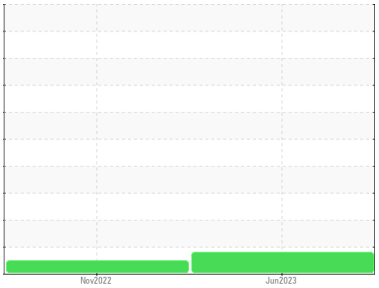
OIL ANALYSIS REPORT

OIL DIAGNOSTICS

Sample Rating Trend



WEAR

Machine Id
738206
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (--- GAL)

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear
Cylinder, crank, or cam shaft 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 no indication of any contamination in the oil.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history 1	history 2
Sample Number		Client Info		**PCA0100748**	PCA0076746	---
Sample Date		Client Info		**19 Jun 2023**	01 Nov 2022	---
Machine Age	mls	Client Info		**142302**	58041	---
Oil Age	mls	Client Info		**142302**	58041	---
Oil Changed		Client Info		**Changed**	Changed	---
Sample Status				**ABNORMAL**	NORMAL	---

CONTAMINATION		method	limit/base	current	history 1	history 2
Fuel		WC Method	>5	**<1.0**	<1.0	---
Glycol		WC Method		**NEG**	NEG	---

WEAR METALS		method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>100	▲ **114**	96	---
Chromium	ppm	ASTM D5185m	>20	**5**	7	---
Nickel	ppm	ASTM D5185m	>4	**1**	<1	---
Titanium	ppm	ASTM D5185m		**29**	<1	---
Silver	ppm	ASTM D5185m	>3	**<1**	3	---
Aluminum	ppm	ASTM D5185m	>20	**47**	78	---
Lead	ppm	ASTM D5185m	>40	**0**	0	---
Copper	ppm	ASTM D5185m	>330	**82**	295	---
Tin	ppm	ASTM D5185m	>15	**3**	6	---
Vanadium	ppm	ASTM D5185m		**<1**	0	---
Cadmium	ppm	ASTM D5185m		**0**	0	---

ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m	2	**9**	17	---
Barium	ppm	ASTM D5185m	0	**0**	0	---
Molybdenum	ppm	ASTM D5185m	50	**42**	49	---
Manganese	ppm	ASTM D5185m	0	**3**	5	---
Magnesium	ppm	ASTM D5185m	950	**739**	531	---
Calcium	ppm	ASTM D5185m	1050	**1688**	1828	---
Phosphorus	ppm	ASTM D5185m	995	**972**	739	---
Zinc	ppm	ASTM D5185m	1180	**1280**	952	---
Sulfur	ppm	ASTM D5185m	2600	**3005**	2319	---

CONTAMINANTS		method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m	>25	**11**	10	---
Sodium	ppm	ASTM D5185m		**5**	6	---
Potassium	ppm	ASTM D5185m	>20	**106**	189	---

INFRA-RED		method	limit/base	current	history 1	history 2
Soot %	%	*ASTM D7844	>3	**2.8**	1.8	---
Nitration	Abs/cm	*ASTM D7624	>20	**17.5**	15	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**32.7**	28.3	---

FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**31.1**	30.9	---
Base Number (BN)	mg KOH/g	ASTM D2896		**4.7**	6.7	---

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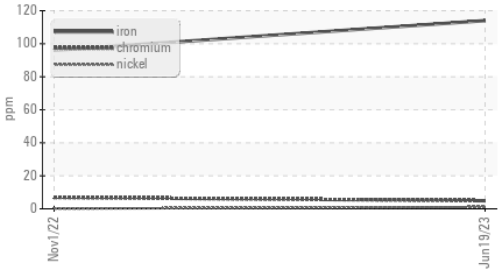
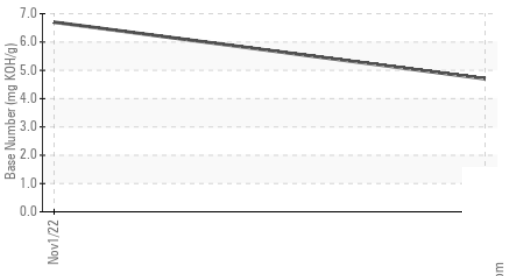
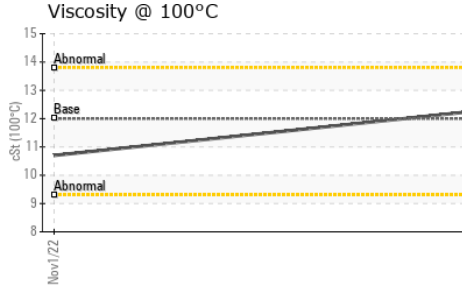
Ferrous Alloys



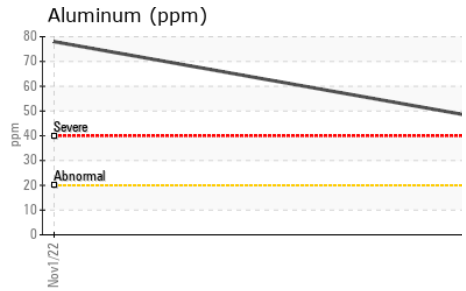
Base Number



Viscosity @ 100°C



Aluminum (ppm)

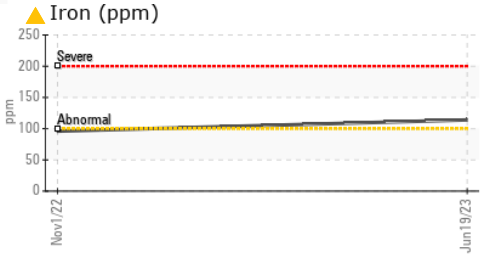


VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
Silt	scalar	*Visual	NONE	**NONE**	NONE	---
Debris	scalar	*Visual	NONE	**NONE**	NONE	---
Sand/Dirt	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	---

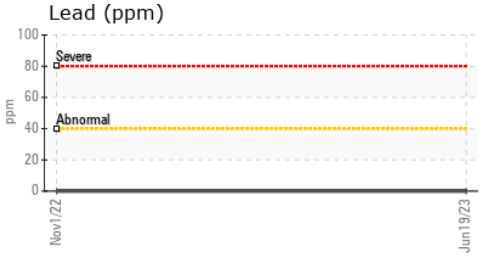
FLUID PROPERTIES		method	limit/base	current	history 1	history 2
Visc @ 100°C	cSt	ASTM D445	12.00	**12.3**	10.7	---

GRAPHS

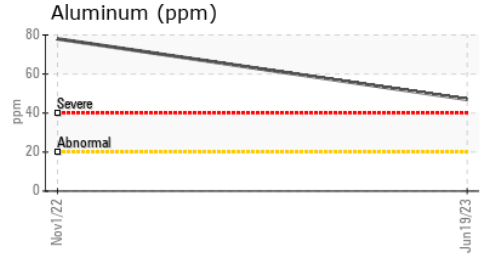
Iron (ppm)



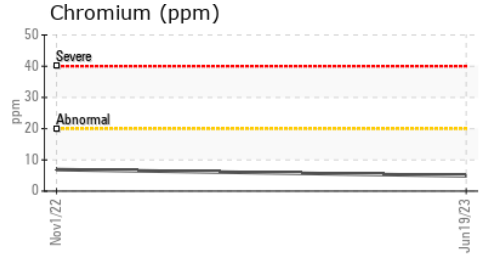
Lead (ppm)



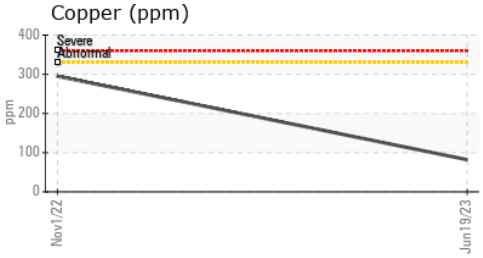
Aluminum (ppm)



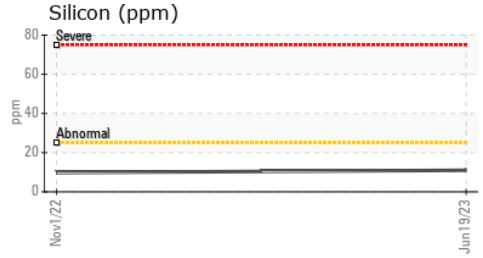
Chromium (ppm)



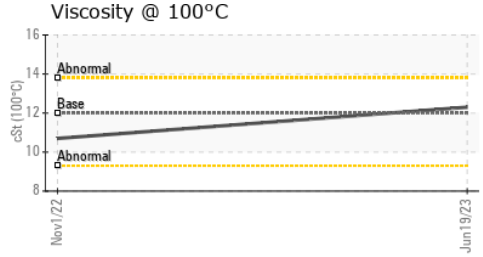
Copper (ppm)



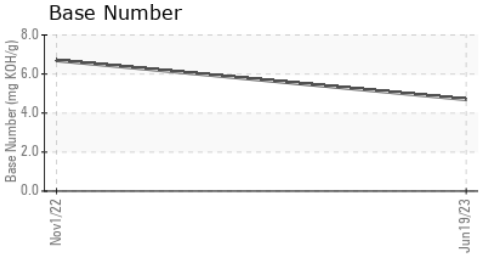
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0100748 **Received** : 07 Jul 2023
Lab Number : 05891962 **Diagnosed** : 09 Jul 2023
Unique Number : 10547772 **Diagnostician** : Doug Bogart
Test Package : MOB 1 (Additional Tests: TBN)

To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

MILLER TRUCK LEASING #118
2196 BENNETT ROAD
PHILADELPHIA, PA
US 19116
Contact: JOHN KEEN
jkeen@millertransgroup.com
T: (215)552-9832
F: (215)552-9892