



CERTIFICATE OF QUALITY

Lab Reference No	: [REDACTED]	Date Sampled	: 01st July, 2022
Sample No	: [REDACTED]	Date Received	: 01st July, 2022
Vessel Name	: MT [REDACTED]	Date Tested	: 01st July, 2022
Location	: [REDACTED] Malaysia	Date Reported	: 01st July, 2022
Product	: MALAYSIA BLEND LIGHT CRUDE OIL (MBLC)		
Source	: Ship's Tanks No. 1W / 2W / 3W / 4W / 5W / 6W / Slop W - Composite		
Type of Sample	: After Loading (Testing & Analysis Purposes)		

On testing, the following results were obtained:

No	TEST ITEM	METHOD	UNIT	LIMIT	RESULT
1	API @ 60°F	ASTM D5002-19	-	Report	33.9
2	Density @ 15°C	ASTM D5002-19	kg/L	Report	0.8550
3	Density @ 20°C	ASTM D5002-19	kg/L	Report	0.8510
4	Kinematic Viscosity @ 20°C	ASTM D445-19a	mm ² /s	Report	12.79
5	Kinematic Viscosity @ 25°C	ASTM D445-19a	mm ² /s	Report	10.94
6	Kinematic Viscosity @ 30°C	ASTM D445-19a	mm ² /s	Report	8.597
7	Kinematic Viscosity @ 40°C	ASTM D445-19a	mm ² /s	Report	6.194
8	Kinematic Viscosity @ 50°C	ASTM D445-19a	mm ² /s	Report	4.794
9	Sulphur	ASTM D4294-16 ¹	mass %	Report	1.55
10	Pour Point (Proc. A)	ASTM D5853-17a	°C	Report	-12
11	Flash Point (PMCC)	ASTM D93-20 (Proc. A)	°C	Report	<40.0 (<0.0)
12	Water by Distillation	ASTM D4006-16e1	%vol	Report	0.050
13	Micro Carbon Residue	ASTM D4530-15(2020)	mass %	Report	4.03
14	Sediment by Extraction	ASTM D473-07(2017) e1	mass %	Report	0.01
15	Ash	ASTM D482-19	mass %	Report	0.012
16	Vanadium	IP 501/05 (2019)	mg/kg	Report	51
17	Sodium	IP 501/05 (2019)	mg/kg	Report	14
18	Nickel	IP 501/05 (2019)	mg/kg	Report	16
19	Asphaltenes	IP 143/04 (2016)	mass %	Report	1.1
20	Mercaptan Sulphur	UOP 163-10	mg/kg	Report	157
21	Nitrogen	ASTM D5762-18a	mg/kg	Report	1,600 (1,556)
22	Wax	UOP 46-85	mass %	Report	6.4
23	Salt Content	ASTM D3230-19	mg/kg	Report	19
24	Reid Vapor Pressure @ 37.8°C	ASTM D6378-20 / D6377-20	kPa	Report	42.2
25	Hydrogen Sulfide (Liquid Phase)	IP 570/14a (2015) (Proc. A)	mg/kg	Report	1.24
26	Total Acid Number	ASTM D664-18e2	mgKOH/g	Report	0.12
27	Organic Chloride	UOP 779-08 (Mod)	mg/kg	Report	5.1

Remarks:

Samples were drawn under Close System Sampling Method via vessel provided Close System Sampler.

Authorized Signature

Susan Toh
Laboratory Manager



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Lab Reference No	: ██████████	Date Sampled	: 01st July, 2022
Sample No	: ██████████	Date Received	: 01st July, 2022
Vessel Name	: MT ██████████	Date Tested	: 01st July, 2022
Location	: ██████████ Malaysia	Date Reported	: 01st July, 2022
Product	: MALAYSIA BLEND LIGHT CRUDE OIL (MBLC)		
Source	: Ship's Tanks No. 1W / 2W / 3W / 4W / 5W / 6W / Slop W - Composite		
Type of Sample	: After Loading (Testing & Analysis Purposes)		

On testing, the following results were obtained:

No	TEST ITEM	METHOD	UNIT	LIMIT	RESULT
28	Bromine number cut @ 360°C	ASTM D1159-07 (2017)	g/100g	Report	1.1
29	Asphaltic Residue @ 360°C	ASTM D402-08	%vol	Report	52.0
30	Total Distillate @ 360°C	ASTM D402-08	%vol	Report	48.0
31	Vacuum Distillation	ASTM D1160-18	-	Report	2 mm Hg 760 mm Hg
	Initial Boiling Point	ASTM D1160-18	°C	Report	60 214
	5% Recovery	ASTM D1160-18	°C	Report	92 256
	10% Recovery	ASTM D1160-18	°C	Report	110 280
	20% Recovery	ASTM D1160-18	°C	Report	155 337
	30% Recovery	ASTM D1160-18	°C	Report	202 395
	40% Recovery	ASTM D1160-18	°C	Report	257 461
	50% Recovery	ASTM D1160-18	°C	Report	333 549
	60% Recovery	ASTM D1160-18	°C	Report	- -
	70% Recovery	ASTM D1160-18	°C	Report	- -
	80% Recovery	ASTM D1160-18	°C	Report	- -
	90% Recovery	ASTM D1160-18	°C	Report	- -
	95% Recovery	ASTM D1160-18	°C	Report	- -
	Final Vapour Temperature	ASTM D1160-18	°C	Report	355 574
	Total Volume Recovered	ASTM D1160-18	% vol	Report	52.0
	Light End Collected	ASTM D1160-18	% vol / ml	Report	20.0 40.0

Remarks:

Samples were drawn under Close System Sampling Method via vessel provided Close System Sampler.

Authorized Signature

Susan Toh
Laboratory Manager