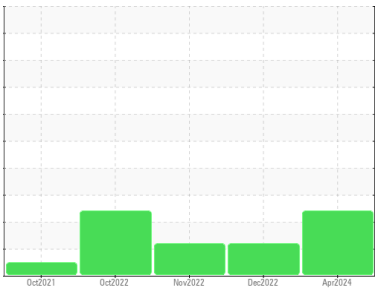
PROBLEM SUMMARY

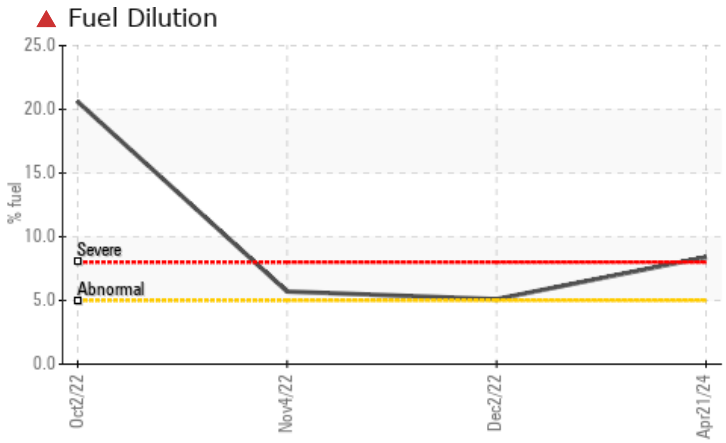
Sample Rating Trend

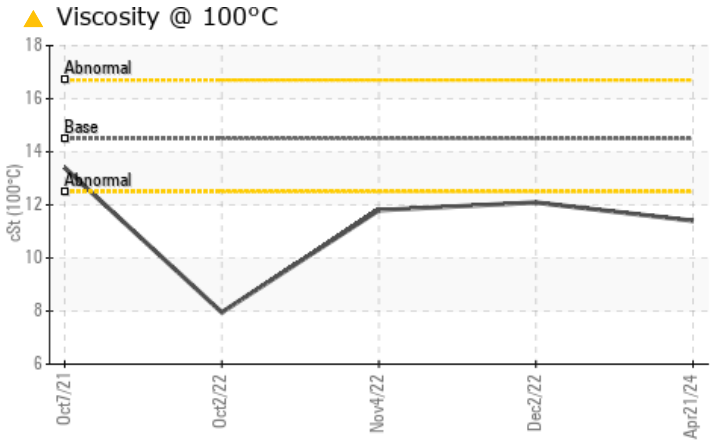


FUEL

Machine Id
FIRE PUMP
Component
Diesel Engine
Fluid
MOBIL MOBILGARD 412 (--- GAL)

COMPONENT CONDITION SUMMARY





RECOMMENDATION

We advise that you check the fuel injection system. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	ABNORMAL	ABNORMAL
Fuel	%	ASTM D3524	>5	▲ **8.4**	▲ 5.1	▲ 5.7
Visc @ 100°C	cSt	ASTM D445	14.5	▲ **11.4**	▲ 12.09	▲ 11.8

Customer Id: ENGBOS
Sample No.: RP0039504
Lab Number: 06156203
Test Package: IND 2

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
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

FUEL

02 Dec 2022 Diag: Doug Bogart
We advise that you check the fuel injection system. Resample at the next service interval to monitor.All component wear rates are normal. There is a moderate amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

FUEL

04 Nov 2022 Diag: Jonathan Hester
We advise that you check the fuel injection system. Resample at the next service interval to monitor.All component wear rates are normal. There is a moderate amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

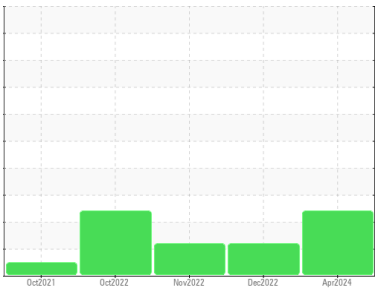
FUEL

02 Oct 2022 Diag: Jonathan Hester
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.All component wear rates are normal. There is a high amount of fuel present in the oil. 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
FIRE PUMP
Component
Diesel Engine
Fluid
MOBIL MOBILGARD 412 (--- GAL)

DIAGNOSIS

▲ Recommendation
We advise that you check the fuel injection system. 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.

▲ 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		**RP0039504**	RP0030035	RP0030029
Sample Date		Client Info		**21 Apr 2024**	02 Dec 2022	04 Nov 2022
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**SEVERE**	ABNORMAL	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	**4**	2	3
Chromium	ppm	ASTM D5185m	>20	**1**	<1	<1
Nickel	ppm	ASTM D5185m	>4	**0**	0	0
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	<1	0
Aluminum	ppm	ASTM D5185m	>20	**1**	2	2
Lead	ppm	ASTM D5185m	>40	**0**	<1	<1
Copper	ppm	ASTM D5185m	>330	**4**	<1	<1
Tin	ppm	ASTM D5185m	>15	**<1**	0	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	0	**0**	0	4
Barium	ppm	ASTM D5185m	0	**2**	<1	0
Molybdenum	ppm	ASTM D5185m	0	**<1**	<1	7
Manganese	ppm	ASTM D5185m	0	**2**	<1	<1
Magnesium	ppm	ASTM D5185m	18	**22**	21	26
Calcium	ppm	ASTM D5185m	6350	**5849**	5814	5789
Phosphorus	ppm	ASTM D5185m	200	**216**	209	207
Zinc	ppm	ASTM D5185m	380	**364**	356	362

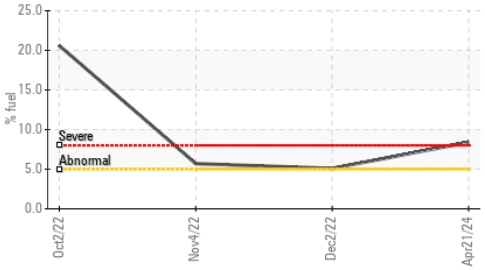
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**14**	6	8
Sodium	ppm	ASTM D5185m		**4**	2	<1
Potassium	ppm	ASTM D5185m	>20	**2**	0	2
Fuel	%	ASTM D3524	>5	▲ **8.4**	▲ 5.1	▲ 5.7
Water	%	ASTM D6304	>0.2	**NEG**	NEG	NEG
ppm Water	ppm	ASTM D6304	>2000	**---**	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**5.1**	5.3	5.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**13.9**	15.0	14.9

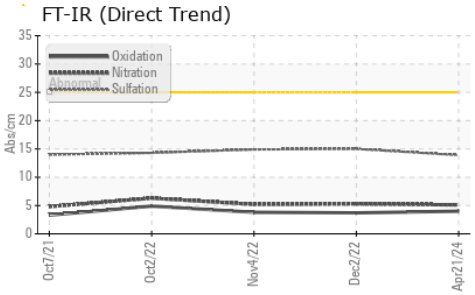
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**4.0**	3.7	3.8
Base Number (BN)	mg KOH/g	ASTM D2896	15	**14.27**	14.7	15.0

OIL ANALYSIS REPORT

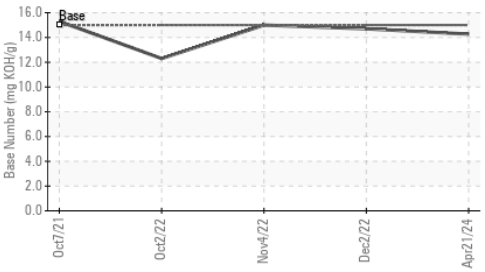
Fuel Dilution



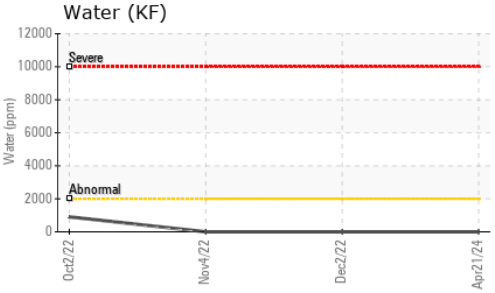
FT-IR (Direct Trend)



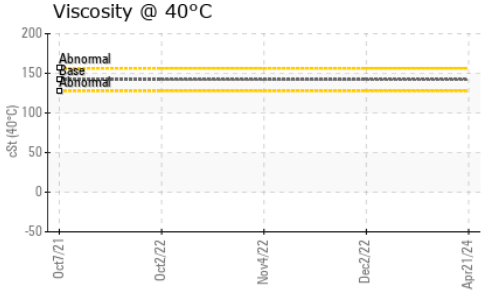
Base Number



Water (KF)



Viscosity @ 40°C

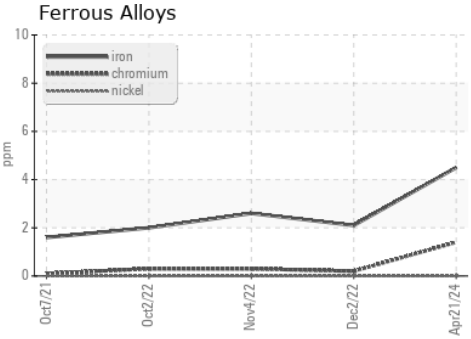


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

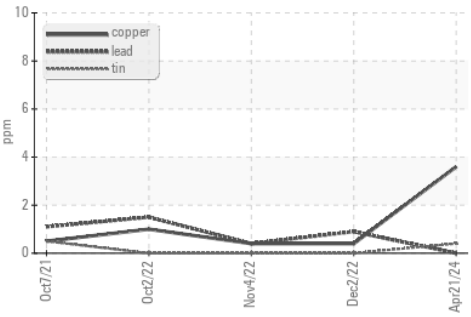
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.5	▲ **11.4**	▲ 12.09	▲ 11.8

GRAPHS

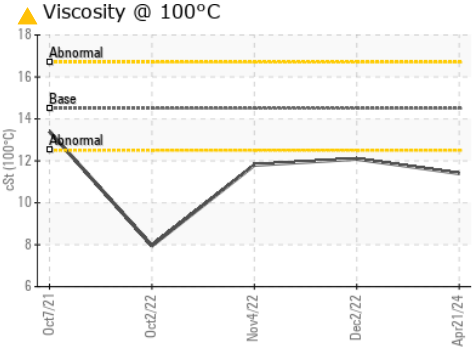
Ferrous Alloys



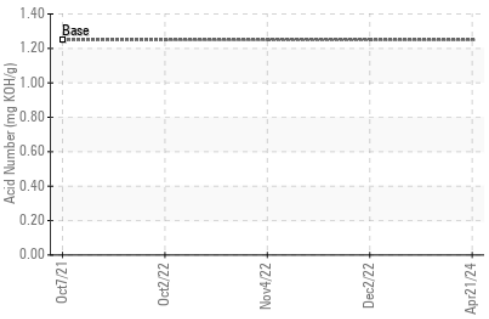
Non-ferrous Metals



Viscosity @ 100°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RP0039504 **Received** : 22 Apr 2024
Lab Number : 06156203 **Tested** : 26 Apr 2024
Unique Number : 10991626 **Diagnosed** : 26 Apr 2024 - Jonathan Hester
Test Package : IND 2 (Additional Tests: FT-IR, KV100, PercentFuel, TBN)

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)

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Report Id: ENGBOS [WUSCAR] 06156203 (Generated: 04/26/2024 13:18:43) Rev: 1

Contact/Location: ROBERT ST SAUVEUR - ENGBOS