



WEAR CHECK

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Machine Id
2007
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- QTS)

RECOMMENDATION

We advise that you check the fuel injection system. We advise that you check for the source of the coolant leak. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0817221	WC0773640	WC0773675
Sample Date		Client Info		07 Dec 2023	06 Aug 2023	20 Mar 2023
Machine Age	hrs	Client Info		1552	0	1163
Oil Age	hrs	Client Info		1552	0	0
Filter Age	hrs	Client Info		1552	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	6	11	4
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	1	<1	0
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	<1	2	<1
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

Test for glycol is positive. There is a high amount of fuel present in the oil. There is a high concentration of glycol present in the oil. Tests confirm the presence of fuel in the oil.

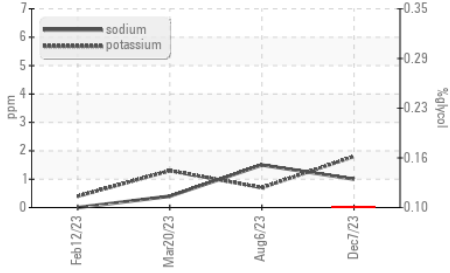
Silicon	ppm	ASTM D5185m	>25	3	3	3
Potassium	ppm	ASTM D5185m	>20	2	<1	1
Fuel	%	ASTM D3524	>5	▲ 9.4	▲ 6.7	▲ 6.3
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		▲ 0.10	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.3	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	8.0	7.8	7.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.1	20.4	19.9
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

FLUID CONDITION

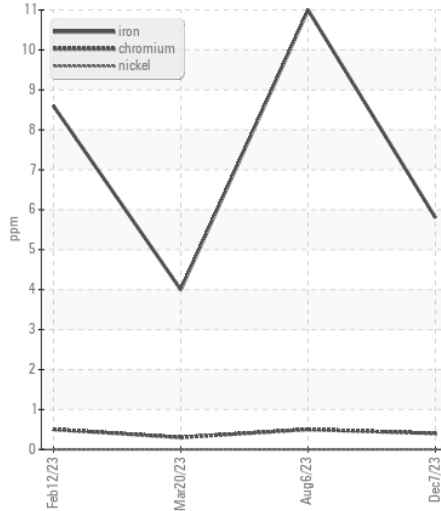
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		1	2	<1
Boron	ppm	ASTM D5185m	0	0	3	3
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	54	55	36
Manganese	ppm	ASTM D5185m	0	0	<1	<1
Magnesium	ppm	ASTM D5185m	1010	879	937	596
Calcium	ppm	ASTM D5185m	1070	931	1012	664
Phosphorus	ppm	ASTM D5185m	1150	995	972	616
Zinc	ppm	ASTM D5185m	1270	1157	1176	791
Sulfur	ppm	ASTM D5185m	2060	3006	3426	2045
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.9	18.3	17.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.4	8.4	8.5
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 11.5	▲ 12.2	▲ 12.3

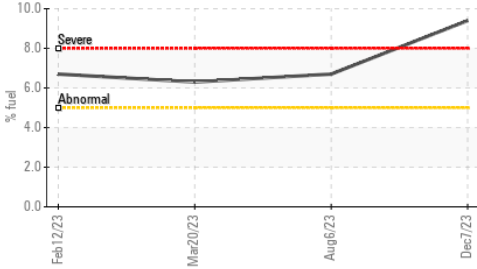
▲ Glycol Contamination



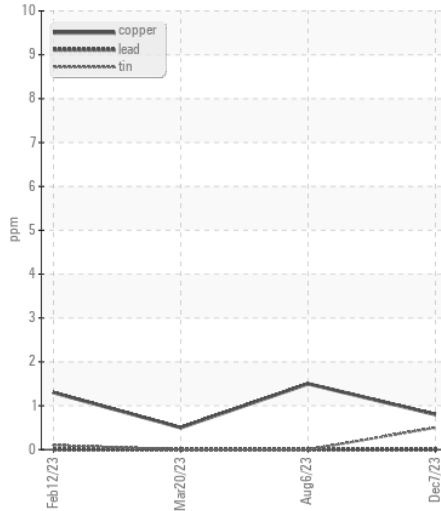
Ferrous Alloys



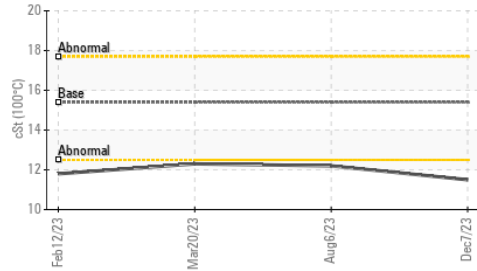
▲ Fuel Dilution



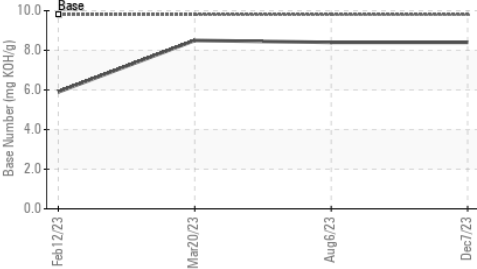
Non-ferrous Metals



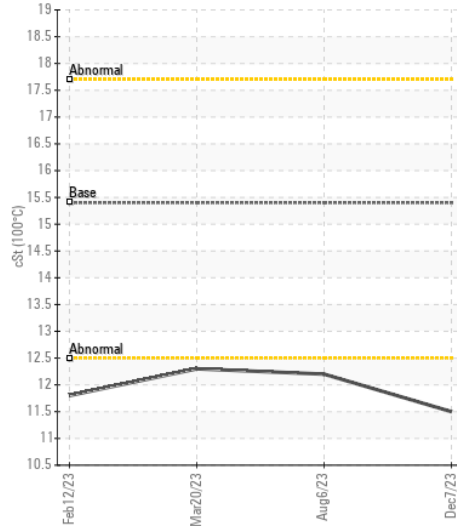
▲ Viscosity @ 100°C



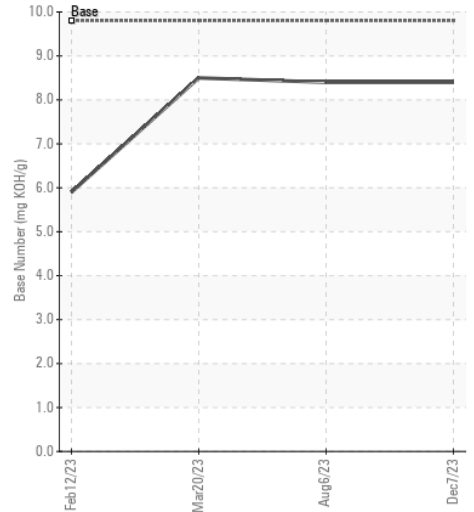
Base Number



▲ Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : WC0817221

Lab Number : 06036618

Unique Number : 10791847

Test Package : FLEET (Additional Tests: Glycol, PercentFuel)

Received : 15 Dec 2023

Tested : 21 Dec 2023

Diagnosed : 21 Dec 2023 - Wes Davis

AREA TRANSPORTATION AUTHORITY

44 TRANSPORTATION CENTER

JOHNSONBURG, PA

US 15845

Contact: DONALD KNEPP

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T: (814)371-0443

F:

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)