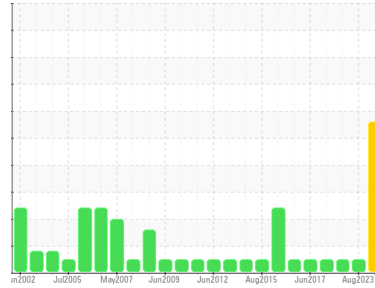
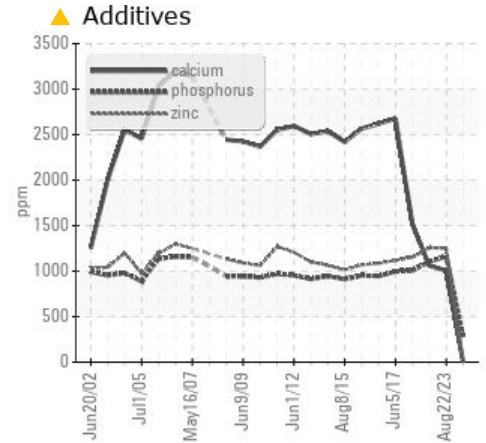
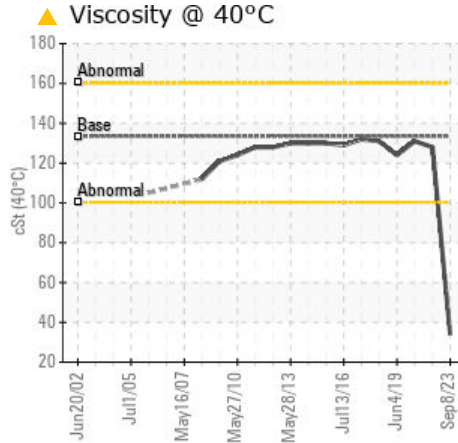
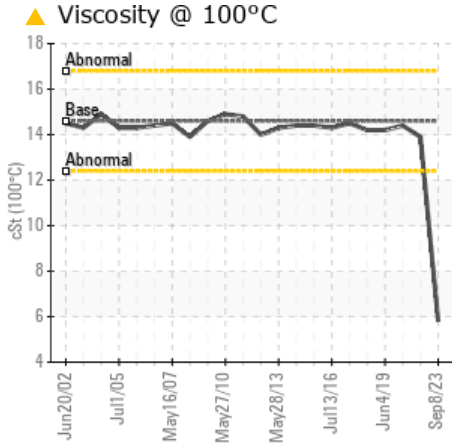




Area  
**Main Power Generation [450204181]**  
 Machine Id  
**Generator MPG #1 (Stbd) - Starting Engine Crank Case (S/N Sample Tag XX-80101-S2)**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON MOTOR OIL SAE 40 (37 LTR)**



**COMPONENT CONDITION SUMMARY**



**RECOMMENDATION**

We advise an early resample to confirm this situation. NOTE: The current sample results do not match this units historical trend, indicating the sample may not be from this component/unit.

**PROBLEMATIC TEST RESULTS**

Sample Status				SEVERE	NORMAL	NORMAL
Calcium	ppm	ASTM D5185(m)	2540	▲ <1	1008	1060
Phosphorus	ppm	ASTM D5185(m)	1000	▲ 284	1161	1105
Zinc	ppm	ASTM D5185(m)	1110	▲ 2	1252	1256
Sulfur	ppm	ASTM D5185(m)	3700	▲ 644	2731	2797
Base Number (BN)	mg KOH/g	ASTM D2896*	7.9	◆ 0.14	8.17	7.15
Visc @ 40°C	cSt	ASTM D7279(m)	133.5	▲ 33.9	128	131
Visc @ 100°C	cSt	ASTM D7279(m)	14.6	▲ 5.8	13.9	14.4

Customer Id: TERHAM  
 Sample No.: PC0011833  
 Lab Number: 02584591  
 Test Package: MAR 2



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Bill Quesnel CLS,OMA II,MLA-III,LLA-I +1  
 (289)291-4641 x4641  
[Bill.Quesnel@wearcheck.com](mailto:Bill.Quesnel@wearcheck.com)

To change component or sample information:  
 Gloria Gonzalez +1 (289)291-4643 x4643  
[gloria.gonzalez@wearcheck.com](mailto:gloria.gonzalez@wearcheck.com)

## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We advise an early resample to confirm this situation.
Alert	---	---	?	NOTE: The current sample results do not match this units historical trend, indicating the sample may not be from this component/unit.

## HISTORICAL DIAGNOSIS

### 22 Aug 2023 Diag: Kevin Marson

NORMAL



Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. Please specify the component make and model with your next sample. All component wear rates are normal. There is no indication of any contamination in the oil. Additive levels indicate the addition of a different brand, or type of oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report



### 03 Nov 2019 Diag: Kevin Marson

NORMAL



Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. Please specify the component make and model with your next sample. All component wear rates are normal. ISO Cleanliness Code (ISO 4406:1999): 23/18/12; Cumulative particle counts  $>4\mu\text{m} = 57300$ ,  $>6\mu\text{m} = 2230$ ,  $>14\mu\text{m} = 37$ ,  $>21\mu\text{m} = 13$ ,  $>38\mu\text{m} = 2$ ,  $>71\mu\text{m} = 0$ . Additive levels indicate the addition of a different brand, or type of oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report



### 04 Jun 2019 Diag: Kevin Marson

NORMAL

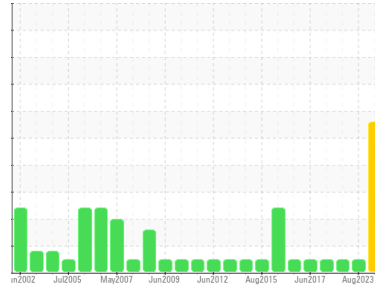


Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. Please specify the component make and model with your next sample. All component wear rates are normal. ISO Cleanliness Code (ISO 4406:1999): 23/17/14; Cumulative particle counts  $>4\mu\text{m} = 74334$ ,  $>6\mu\text{m} = 1035$ ,  $>14\mu\text{m} = 94$ ,  $>21\mu\text{m} = 19$ ,  $>38\mu\text{m} = 0$ ,  $>71\mu\text{m} = 0$ . Additive levels indicate the addition of a different brand, or type of oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report



Area  
**Main Power Generation [450204181]**  
Machine Id  
**Generator MPG #1 (Stbd) - Starting Engine Crank Case (S/N Sample Tag XX-80101-S2)**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON MOTOR OIL SAE 40 (37 LTR)**



**DIAGNOSIS**

**Recommendation**  
We advise an early resample to confirm this situation. NOTE: The current sample results do not match this units historical trend, indicating the sample may not be from this component/unit.

**Wear**  
All component wear rates are normal.

**Contamination**  
Fuel content negligible. There is no indication of any contamination in the oil.

**Fluid Condition**  
The low BN value indicates relatively little reserve alkalinity remaining in this oil. Viscosity of sample indicates oil is within SAE 20 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The oil is no longer serviceable.

**SAMPLE INFORMATION**

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>PC0011833</b>	PC0052571	PC
Sample Date	Client Info	<b>08 Sep 2023</b>	22 Aug 2023	03 Nov 2019
Machine Age	hrs	<b>0</b>	0	0
Oil Age	hrs	<b>0</b>	0	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>SEVERE</b>	NORMAL	NORMAL

**CONTAMINATION**

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

**WEAR METALS**

method	limit/base	current	history1	history2
PQ	ASTM D8184*	<b>0</b>	0	5
Iron	ppm ASTM D5185(m) >100	<b>1</b>	29	3
Chromium	ppm ASTM D5185(m) >20	<b>0</b>	1	<1
Nickel	ppm ASTM D5185(m) >4	<b>0</b>	<1	<1
Titanium	ppm ASTM D5185(m)	<b>0</b>	0	<1
Silver	ppm ASTM D5185(m) >3	<b>0</b>	0	0
Aluminum	ppm ASTM D5185(m) >20	<b>&lt;1</b>	4	<1
Lead	ppm ASTM D5185(m) >40	<b>0</b>	2	<1
Copper	ppm ASTM D5185(m) >330	<b>&lt;1</b>	7	<1
Tin	ppm ASTM D5185(m) >15	<b>1</b>	3	<1
Antimony	ppm ASTM D5185(m)	<b>0</b>	0	<1
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) 1.0	<b>&lt;1</b>	<1	<1
Barium	ppm ASTM D5185(m) 1.0	<b>0</b>	0	0
Molybdenum	ppm ASTM D5185(m) 1.0	<b>0</b>	<1	<1
Manganese	ppm ASTM D5185(m) 1	<b>0</b>	<1	<1
Magnesium	ppm ASTM D5185(m) 15	<b>0</b>	942	886
Calcium	ppm ASTM D5185(m) 2540	<b>&lt;1</b>	1008	1060
Phosphorus	ppm ASTM D5185(m) 1000	<b>284</b>	1161	1105
Zinc	ppm ASTM D5185(m) 1110	<b>2</b>	1252	1256
Sulfur	ppm ASTM D5185(m) 3700	<b>644</b>	2731	2797
Lithium	ppm ASTM D5185(m)	<b>&lt;1</b>	<1	<1

**CONTAMINANTS**

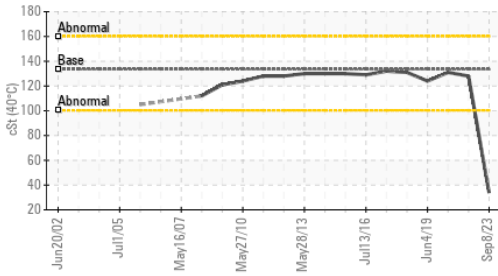
method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >25	<b>&lt;1</b>	14	7
Sodium	ppm ASTM D5185(m)	<b>0</b>	2	0
Potassium	ppm ASTM D5185(m) >20	<b>0</b>	1	<1
Fuel	% ASTM D7593* >5	<b>0.6</b>	<1.0	<1.0

**INFRA-RED**

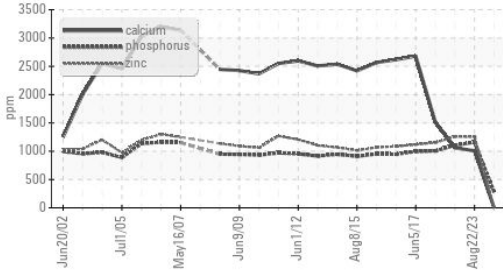
method	limit/base	current	history1	history2
Soot %	% ASTM D7844* >3	<b>0</b>	0	0
Nitration	Abs/cm ASTM D7624* >20	<b>1.6</b>	3.0	3.6
Sulfation	Abs./1mm ASTM D7415* >30	<b>11.7</b>	12.3	15.0

# OIL ANALYSIS REPORT

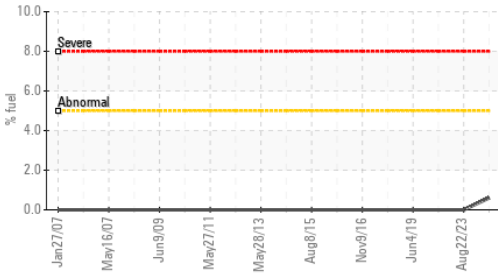
▲ Viscosity @ 40°C



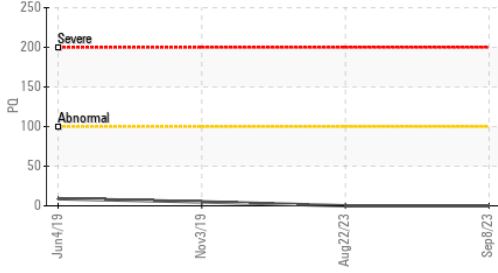
▲ Additives



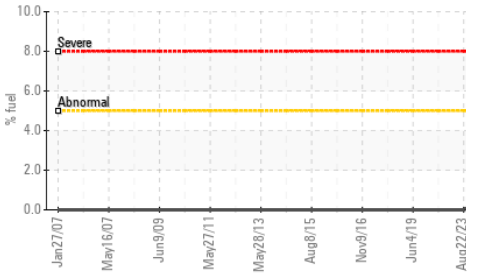
● Fuel Dilution



● PQ



● Fuel Dilution



## FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >20000	---	---	57300
Particles >6µm	ASTM D7647 >5000	---	---	2230
Particles >14µm	ASTM D7647 >640	---	---	37
Particles >21µm	ASTM D7647 >160	---	---	13
Particles >38µm	ASTM D7647 >40	---	---	2
Particles >71µm	ASTM D7647 >10	---	---	0
Oil Cleanliness	ISO 4406 (c) >21/19/16	---	---	23/18/12

## FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation Abs/.1mm	ASTM D7414* >25	<b>2.1</b>	6.1	6.0
Base Number (BN) mg KOH/g	ASTM D2896* 7.9	<b>0.14</b>	8.17	7.15

## VISUAL

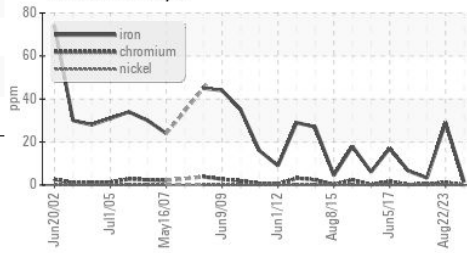
method	limit/base	current	history1	history2
Emulsified Water scalar	Visual* >0.2	<b>NEG</b>	NEG	NEG
Free Water scalar	Visual*	<b>NEG</b>	NEG	NEG

## FLUID PROPERTIES

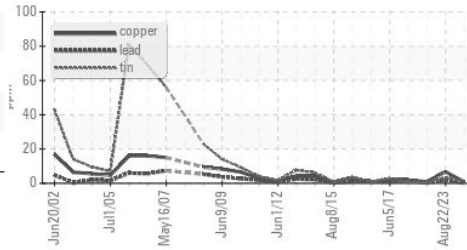
method	limit/base	current	history1	history2
Visc @ 40°C cSt	ASTM D7279(m) 133.5	<b>▲ 33.9</b>	128	131
Visc @ 100°C cSt	ASTM D7279(m) 14.6	<b>▲ 5.8</b>	13.9	14.4
Viscosity Index (VI) Scale	ASTM D2270* 109	<b>112</b>	105	109

## GRAPHS

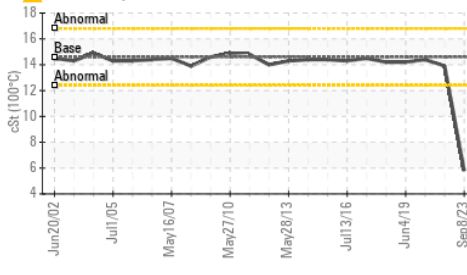
Ferrous Alloys



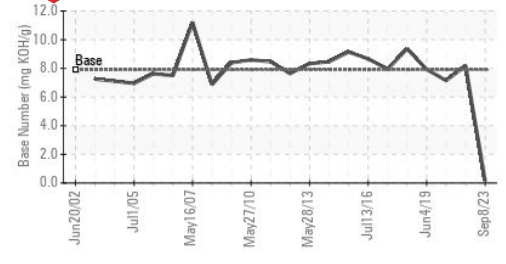
Non-ferrous Metals



▲ Viscosity @ 100°C



● Base Number



ISO 17025:2017  
Accredited  
Laboratory

**Laboratory Sample No.**

**Lab Number**

**Unique Number**

**Test Package**

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9

: PC0011833

: **02584591**

: 5645656

: MAR 2 ( Additional Tests: FuelDilution, KV40, PercentFuel, PQ, PrtCount, VI )

**Received** : 22 Sep 2023

**Diagnosed** : 26 Sep 2023

**Diagnostician** : Bill Quesnel

**Suncor - Terra Nova Projects**

Scotia Centre, 235 Water Street

St. John's, NL

CA A1C 1B6

Contact: Josh Hynes

joshhynes@suncor.com

T: (709)778-3575

F: (709)724-2835

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.