FUEL REPORT

Sample Rating Trend

ISO

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

DIAGNOSIS

Recommendation
We advise that you filter this fluid before use. 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
There is a high amount of particulates present in the fuel. The water content is negligible. There is no bacteria or fungus (yeast and/or mold) indicated in the sample.

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		**WC0869449**	---	---
Sample Date		Client Info		**05 Oct 2023**	---	---
Machine Age	hrs	Client Info		**0**	---	---
Sample Status				**ATTENTION**	---	---

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	**2.46**	---	---
Pensky-Martens Flash Point	°C	*PMCC Calculated		**56**	---	---

SULFUR CONTENT		method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m		**0**	---	---
Sulfur (UVF)	ppm	ASTM D5453		**12**	---	---

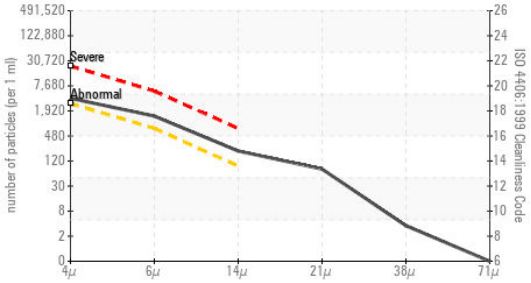
DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86		**157**	---	---
5% Distillation Point	°C	ASTM D86		**192**	---	---
10% Distill Point	°C	ASTM D86		**203**	---	---
15% Distillation Point	°C	ASTM D86		**211**	---	---
20% Distill Point	°C	ASTM D86		**218**	---	---
30% Distill Point	°C	ASTM D86		**233**	---	---
40% Distill Point	°C	ASTM D86		**246**	---	---
50% Distill Point	°C	ASTM D86		**259**	---	---
60% Distill Point	°C	ASTM D86		**273**	---	---
70% Distill Point	°C	ASTM D86		**287**	---	---
80% Distill Point	°C	ASTM D86		**303**	---	---
85% Distillation Point	°C	ASTM D86		**313**	---	---
90% Distill Point	°C	ASTM D86		**325**	---	---
95% Distillation Point	°C	ASTM D86		**342**	---	---
Final Boiling Point	°C	ASTM D86		**347**	---	---
Distillation Residue	%	ASTM D86		**1.4**	---	---
Distillation Loss	%	ASTM D86		**0.6**	---	---

IGNITION QUALITY		method	limit/base	current	history1	history2
API Gravity		ASTM D7777		**36.2**	---	---
Cetane Index		ASTM D4737	<40.0	**46.9**	---	---

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	**0.010**	---	---
ppm Water	ppm	ASTM D6304	<500	**109.0**	---	---
% Gasoline	%	*In-House	<0.50	**0.0**	---	---
% Biodiesel	%	*In-House	<20.0	**0.0**	---	---

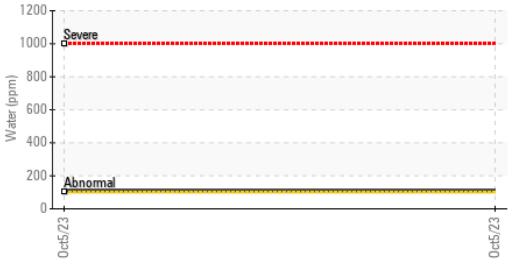
FUEL REPORT

Particle Count



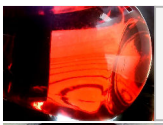
Particle Trend

Water (KF)



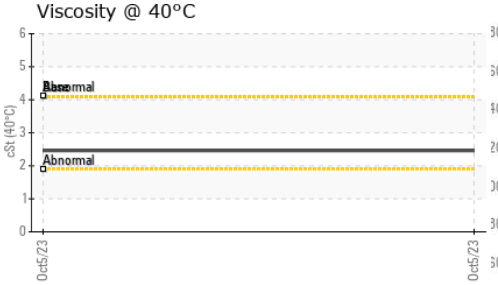
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	▲ **3376**	---	---
Particles >6µm	ASTM D7647	>640	▲ **1261**	---	---
Particles >14µm	ASTM D7647	>80	▲ **184**	---	---
Particles >21µm	ASTM D7647	>20	▲ **68**	---	---
Particles >38µm	ASTM D7647	>4	**3**	---	---
Particles >71µm	ASTM D7647	>3	**0**	---	---
Oil Cleanliness	ISO 4406 (c)	>18/16/13	▲ **19/17/15**	---	---

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	**<1**	---	---
Calcium	ppm	ASTM D5185m	<0.1	**<1**	---	---
Magnesium	ppm	ASTM D5185m	<0.1	**<1**	---	---
Phosphorus	ppm	ASTM D5185m	<0.1	**5**	---	---
Zinc	ppm	ASTM D5185m	<0.1	**0**	---	---

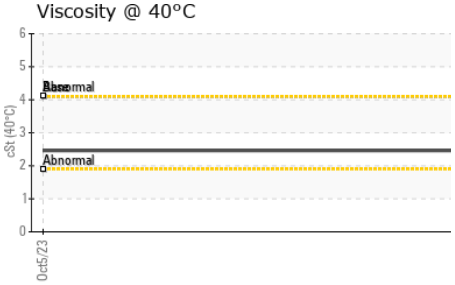
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color				*no image*	*no image*
Bottom				*no image*	*no image*

GRAPHS

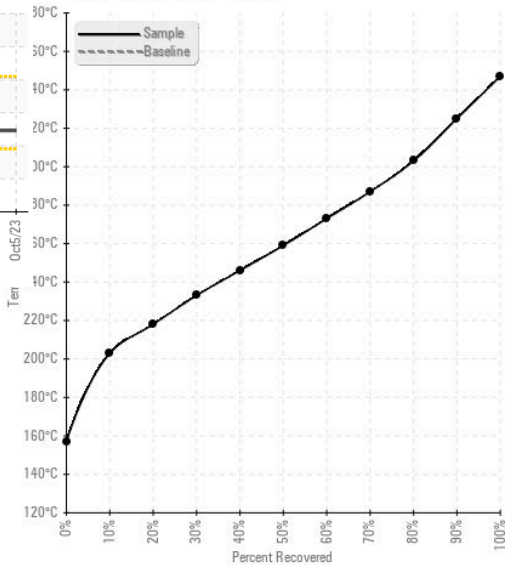
Viscosity @ 40°C



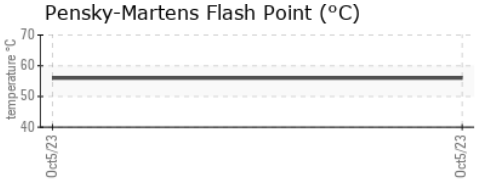
Viscosity @ 40°C



Fuel Distillation Curve



Pensky-Martens Flash Point (°C)



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0869449 **Received** : 17 Oct 2023
Lab Number : 05981551 **Diagnosed** : 25 Oct 2023
Unique Number : 10698846 **Diagnostician** : Doug Bogart
Test Package : DF-2 (Additional Tests: Screen)

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