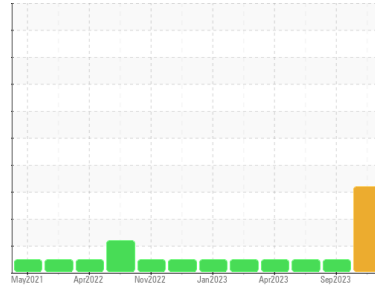


Machine Id
111044

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 10W30 (--- QTS)



DIAGNOSIS

Recommendation

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core).

Contamination

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			PCA0105761	PCA0105787	PCA0100912
Sample Date	Client Info			03 Nov 2023	18 Sep 2023	13 Aug 2023
Machine Age	mls	Client Info		141373	132602	125914
Oil Age	mls	Client Info		0	6690	0
Oil Changed	Client Info			Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

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	71	22	32
Chromium	ppm	ASTM D5185m	>20	1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	▲ 10	2	3
Lead	ppm	ASTM D5185m	>40	6	<1	1
Copper	ppm	ASTM D5185m	>330	▲ 276	1	3
Tin	ppm	ASTM D5185m	>15	4	0	1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	94	4	7
Barium	ppm	ASTM D5185m	0	6	0	<1
Molybdenum	ppm	ASTM D5185m	50	11	60	67
Manganese	ppm	ASTM D5185m	0	3	0	1
Magnesium	ppm	ASTM D5185m	950	96	864	957
Calcium	ppm	ASTM D5185m	1050	1140	1176	1302
Phosphorus	ppm	ASTM D5185m	995	719	1007	1095
Zinc	ppm	ASTM D5185m	1180	961	1239	1353
Sulfur	ppm	ASTM D5185m	2600	2700	3149	3811

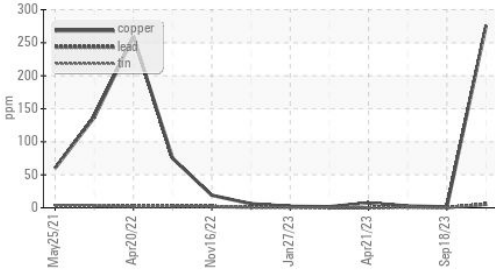
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ 39	4	4
Sodium	ppm	ASTM D5185m		5	0	3
Potassium	ppm	ASTM D5185m	>20	7	2	2

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.6	1.8	2
Nitration	Abs/cm	*ASTM D7624	>20	9.6	9.0	9.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.9	21.3	21.6

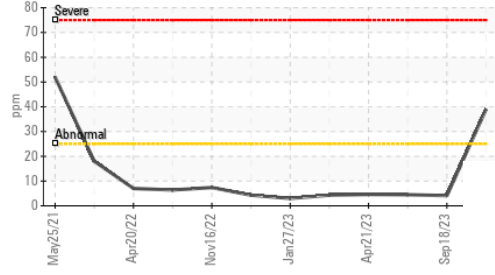
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	20.1	14.8	15.3
Base Number (BN)	mg KOH/g	ASTM D2896		5.7	10.2	9.6

OIL ANALYSIS REPORT

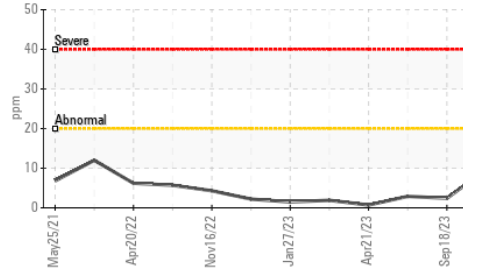
▲ Non-ferrous Metals



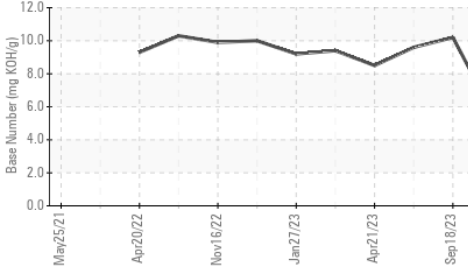
▲ Silicon (ppm)



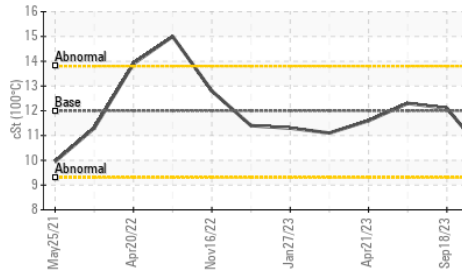
▲ Aluminum (ppm)



Base Number



Viscosity @ 100°C

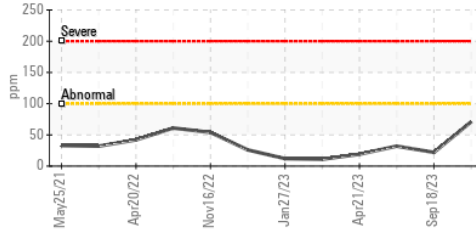


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

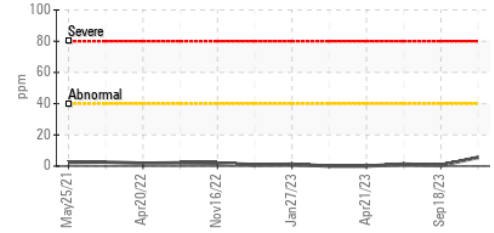
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	10.2	12.1

GRAPHS

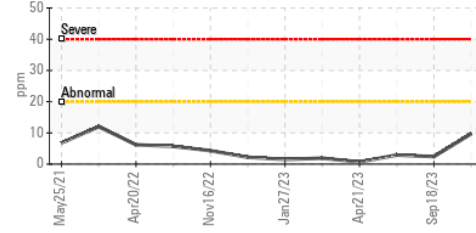
Iron (ppm)



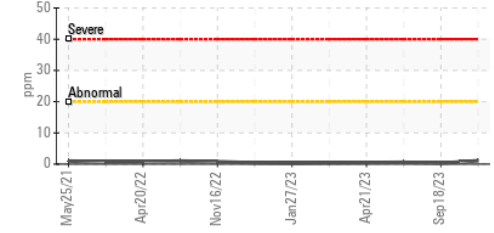
Lead (ppm)



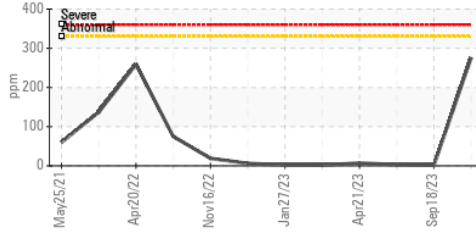
Aluminum (ppm)



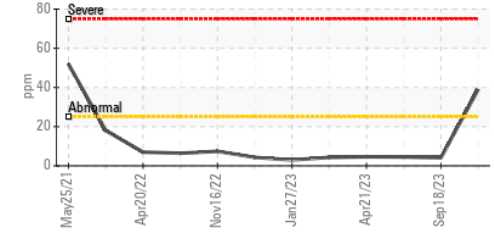
Chromium (ppm)



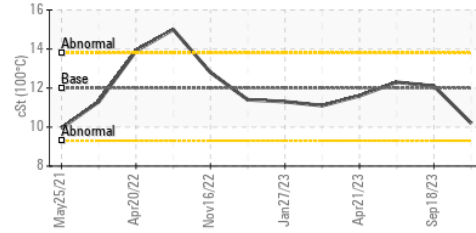
Copper (ppm)



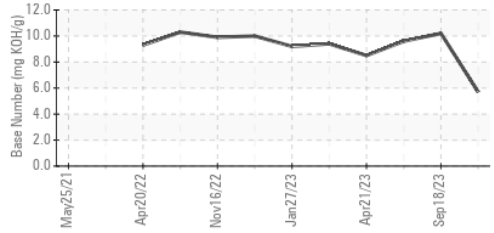
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0105761 **Received** : 08 Nov 2023
Lab Number : 06001320 **Diagnosed** : 09 Nov 2023
Unique Number : 10729680 **Diagnostician** : Jonathan Hester
Test Package : MOB 1 (Additional Tests: TBN)

MILLER TRUCK LEASING #114
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 LOGAN TOWNSHIP, NJ
 US 08085
 Contact: ED DAVIS
 edavis@millertransgroup.com
 T: (856)214-3521
 F: (856)214-3663

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)