



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

Machine Id  
**426138 - SW4614**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor. ( Customer Sample Comment: Engine )

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>GFL0105465</b>	GFL0123567	GFL0105519
Sample Date		Client Info		<b>03 Jul 2024</b>	23 May 2024	18 Jan 2024
Machine Age	mls	Client Info		<b>289644</b>	287726	277220
Oil Age	mls	Client Info		<b>289644</b>	287726	277220
Filter Age	mls	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Changd</b>	Changed	N/A
Filter Changed		Client Info		<b>Not Changd</b>	Changed	N/A
Sample Status				<b>NORMAL</b>	ABNORMAL	SEVERE

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>39</b>	▲ 137	▲ 169
Chromium	ppm	ASTM D5185m	>20	<b>2</b>	7	▲ 16
Nickel	ppm	ASTM D5185m	>4	<b>&lt;1</b>	1	1
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	2
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	● 9	● 15
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	<1	3
Copper	ppm	ASTM D5185m	>330	<b>28</b>	125	11
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	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.

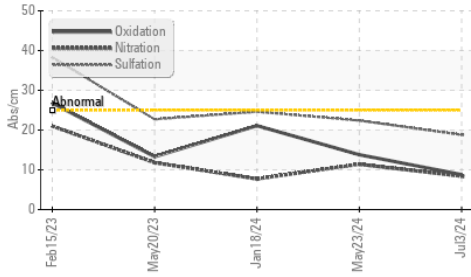
Silicon	ppm	ASTM D5185m	>25	<b>15</b>	▲ 38	▲ 84
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	5	6
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	0.6
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>1.7</b>	1.7	0.7
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.4</b>	11.4	7.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.8</b>	22.4	24.6
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**

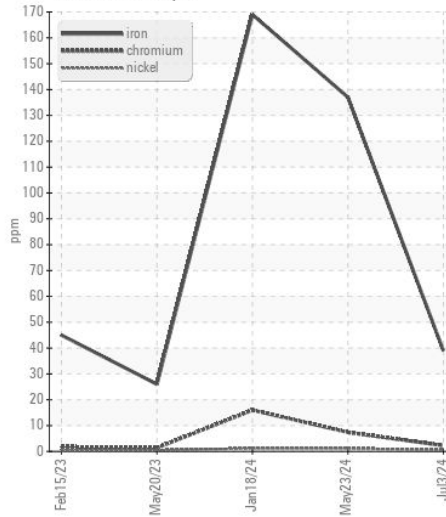
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>2</b>	5	0
Boron	ppm	ASTM D5185m	0	<b>2</b>	<1	58
Barium	ppm	ASTM D5185m	0	<b>0</b>	3	14
Molybdenum	ppm	ASTM D5185m	60	<b>45</b>	58	50
Manganese	ppm	ASTM D5185m	0	<b>&lt;1</b>	2	6
Magnesium	ppm	ASTM D5185m	1010	<b>12</b>	48	450
Calcium	ppm	ASTM D5185m	1070	<b>2333</b>	2487	1730
Phosphorus	ppm	ASTM D5185m	1150	<b>1033</b>	1140	1044
Zinc	ppm	ASTM D5185m	1270	<b>1242</b>	1240	1283
Sulfur	ppm	ASTM D5185m	2060	<b>3497</b>	2929	3335
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>8.8</b>	13.8	21.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	<b>9.8</b>	8.4	11.1
Visc @ 100°C	cSt	ASTM D445	15.4	<b>14.0</b>	13.5	● 10.8

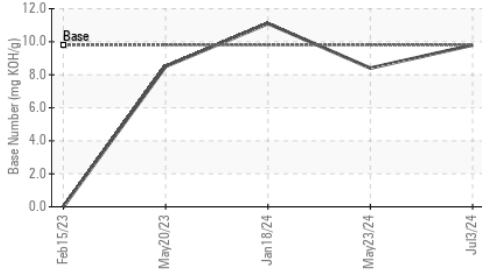
**FT-IR (Direct Trend)**



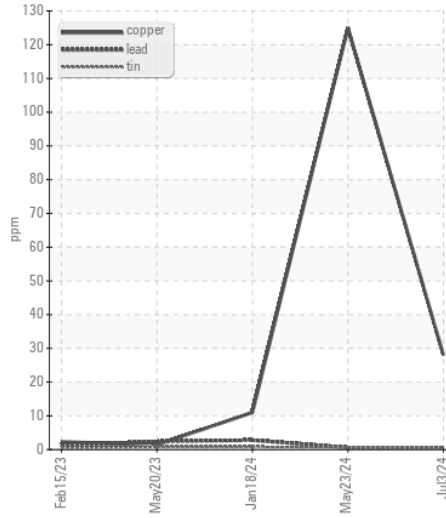
**Ferrous Alloys**



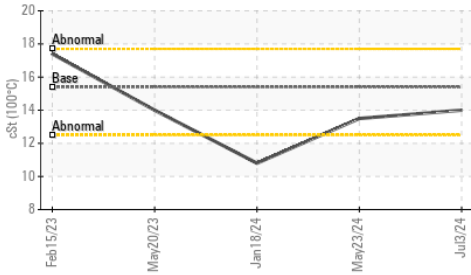
**Base Number**



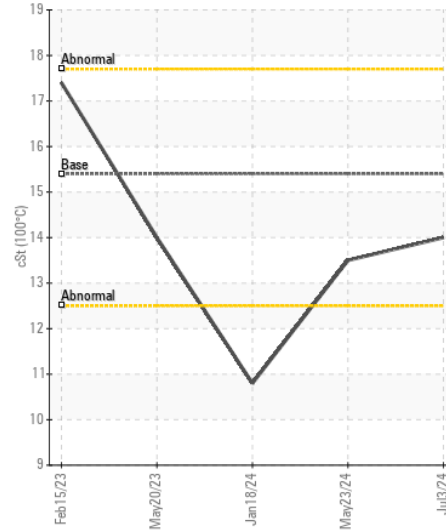
**Non-ferrous Metals**



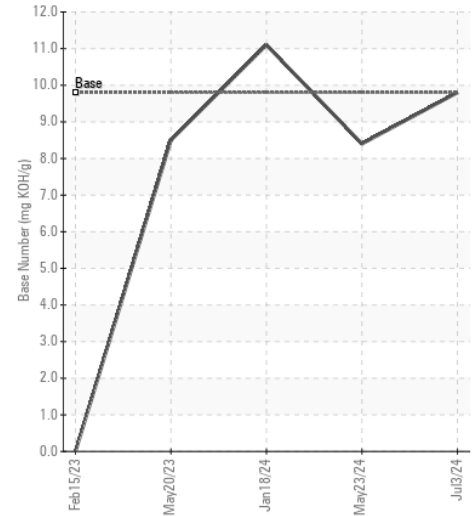
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513

**Sample No.** : GFL0105465

**Lab Number** : 06234437

**Unique Number** : 11123271

**Test Package** : FLEET

**Received** : 12 Jul 2024

**Tested** : 12 Jul 2024

**Diagnosed** : 14 Jul 2024 - Don Baldrige

**GFL Environmental - 983 - Sugar Land Hauling**

16011 West Belfort Street

Sugar Land, TX

US 77498

Contact: Adrian Martinez

adrianmartinez@gflenv.com

T:

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)