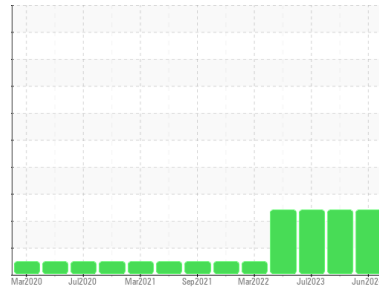


# OIL ANALYSIS REPORT

## Sample Rating Trend



FUEL



Machine Id  
**MACK 160-08**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (11 GAL)**

## DIAGNOSIS

### Recommendation

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

### Wear

Metal levels are typical for a new component breaking in.

### Contamination

There is a high 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. Fuel is present in the oil and is lowering the viscosity. 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>PCA0121247</b>	PCA0106851	PCA0082152
Sample Date	Client Info		<b>12 Jun 2024</b>	04 Oct 2023	10 Jul 2023
Machine Age	hrs	Client Info	<b>500</b>	30214	29778
Oil Age	hrs	Client Info	<b>10000</b>	500	510
Oil Changed	Client Info		<b>Changed</b>	Changed	N/A
Sample Status			<b>SEVERE</b>	SEVERE	SEVERE

## 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>17</b>	19	12
Chromium	ppm	ASTM D5185m >20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m >5	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185m >2	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m >2	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m >20	<b>2</b>	2	0
Lead	ppm	ASTM D5185m >40	<b>5</b>	3	3
Copper	ppm	ASTM D5185m >330	<b>6</b>	8	4
Tin	ppm	ASTM D5185m >15	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	<1
Cadmium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	<b>3</b>	0	3
Barium	ppm	ASTM D5185m 0	<b>0</b>	<1	0
Molybdenum	ppm	ASTM D5185m 60	<b>53</b>	57	55
Manganese	ppm	ASTM D5185m 0	<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m 1010	<b>885</b>	896	901
Calcium	ppm	ASTM D5185m 1070	<b>965</b>	987	1002
Phosphorus	ppm	ASTM D5185m 1150	<b>929</b>	970	935
Zinc	ppm	ASTM D5185m 1270	<b>1158</b>	1189	1111
Sulfur	ppm	ASTM D5185m 2060	<b>2776</b>	3322	3130

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>3</b>	2	2
Sodium	ppm	ASTM D5185m	<b>2</b>	2	6
Potassium	ppm	ASTM D5185m >20	<b>2</b>	2	0
Fuel	%	ASTM D3524 >3.0	<b>▲ 13.7</b>	<b>▲ 11.0</b>	<b>▲ 7.1</b>

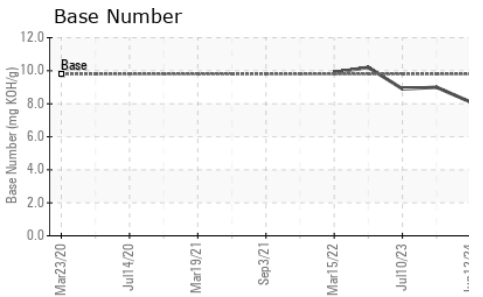
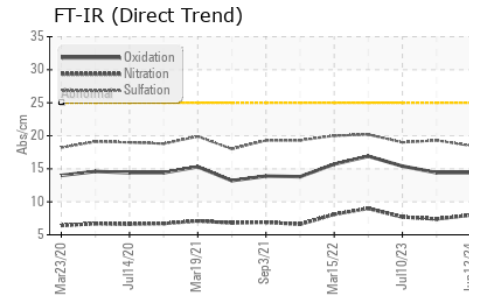
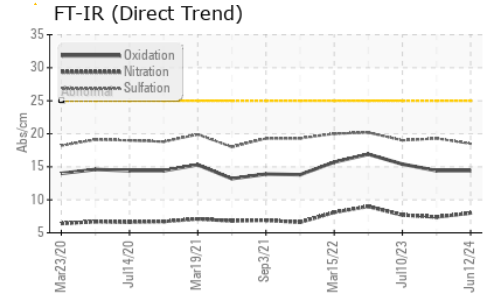
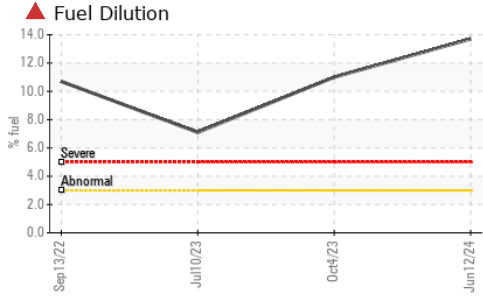
## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >4	<b>0.5</b>	0.8	0.4
Nitration	Abs/cm	*ASTM D7624 >20	<b>8.0</b>	7.4	7.7
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>18.5</b>	19.3	19.0

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>14.4</b>	14.4	15.4
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	<b>8.1</b>	9.0	8.9

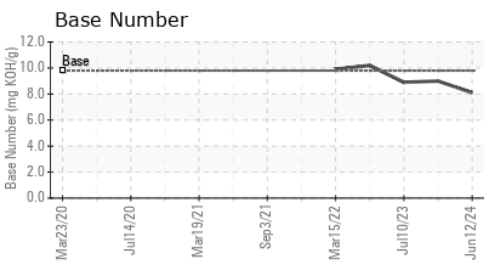
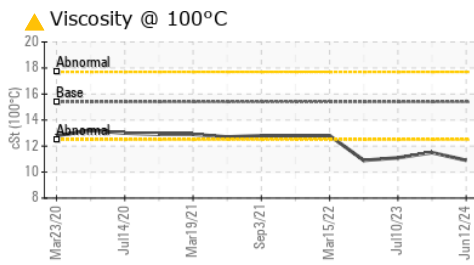
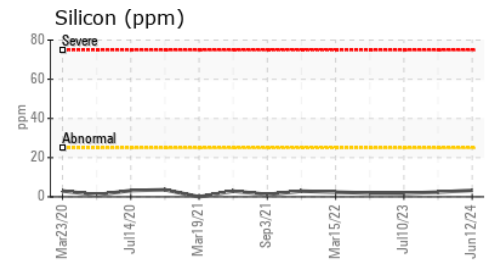
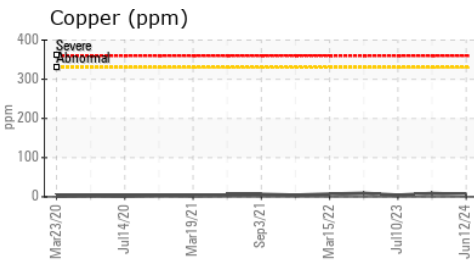
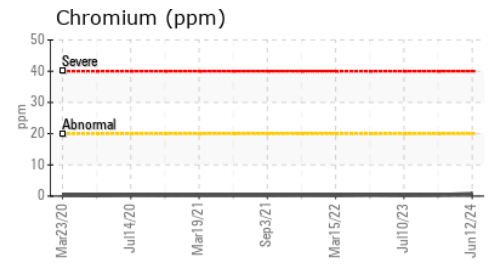
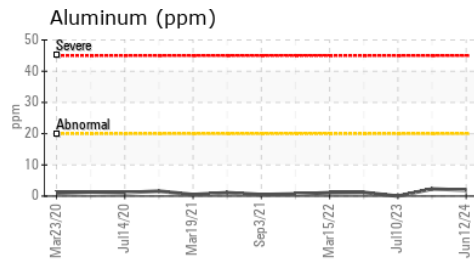
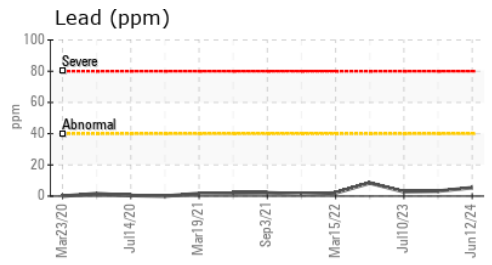
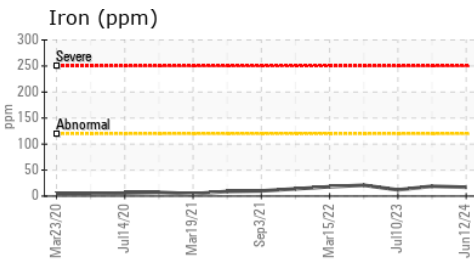
# OIL ANALYSIS REPORT



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	▲ 10.9	▲ 11.5

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0121247 **Received** : 08 Jul 2024  
**Lab Number** : 06229926 **Tested** : 11 Jul 2024  
**Unique Number** : 11113419 **Diagnosed** : 11 Jul 2024 - Wes Davis  
**Test Package** : MOB 1 ( Additional Tests: PercentFuel, TBN )

**GE MARSHALL EXCAVATION**  
 1351 JOLIET RD  
 VALPARAISO, IN  
 US 46385  
 Contact: MARK STEFFEL  
 mark.steffel@gemarshall.com

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)