



WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>



Machine Id  
**4670M**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>GFL0108806</b>	GFL0108791	GFL0105639
Sample Date		Client Info		<b>09 Apr 2024</b>	04 Jan 2024	14 Dec 2023
Machine Age	hrs	Client Info		<b>17944</b>	17253	17080
Oil Age	hrs	Client Info		<b>17253</b>	17080	16983
Filter Age	hrs	Client Info		<b>17253</b>	17080	16983
Oil Changed		Client Info		<b>Changed</b>	Changed	Not Changd
Filter Changed		Client Info		<b>Changed</b>	Changed	Not Changd
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	<b>58</b>	14	6
Chromium	ppm	ASTM D5185m	>5	<b>2</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>30	<b>6</b>	2	2
Lead	ppm	ASTM D5185m	>30	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m	>150	<b>54</b>	<1	<1
Tin	ppm	ASTM D5185m	>5	<b>2</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

There is no indication of any contamination in the oil.

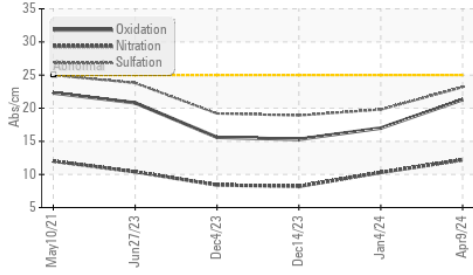
Silicon	ppm	ASTM D5185m	>20	<b>10</b>	5	4
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	2	2
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>1.2</b>	0.5	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>12.2</b>	10.3	8.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.2</b>	19.8	18.9
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

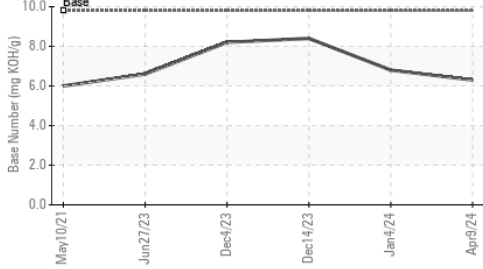
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>14</b>	4	3
Boron	ppm	ASTM D5185m	0	<b>4</b>	0	2
Barium	ppm	ASTM D5185m	0	<b>3</b>	0	0
Molybdenum	ppm	ASTM D5185m	60	<b>60</b>	62	53
Manganese	ppm	ASTM D5185m	0	<b>2</b>	0	<1
Magnesium	ppm	ASTM D5185m	1010	<b>931</b>	987	896
Calcium	ppm	ASTM D5185m	1070	<b>1230</b>	1113	996
Phosphorus	ppm	ASTM D5185m	1150	<b>957</b>	1037	987
Zinc	ppm	ASTM D5185m	1270	<b>1321</b>	1288	1240
Sulfur	ppm	ASTM D5185m	2060	<b>2966</b>	3013	3013
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>21.3</b>	17.0	15.3
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	<b>6.3</b>	6.8	8.4
Visc @ 100°C	cSt	ASTM D445	15.4	<b>13.5</b>	13.8	14.0

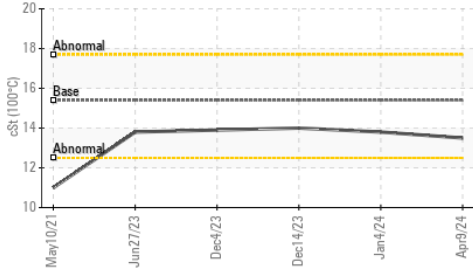
**FT-IR (Direct Trend)**



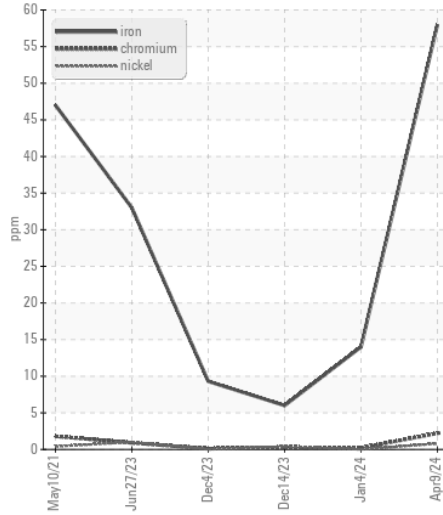
**Base Number**



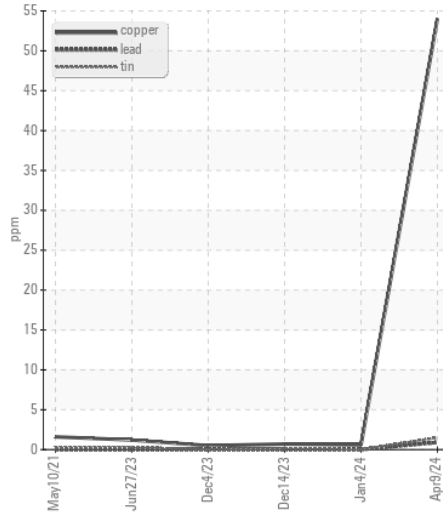
**Viscosity @ 100°C**



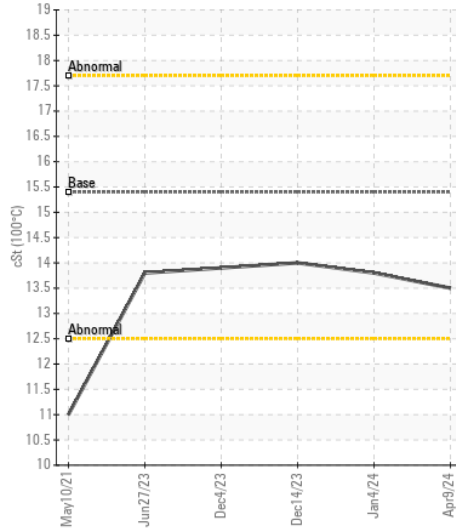
**Ferrous Alloys**



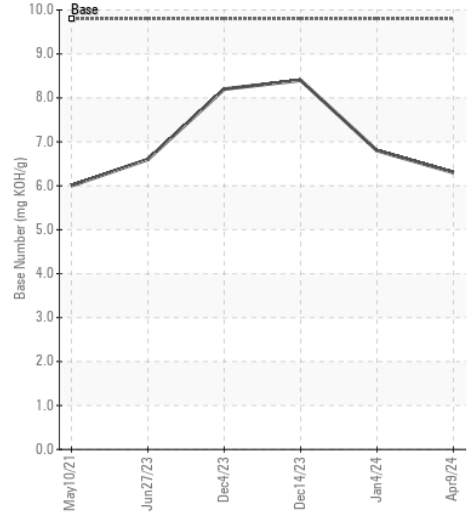
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0108806 **Received** : 11 Apr 2024  
**Lab Number** : 06146407 **Tested** : 12 Apr 2024  
**Unique Number** : 10976485 **Diagnosed** : 15 Apr 2024 - Don Baldrige  
**Test Package** : FLEET

**GFL Environmental - 415 - Michigan East**  
 6200 Elmridge  
 Sterling Heights, MI  
 US 48313  
 Contact: Frank Wolak  
 fwolak@gflenv.com  
 T: (586)825-9514  
 F:

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)