

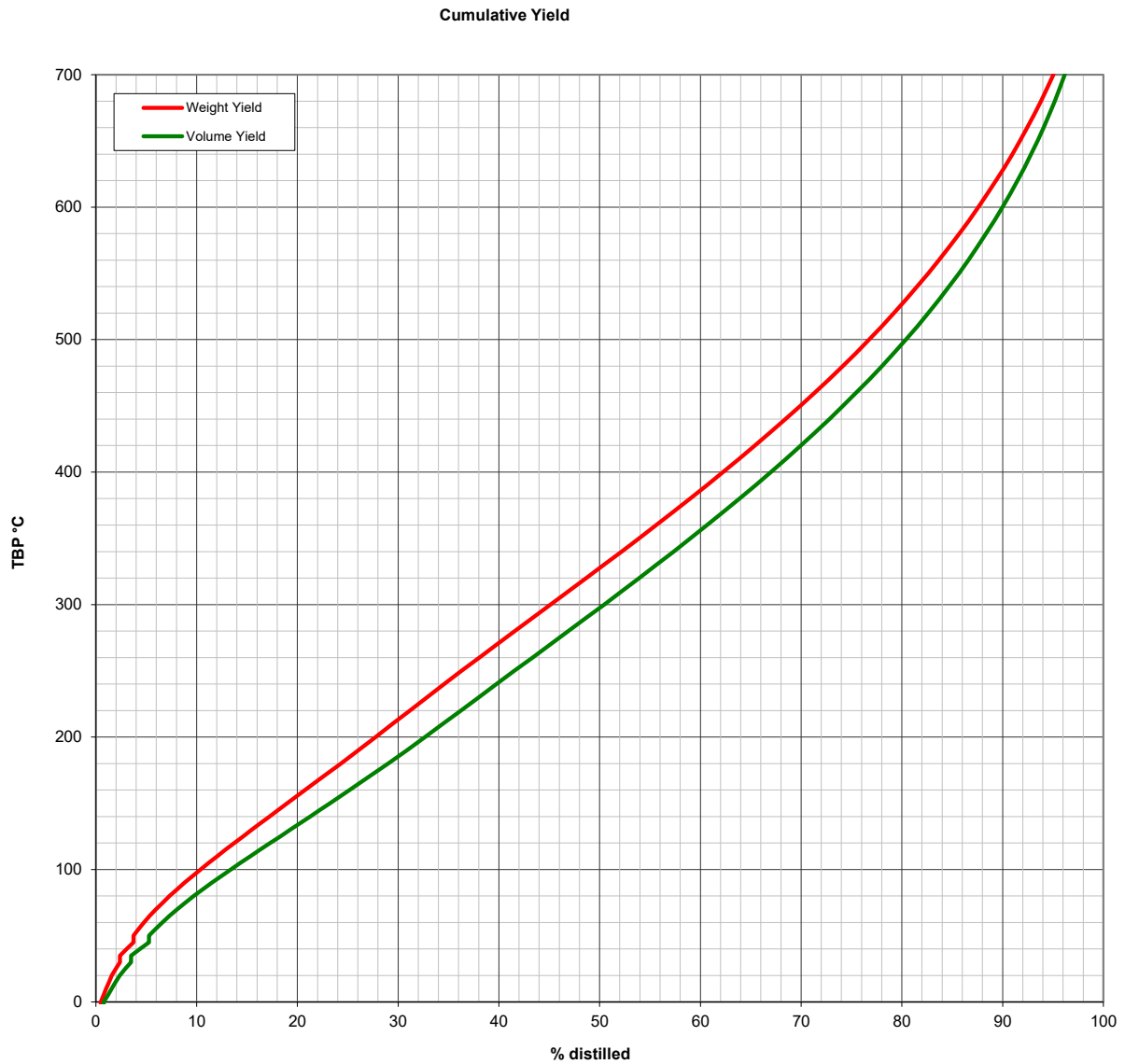
Crude Summary Report

General Information		Molecules (%wt on crude)										Whole Crude Properties			
Reference:	THUN225Y	methane + ethane	0.01									Density @ 15°C (g/cc)	0.8520		
Name:	Thunder Horse	propane	0.21									API Gravity	34.5		
Origin:	USGC	isobutane	0.20									Total Sulfur (% wt)	0.76		
		n-butane	0.88									Pour Point (°C)	-21		
Assay Date:	11/21/2025	isopentane	0.91									Viscosity @ 20°C (cSt)	10.2		
		n-pentane	1.38									Viscosity @ 40°C (cSt)	5.2		
Comments:		cyclopentane	0.14									Nickel (ppm)	8.2		
		C6 paraffins	2.38									Vanadium (ppm)	9.9		
		C6 naphthenes	0.93									Total Nitrogen (ppm)	1003		
		benzene	0.19									Total Acid Number (mgKOH/g)	0.07		
		C7 paraffins	2.42									Mercaptan Sulfur (ppm)	10.8		
		C7 naphthenes	1.61									Hydrogen Sulfide (ppm)	0.0		
		toluene	0.51									Reid Vapor Pressure (kPa)	47.6		
Cut Data		Atmospheric Cuts										Vacuum Cuts			
Start (°C)	IBP	IBP	C5	65	100	150	200	250	300	350	370	370	450	500	550
End (°C)	FBP	C4	65	100	150	200	250	300	350	370	FBP	450	500	550	FBP
Yield (% wt)		1.3	4.1	5.0	8.6	8.8	8.5	8.8	8.8	3.4	42.7	12.6	6.8	5.9	17.4
Yield (% vol)		2.0	5.3	6.1	9.8	9.4	8.9	8.9	8.6	3.3	37.7	11.9	6.2	5.3	14.3
Cumulative Yield (% wt)		1.3	5.4	10.4	19.0	27.8	36.3	45.1	53.9	57.3	100.0	69.9	76.8	82.6	100.0
Volume Average B.P. (°C)	319	41.9	83	125	175	225	275	325	360	528	528	409	474	524	652
Density @ 15°C (g/cc)	0.8520	0.6433	0.7012	0.7422	0.7872	0.8169	0.8408	0.8679	0.8823	0.9598	0.9005	0.9280	0.9448	1.0281	
API Gravity	34.5	88.4	70.3	59.1	48.2	41.6	36.7	31.5	28.8	15.9	25.6	20.9	18.2	6.1	
UOPK	11.98			12.06	11.82	11.80	11.84	11.80	11.83	11.77	11.88	11.89	11.93	11.52	
Molecular Weight (g/mol)				111	138	171	210	253	289	529	344	439	551	970	
Total Sulfur (% wt)	0.8		0.001	0.003	0.005	0.012	0.065	0.286	0.60	0.77	1.52	0.89	1.12	1.39	2.18
Mercaptan Sulfur (ppm)	10.8			0.11	0.11	0.09	0.06	0.03							
Total Nitrogen (ppm)	1003						8	34	169	365	2277	693	1225	1726	4025
Basic Nitrogen (ppm)	338						5	22	62	106	766	202	368	516	1416
Total Acid Number (mgKOH/g)	0.07		0.00	0.01	0.02	0.02	0.04	0.06	0.09	0.11	0.11	0.13	0.14	0.13	0.08
Viscosity @ 20°C (cSt)	10.2					1.49									
Viscosity @ 40°C (cSt)	5.20					1.14	1.70	2.85	5.51	9.68					
Viscosity @ 50°C (cSt)	3.97						1.48	2.39	4.38	7.32	785	17.4	85.1	494	
Viscosity @ 60°C (cSt)											393	12.6	53.0	259	
Viscosity @ 100°C (cSt)											52.7	4.77	13.2	39.3	8132
Viscosity @ 130°C (cSt)															974
Viscosity @ 150°C (cSt)															335
RON (Clear)			75.1	36.5	55.3	32.4									
MON (Clear)			72.8	52.8	54.7	31.9									
Paraffins (% wt)	31.8		96.1	67.8	45.1	54.8									
Naphthenes (%wt)	30.4		3.9	28.7	39.1	28.2									
Aromatics (% wt)	37.8		0.0	3.5	15.8	17.0									
Pour Point (°C)	-21						-49	-27	-5	9	49	25	41	52	85
Cloud Point (°C)							-46	-23	-1						
Freeze Point (°C)							-64	-44	-21						
Smoke Point (mm)							25	21	17						
Cetane Index (D4737A)							39	46	53	57	61				
Naphthalenes (% vol)							0.2	2.9	7.2	9.1					
Aniline Point (°C)					53.9	57.3	63.0	68.5	73.4	77.1		83.1	90.0	95.4	
Hydrogen (% wt)	13.4		16.5	15.4	14.2	14.3	13.7	13.7	13.2	12.9		12.7	12.5	12.4	
Total Wax (% wt)	12.1										11.4	23.4	16.2	9.5	1.4
C7 Asphaltenes (% wt)	2.8										6.6	0.0	0.0	16.3	
Micro Carbon Residue (% wt)	4.0										9.3	0.0	1.2	22.4	
Vanadium (ppm)	9.9										23.2	0.0	0.0	57.0	
Nickel (ppm)	8.2										19.3	0.0	0.0	47.4	
Iron (ppm)	1.6										3.7	0.0	0.0	9.2	
Sodium (ppm)	6.9														
Mercury (ppb)	20.4														
Arsenic (ppb)	7														

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Reference: **THUN225Y**
 Crude: **Thunder Horse**

Yield Distribution



Cumulative Volume % Distilled at 10 Degree C (TBP) Intervals

	0	10	20	30	40	50	60	70	80	90
0				3.5	4.4	5.3	6.6	8.1	9.7	11.5
100	13.4	15.3	17.3	19.3	21.3	23.2	25.2	27.1	29.0	30.9
200	32.7	34.5	36.2	38.0	39.8	41.5	43.3	45.1	46.9	48.7
300	50.4	52.2	53.9	55.6	57.3	59.0	60.7	62.3	63.9	65.5
400	67.0	68.5	70.0	71.4	72.8	74.2	75.5	76.8	78.0	79.2
500	80.4	81.5	82.6	83.7	84.7	85.7	86.6	87.5	88.4	89.2