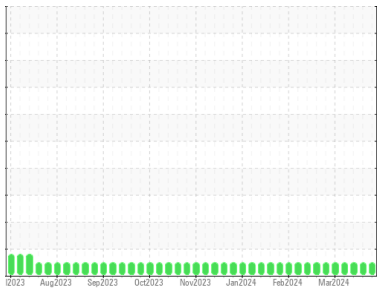
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
Locomotives
Machine Id
2007
Component
Railway diesel
Fluid
RAILWAY ENGINE OIL SAE 40 (243 GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MOB 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid. this testkit includes BN to determine the suitability of the oil for continued use.

Wear
Component wear rates appear to be normal (unconfirmed).

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

Fluid Condition
The condition of the oil is acceptable for the time in service (unconfirmed).

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0891374**	WC0891368	WC0891361
Sample Date		Client Info		**12 Apr 2024**	05 Apr 2024	01 Apr 2024
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**NORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.1	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>42	**15**	15	14
Chromium	ppm	ASTM D5185(m)	>6	**5**	5	5
Nickel	ppm	ASTM D5185(m)	>2	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)	>5	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>4	**2**	2	2
Lead	ppm	ASTM D5185(m)	>30	**4**	3	3
Copper	ppm	ASTM D5185(m)	>95	**17**	16	16
Tin	ppm	ASTM D5185(m)	>10	**3**	2	2
Antimony	ppm	ASTM D5185(m)		**0**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

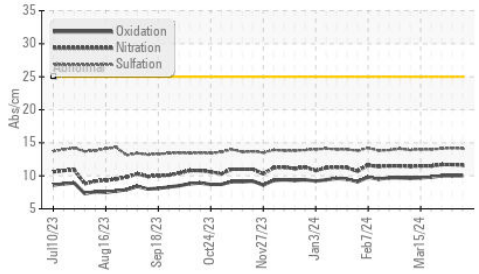
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	10	**<1**	<1	<1
Barium	ppm	ASTM D5185(m)	10	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	25	**0**	0	0
Manganese	ppm	ASTM D5185(m)		**<1**	<1	0
Magnesium	ppm	ASTM D5185(m)	20	**16**	15	17
Calcium	ppm	ASTM D5185(m)	4500	**4508**	4586	4498
Phosphorus	ppm	ASTM D5185(m)	10	**4**	3	4
Zinc	ppm	ASTM D5185(m)	10	**5**	4	5
Sulfur	ppm	ASTM D5185(m)	5000	**2862**	2911	2890
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>22	**2**	2	2
Sodium	ppm	ASTM D5185(m)		**2**	3	2
Potassium	ppm	ASTM D5185(m)	>20	**<1**	1	1

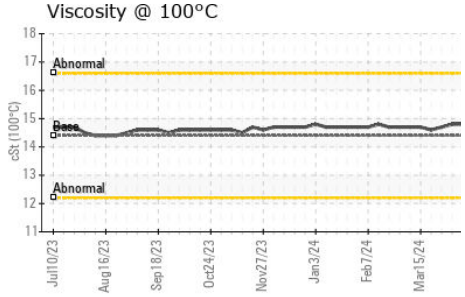
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*		**0**	0	0
Nitration	Abs/cm	ASTM D7624*	>20	**11.6**	11.7	11.7
Sulfation	Abs/.1mm	ASTM D7415*	>30	**14.1**	14.2	14.1

OIL ANALYSIS REPORT

FT-IR (Direct Trend)



Viscosity @ 100°C



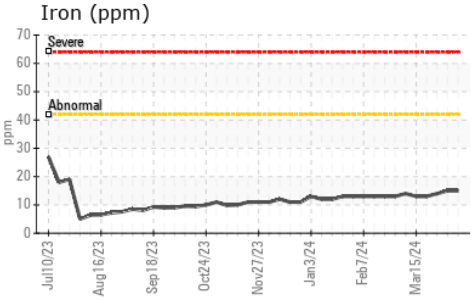
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**10.0**	10.0	10.0

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.1	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

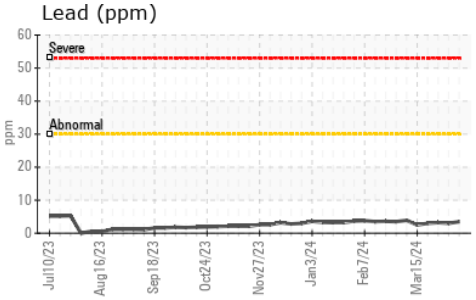
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	14.4	**14.8**	14.8	14.7

GRAPHS

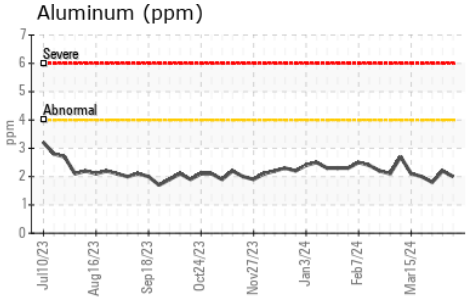
Iron (ppm)



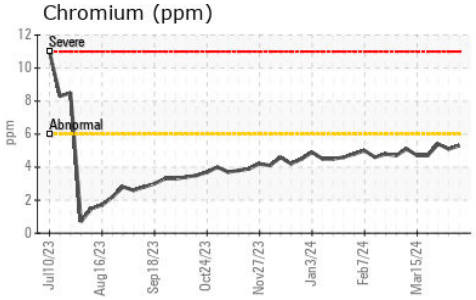
Lead (ppm)



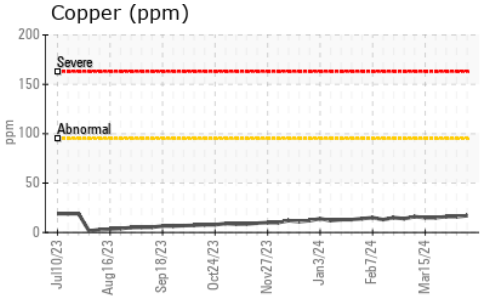
Aluminum (ppm)



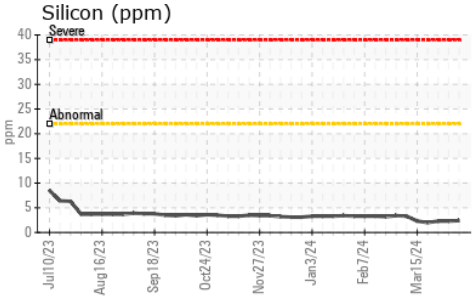
Chromium (ppm)



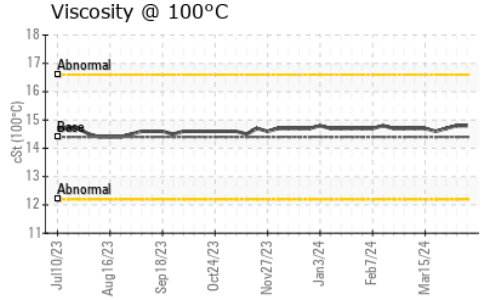
Copper (ppm)



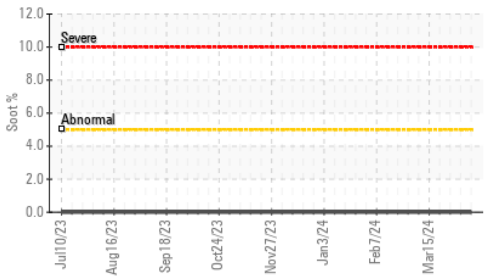
Silicon (ppm)



Viscosity @ 100°C



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0891374
Lab Number : 02630515
Unique Number : 5763647
Test Package : MOB 1

Received : 22 Apr 2024
Tested : 22 Apr 2024
Diagnosed : 22 Apr 2024 - Wes Davis

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

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