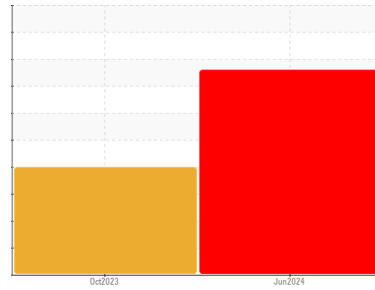




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Area
[68952]
 Machine Id
VOLVO VNL 4447

Component
Diesel Engine
 Fluid
PETRO CANADA DURON SAE 10W30 (--- GAL)

DIAGNOSIS

▲ Recommendation

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

▲ Wear

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

Contamination

Test for glycol is negative. 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		WC0948227	WC0853672	---
Sample Date	Client Info		07 Jun 2024	03 Oct 2023	---
Machine Age	kms	Client Info	765309	651737	---
Oil Age	kms	Client Info	0	96111	---
Oil Changed	Client Info		Changed	Changed	---
Sample Status			SEVERE	ABNORMAL	---

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>6.0	<1.0	0.7	---
Water	WC Method	>0.2	NEG	NEG	---

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*		0	0	---
Iron	ppm	ASTM D5185(m) >100	▲ 149	▲ 116	---
Chromium	ppm	ASTM D5185(m) >20	3	2	---
Nickel	ppm	ASTM D5185(m) >2	▲ 10	▲ 6	---
Titanium	ppm	ASTM D5185(m)	<1	0	---
Silver	ppm	ASTM D5185(m) >2	<1	<1	---
Aluminum	ppm	ASTM D5185(m) >25	▲ 32	14	---
Lead	ppm	ASTM D5185(m) >40	2	2	---
Copper	ppm	ASTM D5185(m) >330	15	17	---
Tin	ppm	ASTM D5185(m) >15	1	<1	---
Antimony	ppm	ASTM D5185(m)	<1	0	---
Vanadium	ppm	ASTM D5185(m)	0	0	---
Beryllium	ppm	ASTM D5185(m)	0	0	---
Cadmium	ppm	ASTM D5185(m)	0	0	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 1	5	4	---
Barium	ppm	ASTM D5185(m) 1	<1	<1	---
Molybdenum	ppm	ASTM D5185(m) 1	64	84	---
Manganese	ppm	ASTM D5185(m) 1	2	2	---
Magnesium	ppm	ASTM D5185(m) 10	896	937	---
Calcium	ppm	ASTM D5185(m) 2942	1232	1179	---
Phosphorus	ppm	ASTM D5185(m) 1102	947	947	---
Zinc	ppm	ASTM D5185(m) 1351	1185	1203	---
Sulfur	ppm	ASTM D5185(m) 3903	2027	2124	---
Lithium	ppm	ASTM D5185(m)	<1	<1	---

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >25	10	8	---
Sodium	ppm	ASTM D5185(m)	56	● 224	---
Potassium	ppm	ASTM D5185(m) >20	52	▲ 187	---
Glycol	%	ASTM D7922*	0.0	0.0	---

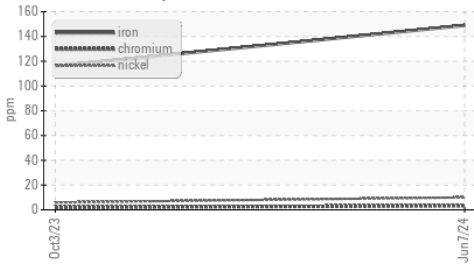
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844* >3	1	1	---
Nitration	Abs/cm	ASTM D7624* >20	13.3	13.8	---
Sulfation	Abs./1mm	ASTM D7415* >30	26.9	28.1	---

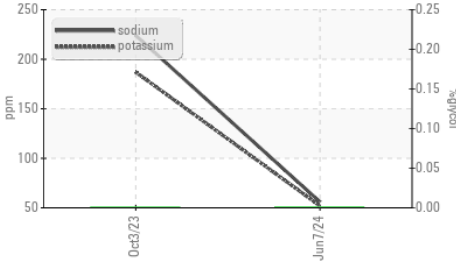


OIL ANALYSIS REPORT

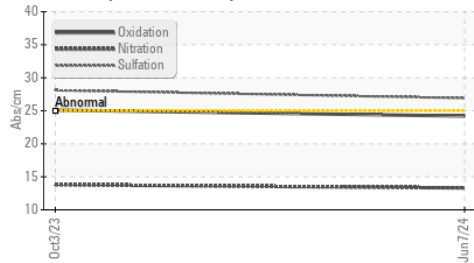
▲ Ferrous Alloys



Glycol Contamination



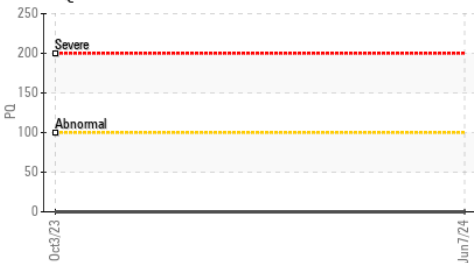
FT-IR (Direct Trend)



Viscosity @ 40°C



PQ



FLUID DEGRADATION

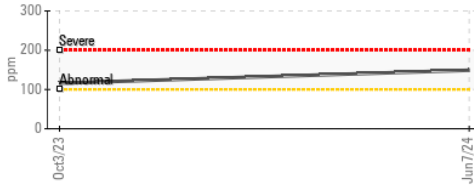
Parameter	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	24.2	25.1	---
White Metal	scalar	Visual*	NONE	NONE	NONE	---
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	---
Precipitate	scalar	Visual*	NONE	NONE	NONE	---
Silt	scalar	Visual*	NONE	NONE	NONE	---
Debris	scalar	Visual*	NONE	NONE	NONE	---
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	---
Appearance	scalar	Visual*	NORML	NORML	NORML	---
Odor	scalar	Visual*	NORML	NORML	NORML	---
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	---
Free Water	scalar	Visual*		NEG	NEG	---

FLUID PROPERTIES

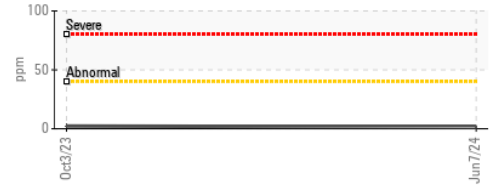
Parameter	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	74.0	77.2	---
Visc @ 100°C	cSt	ASTM D7279(m)	11.4	11.4	11.3
Viscosity Index (VI)	Scale	ASTM D2270*	146	139	---

GRAPHS

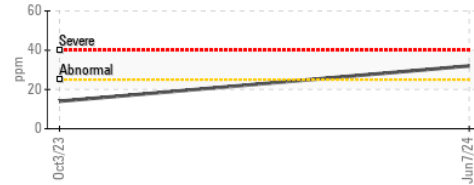
▲ Iron (ppm)



Lead (ppm)



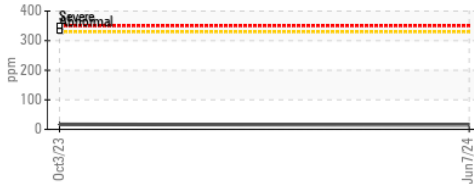
▲ Aluminum (ppm)



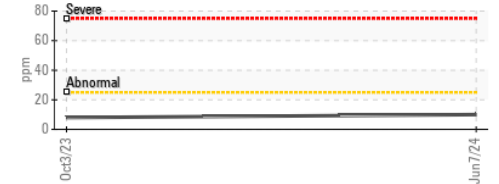
Chromium (ppm)



▲ Copper (ppm)



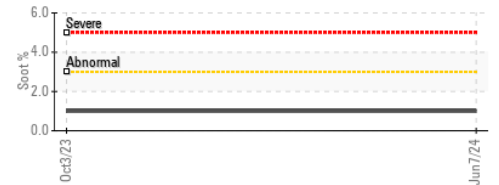
Silicon (ppm)



Viscosity @ 100°C



Soot %



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **PERFORMANCE EQUIPMENT - VISION TRUCK**
Sample No. : WC0948227 **Received** : 17 Jun 2024 **415 EVANS AVENUE**
Lab Number : 02642295 **Tested** : 18 Jun 2024 **ETOBICOKE, ON**
Unique Number : 5799834 **Diagnosed** : 19 Jun 2024 - Kevin Marson **CA M8W 0B3**
Test Package : MOB 1 (Additional Tests: Glycol, KV40, PQ, VI, Visual) **Contact: Service**
etobservice@visiontruckgroup.com

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.