

Area
Plymouth & Brockton

Machine Id
415

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (39 QTS)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels remain elevated. Test for glycol is negative.

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	history1	history2
Sample Number	Client Info		PCA0110105	PCA0104399	PCA0013379
Sample Date	Client Info		12 Jun 2024	11 Dec 2023	09 Aug 2023
Machine Age	mls	Client Info	560440	540389	528857
Oil Age	mls	Client Info	12000	12000	24000
Oil Changed	Client Info		Not Chngd	Not Chngd	Changed
Sample Status			ATTENTION	SEVERE	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>3.0	<1.0	<1.0	<1.0
Water	WC Method	>0.2	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >90	44	▲ 125	▲ 157
Chromium	ppm	ASTM D5185m >20	2	1	4
Nickel	ppm	ASTM D5185m >2	<1	0	<1
Titanium	ppm	ASTM D5185m >2	<1	0	<1
Silver	ppm	ASTM D5185m >2	<1	0	0
Aluminum	ppm	ASTM D5185m >20	2	4	8
Lead	ppm	ASTM D5185m >40	4	34	▲ 64
Copper	ppm	ASTM D5185m >330	11	35	192
Tin	ppm	ASTM D5185m >15	<1	0	3
Vanadium	ppm	ASTM D5185m	<1	0	0
Cadmium	ppm	ASTM D5185m	<1	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	7	5	8
Barium	ppm	ASTM D5185m 0	0	5	0
Molybdenum	ppm	ASTM D5185m 60	72	131	72
Manganese	ppm	ASTM D5185m 0	<1	0	2
Magnesium	ppm	ASTM D5185m 1010	952	867	935
Calcium	ppm	ASTM D5185m 1070	1129	1109	1207
Phosphorus	ppm	ASTM D5185m 1150	967	918	1062
Zinc	ppm	ASTM D5185m 1270	1254	1218	1280
Sulfur	ppm	ASTM D5185m 2060	2872	3626	2482

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	9	16	14
Sodium	ppm	ASTM D5185m	● 64	▲ 1741	▲ 328
Potassium	ppm	ASTM D5185m >20	● 93	▲ 1209	▲ 86
Glycol	%	*ASTM D2982	NEG	▲ 0.20	▲ 0.06

INFRA-RED

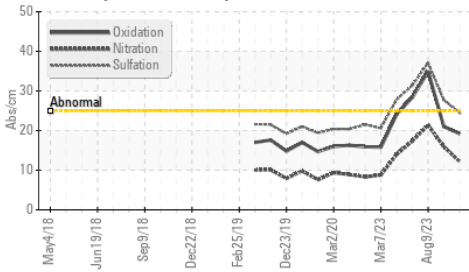
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >6	1.8	2.2	4.2
Nitration	Abs/cm	*ASTM D7624 >20	12.2	15.9	21.4
Sulfation	Abs/.1mm	*ASTM D7415 >30	24.5	27.7	37.1

FLUID DEGRADATION

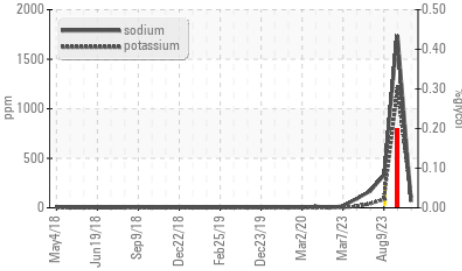
	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	19.2	21.0	34.9
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	8.12	11.29	6.61

OIL ANALYSIS REPORT

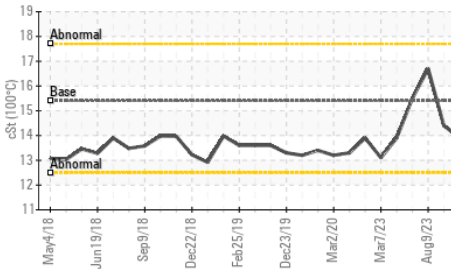
FT-IR (Direct Trend)



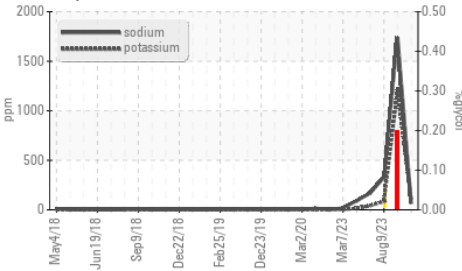
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination

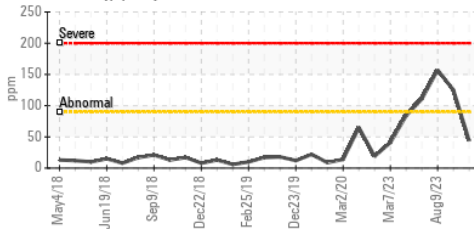


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

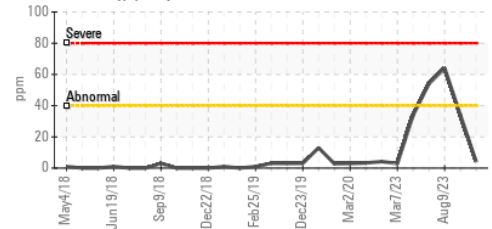
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.9	14.4

GRAPHS

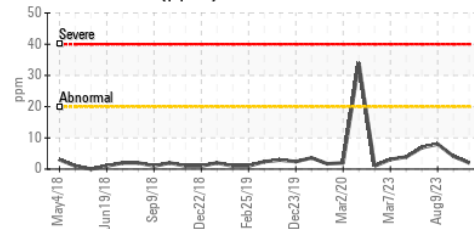
Iron (ppm)



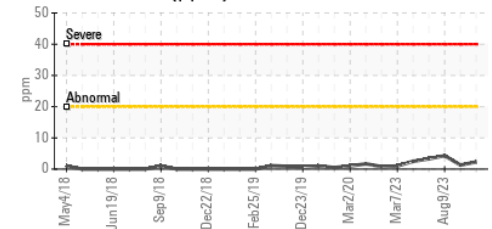
Lead (ppm)



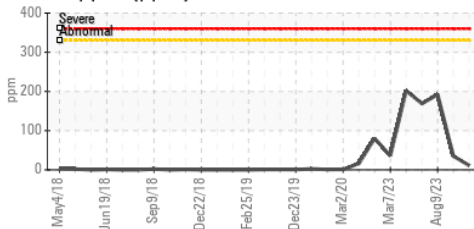
Aluminum (ppm)



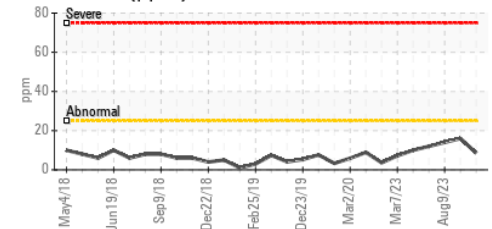
Chromium (ppm)



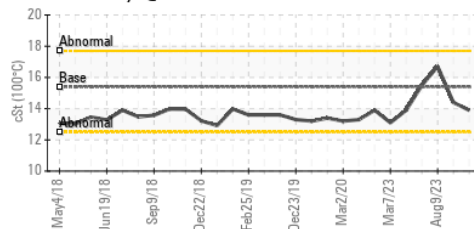
Copper (ppm)



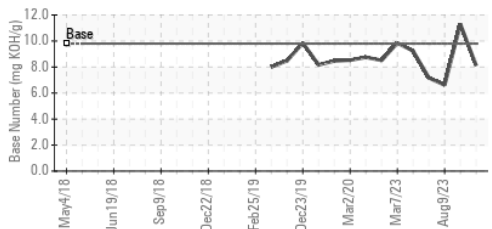
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : PCA0110105

Lab Number : 06230372

Unique Number : 11113865

Test Package : MOB 2

Received : 08 Jul 2024

Tested : 10 Jul 2024

Diagnosed : 10 Jul 2024 - Jonathan Hester

PLYMOUTH & BROCKTON

8 INDUSTRIAL PARK RD

PLYMOUTH, MA

US 02360

Contact: Donald Pelquin

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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)