



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



Area  
**(24598UA)**  
Machine Id  
**812024**  
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>GFL0112181</b>	GFL0112797	GFL0098255
Sample Date		Client Info		<b>11 Apr 2024</b>	01 Mar 2024	19 Dec 2023
Machine Age	hrs	Client Info		<b>4238</b>	0	4238
Oil Age	hrs	Client Info		<b>4238</b>	0	4238
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	<b>10</b>	4	3
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>5	<b>2</b>	1	1
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	<1	<1
Aluminum	ppm	ASTM D5185m	>20	<b>2</b>	2	<1
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m	>330	<b>7</b>	5	2
Tin	ppm	ASTM D5185m	>15	<b>1</b>	<1	0
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.

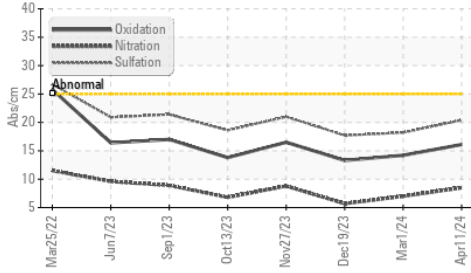
Silicon	ppm	ASTM D5185m	>25	<b>4</b>	3	3
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	0	0
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>4	<b>0.5</b>	0.3	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.5</b>	7.0	5.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.4</b>	18.2	17.7
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**

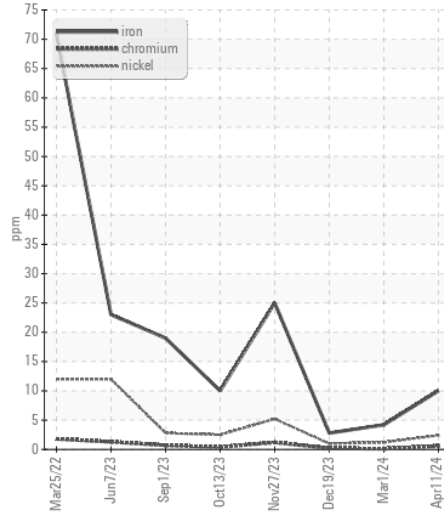
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>216	<b>0</b>	<1	2
Boron	ppm	ASTM D5185m	250	<b>7</b>	11	15
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	<1
Molybdenum	ppm	ASTM D5185m	100	<b>61</b>	55	60
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>927</b>	926	938
Calcium	ppm	ASTM D5185m	3000	<b>1192</b>	1067	1126
Phosphorus	ppm	ASTM D5185m	1150	<b>1037</b>	1088	1114
Zinc	ppm	ASTM D5185m	1350	<b>1231</b>	1281	1279
Sulfur	ppm	ASTM D5185m	4250	<b>2957</b>	3234	3193
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.1</b>	14.2	13.3
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>6.4</b>	8.3	8.7
Visc @ 100°C	cSt	ASTM D445	14.4	<b>13.7</b>	13.8	14.0

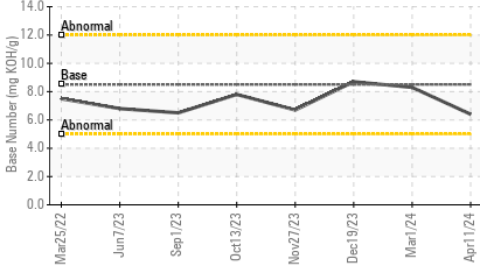
**FT-IR (Direct Trend)**



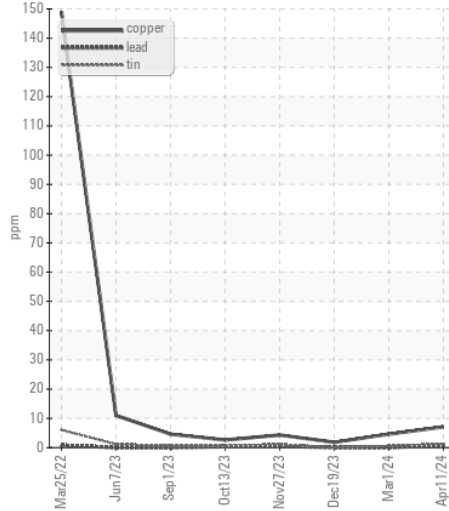
**Ferrous Alloys**



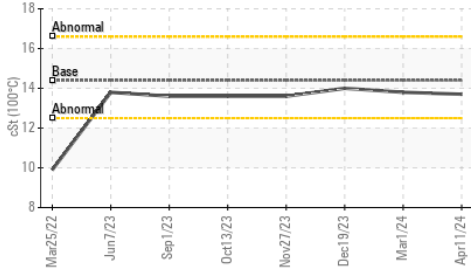
**Base Number**



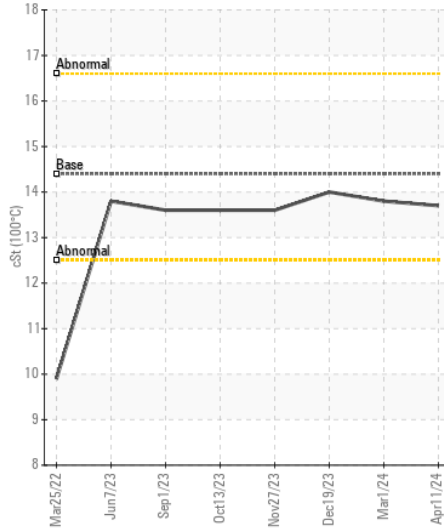
**Non-ferrous Metals**



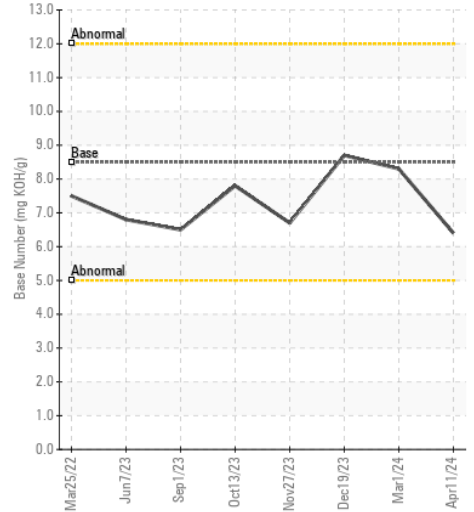
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0112181  
**Lab Number** : 06148416  
**Unique Number** : 10978494  
**Test Package** : FLEET

**GFL Environmental - 045 - Tidewater**  
 3821 Cook Blvd.  
 Chesapeake, VA  
 US 23323  
 Contact: ELVIN RODRIGUEZ  
 elvinrodriguez@gflenv.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: