



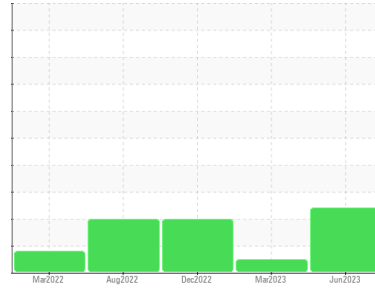
Machine Id

60

Component

Diesel Engine

Fluid

PETRO CANADA DURON SHP 15W40 (--- GAL)


DIAGNOSIS

Recommendation

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

There is an abnormal amount of solids and carbon present in the oil.

Fluid Condition

The oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

method	limit/base	current	history 1	history 2
Sample Number	Client Info	PCA0098351	PCA0083077	PCA0083345
Sample Date	Client Info	28 Jun 2023	29 Mar 2023	06 Dec 2022
Machine Age	hrs	Client Info	0	0
Oil Age	hrs	Client Info	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		SEVERE	NORMAL	SEVERE

CONTAMINATION

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

WEAR METALS

method	limit/base	current	history 1	history 2
Iron	ppm ASTM D5185m >100	77	20	42
Chromium	ppm ASTM D5185m >20	3	1	2
Nickel	ppm ASTM D5185m >4	<1	0	<1
Titanium	ppm ASTM D5185m	<1	0	0
Silver	ppm ASTM D5185m >3	0	0	0
Aluminum	ppm ASTM D5185m >20	0	0	1
Lead	ppm ASTM D5185m >40	3	2	8
Copper	ppm ASTM D5185m >330	<1	0	1
Tin	ppm ASTM D5185m >15	<1	<1	1
Vanadium	ppm ASTM D5185m	0	0	0
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history 1	history 2
Boron	ppm ASTM D5185m 0	2	2	3
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	59	59	57
Manganese	ppm ASTM D5185m 0	<1	<1	<1
Magnesium	ppm ASTM D5185m 1010	987	1022	962
Calcium	ppm ASTM D5185m 1070	1118	1154	1124
Phosphorus	ppm ASTM D5185m 1150	1023	1046	982
Zinc	ppm ASTM D5185m 1270	1260	1344	1224
Sulfur	ppm ASTM D5185m 2060	3638	3626	3277

CONTAMINANTS

method	limit/base	current	history 1	history 2
Silicon	ppm ASTM D5185m >25	3	3	3
Sodium	ppm ASTM D5185m	2	2	0
Potassium	ppm ASTM D5185m >20	0	4	0

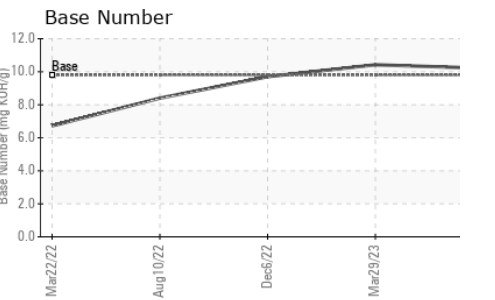
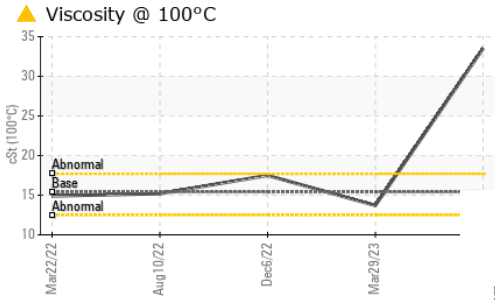
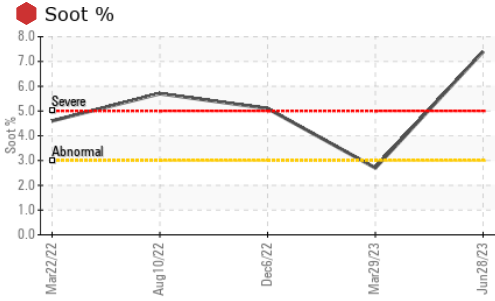
INFRA-RED

method	limit/base	current	history 1	history 2
Soot %	% *ASTM D7844 >3	7.4	2.7	5.1
Nitration	Abs/cm *ASTM D7624 >20	42.5	6.9	10.0
Sulfation	Abs/.1mm *ASTM D7415 >30	72.8	22.1	32.2

FLUID DEGRADATION

method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm *ASTM D7414 >25	104.3	13.3	11.7
Base Number (BN)	mg KOH/g ASTM D2896 9.8	10.21	10.42	9.70

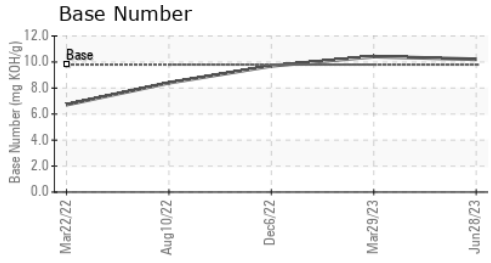
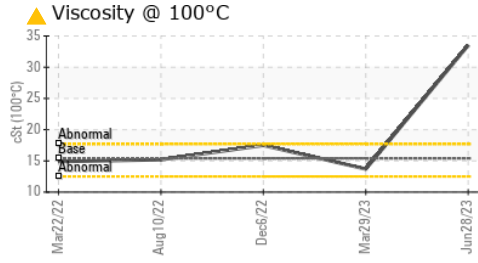
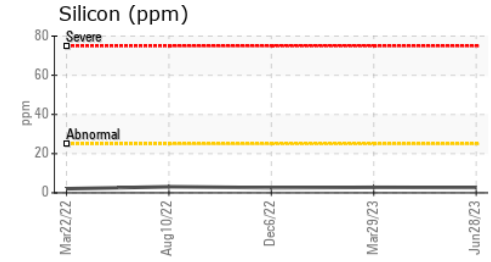
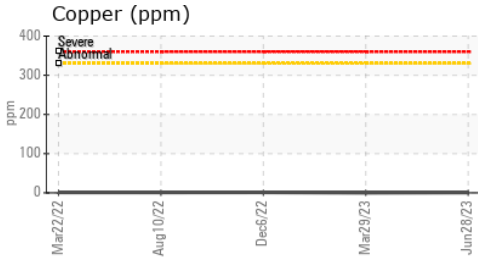
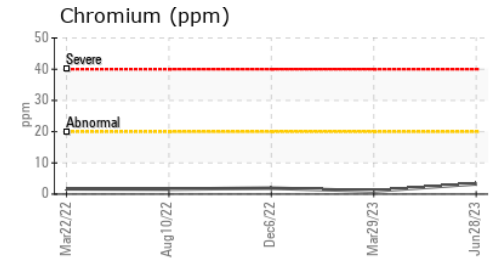
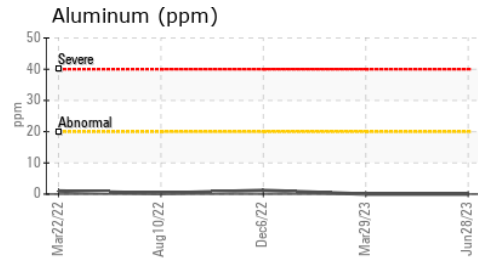
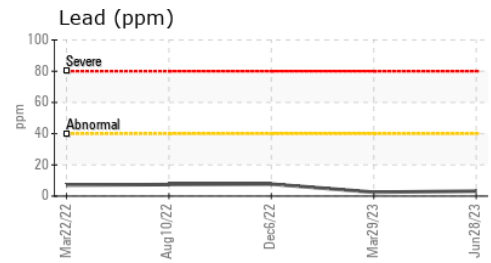
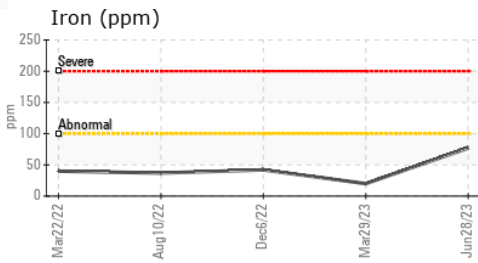
OIL ANALYSIS REPORT



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	▲ 33.51	13.7	17.5

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0098351 **Received** : 30 Jun 2023
Lab Number : 05887988 **Diagnosed** : 06 Jul 2023
Unique Number : 10538471 **Diagnostician** : Wes Davis
Test Package : MOB 2

REDI MIX SERVICES
 120 BERKLEY ST
 TAUNTON, MA
 US 02780
 Contact: HENRY HOLLER
 hholler@glopes.com

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)