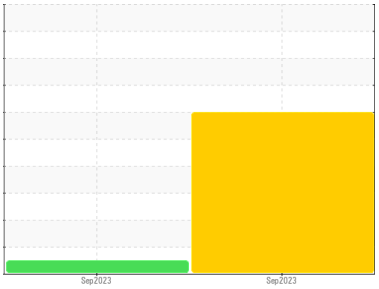
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
426739
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (--- QTS)

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

Wear
The aluminum level is severe.

Contamination
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 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		**PCA0099723**	PCA0099721	---
Sample Date		Client Info		**15 Sep 2023**	14 Sep 2023	---
Machine Age	mls	Client Info		**119445**	119445	---
Oil Age	mls	Client Info		**20000**	20000	---
Oil Changed		Client Info		**Changed**	Changed	---
Sample Status				**SEVERE**	NORMAL	---

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	---
Water		WC Method	>0.2	**NEG**	NEG	---
Glycol		WC Method		**NEG**	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**75**	4	---
Chromium	ppm	ASTM D5185m	>20	**6**	<1	---
Nickel	ppm	ASTM D5185m	>4	**1**	<1	---
Titanium	ppm	ASTM D5185m		**<1**	<1	---
Silver	ppm	ASTM D5185m	>3	**0**	0	---
Aluminum	ppm	ASTM D5185m	>20	**102**	2	---
Lead	ppm	ASTM D5185m	>40	**<1**	<1	---
Copper	ppm	ASTM D5185m	>330	**11**	6	---
Tin	ppm	ASTM D5185m	>15	**<1**	0	---
Vanadium	ppm	ASTM D5185m		**0**	0	---
Cadmium	ppm	ASTM D5185m		**<1**	<1	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	**507**	223	---
Barium	ppm	ASTM D5185m	0	**0**	0	---
Molybdenum	ppm	ASTM D5185m	50	**63**	7	---
Manganese	ppm	ASTM D5185m	0	**<1**	<1	---
Magnesium	ppm	ASTM D5185m	950	**126**	18	---
Calcium	ppm	ASTM D5185m	1050	**3368**	2125	---
Phosphorus	ppm	ASTM D5185m	995	**1023**	996	---
Zinc	ppm	ASTM D5185m	1180	**1181**	1140	---
Sulfur	ppm	ASTM D5185m	2600	**4397**	4297	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**13**	19	---
Sodium	ppm	ASTM D5185m		**7**	<1	---
Potassium	ppm	ASTM D5185m	>20	**3**	8	---

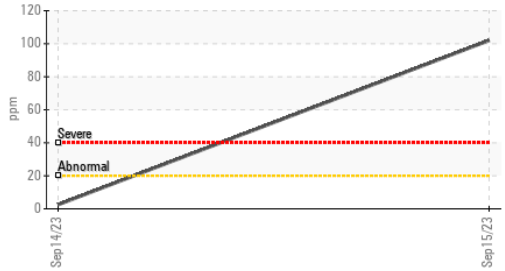
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.4**	0.9	---
Nitration	Abs/cm	*ASTM D7624	>20	**9.5**	11.4	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.1**	20.3	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**16.8**	18.6	---
Base Number (BN)	mg KOH/g	ASTM D2896		**8.1**	8.8	---

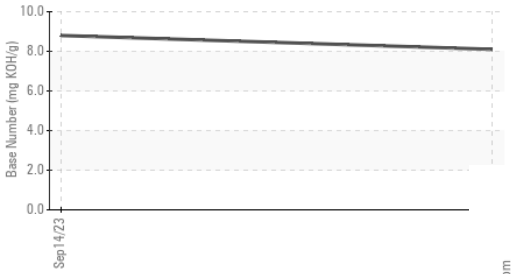
OIL ANALYSIS REPORT

OIL DIAGNOSTICS

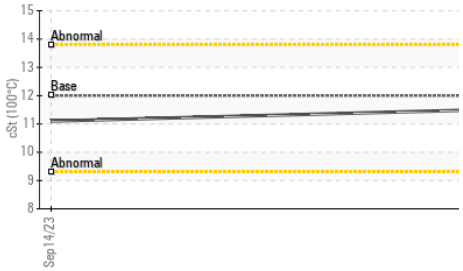
Aluminum (ppm)



Base Number



Viscosity @ 100°C

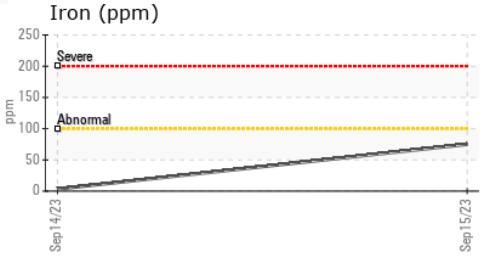


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
Silt	scalar	*Visual	NONE	**NONE**	NONE	---
Debris	scalar	*Visual	NONE	**NONE**	NONE	---
Sand/Dirt	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	---

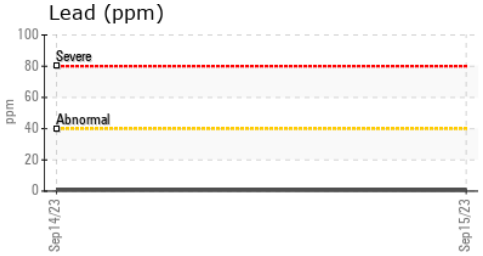
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	**11.5**	11.1	---

GRAPHS

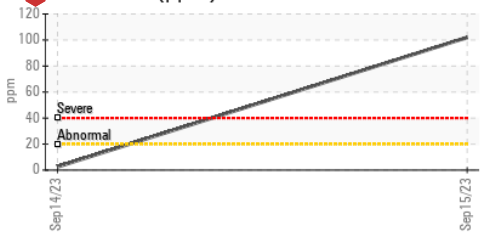
Iron (ppm)



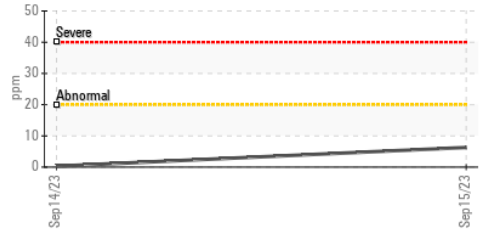
Lead (ppm)



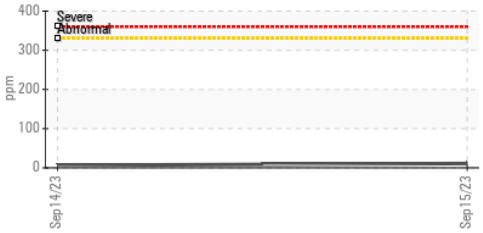
Aluminum (ppm)



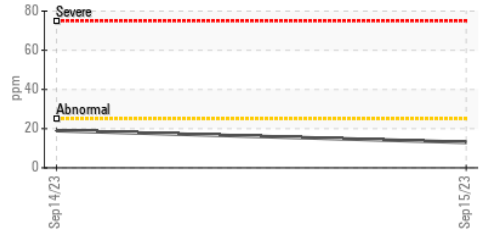
Chromium (ppm)



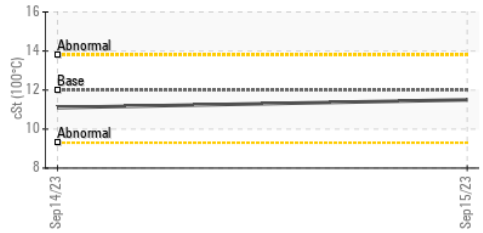
Copper (ppm)



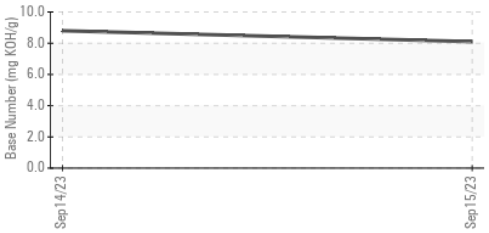
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0099723 **Received** : 07 Dec 2023
Lab Number : 06027342 **Diagnosed** : 11 Dec 2023
Unique Number : 10777133 **Diagnostician** : Jonathan Hester
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)

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