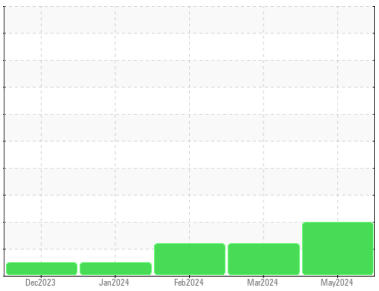
OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL

Machine Id
7458
Component
Diesel Engine
Fluid
SHELL Rotella T5 15W-40 (--- QTS)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

Wear
The aluminum level is abnormal. All other component wear rates are normal.

Contamination
Sodium and/or potassium levels are high. Test for glycol is negative.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0911654**	WC0910176	WC0899595
Sample Date		Client Info		**12 May 2024**	22 Mar 2024	20 Feb 2024
Machine Age	mls	Client Info		**0**	0	10171
Oil Age	mls	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	Not Changd	Not Changd
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**52**	50	43
Chromium	ppm	ASTM D5185m	>20	**2**	2	<1
Nickel	ppm	ASTM D5185m	>4	**<1**	<1	0
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	▲ **20**	19	13
Lead	ppm	ASTM D5185m	>40	**<1**	1	<1
Copper	ppm	ASTM D5185m	>330	**6**	7	4
Tin	ppm	ASTM D5185m	>15	**<1**	1	0
Vanadium	ppm	ASTM D5185m		**<1**	<1	0
Cadmium	ppm	ASTM D5185m		**<1**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**86**	99	104
Barium	ppm	ASTM D5185m		**7**	7	6
Molybdenum	ppm	ASTM D5185m		**122**	129	115
Manganese	ppm	ASTM D5185m		**3**	3	2
Magnesium	ppm	ASTM D5185m		**649**	698	788
Calcium	ppm	ASTM D5185m		**1253**	1394	1376
Phosphorus	ppm	ASTM D5185m		**777**	795	834
Zinc	ppm	ASTM D5185m		**869**	958	975
Sulfur	ppm	ASTM D5185m		**3279**	3449	3651

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**15**	15	13
Sodium	ppm	ASTM D5185m		**2**	3	4
Potassium	ppm	ASTM D5185m	>20	▲ **94**	▲ 90	▲ 61
Glycol	%	*ASTM D2982		**NEG**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.6**	0.6	0.5
Nitration	Abs/cm	*ASTM D7624	>20	**10.1**	9.7	9.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	**19.8**	19.4	18.6

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**16.4**	16.9	16.0
Base Number (BN)	mg KOH/g	ASTM D2896	10	**6.7**	6.3	6.8

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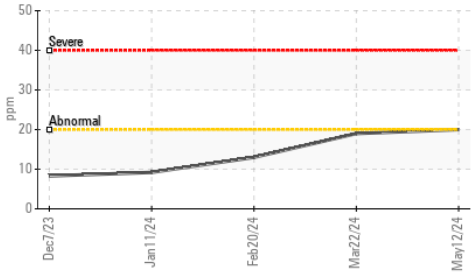
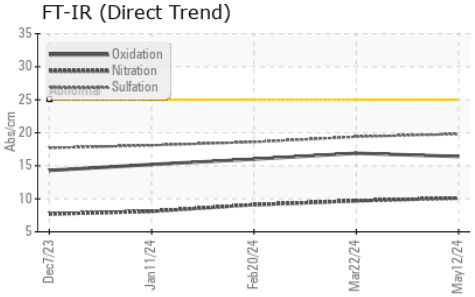
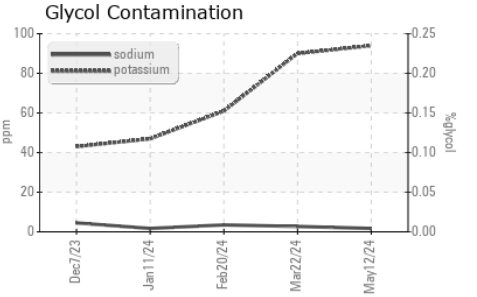
Aluminum (ppm)



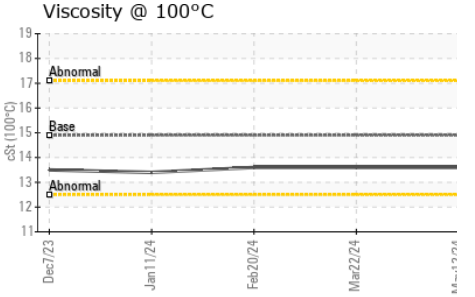
FT-IR (Direct Trend)



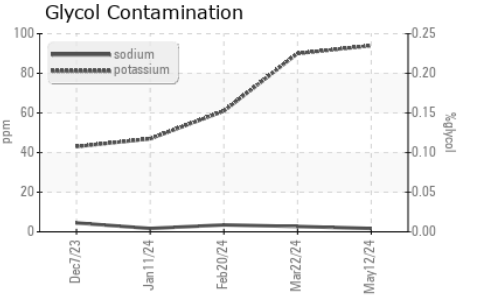
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination

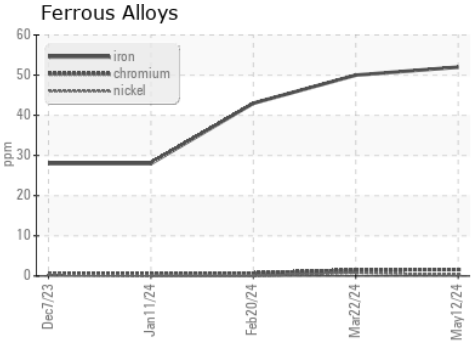


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

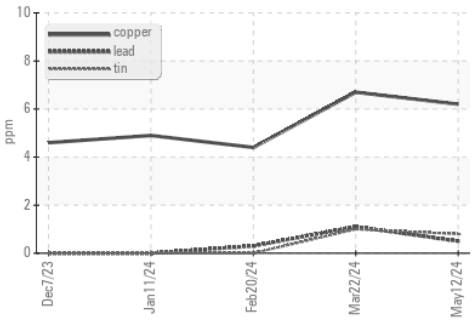
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.9	**13.6**	13.6	13.6

GRAPHS

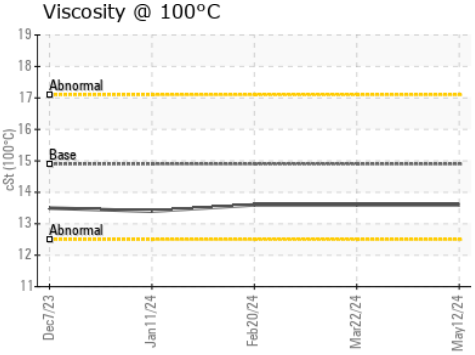
Ferrous Alloys



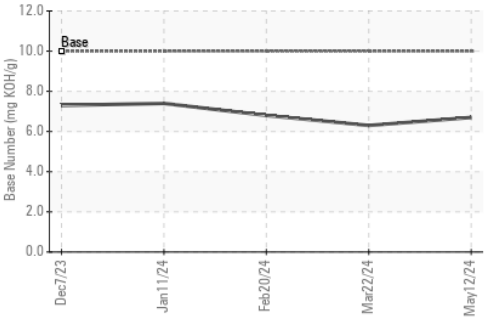
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0911654
Lab Number : 06176526
Unique Number : 11022579
Test Package : FLEET (Additional Tests: Glycol)

Received : 10 May 2024
Tested : 15 May 2024
Diagnosed : 15 May 2024 - Sean Felton

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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