



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



Area  
**(413UA)**  
Machine Id  
**813012**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 40 (--- GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>GFL0122018</b>	GFL0116585	GFL0116609
Sample Date		Client Info		<b>25 Jun 2024</b>	03 Jun 2024	26 Apr 2024
Machine Age	hrs	Client Info		<b>4392</b>	4233	3973
Oil Age	hrs	Client Info		<b>159</b>	3896	3829
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Changd</b>	Changed	Not Changd
Filter Changed		Client Info		<b>Not Changd</b>	Changed	Not Changd
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	<b>5</b>	11	8
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>5	<b>1</b>	5	4
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	2	2
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	0	<1
Copper	ppm	ASTM D5185m	>330	<b>1</b>	2	2
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
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.

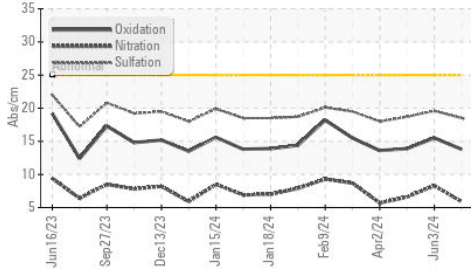
Silicon	ppm	ASTM D5185m	>25	<b>6</b>	4	4
Potassium	ppm	ASTM D5185m	>20	<b>5</b>	2	2
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>4	<b>0.2</b>	0.6	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.9</b>	8.3	6.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.5</b>	19.6	18.7
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**

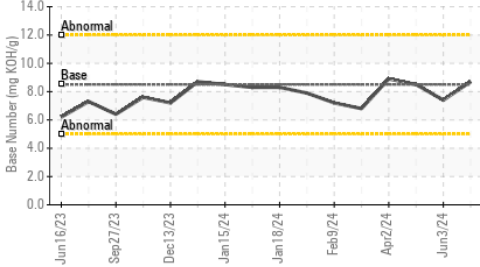
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>216	<b>5</b>	2	<1
Boron	ppm	ASTM D5185m	250	<b>20</b>	11	13
Barium	ppm	ASTM D5185m	10	<b>&lt;1</b>	<1	0
Molybdenum	ppm	ASTM D5185m	100	<b>56</b>	63	59
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	1	<1
Magnesium	ppm	ASTM D5185m	450	<b>937</b>	927	902
Calcium	ppm	ASTM D5185m	3000	<b>1163</b>	1136	1112
Phosphorus	ppm	ASTM D5185m	1150	<b>1039</b>	1078	1006
Zinc	ppm	ASTM D5185m	1350	<b>1269</b>	1239	1212
Sulfur	ppm	ASTM D5185m	4250	<b>3398</b>	3252	3115
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>13.8</b>	15.5	13.9
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>8.7</b>	7.4	8.5
Visc @ 100°C	cSt	ASTM D445	14.4	<b>14.1</b>	13.7	14.0

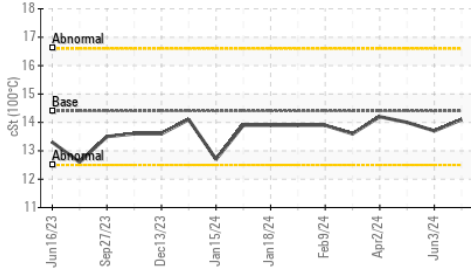
**FT-IR (Direct Trend)**



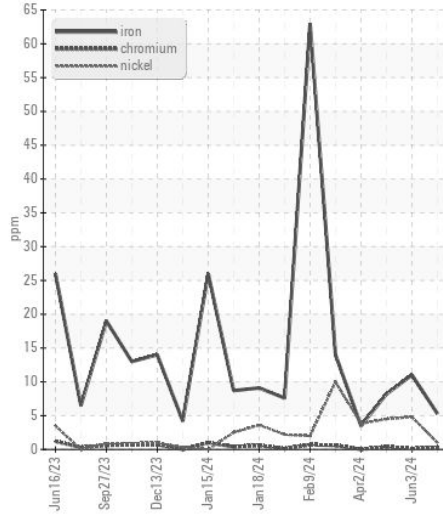
**Base Number**



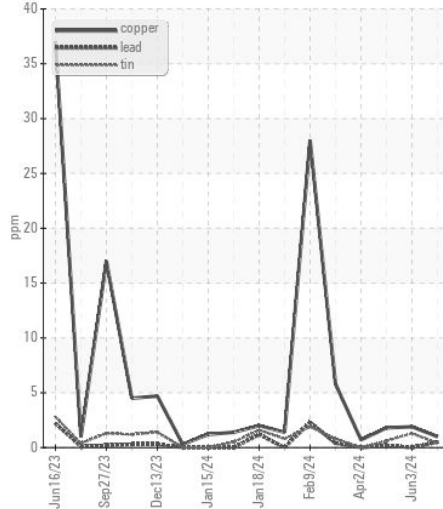
**Viscosity @ 100°C**



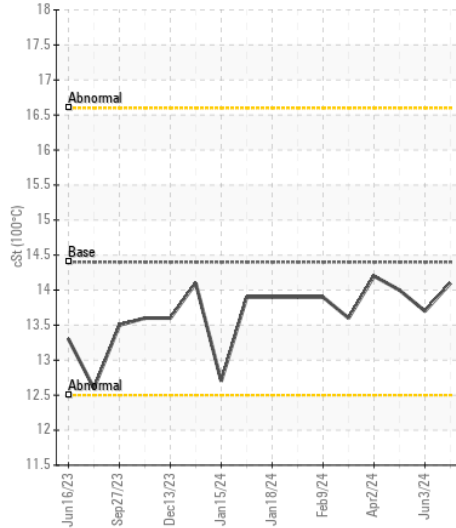
**Ferrous Alloys**



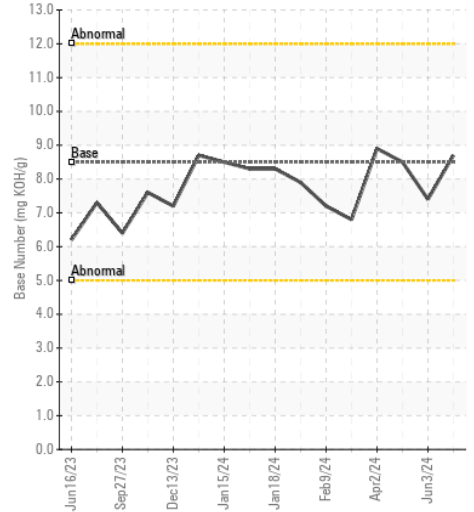
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0122018  
**Lab Number** : 06222183  
**Unique Number** : 11100380  
**Test Package** : FLEET

**Received** : 27 Jun 2024  
**Tested** : 28 Jun 2024  
**Diagnosed** : 28 Jun 2024 - Wes Davis

**GFL Environmental - 652 - Fredericksburg Hauling**  
 10954 Houser Drive  
 Fredericksburg, VA  
 US 22408

Contact: TECHNICIAN ACCOUNT  
 catherine.anastasio@wearcheck.com

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)

T:  
F: