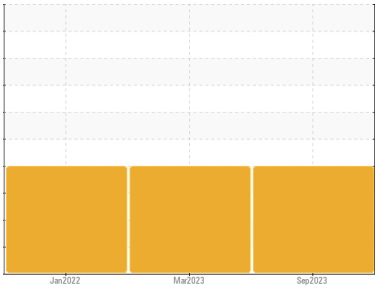
PROBLEM SUMMARY

Sample Rating Trend

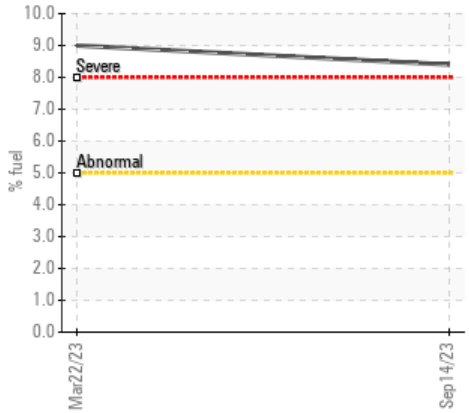


FUEL

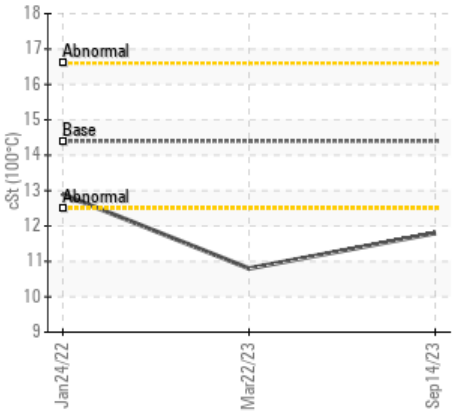
Machine Id
9909
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY

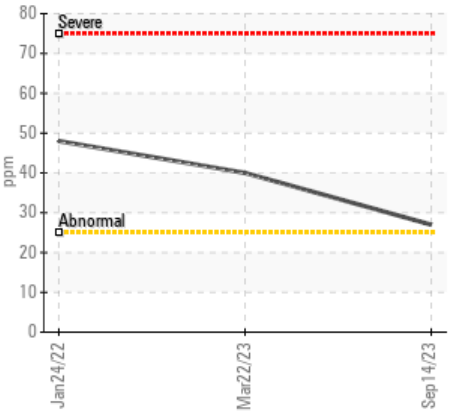
Fuel Dilution



Viscosity @ 100°C



Silicon (ppm)



RECOMMENDATION

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	ABNORMAL
Silicon	ppm	ASTM D5185m	>25	▲ **27**	▲ 40	▲ 48
Fuel	%	ASTM D3524	>5	⬢ **8.4**	⬢ 9.0	<1.0
Visc @ 100°C	cSt	ASTM D445	14.4	▲ **11.8**	▲ 10.8	12.9

Customer Id: TOWCHANC
Sample No.: WC0844939
Lab Number: 05963289
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldridge +1
don.b505@comcast.net

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Fuel/injector System	---	---	?	We advise that you check the fuel injection system.

HISTORICAL DIAGNOSIS

22 Mar 2023 Diag: Jonathan Hester

FUEL

We advise that you check the fuel injection system. We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a high amount of fuel present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material. Fuel is present in the oil and is lowering the viscosity.

view report

24 Jan 2022 Diag: Jonathan Hester

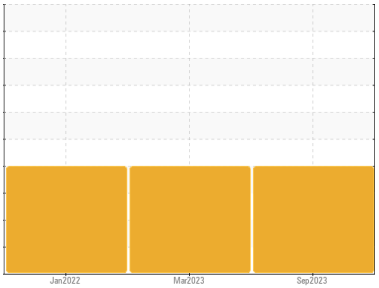
DIRT

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.All component wear rates are normal. Sodium and/or potassium levels are high. Elemental level of silicon (Si) above normal indicating ingress of seal material. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Machine Id
9909
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
There is a high amount of fuel present in the oil. Elemental level of silicon (Si) above normal.

Fluid Condition
Fuel is present in the oil and is lowering the viscosity.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0844939**	WC0790555	WC0635294
Sample Date		Client Info		**14 Sep 2023**	22 Mar 2023	24 Jan 2022
Machine Age	mls	Client Info		**369696**	359147	348013
Oil Age	mls	Client Info		**0**	6000	6000
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	SEVERE	ABNORMAL

CONTAMINATION	method	limit/base	current	history1	history2
Glycol	WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**57**	46	96
Chromium	ppm	ASTM D5185m	>20	**6**	5	2
Nickel	ppm	ASTM D5185m	>4	**<1**	0	0
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>3	**0**	0	<1
Aluminum	ppm	ASTM D5185m	>20	**3**	3	6
Lead	ppm	ASTM D5185m	>40	**24**	15	4
Copper	ppm	ASTM D5185m	>330	**21**	42	8
Tin	ppm	ASTM D5185m	>15	**2**	2	<1
Antimony	ppm	ASTM D5185m		**---**	---	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**8**	11	32
Barium	ppm	ASTM D5185m	10	**2**	3	0
Molybdenum	ppm	ASTM D5185m	100	**74**	66	105
Manganese	ppm	ASTM D5185m		**1**	2	<1
Magnesium	ppm	ASTM D5185m	450	**401**	341	465
Calcium	ppm	ASTM D5185m	3000	**1834**	1731	1393
Phosphorus	ppm	ASTM D5185m	1150	**1027**	988	854
Zinc	ppm	ASTM D5185m	1350	**1252**	1152	1066
Sulfur	ppm	ASTM D5185m	4250	**2932**	3063	2992

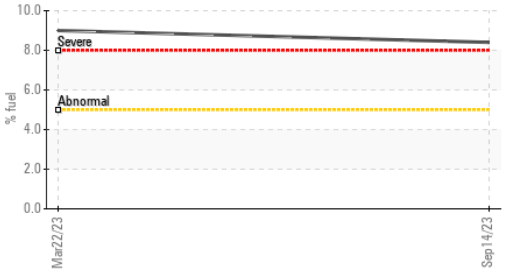
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ **27**	▲ 40	▲ 48
Sodium	ppm	ASTM D5185m	>158	**36**	54	▲ 1291
Potassium	ppm	ASTM D5185m	>20	**2**	2	▲ 155
Fuel	%	ASTM D3524	>5	● **8.4**	● 9.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1**	0.4	2.8
Nitration	Abs/cm	*ASTM D7624	>20	**13.5**	9.1	17.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	**27.2**	21.7	33.4

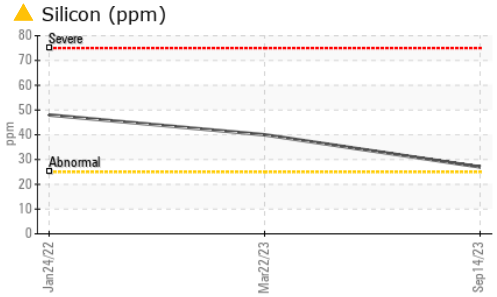
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**27.8**	19.3	27.6
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**5.7**	7.6	8.7

OIL ANALYSIS REPORT

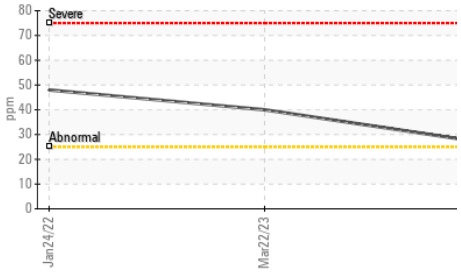
Fuel Dilution



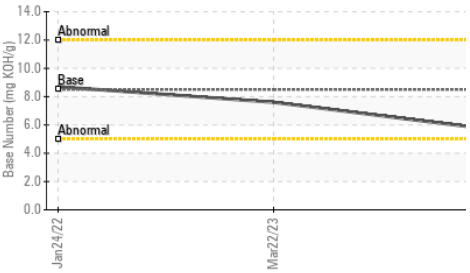
Silicon (ppm)



Silicon (ppm)



Base Number

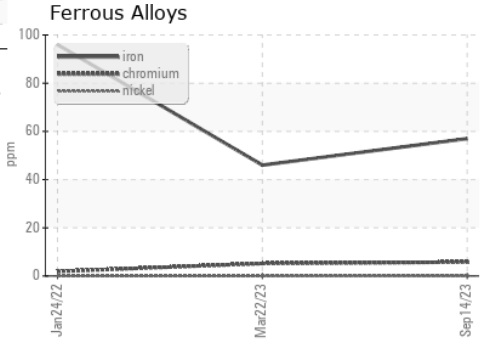


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

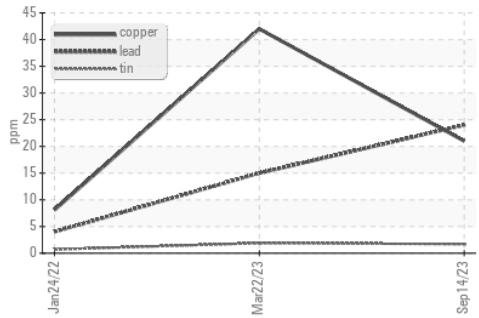
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	▲ **11.8**	▲ 10.8	12.9

GRAPHS

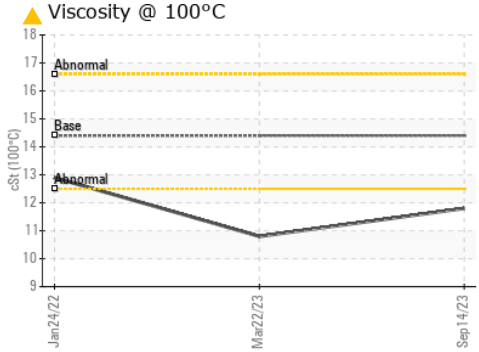
Ferrous Alloys



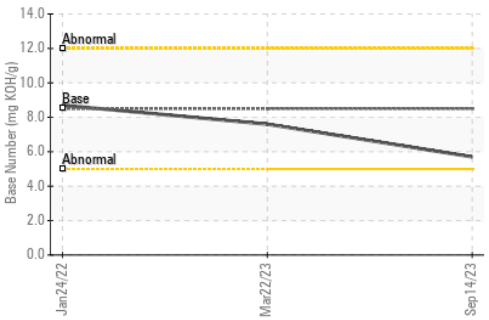
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0844939 **Received** : 28 Sep 2023
Lab Number : 05963289 **Diagnosed** : 29 Sep 2023
Unique Number : 10669840 **Diagnostician** : Don Baldridge
Test Package : FLEET (Additional Tests: PercentFuel)

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)

TOWN OF CHAPEL HILL
6900 MILLHOUSE RD
CHAPEL HILL, NC
US 27516
Contact: Lisa DePasqua
ldepasqua@townofchapelhill.org
T: (919)696-4941
F: