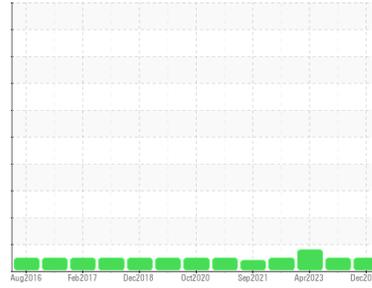




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
4000 Series
 Machine Id
Navistar 4229

Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (16 LTR)

DIAGNOSIS

Recommendation

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

The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0837202	WC0805728	WC0797628
Sample Date	Client Info		21 Dec 2023	05 Aug 2023	20 Apr 2023
Machine Age	mls	Client Info	237184	224646	214489
Oil Age	mls	Client Info	12358	10157	10440
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			NORMAL	NORMAL	ABNORMAL

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)	>130	31	27	42
Chromium	ppm	ASTM D5185(m)	>10	1	2	▲ 10
Nickel	ppm	ASTM D5185(m)	>4	<1	0	<1
Titanium	ppm	ASTM D5185(m)	>2	0	0	<1
Silver	ppm	ASTM D5185(m)	>2	0	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	4	3	6
Lead	ppm	ASTM D5185(m)	>20	<1	0	0
Copper	ppm	ASTM D5185(m)	>125	1	1	2
Tin	ppm	ASTM D5185(m)	>4	0	0	0
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)	0	2	3	4
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	57	59	62
Manganese	ppm	ASTM D5185(m)	0	0	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	925	978	992
Calcium	ppm	ASTM D5185(m)	1070	1111	1026	1116
Phosphorus	ppm	ASTM D5185(m)	1150	984	1047	1099
Zinc	ppm	ASTM D5185(m)	1270	1151	1184	1228
Sulfur	ppm	ASTM D5185(m)	2060	2581	2436	2584
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS

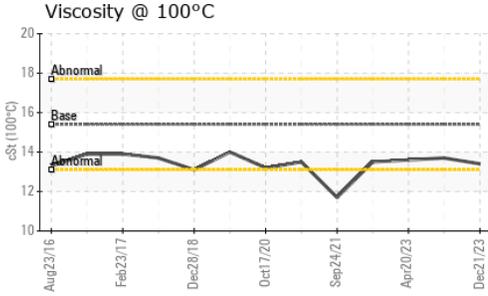
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>25	5	6	11
Sodium	ppm	ASTM D5185(m)		2	3	8
Potassium	ppm	ASTM D5185(m)	>20	<1	1	2

INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	>6	0.3	0.2	0.2
Nitration	Abs/cm	ASTM D7624*	>20	8.7	7.4	9.0
Sulfation	Abs./1mm	ASTM D7415*	>30	19.4	19.2	19.2

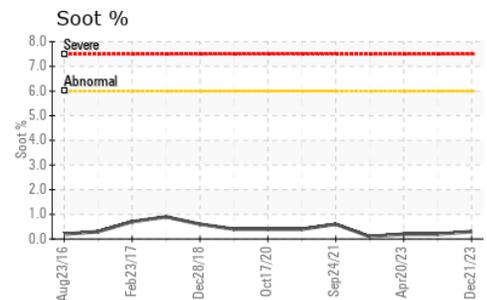
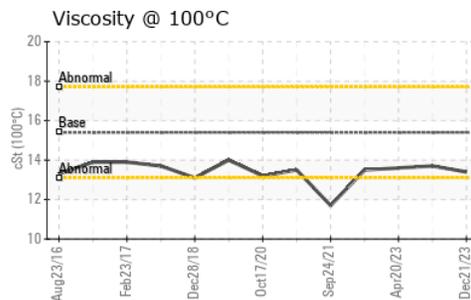
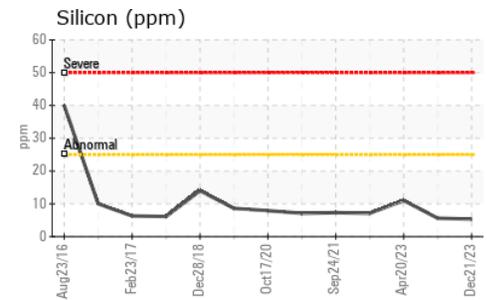
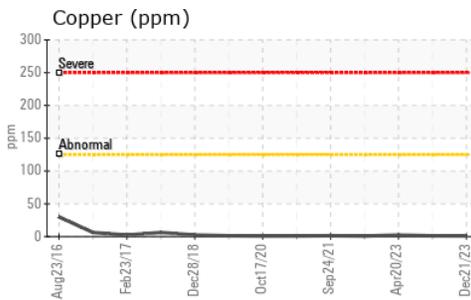
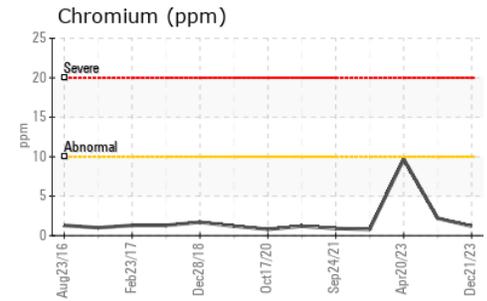
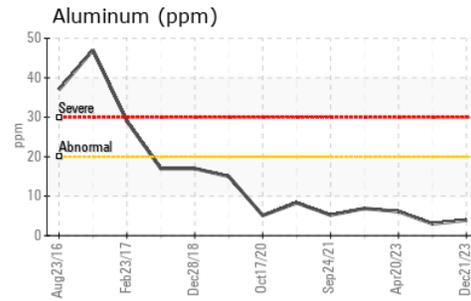
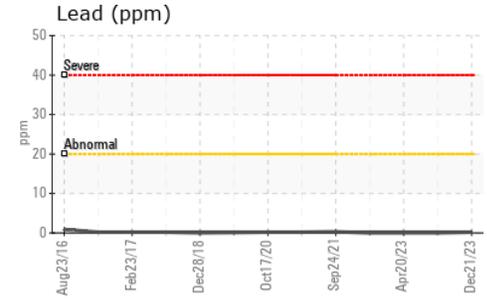
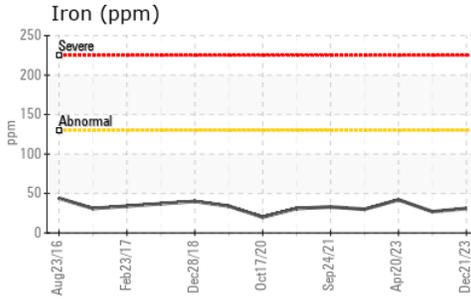


OIL ANALYSIS REPORT



FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	>25	16.0	14.2	15.9
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)	15.4	13.4	13.7	13.6

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **MANITOU LIN TRANSPORT (GARAGE)**
Sample No. : WC0837202 **Received** : 28 Dec 2023 1335 SHAWSON DRIVE
Lab Number : **02605502** **Diagnosed** : 28 Dec 2023 MISSISSAUGA, ON
Unique Number : 5698587 **Diagnostician** : Wes Davis CA L4W 1C4
Test Package : MOB 1

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.

Contact: Travis Spence
tspence@manitoulintransport.com

T:
F: (905)564-6361