



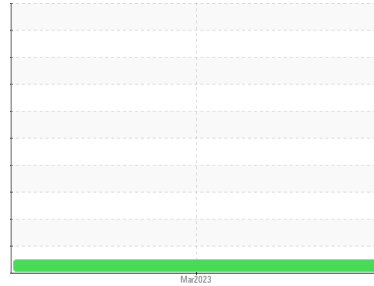
OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area
RESIDENCES AT THOMAS CIRCLE [20177]
 Machine Id
FIRE PUMP (S/N U694536A)
 Component
Diesel Engine
 Fluid
OFF-ROAD (250 GAL)



DIAGNOSIS

Recommendation

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

Wear

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

Contamination

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

Fluid Condition

Sulfur value derived by ASTM D5453 method for ULSD validation. Sulfur level is acceptable for ULSD specification.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		DCDF02988	---	---
Sample Date	Client Info		17 Mar 2023	---	---
Machine Age	hrs	Client Info	0	---	---
Oil Age	hrs	Client Info	0	---	---
Oil Changed	Client Info		N/A	---	---
Sample Status			NORMAL	---	---

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	---	---
Glycol	WC Method		NEG	---	---

WEAR METALS

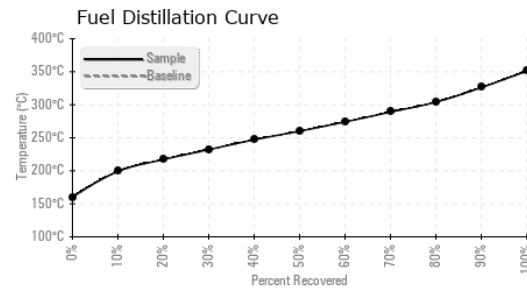
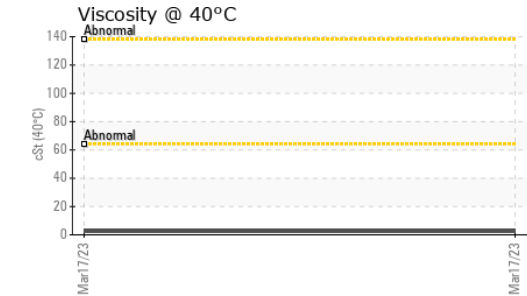
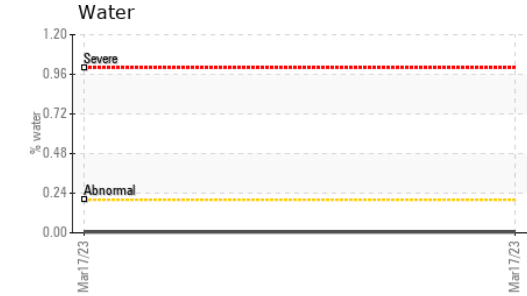
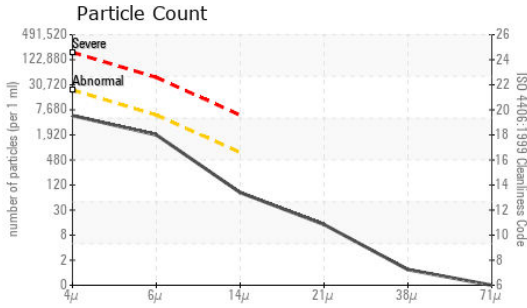
	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >200	0	---	---
Chromium	ppm	ASTM D5185m >20	0	---	---
Nickel	ppm	ASTM D5185m >2	0	---	---
Titanium	ppm	ASTM D5185m >2	0	---	---
Silver	ppm	ASTM D5185m >2	0	---	---
Aluminum	ppm	ASTM D5185m >30	0	---	---
Lead	ppm	ASTM D5185m >30	0	---	---
Copper	ppm	ASTM D5185m >30	0	---	---
Tin	ppm	ASTM D5185m >15	0	---	---
Vanadium	ppm	ASTM D5185m	0	---	---
Cadmium	ppm	ASTM D5185m	0	---	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	---	---
Barium	ppm	ASTM D5185m	<1	---	---
Molybdenum	ppm	ASTM D5185m	0	---	---
Manganese	ppm	ASTM D5185m	0	---	---
Magnesium	ppm	ASTM D5185m	<1	---	---
Calcium	ppm	ASTM D5185m	4	---	---
Phosphorus	ppm	ASTM D5185m	12	---	---
Zinc	ppm	ASTM D5185m	2	---	---
Sulfur	ppm	ASTM D5185m	0	---	---



OIL ANALYSIS REPORT



Laboratory Sample No.
Lab Number
Unique Number
Test Package

Certificate L2367
 To discuss this sample report, call...
 * - Denotes test methods that are...
 Statements of conformity to specific...

DISTILLATION	method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86	160	---	---
5% Distillation Point	°C	ASTM D86	187	---	---
10% Distill Point	°C	ASTM D86	199	---	---
15% Distillation Point	°C	ASTM D86	209	---	---
20% Distill Point	°C	ASTM D86	217	---	---
30% Distill Point	°C	ASTM D86	232	---	---
40% Distill Point	°C	ASTM D86	247	---	---
50% Distill Point	°C	ASTM D86	260	---	---
60% Distill Point	°C	ASTM D86	274	---	---
70% Distill Point	°C	ASTM D86	289	---	---
80% Distill Point	°C	ASTM D86	304	---	---
85% Distillation Point	°C	ASTM D86	314	---	---
90% Distill Point	°C	ASTM D86	326	---	---
95% Distillation Point	°C	ASTM D86	343	---	---
Final Boiling Point	°C	ASTM D86	351	---	---
API Gravity		ASTM D7777	36.6	---	---
Cetane Index		ASTM D4737	47.6	---	---
Distillation Residue	%	ASTM D86	1.4	---	---
Distillation Loss	%	ASTM D86	1.1	---	---
Specific Gravity		*ASTM D1298	0.842	---	---

CONTAMINANTS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >30	1	---	---
Sodium	ppm	ASTM D5185m	0	---	---
Potassium	ppm	ASTM D5185m >20	<1	---	---
Water	%	ASTM D6304 >0.2	0.005	---	---
ppm Water	ppm	ASTM D6304 >2000	50.7	---	---

FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	4889	---	---
Particles >6µm	ASTM D7647	>5000	1685	---	---
Particles >14µm	ASTM D7647	>640	70	---	---
Particles >21µm	ASTM D7647	>160	12	---	---
Particles >38µm	ASTM D7647	>40	1	---	---
Particles >71µm	ASTM D7647	>10	0	---	---
Oil Cleanliness	ISO 4406 (c)	>21/19/16	19/18/13	---	---

VISUAL	method	limit/base	current	history1	history2
Fuel Color	text	*Visual Screen	Red	---	---
White Metal	scalar	*Visual NONE	NONE	---	---
Yellow Metal	scalar	*Visual NONE	NONE	---	---
Precipitate	scalar	*Visual NONE	NONE	---	---
Silt	scalar	*Visual NONE	NONE	---	---
Debris	scalar	*Visual NONE	NONE	---	---
Sand/Dirt	scalar	*Visual NONE	NONE	---	---
Appearance	scalar	*Visual NORML	NORML	---	---
Odor	scalar	*Visual NORML	NORML	---	---
Emulsified Water	scalar	*Visual >0.2	NEG	---	---
Free Water	scalar	*Visual	NEG	---	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 <2000	2.53	---	BALTIMORE, MD US 21227
Pour Point	°C	ASTM D5950	-22	---	KV40 Contact: JOHN SCHIREN
Pensky-Martens Flash Point	°C	*PMCC Calculated	57	---	jschiren@curtisengine.com
Cloud Point	°C	ASTM D5771	-12	---	T: ---
ASTM Color	scalar	*ASTM D1500	L5.5	---	F: (410)536-2098