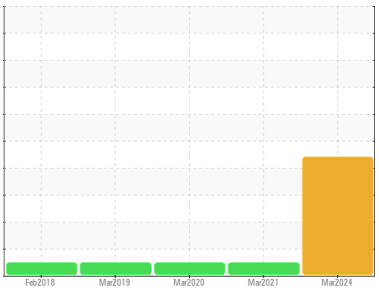
FUEL REPORT

Sample Rating Trend



WATER

Machine Id
TOSHIBA 3
Component
Diesel Fuel
Fluid
No.2 DIESEL FUEL (HIGH-SULPHUR) (--- 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
There is a high amount of particulates present in the fuel. Free water present. There is a moderate amount of visible silt present in the sample. 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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC06133766**	WC05213702	WC04933048
Sample Date		Client Info		**28 Mar 2024**	24 Mar 2021	12 Mar 2020
Machine Age	hrs	Client Info		**0**	0	0
Sample Status				**ABNORMAL**	NORMAL	NORMAL

PHYSICAL PROPERTIES		method	limit/base	current	history1	history2
Specific Gravity		*ASTM D1298	0.839	**---**	0.849	0.849
Fuel Color	text	*Visual Screen	Yllow	**Red**	Red	Red
ASTM Color	scalar	*ASTM D1500		**L4.0**	L5.5	L6.0
Visc @ 40°C	cSt	ASTM D445	3.0	**2.46**	2.58	2.56
Pensky-Martens Flash Point	°C	*PMCC Calculated	52	**62.1**	64	64

SULFUR CONTENT		method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m	500	**305**	567	594
Sulfur (UVF)	ppm	ASTM D5453		**394**	560	526

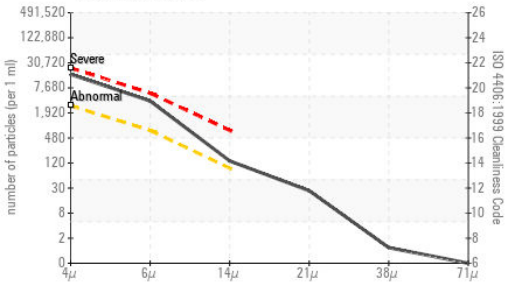
DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86	165	**173**	164	159
5% Distillation Point	°C	ASTM D86		**197**	195	191
10% Distill Point	°C	ASTM D86	201	**207**	207	204
15% Distillation Point	°C	ASTM D86		**215**	216	214
20% Distill Point	°C	ASTM D86	216	**223**	223	222
30% Distill Point	°C	ASTM D86	230	**238**	237	237
40% Distill Point	°C	ASTM D86	243	**250**	250	250
50% Distill Point	°C	ASTM D86	255	**263**	262	262
60% Distill Point	°C	ASTM D86	267	**276**	275	274
70% Distill Point	°C	ASTM D86	280	**289**	288	287
80% Distill Point	°C	ASTM D86	295	**303**	303	302
85% Distillation Point	°C	ASTM D86		**313**	312	310
90% Distill Point	°C	ASTM D86	310	**323**	322	321
95% Distillation Point	°C	ASTM D86		**340**	340	336
Final Boiling Point	°C	ASTM D86	341	**354**	346	346
Distillation Residue	%	ASTM D86	3.0	**---**	1.4	1.4
Distillation Loss	%	ASTM D86	3.0	**---**	0.5	0.1

IGNITION QUALITY		method	limit/base	current	history1	history2
API Gravity		ASTM D7777	37.7	**35**	35.2	35.2
Cetane Index		ASTM D4737	<40.0	**46**	43.7	43.2

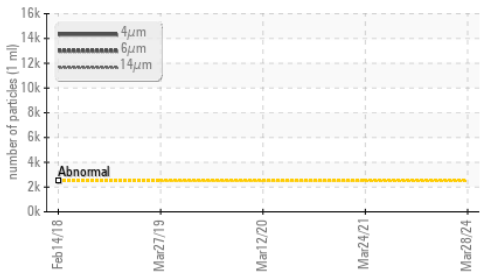
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	<1.0	**<1**	<1	<1
Sodium	ppm	ASTM D5185m	<0.1	**0**	<1	0
Potassium	ppm	ASTM D5185m	<0.1	**1**	1	0
Water	%	ASTM D6304	<0.05	**0.004**	0.005	0.004
ppm Water	ppm	ASTM D6304	<500	**40**	56.8	44.4
% Gasoline	%	*In-House	<0.50	**0.0**	0.0	0.0
% Biodiesel	%	*In-House	<20.0	**0.0**	0.0	0.0

FUEL REPORT

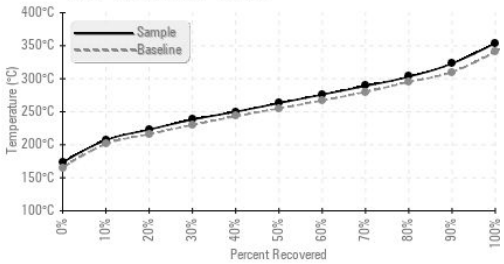
Particle Count



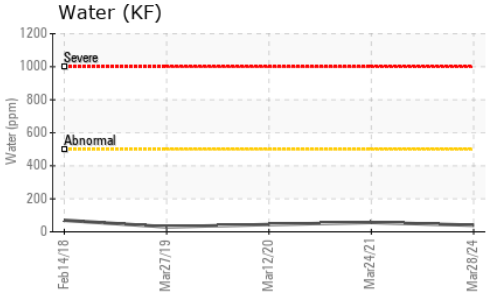
Particle Trend



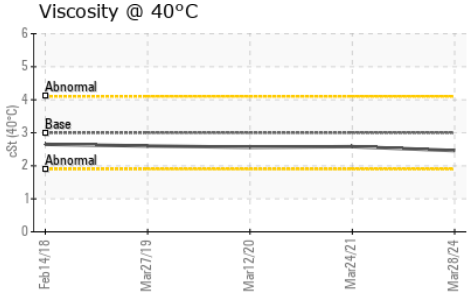
Fuel Distillation Curve



Water (KF)



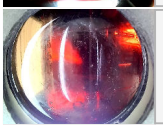
Viscosity @ 40°C



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	▲ **14067**	---	---
Particles >6µm	ASTM D7647	>640	▲ **3237**	---	---
Particles >14µm	ASTM D7647	>80	▲ **119**	---	---
Particles >21µm	ASTM D7647	>20	▲ **23**	---	---
Particles >38µm	ASTM D7647	>4	**1**	---	---
Particles >71µm	ASTM D7647	>3	**0**	---	---
Oil Cleanliness	ISO 4406 (c)	>18/16/13	▲ **21/19/14**	---	---

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**	<1	<1
Lead	ppm	ASTM D5185m	<0.1	**0**	<1	0
Vanadium	ppm	ASTM D5185m	<0.1	**0**	0	<1
Iron	ppm	ASTM D5185m	<0.1	**0**	0	0
Calcium	ppm	ASTM D5185m	<0.1	**4**	<1	<1
Magnesium	ppm	ASTM D5185m	<0.1	**<1**	<1	<1
Phosphorus	ppm	ASTM D5185m	<0.1	**0**	0	0
Zinc	ppm	ASTM D5185m	<0.1	**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. : WC06133766 **Received** : 29 Mar 2024
Lab Number : 06133766 **Tested** : 11 Apr 2024
Unique Number : 10953231 **Diagnosed** : 11 Apr 2024 - Doug Bogart
Test Package : DF-2 (Additional Tests: Bacteria, Fuel, 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)

COUCH OIL COMPANY
2907 HILLSBOROUGH RD
DURHAM, NC
US 27705
Contact: JESSE BROWN
jesse@couchoilcompany.com
T: (919)285-5408
F: