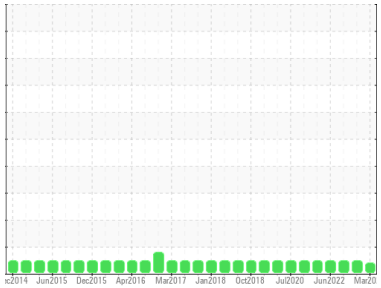
OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY

Area
52000 series
Machine Id
Navistar 52599
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (40 LTR)

DIAGNOSIS

Recommendation
Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

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

Fluid Condition
Viscosity of sample indicates oil is within SAE 40 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0899644**	WC0805715	WC0748782
Sample Date		Client Info		**23 Mar 2024**	10 Sep 2023	17 Nov 2022
Machine Age	mls	Client Info		**602206**	586247	547352
Oil Age	mls	Client Info		**15962**	20614	21422
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<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 D5185(m)	>90	**33**	30	29
Chromium	ppm	ASTM D5185(m)	>20	**1**	1	1
Nickel	ppm	ASTM D5185(m)	>2	**0**	0	0
Titanium	ppm	ASTM D5185(m)	>2	**0**	0	<1
Silver	ppm	ASTM D5185(m)	>2	**0**	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	**2**	1	2
Lead	ppm	ASTM D5185(m)	>40	**3**	3	5
Copper	ppm	ASTM D5185(m)	>330	**1**	1	<1
Tin	ppm	ASTM D5185(m)	>15	**0**	0	<1
Antimony	ppm	ASTM D5185(m)		**0**	0	<1
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)	2	**5**	4	3
Barium	ppm	ASTM D5185(m)	0	**0**	<1	0
Molybdenum	ppm	ASTM D5185(m)	50	**81**	81	80
Manganese	ppm	ASTM D5185(m)	0	**0**	0	<1
Magnesium	ppm	ASTM D5185(m)	950	**1295**	1312	1305
Calcium	ppm	ASTM D5185(m)	1050	**1476**	1417	1539
Phosphorus	ppm	ASTM D5185(m)	995	**1314**	1348	1434
Zinc	ppm	ASTM D5185(m)	1180	**1582**	1597	1637
Sulfur	ppm	ASTM D5185(m)	2600	**2756**	2800	2952
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**4**	5	4
Sodium	ppm	ASTM D5185(m)		**4**	3	2
Potassium	ppm	ASTM D5185(m)	>20	**2**	<1	0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>6	**0.8**	0.7	0.6
Nitration	Abs/cm	ASTM D7624*	>20	**15.6**	14.7	13.7
Sulfation	Abs/.1mm	ASTM D7415*	>30	**31.4**	30.4	29.7

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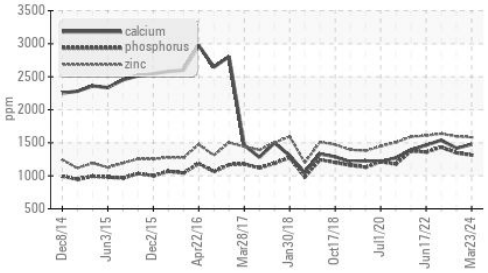
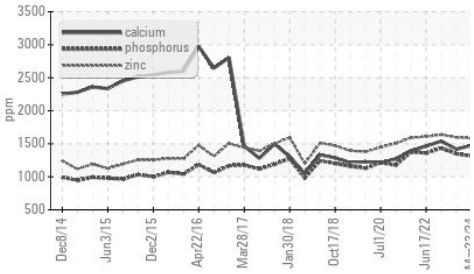
Additives



Additives



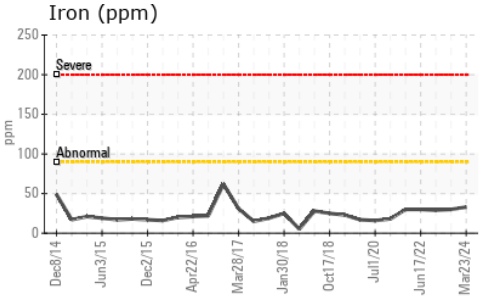
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**31.1**	29.0	26.1

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

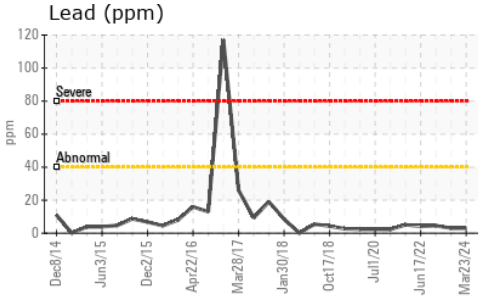
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	12.00	▲ **15.0**	14.7	14.9

GRAPHS

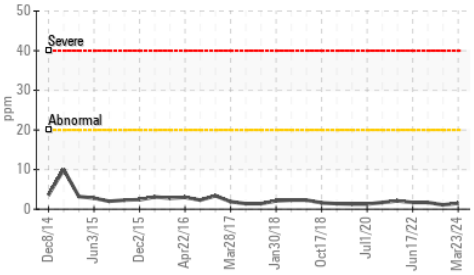
Iron (ppm)



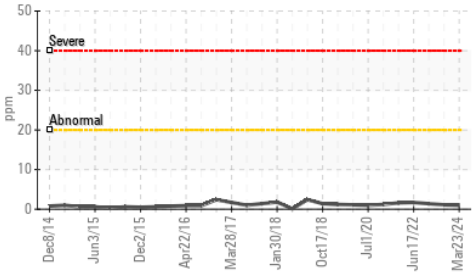
Lead (ppm)



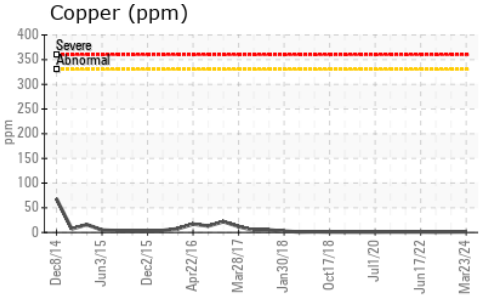
Aluminum (ppm)



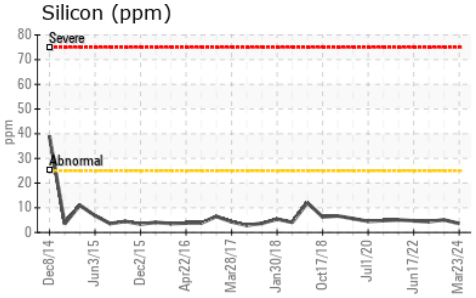
Chromium (ppm)



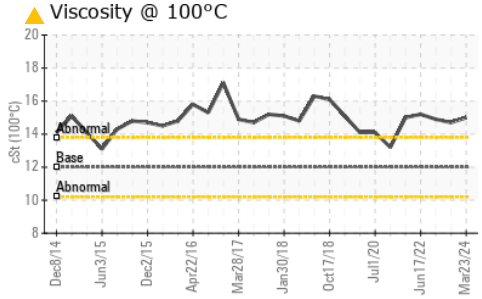
Copper (ppm)



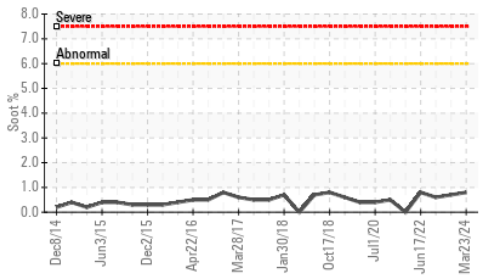
Silicon (ppm)



▲ Viscosity @ 100°C



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0899644
Lab Number : 02626383
Unique Number : 5759515
Test Package : MOB 1

Received : 03 Apr 2024
Tested : 03 Apr 2024
Diagnosed : 03 Apr 2024 - Kevin Marson

MANITOULIN TRANSPORT (GARAGE)
1335 SHAWSON DRIVE
MISSISSAUGA, ON
CA L4W 1C4
Contact: Travis Spence
tspence@manitoulintransport.com
T:
F: (905)564-6361

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.