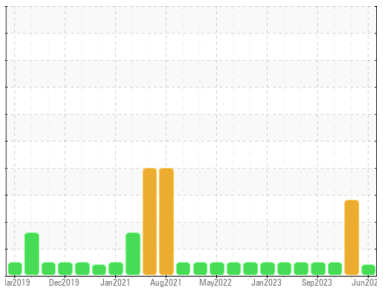
OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY

Machine Id
DEG-4
Component
Diesel Engine
Fluid
MOBIL MOBILGARD 412 (--- GAL)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
Fuel content negligible. There is no indication of any contamination in the oil.

Fluid Condition
The oil viscosity is lower than normal. 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		**RP0043308**	RP0039440	RP0038817
Sample Date		Client Info		**04 Jun 2024**	13 Mar 2024	11 Dec 2023
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				**MARGINAL**	ABNORMAL	NORMAL

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	**2**	0	0
Chromium	ppm	ASTM D5185m	>20	**0**	<1	0
Nickel	ppm	ASTM D5185m	>4	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	<1	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**<1**	<1	<1
Lead	ppm	ASTM D5185m	>40	**0**	<1	0
Copper	ppm	ASTM D5185m	>330	**<1**	1	0
Tin	ppm	ASTM D5185m	>15	**0**	<1	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**3**	1	<1
Barium	ppm	ASTM D5185m	0	**2**	0	0
Molybdenum	ppm	ASTM D5185m	0	**2**	0	0
Manganese	ppm	ASTM D5185m	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	18	**18**	9	17
Calcium	ppm	ASTM D5185m	6350	**4701**	4982	5390
Phosphorus	ppm	ASTM D5185m	200	**168**	203	205
Zinc	ppm	ASTM D5185m	380	**357**	381	357

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**6**	8	8
Sodium	ppm	ASTM D5185m		**<1**	3	2
Potassium	ppm	ASTM D5185m	>20	**0**	0	0
Fuel	%	ASTM D3524	>5	**1.6**	1.6	<1.0
Water	%	ASTM D6304	>0.2	**NEG**	▲ 0.829	NEG
ppm Water	ppm	ASTM D6304	>2000	**---**	▲ 8290	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.1**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**5.1**	6.7	7.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	**12.1**	10.3	9.6

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**2.8**	3.3	3.8
Base Number (BN)	mg KOH/g	ASTM D2896	15	**12.27**	13.12	14.97

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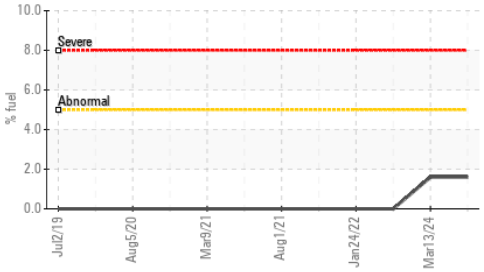
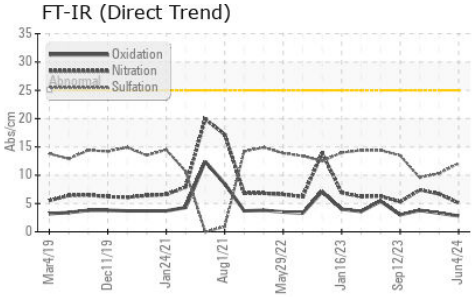
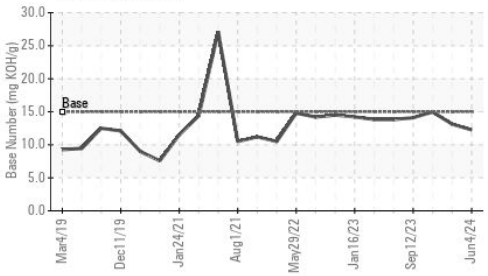
Fuel Dilution



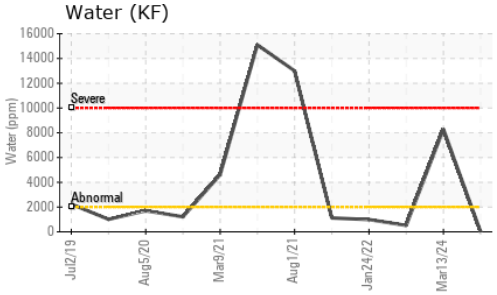
FT-IR (Direct Trend)



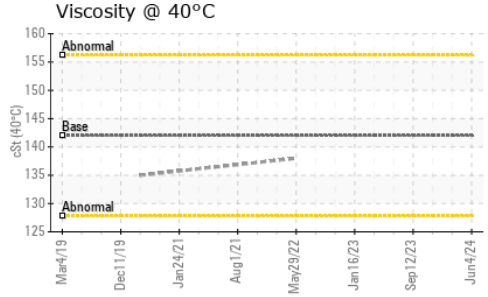
Base Number



Water (KF)



Viscosity @ 40°C

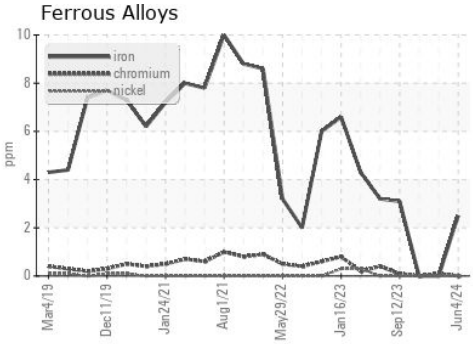


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

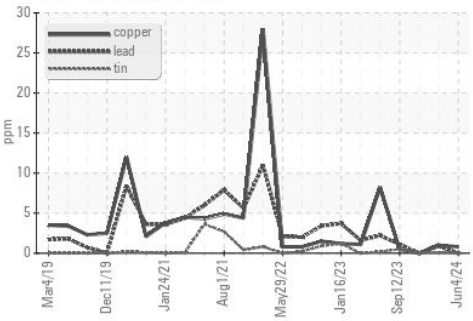
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.5	▲ **12.2**	7.59	14.1

GRAPHS

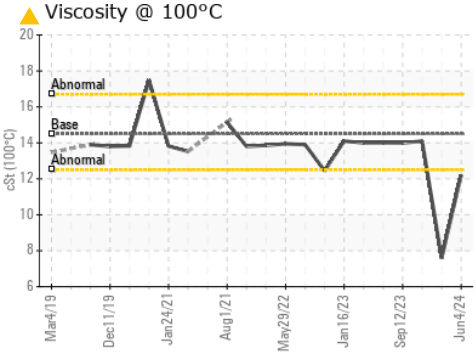
Ferrous Alloys



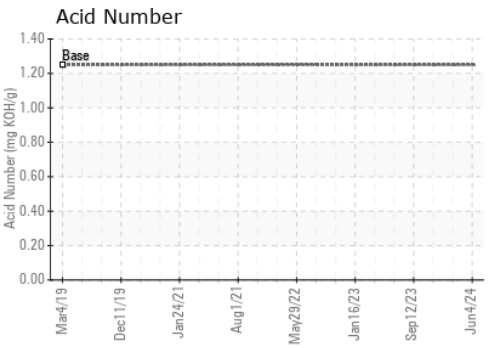
Non-ferrous Metals



▲ Viscosity @ 100°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RP0043308
Lab Number : 06200349
Unique Number : 11062472
Test Package : IND 2 (Additional Tests: FT-IR, FuelDilution, KV100, PercentFuel, TBN)

Received : 05 Jun 2024
Tested : 10 Jun 2024
Diagnosed : 10 Jun 2024 - Jonathan Hester

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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