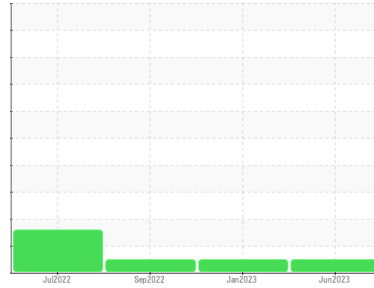




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
351222

Component
Diesel Engine

Fluid
DIESEL ENGINE OIL SAE 5W30 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

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.

SAMPLE INFORMATION

	method	limit/base	current	history 1	history 2
Sample Number	Client Info		GFL0015794	GFL0067566	GFL0055911
Sample Date	Client Info		28 Jun 2023	24 Jan 2023	13 Sep 2022
Machine Age	mls	Client Info	172105	172105	159303
Oil Age	mls	Client Info	159303	0	6000
Oil Changed	Client Info		N/A	N/A	Changed
Sample Status			NORMAL	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history 1	history 2
Fuel	WC Method	>5	<1.0	<1.0	<1.0
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m >100	46	24	21
Chromium	ppm	ASTM D5185m >20	4	1	1
Nickel	ppm	ASTM D5185m >4	2	<1	0
Titanium	ppm	ASTM D5185m	2	0	<1
Silver	ppm	ASTM D5185m >3	1	0	<1
Aluminum	ppm	ASTM D5185m >20	8	4	4
Lead	ppm	ASTM D5185m >40	4	0	<1
Copper	ppm	ASTM D5185m >330	6	3	5
Tin	ppm	ASTM D5185m >15	2	<1	<1
Vanadium	ppm	ASTM D5185m	1	0	<1
Cadmium	ppm	ASTM D5185m	2	0	<1

ADDITIVES

	method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m 250	18	25	22
Barium	ppm	ASTM D5185m 10	19	0	0
Molybdenum	ppm	ASTM D5185m 100	131	139	139
Manganese	ppm	ASTM D5185m	3	<1	<1
Magnesium	ppm	ASTM D5185m 450	506	521	505
Calcium	ppm	ASTM D5185m 3000	981	1025	1028
Phosphorus	ppm	ASTM D5185m 1150	640	649	656
Zinc	ppm	ASTM D5185m 1350	820	805	831
Sulfur	ppm	ASTM D5185m 4250	2283	2445	2219

CONTAMINANTS

	method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m >25	15	13	21
Sodium	ppm	ASTM D5185m	6	3	2
Potassium	ppm	ASTM D5185m >20	8	<1	2

INFRA-RED

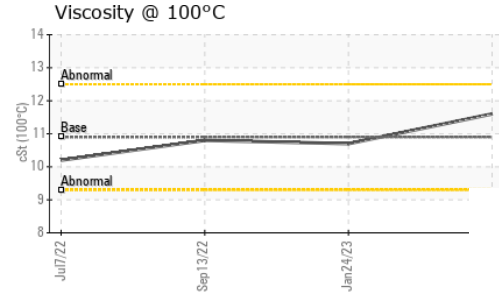
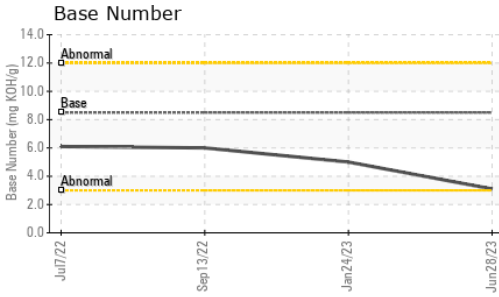
	method	limit/base	current	history 1	history 2
Soot %	%	*ASTM D7844 >3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624 >20	14.4	11.2	12.0
Sulfation	Abs/.1mm	*ASTM D7415 >30	26.5	22.9	24.8

FLUID DEGRADATION

	method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm	*ASTM D7414 >25	24.2	16.8	19.7
Base Number (BN)	mg KOH/g	ASTM D2896 8.5	3.1	5.0	6.0



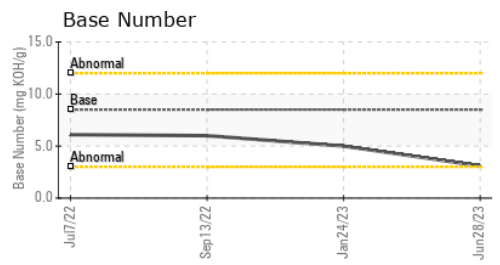
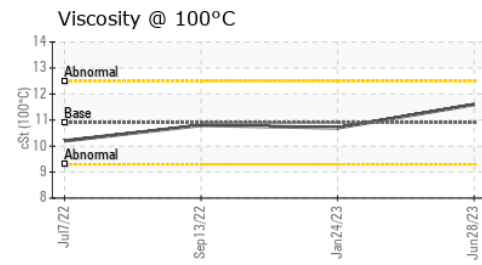
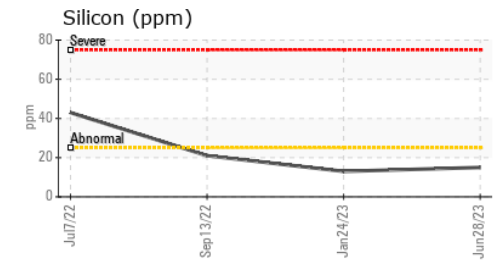
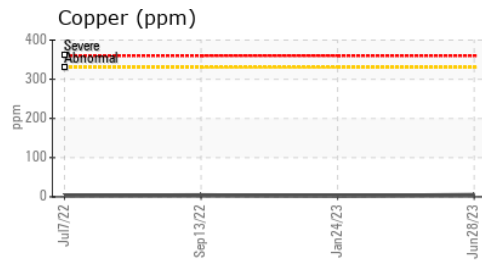
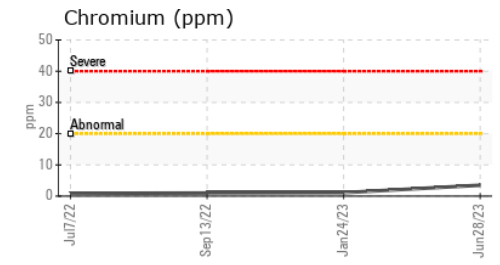
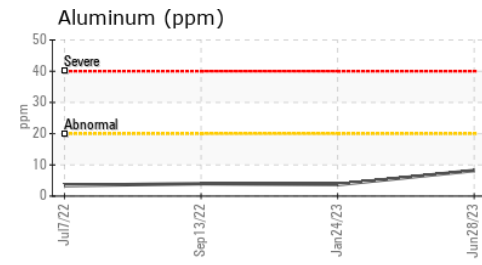
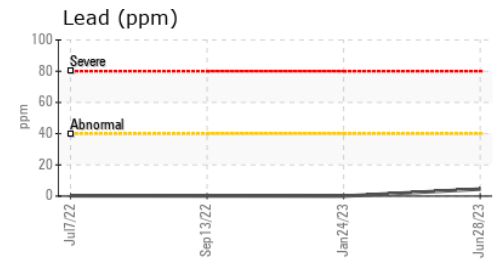
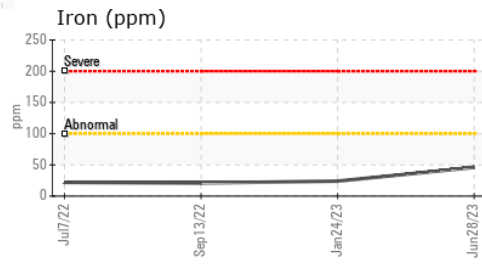
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history 1	history 2	
Visc @ 100°C	cSt	ASTM D445	10.9	11.6	10.7	10.8

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0015794 **Received** : 03 Jul 2023
Lab Number : 05888816 **Diagnosed** : 05 Jul 2023
Unique Number : 10539299 **Diagnostician** : Don Baldrige
Test Package : MOB 2

GFL Environmental - 641 - Alpena
 1241 KING SETTLEMENT RD
 ALPENA, MI
 US 49707
 Contact: DYLAN TOLAN
 dylan.tolan@gflenv.com
 T: (989)854-7203
 F:

Certificate L2367
 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)