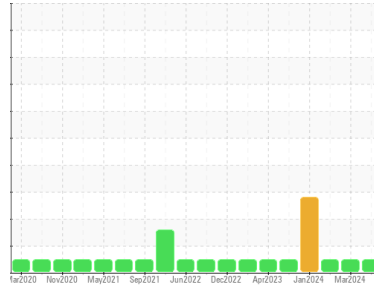


# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id

**DR167**

Component

**Diesel Engine**

Fluid

**PETRO CANADA DURON UHP 5W40 (40 LTR)**

## 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 condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>PC0089306</b>	PC0078476	PC0082052
Sample Date	Client Info			<b>10 May 2024</b>	18 Mar 2024	30 Jan 2024
Machine Age	hrs	Client Info		<b>15100</b>	14829	14627
Oil Age	hrs	Client Info		<b>0</b>	0	250
Oil Changed	Client Info			<b>Changed</b>	Changed	Not Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<b>&lt;1.0</b>	<1.0	1
Water	WC Method	>0.2		<b>NEG</b>	NEG	NEG
Glycol	WC Method			<b>NEG</b>	NEG	NEG

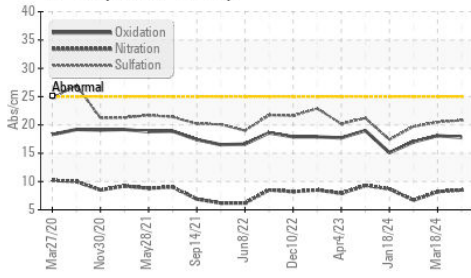
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	<b>26</b>	17	6
Chromium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185(m)	>4	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	1	1
Lead	ppm	ASTM D5185(m)	>40	<b>0</b>	0	<1
Copper	ppm	ASTM D5185(m)	>330	<b>3</b>	2	1
Tin	ppm	ASTM D5185(m)	>15	<b>&lt;1</b>	0	0
Antimony	ppm	ASTM D5185(m)		<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)		<b>0</b>	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	65	<b>38</b>	48	57
Barium	ppm	ASTM D5185(m)	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	65	<b>52</b>	54	54
Manganese	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185(m)	1160	<b>1022</b>	1071	1058
Calcium	ppm	ASTM D5185(m)	820	<b>788</b>	800	780
Phosphorus	ppm	ASTM D5185(m)	1160	<b>940</b>	959	987
Zinc	ppm	ASTM D5185(m)	1260	<b>1097</b>	1147	1111
Sulfur	ppm	ASTM D5185(m)	3000	<b>2557</b>	2653	2861
Lithium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1

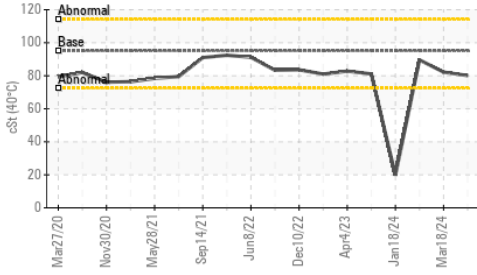
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	<b>2</b>	1	5
Sodium	ppm	ASTM D5185(m)		<b>3</b>	3	3
Potassium	ppm	ASTM D5185(m)	>20	<b>0</b>	0	<1

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	<b>0.3</b>	0.2	0
Nitration	Abs/cm	ASTM D7624*	>20	<b>8.5</b>	8.2	6.7
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>20.8</b>	20.5	19.7

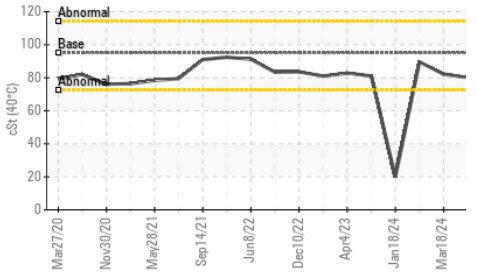
**FT-IR (Direct Trend)**



**Viscosity @ 40°C**



**Viscosity @ 40°C**



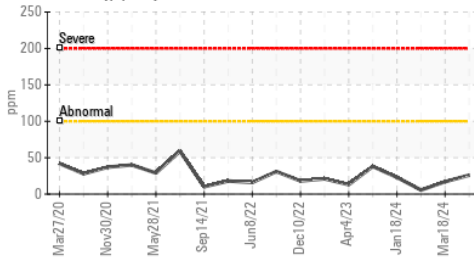
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>17.8</b>	18.1	17.0

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG
Free Water	scalar	Visual*		<b>NEG</b>	NEG	NEG

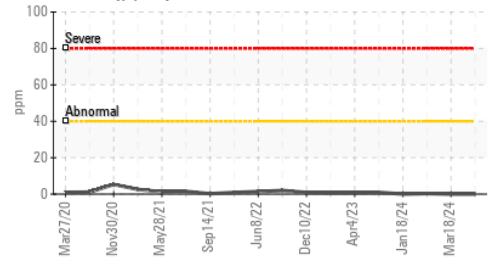
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	95.1	<b>80.1</b>	82.2	89.6
Visc @ 100°C	cSt	ASTM D7279(m)	14.3	<b>13.2</b>	13.5	14.5
Viscosity Index (VI)	Scale	ASTM D2270*	169	<b>167</b>	167	168

**GRAPHS**

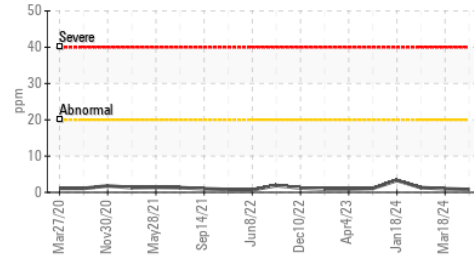
**Iron (ppm)**



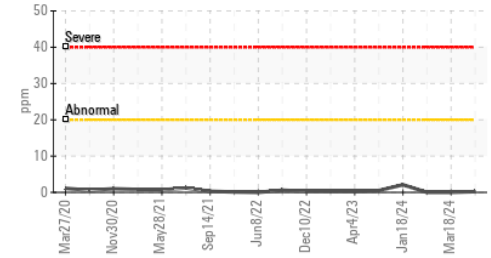
**Lead (ppm)**



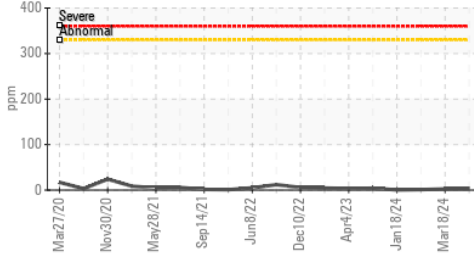
**Aluminum (ppm)**



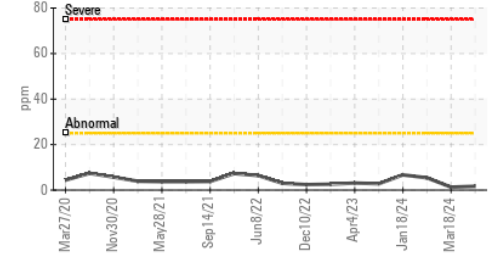
**Chromium (ppm)**



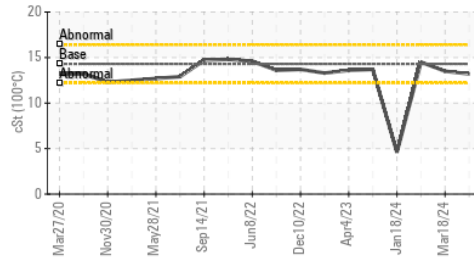
**Copper (ppm)**



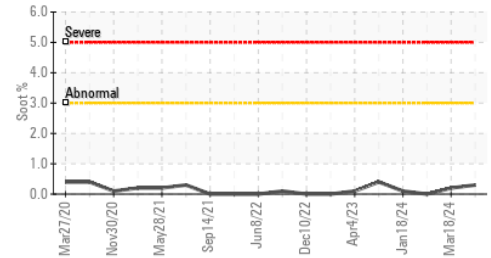
**Silicon (ppm)**



**Viscosity @ 100°C**



**Soot %**



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0089306  
**Lab Number** : 02636336  
**Unique Number** : 5785498  
**Test Package** : MOB 1 ( Additional Tests: KV40, VI )

**Received** : 17 May 2024  
**Tested** : 17 May 2024  
**Diagnosed** : 17 May 2024 - Wes Davis  
 Green Infrastructure and Partners Inc (GIPI) - 286 - Shoring & Foundations  
 151 Ram Forest Rd,  
 Stouffville, ON  
 CA L4A 2G8  
 Contact: Shannon Abbott  
 sabbott@gipi.com  
 T: (905)750-5900  
 F:

To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.