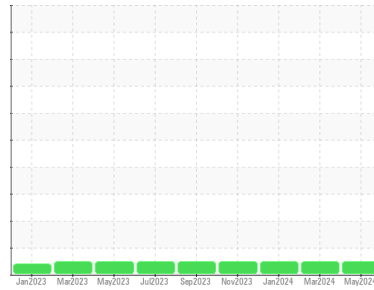


OIL ANALYSIS REPORT

Area
Plymouth & Brockton
 Machine Id
11448
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (36 QTS)

Sample Rating Trend



DIAGNOSIS

Recommendation
 Resample at the next service interval to monitor.

Wear
 All component wear rates are normal.

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 condition of the oil is suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		PCA0104509	PCA0104439	PCA0104733
Sample Date	Client Info		17 May 2024	20 Mar 2024	27 Jan 2024
Machine Age	mls	Client Info	107332	95399	85937
Oil Age	mls	Client Info	12000	24000	12000
Oil Changed	Client Info		Not Changed	Changed	Not Changed
Sample Status			NORMAL	NORMAL	NORMAL

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
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >90	14	20	11
Chromium	ppm	ASTM D5185m >20	<1	1	<1
Nickel	ppm	ASTM D5185m >2	<1	<1	0
Titanium	ppm	ASTM D5185m >2	<1	<1	0
Silver	ppm	ASTM D5185m >2	<1	0	0
Aluminum	ppm	ASTM D5185m >20	1	2	2
Lead	ppm	ASTM D5185m >40	<1	2	0
Copper	ppm	ASTM D5185m >330	<1	<1	0
Tin	ppm	ASTM D5185m >15	<1	1	<1
Vanadium	ppm	ASTM D5185m	<1	<1	0
Cadmium	ppm	ASTM D5185m	<1	<1	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	7	4	5
Barium	ppm	ASTM D5185m 0	2	0	<1
Molybdenum	ppm	ASTM D5185m 60	67	63	56
Manganese	ppm	ASTM D5185m 0	<1	<1	<1
Magnesium	ppm	ASTM D5185m 1010	965	1040	878
Calcium	ppm	ASTM D5185m 1070	1113	1211	984
Phosphorus	ppm	ASTM D5185m 1150	1123	1135	953
Zinc	ppm	ASTM D5185m 1270	1265	1397	1165
Sulfur	ppm	ASTM D5185m 2060	3347	3793	2766

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	21	4	3
Sodium	ppm	ASTM D5185m	<1	2	0
Potassium	ppm	ASTM D5185m >20	2	2	<1

INFRA-RED

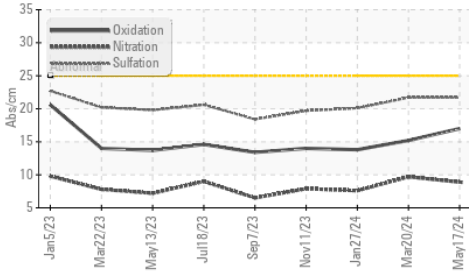
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >6	1	1.9	1.2
Nitration	Abs/cm	*ASTM D7624 >20	8.9	9.7	7.6
Sulfation	Abs/.1mm	*ASTM D7415 >30	21.7	21.7	20.1

FLUID DEGRADATION

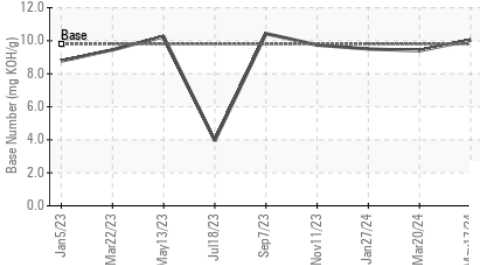
	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	17.0	15.2	13.8
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	10.03	9.40	9.50

OIL ANALYSIS REPORT

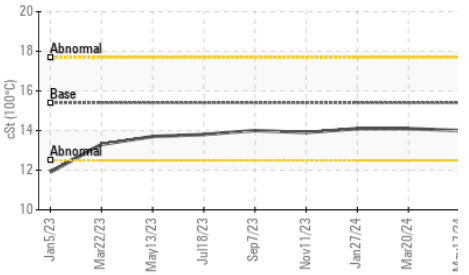
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

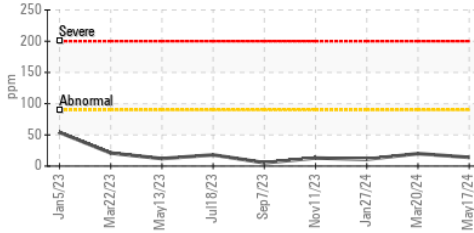


PARAMETER	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

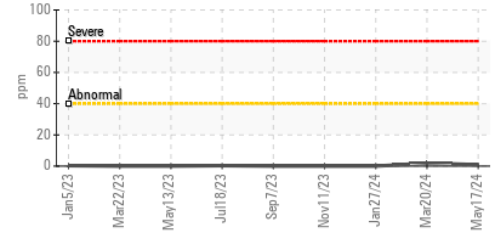
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	14.1

GRAPHS

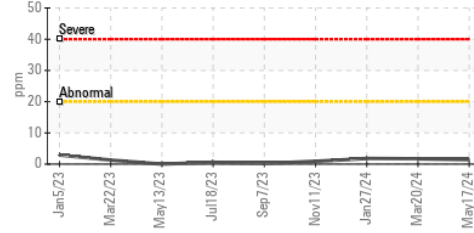
Iron (ppm)



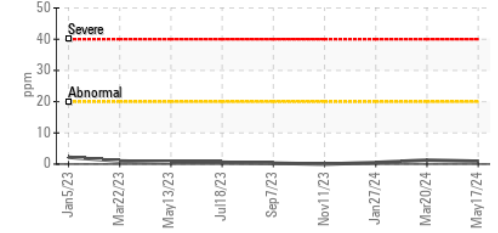
Lead (ppm)



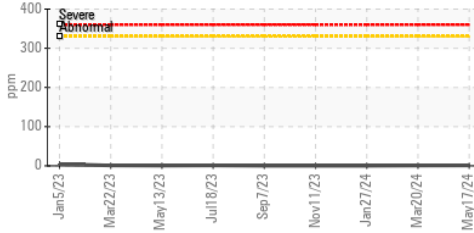
Aluminum (ppm)



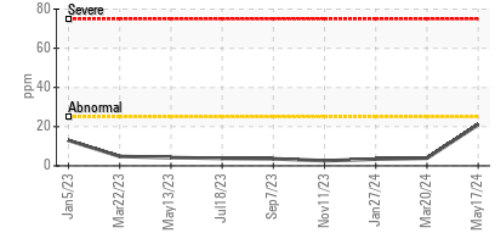
Chromium (ppm)



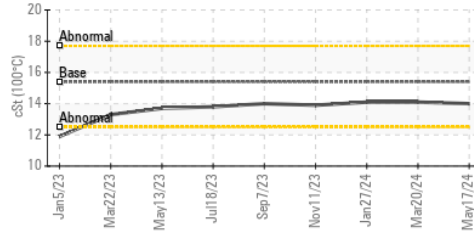
Copper (ppm)



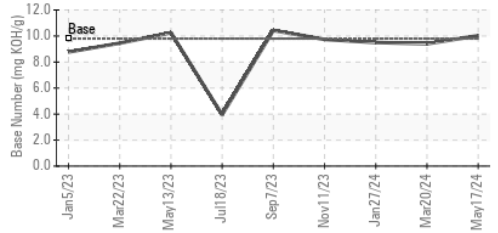
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : PCA0104509

Lab Number : 06196880

Unique Number : 11059003

Test Package : MOB 2

Received : 31 May 2024

Tested : 03 Jun 2024

Diagnosed : 03 Jun 2024 - Wes Davis

PLYMOUTH & BROCKTON

8 INDUSTRIAL PARK RD

PLYMOUTH, MA

US 02360

Contact: Donald Pelquin

Dpelquin@P-B.com

T: (508)732-6039

F: (508)732-6091

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)