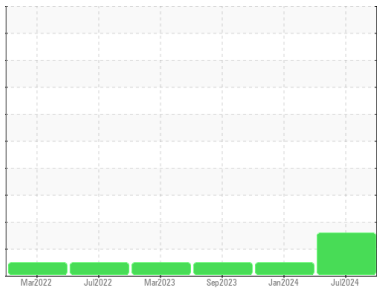
OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Machine Id
660
Component
Gasoline Engine
Fluid
GASOLINE ENGINE OIL SAE 5W30 (11 QTS)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
Elemental level of silicon (Si) above normal indicating ingress of seal material.

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**RW0005211**	RW0004307	RW0004780
Sample Date		Client Info		**02 Jul 2024**	11 Jan 2024	14 Sep 2023
Machine Age	mls	Client Info		**42701**	33453	28117
Oil Age	mls	Client Info		**9248**	5300	7599
Oil Changed		Client Info		**Changed**	Changed	N/A
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>150	**25**	14	16
Chromium	ppm	ASTM D5185m	>20	**2**	1	1
Nickel	ppm	ASTM D5185m	>5	**<1**	<1	2
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>40	**5**	4	4
Lead	ppm	ASTM D5185m	>50	**0**	0	0
Copper	ppm	ASTM D5185m	>155	**<1**	0	1
Tin	ppm	ASTM D5185m	>10	**0**	<1	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	75	**16**	21	27
Barium	ppm	ASTM D5185m	5	**0**	0	0
Molybdenum	ppm	ASTM D5185m	100	**73**	74	68
Manganese	ppm	ASTM D5185m		**<1**	<1	1
Magnesium	ppm	ASTM D5185m	12	**516**	500	458
Calcium	ppm	ASTM D5185m	2100	**1197**	1005	977
Phosphorus	ppm	ASTM D5185m	650	**716**	706	645
Zinc	ppm	ASTM D5185m	850	**852**	780	816
Sulfur	ppm	ASTM D5185m	2500	**2953**	2469	2598

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>30	▲ **44**	26	29
Sodium	ppm	ASTM D5185m	>400	**24**	15	32
Potassium	ppm	ASTM D5185m	>20	**1**	<1	2

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.1**	0	0
Nitration	Abs/cm	*ASTM D7624	>20	**17.6**	14.2	15.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	**31.4**	24.6	31.6

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**30.7**	20.5	26.7
Base Number (BN)	mg KOH/g	ASTM D2896		**3.67**	---	---

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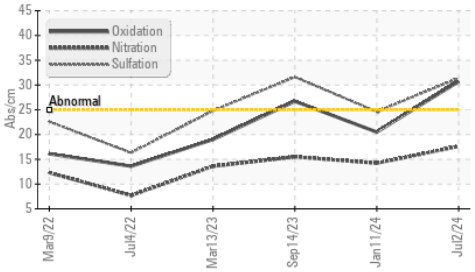
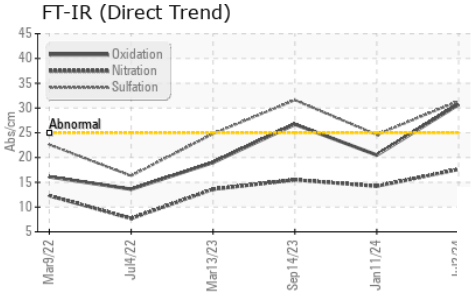
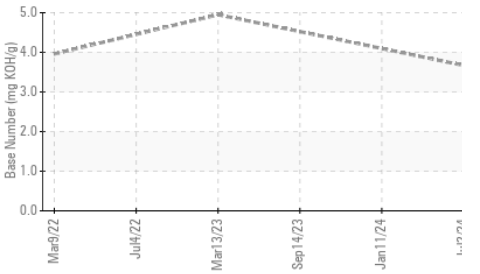
FT-IR (Direct Trend)



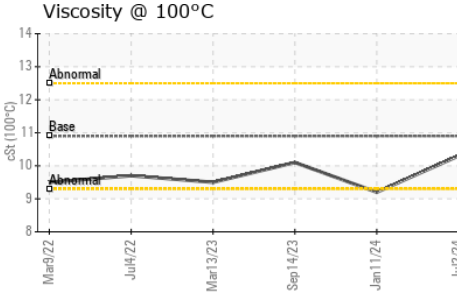
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

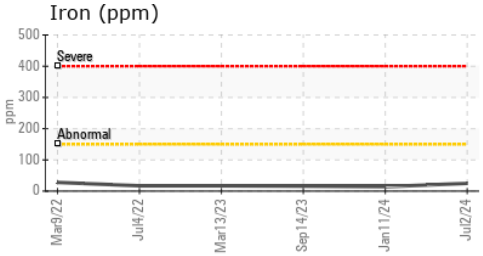


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

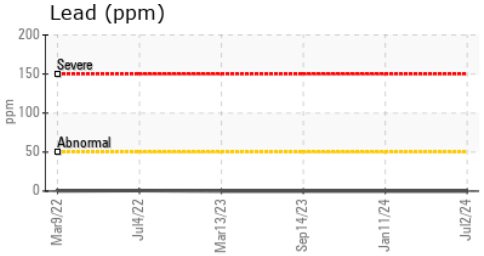
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	10.9	**10.3**	9.2	10.1

GRAPHS

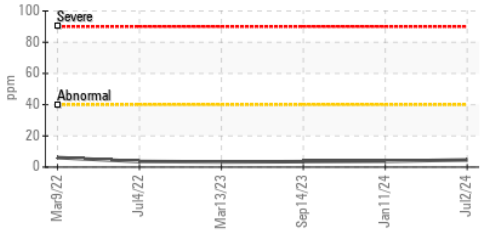
Iron (ppm)



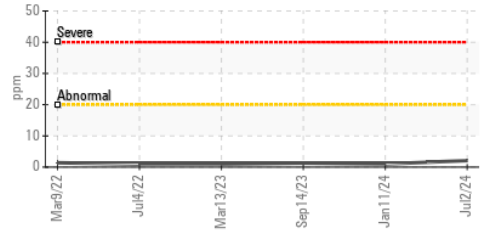
Lead (ppm)



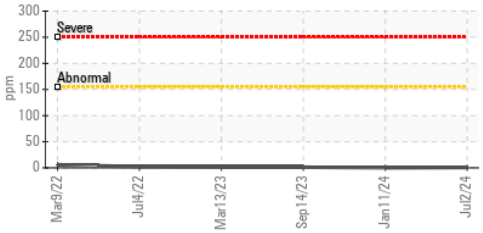
Aluminum (ppm)



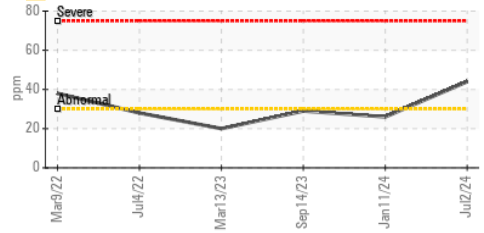
Chromium (ppm)



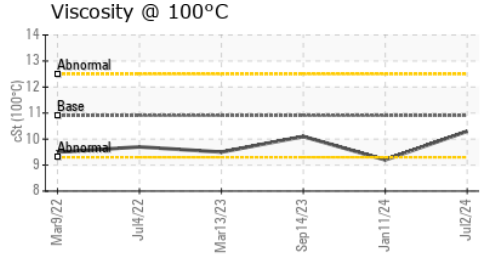
Copper (ppm)



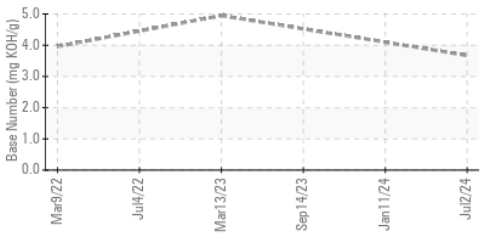
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RW0005211 **Received** : 17 Jul 2024
Lab Number : 06239645 **Tested** : 18 Jul 2024
Unique Number : 11128479 **Diagnosed** : 19 Jul 2024 - Sean Felton
Test Package : MOB 2 (Additional Tests: 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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