

# Crude Oil Assay – Hibernia (from ExxonMobil site)

HIBER11Z	Whole		Hvy		Vacuum		Vacuum	
	crude -	Butane	Lt.	Naphtha	Kerosene	Diesel	Gas Oil	Residue
	200 to	and	C5- 165F	165 -	330 -	480 -	650 -	1000F+
	1499	Lighter -	60 to 165	330F 165	480F 330	650F 480	650 to	1000 to
	1499	200 to 60	60 to 165	to 330	to 480	to 650	1000	1499
Cut volume, %	100	1.51	5.68	14.83	14.76	17.03	28.89	17.29
API Gravity,	33.9	121.42	81.02	54.91	43.1	34.04	24.71	12.65
Specific Gravity (60/60F),	0.8555	0.5595	0.6658	0.7591	0.8104	0.8548	0.9058	0.9816
Carbon, wt %		82.43	83.95	85.88	86.21	86.51	86.39	
Hydrogen, wt %		17.57	16.05	14.12	13.77	13.23	12.81	
Pour point, F	37				-62	17	103	103
Neutralization number (TAN), MG/GM	0.095					0.054	0.116	0.212
Sulfur, wt%	0.54			0.0011	0.0213	0.2431	0.6814	1.4428
Viscosity at 20C/68F, cSt	12.49	0.35	0.41	0.75	1.79	6.88	120.83	472934.04
Viscosity at 40C/104F, cSt	6.21	0.3	0.35	0.62	1.31	3.96	40.48	34316.32
Viscosity at 50C/122F, cSt	4.7	0.28	0.32	0.56	1.15	3.16	26.22	11920.94
Mercaptan sulfur, ppm	1			1.5	2.1			
Nitrogen, ppm	1350	0	0	0	0.2	88.5	1196.1	4868
CCR, wt%	2.45					0	0.26	11.9
N-Heptane Insolubles (C7 Asphaltenes), wt%								0.3
Nickel, ppm	1.3					0	0	6.5
Vanadium, ppm	0.7					0	0	3.5
Calcium, ppm	0.5							
Reid Vapor Pressure (RVP) Whole Crude, psi	3.4							
Heat of Combustion (Gross), BTU/lb	19429							
Heat of Combustion (Net), BTU/lb	18222	19288	18852	18626	18567			
Hydrogen Sulfide (dissolved), ppm	0							
Salt content, ptb	0.1							
Paraffins, vol %		100	84.28	51.64	47.08	41.83	26.36	
Naphthenes, vol %		0	14.13	31.88	32.71	34.07	37.12	
Aromatics (FIA), vol %				16.48	16.9			
Distillation type, D-	1160	86	86	86	86	86	1160	1160
ASTM IBP, F	17.9	-127.8	95.9	208.1	363.8	506	690.6	1038.8
5 vol%, F	135.3	-94.6	101.4	213.7	368.2	510.8	695.2	1043.4
10 vol%, F	201.5	-52.1	106	216.6	370.4	512.9	706.3	1055.3
20 vol%, F	306.9	10.5	110.9	223.6	375.5	518.9	728.3	1081.3
30 vol%, F	403.1	29.8	114.6	231.7	381.8	526.3	752.6	1111.3
40 vol%, F	497.7	35.9	117.1	240.8	389.1	535.3	778.5	1145.4
50 vol%, F	597	35.8	121.9	249.1	396.4	543.8	806.4	1183.7
60 vol%, F	705	38.8	129	258.8	405.1	553.8	835.7	1228.7
70 vol%, F	806.7	43.7	134.1	269	414	564.5	865.7	1277.3
80 vol%, F	925.9	47.3	139.3	279.9	423.8	576	897.7	1330.3
90 vol%, F	1082.4	46.1	141.8	291.1	434	587.8	929	1385.2
95 vol%, F	1213.2	46.1	144.4	297.4	439.8	594.4	947.8	1419.1
ASTM EP, F	1401.5	47.2	147	302.5	444.5	605	969.7	1458
Freeze point, F					-48.2	29		
Smoke point, mm					21.3			
Naphthalenes (D1840), vol%					4.4			
Viscosity at 100C/212F, cSt	1.81	0.21	0.23	0.38	0.69	1.44	5.97	316.71
Viscosity at 150C/302F, cSt	1.03	0.17	0.18	0.28	0.47	0.88	2.58	42.23
Cetane Index 1990 (D4737),	33.1	152.4	44.1	29.4	43.8	54.1	56.9	45.5
Cloud point, F					-54	24		
Aniline pt, F					138.2	161.3	191.7	

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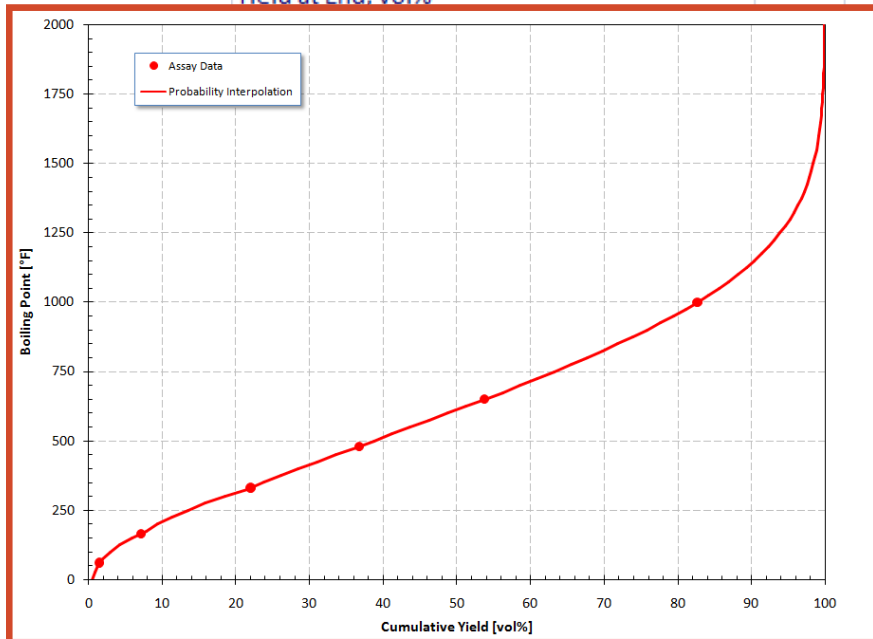
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TBP Temp At Start, °F			60	165	330	480	650	1000
TBP Temp At End, °F		60	165	330	480	650	1000	
Yield at Start, vol%			1.52	7.2	22.03	36.79	53.82	82.71
Yield at End, vol%		1.52	7.2	22.03	36.79	53.82	82.71	100
Yield at Mid-Increment, vol%			4.36	14.615	29.41	45.305	68.265	91.355

Create cumulative yield curve  
from incremental values

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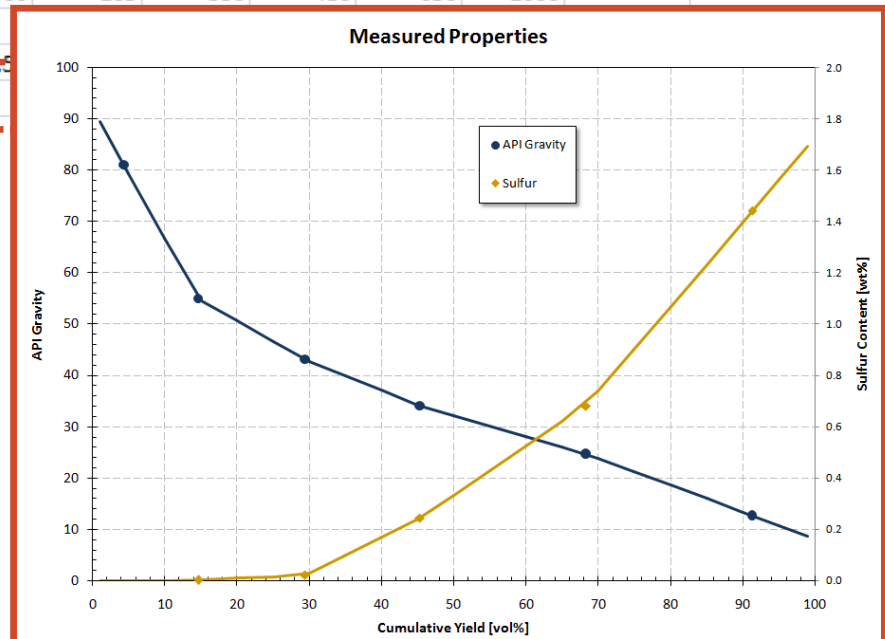
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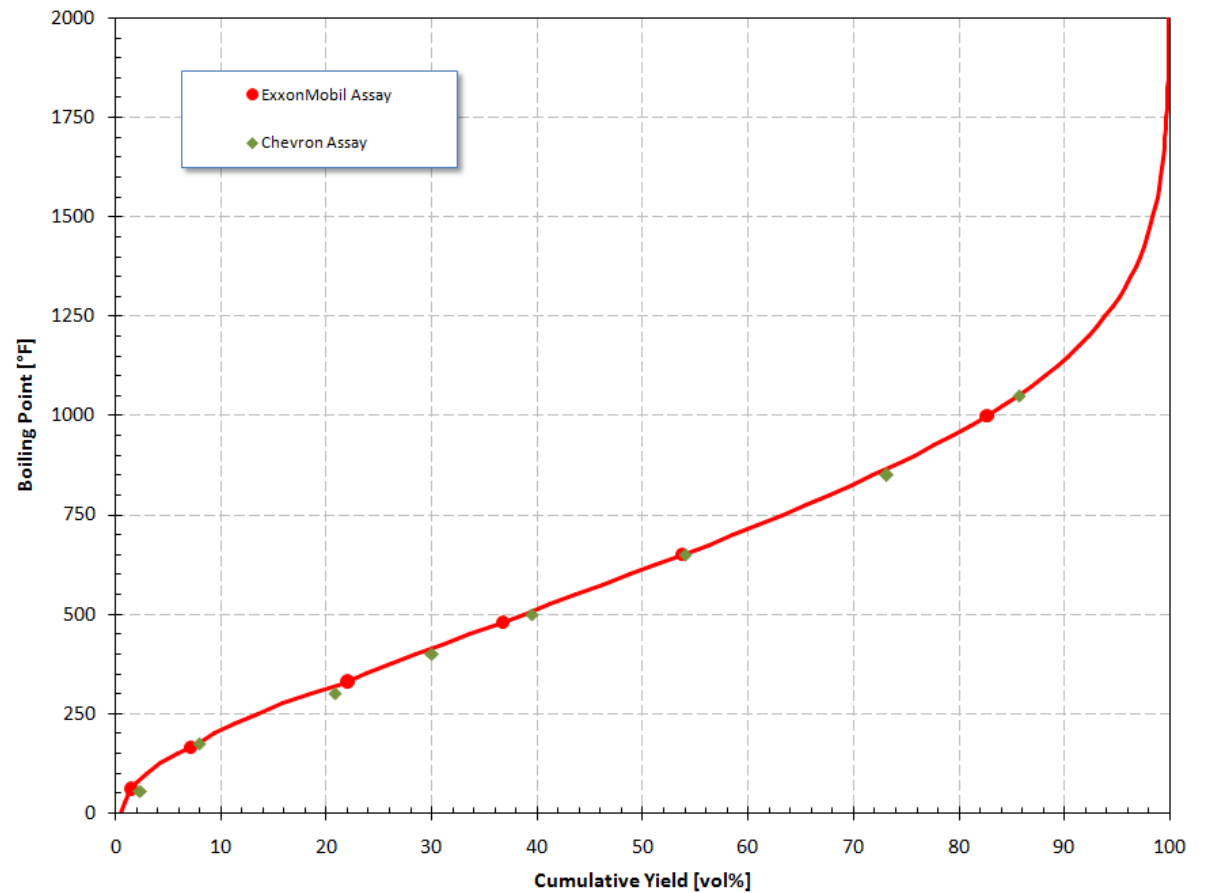


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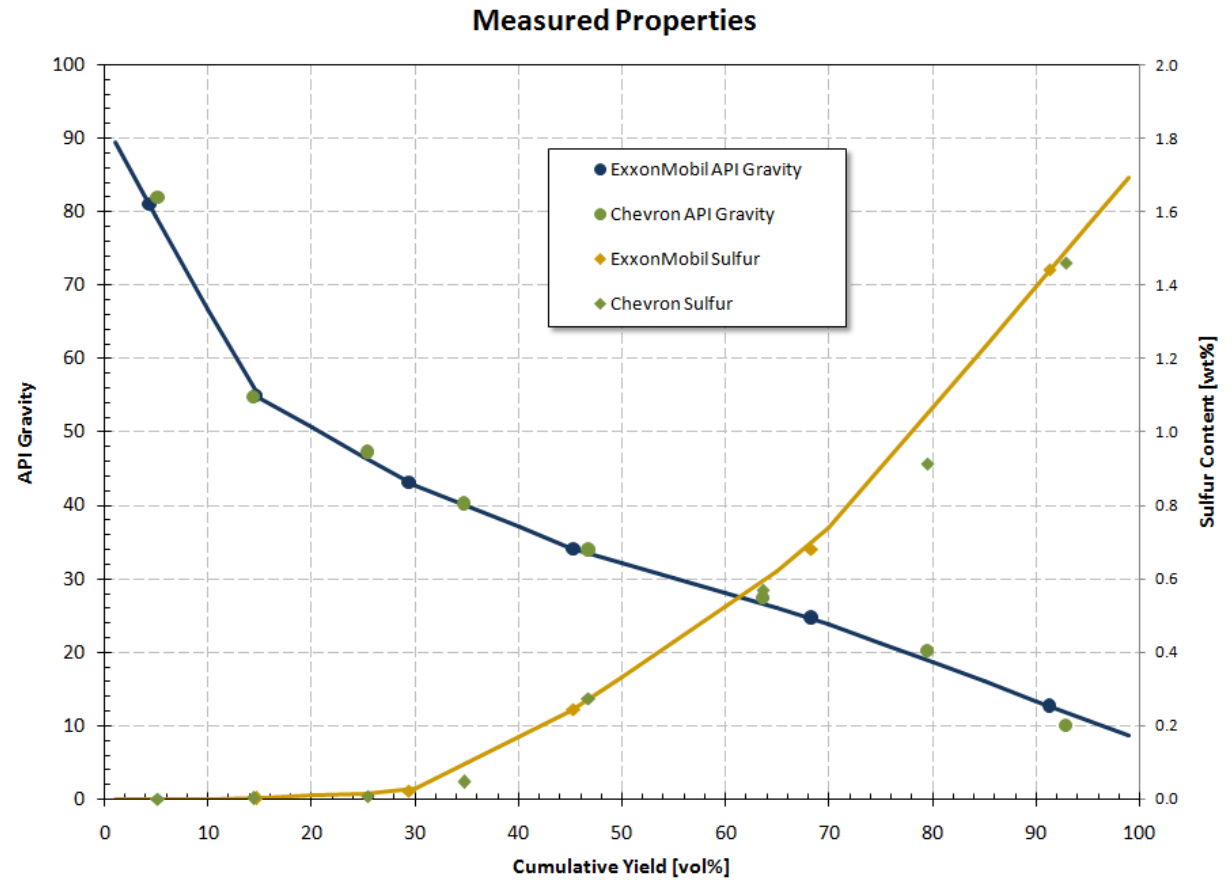
# Comparison of Chevron & ExxonMobil Assays

	ExxonMobil	Chevron
API Gravity	33.9	33.53
Specific Gravity (60/60F)	0.8555	0.8574
Sulfur, wt%	0.54	0.53
Viscosity, cSt at 40°C (104°F)	6.21	6.73
Viscosity, cSt at 50°C (122°F)	4.7	5.17
Vanadium, ppm	0.7	0.87
Nickel, ppm	1.3	0.74
CCR / MCR, wt%	2.45	2.61

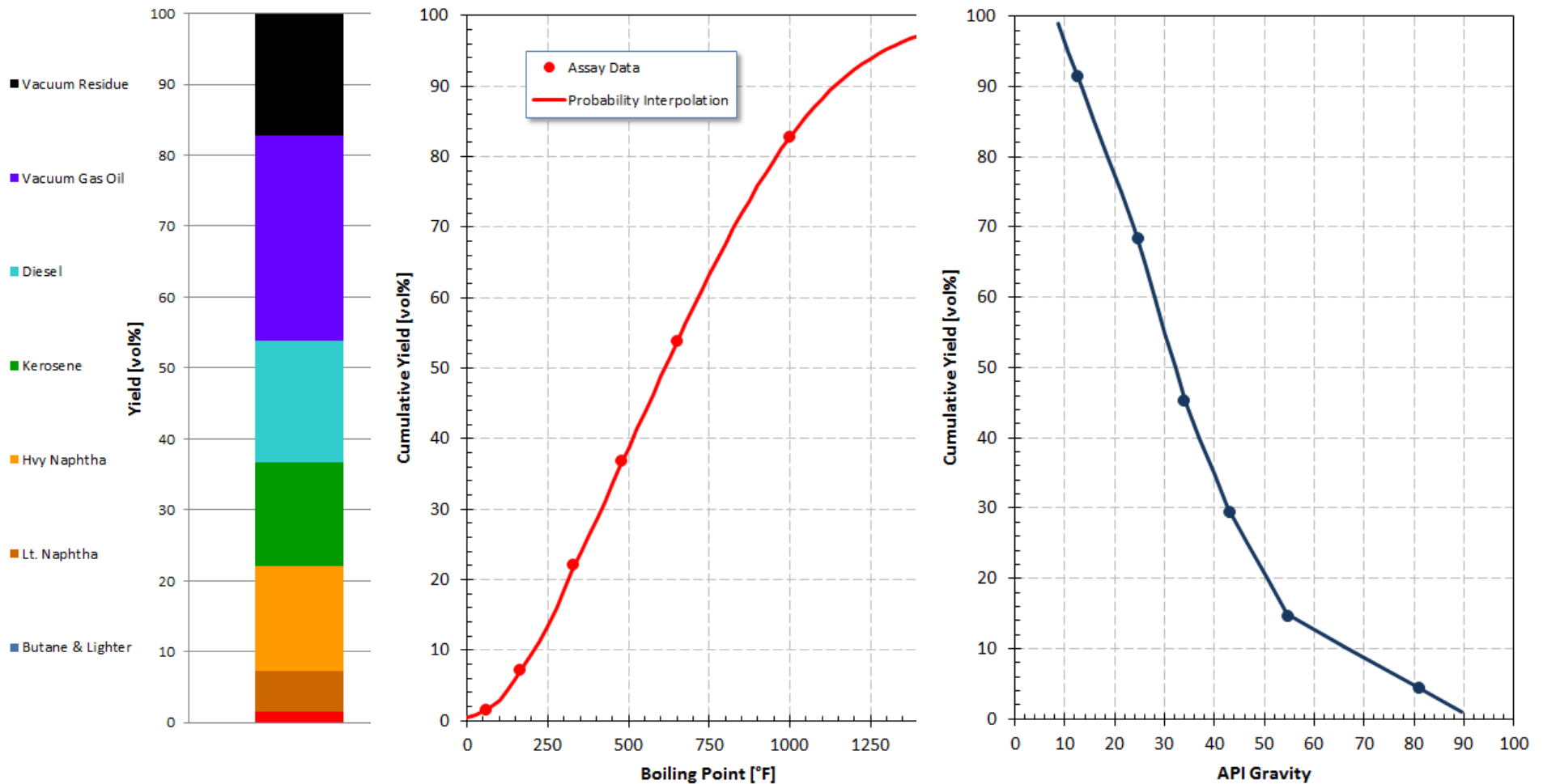


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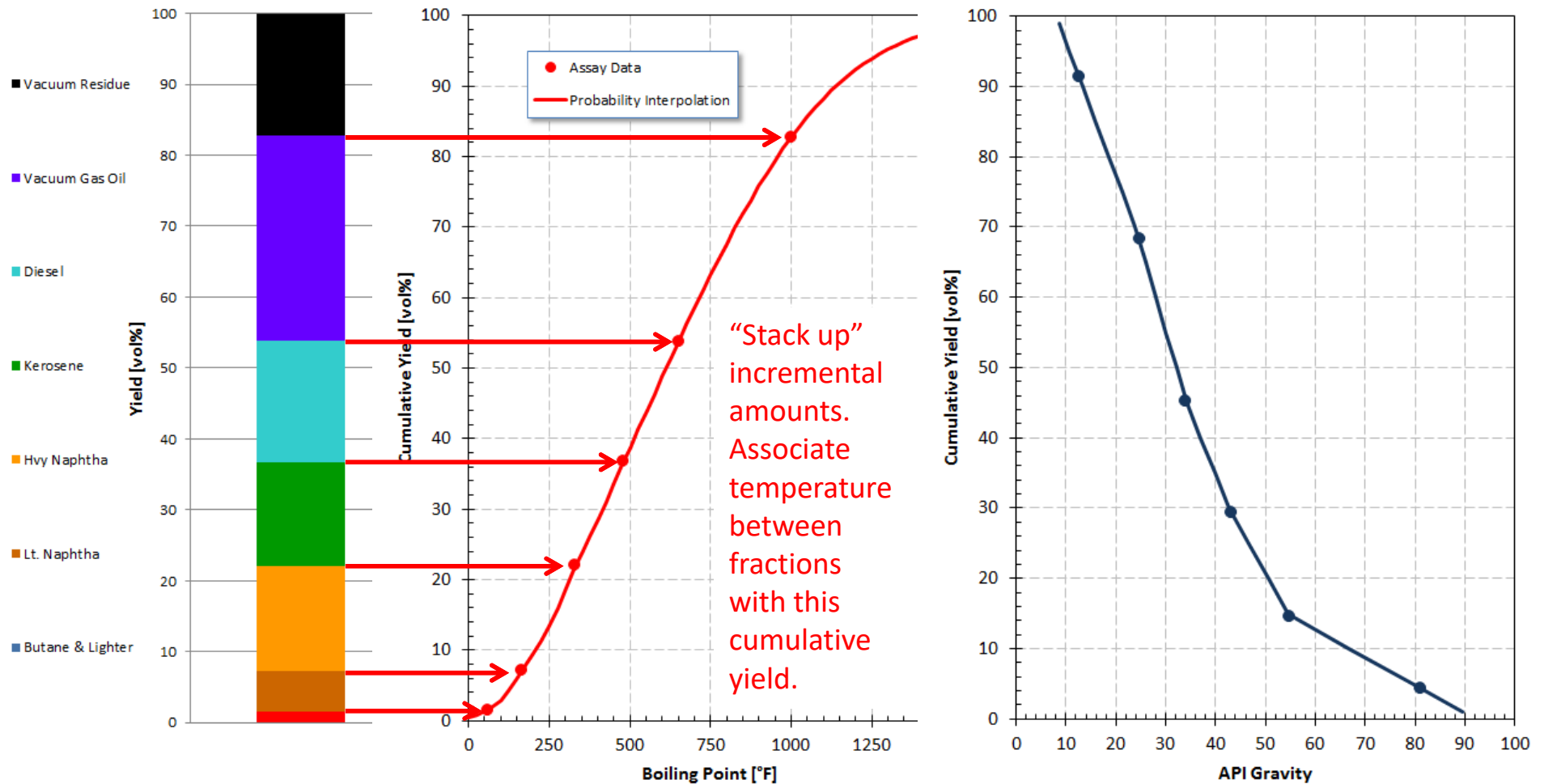
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# Comparison & Use of Yield Values

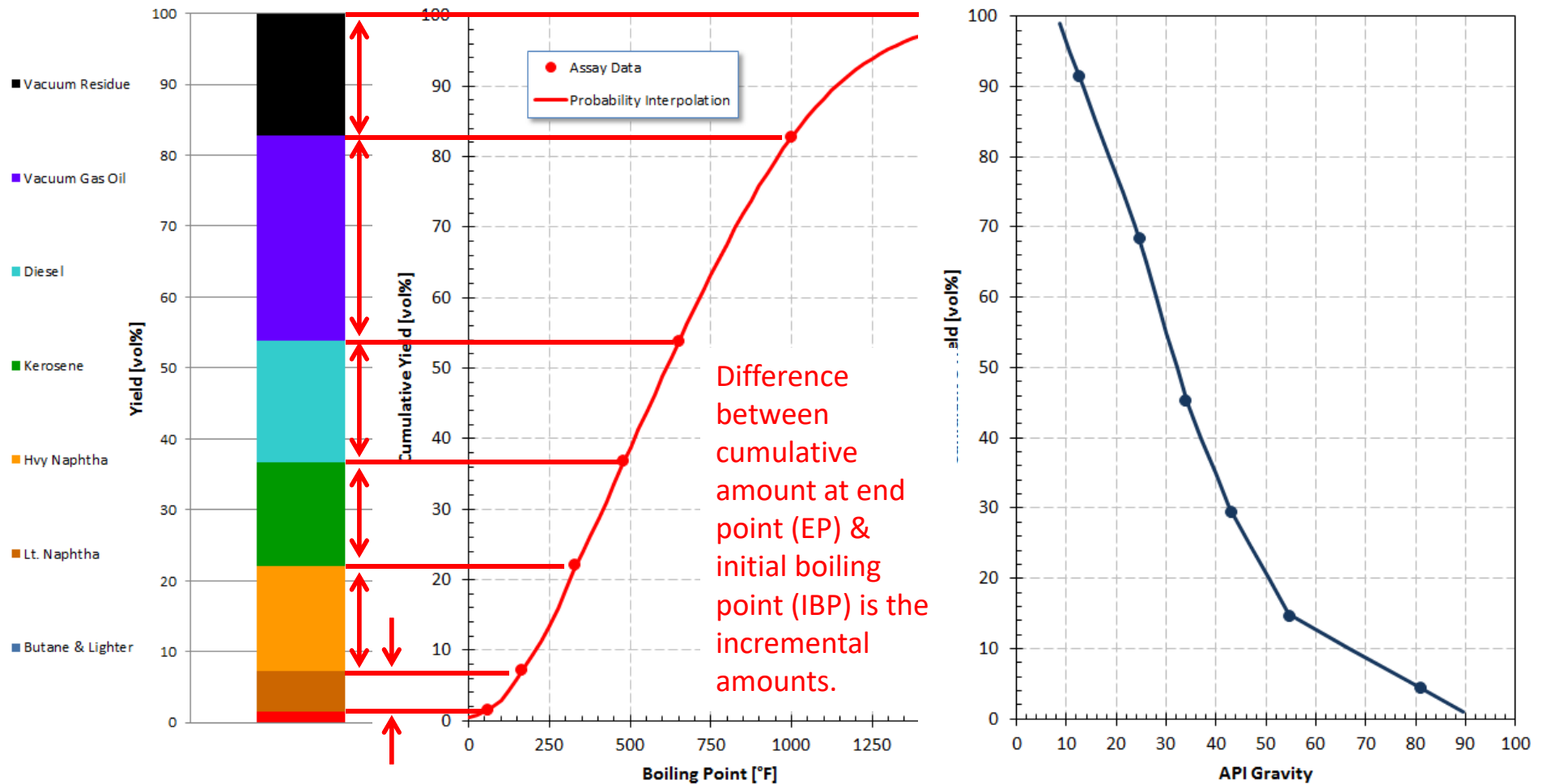


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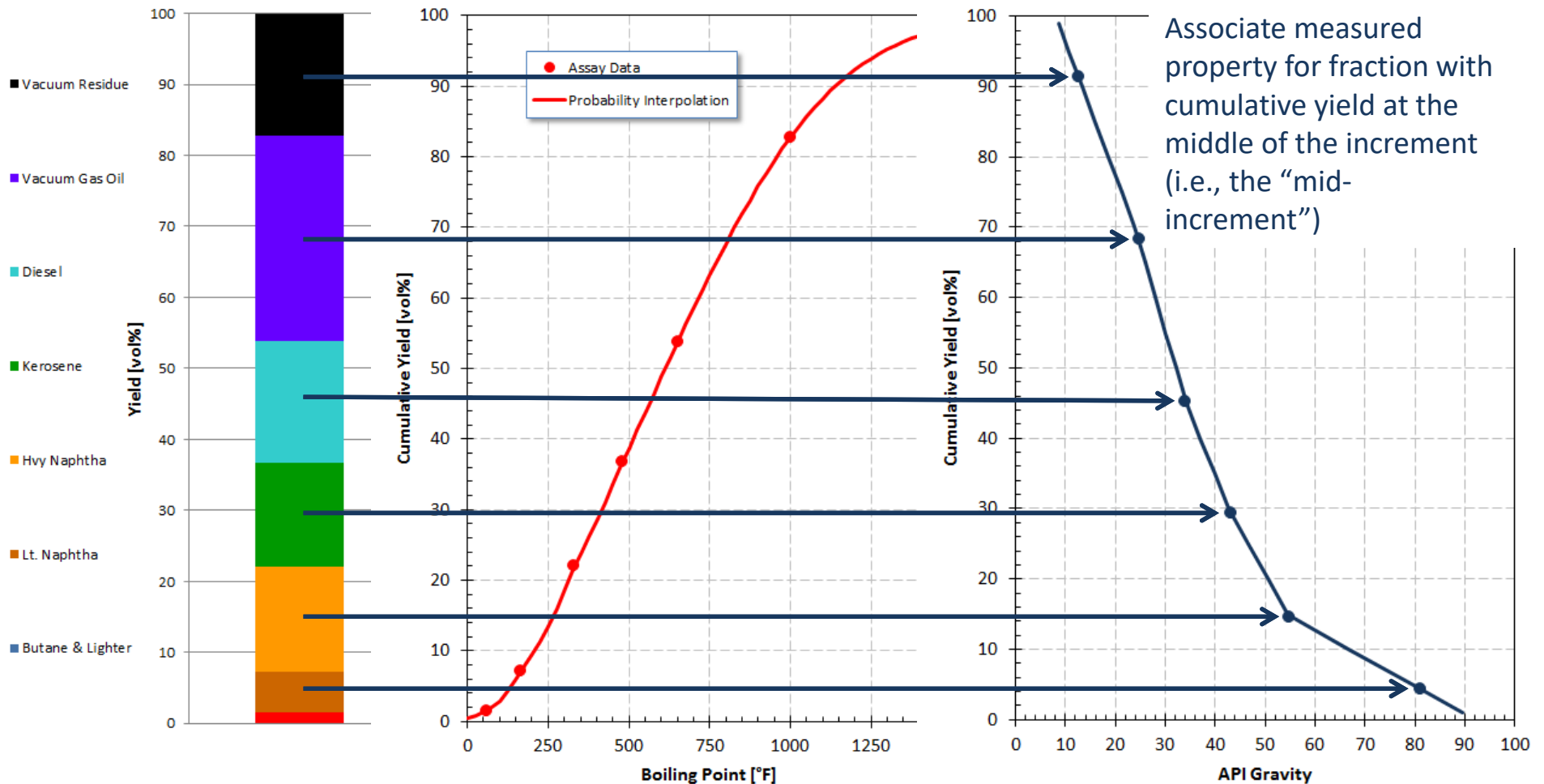




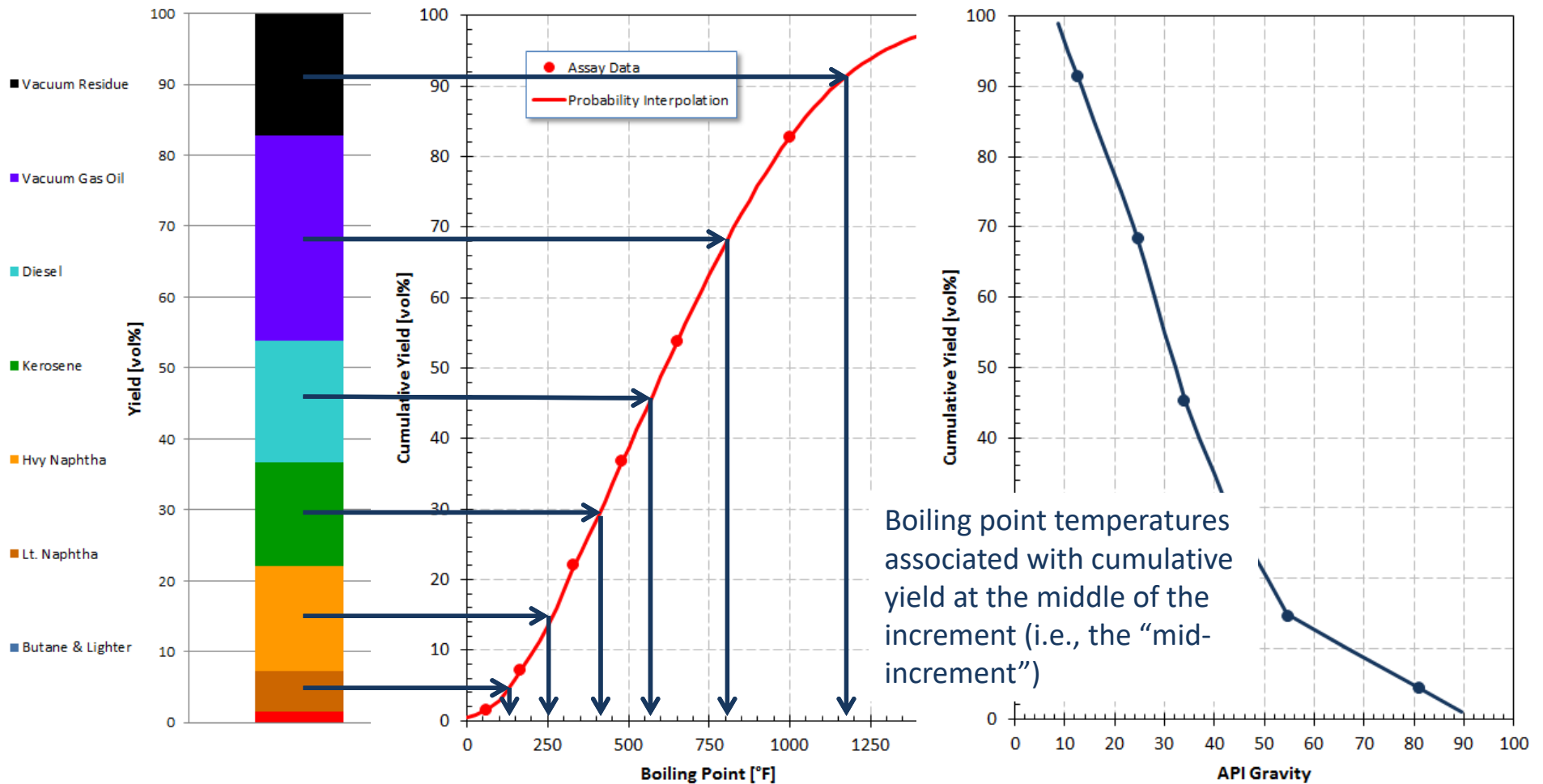
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