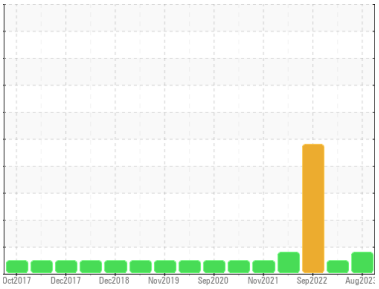
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Area
3000 Series
Machine Id
Navistar 3234
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
Iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated.

Contamination
There is no indication of any contamination 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		**WC0837235**	WC0785968	WC0738261
Sample Date		Client Info		**10 Aug 2023**	08 Mar 2023	24 Sep 2022
Machine Age	mls	Client Info		**334610**	315025	294466
Oil Age	mls	Client Info		**19585**	20559	21566
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	NORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	<1.0	<1.0

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**0**	---	---
Iron	ppm	ASTM D5185(m)	>75	▲ **80**	50	73
Chromium	ppm	ASTM D5185(m)	>5	**2**	2	2
Nickel	ppm	ASTM D5185(m)	>4	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	**0**	<1	<1
Silver	ppm	ASTM D5185(m)	>2	**<1**	0	0
Aluminum	ppm	ASTM D5185(m)	>15	**10**	11	8
Lead	ppm	ASTM D5185(m)	>25	**<1**	1	1
Copper	ppm	ASTM D5185(m)	>100	**25**	33	15
Tin	ppm	ASTM D5185(m)	>4	**<1**	<1	<1
Antimony	ppm	ASTM D5185(m)		**0**	<1	<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	**<1**	2	3
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	50	**61**	64	64
Manganese	ppm	ASTM D5185(m)	0	**1**	1	1
Magnesium	ppm	ASTM D5185(m)	950	**980**	944	976
Calcium	ppm	ASTM D5185(m)	1050	**1042**	1073	1165
Phosphorus	ppm	ASTM D5185(m)	995	**999**	984	1060
Zinc	ppm	ASTM D5185(m)	1180	**1220**	1209	1234
Sulfur	ppm	ASTM D5185(m)	2600	**2150**	2214	2261
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**11**	14	7
Sodium	ppm	ASTM D5185(m)		**11**	46	▲ 23
Potassium	ppm	ASTM D5185(m)	>20	**14**	55	▲ 27
Glycol	%	ASTM D7922*		**0.0**	0.0	▲ 0.035

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>6	**1.4**	0.9	1.2
Nitration	Abs/cm	ASTM D7624*	>20	**16.3**	13.5	14.2
Sulfation	Abs/.1mm	ASTM D7415*	>30	**30.4**	26.6	27.9

OIL ANALYSIS REPORT

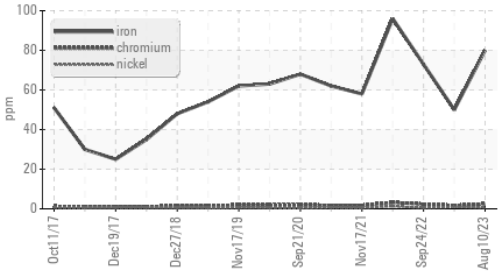
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**28.6**	22.0	23.4

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

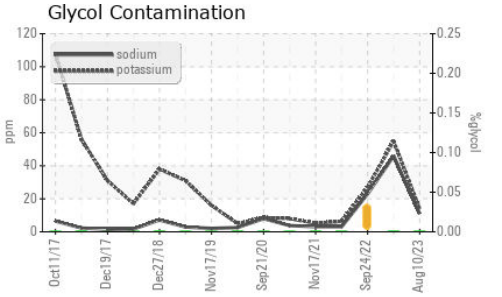
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	12.00	**11.9**	11.7	11.9

GRAPHS

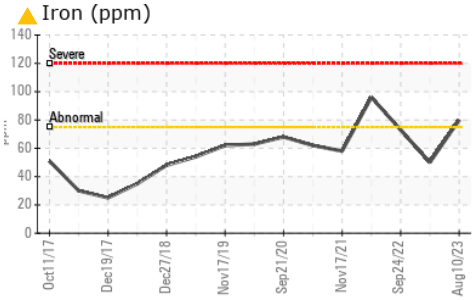
Ferrous Alloys



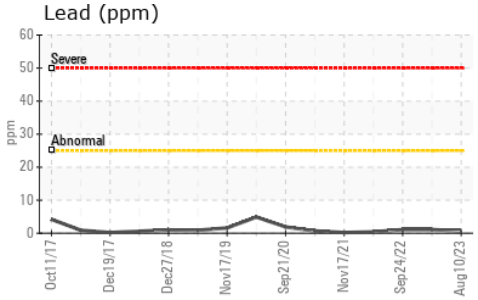
Glycol Contamination



Iron (ppm)

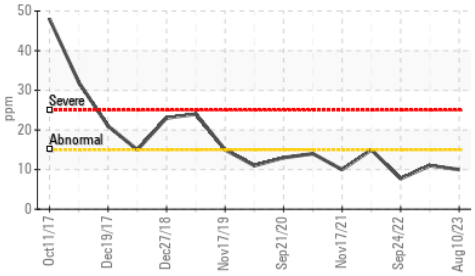


Lead (ppm)

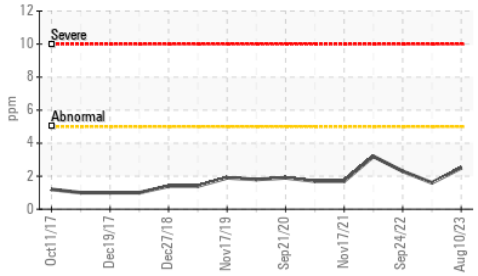


PQ

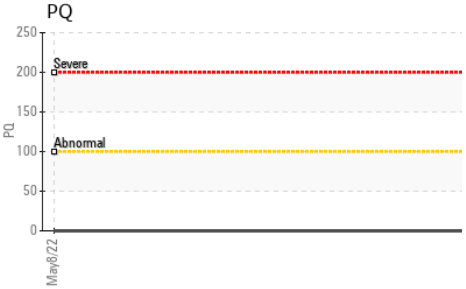
Aluminum (ppm)



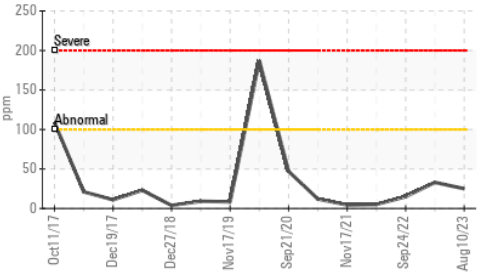
Chromium (ppm)



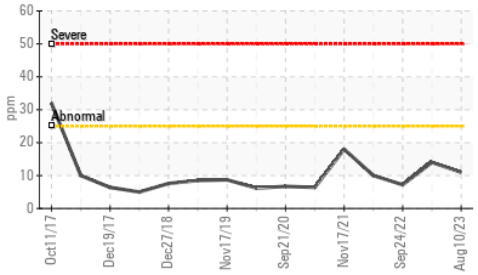
PQ



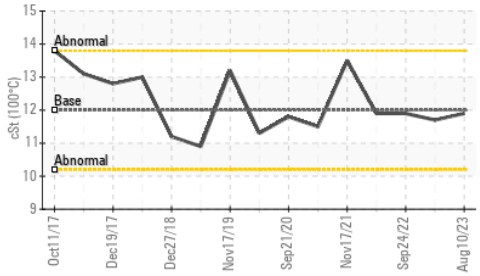
Copper (ppm)



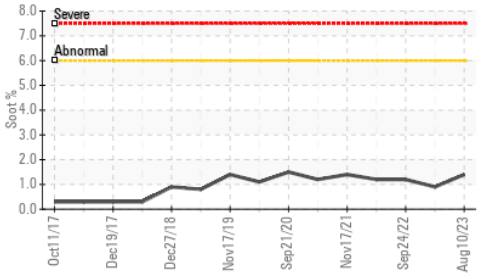
Silicon (ppm)



Viscosity @ 100°C



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **MANITOULIN TRANSPORT (GARAGE)**
Sample No. : WC0837235 **Received** : 22 Aug 2023 1335 SHAWSON DRIVE
Lab Number : 02577416 **Diagnosed** : 23 Aug 2023 MISSISSAUGA, ON
Unique Number : 5630476 **Diagnostician** : Kevin Marson CA L4W 1C4
Test Package : MOB 1 (Additional Tests: Glycol, PQ) 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