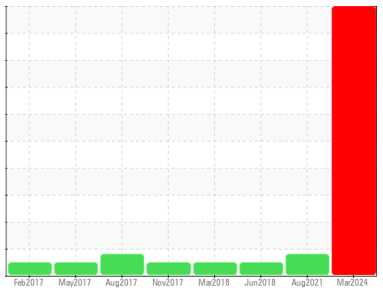
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Area
4000 Series
Machine Id
Navistar 4269
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (16 LTR)

DIAGNOSIS

▲ Recommendation
Check for low coolant level. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. The oil change at the time of sampling has been noted. We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

▲ Wear
Aluminum and iron ppm levels are severe. Nickel ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. Exhaust valve wear is indicated. Piston wear is indicated.

▲ Contamination
Water treatment chemicals present, indicating slow coolant leak. There is a moderate concentration of dirt present in the oil. Test for glycol is negative. High amount of ingressed dirt has caused abrasive wear to the component.

● 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		**WC0915513**	WC0631586	WC0294423
Sample Date		Client Info		**21 Mar 2024**	09 Aug 2021	19 Jun 2018
Machine Age	kms	Client Info		**292544**	129252	74408
Oil Age	kms	Client Info		**0**	10423	11171
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	MARGINAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	▲ 1	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**9**	---	---
Iron	ppm	ASTM D5185(m)	>130	▲ **251**	46	19
Chromium	ppm	ASTM D5185(m)	>10	**6**	2	<1
Nickel	ppm	ASTM D5185(m)	>4	▲ **5**	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	**<1**	<1	0
Silver	ppm	ASTM D5185(m)	>2	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	▲ **40**	16	8
Lead	ppm	ASTM D5185(m)	>20	**0**	0	<1
Copper	ppm	ASTM D5185(m)	>125	**7**	2	2
Tin	ppm	ASTM D5185(m)	>4	**0**	<1	0
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)	0	**1**	12	4
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	60	**118**	71	59
Manganese	ppm	ASTM D5185(m)	0	**2**	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	**934**	1005	932
Calcium	ppm	ASTM D5185(m)	1070	**1009**	1120	1050
Phosphorus	ppm	ASTM D5185(m)	1150	**903**	1090	999
Zinc	ppm	ASTM D5185(m)	1270	**1158**	1266	1238
Sulfur	ppm	ASTM D5185(m)	2060	**2473**	2732	2662
Lithium	ppm	ASTM D5185(m)		**<1**	<1	0

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	▲ **51**	10	8
Sodium	ppm	ASTM D5185(m)		● **607**	62	2
Potassium	ppm	ASTM D5185(m)	>20	▲ **123**	75	11
Glycol	%	ASTM D7922*		**0.0**	0.0	0.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>6	**1.5**	0.7	0.3
Nitration	Abs/cm	ASTM D7624*	>20	**12.7**	9.6	7.3
Sulfation	Abs/.1mm	ASTM D7415*	>30	**23.9**	21.8	19.8

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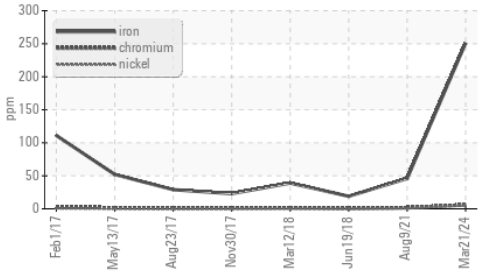
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**18.4**	16.1	14.8

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

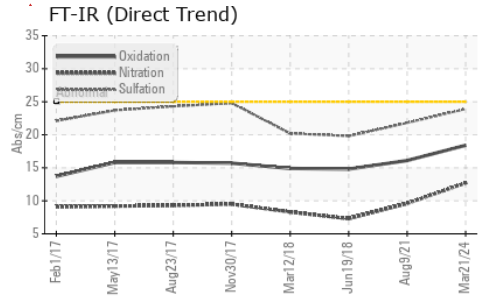
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	**13.2**	13.0	13.9

GRAPHS

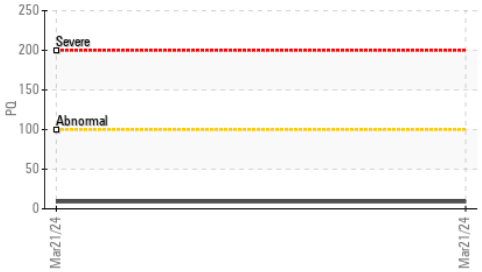
Ferrous Alloys



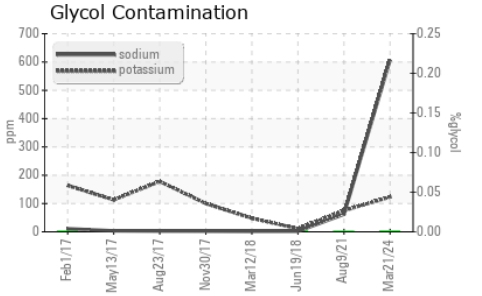
FT-IR (Direct Trend)



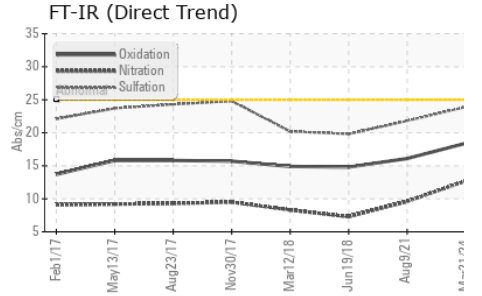
PQ



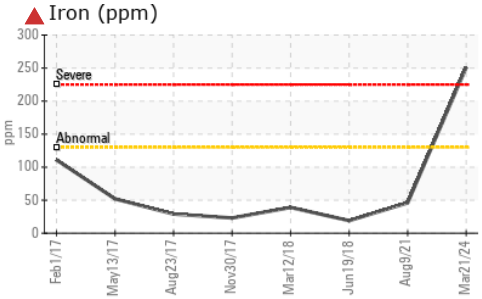
Glycol Contamination



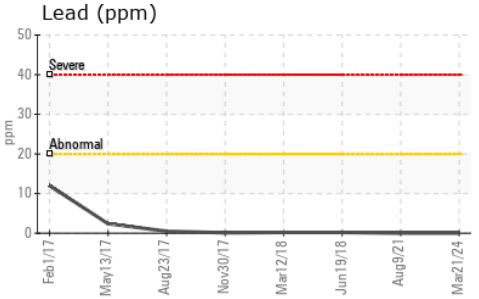
FT-IR (Direct Trend)



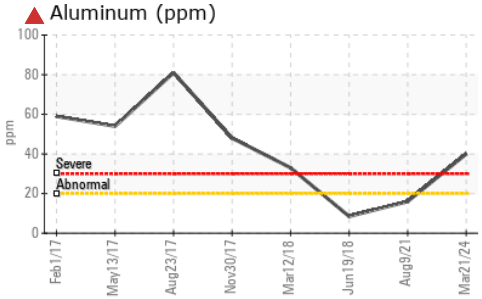
Iron (ppm)



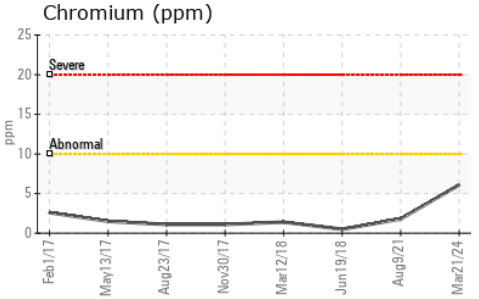
Lead (ppm)



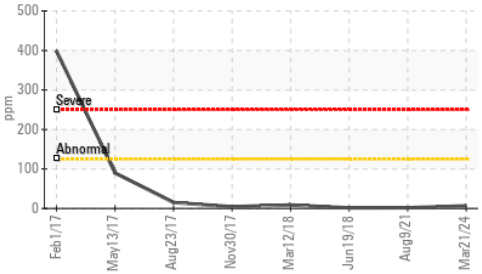
Aluminum (ppm)



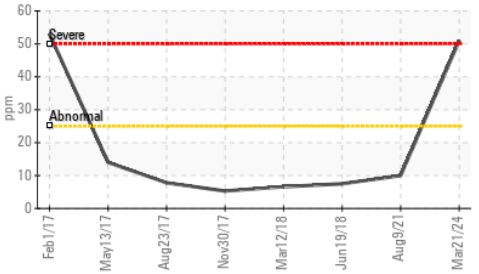
Chromium (ppm)



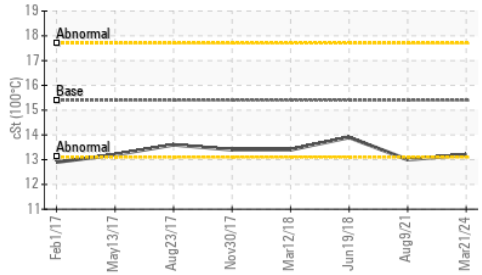
Copper (ppm)



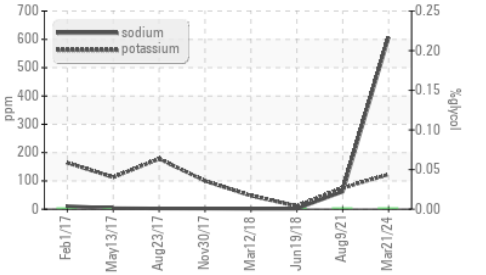
Silicon (ppm)



Viscosity @ 100°C



Glycol Contamination



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0915513 **Received** : 08 Apr 2024
Lab Number : 02627266 **Tested** : 09 Apr 2024
Unique Number : 5760398 **Diagnosed** : 09 Apr 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: Glycol, PQ)

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.

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