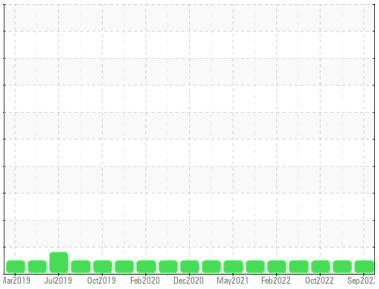
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
52000 series
Machine Id
Navistar 52824
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
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. There is no indication of any contamination in the oil.

Fluid Condition
Additive levels indicate the addition of a different brand, or type of oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0848043**	WC0759725	WC0738227
Sample Date		Client Info		**29 Sep 2023**	17 Dec 2022	04 Oct 2022
Machine Age	mls	Client Info		**563192**	476103	448499
Oil Age	mls	Client Info		**27748**	27954	20000
Oil Changed		Client Info		**Changed**	Changed	N/A
Sample Status				**NORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	**20**	23	22
Chromium	ppm	ASTM D5185(m)	>20	**<1**	1	<1
Nickel	ppm	ASTM D5185(m)	>4	**0**	0	<1
Titanium	ppm	ASTM D5185(m)		**0**	<1	<1
Silver	ppm	ASTM D5185(m)	>3	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**2**	3	3
Lead	ppm	ASTM D5185(m)	>40	**2**	1	<1
Copper	ppm	ASTM D5185(m)	>330	**2**	2	1
Tin	ppm	ASTM D5185(m)	>15	**0**	<1	<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	**19**	2	2
Barium	ppm	ASTM D5185(m)	0	**<1**	0	0
Molybdenum	ppm	ASTM D5185(m)	50	**22**	61	61
Manganese	ppm	ASTM D5185(m)	0	**0**	<1	<1
Magnesium	ppm	ASTM D5185(m)	950	**313**	977	927
Calcium	ppm	ASTM D5185(m)	1050	**1950**	1114	1187
Phosphorus	ppm	ASTM D5185(m)	995	**968**	1068	1069
Zinc	ppm	ASTM D5185(m)	1180	**1186**	1198	1216
Sulfur	ppm	ASTM D5185(m)	2600	**2742**	2520	2551
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**7**	6	5
Sodium	ppm	ASTM D5185(m)		**3**	3	3
Potassium	ppm	ASTM D5185(m)	>20	**5**	1	2

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**1.4**	1	2
Nitration	Abs/cm	ASTM D7624*	>20	**10.9**	10.4	10.9
Sulfation	Abs/.1mm	ASTM D7415*	>30	**27.0**	23.5	24.7

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**19.9**	18.1	17.6

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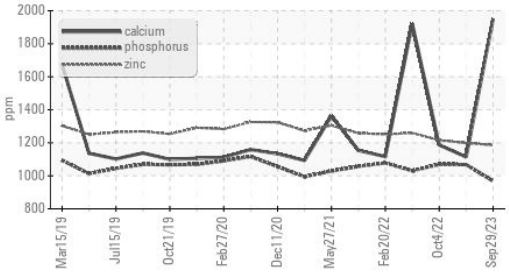
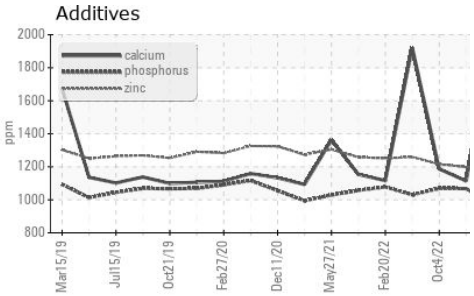
Additives



Additives

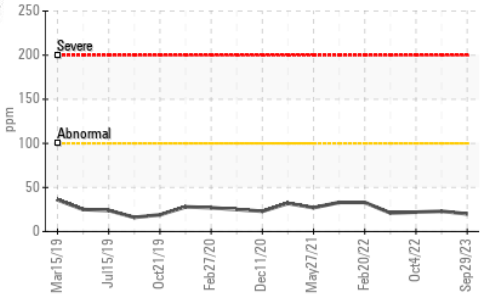


VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

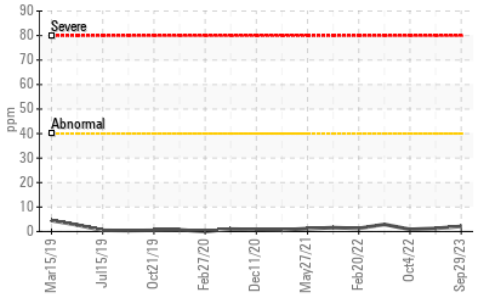
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	12.00	**12.7**	11.9	12.5

GRAPHS

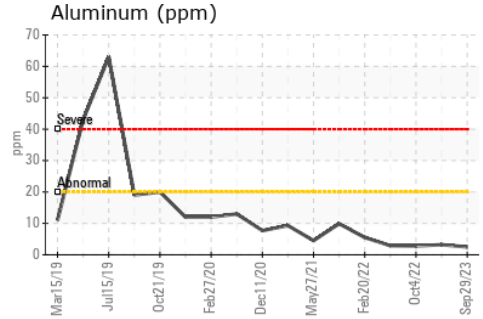
Iron (ppm)



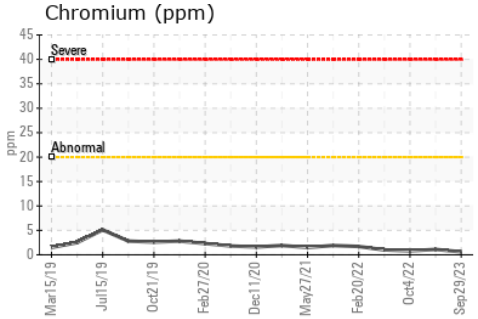
Lead (ppm)



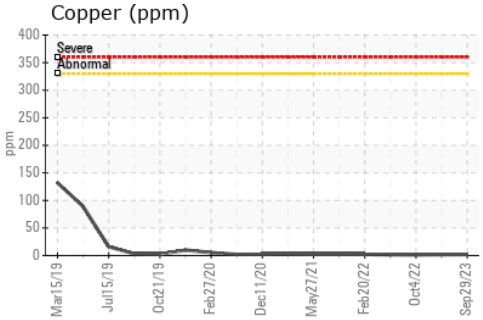
Aluminum (ppm)



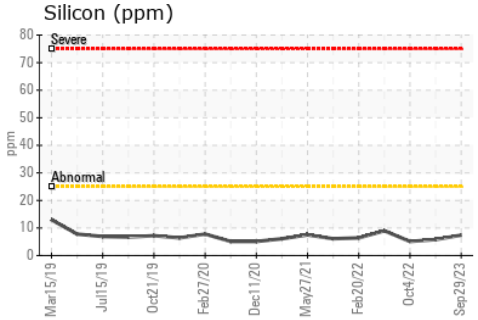
Chromium (ppm)



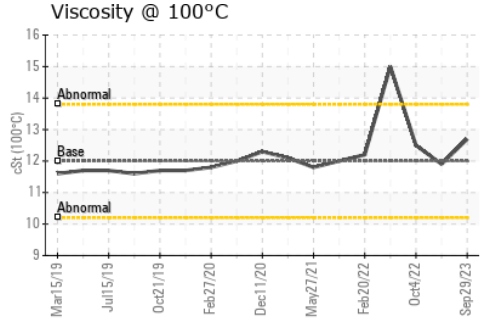
Copper (ppm)



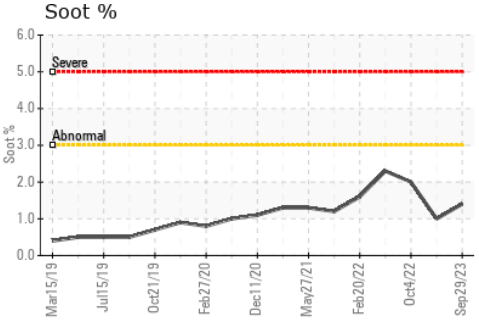
Silicon (ppm)



Viscosity @ 100°C



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **MANITOULIN TRANSPORT (GARAGE)**
Sample No. : WC0848043
Lab Number : 02586353
Unique Number : 5655419
Test Package : MOB 1

Received : 03 Oct 2023
Diagnosed : 03 Oct 2023
Diagnostician : Wes Davis

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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.