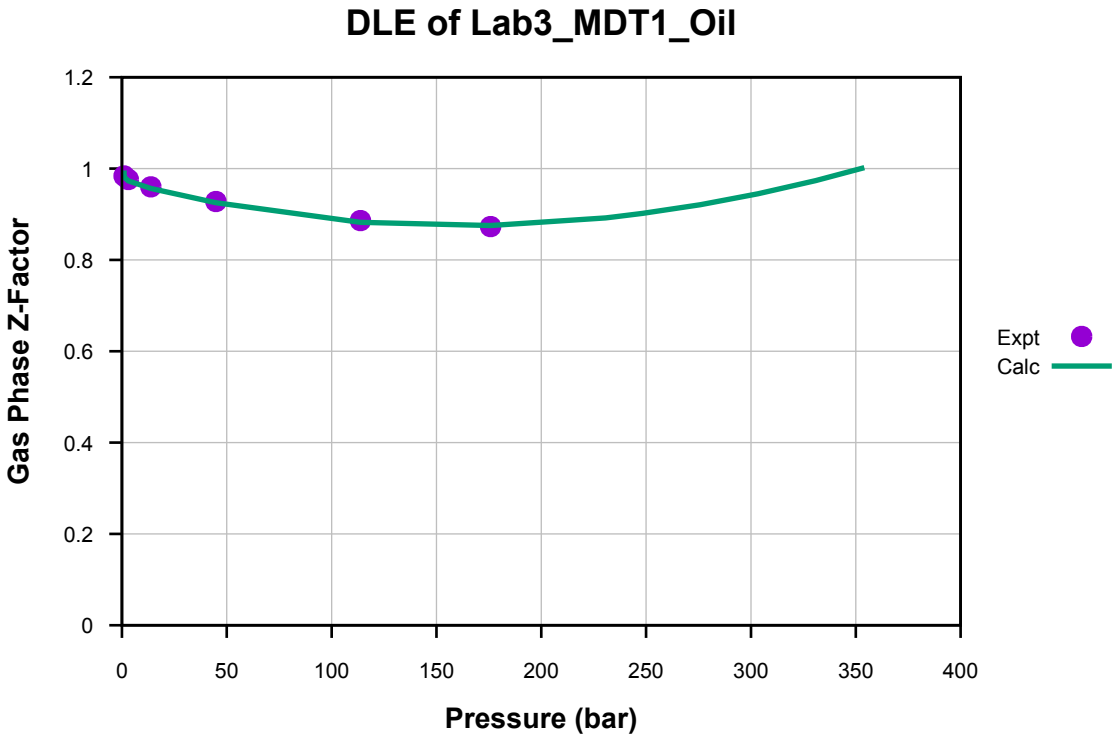

Figure 55: Gas Phase Z-Factor vs. Pressure for DLE of Lab3_MDT1_Oil.

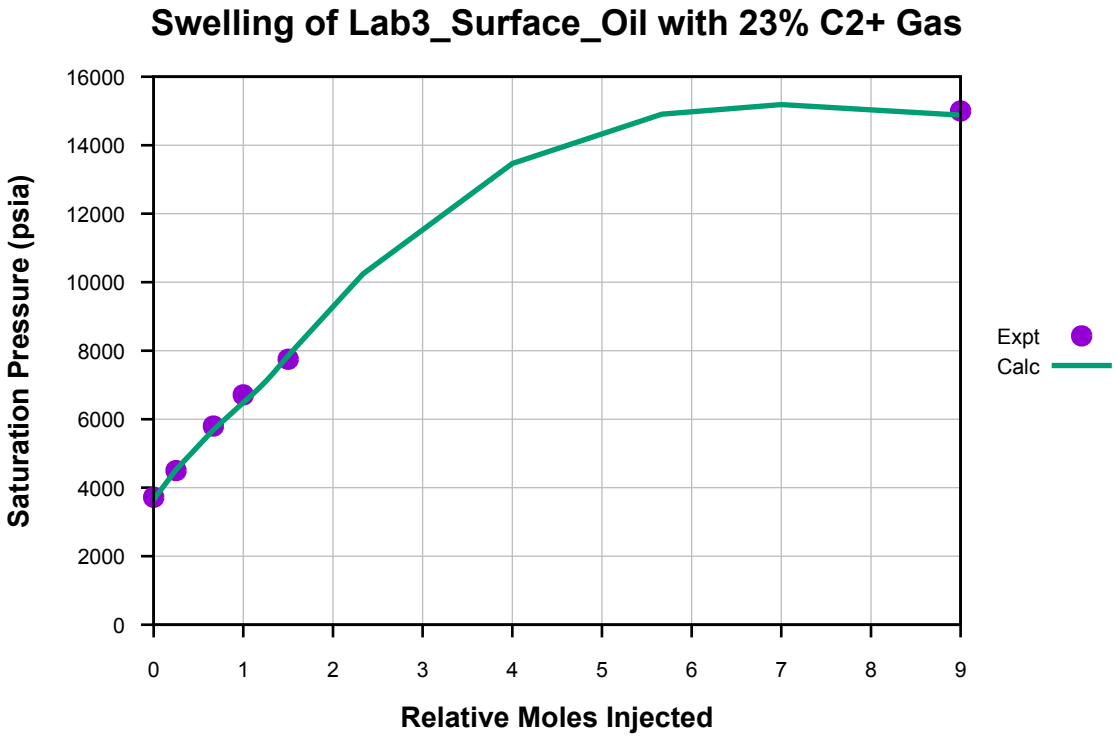

Figure 56: Saturation Pressure vs. Relative Moles Injected for Swelling of Lab3_Surface_Oil with 23% C2+ Gas.

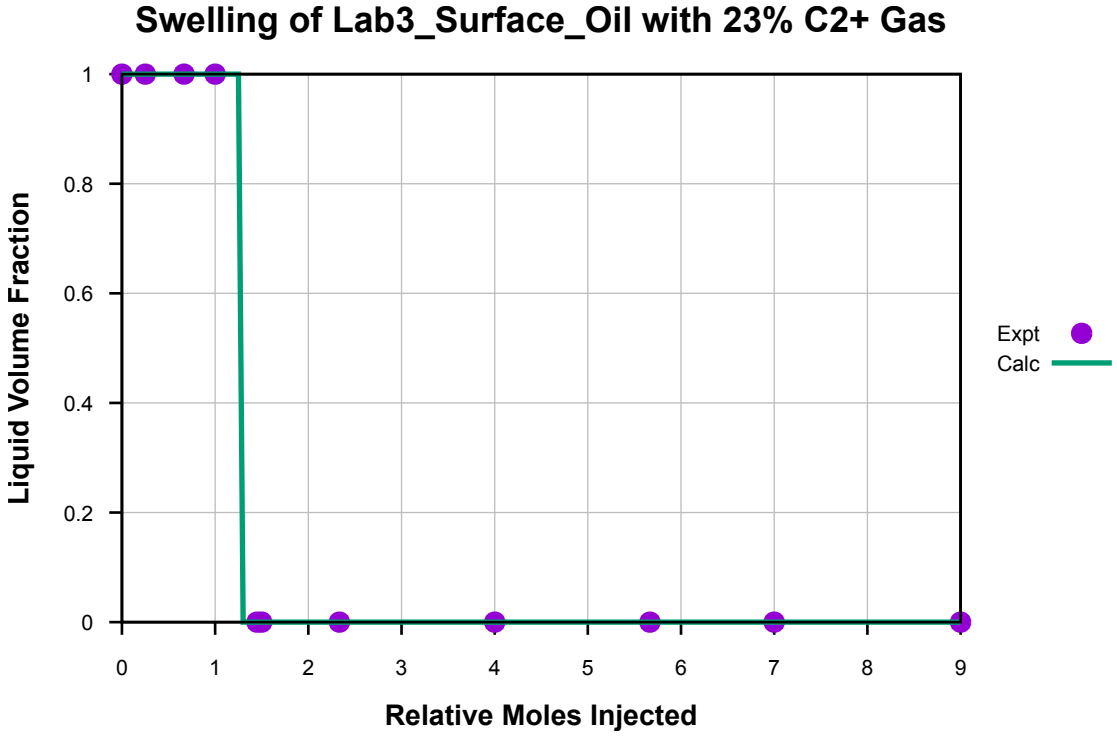

Figure 57: Liquid Volume Fraction vs. Relative Moles Injected for Swelling of Lab3_Surface_Oil with 23% C2+ Gas.

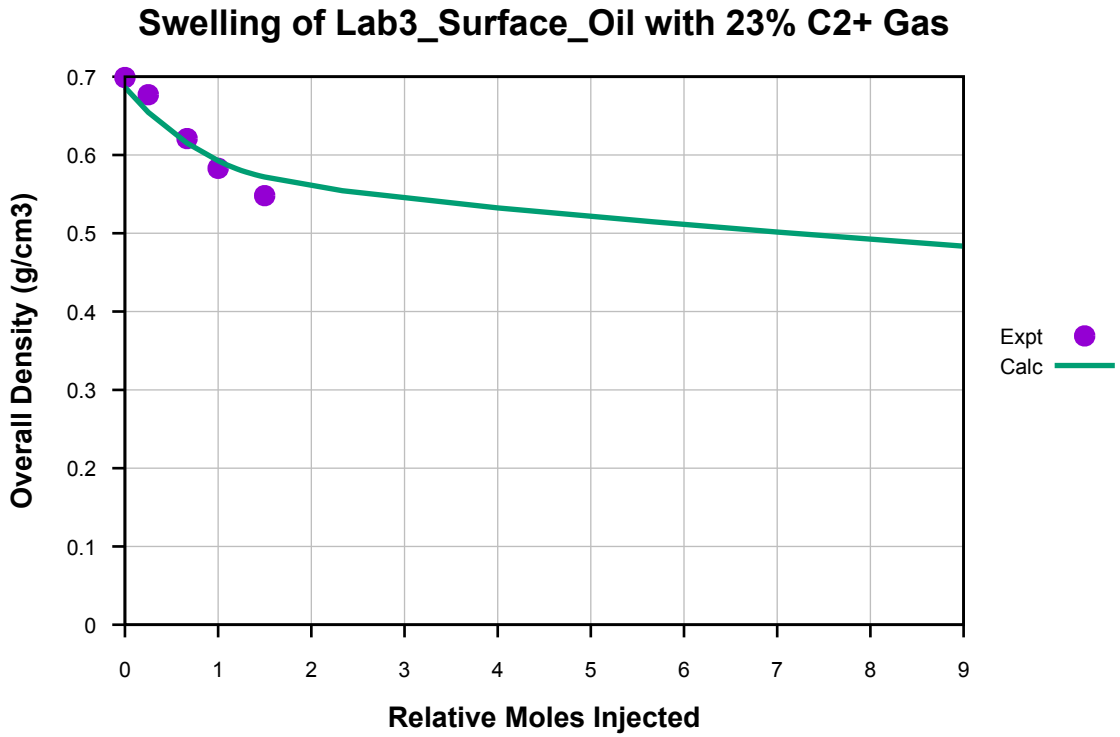

Figure 58: Overall Density vs. Relative Moles Injected for Swelling of Lab3_Surface_Oil with 23% C2+ Gas.

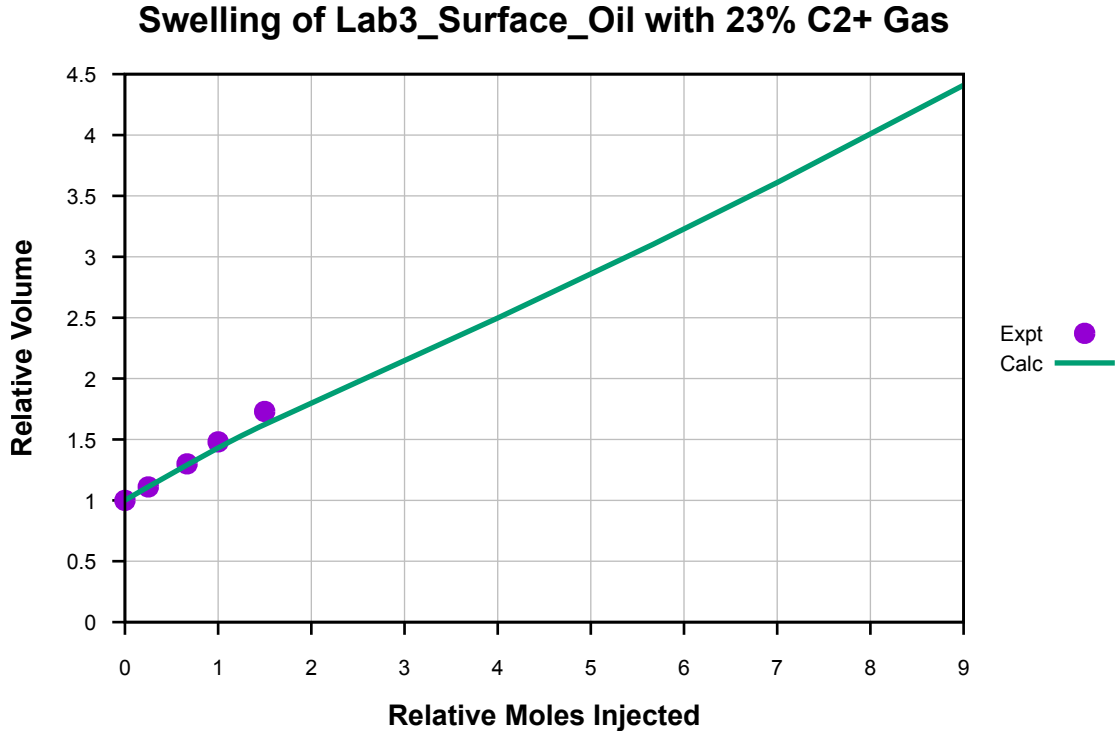

Figure 59: Relative Volume vs. Relative Moles Injected for Swelling of Lab3_Surface_Oil with 23% C2+ Gas.

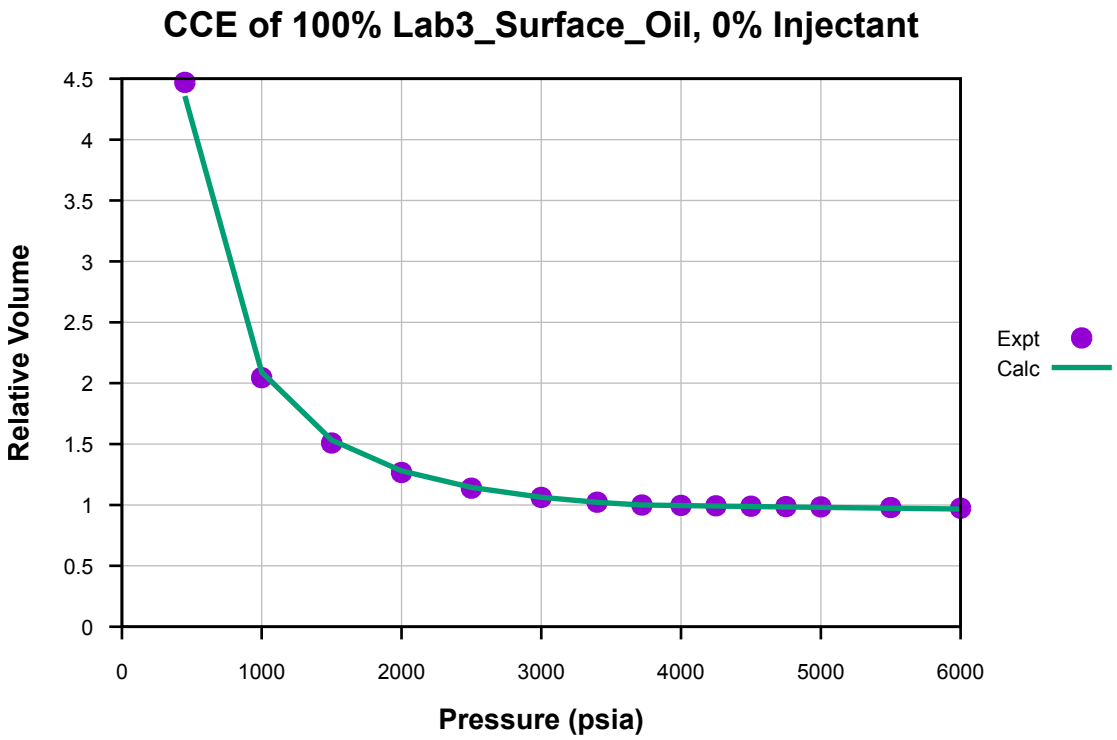

Figure 60: Relative Volume vs. Pressure for CCE of 100% Lab3_Surface_Oil, 0% Injectant.

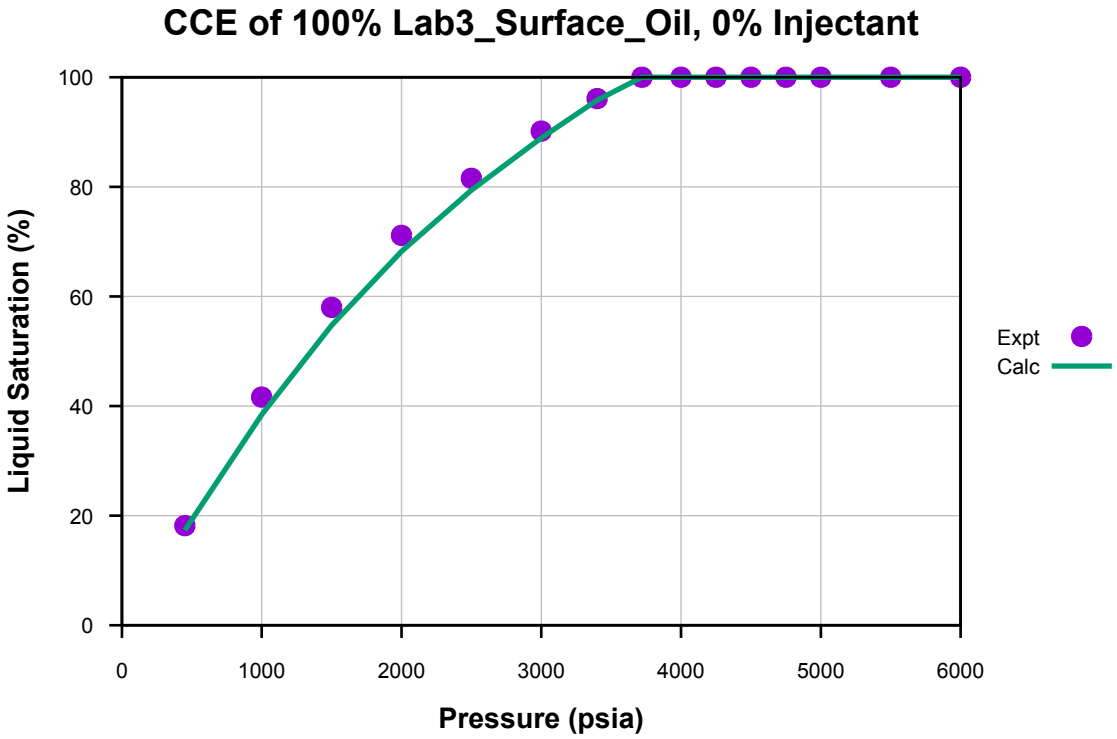

Figure 61: Liquid Saturation vs. Pressure for CCE of 100% Lab3_Surface_Oil, 0% Injectant.

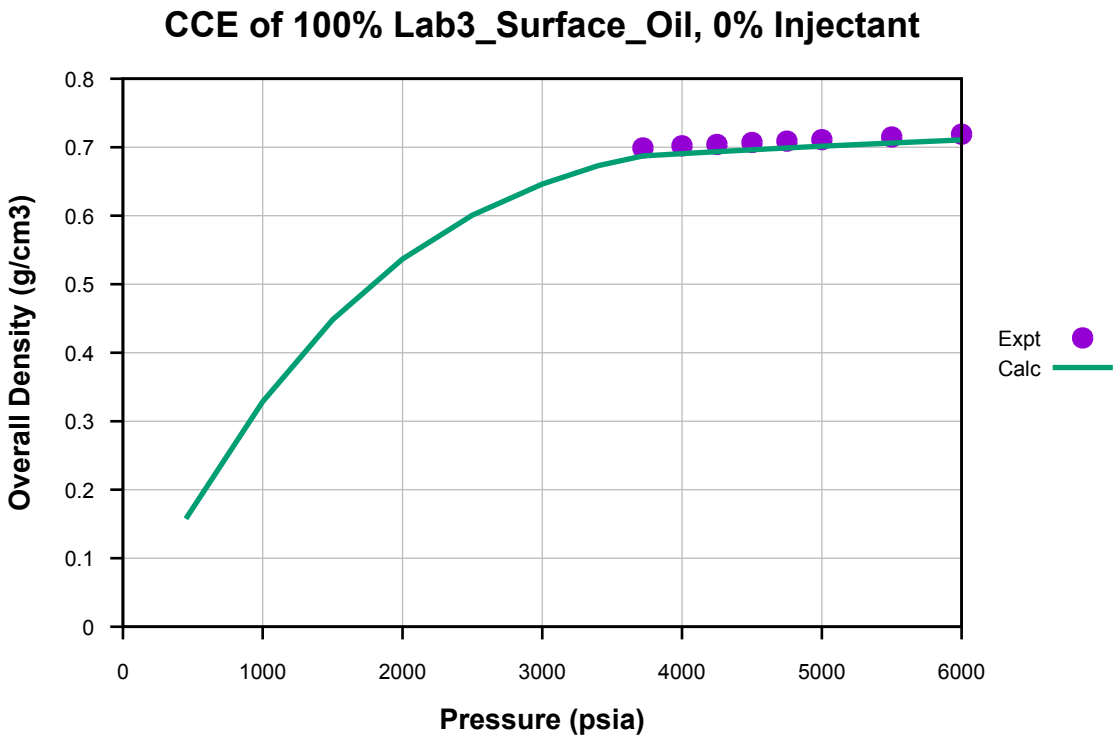

Figure 62: Overall Density vs. Pressure for CCE of 100% Lab3_Surface_Oil, 0% Injectant.

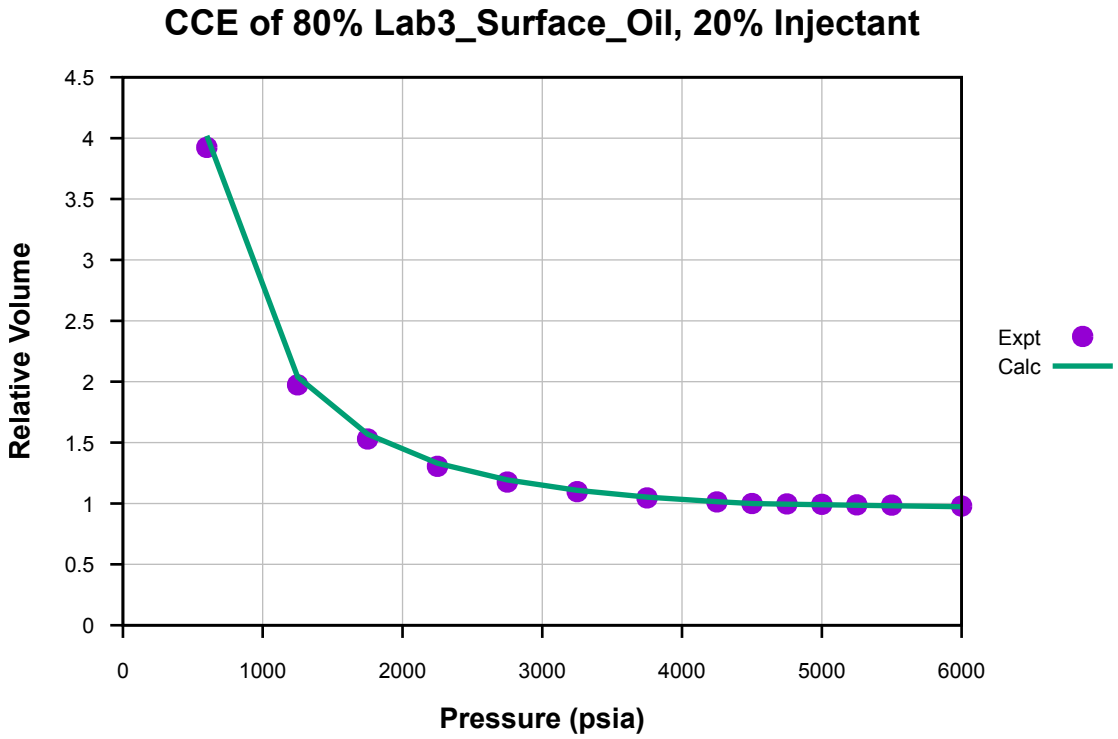

Figure 63: Relative Volume vs. Pressure for CCE of 80% Lab3_Surface_Oil, 20% Injectant.

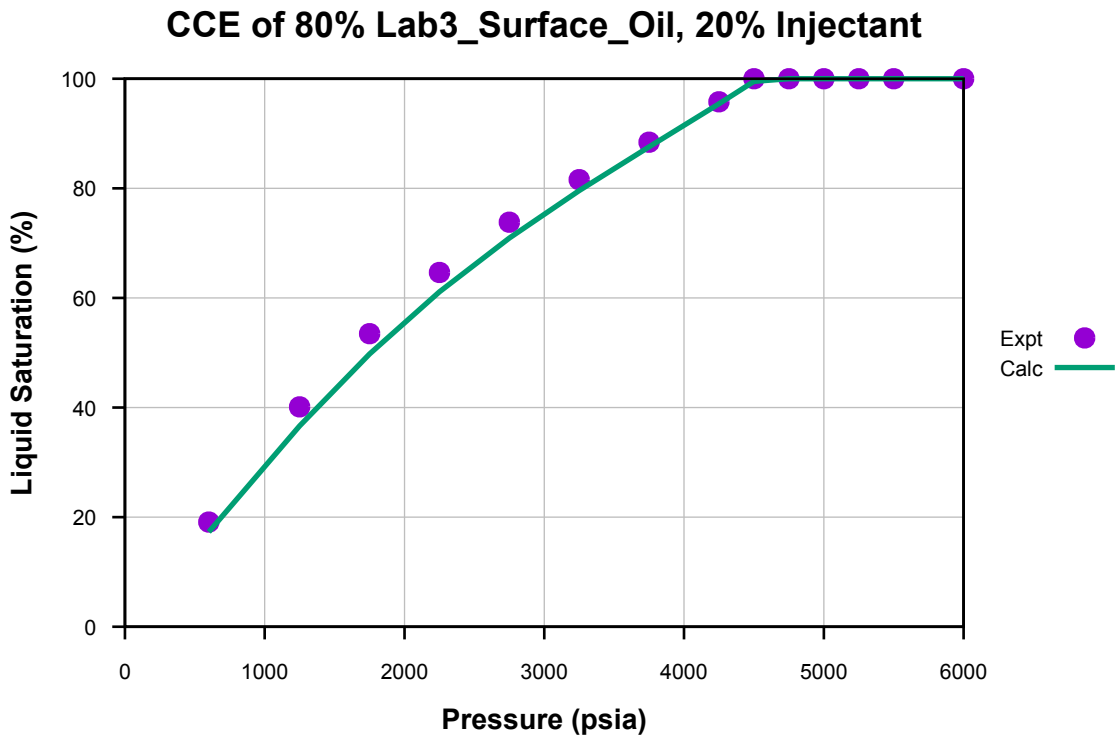

Figure 64: Liquid Saturation vs. Pressure for CCE of 80% Lab3_Surface_Oil, 20% Injectant.

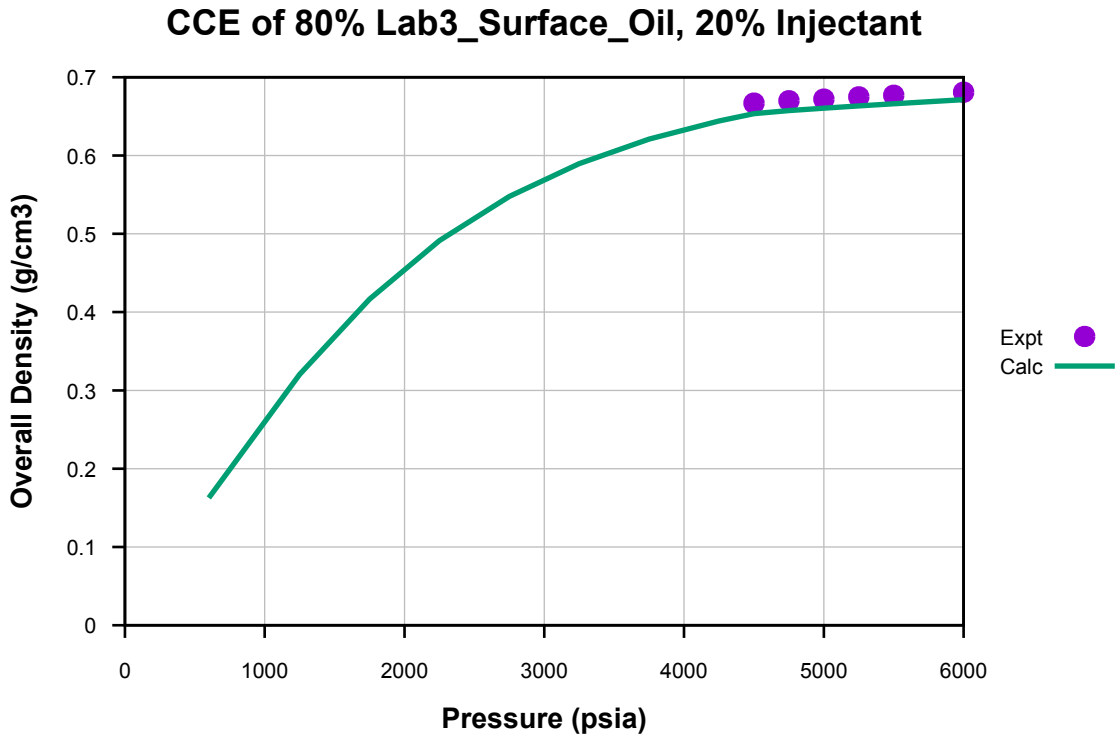

Figure 65: Overall Density vs. Pressure for CCE of 80% Lab3_Surface_Oil, 20% Injectant.

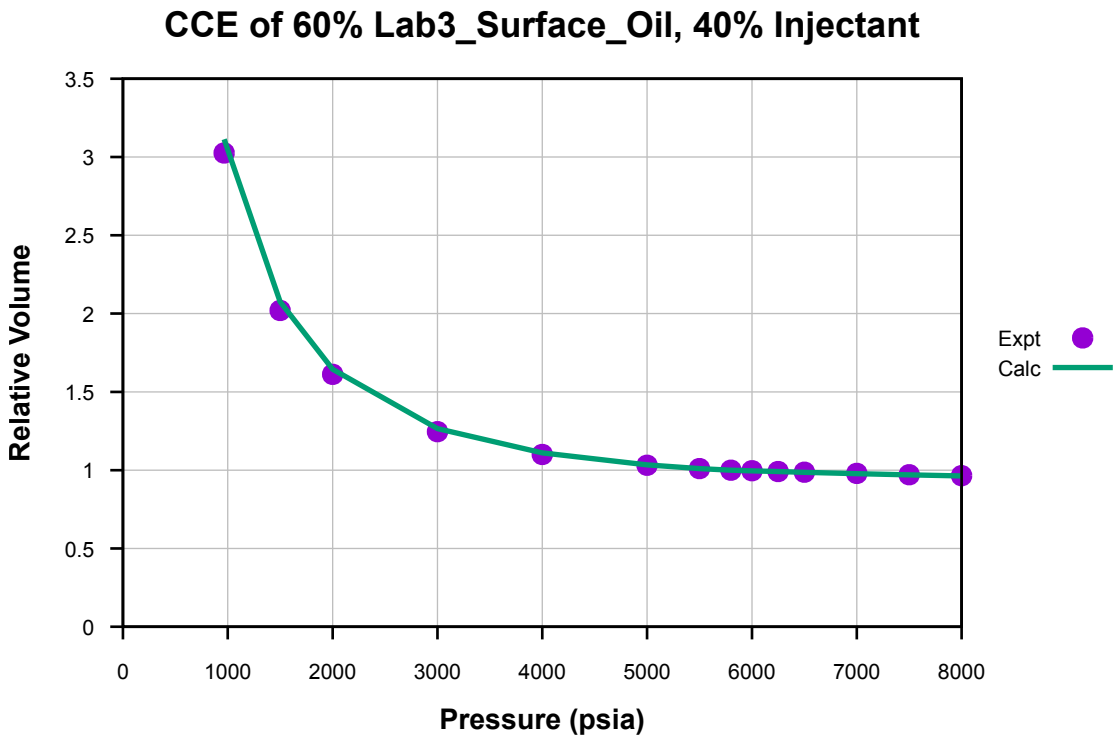

Figure 66: Relative Volume vs. Pressure for CCE of 60% Lab3_Surface_Oil, 40% Injectant.

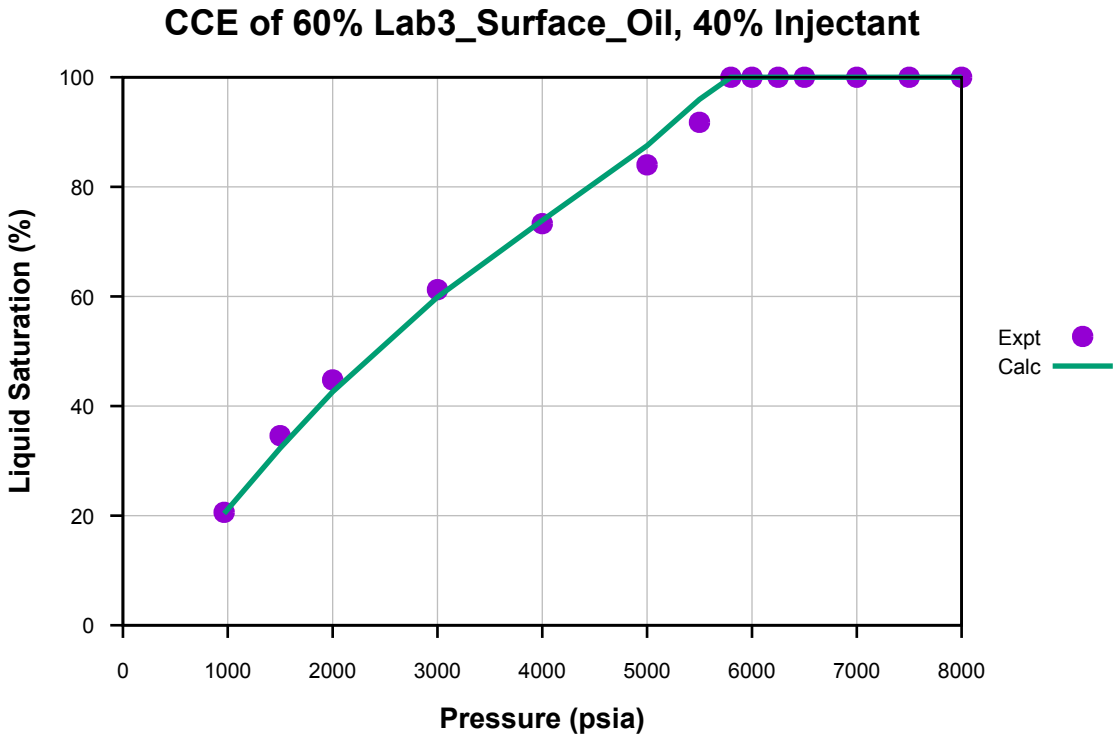

Figure 67: Liquid Saturation vs. Pressure for CCE of 60% Lab3_Surface_Oil, 40% Injectant.

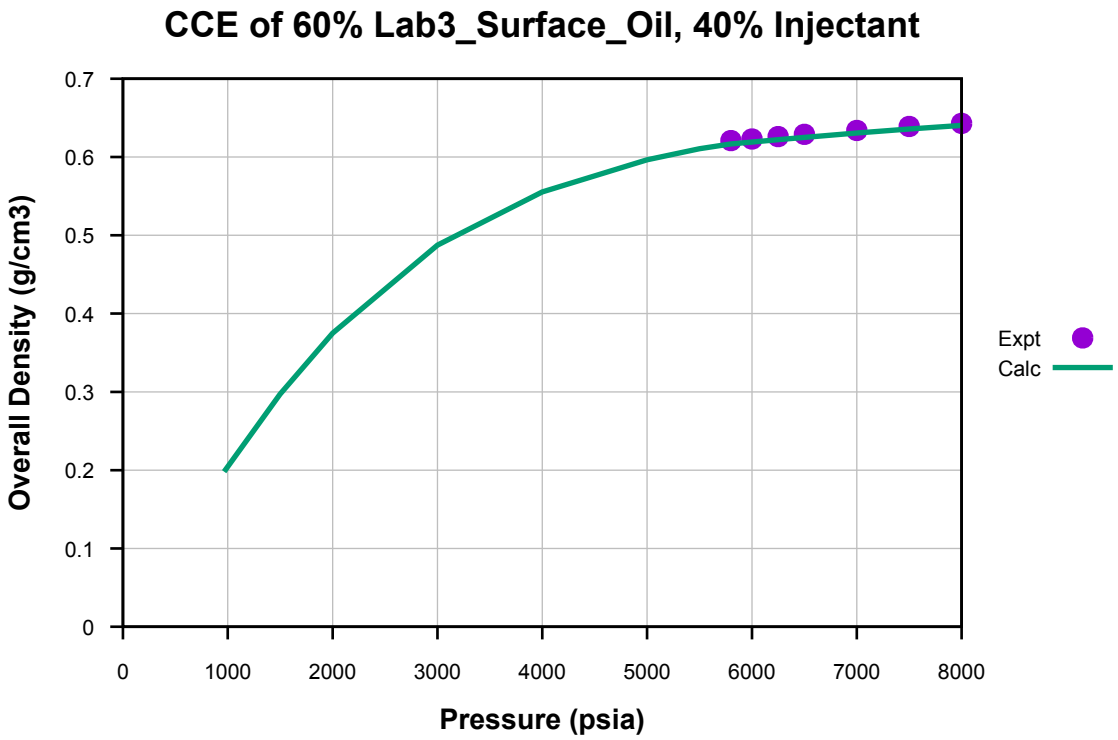

Figure 68: Overall Density vs. Pressure for CCE of 60% Lab3_Surface_Oil, 40% Injectant.

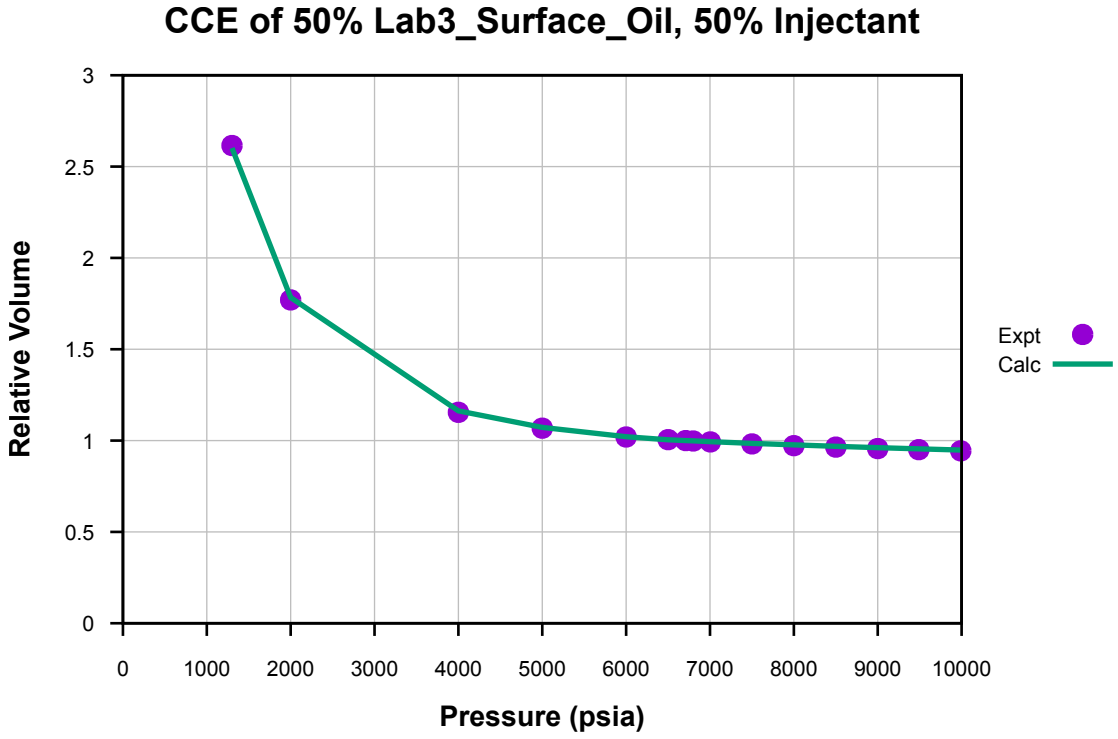

Figure 69: Relative Volume vs. Pressure for CCE of 50% Lab3_Surface_Oil, 50% Injectant.

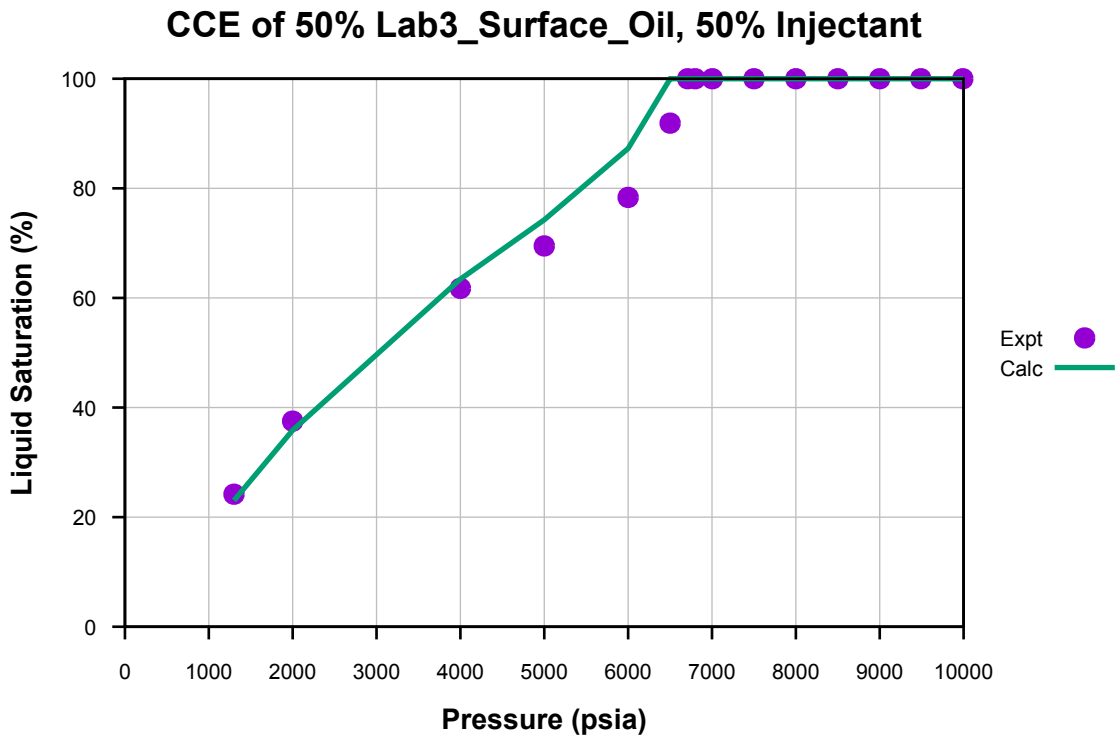

Figure 70: Liquid Saturation vs. Pressure for CCE of 50% Lab3_Surface_Oil, 50% Injectant.

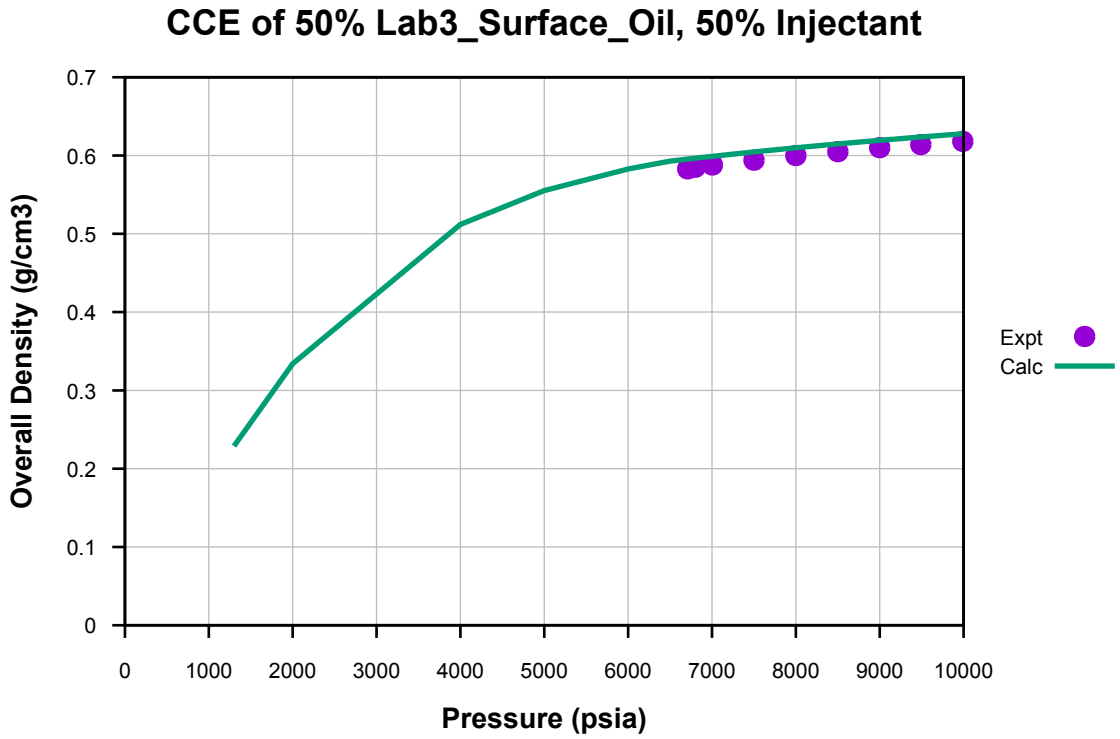

Figure 71: Overall Density vs. Pressure for CCE of 50% Lab3_Surface_Oil, 50% Injectant.

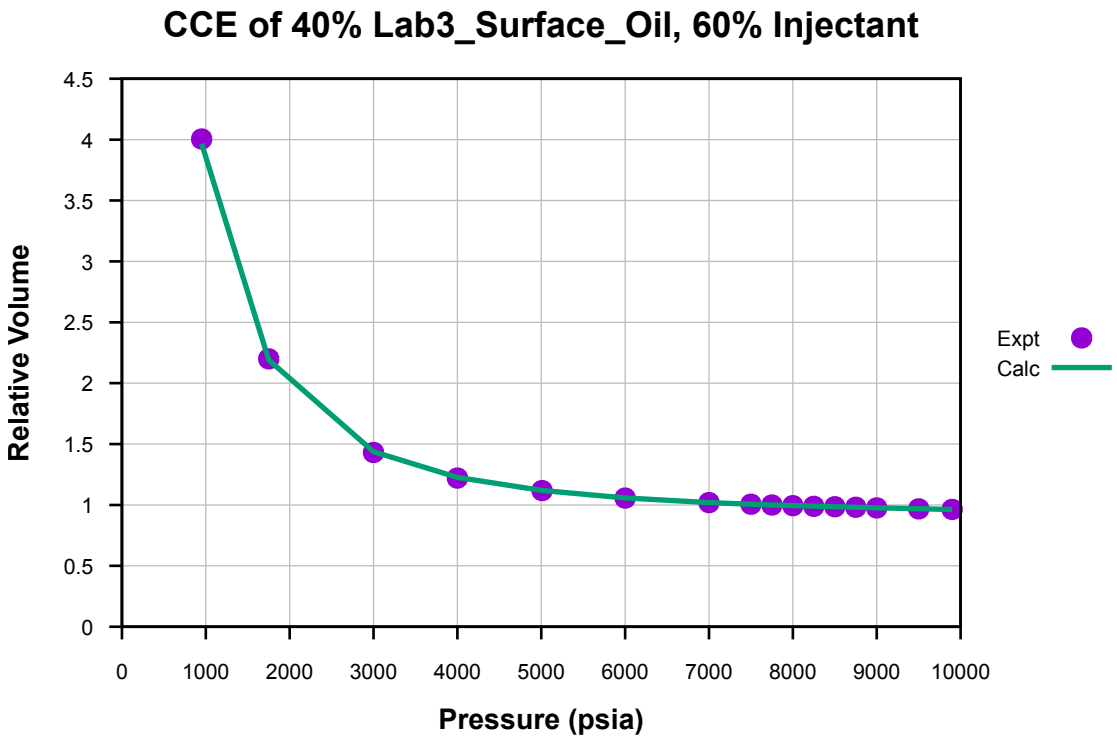

Figure 72: Relative Volume vs. Pressure for CCE of 40% Lab3_Surface_Oil, 60% Injectant.

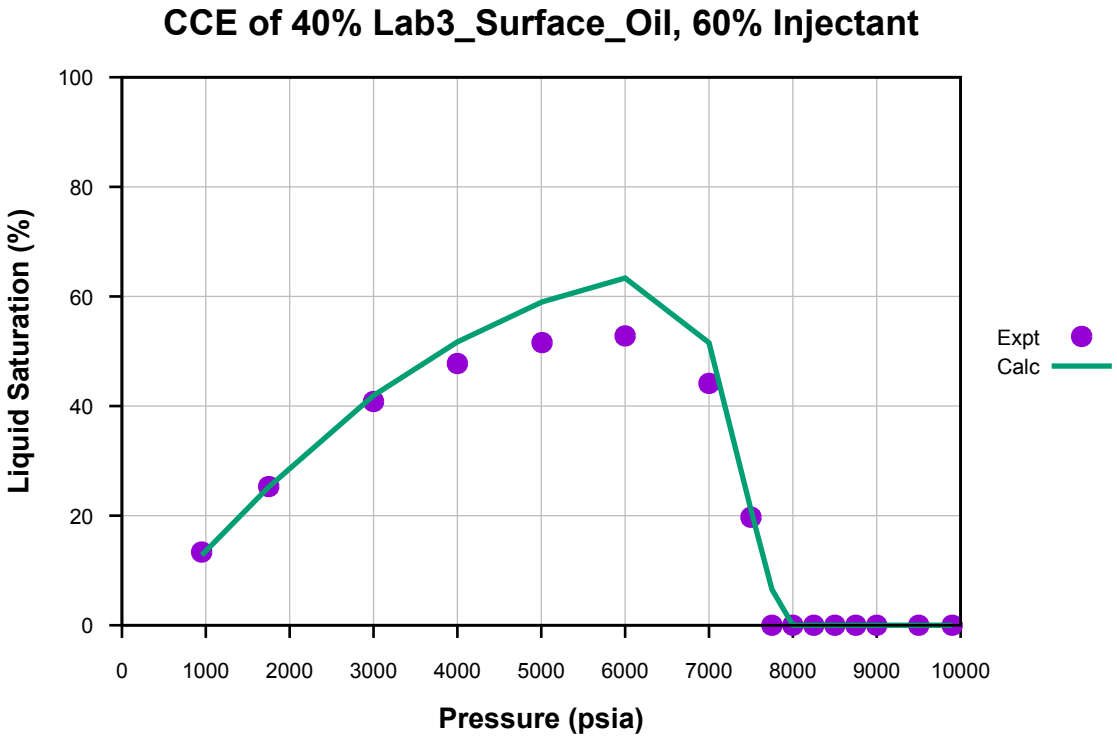

Figure 73: Liquid Saturation vs. Pressure for CCE of 40% Lab3_Surface_Oil, 60% Injectant.

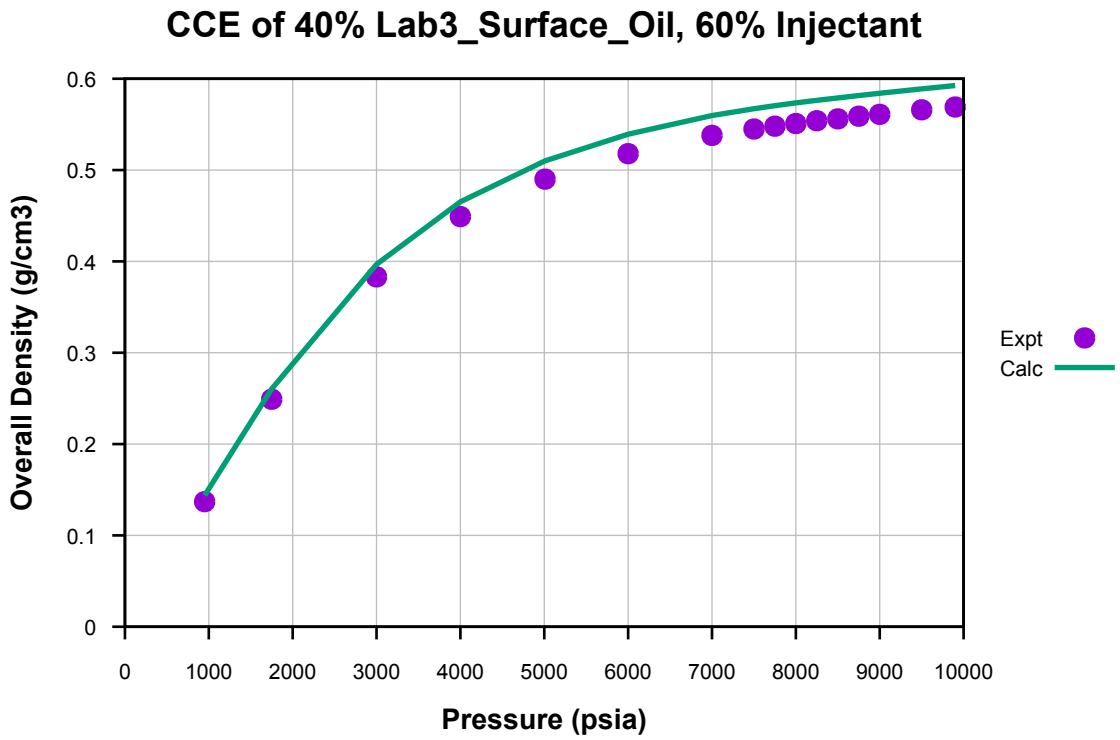

Figure 74: Overall Density vs. Pressure for CCE of 40% Lab3_Surface_Oil, 60% Injectant.

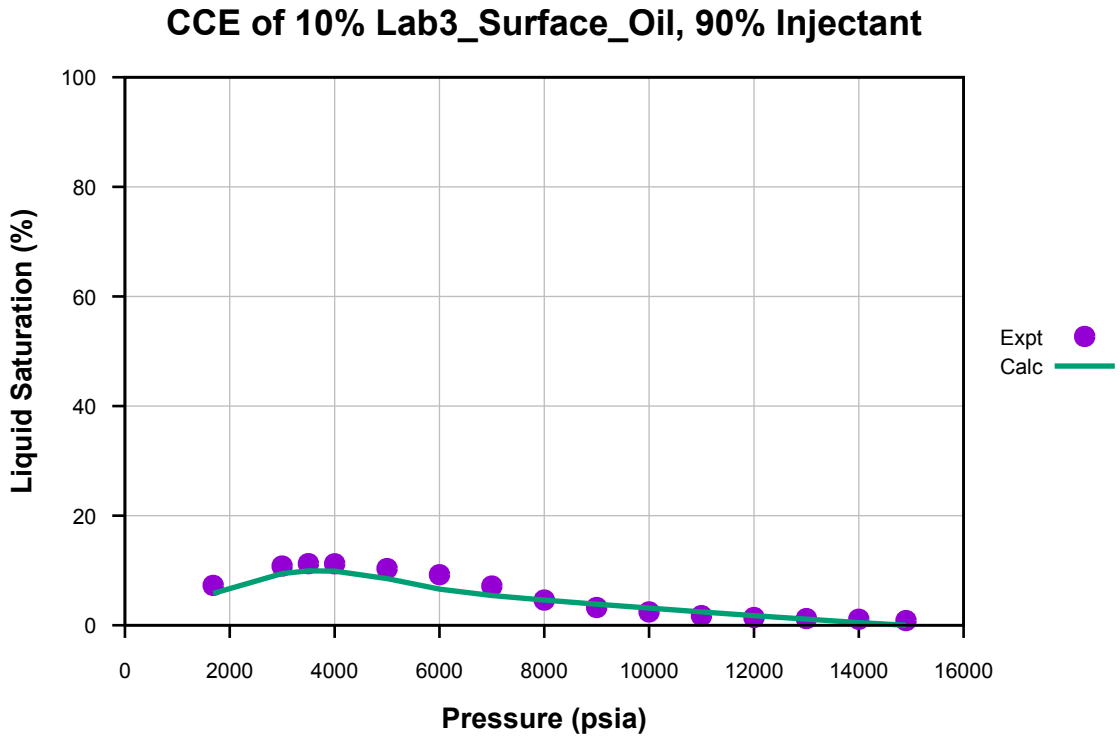

Figure 75: Liquid Saturation vs. Pressure for CCE of 10% Lab3_Surface_Oil, 90% Injectant.

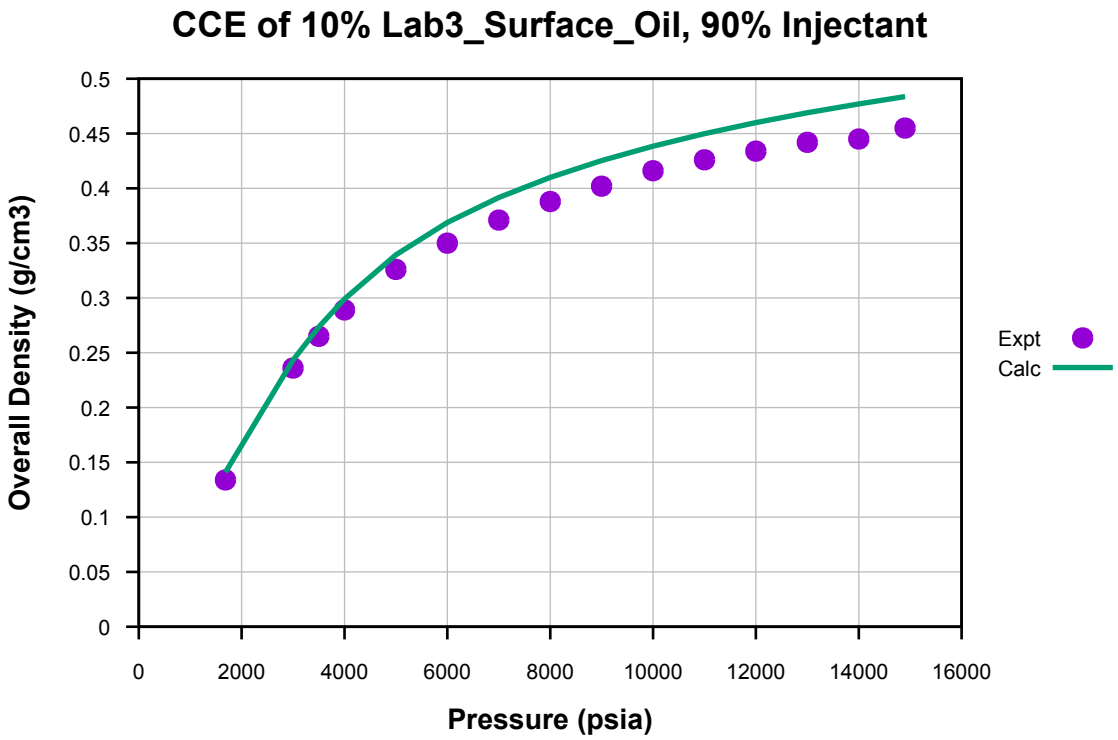

Figure 76: Overall Density vs. Pressure for CCE of 10% Lab3_Surface_Oil, 90% Injectant.

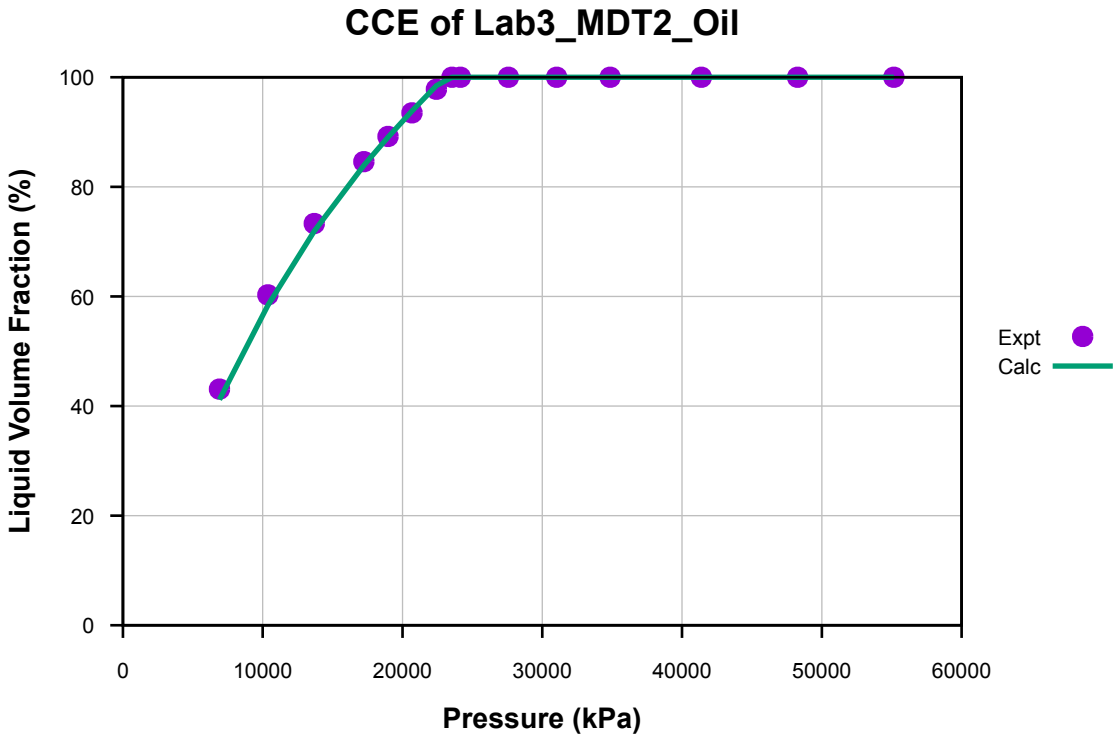

Figure 77: Liquid Volume Fraction vs. Pressure for CCE of Lab3_MDT2_Oil.

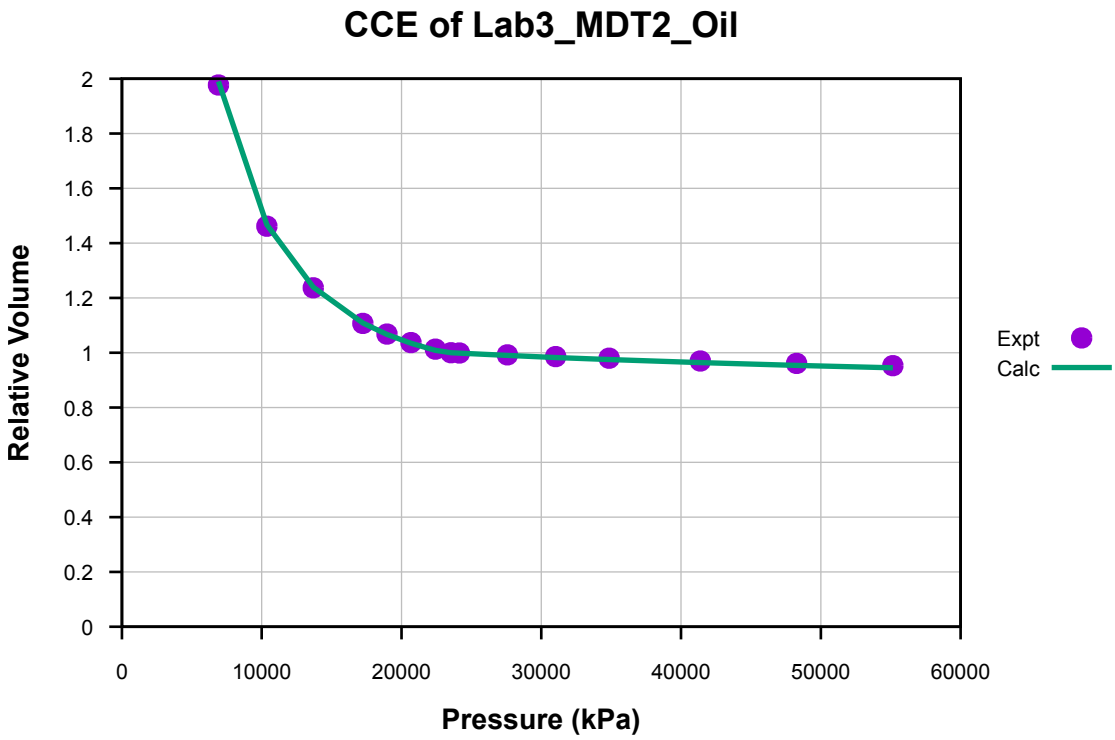

Figure 78: Relative Volume vs. Pressure for CCE of Lab3_MDT2_Oil.

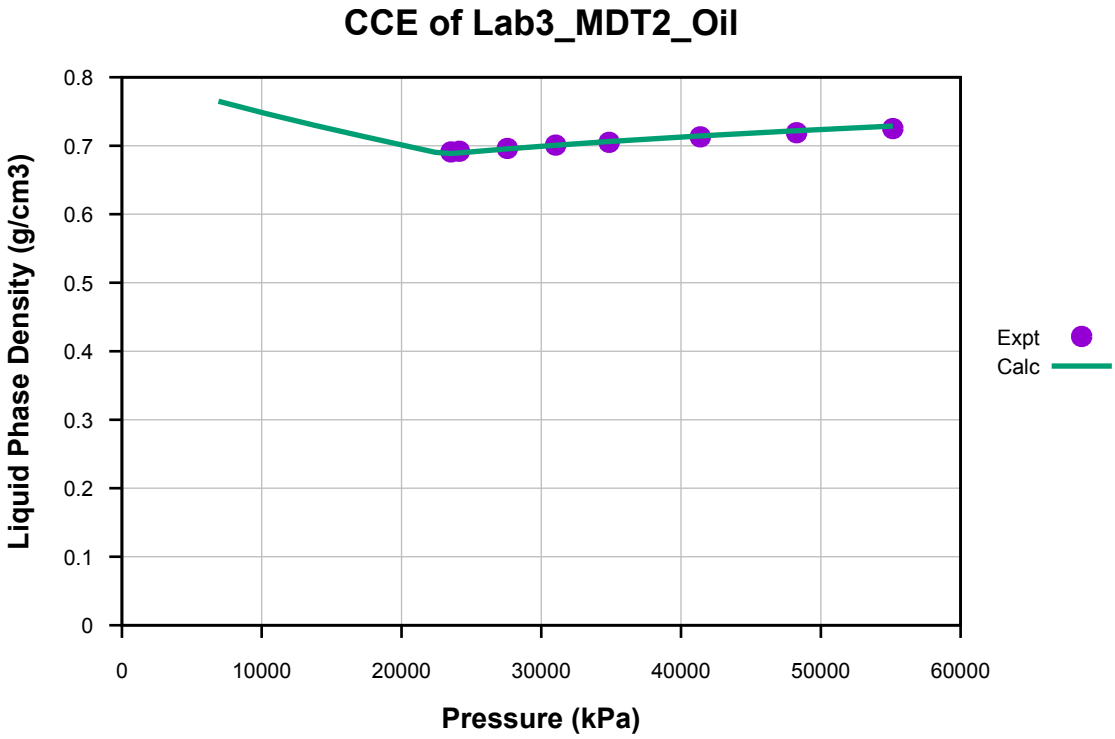

Figure 79: Liquid Phase Density vs. Pressure for CCE of Lab3_MDT2_Oil.

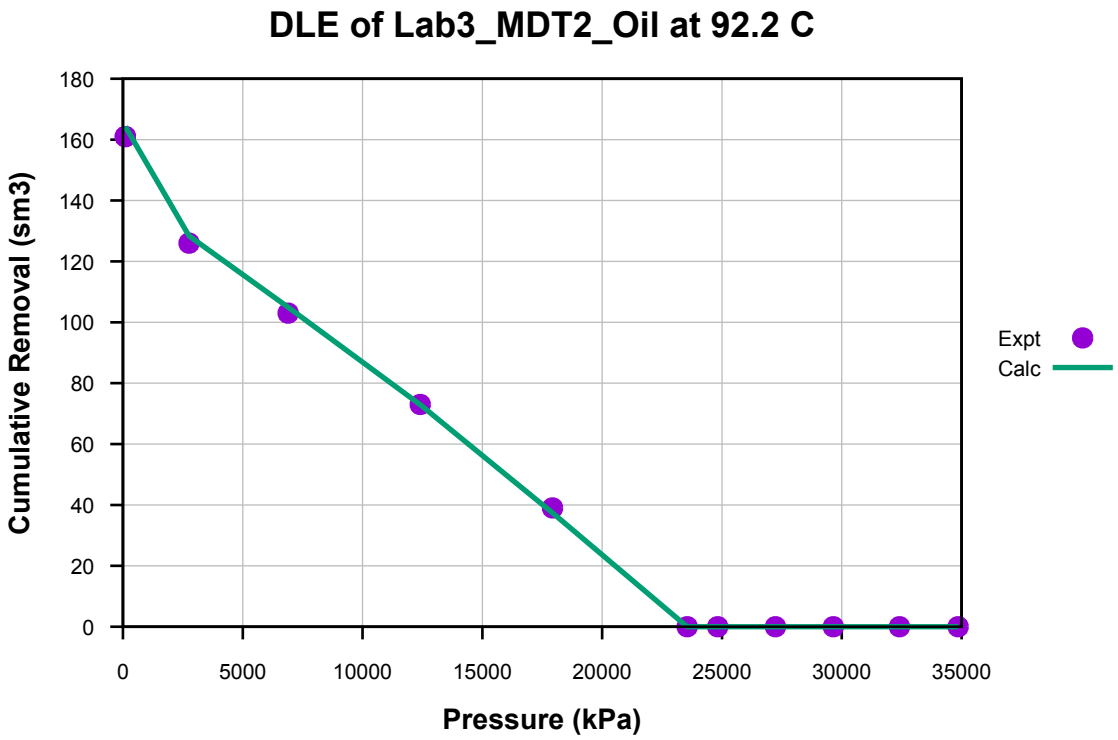

Figure 80: Cumulative Removal vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

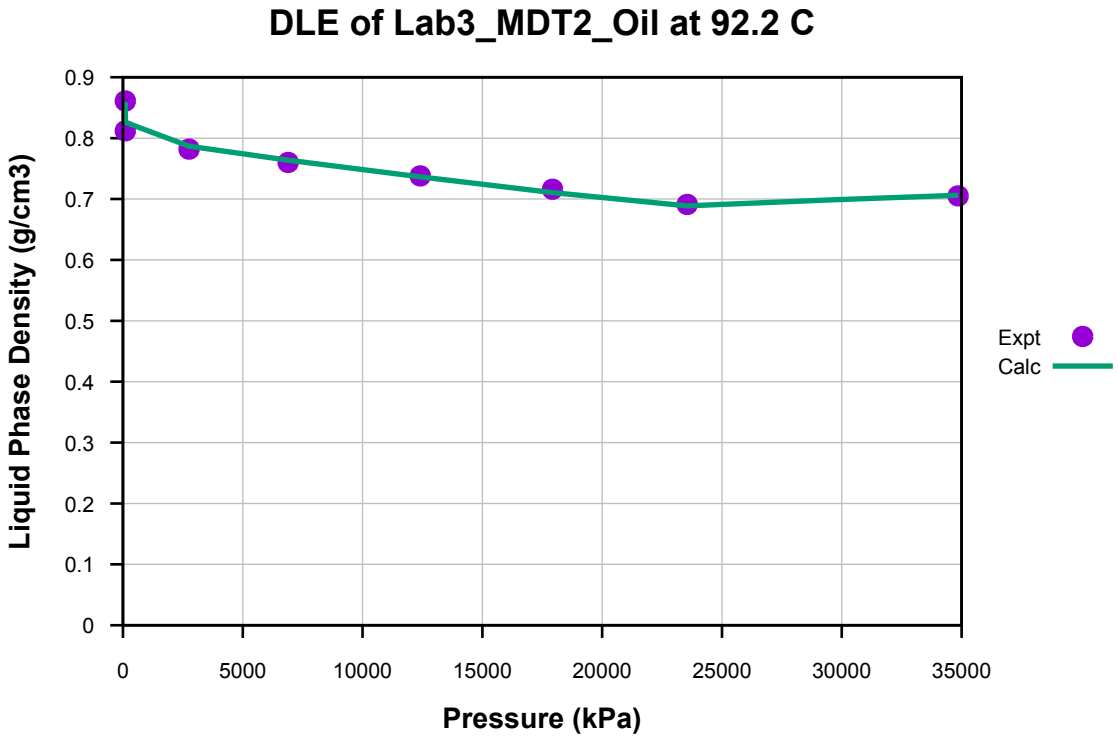

Figure 81: Liquid Phase Density vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

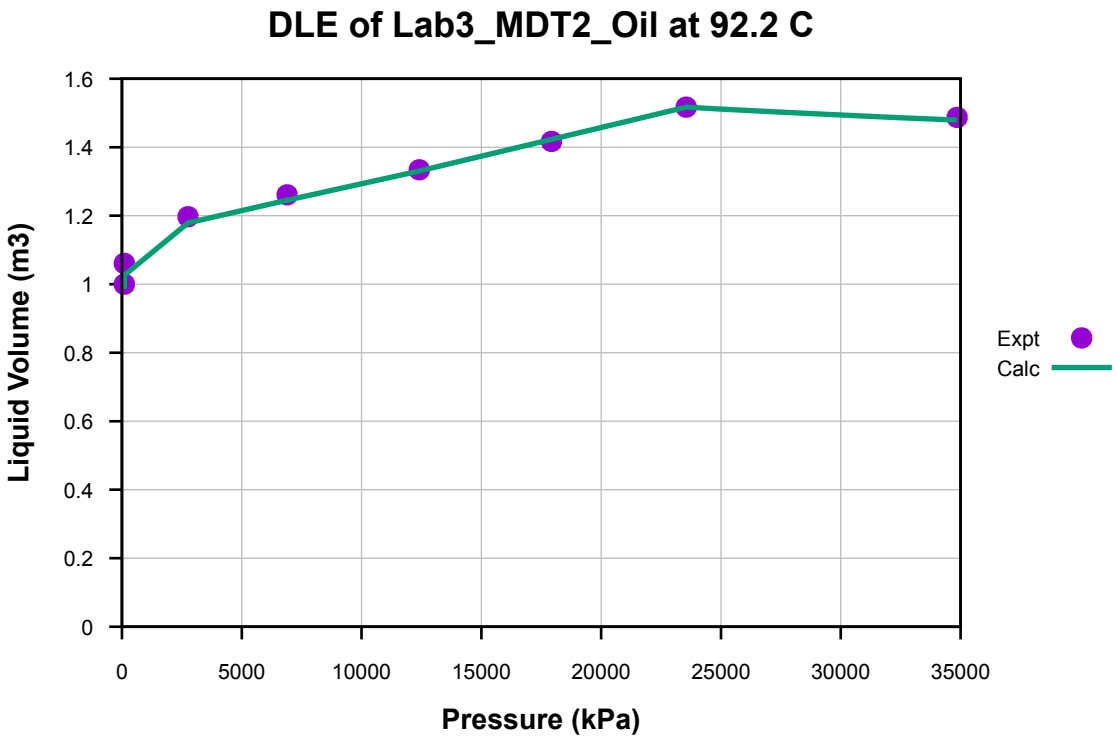

Figure 82: Liquid Volume vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

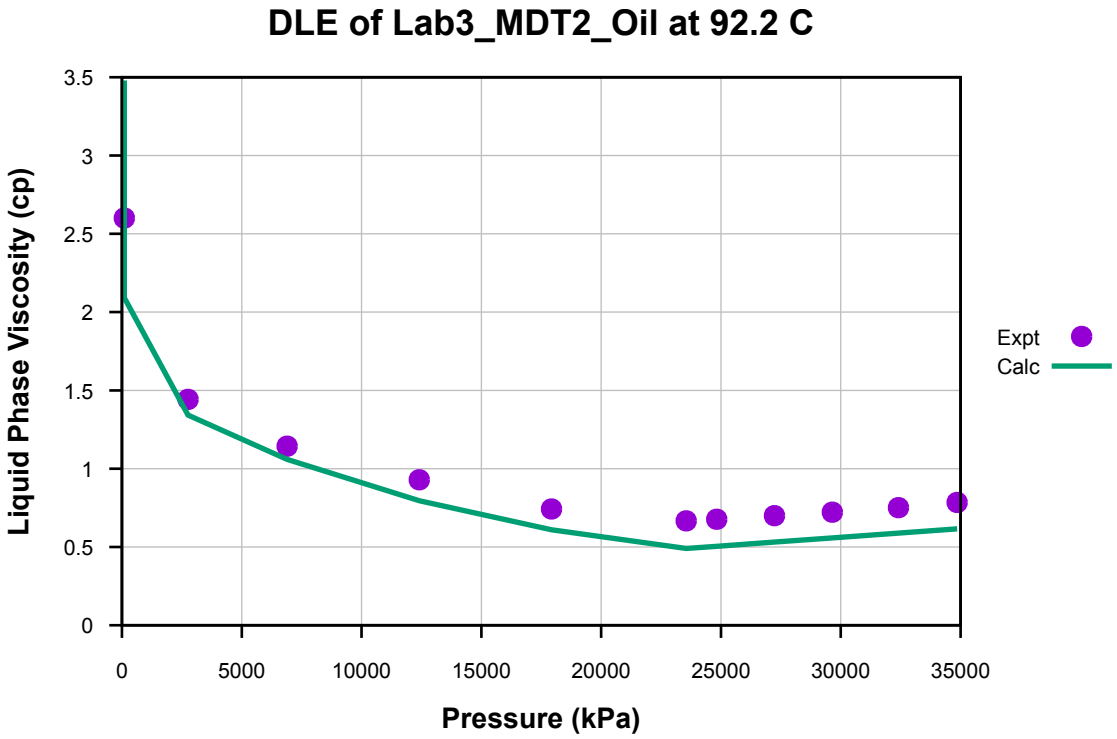

Figure 83: Liquid Phase Viscosity vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

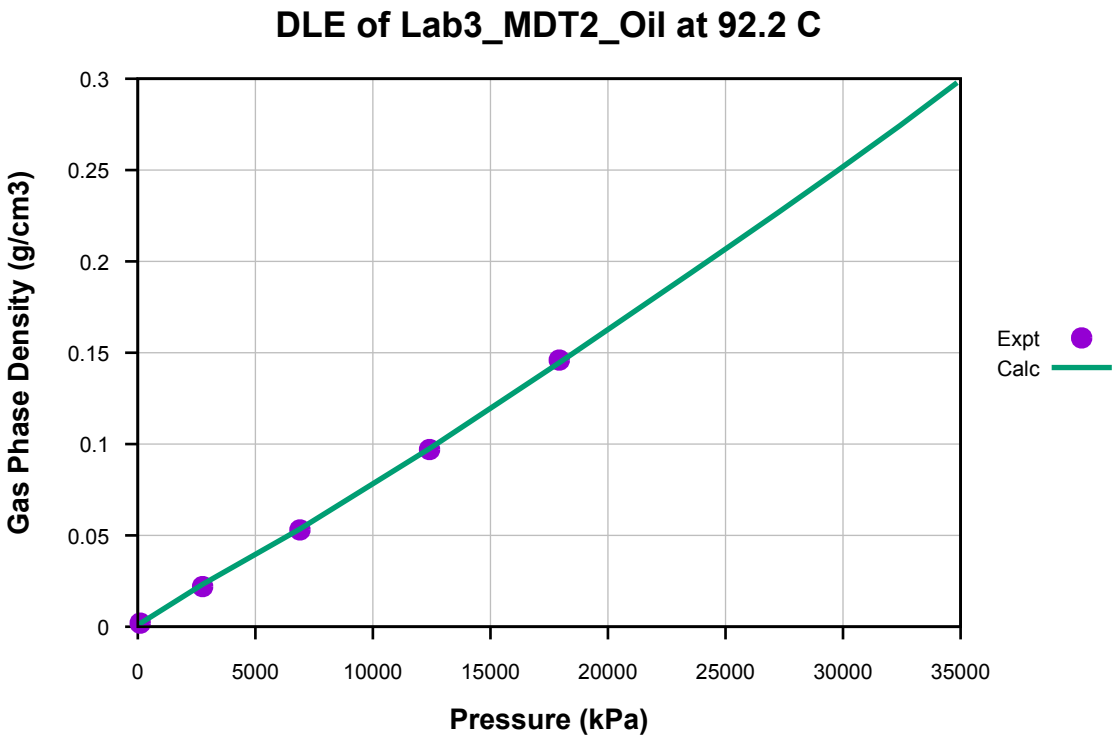

Figure 84: Gas Phase Density vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

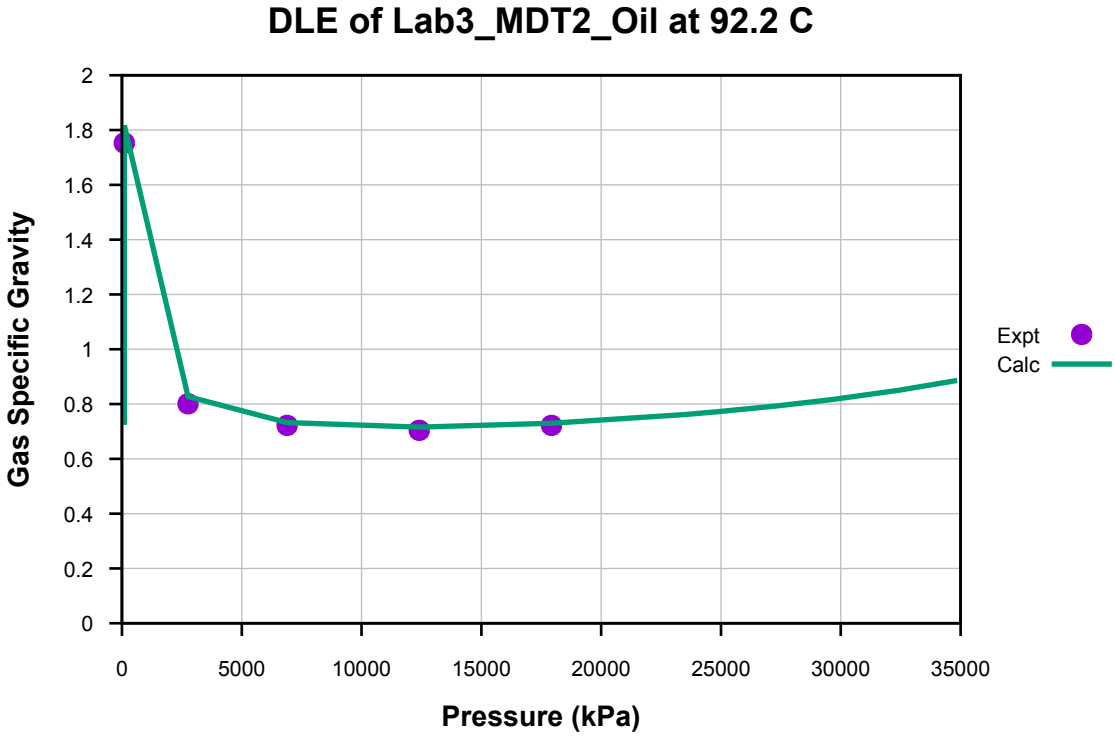

Figure 85: Gas Specific Gravity vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

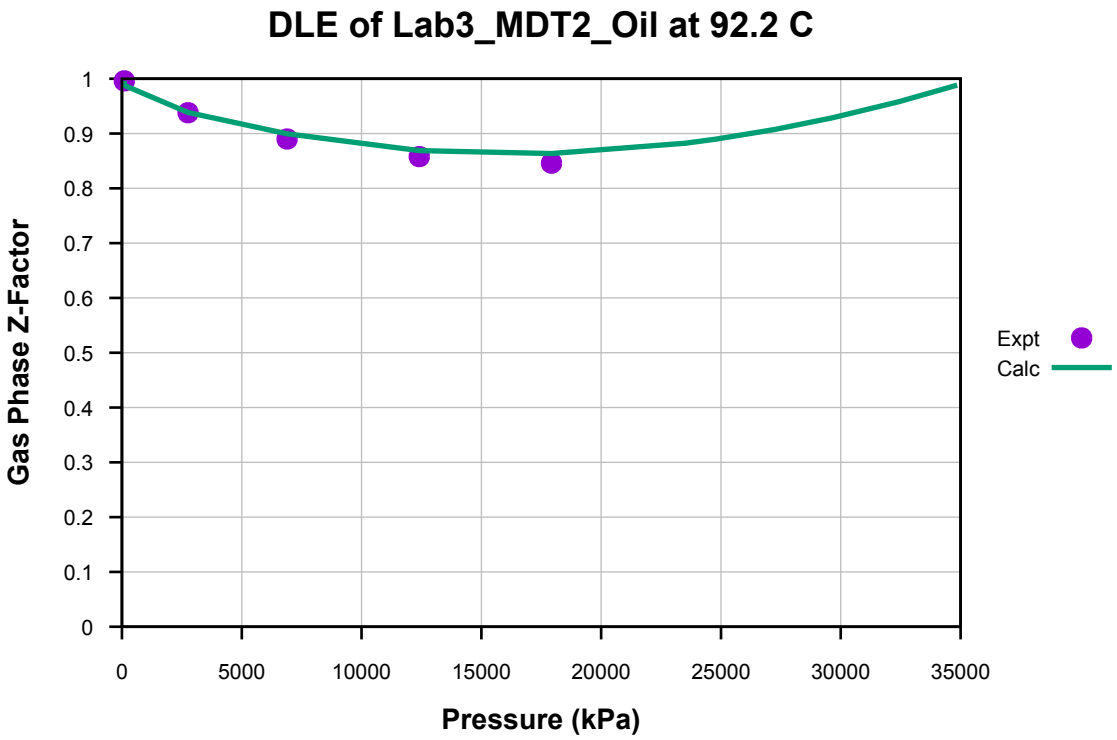

Figure 86: Gas Phase Z-Factor vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

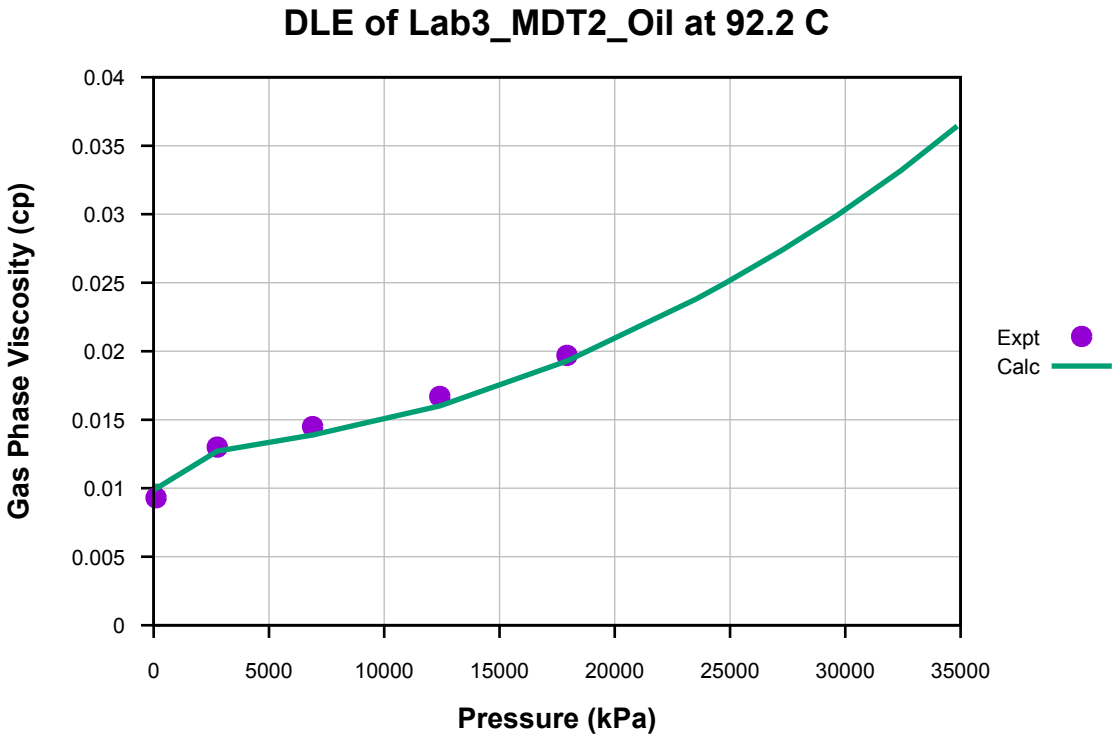

Figure 87: Gas Phase Viscosity vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

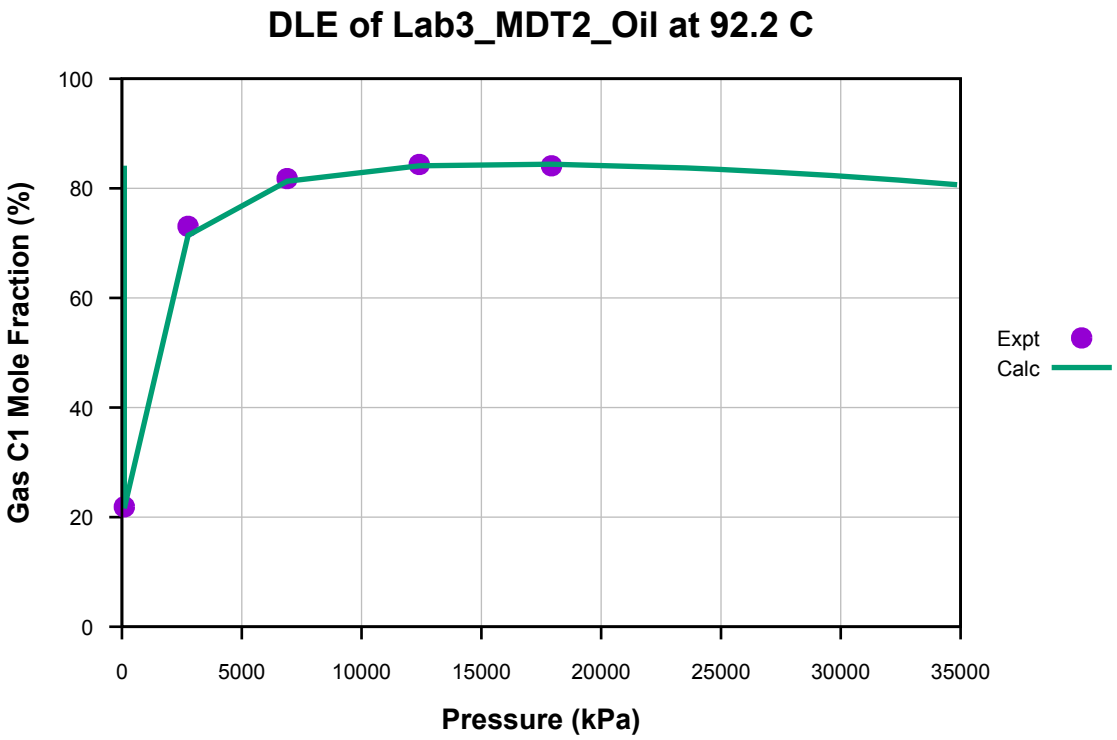

Figure 88: Gas C1 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

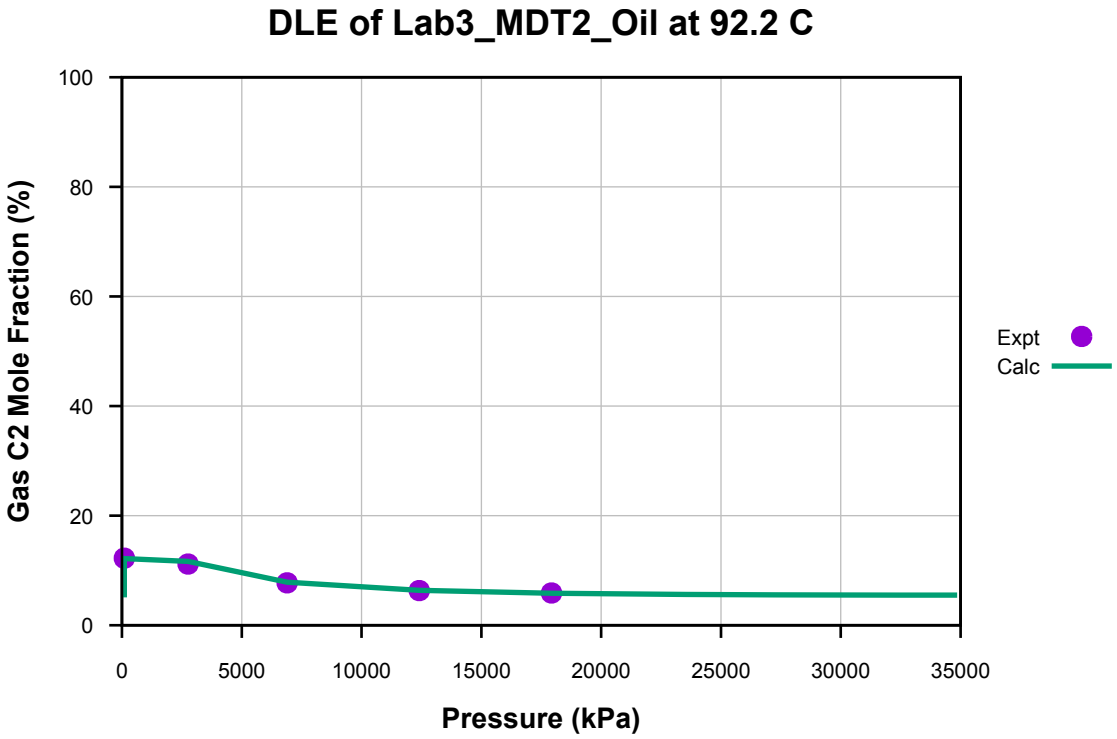

Figure 89: Gas C2 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

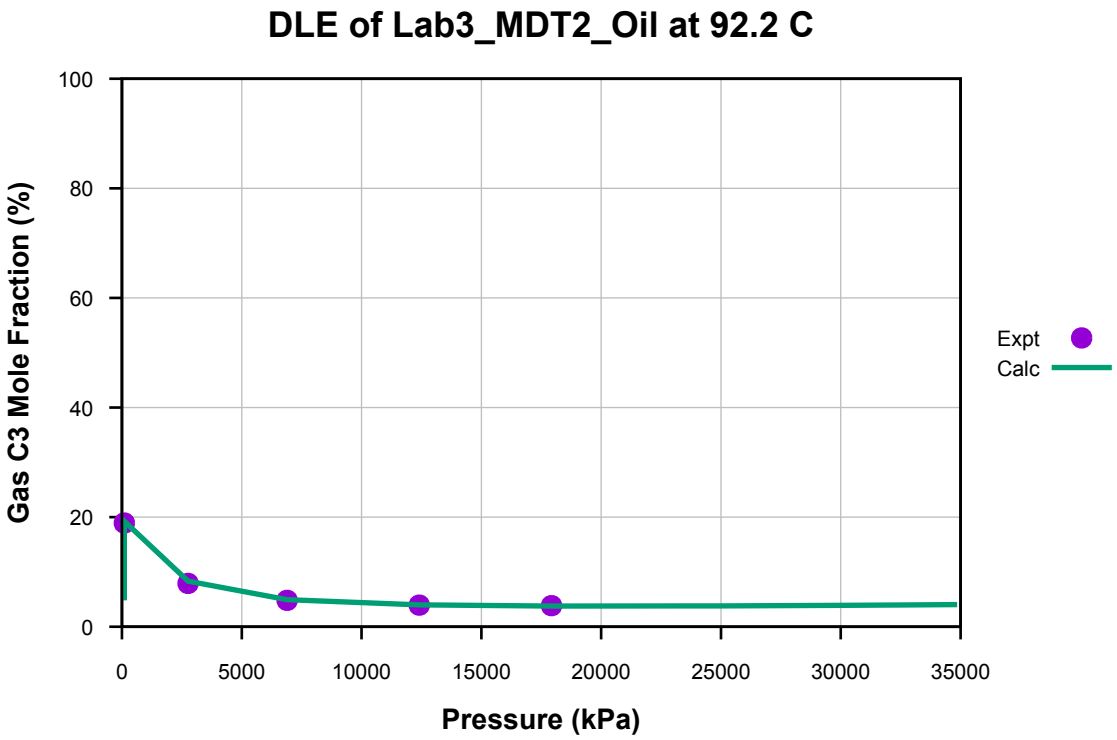

Figure 90: Gas C3 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

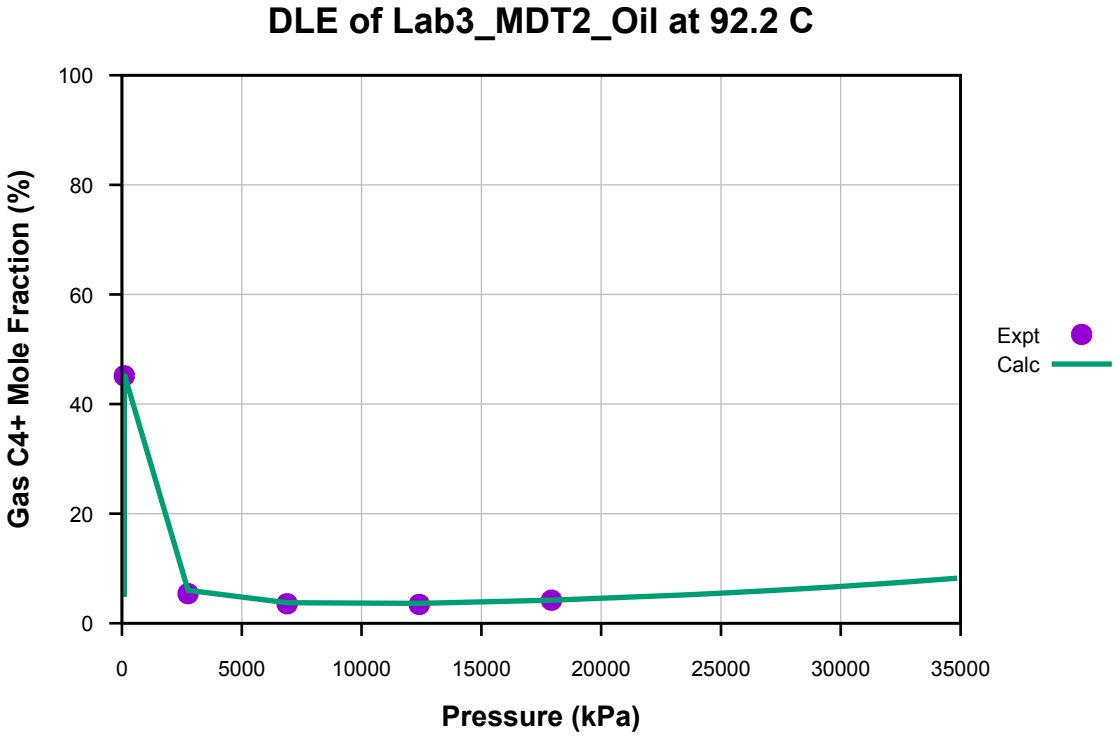

Figure 91: Gas C4+ Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

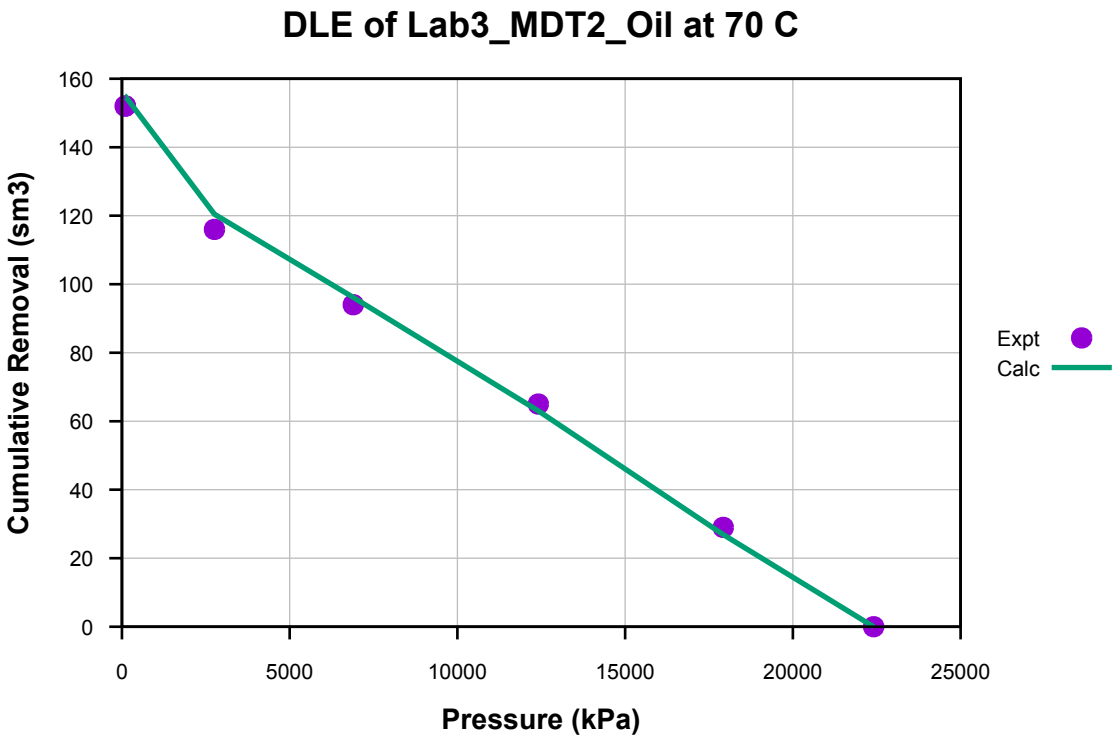

Figure 92: Cumulative Removal vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

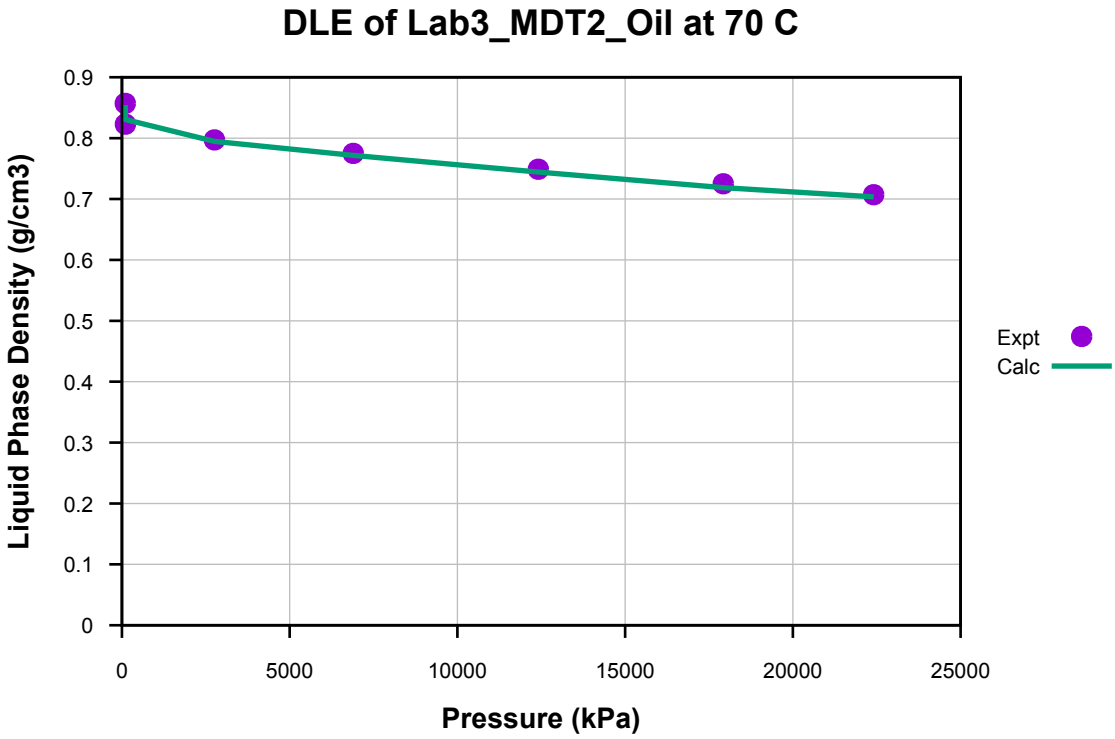

Figure 93: Liquid Phase Density vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

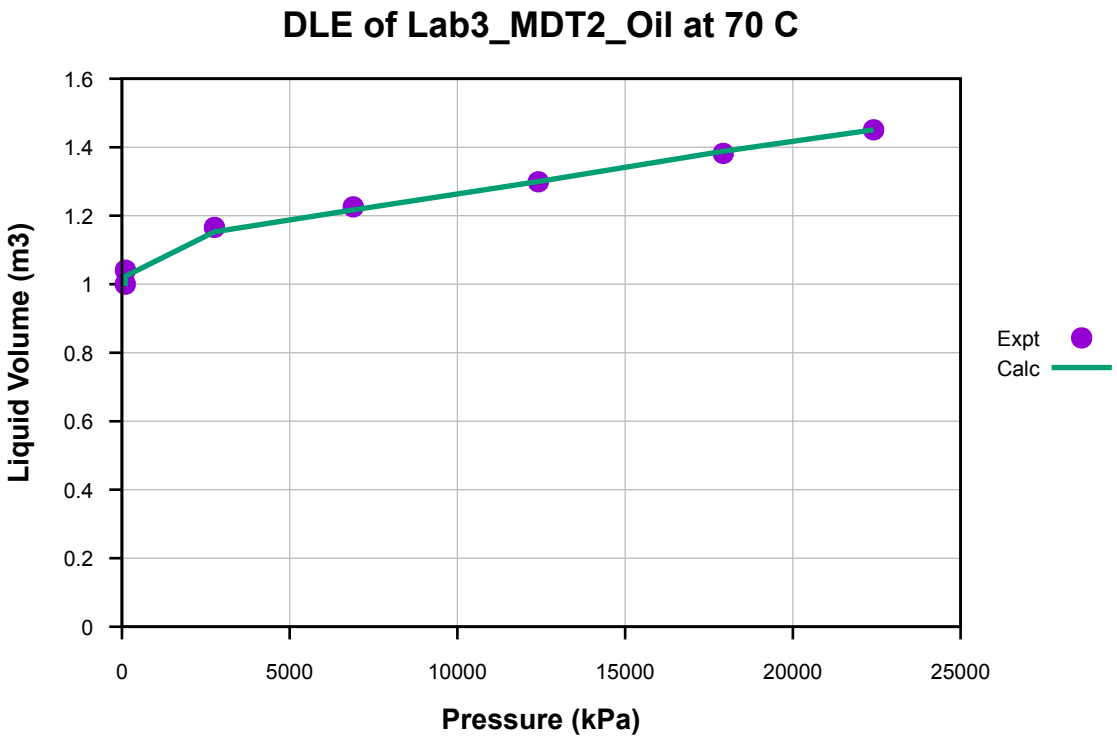

Figure 94: Liquid Volume vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

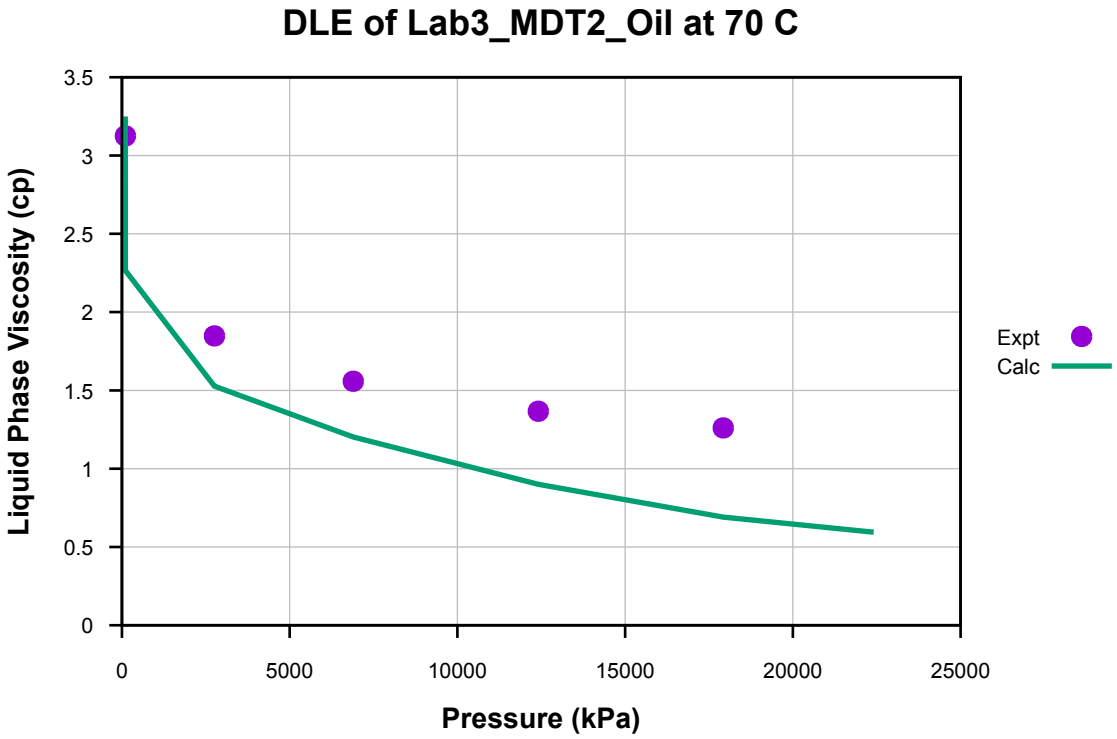

Figure 95: Liquid Phase Viscosity vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

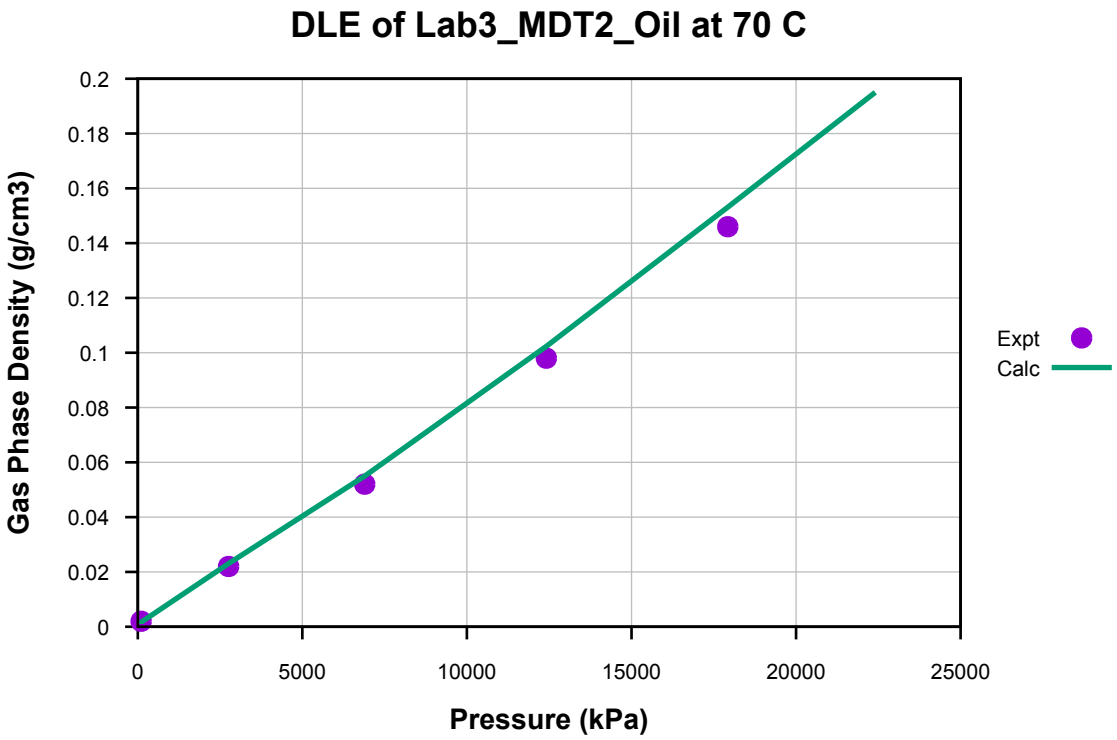

Figure 96: Gas Phase Density vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

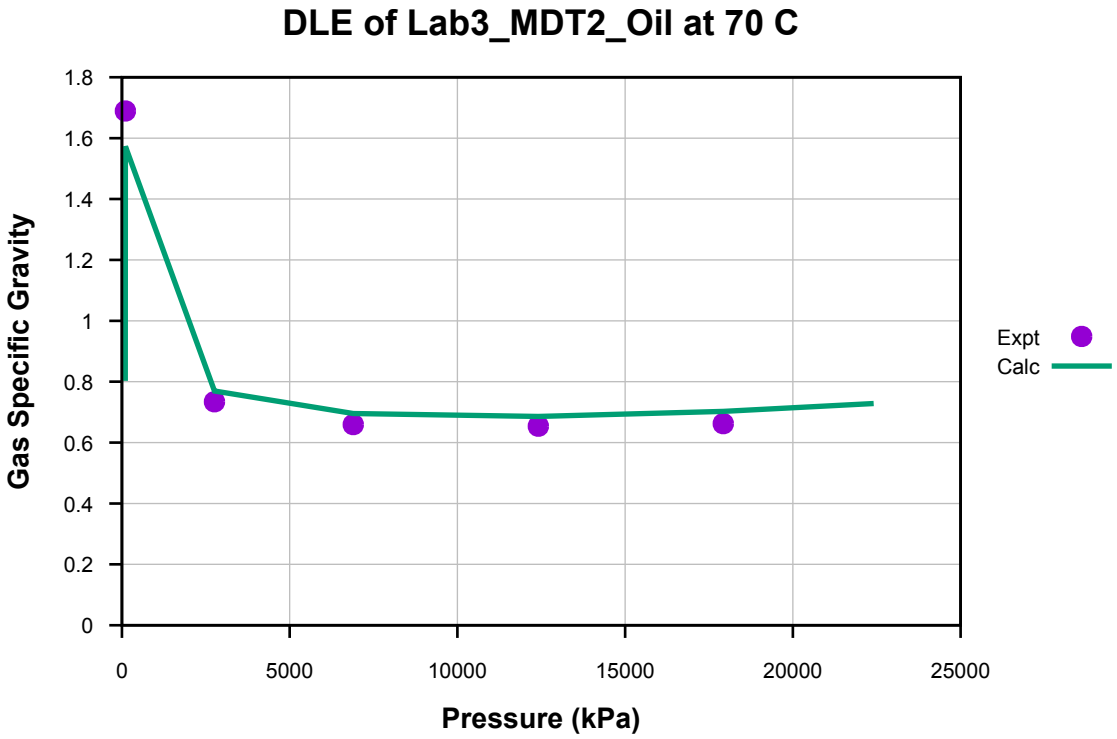

Figure 97: Gas Specific Gravity vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

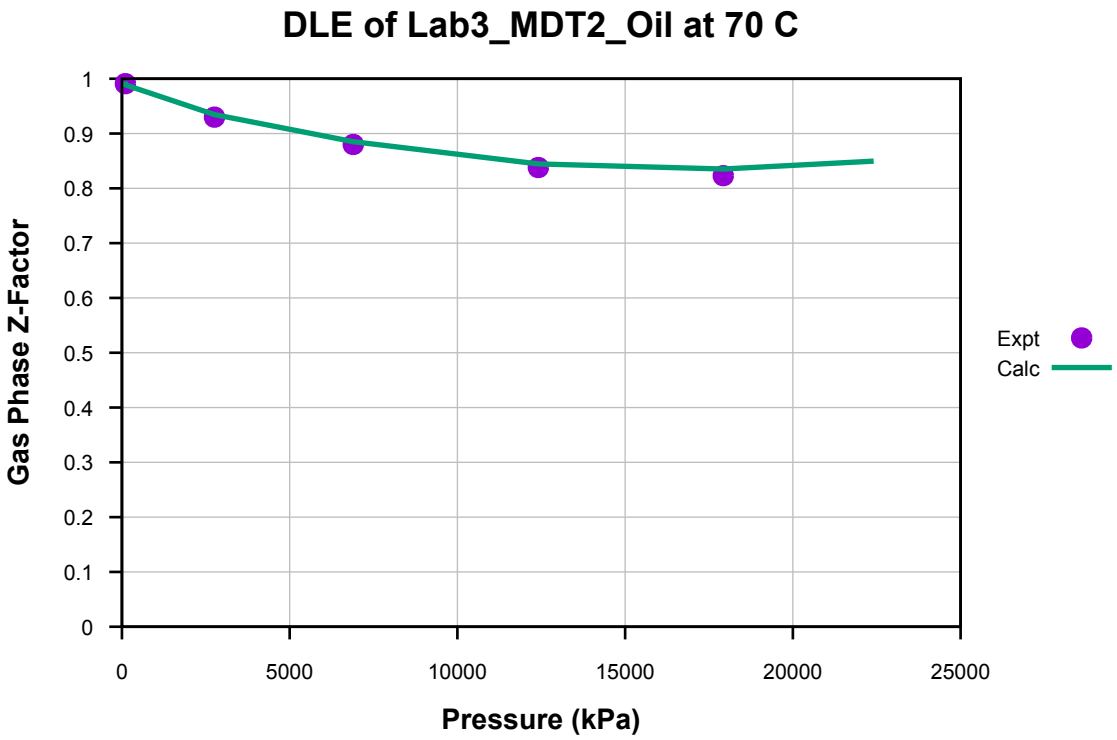

Figure 98: Gas Phase Z-Factor vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

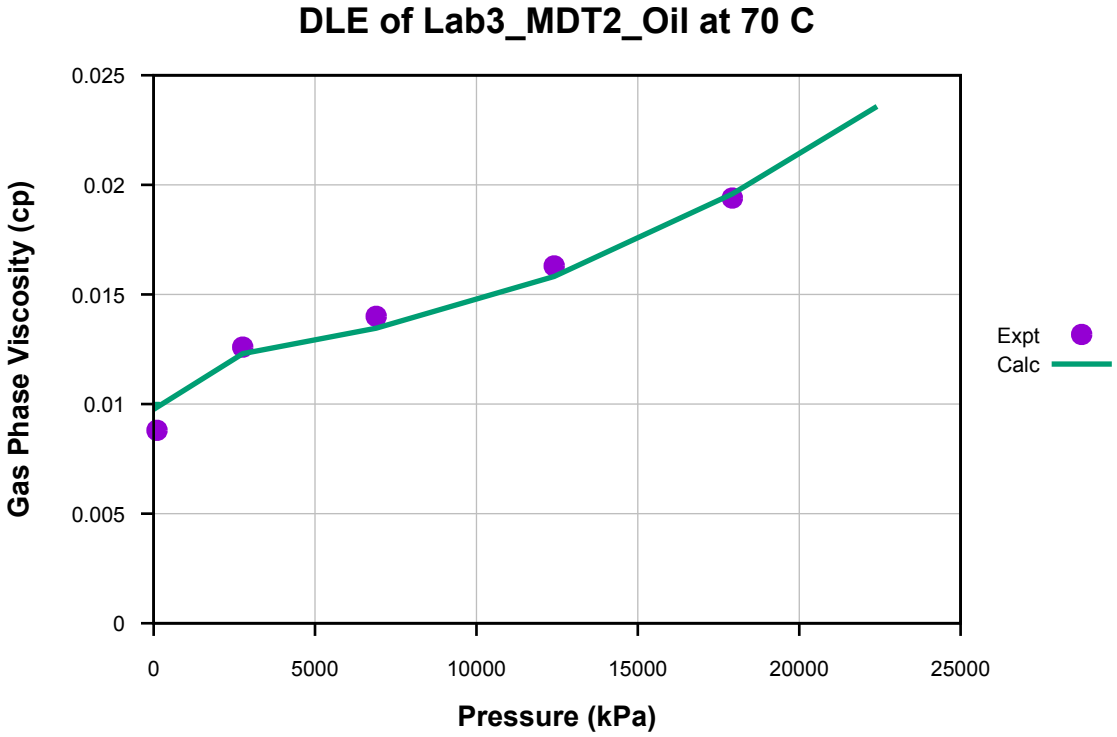

Figure 99: Gas Phase Viscosity vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

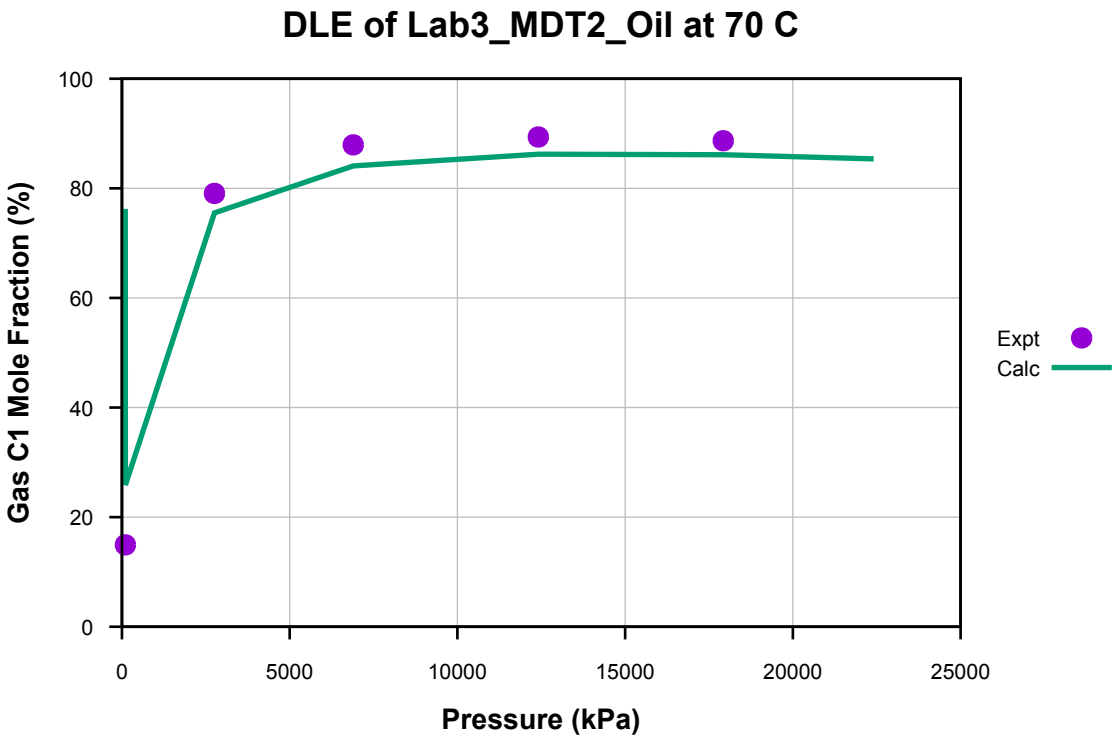

Figure 100: Gas C1 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

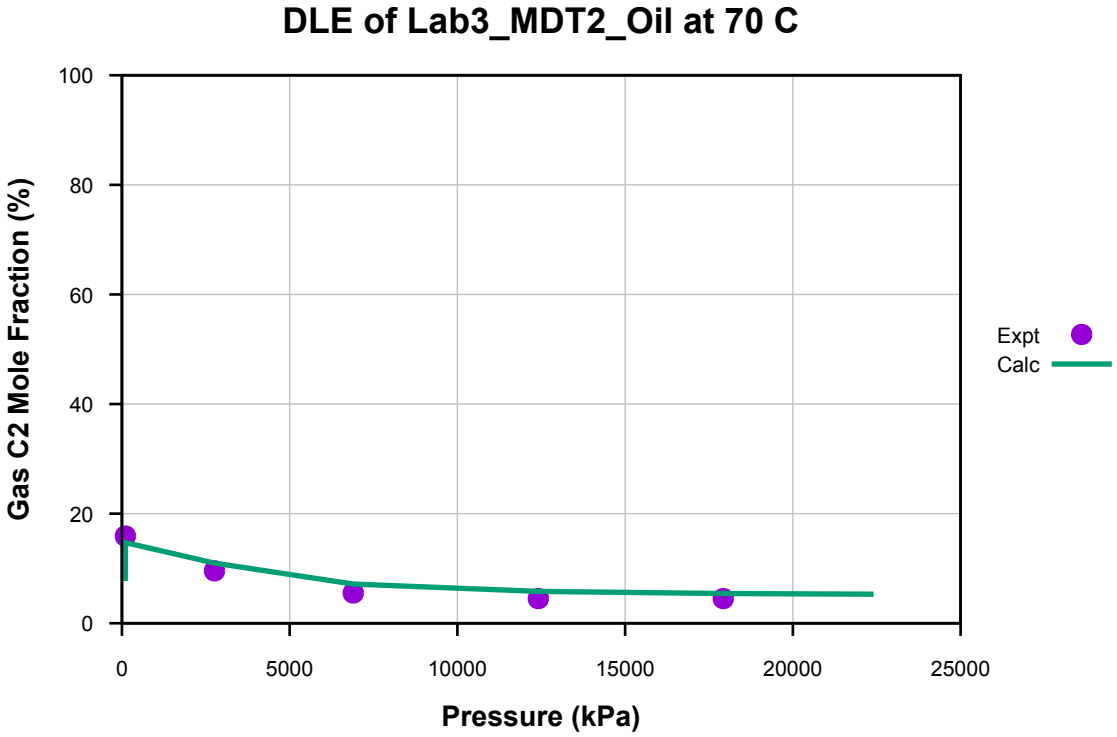

Figure 101: Gas C2 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

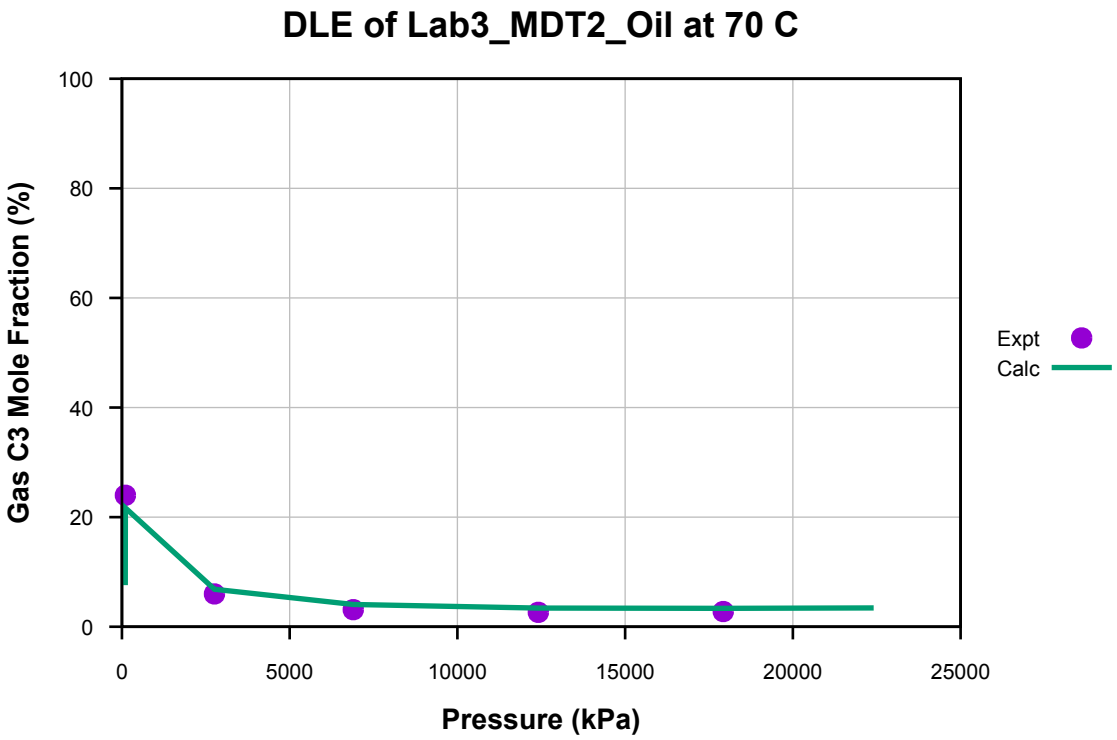

Figure 102: Gas C3 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

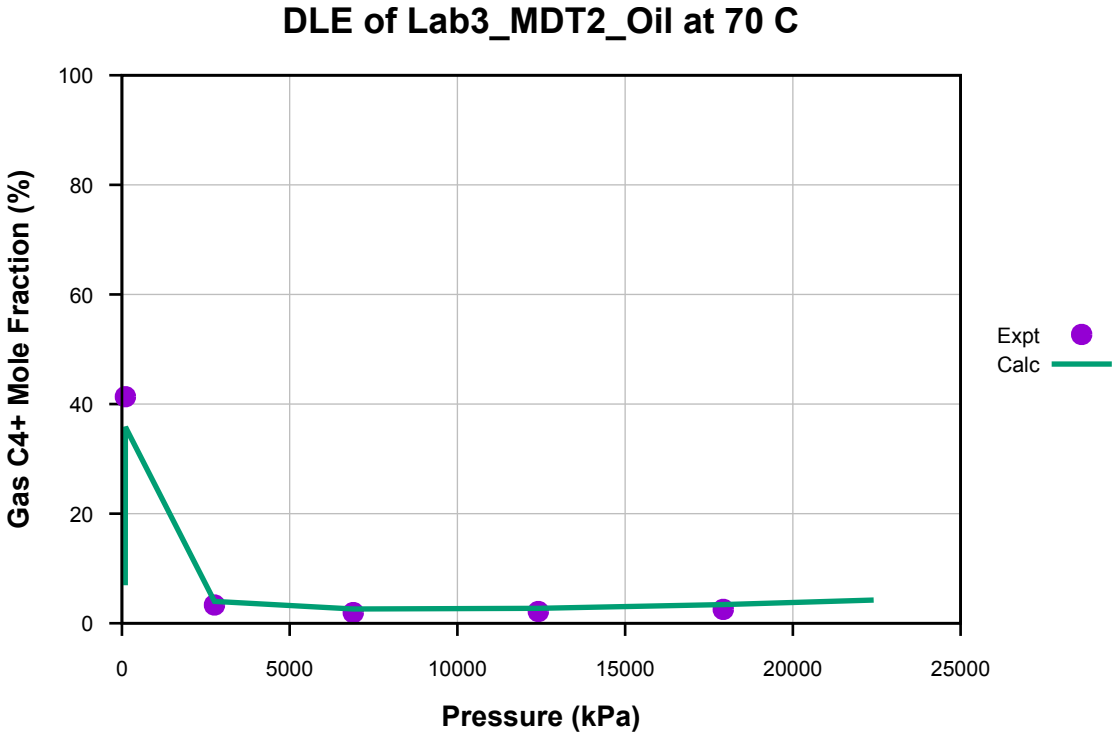

Figure 103: Gas C4+ Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

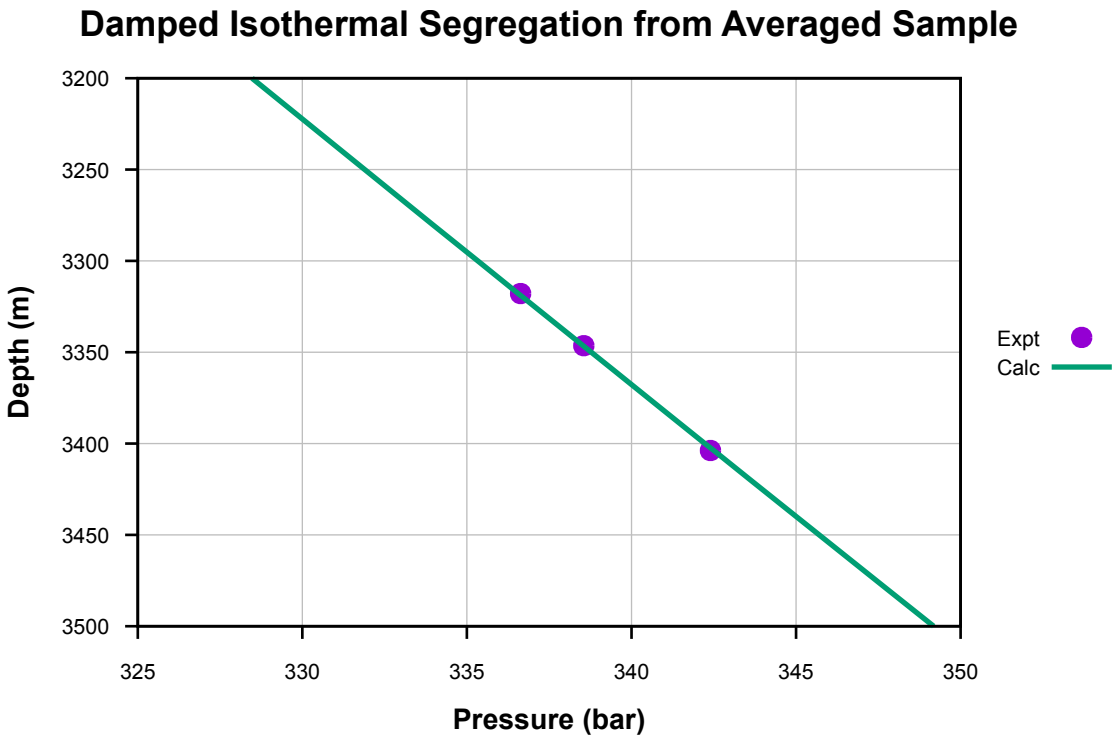

Figure 104: Depth vs. Pressure for Damped Isothermal Segregation from Averaged Sample.

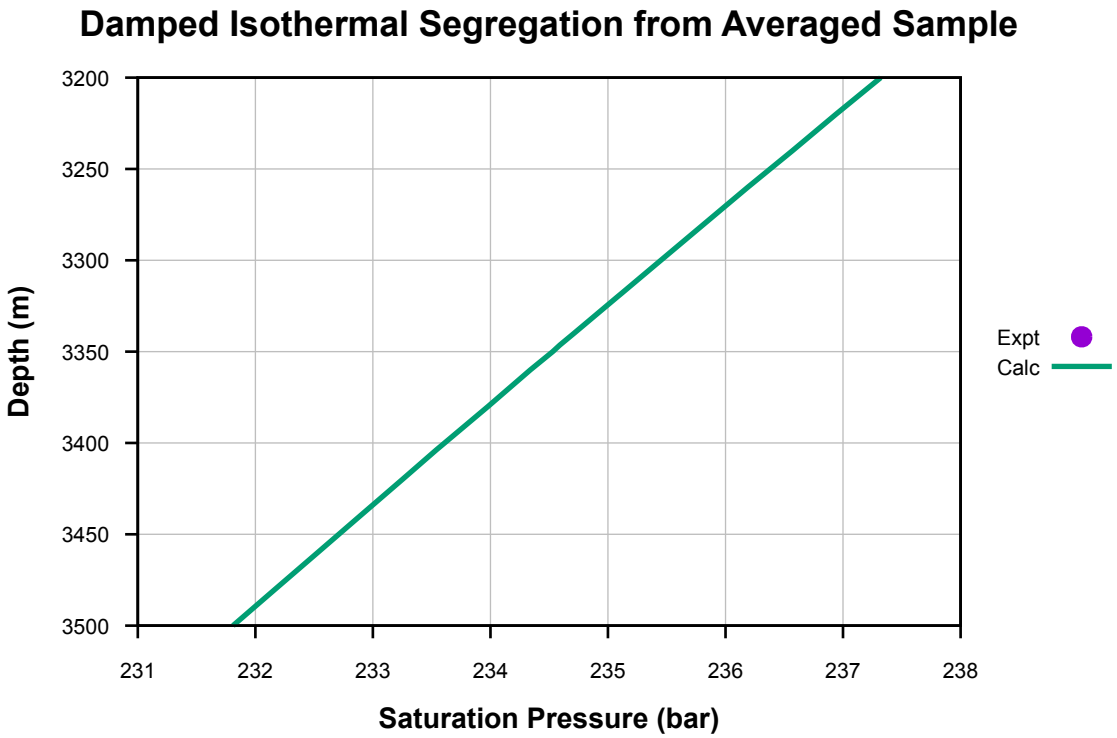

Figure 105: Depth vs. Saturation Pressure for Damped Isothermal Segregation from Averaged Sample.

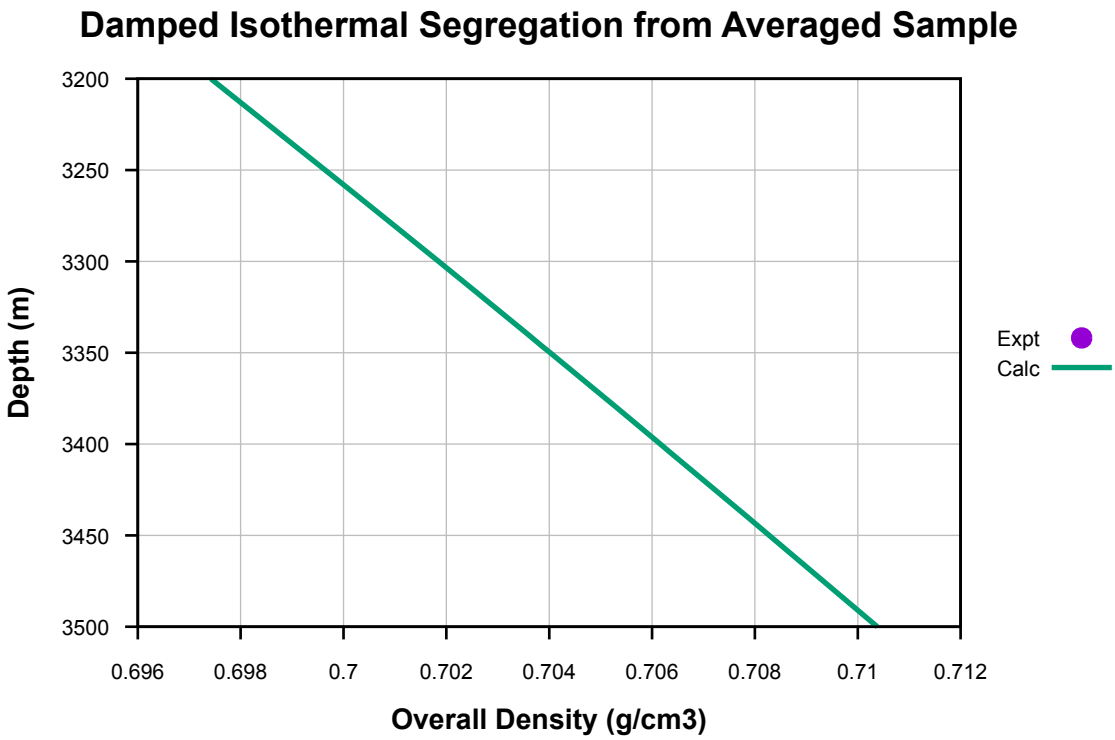

Figure 106: Depth vs. Overall Density for Damped Isothermal Segregation from Averaged Sample.

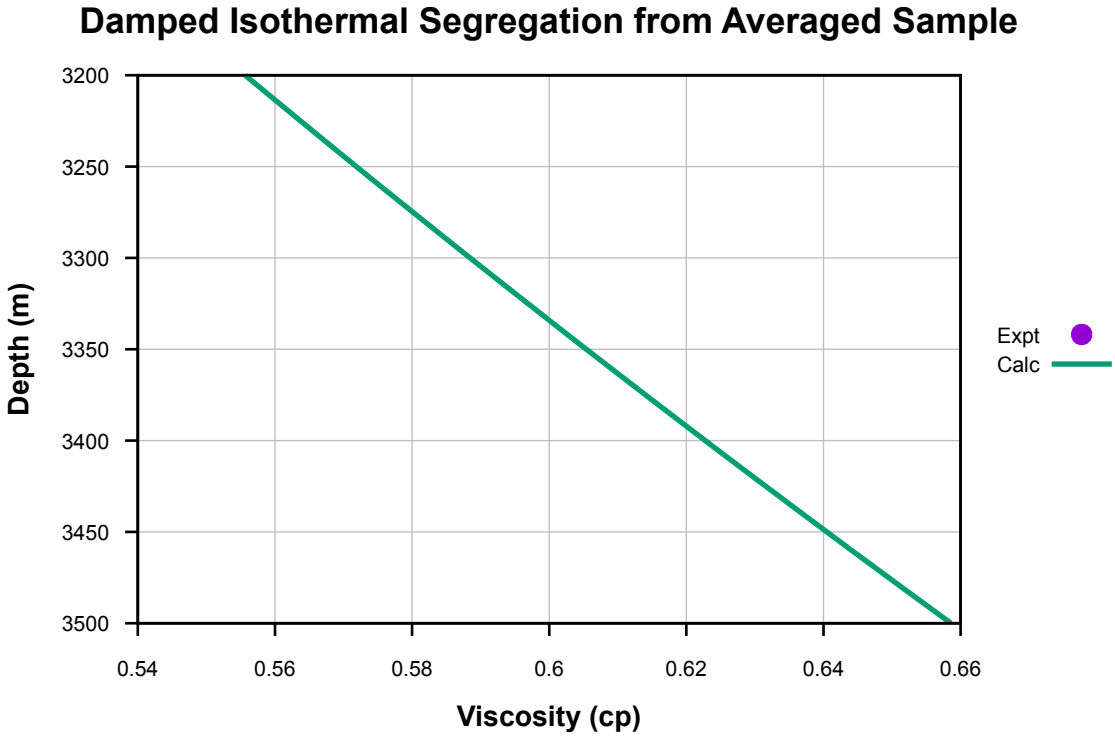

Figure 107: Depth vs. Viscosity for Damped Isothermal Segregation from Averaged Sample.

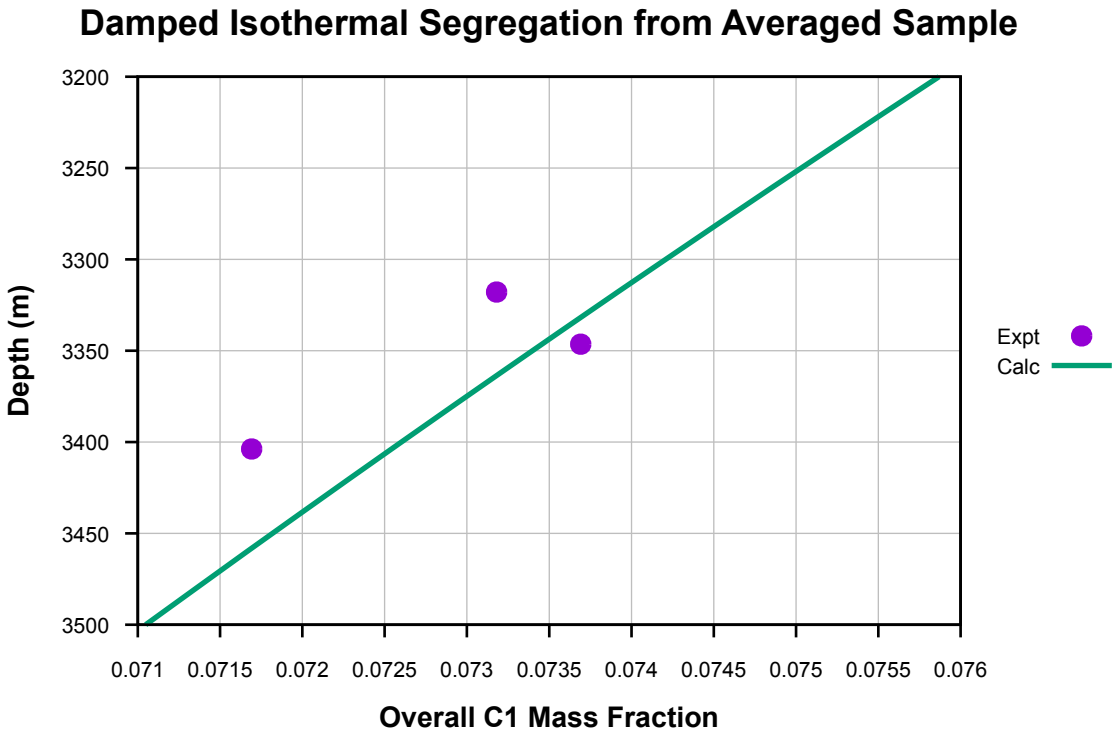

Figure 108: Depth vs. Overall C1 Mass Fraction for Damped Isothermal Segregation from Averaged Sample.

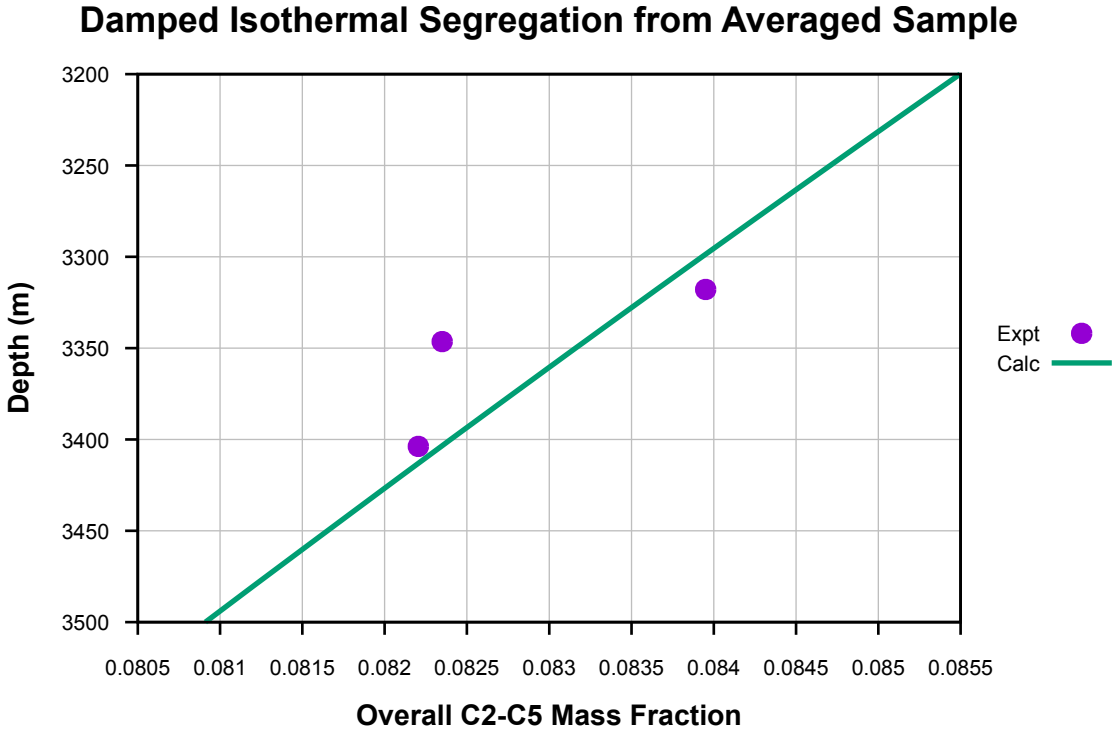

Figure 109: Depth vs. Overall C2-C5 Mass Fraction for Damped Isothermal Segregation from Averaged Sample.

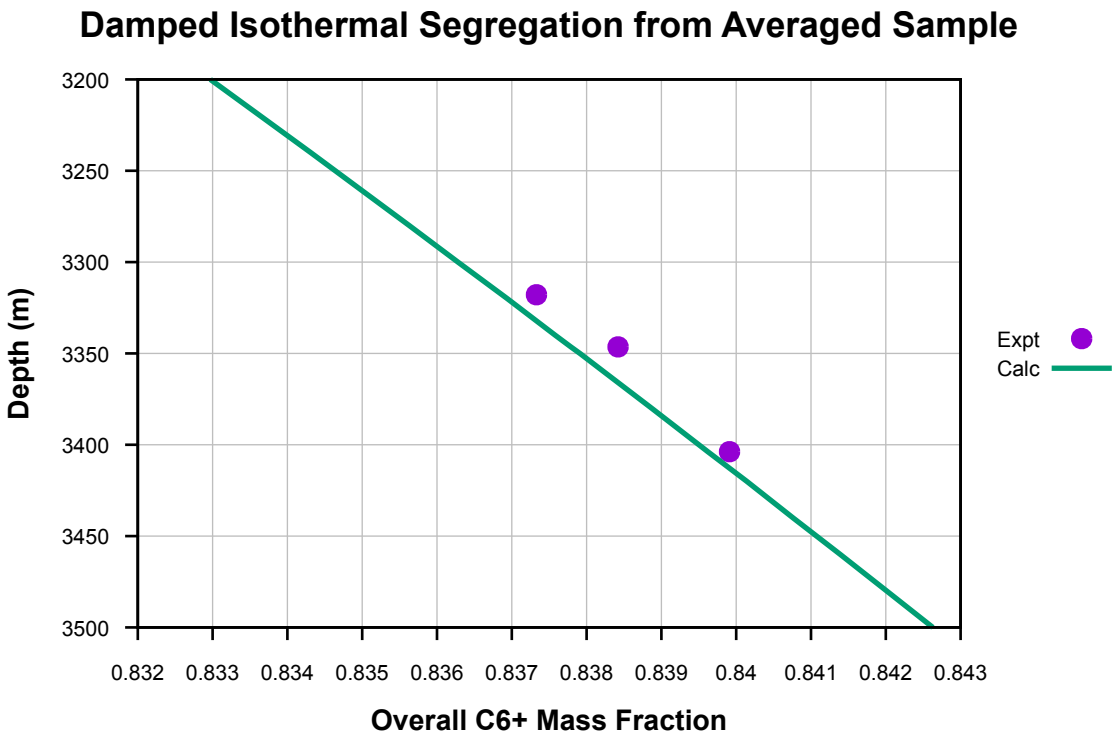

Figure 110: Depth vs. Overall C6+ Mass Fraction for Damped Isothermal Segregation from Averaged Sample.

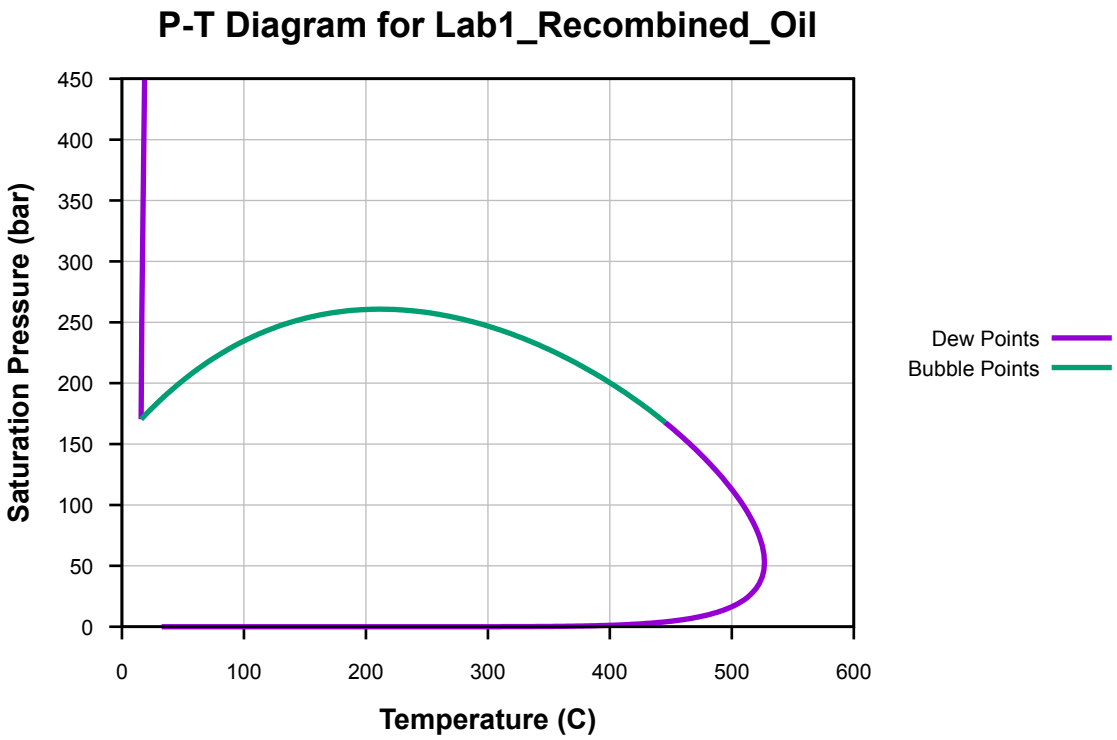

Figure 111: Saturation Pressure vs. Temperature, P-T Diagram for Lab1_Recombined_Oil.

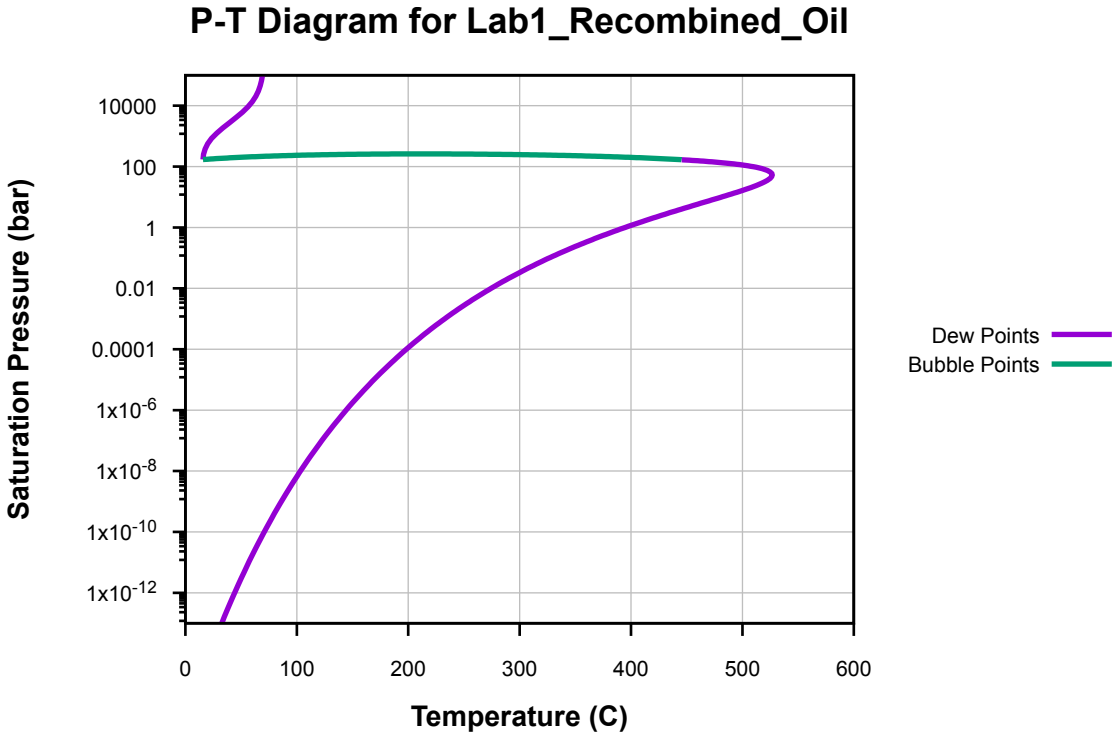

Figure 112: Log of Saturation Pressure vs. Temperature, P-T Diagram for Lab1_Recombined_Oil.

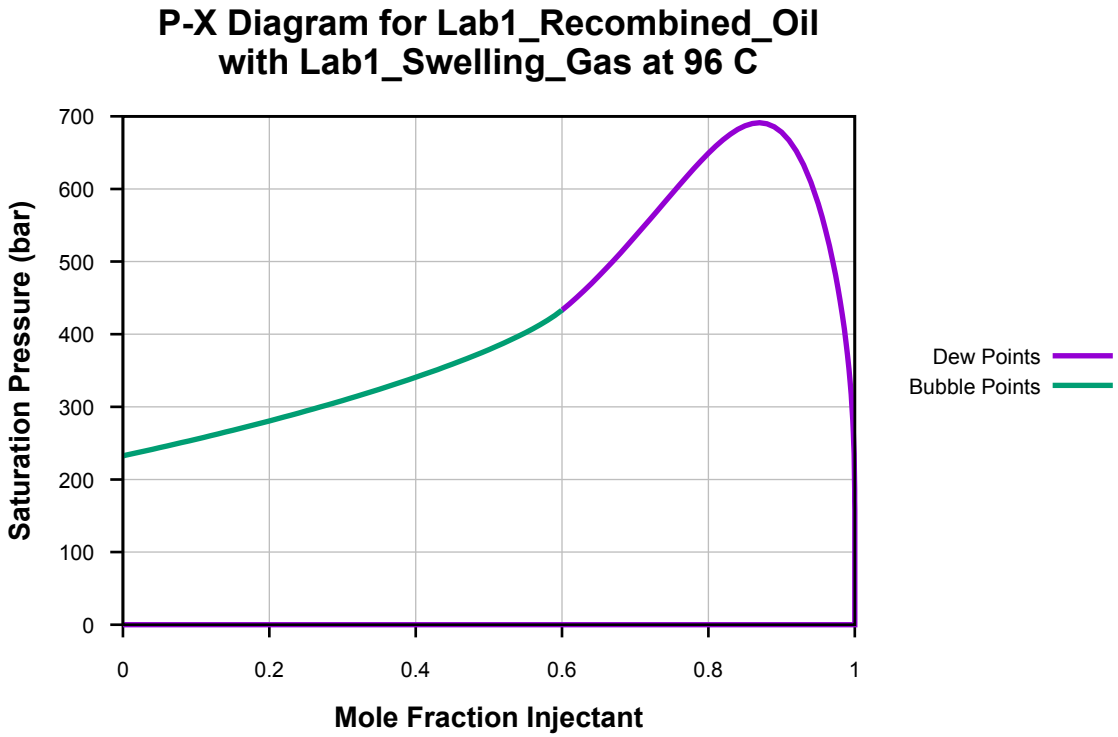

Figure 113: Saturation Pressure vs. Mole Fraction Injectant at 96 C, P-X Diagram for Lab1_-Recombined_Oil, with Lab1_Swelling_Gas at 96 C .

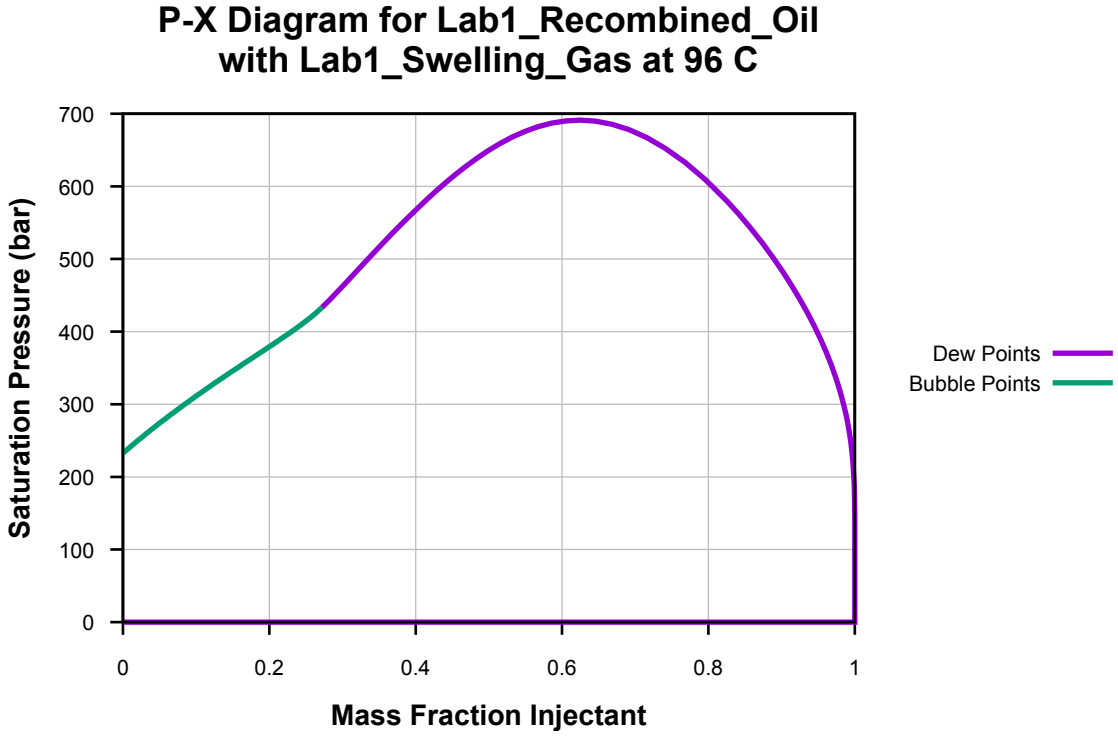

Figure 114: Saturation Pressure vs. Mass Fraction Injectant at 96 C, P-X Diagram for Lab1_-Recombined_Oil, with Lab1_Swelling_Gas at 96 C .

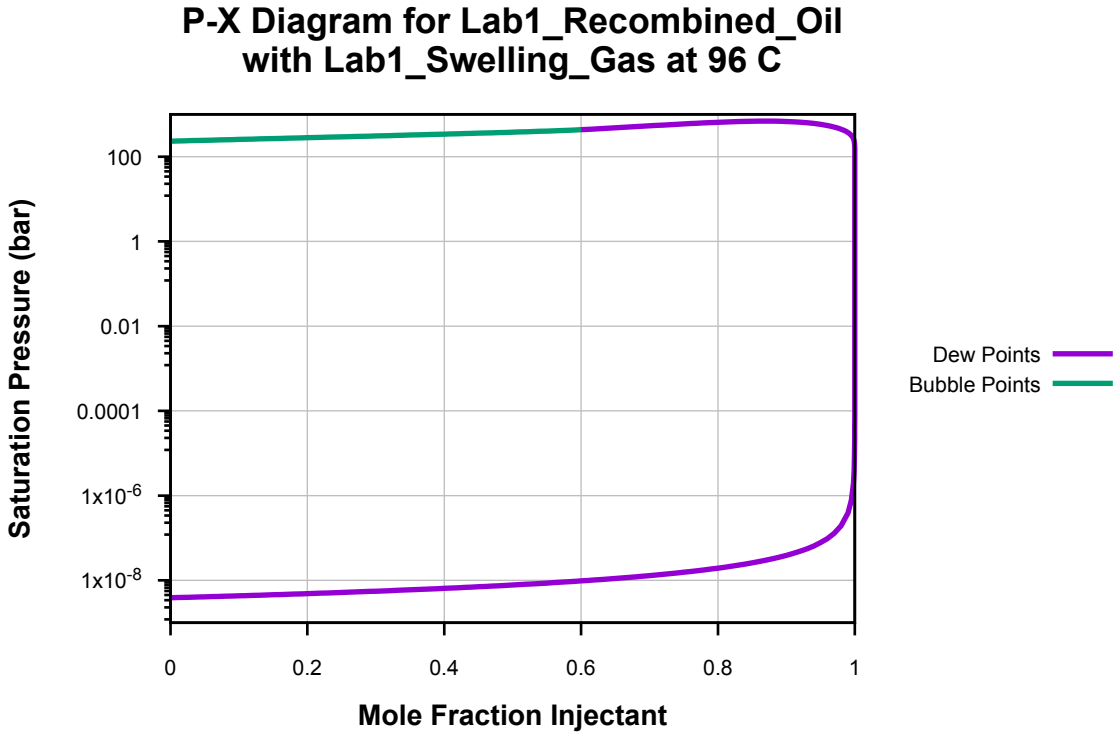

Figure 115: Log of Saturation Pressure vs. Mole Fraction Injectant at 96 C, P-X Diagram for Lab1_Recombined_Oil, with Lab1_Swelling_Gas at 96 C .

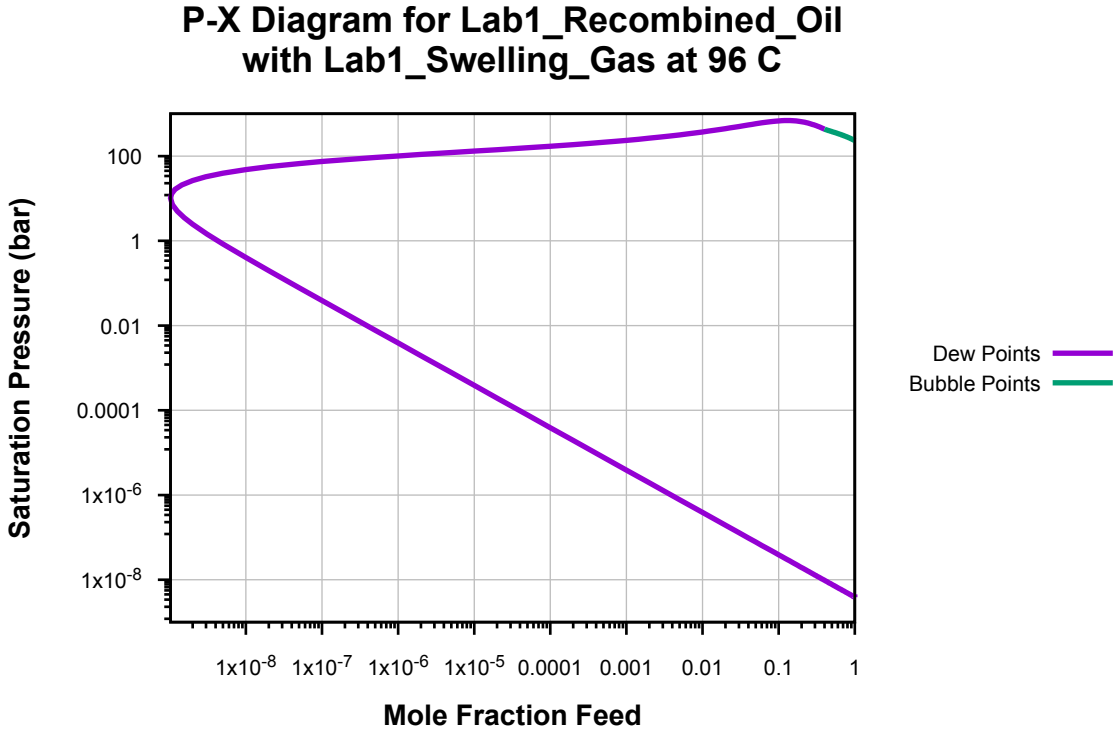

Figure 116: Log of Saturation Pressure vs. Log of Mole Fraction Feed at 96 C, P-X Diagram for Lab1_Recombined_Oil, with Lab1_Swelling_Gas at 96 C .

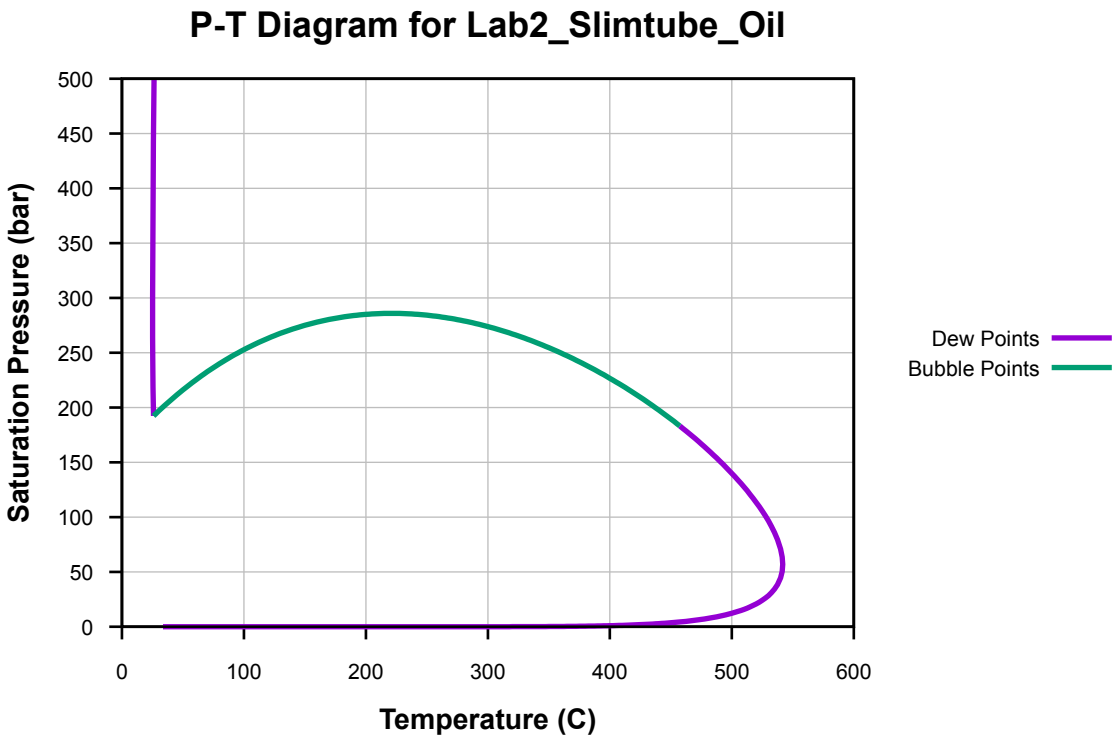

Figure 117: Saturation Pressure vs. Temperature, P-T Diagram for Lab2_Slimtube_Oil.

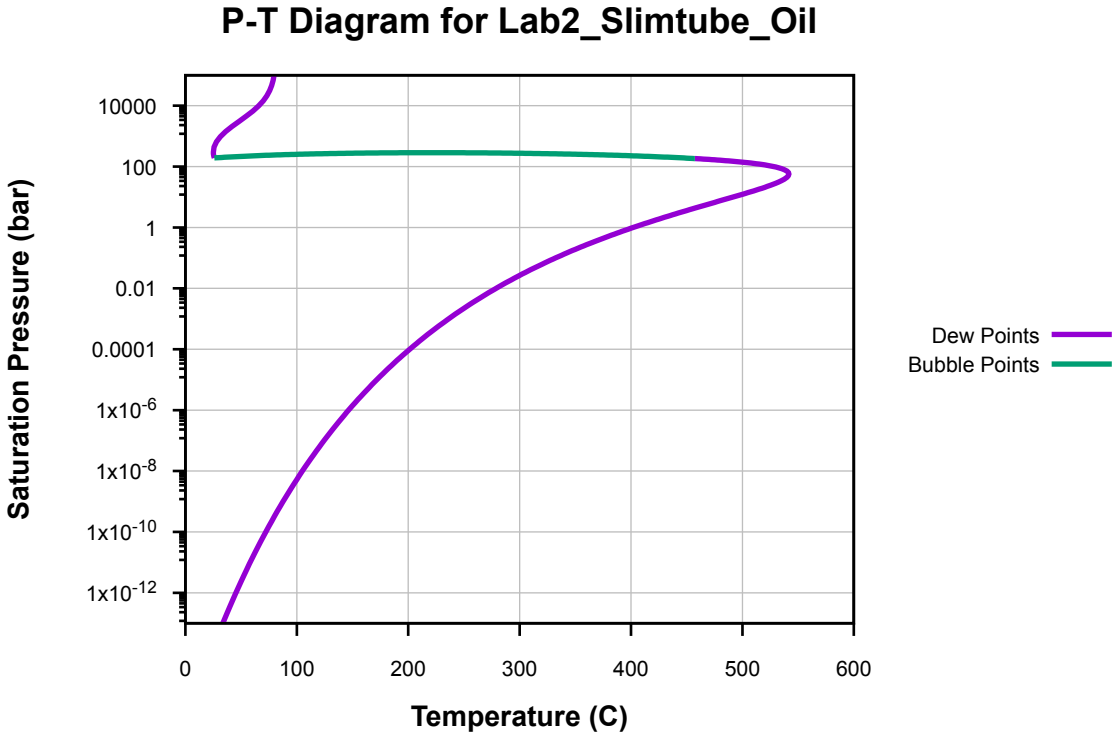

Figure 118: Log of Saturation Pressure vs. Temperature, P-T Diagram for Lab2_Slimtube_Oil.

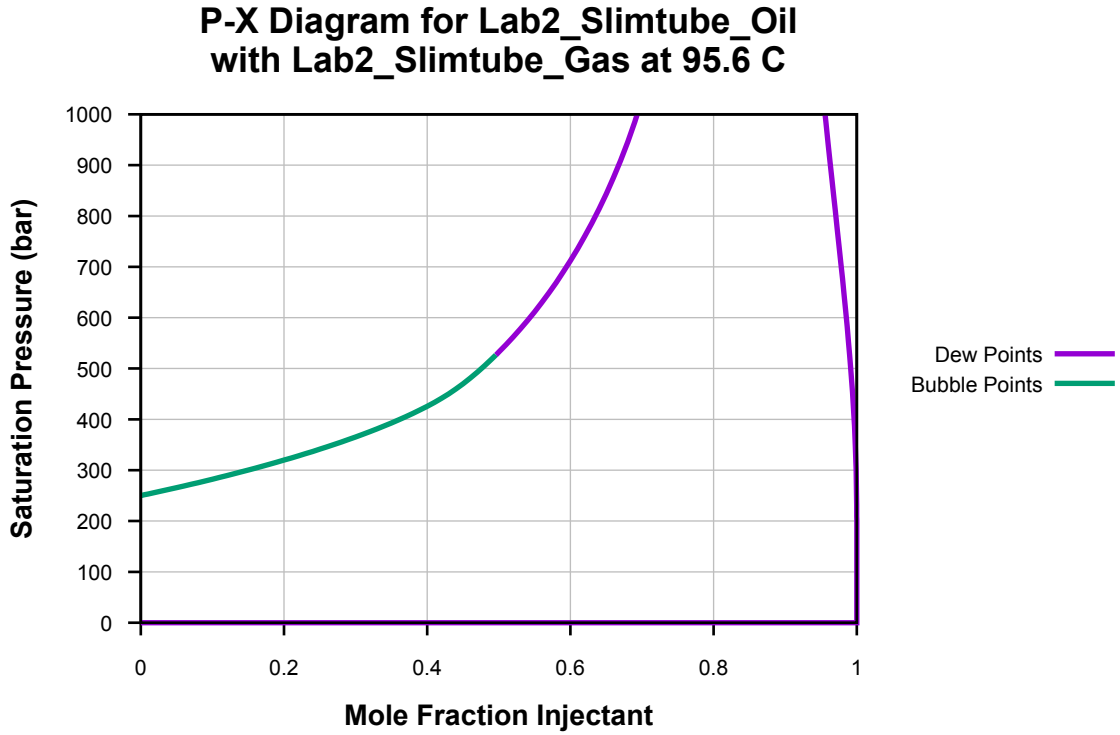

Figure 119: Saturation Pressure vs. Mole Fraction Injectant at 95.5556 C, P-X Diagram for Lab2_-Slimtube_Oil, with Lab2_Slimtube_Gas at 95.6 C .

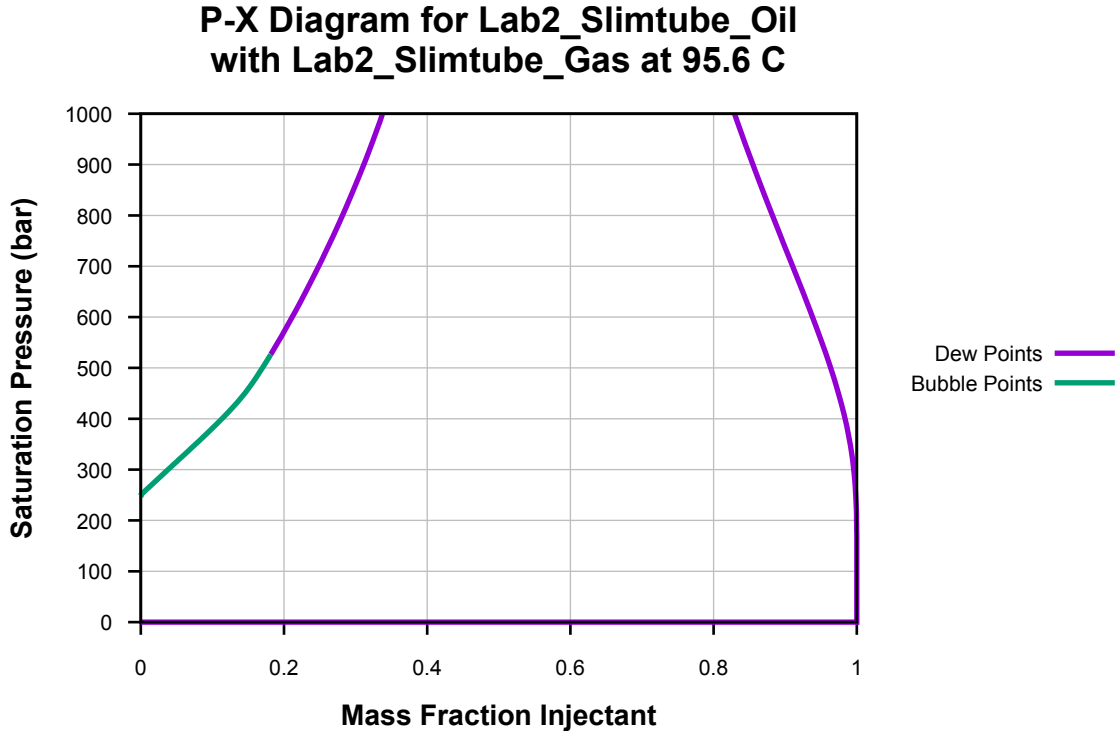

Figure 120: Saturation Pressure vs. Mass Fraction Injectant at 95.5556 C, P-X Diagram for Lab2_-Slimtube_Oil, with Lab2_Slimtube_Gas at 95.6 C .

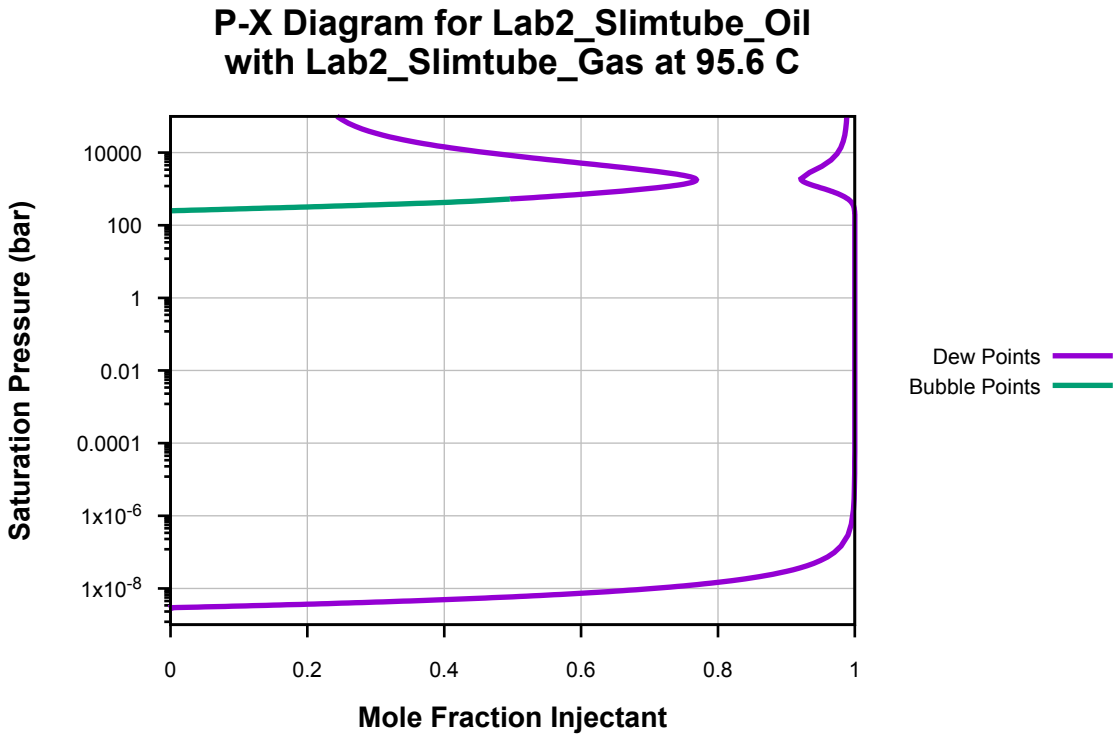

Figure 121: Log of Saturation Pressure vs. Mole Fraction Injectant at 95.5556 C, P-X Diagram for Lab2_Slimtube_Oil, with Lab2_Slimtube_Gas at 95.6 C .

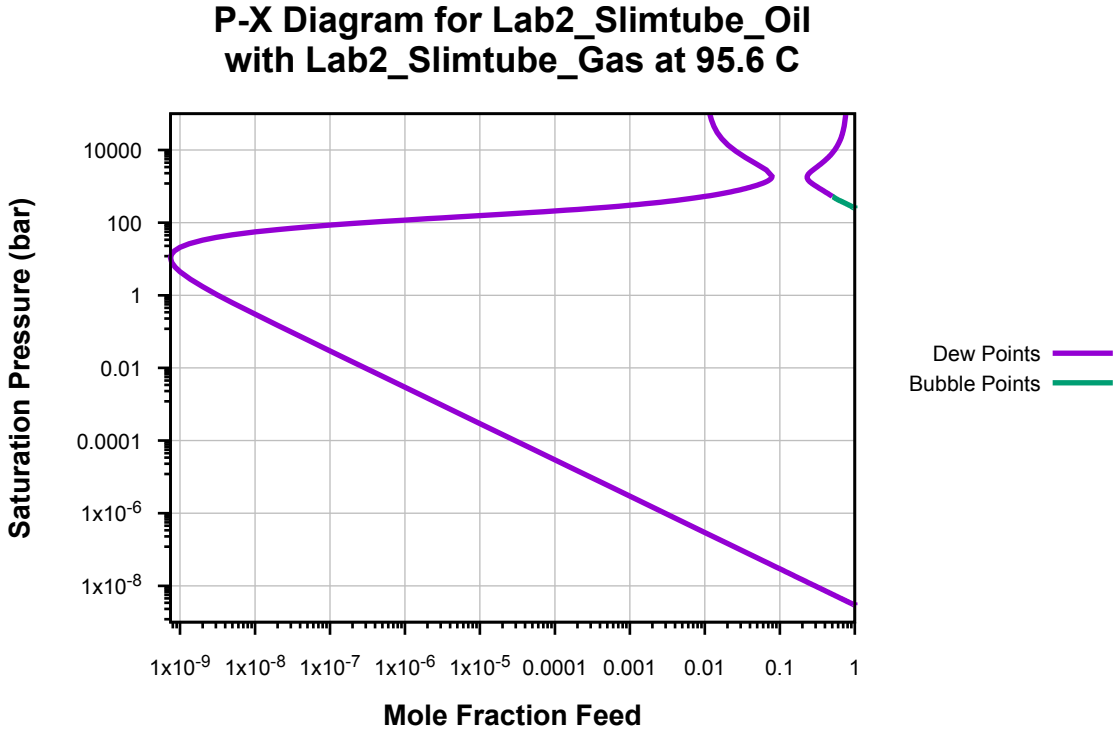

Figure 122: Log of Saturation Pressure vs. Log of Mole Fraction Feed at 95.5556 C, P-X Diagram for Lab2_Slimtube_Oil, with Lab2_Slimtube_Gas at 95.6 C .

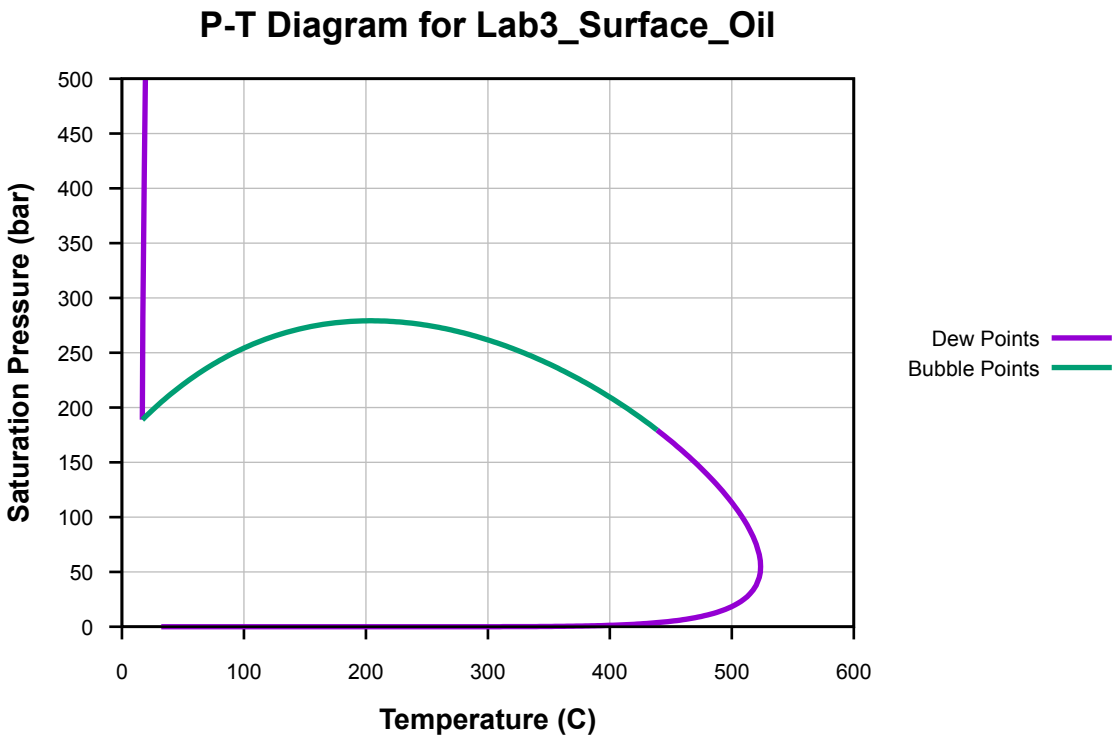

Figure 123: Saturation Pressure vs. Temperature, P-T Diagram for Lab3_Surface_Oil.

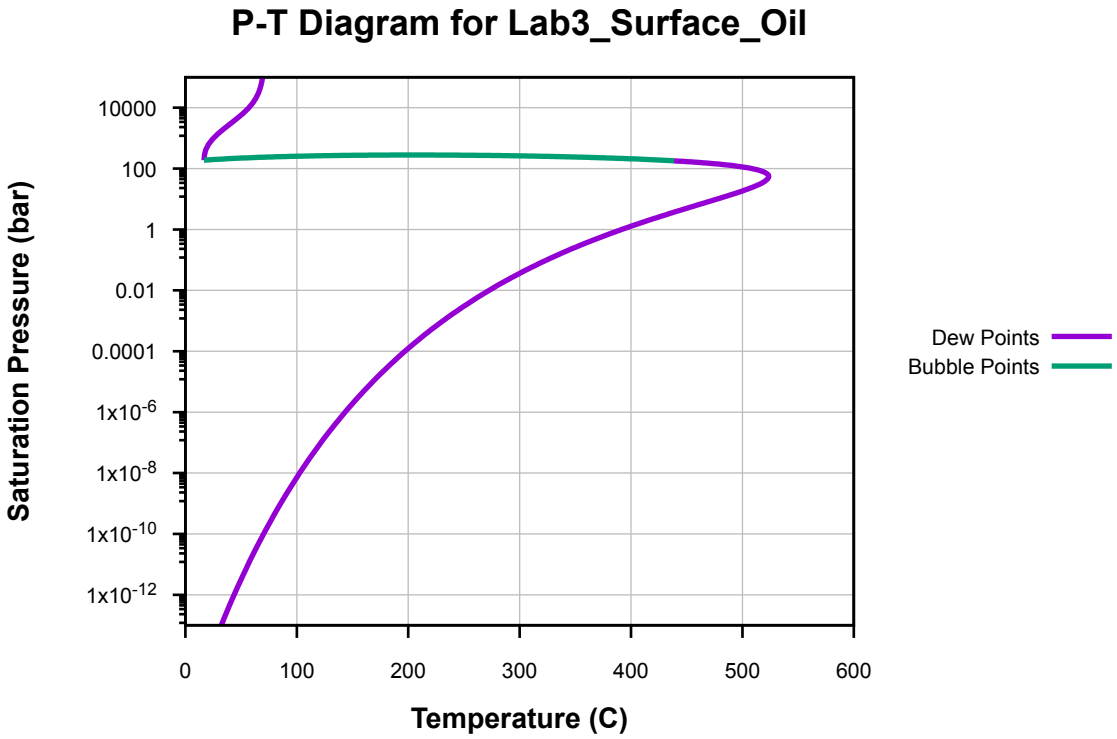

Figure 124: Log of Saturation Pressure vs. Temperature, P-T Diagram for Lab3_Surface_Oil.

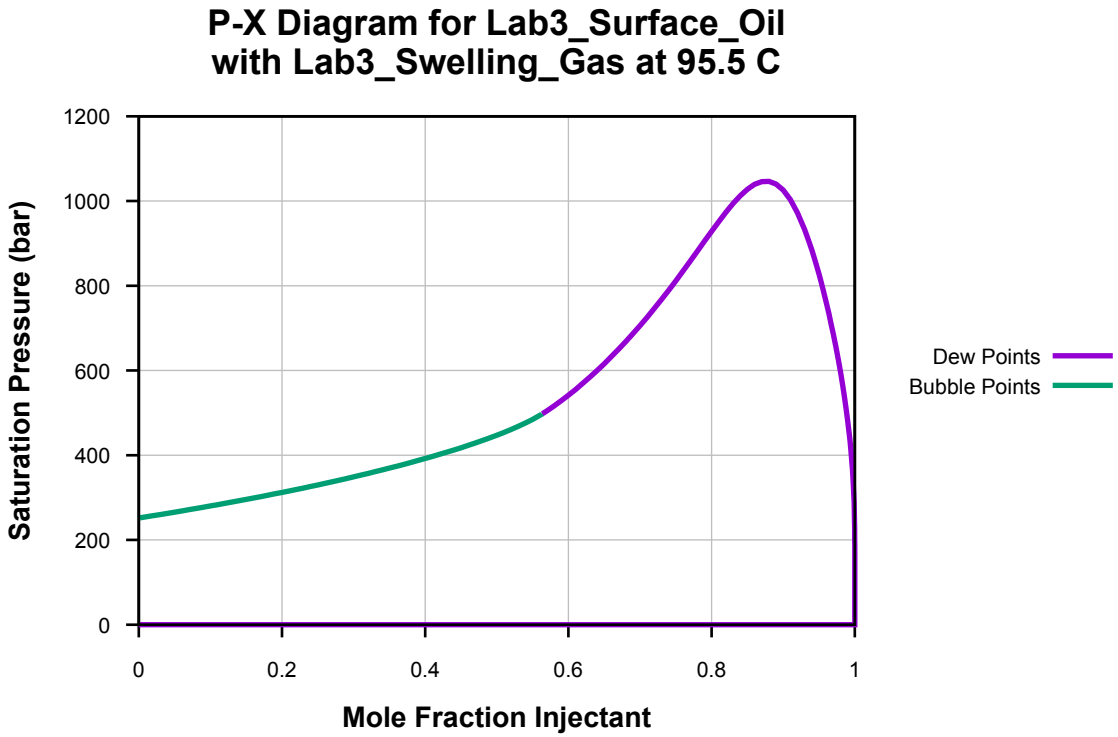

Figure 125: Saturation Pressure vs. Mole Fraction Injectant at 95.5 C, P-X Diagram for Lab3_-Surface_Oil, with Lab3_Swelling_Gas at 95.5 C .

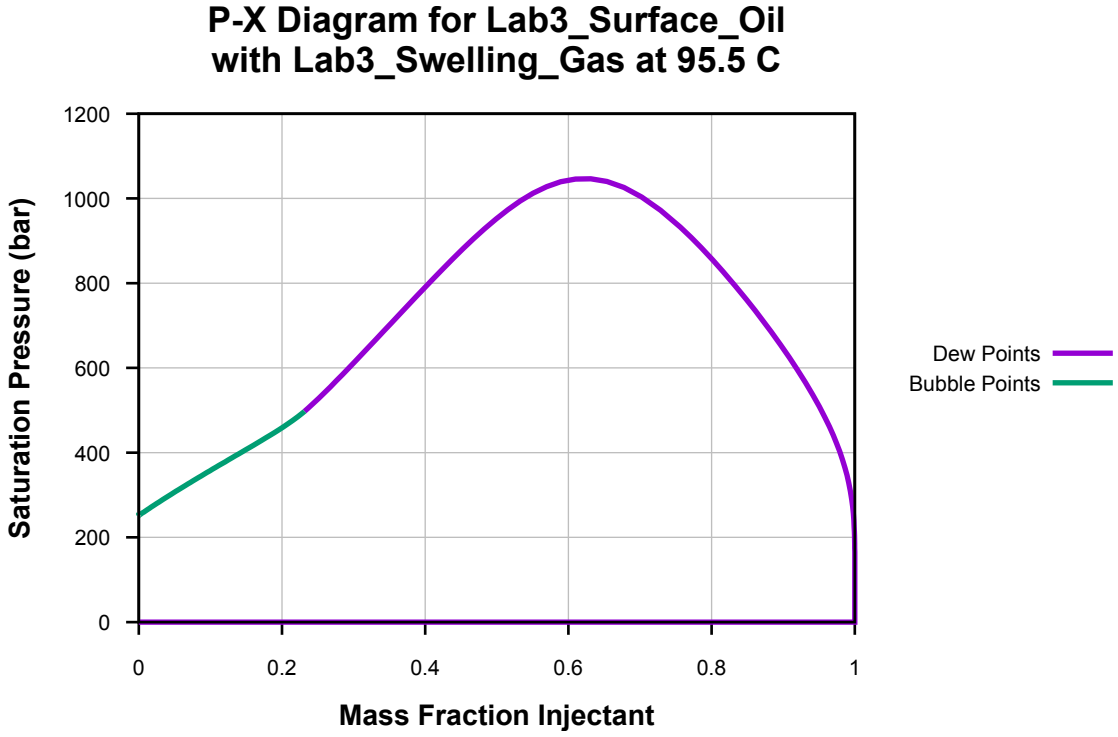

Figure 126: Saturation Pressure vs. Mass Fraction Injectant at 95.5 C, P-X Diagram for Lab3_-Surface_Oil, with Lab3_Swelling_Gas at 95.5 C .

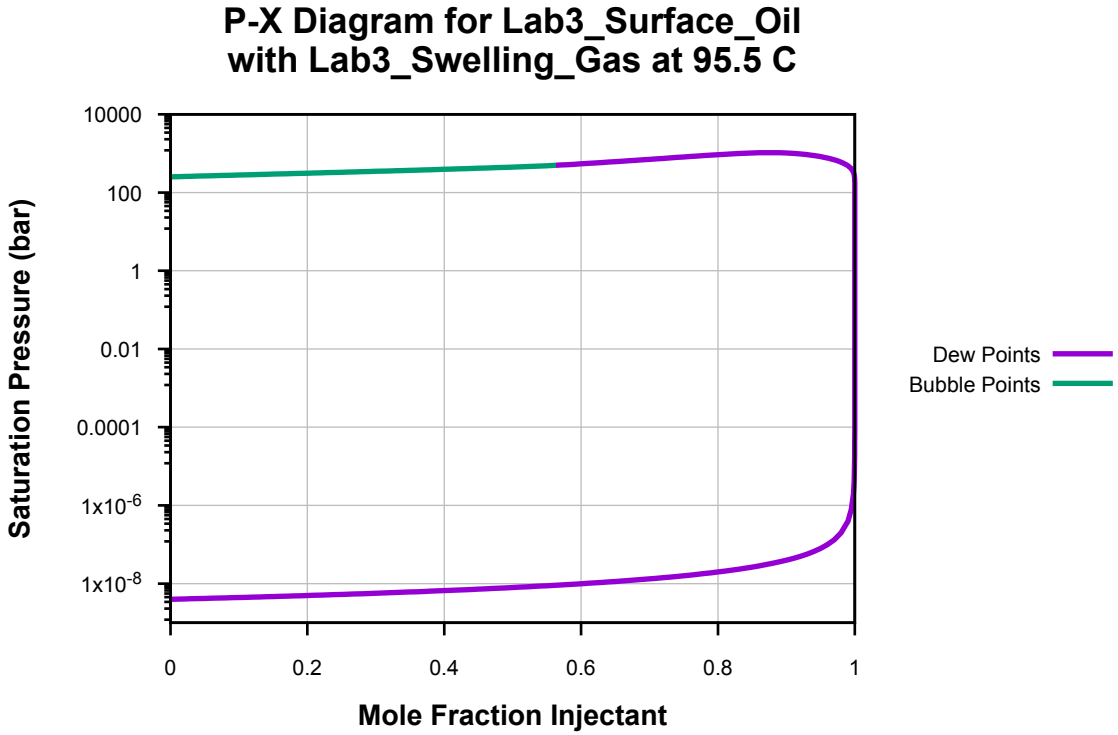

Figure 127: Log of Saturation Pressure vs. Mole Fraction Injectant at 95.5 C, P-X Diagram for Lab3_Surface_Oil, with Lab3_Swelling_Gas at 95.5 C .

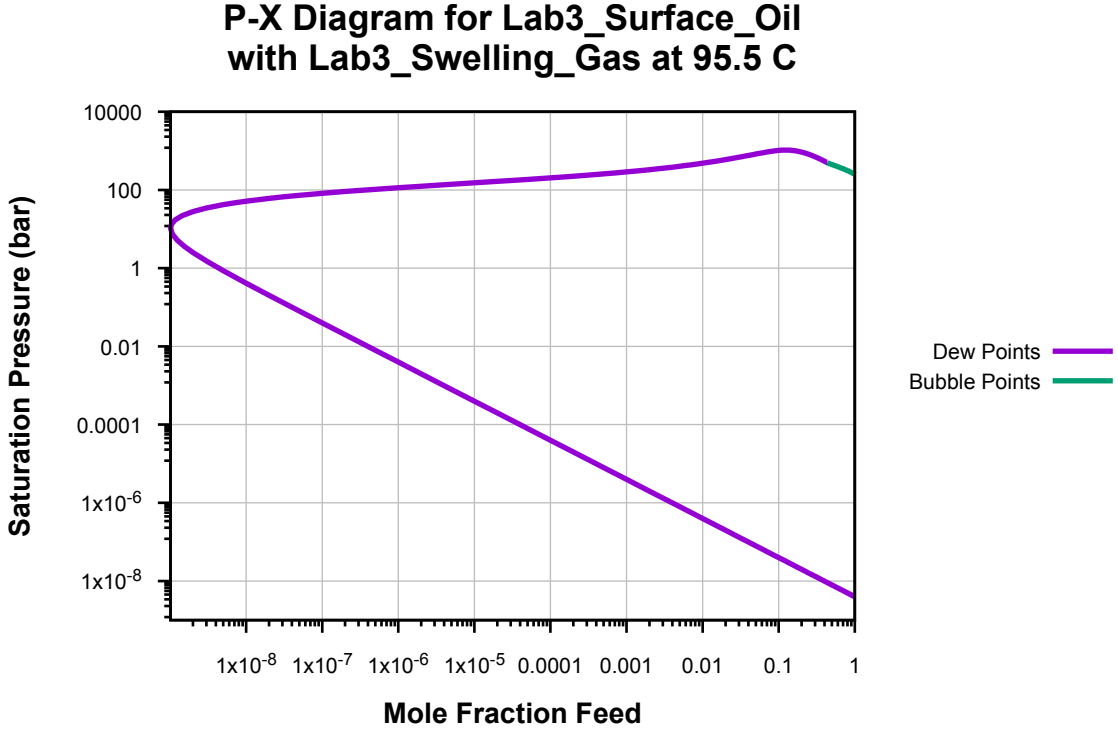

Figure 128: Log of Saturation Pressure vs. Log of Mole Fraction Feed at 95.5 C, P-X Diagram for Lab3_Surface_Oil, with Lab3_Swelling_Gas at 95.5 C .

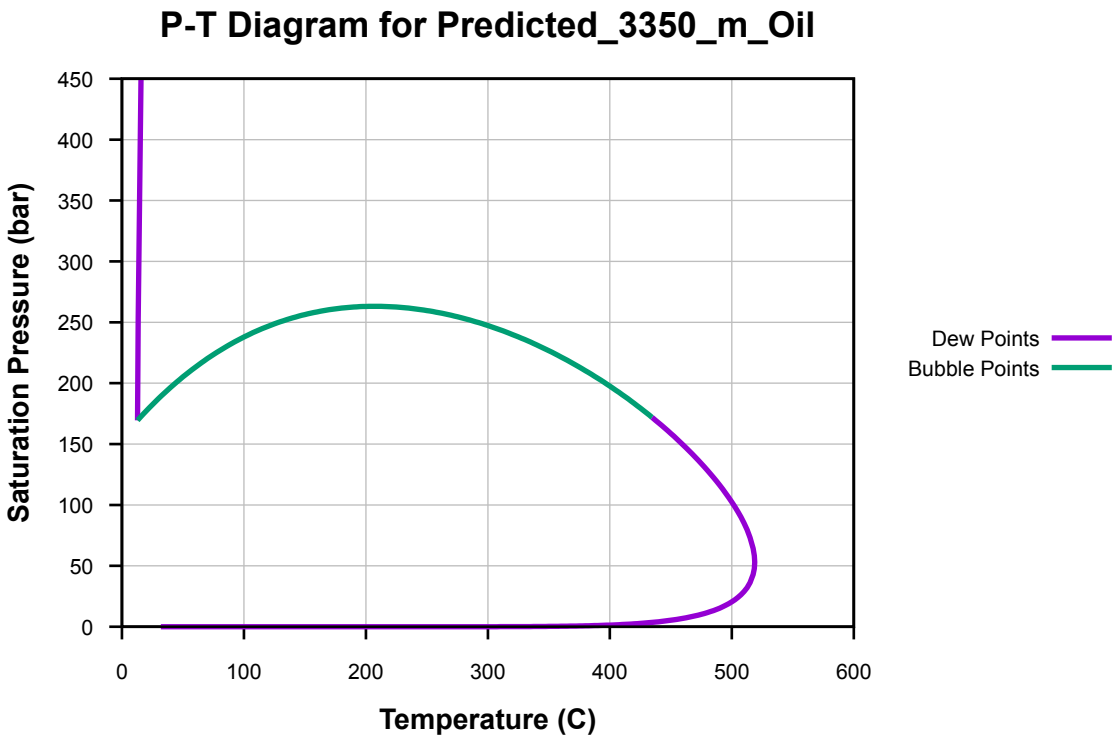

Figure 129: Saturation Pressure vs. Temperature, P-T Diagram for Predicted_3350_m_Oil.

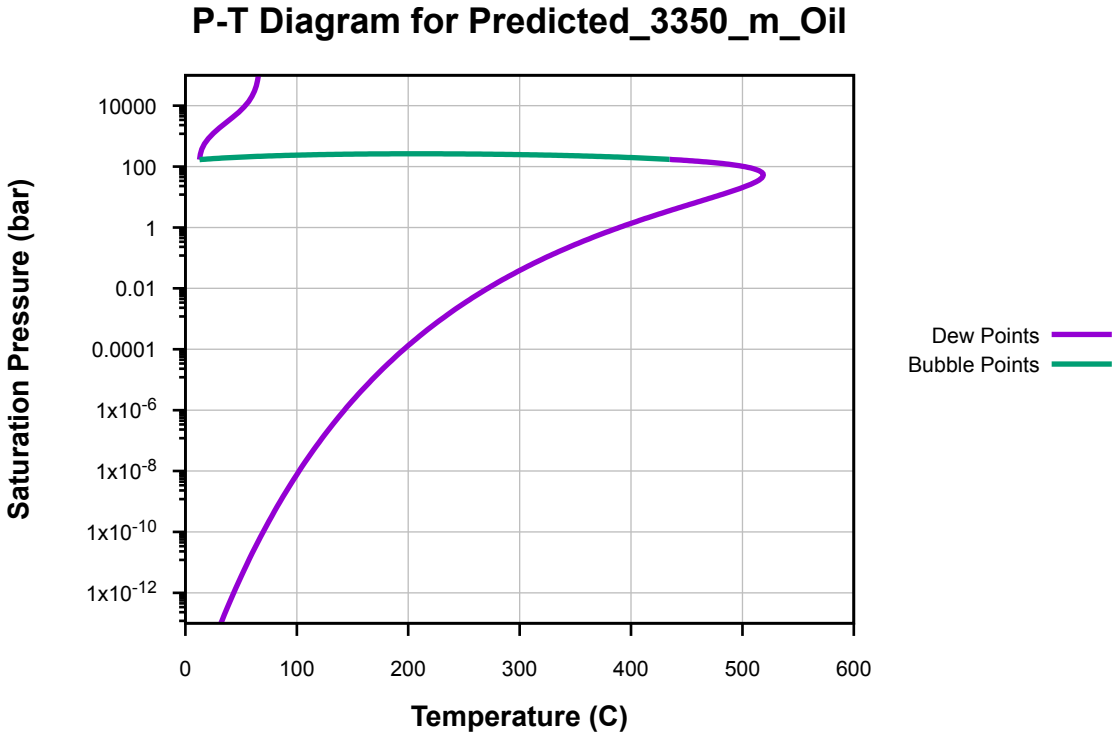

Figure 130: Log of Saturation Pressure vs. Temperature, P-T Diagram for Predicted_3350_m_Oil.

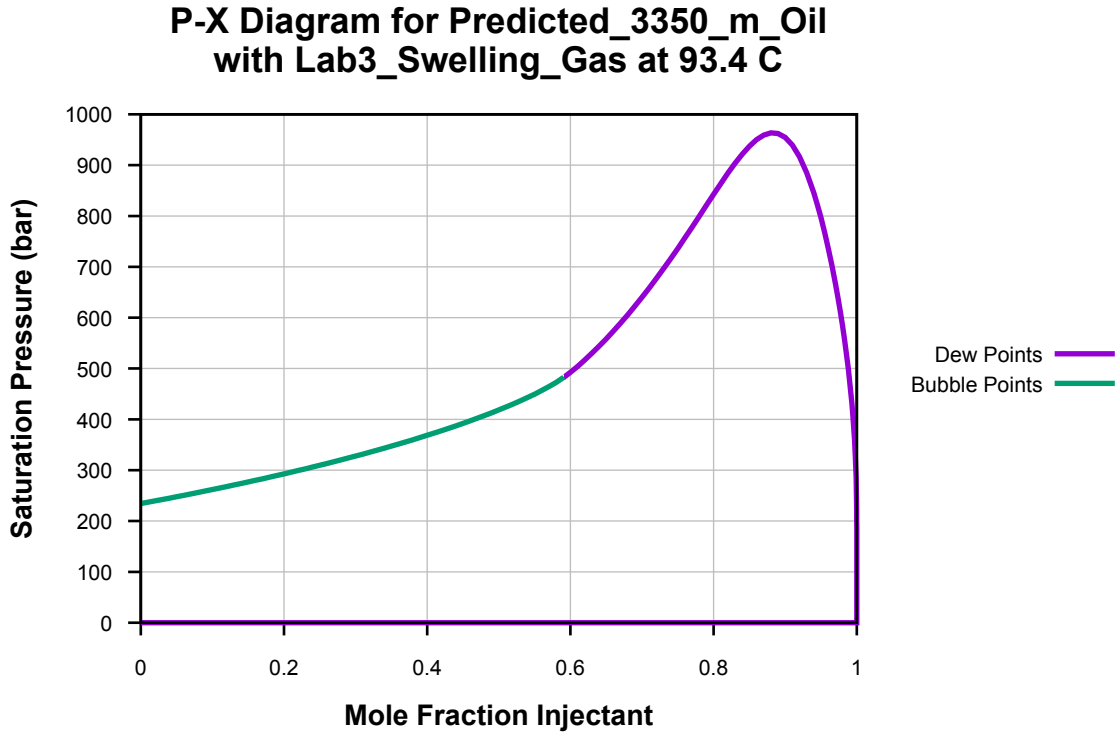

Figure 131: Saturation Pressure vs. Mole Fraction Injectant at 93.4 C, P-X Diagram for Predicted_-3350_m_Oil, with Lab3_Swelling_Gas at 93.4 C .

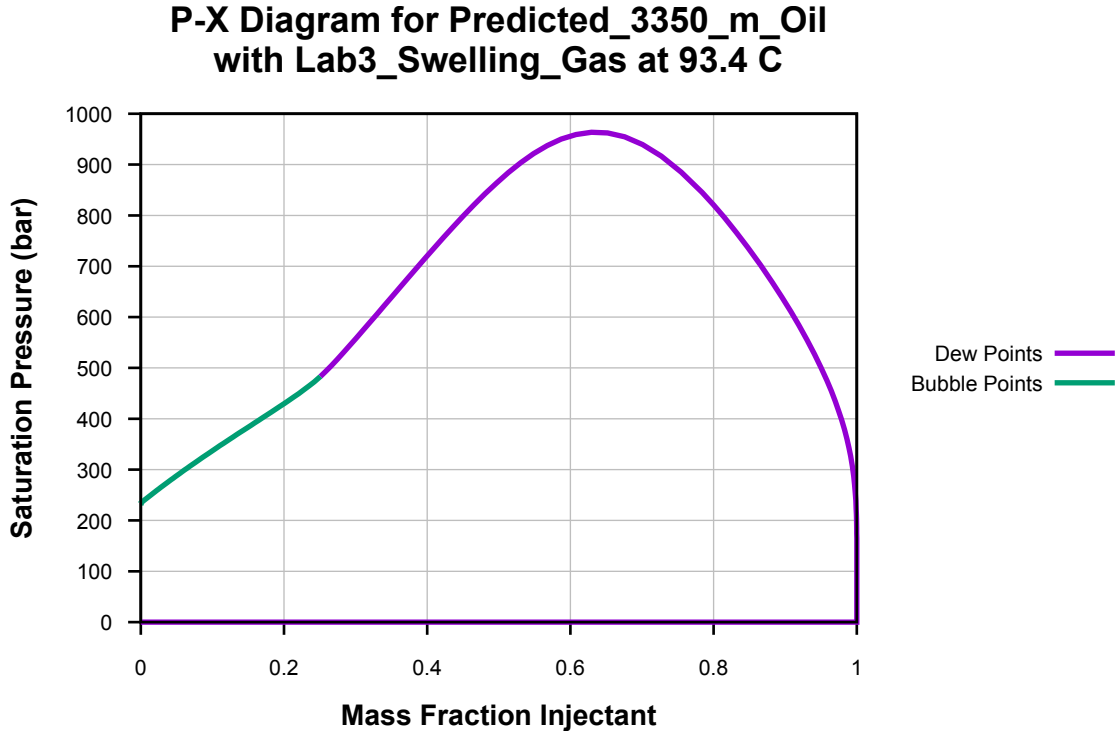

Figure 132: Saturation Pressure vs. Mass Fraction Injectant at 93.4 C, P-X Diagram for Predicted_-3350_m_Oil, with Lab3_Swelling_Gas at 93.4 C .

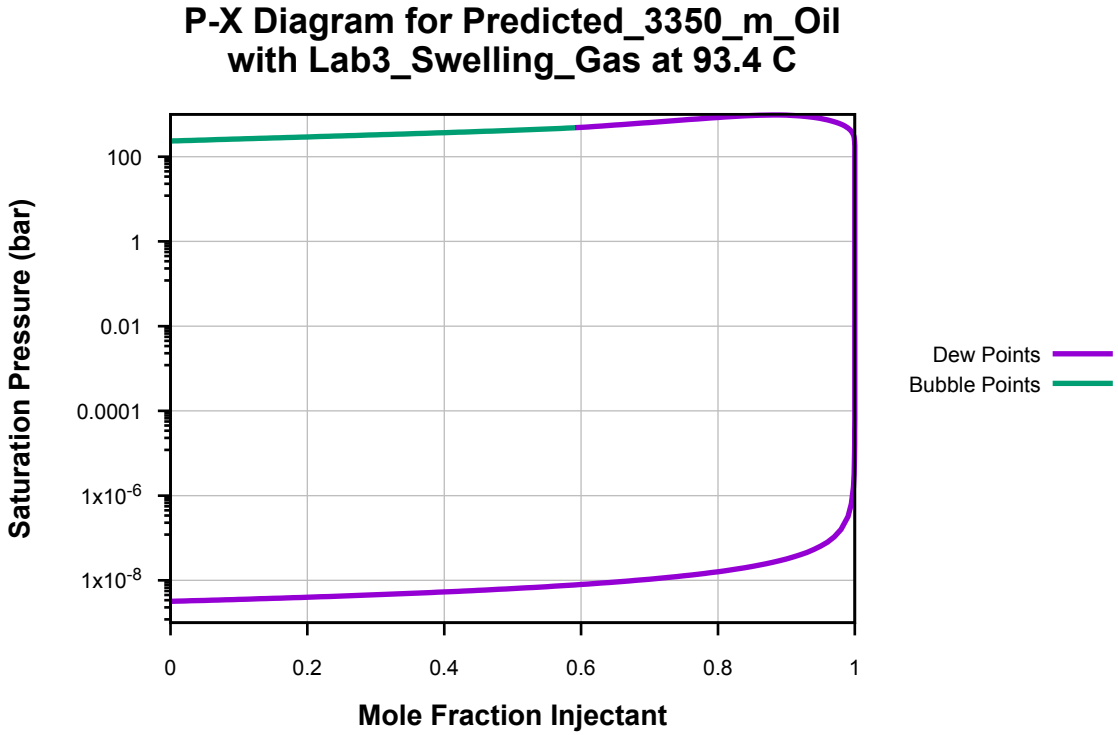

Figure 133: Log of Saturation Pressure vs. Mole Fraction Injectant at 93.4 C, P-X Diagram for Predicted_3350_m_Oil, with Lab3_Swelling_Gas at 93.4 C .

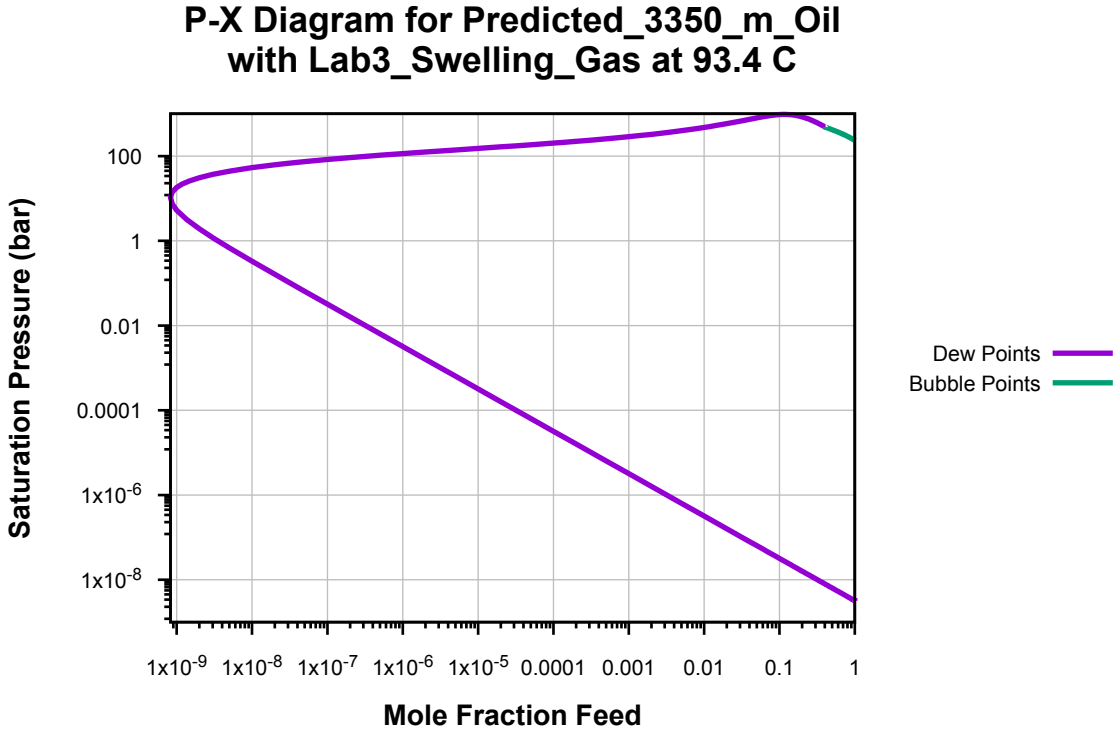

Figure 134: Log of Saturation Pressure vs. Log of Mole Fraction Feed at 93.4 C, P-X Diagram for Predicted_3350_m_Oil, with Lab3_Swelling_Gas at 93.4 C .

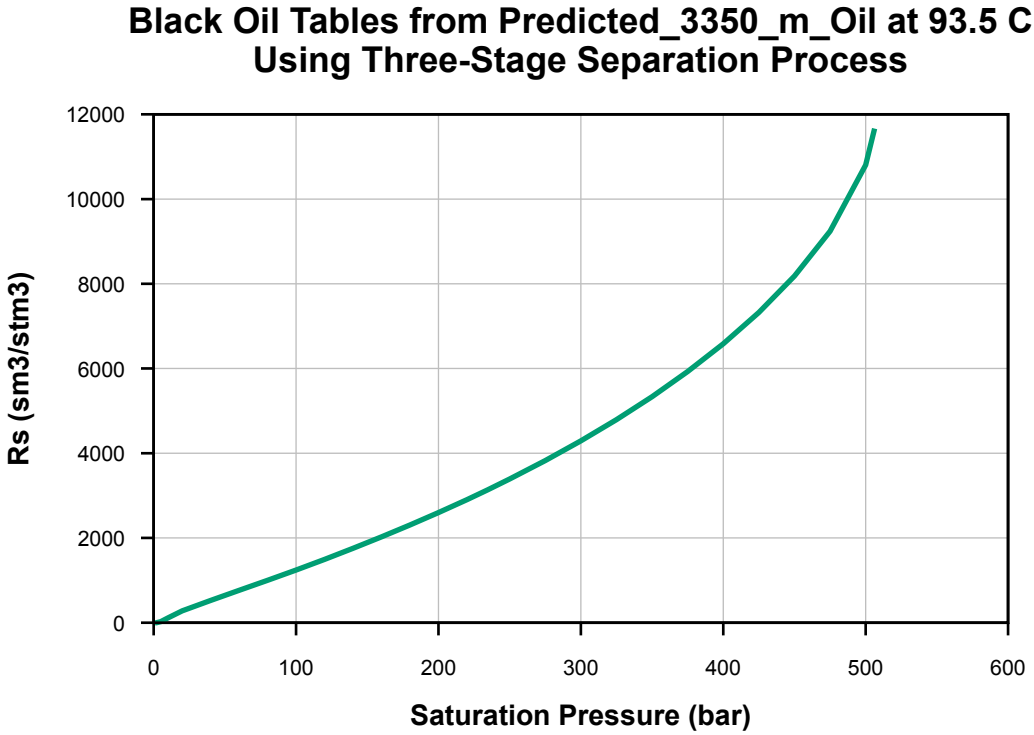

Figure 135: Rs vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.

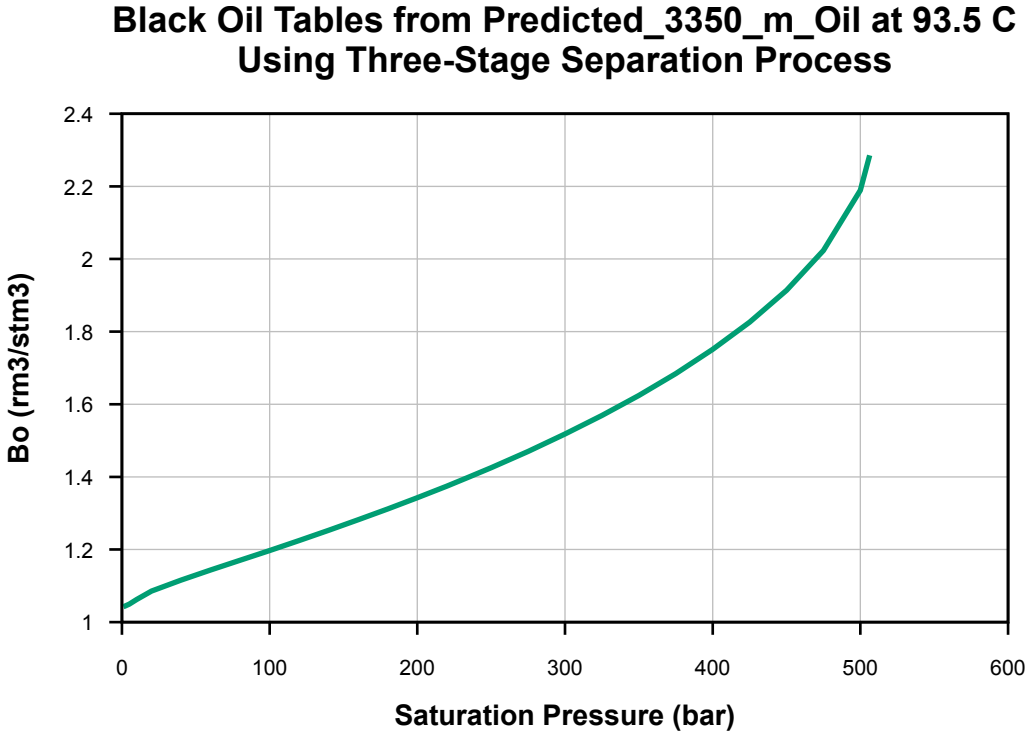

Figure 136: Bo vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.

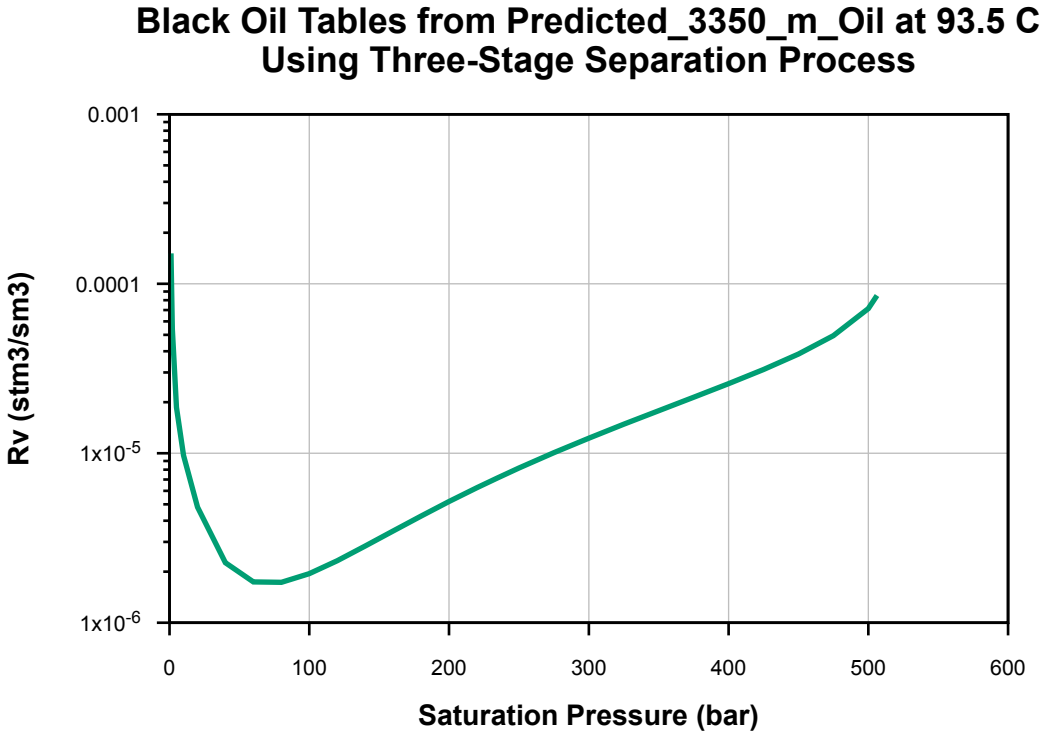

Figure 137: Rv vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.

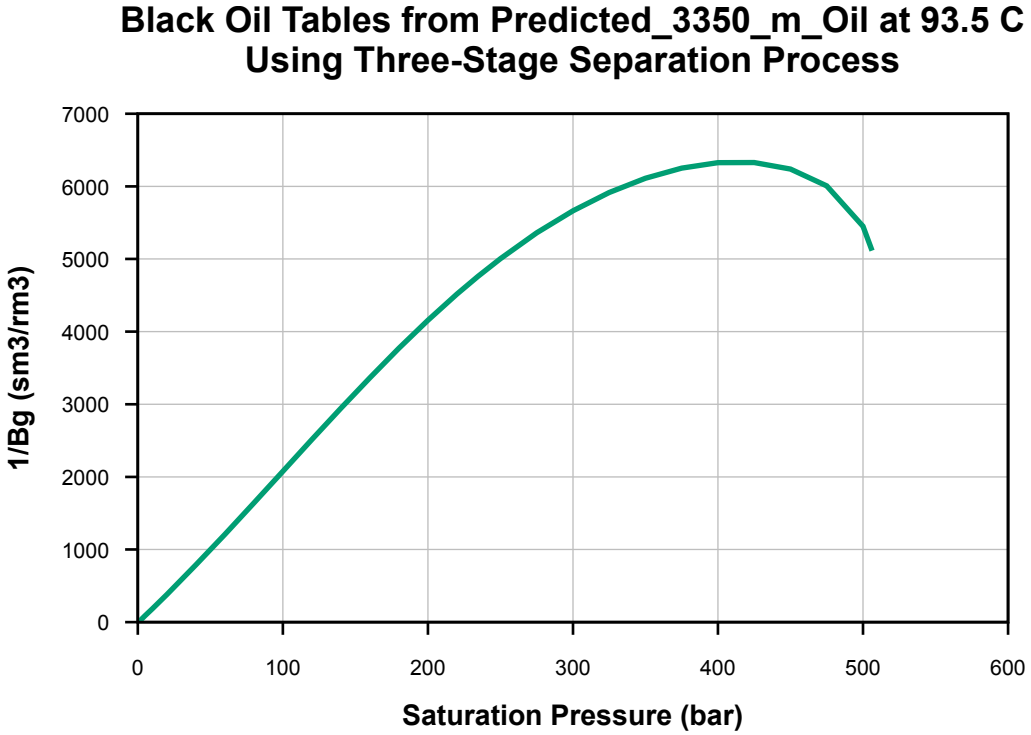

Figure 138: 1/Bg vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.

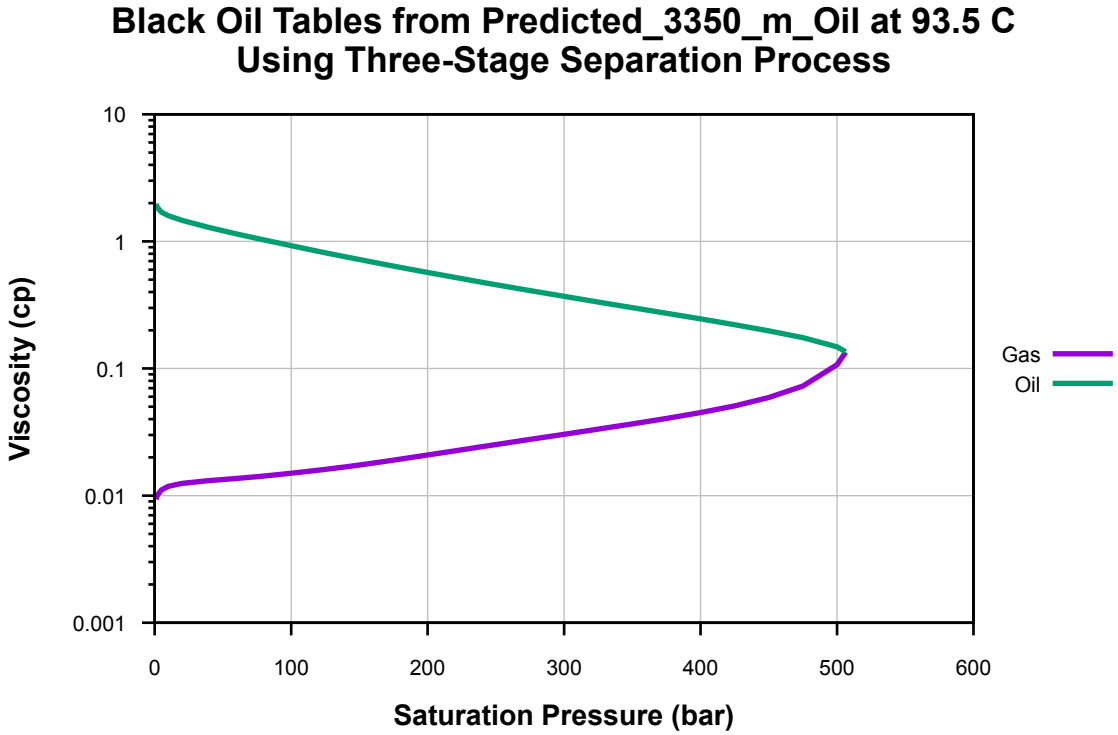

Figure 139: Viscosity vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.

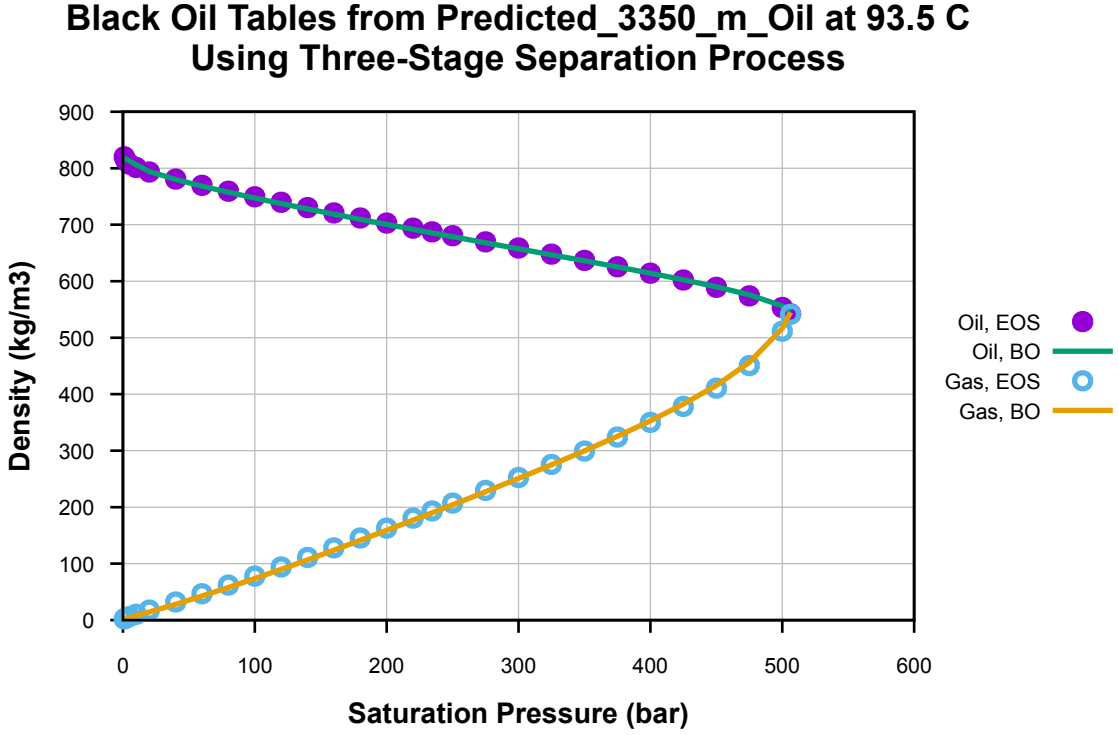

Figure 140: Density vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.

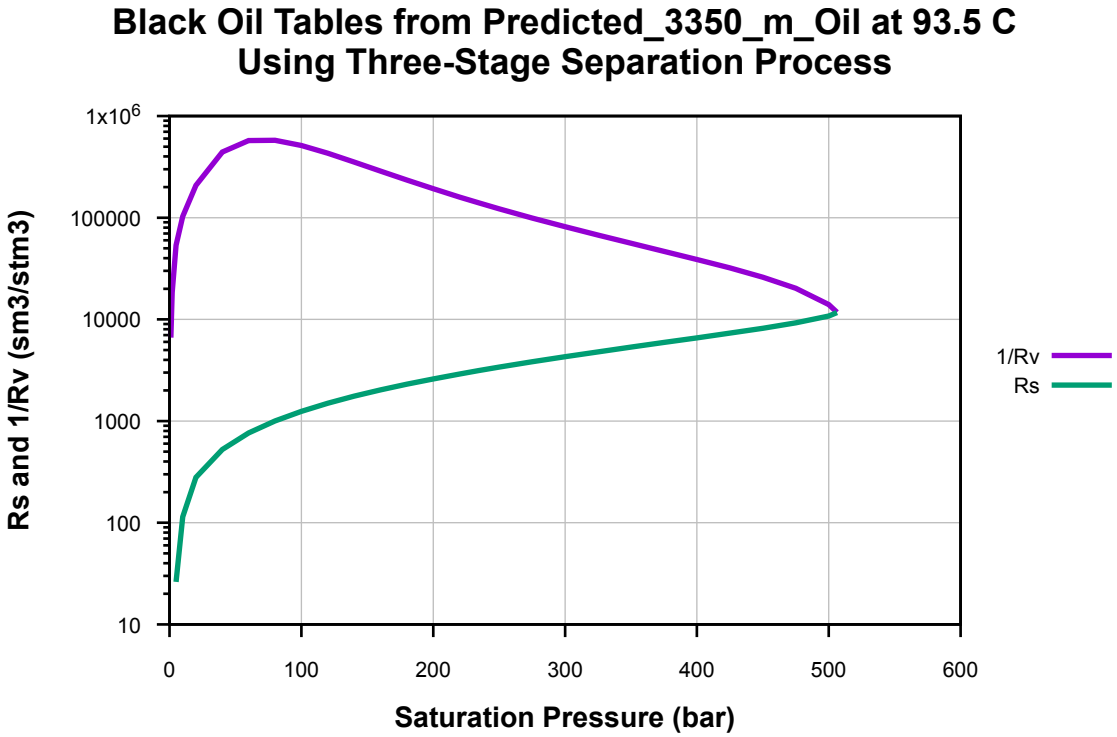

Figure 141: Rs and 1/Rv vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.