

Machine Id  
**4582**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON HP 15W40 (--- GAL)**

**RECOMMENDATION**

We advise that you check for the source of the coolant leak. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>GFL0112389</b>	GFL0084286	GFL0072832
Sample Date		Client Info		<b>28 Feb 2024</b>	12 Jul 2023	16 Feb 2023
Machine Age	kms	Client Info		<b>0</b>	28044	27909
Oil Age	kms	Client Info		<b>10829</b>	600	0
Filter Age	kms	Client Info		<b>10829</b>	600	0
Oil Changed		Client Info		<b>Changed</b>	Changed	N/A
Filter Changed		Client Info		<b>Changed</b>	Changed	N/A
Sample Status				<b>SEVERE</b>	SEVERE	ABNORMAL

**WEAR**

Aluminum, iron and nickel ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. Exhaust valve wear is indicated. Piston wear is indicated.

PQ		ASTM D8184*	>30	<b>0</b>	0	---
Iron	ppm	ASTM D5185(m)	>110	<b>▲ 136</b>	▲ 226	38
Chromium	ppm	ASTM D5185(m)	>4	<b>&lt;1</b>	2	2
Nickel	ppm	ASTM D5185(m)	>2	<b>▲ 3</b>	▲ 12	1
Titanium	ppm	ASTM D5185(m)		<b>0</b>	<1	<1
Silver	ppm	ASTM D5185(m)	>2	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185(m)	>25	<b>▲ 36</b>	▲ 83	4
Lead	ppm	ASTM D5185(m)	>45	<b>4</b>	16	2
Copper	ppm	ASTM D5185(m)	>85	<b>36</b>	▲ 128	1
Tin	ppm	ASTM D5185(m)	>4	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0

**CONTAMINATION**

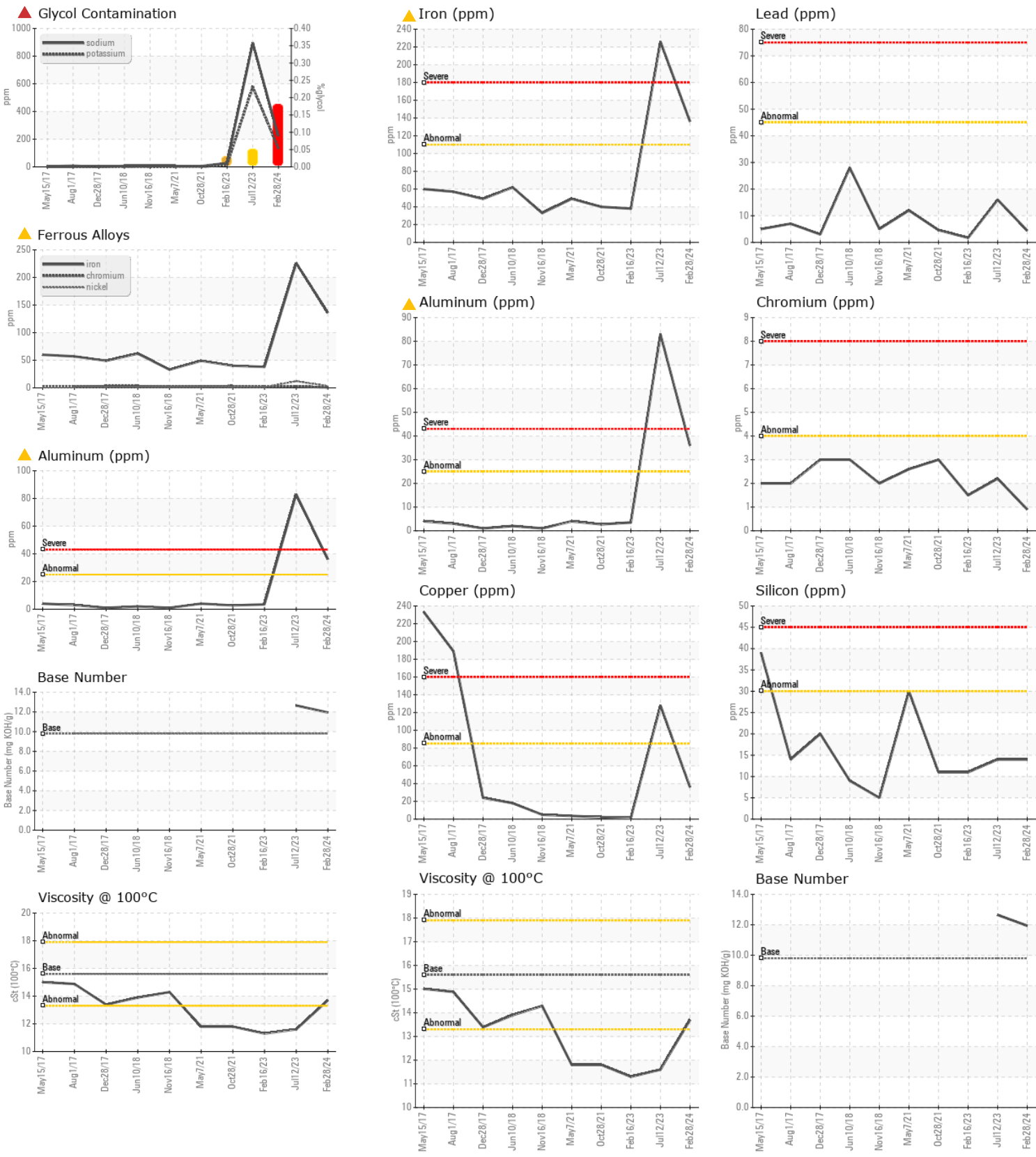
Test for glycol is positive. There is a high concentration of glycol present in the oil.

Silicon	ppm	ASTM D5185(m)	>30	<b>14</b>	14	11
Potassium	ppm	ASTM D5185(m)	>20	<b>▲ 134</b>	▲ 578	▲ 14
Fuel		WC Method	>5	<b>&lt;1.0</b>	0.8	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	%	ASTM D7922*		<b>▲ 0.179</b>	▲ 0.05	▲ 0.029
Soot %	%	ASTM D7844*	>3	<b>0.2</b>	0.3	0.5
Nitration	Abs/cm	ASTM D7624*	>20	<b>8.1</b>	15.9	7.5
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>18.9</b>	19.7	21.6
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		<b>● 223</b>	● 895	● 28
Boron	ppm	ASTM D5185(m)	0	<b>8</b>	36	8
Barium	ppm	ASTM D5185(m)	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	60	<b>58</b>	67	60
Manganese	ppm	ASTM D5185(m)	0	<b>2</b>	6	<1
Magnesium	ppm	ASTM D5185(m)	1010	<b>905</b>	929	951
Calcium	ppm	ASTM D5185(m)	1070	<b>1009</b>	956	1111
Phosphorus	ppm	ASTM D5185(m)	1150	<b>978</b>	1035	1058
Zinc	ppm	ASTM D5185(m)	1270	<b>1120</b>	1171	1176
Sulfur	ppm	ASTM D5185(m)	2060	<b>2605</b>	2483	2571
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>14.5</b>	15.7	14.8
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	<b>11.94</b>	12.65	---
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	<b>13.7</b>	▲ 11.6	11.3



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : GFL0112389  
**Lab Number** : 02619524  
**Unique Number** : 5736634  
**Test Package** : MOB 2 ( Additional Tests: PQ )

**Received** : 04 Mar 2024  
**Tested** : 05 Mar 2024  
**Diagnosed** : 05 Mar 2024 - Kevin Marson

**GFL Environmental - 550 - Rocky View County**  
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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.