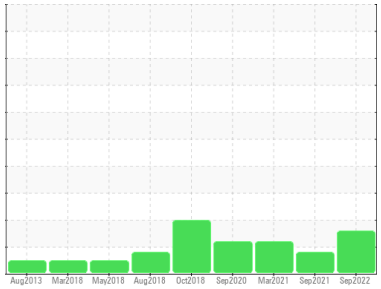
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Area
3000 Series
Machine Id
Navistar 3251
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (26 LTR)

DIAGNOSIS

Recommendation
The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
Copper ppm levels are abnormal. A sharp increase in the copper level is noted. Bearing wear is indicated.

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 a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition
The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0738214**	WC0608137	WC0557769
Sample Date		Client Info		**19 Sep 2022**	28 Sep 2021	11 Mar 2021
Machine Age	mls	Client Info		**175427**	161096	154013
Oil Age	mls	Client Info		**6663**	7013	7145
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>75	**20**	23	23
Chromium	ppm	ASTM D5185(m)	>5	**<1**	<1	<1
Nickel	ppm	ASTM D5185(m)	>4	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)		**<1**	0	0
Silver	ppm	ASTM D5185(m)		**<1**	<1	<1
Aluminum	ppm	ASTM D5185(m)	>15	**6**	5	5
Lead	ppm	ASTM D5185(m)	>25	**4**	<1	<1
Copper	ppm	ASTM D5185(m)	>100	▲ **154**	2	2
Tin	ppm	ASTM D5185(m)	>4	**<1**	<1	<1
Antimony	ppm	ASTM D5185(m)		**<1**	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)	2	**9**	2	6
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	50	**54**	55	45
Manganese	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)	950	**825**	912	733
Calcium	ppm	ASTM D5185(m)	1050	**1021**	991	1008
Phosphorus	ppm	ASTM D5185(m)	995	**921**	939	774
Zinc	ppm	ASTM D5185(m)	1180	**1045**	1126	1034
Sulfur	ppm	ASTM D5185(m)	2600	**2217**	2410	2341
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

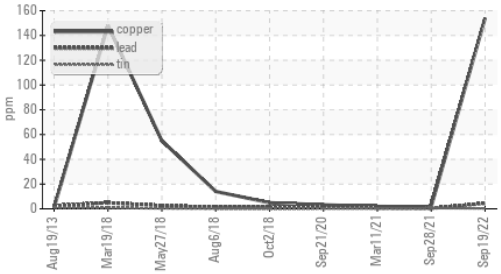
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**4**	8	17
Sodium	ppm	ASTM D5185(m)		**5**	2	2
Potassium	ppm	ASTM D5185(m)	>20	**7**	5	3
Fuel	%	ASTM D7593*	>3.0	▲ **4.5**	▲ 4.2	▲ 7.9

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>6	**0.2**	0.3	0.4
Nitration	Abs/cm	ASTM D7624*	>20	**10.9**	11.3	12.4
Sulfation	Abs/.1mm	ASTM D7415*	>30	**22.3**	24.0	23.5

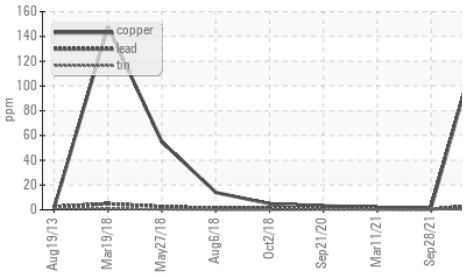
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**21.4**	24.0	23.9

OIL ANALYSIS REPORT

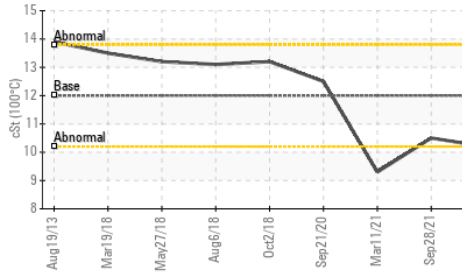
Non-ferrous Metals



Non-ferrous Metals



Viscosity @ 100°C

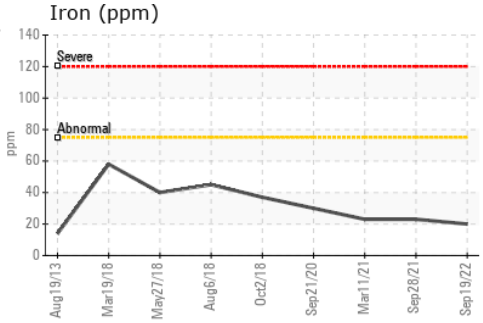


VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

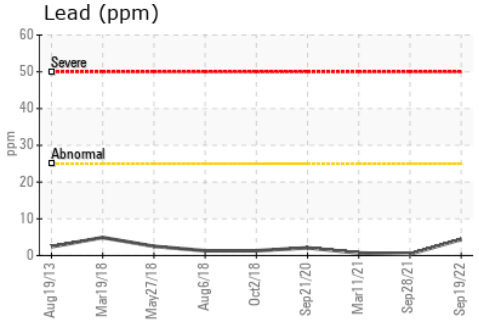
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	12.00	**10.2**	10.5	▲ 9.3

GRAPHS

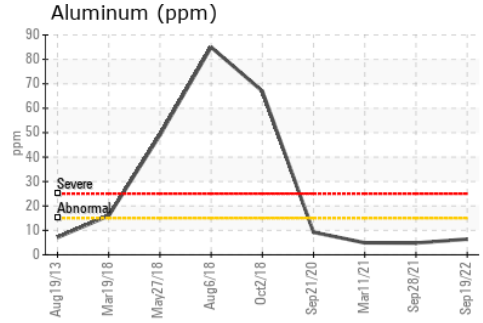
Iron (ppm)



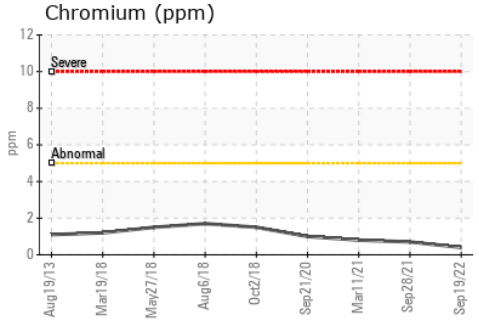
Lead (ppm)



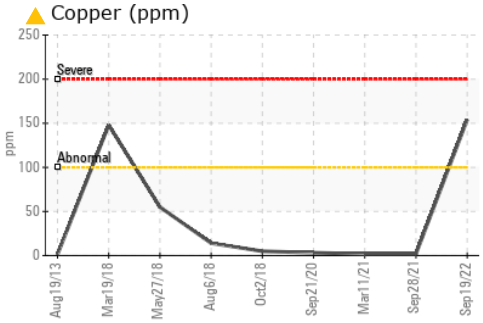
Aluminum (ppm)



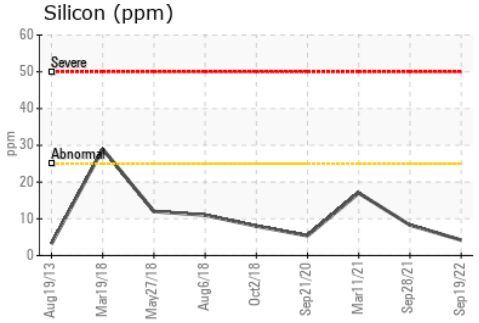
Chromium (ppm)



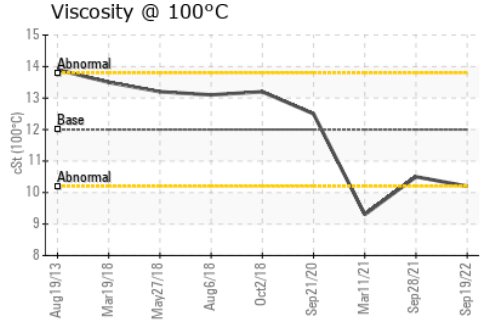
Copper (ppm)



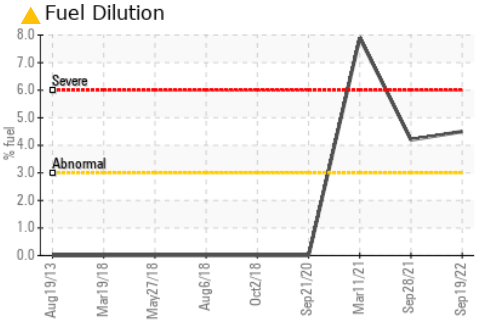
Silicon (ppm)



Viscosity @ 100°C



Fuel Dilution



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **MANITOULIN TRANSPORT (GARAGE)**
Sample No. : WC0738214 **Received** : 28 Sep 2022 1335 SHAWSON DRIVE
Lab Number : 02513414 **Diagnosed** : 29 Sep 2022 MISSISSAUGA, ON
Unique Number : 5462389 **Diagnostician** : Kevin Marson CA L4W 1C4
Test Package : MOB 1 (Additional Tests: PercentFuel) Contact: Travis Spence

To discuss this sample report, contact Customer Service at 1-800-268-2131. tspence@manitoulintransport.com
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T:
Validity of results and interpretation are based on the sample and information as supplied. F: (905)564-6361