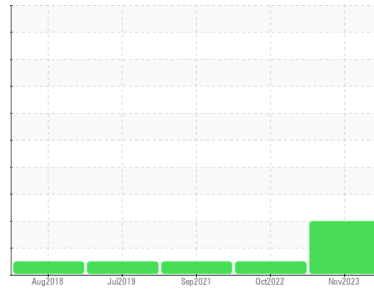




FUEL REPORT

Sample Rating Trend



WATER



Machine Id
GOOG-T-2A-1B

Component
Diesel Fuel
Fluid

No.2 DIESEL FUEL (ULTRALOW SULPHUR) (12000 GAL)

DIAGNOSIS

▲ Recommendation

We advise that you filter this fluid before use. We advise that you follow the water drain-off procedure for this component. All other 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

Free water present. High concentration of visible dirt/debris present in the fuel. There is no bacteria or fungus (yeast and/or mold) present 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	WC0869476	WC0736814	WC0608570
Sample Date	Client Info	16 Nov 2023	18 Oct 2022	22 Sep 2021
Machine Age	hrs	0	0	0
Sample Status		ABNORMAL	NORMAL	NORMAL

PHYSICAL PROPERTIES

method	limit/base	current	history1	history2		
Specific Gravity	*ASTM D1298	0.839	0.845	0.844	0.844	
Fuel Color	text	*Visual Screen	Yellow	Red	Red	Red
ASTM Color	scalar	*ASTM D1500		L4.5	L4.5	L5.5
Visc @ 40°C	cSt	ASTM D445	3.0	2.54	2.57	2.52
Pensky-Martens Flash Point	°C	*PMCC Calculated	52	60	68	64

SULFUR CONTENT

method	limit/base	current	history1	history2		
Sulfur	ppm	ASTM D5185m	10	0	0	0
Sulfur (UVF)	ppm	ASTM D5453		8	8	9

DISTILLATION

method	limit/base	current	history1	history2		
Initial Boiling Point	°C	ASTM D86	165	166	166	164
5% Distillation Point	°C	ASTM D86		194	195	193
10% Distill Point	°C	ASTM D86	201	205	205	205
15% Distillation Point	°C	ASTM D86		215	214	214
20% Distill Point	°C	ASTM D86	216	222	221	221
30% Distill Point	°C	ASTM D86	230	236	235	235
40% Distill Point	°C	ASTM D86	243	248	248	248
50% Distill Point	°C	ASTM D86	255	261	261	261
60% Distill Point	°C	ASTM D86	267	274	274	274
70% Distill Point	°C	ASTM D86	280	288	288	288
80% Distill Point	°C	ASTM D86	295	304	304	303
85% Distillation Point	°C	ASTM D86		313	313	312
90% Distill Point	°C	ASTM D86	310	325	324	324
95% Distillation Point	°C	ASTM D86		342	341	341
Final Boiling Point	°C	ASTM D86	341	348	350	351
Distillation Residue	%	ASTM D86	3.0	1.4	1.4	1.4
Distillation Loss	%	ASTM D86	3.0	0.9	0.8	0.6

IGNITION QUALITY

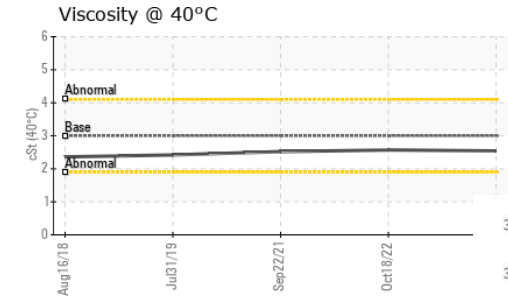
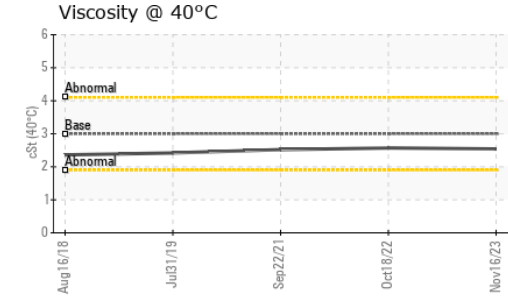
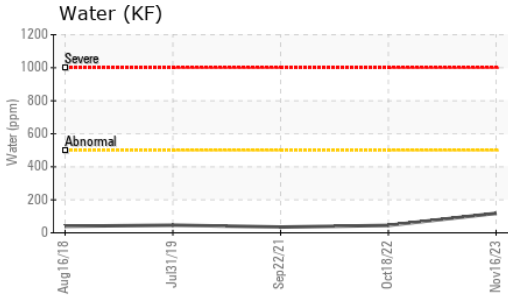
method	limit/base	current	history1	history2	
API Gravity	ASTM D7777	37.7	36.0	36.2	36.2
Cetane Index	ASTM D4737	<40.0	47.1	47.2	47.3

CONTAMINANTS

method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185m	<1.0	0	0	0
Sodium	ppm	ASTM D5185m	<0.1	<1	0	0
Potassium	ppm	ASTM D5185m	<0.1	0	0	0
Water	%	ASTM D6304	<0.05	0.011	0.004	0.003
ppm Water	ppm	ASTM D6304	<500	118	45.2	35.0
% Gasoline	%	*In-House	<0.50	0.0	0.0	0.0
% Biodiesel	%	*In-House	<20.0	0.0	0.0	0.0



FUEL REPORT


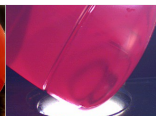


MICROBIAL	method	limit/base	current	history1	history2
Bacteria	CFU/ml WC-Method	>=100000	0	---	---
Yeast	CFU/ml WC-Method	>=100000	0	---	---
Mold	Colonies WC-Method	MODER	---	---	---

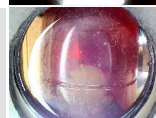

HEAVY METALS	method	limit/base	current	history1	history2
Aluminum	ppm ASTM D5185m	<0.1	0	0	0
Nickel	ppm ASTM D5185m	<0.1	0	0	0
Lead	ppm ASTM D5185m	<0.1	0	0	<1
Vanadium	ppm ASTM D5185m	<0.1	0	0	0
Iron	ppm ASTM D5185m	<0.1	0	0	0
Calcium	ppm ASTM D5185m	<0.1	0	0	0
Magnesium	ppm ASTM D5185m	<0.1	0	0	0
Phosphorus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

SAMPLE IMAGES

	method	limit/base	current	history1	history2
Color					
Bottom					

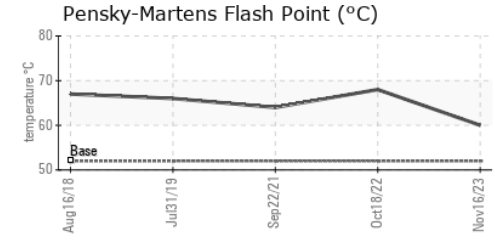
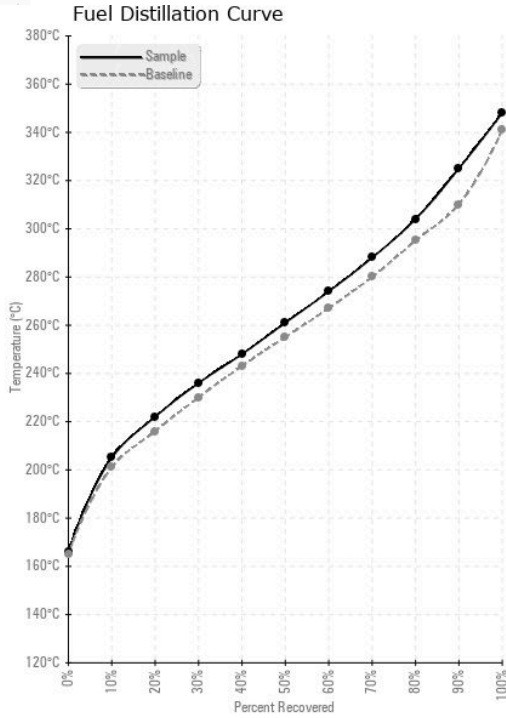



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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0869476 **Received** : 22 Nov 2023
Lab Number : 06015564 **Diagnosed** : 29 Nov 2023
Unique Number : 10754708 **Diagnostician** : Doug Bogart
Test Package : DF-2 (Additional Tests: Bacteria, Screen)

VITAL FUEL SYSTEMS
 1076 CLASSIC RD
 APEX, NC
 US 27539
 Contact: JOHN MORREALE
 jmorreale@vitalfuelsystems.com
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 F: (919)303-7399

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)