



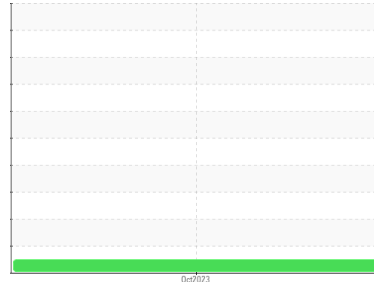
FUEL REPORT

Sample Rating Trend

NORMAL



Machine Id
GOOGLE-LNR-B-1-F
 Component
Diesel Fuel
 Fluid
DIESEL FUEL No. 2 (--- GAL)



DIAGNOSIS

Recommendation

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

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) present 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. Sulfur level is acceptable for ULSD specification.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			WC0869448	---	---
Sample Date	Client Info			05 Oct 2023	---	---
Machine Age	hrs	Client Info		0	---	---
Sample Status				NORMAL	---	---

PHYSICAL PROPERTIES		method	limit/base	current	history1	history2
Specific Gravity		*ASTM D1298		0.844	---	---
Fuel Color	text	*Visual Screen		Red	---	---
ASTM Color	scalar	*ASTM D1500		L4.5	---	---
Visc @ 40°C	cSt	ASTM D445	4.1	2.59	---	---
Pensky-Martens Flash Point	°C	*PMCC Calculated		57	---	---

SULFUR CONTENT		method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m		0	---	---
Sulfur (UVF)	ppm	ASTM D5453		13	---	---

DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86		158	---	---
5% Distillation Point	°C	ASTM D86		192	---	---
10% Distill Point	°C	ASTM D86		203	---	---
15% Distillation Point	°C	ASTM D86		212	---	---
20% Distill Point	°C	ASTM D86		220	---	---
30% Distill Point	°C	ASTM D86		235	---	---
40% Distill Point	°C	ASTM D86		249	---	---
50% Distill Point	°C	ASTM D86		262	---	---
60% Distill Point	°C	ASTM D86		275	---	---
70% Distill Point	°C	ASTM D86		289	---	---
80% Distill Point	°C	ASTM D86		306	---	---
85% Distillation Point	°C	ASTM D86		315	---	---
90% Distill Point	°C	ASTM D86		326	---	---
95% Distillation Point	°C	ASTM D86		343	---	---
Final Boiling Point	°C	ASTM D86		347	---	---
Distillation Residue	%	ASTM D86		1.4	---	---
Distillation Loss	%	ASTM D86		0.7	---	---

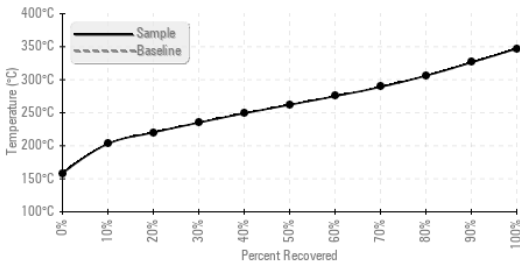
IGNITION QUALITY		method	limit/base	current	history1	history2
API Gravity		ASTM D7777		36.2	---	---
Cetane Index		ASTM D4737	<40.0	47.5	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	<1.0	0	---	---
Sodium	ppm	ASTM D5185m	<0.1	0	---	---
Potassium	ppm	ASTM D5185m	<0.1	<1	---	---
Water	%	ASTM D6304	<0.05	0.008	---	---
ppm Water	ppm	ASTM D6304	<500	89.5	---	---
% Gasoline	%	*In-House	<0.50	0.0	---	---
% Biodiesel	%	*In-House	<20.0	0.0	---	---

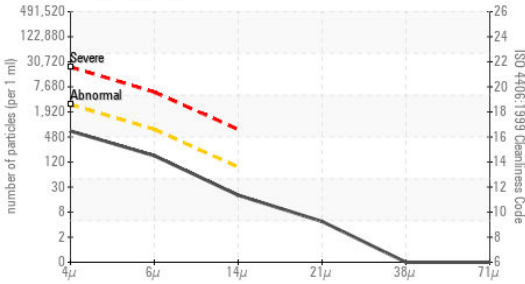


FUEL REPORT

Fuel Distillation Curve



Particle Count



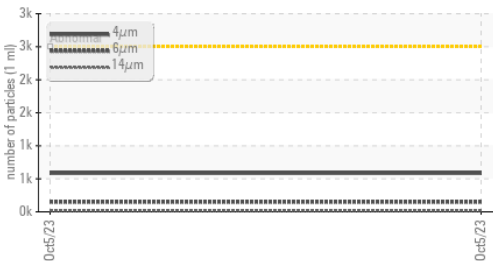
Water (KF)



Viscosity @ 40°C



Particle Trend



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	585	---	---
Particles >6µm	ASTM D7647	>640	150	---	---
Particles >14µm	ASTM D7647	>80	17	---	---
Particles >21µm	ASTM D7647	>20	4	---	---
Particles >38µm	ASTM D7647	>4	0	---	---
Particles >71µm	ASTM D7647	>3	0	---	---
Oil Cleanliness	ISO 4406 (c)	>18/16/13	16/14/11	---	---

MICROBIAL	method	limit/base	current	history1	history2
Bacteria	CFU/ml WC-Method	>=100000	0	---	---
Yeast	CFU/ml WC-Method	>=100000	0	---	---
Mold	Colonies WC-Method	MODER	---	---	---

HEAVY METALS	method	limit/base	current	history1	history2
Aluminum	ppm ASTM D5185m	<0.1	0	---	---
Nickel	ppm ASTM D5185m	<0.1	0	---	---
Lead	ppm ASTM D5185m	<0.1	0	---	---
Vanadium	ppm ASTM D5185m	<0.1	0	---	---
Iron	ppm ASTM D5185m	<0.1	0	---	---
Calcium	ppm ASTM D5185m	<0.1	<1	---	---
Magnesium	ppm ASTM D5185m	<0.1	<1	---	---
Phosphorus	ppm ASTM D5185m	<0.1	6	---	---
Zinc	ppm ASTM D5185m	<0.1	0	---	---

SAMPLE IMAGES	method	limit/base	current	history1	history2	
Color					no image	no image
Bottom					no image	no image



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : WC0869448
 Lab Number : **05981552**
 Unique Number : 10698847
 Test Package : DF-2 (Additional Tests: Bacteria, Screen)

Received : 17 Oct 2023
 Diagnosed : 08 Nov 2023
 Diagnostician : Doug Bogart

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

VITAL FUEL SYSTEMS
 1076 CLASSIC RD
 APEX, NC
 US 27539

Contact: JOHN MORREALE
 jmorreale@vitalfuelsystems.com

T: (919)629-8180
 F: (919)303-7399