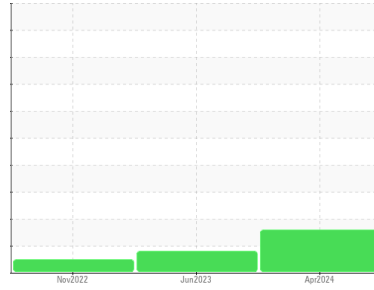


# OIL ANALYSIS REPORT

## Sample Rating Trend



**WEAR**



Machine Id  
**738206**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 10W30 (--- GAL)**

## DIAGNOSIS

### Recommendation

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

### Wear

Cylinder, crank, or cam shaft wear is indicated.

### Contamination

There is an abnormal amount of solids and carbon present in the oil.

### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>PCA0121411</b>	PCA0100748	PCA0076746
Sample Date	Client Info			<b>11 Apr 2024</b>	19 Jun 2023	01 Nov 2022
Machine Age	mls Client Info			<b>63191</b>	142302	58041
Oil Age	mls Client Info			<b>63191</b>	142302	58041
Oil Changed	Client Info			<b>Changed</b>	Changed	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	>100	<b>▲ 116</b>	▲ 114	96
Chromium	ppm	ASTM D5185m	>20	<b>4</b>	5	7
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	1	<1
Titanium	ppm	ASTM D5185m		<b>6</b>	29	<1
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	3
Aluminum	ppm	ASTM D5185m	>20	<b>30</b>	47	78
Lead	ppm	ASTM D5185m	>40	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>330	<b>34</b>	82	295
Tin	ppm	ASTM D5185m	>15	<b>2</b>	3	6
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	<b>3</b>	9	17
Barium	ppm	ASTM D5185m	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	50	<b>67</b>	42	49
Manganese	ppm	ASTM D5185m	0	<b>2</b>	3	5
Magnesium	ppm	ASTM D5185m	950	<b>1047</b>	739	531
Calcium	ppm	ASTM D5185m	1050	<b>1417</b>	1688	1828
Phosphorus	ppm	ASTM D5185m	995	<b>1185</b>	972	739
Zinc	ppm	ASTM D5185m	1180	<b>1453</b>	1280	952
Sulfur	ppm	ASTM D5185m	2600	<b>2926</b>	3005	2319

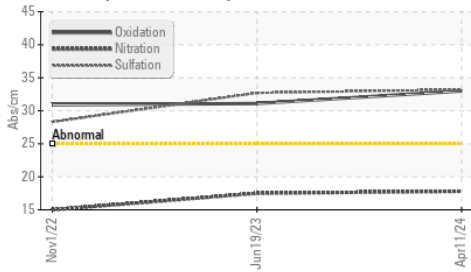
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	<b>15</b>	11	10
Sodium	ppm	ASTM D5185m		<b>4</b>	5	6
Potassium	ppm	ASTM D5185m	>20	<b>64</b>	106	189
Fuel	%	ASTM D3524	>5	<b>&lt;1.0</b>	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	<b>▲ 3</b>	2.8	1.8
Nitration	Abs/cm	*ASTM D7624	>20	<b>17.8</b>	17.5	15
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>33.2</b>	32.7	28.3

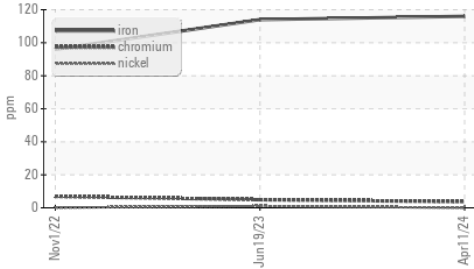
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>33.0</b>	31.1	30.9
Base Number (BN)	mg KOH/g	ASTM D2896		<b>2.7</b>	4.7	6.7

# OIL ANALYSIS REPORT

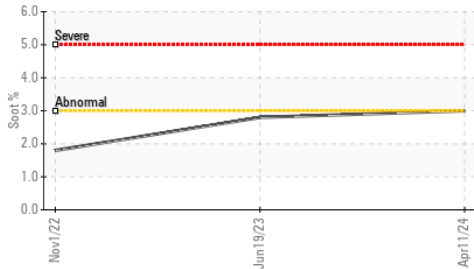
## ▲ FT-IR (Direct Trend)



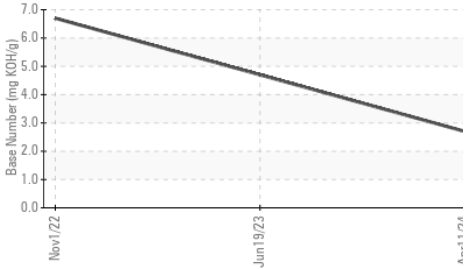
## ▲ Ferrous Alloys



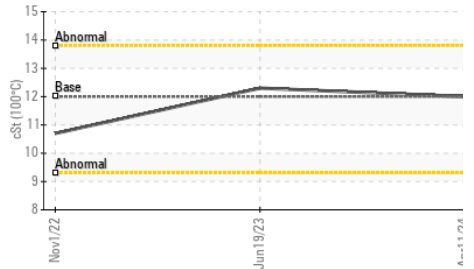
## ▲ Soot %



## Base Number



## Viscosity @ 100°C

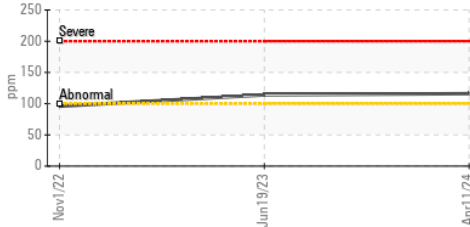


PARAMETER	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

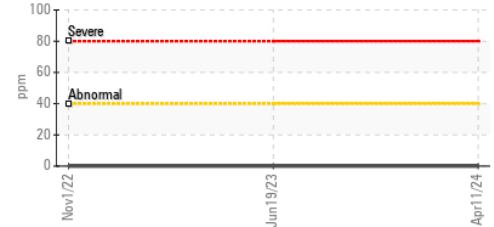
PARAMETER	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	12.0	12.3

## GRAPHS

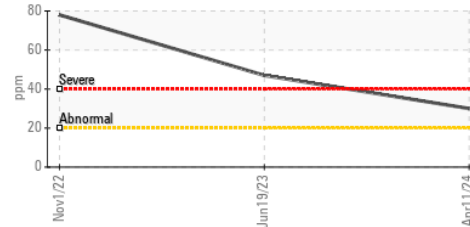
### ▲ Iron (ppm)



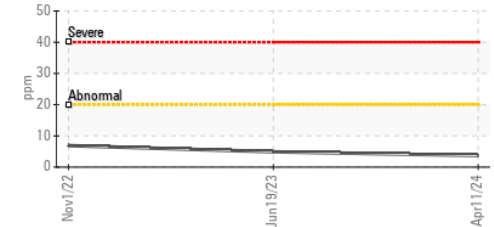
### ▲ Lead (ppm)



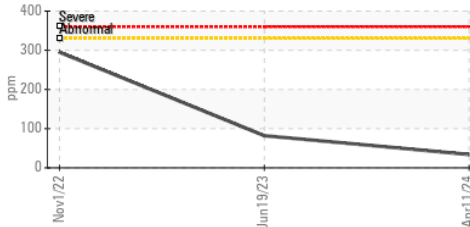
### ▲ Aluminum (ppm)



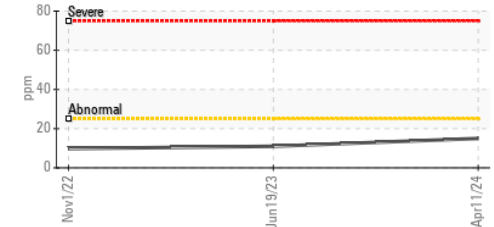
### ▲ Chromium (ppm)



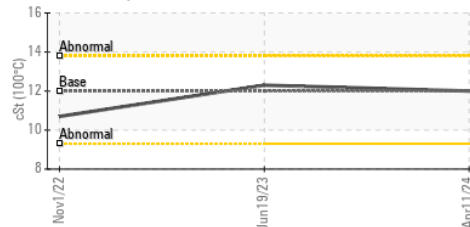
### ▲ Copper (ppm)



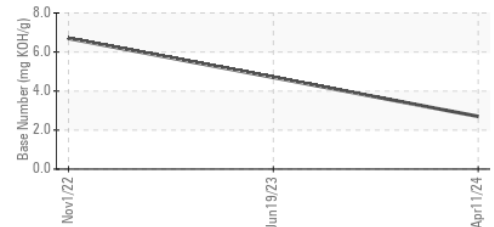
### ▲ Silicon (ppm)



### ▲ Viscosity @ 100°C



### ▲ Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0121411 **Received** : 16 Apr 2024  
**Lab Number** : 06150073 **Tested** : 17 Apr 2024  
**Unique Number** : 10980151 **Diagnosed** : 18 Apr 2024 - Sean Felton  
**Test Package** : MOB 1 ( Additional Tests: FuelDilution, TBN )

**MILLER TRUCK LEASING #118**  
 2196 BENNETT ROAD  
 PHILADELPHIA, PA  
 US 19116  
 Contact: ROSTY VITER  
 rviter@millertransgroup.com  
 T: (215)552-9832  
 F: (215)552-9892

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)