



WEAR	NORMAL
CONTAMINATION	MARGINAL
FLUID CONDITION	ABNORMAL

Machine Id
9911
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		HRE0000501	WC0887618	WC0810325
Sample Date		Client Info		06 Jun 2024	19 Feb 2024	07 Jun 2023
Machine Age	mls	Client Info		0	346648	341052
Oil Age	mls	Client Info		0	0	0
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	SEVERE

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	54	32	46
Chromium	ppm	ASTM D5185m	>20	1	1	3
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		4	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	5	3
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	<1	1	1
Tin	ppm	ASTM D5185m	>15	0	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

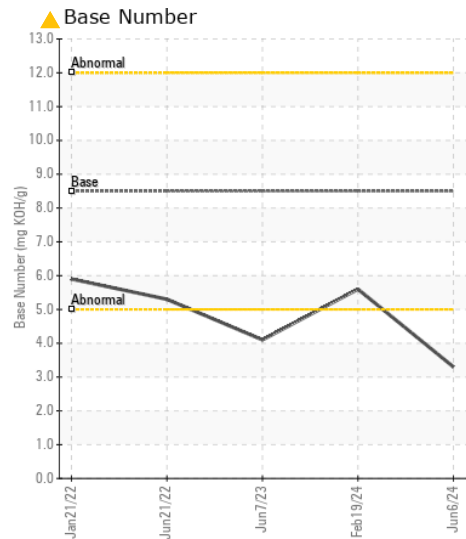
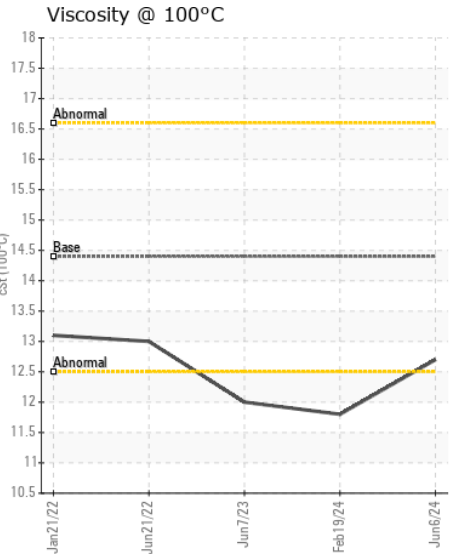
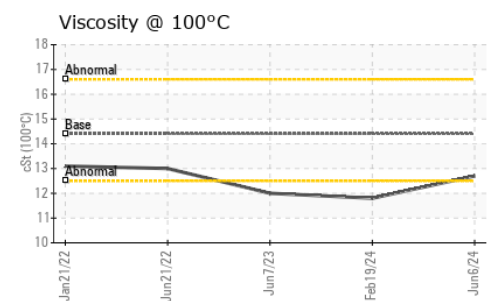
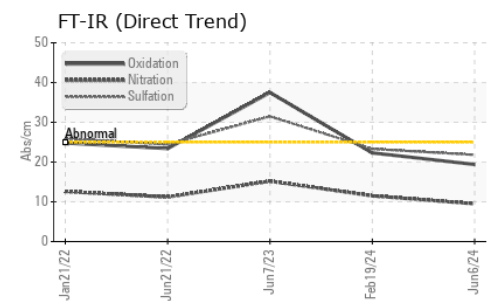
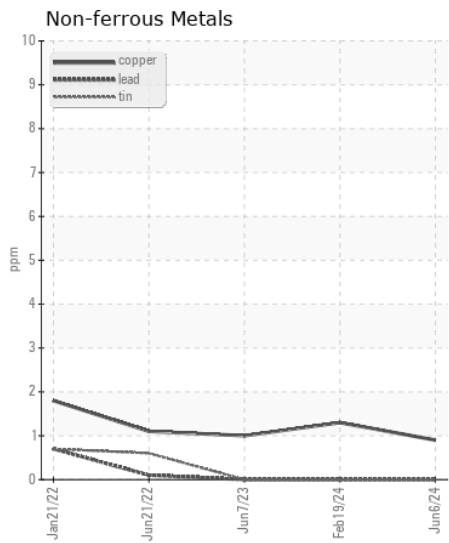
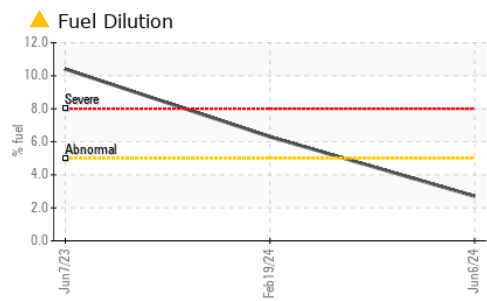
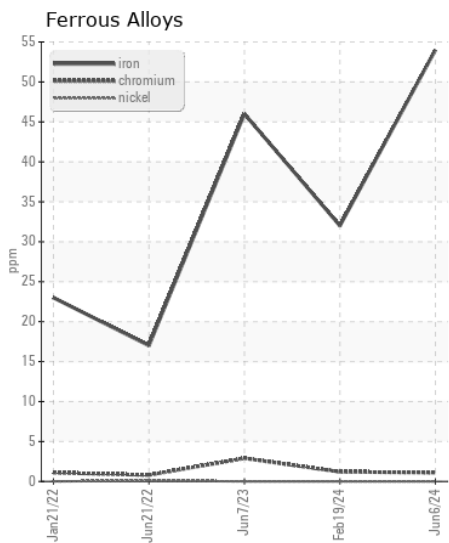
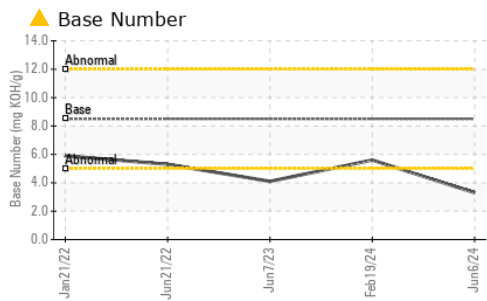
Light fuel dilution occurring. No other contaminants were detected in the oil.

Silicon	ppm	ASTM D5185m	>25	9	6	9
Potassium	ppm	ASTM D5185m	>20	3	6	11
Fuel	%	ASTM D3524	>5	▲ 2.7	▲ 6.3	▲ 10.4
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.9	0.6	1.2
Nitration	Abs/cm	*ASTM D7624	>20	9.5	11.5	15.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.8	23.3	31.5
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

FLUID CONDITION

The BN level is low. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m	>158	8	12	23
Boron	ppm	ASTM D5185m	250	96	26	34
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	71	81	69
Manganese	ppm	ASTM D5185m		<1	0	0
Magnesium	ppm	ASTM D5185m	450	377	259	188
Calcium	ppm	ASTM D5185m	3000	1604	1749	1764
Phosphorus	ppm	ASTM D5185m	1150	997	959	864
Zinc	ppm	ASTM D5185m	1350	1180	1162	1078
Sulfur	ppm	ASTM D5185m	4250	3527	3234	3427
Oxidation	Abs/.1mm	*ASTM D7414	>25	19.4	22.3	37.5
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	▲ 3.3	5.6	4.1
Visc @ 100°C	cSt	ASTM D445	14.4	12.7	▲ 11.8	▲ 12.0



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HRE0000501 **Received** : 18 Jun 2024
Lab Number : 06213231 **Tested** : 20 Jun 2024
Unique Number : 11086095 **Diagnosed** : 20 Jun 2024 - Don Baldrige
Test Package : FLEET (Additional Tests: PercentFuel)

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Certificate L2367
 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)