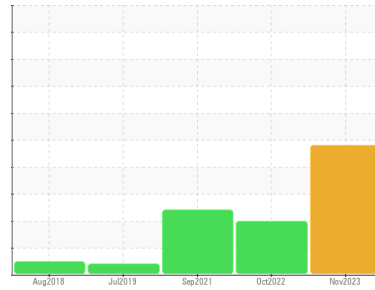




FUEL REPORT

Sample Rating Trend



WATER



Machine Id
GOOG-T-2A-1A

Component
Diesel Fuel
Fluid

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

DIAGNOSIS

Recommendation

We advise that you follow the water drain-off procedure for this component, and use off-line filtration to improve the cleanliness of the system fluid.

Corrosion

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

Contaminants

Appearance is hazy. Free water present. There is a moderate amount of visible silt present in the sample. There is a light concentration of water present in the fuel. There is no bacteria or fungus (yeast and/or mold) present in the sample.

Fuel Condition

The fuel is no longer serviceable due to the presence of contaminants. 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			WC0869474	WC0736813	WC0608569
Sample Date	Client Info			10 Nov 2023	18 Oct 2022	22 Sep 2021
Machine Age	hrs	Client Info		0	0	0
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

PHYSICAL PROPERTIES		method	limit/base	current	history1	history2
Specific Gravity		*ASTM D1298	0.839	0.845	0.845	0.845
Fuel Color	text	*Visual Screen	Yellow	Red	Red	Red
ASTM Color	scalar	*ASTM D1500		L4.0	L4.5	L5.5
Visc @ 40°C	cSt	ASTM D445	3.0	2.6	2.6	2.5
Pensky-Martens Flash Point	°C	*PMCC Calculated	52	154	66	65

SULFUR CONTENT		method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m	10	0	0	6
Sulfur (UVF)	ppm	ASTM D5453		8	9	8

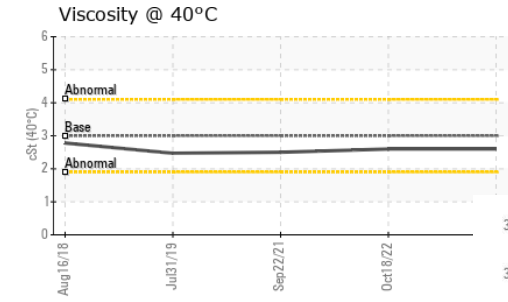
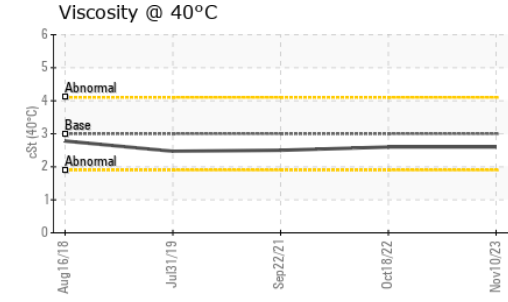
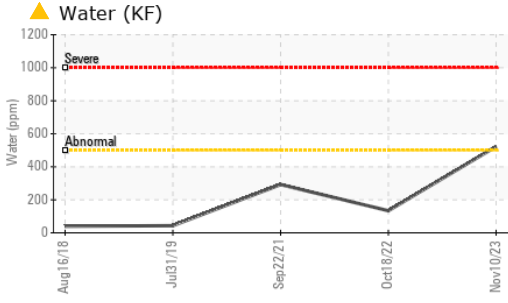
DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86	165	145	155	165
5% Distillation Point	°C	ASTM D86		192	196	194
10% Distill Point	°C	ASTM D86	201	205	207	206
15% Distillation Point	°C	ASTM D86		213	216	213
20% Distill Point	°C	ASTM D86	216	221	224	221
30% Distill Point	°C	ASTM D86	230	236	237	236
40% Distill Point	°C	ASTM D86	243	248	249	248
50% Distill Point	°C	ASTM D86	255	261	262	261
60% Distill Point	°C	ASTM D86	267	274	275	274
70% Distill Point	°C	ASTM D86	280	288	288	287
80% Distill Point	°C	ASTM D86	295	303	303	303
85% Distillation Point	°C	ASTM D86		312	313	312
90% Distill Point	°C	ASTM D86	310	323	324	323
95% Distillation Point	°C	ASTM D86		340	342	340
Final Boiling Point	°C	ASTM D86	341	350	349	350
Distillation Residue	%	ASTM D86	3.0	1.4	1.4	1.4
Distillation Loss	%	ASTM D86	3.0	0.4	0.8	0.4

IGNITION QUALITY		method	limit/base	current	history1	history2
API Gravity		ASTM D7777	37.7	36.0	36.0	36.0
Cetane Index		ASTM D4737	<40.0	46.8	47.2	47.0

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	▲ 0.052	0.013	0.029
ppm Water	ppm	ASTM D6304	<500	▲ 523	133.9	292.4
% 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	0	0
Yeast	CFU/ml WC-Method	>=100000	0	0	▲ 1000
Mold	Colonies WC-Method	MODER	---	---	---

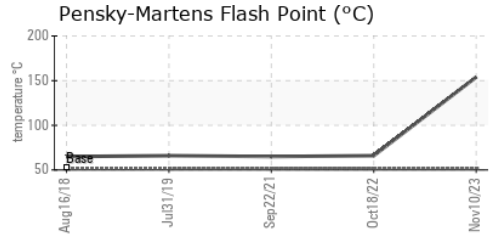
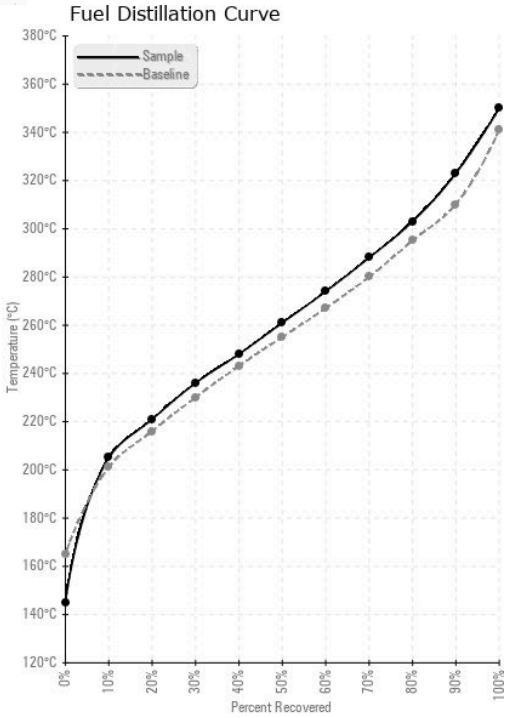
HEAVY METALS	method	limit/base	current	history1	history2
Aluminum	ppm ASTM D5185m	<0.1	0	0	0
Nickel	ppm ASTM D5185m	<0.1	0	0	0
Lead	ppm ASTM D5185m	<0.1	0	0	0
Vanadium	ppm ASTM D5185m	<0.1	0	0	0
Iron	ppm ASTM D5185m	<0.1	0	0	0
Calcium	ppm ASTM D5185m	<0.1	0	0	3
Magnesium	ppm ASTM D5185m	<0.1	0	0	0
Phosphorus	ppm ASTM D5185m	<0.1	1	0	<1
Zinc	ppm ASTM D5185m	<0.1	0	0	0

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

no image

no image

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0869474 **Received** : 22 Nov 2023
Lab Number : 06015565 **Diagnosed** : 30 Nov 2023
Unique Number : 10754709 **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
 T: (919)629-8180
 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)