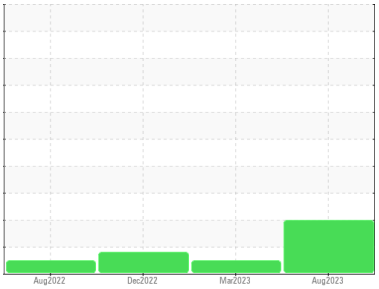
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Machine Id
736803
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (--- QTS)

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. All other component wear rates are normal.

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.

Fluid Condition
The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0103036**	PCA0094285	PCA0088089
Sample Date		Client Info		**03 Aug 2023**	24 Mar 2023	15 Dec 2022
Machine Age	mls	Client Info		**153886**	101451	77267
Oil Age	mls	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Not Changd	Changed
Sample Status				**ABNORMAL**	NORMAL	ABNORMAL

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	▲ **176**	85	▲ 157
Chromium	ppm	ASTM D5185m	>20	**6**	4	10
Nickel	ppm	ASTM D5185m	>4	**1**	<1	3
Titanium	ppm	ASTM D5185m		**0**	0	<1
Silver	ppm	ASTM D5185m	>3	**<1**	0	0
Aluminum	ppm	ASTM D5185m	>20	**61**	44	106
Lead	ppm	ASTM D5185m	>40	**<1**	<1	3
Copper	ppm	ASTM D5185m	>330	**73**	63	216
Tin	ppm	ASTM D5185m	>15	**4**	3	12
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	**7**	10	19
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	50	**61**	51	45
Manganese	ppm	ASTM D5185m	0	**4**	3	6
Magnesium	ppm	ASTM D5185m	950	**885**	828	525
Calcium	ppm	ASTM D5185m	1050	**1446**	1427	1823
Phosphorus	ppm	ASTM D5185m	995	**945**	855	683
Zinc	ppm	ASTM D5185m	1180	**1241**	1229	889
Sulfur	ppm	ASTM D5185m	2600	**2336**	2096	1785

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**11**	6	11
Sodium	ppm	ASTM D5185m		**6**	3	10
Potassium	ppm	ASTM D5185m	>20	**137**	89	272

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**2.4**	1.1	1.8
Nitration	Abs/cm	*ASTM D7624	>20	**22.6**	11.6	19.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	**34.4**	23.4	30.3

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**48.0**	24.7	42.1
Base Number (BN)	mg KOH/g	ASTM D2896		▲ **1.4**	6.2	3.4

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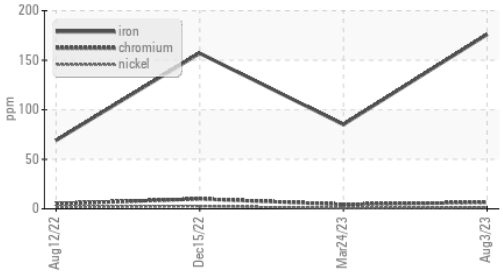
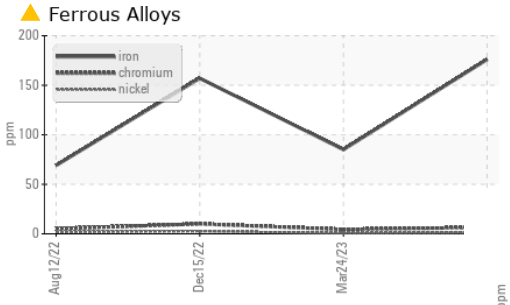
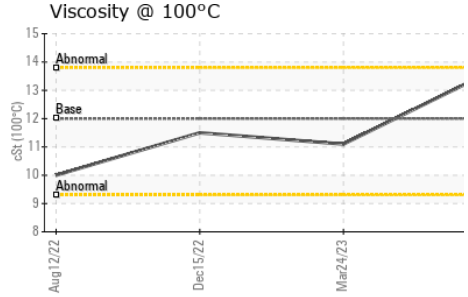
Ferrous Alloys



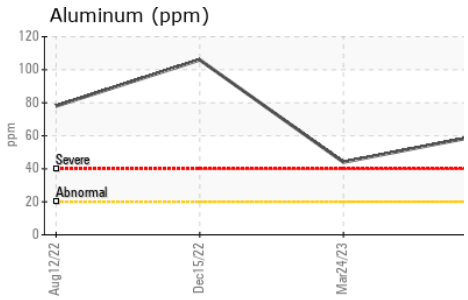
Ferrous Alloys



Viscosity @ 100°C



Aluminum (ppm)

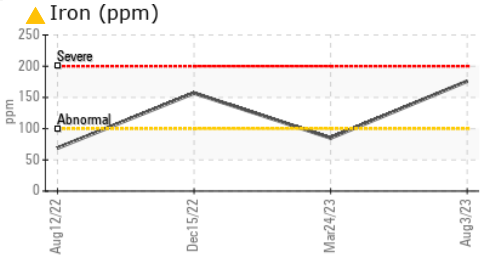


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

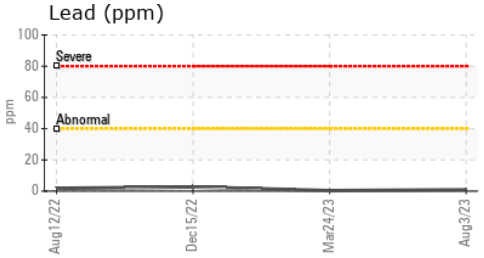
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	**13.6**	11.1	11.5

GRAPHS

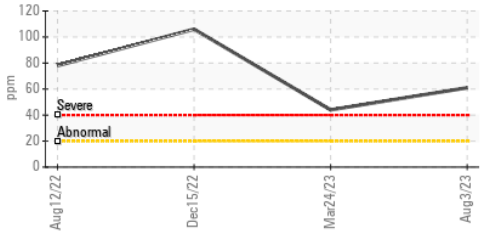
Iron (ppm)



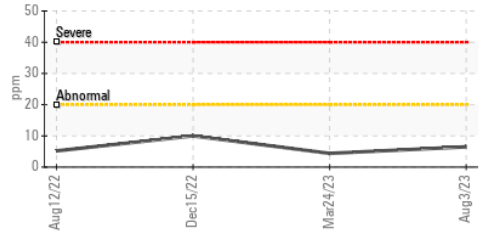
Lead (ppm)



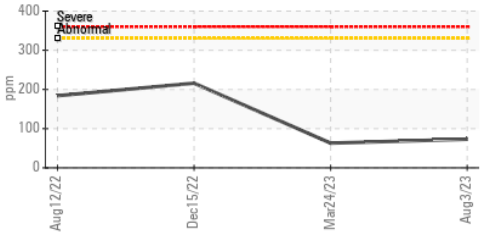
Aluminum (ppm)



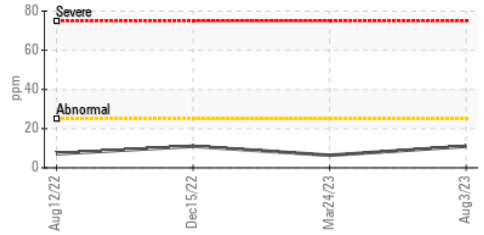
Chromium (ppm)



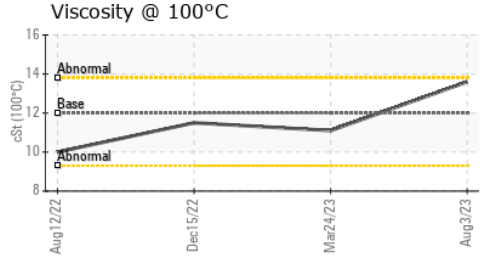
Copper (ppm)



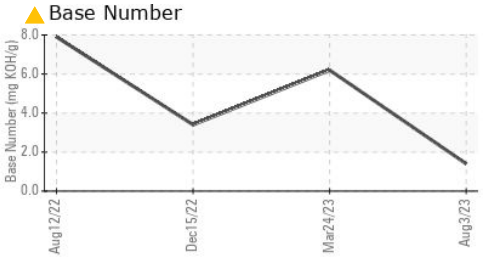
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0103036 **Received** : 16 Aug 2023
Lab Number : 05925737 **Diagnosed** : 17 Aug 2023
Unique Number : 10605684 **Diagnostician** : Don Baldridge
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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