

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

FREIGHTLINER 477

Component Diesel Engine

Fluid PETRO CANADA DURON HP 15W40 (--- GAL)

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 INFORM	1ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0905951	WC0868034	
Sample Date		Client Info		10 Jul 2024	09 Feb 2024	
Machine Age	mls	Client Info		233889	230208	
Oil Age	mls	Client Info		0	0	
Oil Changed		Client Info		Not Changd	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	23	20	
Chromium	ppm	ASTM D5185m	>5	<1	<1	
Nickel	ppm	ASTM D5185m	>2	0	0	
Titanium	ppm	ASTM D5185m		<1	0	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>30	4	2	
Lead	ppm	ASTM D5185m	>30	<1	0	
Copper	ppm	ASTM D5185m	>150	1	<1	
Tin	ppm	ASTM D5185m	>5	<1	0	
Vanadium	ppm	ASTM D5185m		<1	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current	history1 12	history2
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	7	12	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	7 0	12 <1	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 0 64	12 <1 67	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 0 64 0	12 <1 67 0	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 0 64 0 875	12 <1 67 0 899	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 0 64 0 875 1235	12 <1 67 0 899 1069	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 0 64 0 875 1235 1078	12 <1 67 0 899 1069 904	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 0 64 0 875 1235 1078 1261	12 <1 67 0 899 1069 904 1234	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		7 0 64 0 875 1235 1078 1261 2875	12 <1 67 0 899 1069 904 1234 3040	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 0 64 0 875 1235 1078 1261 2875 current	12 <1 67 0 899 1069 904 1234 3040 history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 0 64 0 875 1235 1078 1261 2875 current 3	12 <1 67 0 899 1069 904 1234 3040 history1 3	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 0 64 0 875 1235 1078 1261 2875 current 3 <	12 <1 67 0 899 1069 904 1234 3040 history1 3 0	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	limit/base >20 >20	7 0 64 0 875 1235 1078 1261 2875 current 3 <1 5	12 <1 67 0 899 1069 904 1234 3040 history1 3 0 6	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >20 >20 limit/base	7 0 64 0 875 1235 1078 1261 2875 current 3 <1 5 current	12 <1 67 0 899 1069 904 1234 3040 history1 3 0 6 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >20 >20 limit/base >3	7 0 64 0 875 1235 1078 1261 2875 current 3 <1 5 current 0.8	12 <1 67 0 899 1069 904 1234 3040 history1 3 0 6 history1 0.6	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >20 >20 limit/base >3 >20	7 0 64 0 875 1235 1078 1261 2875 <i>current</i> 3 <1 5 <i>current</i> 0.8 7.3	12 <1 67 0 899 1069 904 1234 3040 history1 3 0 6 history1 0.6 6.6	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	Imit/base >20 >20 ≥20 Imit/base >3 >20 >3 >20	7 0 64 0 875 1235 1078 1261 2875 current 3 <1 5 current 0.8 7.3 19.3	12 <1 67 0 899 1069 904 1234 3040 history1 3 0 6 <u>history1</u> 0.6 6.6 18.4	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	limit/base >20 >20 limit/base >20 s3 >20 >30 >30 limit/base	7 0 64 0 875 1235 1078 1261 2875 current 3 <1 5 current 0.8 7.3 19.3 current	12 <1 67 0 899 1069 904 1234 3040 history1 3 0 6 history1 0.6 6.6 18.4 history1	 history2 history2 history2 history2



3

31

2!

Abs/cm

10

10.0

6.

19 18 17

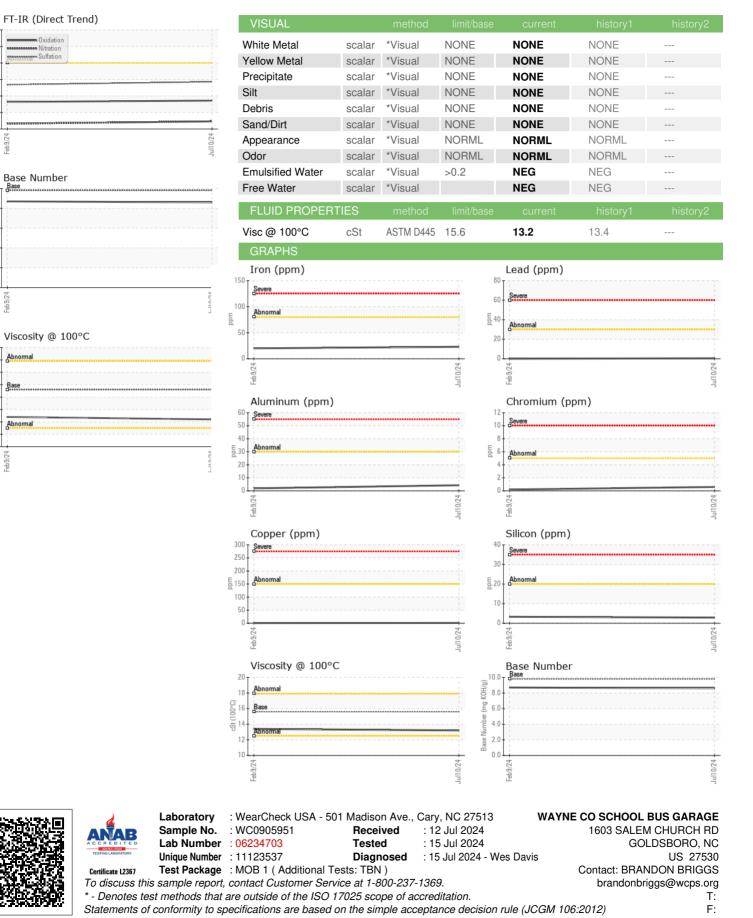
13

12

(mg KOH/g)

equilate and a gase Number 5.0

OIL ANALYSIS REPORT



Report Id: WAYGOL [WUSCAR] 06234703 (Generated: 07/15/2024 09:08:17) Rev: 1

Contact/Location: BRANDON BRIGGS - WAYGOL

Page 2 of 2