

PROBLEM SUMMARY

Sample Rating Trend

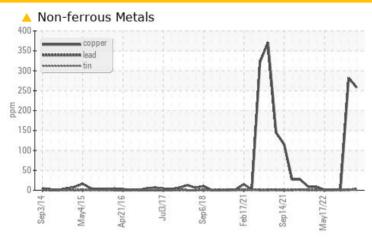
WEAR

Machine Id **3439C** Component

Natural Gas Engine

PETRO CANADA DURON GEO LD 15W40 (29 GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS								
Sample Status				ABNORMAL	ABNORMAL	NORMAL		
Copper	ppm	ASTM D5185m	>35	258	<u>^</u> 282	2		

Customer Id: GFL017 Sample No.: GFL0088574 Lab Number: 05900648 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:

Don Baldridge +1 don.b505@comcast.net

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

09 May 2023 Diag: Jonathan Hester

WEAR



No corrective action is recommended at this time. Resample at the next service interval to monitor. The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



15 Nov 2022 Diag: Sean Felton

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



04 Aug 2022 Diag: Jonathan Hester

NORMAL



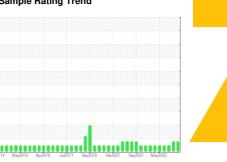
Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.





OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id 3439C Component

Natural Gas Engine

PETRO CANADA DURON GEO LD 15W40 (29 GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal.

Contamination

There is no indication of any contamination in the

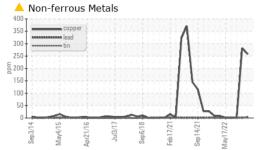
Fluid Condition

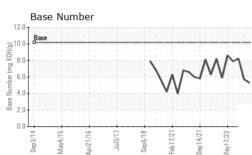
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

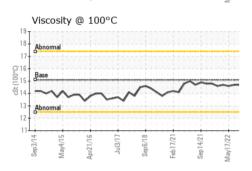
Sample Date	22014 Mmy2015 Apr2016 Jul2017 Smp2018 Feb2021 Smp2022 Mmy2022						
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 15105 15107	Sample Number		Client Info		GFL0088574	GFL0061167	GFL0052727
Oil Age hrs Client Info 395 1099 679 Oil Changed Client Info N/A N/A N/A Changed Sample Status Client Info N/A ABNORMAL NORMAL NORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 18 18 16 Chromium ppm ASTM D5185m >44 2 2 2 1 Nickel ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 3 1 <1 Capper ppm ASTM D5185m >30 3 1 <1 <1 Capper ppm ASTM D5185m >4 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Sample Date		Client Info		17 Jul 2023	09 May 2023	15 Nov 2022
Oil Changed Client Info	Machine Age	hrs	Client Info		15105	15105	15105
WEAR METALS method limit/base current history1 history2 fron ppm ASTM D5185m >50 18 18 16 Chromium ppm ASTM D5185m >4 2 2 1 Nickel ppm ASTM D5185m >2 -1 1 0 Sliver ppm ASTM D5185m >2 -1 1 0 Sliver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >9 6 -1 3 Lead ppm ASTM D5185m >30 3 1 -1 -1 Copper ppm ASTM D5185m >4 -1 -1 <td>Oil Age</td> <td>hrs</td> <td>Client Info</td> <td></td> <th>395</th> <td>1099</td> <td>679</td>	Oil Age	hrs	Client Info		395	1099	679
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 18 18 16 Chromium ppm ASTM D5185m >4 2 2 2 1 Nickel ppm ASTM D5185m >2 <1	Oil Changed		Client Info		N/A	N/A	Changed
Irron	Sample Status				ABNORMAL	ABNORMAL	NORMAL
Chromium ppm ASTM D5185m >4 2 2 1 Nickel ppm ASTM D5185m >2 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>50	18	18	16
Titanium	Chromium	ppm	ASTM D5185m	>4	2	2	1
Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >9 6 <1 3 Lead ppm ASTM D5185m >30 3 1 <1 Copper ppm ASTM D5185m >35 ≥258 ≥282 2 Tin ppm ASTM D5185m >4 <1 <1 <1 Vanadium ppm ASTM D5185m >4 <1 <1 <1 0 Cadmium ppm ASTM D5185m 50 11 17 26 Boron ppm ASTM D5185m 50 11 17 26 Barium ppm ASTM D5185m 50 54 53 54 Molybdenum ppm ASTM D5185m 50 54 53 54 Magnesium ppm ASTM D5185m 50 54 53 54 Magnesium ppm ASTM D5185m 1510 <	Nickel	ppm	ASTM D5185m	>2	<1	1	0
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Copper ppm ASTM D5185m >35 ▲ 258 ▲ 282 2 Tin ppm ASTM D5185m >4 <1	Lead			>30	3	1	<1
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Potassium ppm ASTM D5185m >20 3 3 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 0.1 Nitration Abs/cm *ASTM D7624 >20 10.3 8.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 17.8 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.6 15.6 17.2	Sodium		ASTM D5185m		7	7	4
Soot % % *ASTM D7844 0 0 0.1 Nitration Abs/cm *ASTM D7624 >20 10.3 8.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 17.8 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.6 15.6 17.2	Potassium		ASTM D5185m	>20	3	3	2
Nitration Abs/cm *ASTM D7624 >20 10.3 8.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 17.8 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.6 15.6 17.2	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 10.3 8.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 17.8 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.6 15.6 17.2	Soot %	%	*ASTM D7844		0	0	0.1
Sulfation Abs/.1mm *ASTM D7415 >30 19.6 17.8 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.6 15.6 17.2			*ASTM D7624	>20			
Oxidation							
	FLUID DEGRA	OATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	17.6	15.6	17.2
	Base Number (BN)	mg KOH/g	ASTM D2896	10.2	5.3	5.7	8.2



OIL ANALYSIS REPORT



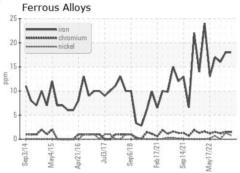


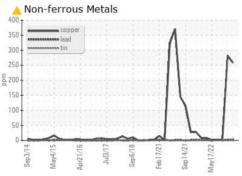


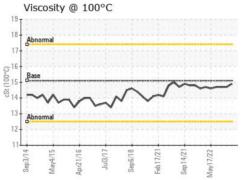
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

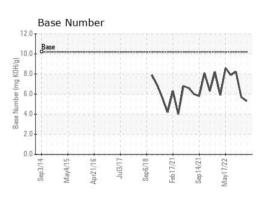
FLUID PROPE	ERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	14.9	14.7	14.7

GRAPHS













Certificate L2367

Report Id: GFL017 [WUSCAR] 05900648 (Generated: 07/19/2023 13:22:42) Rev: 1

Laboratory Sample No. Lab Number **Unique Number**

: 05900648

To discuss this sample report, contact Customer Service at 1-800-237-1369.

: GFL0088574 : 10562004 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 17 Jul 2023 Diagnosed : 19 Jul 2023 Diagnostician : Don Baldridge

GFL Environmental - 017 - Durham 148 Stone Park Court

Durham, NC US 27703 Contact: Shane Parks shane.parks@gflenv.com

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (919)596-1363 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (919)598-1852