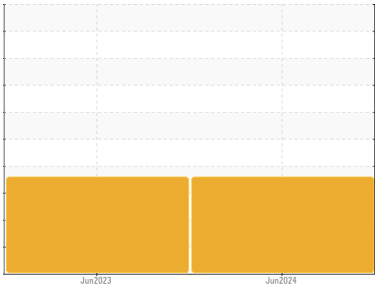
PROBLEM SUMMARY

Sample Rating Trend

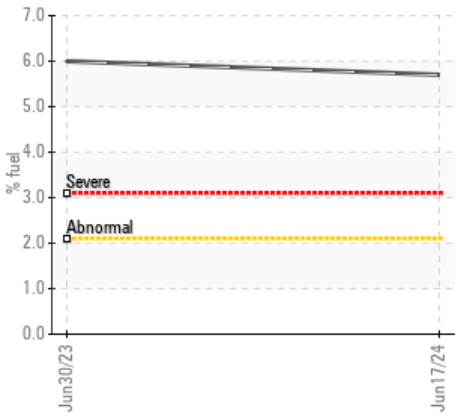


FUEL

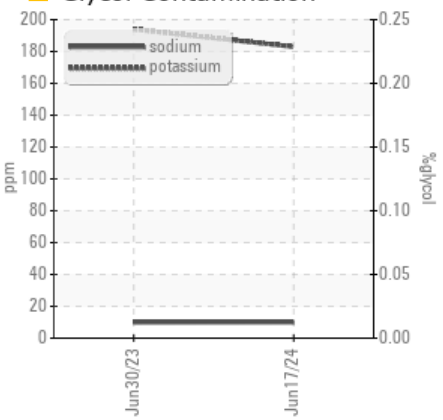
Machine Id
[] 24-174
Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY

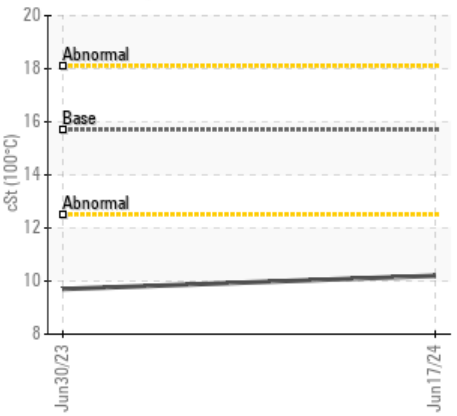
▲ Fuel Dilution



▲ Glycol Contamination



▲ Viscosity @ 100°C



RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. 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	---
Potassium	ppm	ASTM D5185m	>20	▲ **183**	● 194	---
Fuel	%	ASTM D3524	>2.1	▲ **5.7**	▲ 6.0	---
Visc @ 100°C	cSt	ASTM D445	15.7	▲ **10.2**	▲ 9.7	---

Customer Id: GARSEA
Sample No.: PE0003092
Lab Number: 06220570
Test Package: CONST

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

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.
Check Glycol Access	---	---	?	We advise that you check for the source of the coolant leak.

HISTORICAL DIAGNOSIS

FUEL

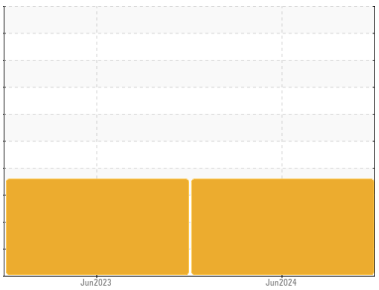
30 Jun 2023 Diag: Doug Bogart

We advise that you check the fuel injection system. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.Metal levels are typical for a new component breaking in. Sodium and/or potassium levels are high. There is a high amount of fuel present in the oil. Test for glycol is negative. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Machine Id
[] 24-174
Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check for the source of the coolant leak. Check for low coolant level. 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
Sodium and/or potassium levels remain high. There is a high amount of fuel present in the oil.

Fluid Condition
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PE0003092**	PE0001397	---
Sample Date		Client Info		**17 Jun 2024**	30 Jun 2023	---
Machine Age	hrs	Client Info		**824**	211	---
Oil Age	hrs	Client Info		**824**	211	---
Oil Changed		Client Info		**Changed**	Not Changd	---
Sample Status				**SEVERE**	SEVERE	---

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.21	**NEG**	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>51	**48**	17	---
Chromium	ppm	ASTM D5185m	>11	**<1**	<1	---
Nickel	ppm	ASTM D5185m	>5	**0**	0	---
Titanium	ppm	ASTM D5185m		**0**	0	---
Silver	ppm	ASTM D5185m	>3	**0**	0	---
Aluminum	ppm	ASTM D5185m	>31	**5**	3	---
Lead	ppm	ASTM D5185m	>26	**4**	<1	---
Copper	ppm	ASTM D5185m	>26	**20**	16	---
Tin	ppm	ASTM D5185m	>4	**1**	<1	---
Vanadium	ppm	ASTM D5185m		**0**	0	---
Cadmium	ppm	ASTM D5185m		**0**	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	316	**132**	255	---
Barium	ppm	ASTM D5185m	0.0	**8**	6	---
Molybdenum	ppm	ASTM D5185m	1.2	**157**	168	---
Manganese	ppm	ASTM D5185m		**2**	<1	---
Magnesium	ppm	ASTM D5185m	24	**33**	21	---
Calcium	ppm	ASTM D5185m	2292	**2262**	2257	---
Phosphorus	ppm	ASTM D5185m	1064	**675**	672	---
Zinc	ppm	ASTM D5185m	1160	**832**	810	---
Sulfur	ppm	ASTM D5185m	4996	**2772**	3053	---

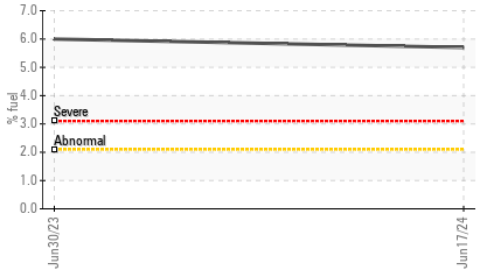
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>22	**37**	39	---
Sodium	ppm	ASTM D5185m	>31	**10**	10	---
Potassium	ppm	ASTM D5185m	>20	▲ **183**	● 194	---
Fuel	%	ASTM D3524	>2.1	▲ **5.7**	▲ 6.0	---
Glycol	%	*ASTM D2982		**NEG**	NEG	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.3**	0.1	---
Nitration	Abs/cm	*ASTM D7624	>20	**11.6**	8.2	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.8**	16.3	---

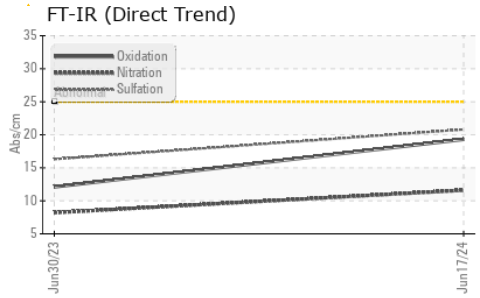
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**19.3**	12.1	---
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	**5.4**	7.1	---

OIL ANALYSIS REPORT

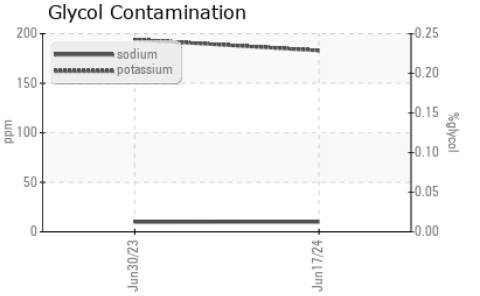
Fuel Dilution



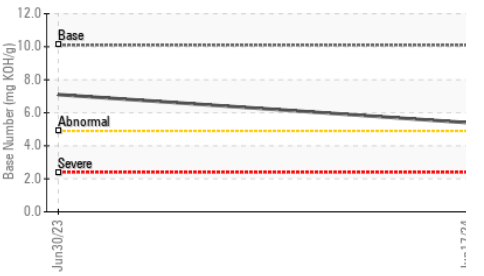
FT-IR (Direct Trend)



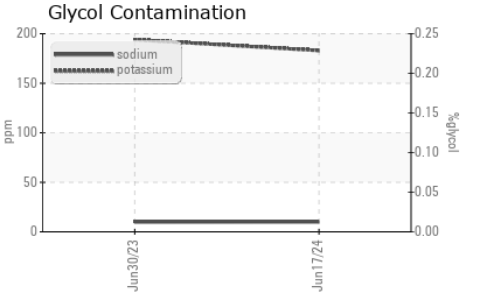
Glycol Contamination



Base Number



Glycol Contamination

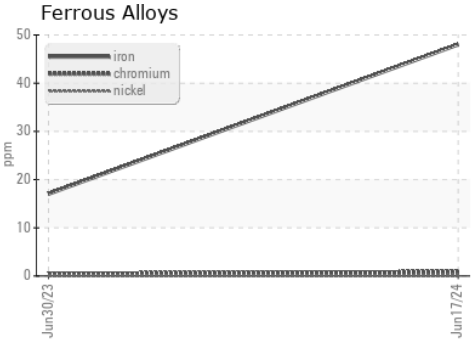


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
Silt	scalar	*Visual	NONE	**NONE**	NONE	---
Debris	scalar	*Visual	NONE	**NONE**	NONE	---
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	---
Appearance	scalar	*Visual	NORML	**NORML**	NORML	---
Odor	scalar	*Visual	NORML	**NORML**	NORML	---
Emulsified Water	scalar	*Visual	>0.21	**NEG**	NEG	---
Free Water	scalar	*Visual		**NEG**	NEG	---

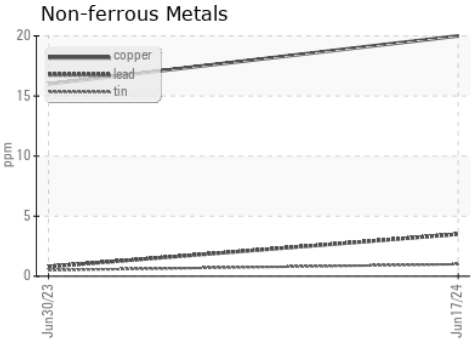
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.7	▲ **10.2**	▲ 9.7	---

GRAPHS

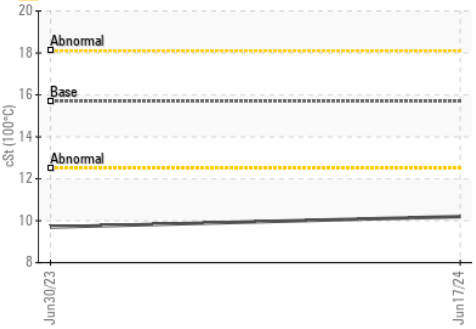
Ferrous Alloys



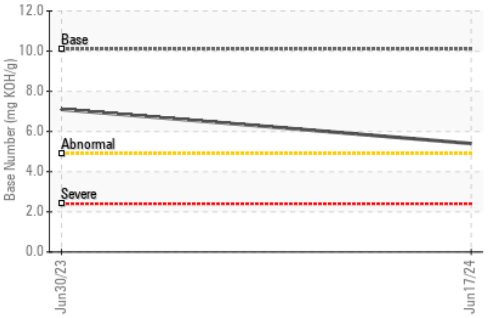
Non-ferrous Metals



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0003092
Lab Number : 06220570
Unique Number : 11098767
Test Package : CONST (Additional Tests: FT-IR, Glycol, ICP, KV100, PercentFuel, SCREEN, TBN)

Received : 25 Jun 2024
Tested : 28 Jun 2024
Diagnosed : 28 Jun 2024 - Jonathan Hester

Gary Merlino Construction - Off Road Shop
9125 10TH AVE SOUTH
SEATTLE, WA
US 98108
Contact: Jesse Patterson
oilsamples@gmccinc.com
T: 1(866)292-1303
F:

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)