

FUEL REPORT

Area [20315] 0716716 - EPL ARCHIVES (S/N 5312001615) Component

Diesel Fuel Fluid

OFF-ROAD DIESEL FUEL (--- GAL)

Recommendation

All laboratory tests indicate that this sample meets specifications for No.2 diesel fuel, low sulfur.

Corrosion

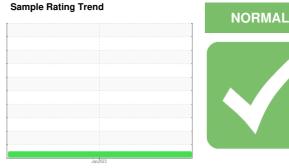
All metal levels are normal indicating no corrosion in the system.

Contaminants

The water content is negligible. There is no bacteria or fungus (yeast and/or mold) indicated in the sample. There is no indication of any contamination in the fuel. The amount and size of particulates present in the system are acceptable.

Fuel Condition

Sulfur value derived by ASTM D5453 method for ULSD validation.





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SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WCDF02985		
Sample Date		Client Info		04 Jan 2023		
Machine Age	hrs	Client Info		0		
Sample Status				NORMAL		
PHYSICAL PROP	ERTIES	method	limit/base	current	history1	history2
Specific Gravity		*ASTM D1298		0.841		
Fuel Color	text	*Visual Screen		Red		
ASTM Color	scalar	*ASTM D1500		L4.0		
Visc @ 40°C	cSt	ASTM D445		2.48		
Pensky-Martens Flash Point	°C	*PMCC Calculated		64		
Cloud Point	°C	ASTM D5771		-12		
Pour Point	°C	ASTM D5950		-21		
SULFUR CONTEN	١T	method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m		29		
Sulfur (UVF)	ppm	ASTM D5453		46		
DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86		167		
5% Distillation Point	°C	ASTM D86		191		
10% Distill Point	°C	ASTM D86		200		
15% Distillation Point	°C	ASTM D86		210		
20% Distill Point	°C	ASTM D86		217		
30% Distill Point	°C	ASTM D86		230		
40% Distill Point	°C	ASTM D86		245		
50% Distill Point	°C	ASTM D86		258		
60% Distill Point	°C	ASTM D86		272		
70% Distill Point	°C	ASTM D86		286		
80% Distill Point	°C	ASTM D86		303		
85% Distillation Point	°C	ASTM D86		312		
90% Distill Point	°C	ASTM D86		324		
95% Distillation Point	°C	ASTM D86		341		
Final Boiling Point	°C	ASTM D86		352		
Distillation Residue	%	ASTM D86		1.4		
Distillation Loss	%	ASTM D86		50.9		
IGNITION QUALIT	ΓY	method	limit/base	current	history1	history2
API Gravity		ASTM D7777		36.8		
Cetane Index		ASTM D4737	<40.0	98.1		
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	<1.0	0		
Sodium	ppm	ASTM D5185m	<0.1	0		



FUEL REPORT

491,520	Particle Count	FLUID CLEANLI	NESS	method	limit/base	current	history1	history2
122,880		Particles >4µm		ASTM D7647	>2500	591		
	Severe -22 20	Particles >6µm		ASTM D7647		189		
7,680 3 1,920	Severe 22 180 4406 199 Cleantiness Abnormal 18 99 Cleantiness 16 17 114 112 12	Particles >14µm		ASTM D7647	>80	18		
	16 0	Particles >21µm		ASTM D7647	>20	6		
jo 120	14 min	Particles >38µm		ASTM D7647	>4	1		
(m 1,920 (m 1,920 (m 1,920 (m 1,920 (m 1,920 (m 1,920 (m 1,920 (m 1,920 (m 1,920) (m 1	12 EBS Code	Particles >71µm		ASTM D7647	>3	0		
≓ 8 2		Oil Cleanliness		ISO 4406 (c)		16/15/11		
0	μ 6μ 14μ 21μ 38μ 71μ	HEAVY METALS		method	limit/base	current	history1	history2
1200	Water (KF)	Aluminum	ppm	ASTM D5185m	<0.1	0		
1000	Courses.	Nickel	ppm	ASTM D5185m	<0.1	0		
800		Lead	ppm	ASTM D5185m	<0.1	0		
000 Mater (ppm)		Vanadium	ppm	ASTM D5185m	<0.1	0		
ate ∧ 400		Iron	ppm	ASTM D5185m	<0.1	0		
700		Calcium	ppm	ASTM D5185m	<0.1	0		
200	Abnormal	Magnesium	ppm	ASTM D5185m	<0.1	0		
0	Jan 4/23	Phosphorus	ppm	ASTM D5185m	<0.1	1		
	Jan 4/23 Jan 4/23	Zinc	ppm	ASTM D5185m	<0.1	0		
	Viscosity @ 40°C	SAMPLE IMAGE	S	method	limit/base	current	history1	history2
6 5 (J_0]+) 153 3	Abnormal	Color				<u>, db</u>	no image	no image
2 1 0	E27thmer	Bottom					no image	no image
		GRAPHS						
	Particle Trend	Fuel Distillation C	irve			Pensky-Marten	s Flash Point (°C)
3k	4/m 1	Fuel Distillation Co	irve		ې ⁸ ا	°T	s Flash Point (°C)
	4/m 1	Fuel Distillation C	irve		attre)	s Flash Point (°C)
	4/m 1	Fuel Distillation Co	irve		17 temberatrine)-	s Flash Point (°C)
of particles (1 ml) 3k 3k	4μm 6μm 14μm	Fuel Distillation Co	irve		attre) -) -	s Flash Point (
of particles (1 ml) 3k 3k	4μm 6μm 14μm	Fuel Distillation Co	irve		17 temberatrine)-	s Flash Point (°C)
(1 m) 2k 2k	4μm 6μm 14μm	Sample 360°C Sample 340°C Sample 320°C 300°C	Irve		17 temberatrine) -) -	s Flash Point (
of particles (1 ml) 3k 5k 3k	4μm 6μm 14μm	Fuel Distillation Co	irve		17 temberatrine) -) -	s Flash Point (
of particles (1 ml) 3k 5k 3k	4μm 6μm 14μm	Fuel Distillation Co	ırve	_	17 temberatrine) -) -	s Flash Point (
of particles (1 ml) 3k 5k 3k	220 hmb	Fuel Distillation Cd 360°C 360°C 340°C 320°C 320°C 280°C 280°C	ırve		17 temberatrine) -) -	s Flash Point (
3k ([m]) Sabiticides N 2K N 1k 0k	220 hmb	Fuel Distillation Co	Irve		17 temberatrine) -) -	s Flash Point (
(E 3k (E 1) spired piped of piped of pi	4μm 6μm 14μm 14μm Fuel Distillation Curve	Fuel Distillation Co 360°C 360°C 340°C 320°C 320°C 280°C 280°C 2260°C 2260°C 220°C	Irve		17 temberatrine) -) -	s Flash Point (
(m 3k (m 1) 22k 24 24 24 24 24 24 25 24 24 25 24 25 24 25 24 25 24 25 26 26 26 26 26 26 26 26 26 26 26 26 26	Fuel Distillation Curve	Fuel Distillation Co 360°C Sample 340°C 300°C 300°C 300°C 280°C 280°C 220°C 220°C 200°C 300°C	Irve		17 temberatrine) -) -	s Flash Point (
(m 3k (m 22k 2k 2k 2k 2k 2k 2k 2k 2k 2k 2k 2k 2k	4μm 6μm 14μm 14μm Fuel Distillation Curve	Fuel Distillation Co 360°C Sample 340°C Sample 340°C Sample 320°C Sa	Irve		17 temberatrine) -) -	s Flash Point (
(☐ 38 (☐ 1990) 1990) 1990 1990 1990 1990 1990 199	4μm 6μm 14μm 14μm Fuel Distillation Curve	Fuel Distillation Co 360°C Sample 340°C 300°C 300°C 300°C 280°C 280°C 220°C 220°C 200°C 300°C	Irve		17 temberatrine) -) -	s Flash Point (
(m 3% 22, 22, 22, 23, 23, 23, 23, 23, 23, 23,	4μm 6μm 14μm 14μm Fuel Distillation Curve	Fuel Distillation Co 360°C Sample 340°C Sample 340°C Sample 320°C Sample 300°C Sa	Irve		17 temberatrine) -) -	s Flash Point (
(E) 38 22 24 400 °C 350 °C (2) 300 °C (2) 300 °C (2) 300 °C (2) 150 °C 150 °C 150 °C	4μm 6μm 14μm 14μm Fuel Distillation Curve	Sample 360°C Sample 360°C Sample 340°C 300°C 320°C 300°C 280°C 280°C 220°C 220°C 220°C 300°C 100°C 100°C 100°C 100°C			ampeduat 51) -) -	s Flash Point (
(Te 138) 282, 282, 284, 284, 284, 284, 284, 284,	Fuel Distillation Curve	Fuel Distillation Co 360°C 360°C 340°C 320°C 300°C 280°C 280°C 220°C 220°C 200°C 160°C 140°C 120°C 20°C 3	ITVE		17 temberatrine) -) -	s Flash Point (
[¹ ² ¹ ³ ²	4µm 4µm 14µm 14µm Copyer Fuel Distillation Curve 5 5 6 9 <t< th=""><th>Fuel Distillation Co 360°C 360°C 360°C 300°C 280°C 280°C 280°C 200°C 200°C 100°C 200°C 100°C 200°C 100°C 100°C 200°C 1</th><th>1 Madiso Rece Teste Diag ts: Scree ice at 1-4 7025 scd</th><th>d on Ave., Cary ived : 05 od : 09 n 0 800-237-1365 ope of accrec</th><th>7, NC 27513 5 Jan 2023 9 Jan 2023 - Do 9. <i>Vitation.</i></th><th>ug Bogart</th><th>CL 3915 BA Contact: JC jschiren@cu</th><th></th></t<>	Fuel Distillation Co 360°C 360°C 360°C 300°C 280°C 280°C 280°C 200°C 200°C 100°C 200°C 100°C 200°C 100°C 100°C 200°C 1	1 Madiso Rece Teste Diag ts: Scree ice at 1-4 7025 scd	d on Ave., Cary ived : 05 od : 09 n 0 800-237-1365 ope of accrec	7, NC 27513 5 Jan 2023 9 Jan 2023 - Do 9. <i>Vitation.</i>	ug Bogart	CL 3915 BA Contact: JC jschiren@cu	

Contact/Location: JOHN SCHIREN - CURBAL