

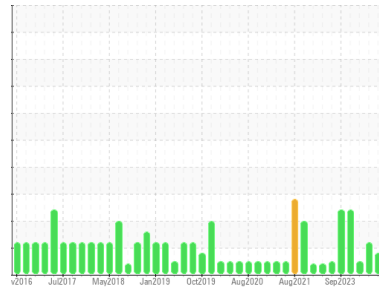


# OIL ANALYSIS REPORT



Machine Id  
**2412 MACK GU713**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (48 QTS)**

Sample Rating Trend



FUEL



## DIAGNOSIS

### Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

### Wear

All component wear rates are normal.

### Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

### Fluid Condition

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

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>GFL0103182</b>	GFL0094658	GFL0103208
Sample Date	Client Info		<b>21 May 2024</b>	28 Feb 2024	20 Dec 2023
Machine Age	hrs	Client Info	<b>30032</b>	29525	29076
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>Changed</b>	Changed	Not Changed
Sample Status			<b>ABNORMAL</b>	ABNORMAL	NORMAL

## CONTAMINATION

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

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >120	<b>21</b>	6	3
Chromium	ppm	ASTM D5185m >20	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185m >5	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185m >2	<b>0</b>	0	0
Silver	ppm	ASTM D5185m >2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >20	<b>2</b>	2	2
Lead	ppm	ASTM D5185m >40	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m >330	<b>&lt;1</b>	3	1
Tin	ppm	ASTM D5185m >15	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	<1
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	<1

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	<b>0</b>	2	2
Barium	ppm	ASTM D5185m 0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m 60	<b>58</b>	53	59
Manganese	ppm	ASTM D5185m 0	<b>0</b>	<1	0
Magnesium	ppm	ASTM D5185m 1010	<b>905</b>	824	989
Calcium	ppm	ASTM D5185m 1070	<b>1098</b>	923	1082
Phosphorus	ppm	ASTM D5185m 1150	<b>1014</b>	858	1118
Zinc	ppm	ASTM D5185m 1270	<b>1223</b>	1146	1310
Sulfur	ppm	ASTM D5185m 2060	<b>3389</b>	2724	3448

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>6</b>	4	5
Sodium	ppm	ASTM D5185m	<b>3</b>	3	2
Potassium	ppm	ASTM D5185m >20	<b>0</b>	<1	2
Fuel	%	ASTM D3524 >3.0	<b>▲ 4.0</b>	▲ 4.8	2.0

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >4	<b>0.4</b>	0.6	0.2
Nitration	Abs/cm	*ASTM D7624 >20	<b>9.9</b>	10.6	6.1
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>19.0</b>	19.8	17.7

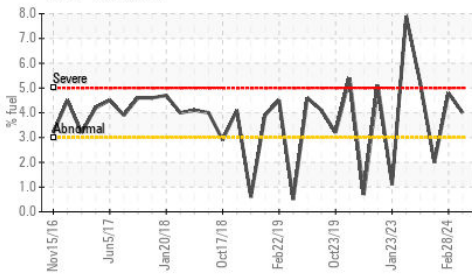
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>15.4</b>	15.9	14.2
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	<b>6.0</b>	5.4	8.9

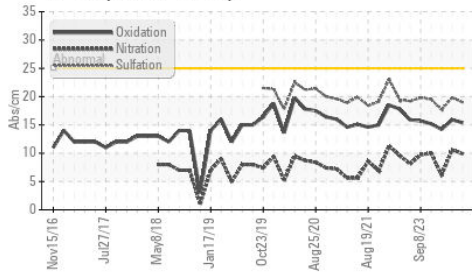


# OIL ANALYSIS REPORT

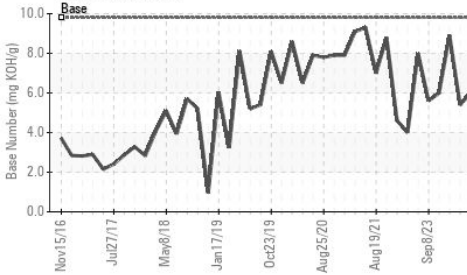
### ▲ Fuel Dilution



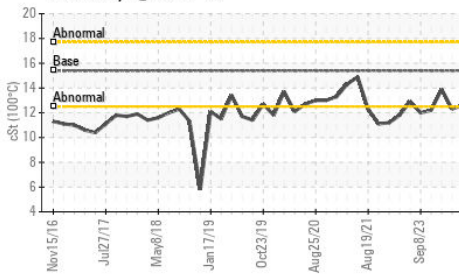
### FT-IR (Direct Trend)



### Base Number



### Viscosity @ 100°C

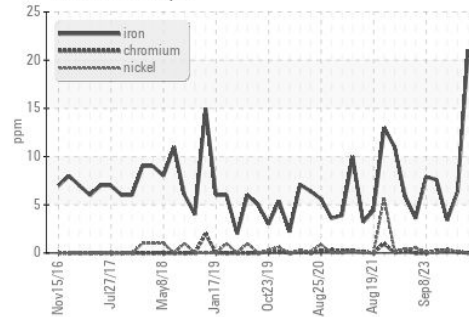


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

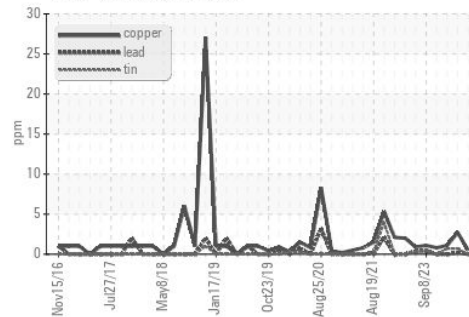
FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.4	12.6	▲ 12.3	13.9

### GRAPHS

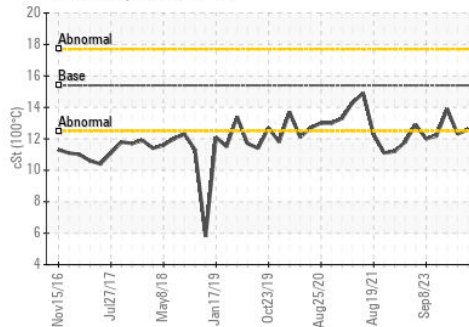
#### Ferrous Alloys



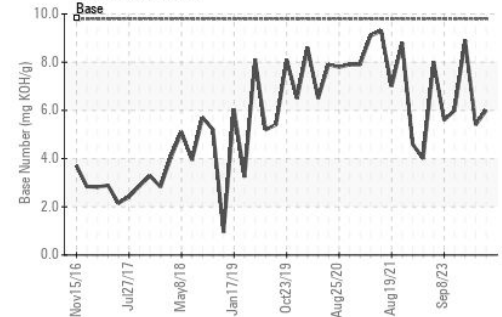
#### Non-ferrous Metals



#### Viscosity @ 100°C



#### Base Number



Certificate L2367

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

**Sample No.** : GFL0103182

**Lab Number** : 06187484

**Unique Number** : 11044236

**Test Package** : FLEET ( Additional Tests: PercentFuel )

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)

**Received** : 22 May 2024

**Tested** : 28 May 2024

**Diagnosed** : 28 May 2024 - Wes Davis

**GFL Environmental - 001 - Raleigh(CNG)**

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