

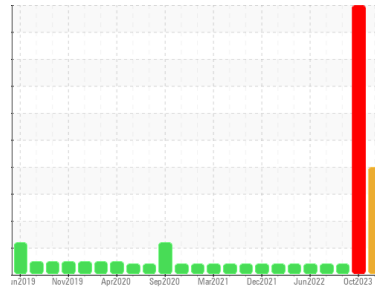


OIL ANALYSIS REPORT



Machine Id
FREIGHTLINER 1085D 8061 (S/N 1FVH65D2315HV2637)
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON XL SYN BLEND 15W40 (--- GAL)

Sample Rating Trend



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

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Test for glycol is negative.

Fluid Condition

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0899082	WC0862893	WC0791000
Sample Date	Client Info		09 Jul 2024	23 Oct 2023	06 Mar 2023
Machine Age	hrs	Client Info	12345	11636	11416
Oil Age	hrs	Client Info	520	492	273
Oil Changed	Client Info		Changed	Not Changd	Changed
Sample Status			ABNORMAL	SEVERE	ATTENTION

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >80	78	▲ 215	47
Chromium	ppm	ASTM D5185m >5	3	▲ 19	3
Nickel	ppm	ASTM D5185m >2	0	▲ 11	<1
Titanium	ppm	ASTM D5185m	<1	<1	<1
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >30	● 14	▲ 68	23
Lead	ppm	ASTM D5185m >30	0	0	<1
Copper	ppm	ASTM D5185m >150	20	9	2
Tin	ppm	ASTM D5185m >5	<1	2	2
Vanadium	ppm	ASTM D5185m	0	<1	<1
Cadmium	ppm	ASTM D5185m	0	<1	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 1	40	50	51
Barium	ppm	ASTM D5185m 1	0	0	0
Molybdenum	ppm	ASTM D5185m 60	49	389	219
Manganese	ppm	ASTM D5185m 1	9	3	<1
Magnesium	ppm	ASTM D5185m 1010	513	383	419
Calcium	ppm	ASTM D5185m 1070	1724	1069	1138
Phosphorus	ppm	ASTM D5185m 1150	767	577	547
Zinc	ppm	ASTM D5185m 1270	902	697	685
Sulfur	ppm	ASTM D5185m 2060	2775	2152	2102

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >20	▲ 28	▲ 21	14
Sodium	ppm	ASTM D5185m	24	▲ 847	<1
Potassium	ppm	ASTM D5185m >20	● 58	▲ 695	2
Fuel	%	ASTM D3524 >5	<1.0	<1.0	<1.0
Glycol	%	*ASTM D2982	0.0	▲ 0.12	NEG

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.3	0.2	0.3
Nitration	Abs/cm	*ASTM D7624 >20	8.5	8.8	8.5
Sulfation	Abs/.1mm	*ASTM D7415 >30	22.8	15.9	18.0

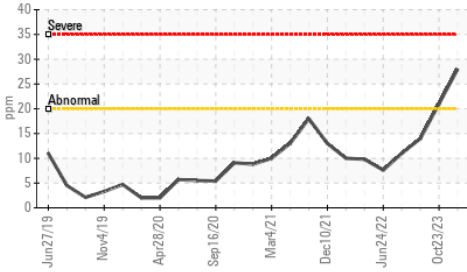
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	20.8	8.7	13.4
Base Number (BN)	mg KOH/g	ASTM D2896 9.6	9.3	8.3	6.2

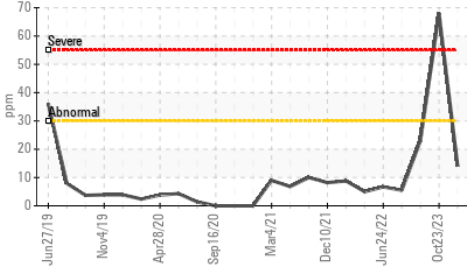


OIL ANALYSIS REPORT

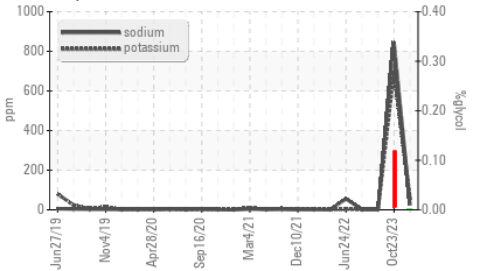
▲ Silicon (ppm)



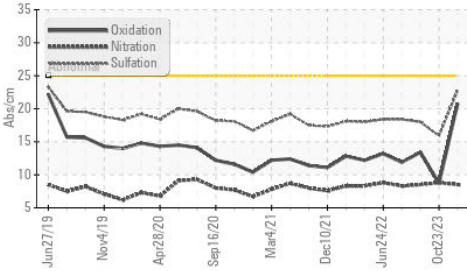
● Aluminum (ppm)



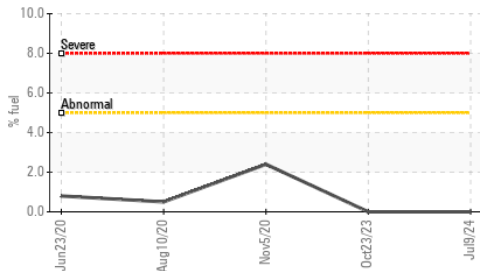
▲ Glycol Contamination



FT-IR (Direct Trend)



Fuel Dilution

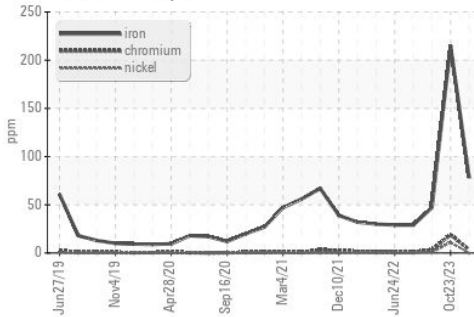


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

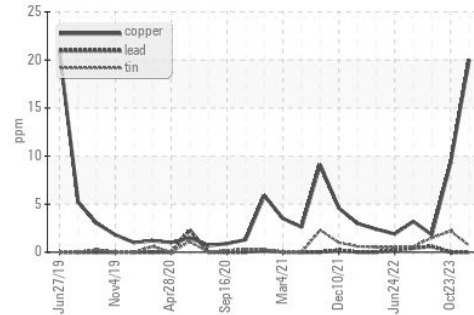
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.5	● 11.2	● 10.4

GRAPHS

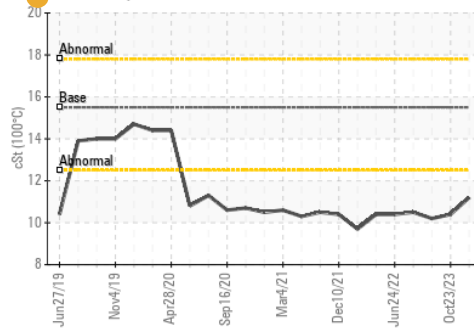
Ferrous Alloys



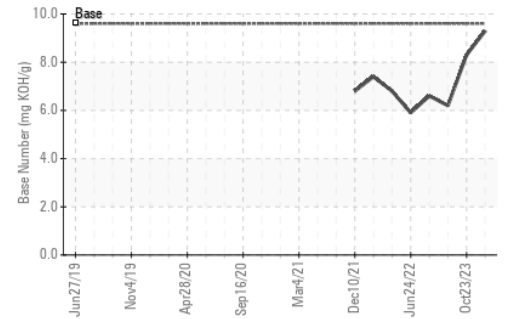
Non-ferrous Metals



● Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0899082 **Received** : 15 Jul 2024
Lab Number : 06235466 **Tested** : 17 Jul 2024
Unique Number : 11124300 **Diagnosed** : 17 Jul 2024 - Jonathan Hester
Test Package : CONST (Additional Tests: FuelDilution, TBN)

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)

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