



WEAR	NORMAL
CONTAMINATION	MARGINAL
FLUID CONDITION	NORMAL

Machine Id
442108
 Component
Diesel Engine
 Fluid
DIESEL ENGINE OIL SAE 15W40 (20 GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		IL0036512	IL0031174	IL0031119
Sample Date		Client Info		08 Apr 2024	29 Sep 2023	19 Apr 2023
Machine Age	mls	Client Info		117752	100715	82844
Oil Age	mls	Client Info		17037	17871	82844
Filter Age	mls	Client Info		17037	17871	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				MARGINAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	63	48	38
Chromium	ppm	ASTM D5185m	>20	2	1	1
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	30	19	30
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	2	1	1
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

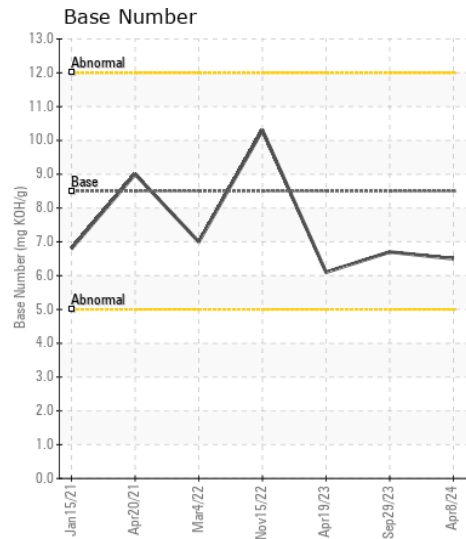
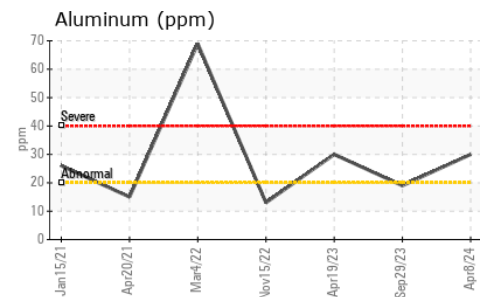
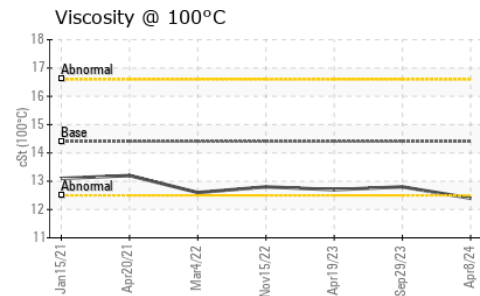
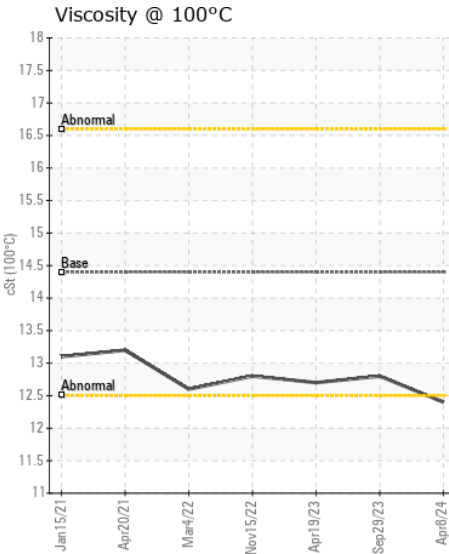
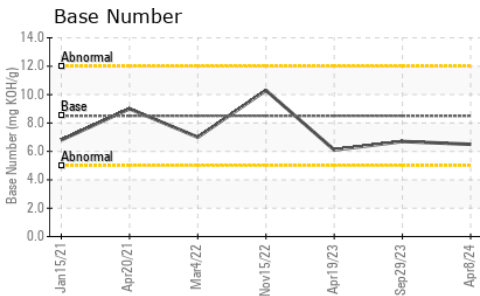
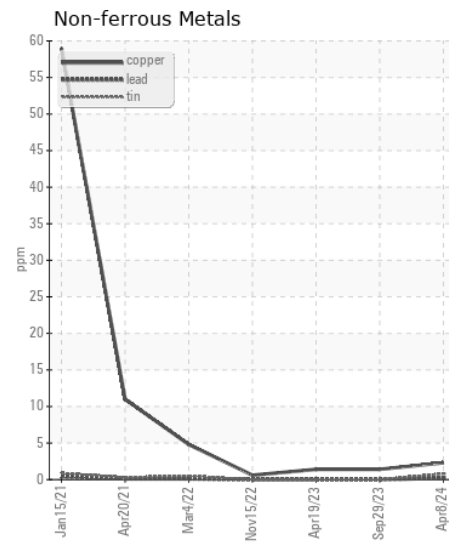
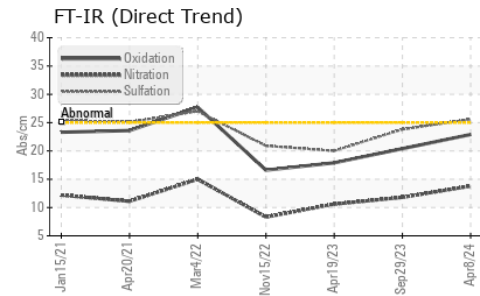
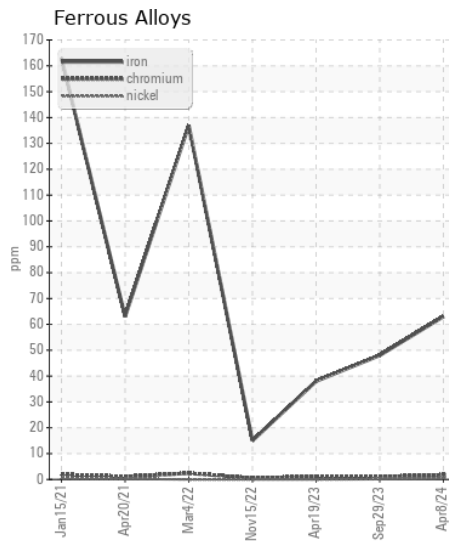
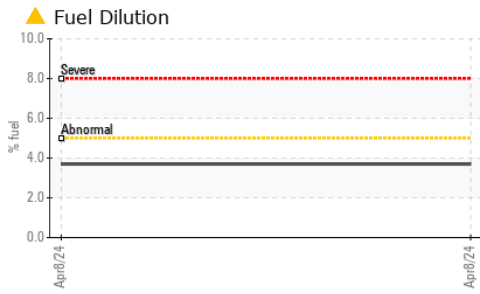
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. Light fuel dilution occurring. No other contaminants were detected in the oil.

Silicon	ppm	ASTM D5185m	>25	6	5	4
Potassium	ppm	ASTM D5185m	>20	48	39	52
Fuel	%	ASTM D3524	>5	▲ 3.7	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	1.4	0.9	0.8
Nitration	Abs/cm	*ASTM D7624	>20	13.8	11.8	10.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.6	23.8	20.0
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 result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>158	0	0	2
Boron	ppm	ASTM D5185m	250	3	2	3
Barium	ppm	ASTM D5185m	10	2	0	0
Molybdenum	ppm	ASTM D5185m	100	72	70	63
Manganese	ppm	ASTM D5185m		<1	<1	1
Magnesium	ppm	ASTM D5185m	450	899	982	970
Calcium	ppm	ASTM D5185m	3000	1103	1135	1106
Phosphorus	ppm	ASTM D5185m	1150	998	926	1002
Zinc	ppm	ASTM D5185m	1350	1154	1272	1258
Sulfur	ppm	ASTM D5185m	4250	2889	3256	3650
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.9	20.4	17.9
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	6.5	6.7	6.1
Visc @ 100°C	cSt	ASTM D445	14.4	12.4	12.8	12.7



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : IL0036512 **Received** : 10 May 2024
Lab Number : 06176492 **Tested** : 15 May 2024
Unique Number : 11022545 **Diagnosed** : 15 May 2024 - Wes Davis
Test Package : FLEET (Additional Tests: FuelDilution, 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)