

# **OIL ANALYSIS REPORT**

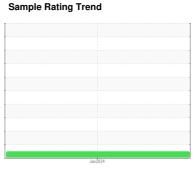
# **NORMAL**



# FREIGHTLINER 122040-SW8201

Component **Diesel Engine** 

**MOBIL DELVAC ELITE 15W40 (--- GAL)** 





### DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

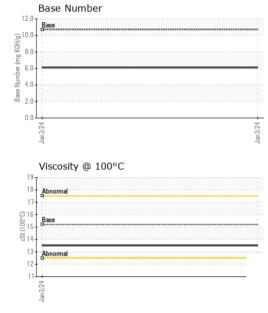
### **Fluid Condition**

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

Sample Number   Client Info   GFL0095474	15440 ( GAL	.)			Jan2024		
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age	Sample Number		Client Info		GFL0095474		
Machine Age         hrs         Client Info         2760             Oil Age         hrs         Client Info         500             Oil Oil Changed         Client Info         Changed             Sample Status         NORMAL             CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >5         <1.0	•		Client Info		03 Jan 2024		
Oil Age         hrs         Client Info         500             Oil Changed         Client Info         Changed             Sample Status         NORMAL             Neder         WC Method         5         <1.0	•	hrs	Client Info		2760		
Oil Changed Sample Status         Client Info         Changed NORMAL		hrs	Client Info		500		
NORMAL	-		Client Info		Changed		
Fuel   WC Method   So	Sample Status						
Water	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS         method         Imit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >80         6             Chromium         ppm         ASTM D5185m         >5         0             Nickel         ppm         ASTM D5185m         >2         0             Titanium         ppm         ASTM D5185m         >3         0             Silver         ppm         ASTM D5185m         >30         0             Aluminum         ppm         ASTM D5185m         >30         0             Lead         ppm         ASTM D5185m         >30         0             Lead         ppm         ASTM D5185m         >150         32             Copper         ppm         ASTM D5185m         >5         3             Tin         ppm         ASTM D5185m         0              Vanadium         ppm         ASTM D5185m         0 <td>Fuel</td> <td></td> <td>WC Method</td> <td>&gt;5</td> <th>&lt;1.0</th> <td></td> <td></td>	Fuel		WC Method	>5	<1.0		
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >80         6	Water		WC Method	>0.2	NEG		
Irron	Glycol		WC Method		NEG		
Chromium	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>80	6		
Titanium	Chromium	ppm	ASTM D5185m	>5	0		
Silver	Nickel	ppm	ASTM D5185m	>2	0		
Aluminum	Titanium	ppm	ASTM D5185m		0		
Lead	Silver	ppm	ASTM D5185m	>3	0		
Copper         ppm         ASTM D5185m         >150         32             Tin         ppm         ASTM D5185m         0             Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         91             Barium         ppm         ASTM D5185m         2             Molybdenum         ppm         ASTM D5185m         118             Manganese         ppm         ASTM D5185m         0             Manganesium         ppm         ASTM D5185m         1223             Calcium         ppm         ASTM D5185m         791             Phosphorus         ppm         ASTM D5185m         791             Sulfur         ppm         ASTM D5185m         20         3	Aluminum	ppm	ASTM D5185m	>30	5		
Tin	Lead	ppm	ASTM D5185m	>30	0		
Vanadium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         91             Barium         ppm         ASTM D5185m         2             Molybdenum         ppm         ASTM D5185m         118             Manganese         ppm         ASTM D5185m         0             Magnesium         ppm         ASTM D5185m         673             Calcium         ppm         ASTM D5185m         1223             Phosphorus         ppm         ASTM D5185m         791             Sulfur         ppm         ASTM D5185m         791             Sulfur         ppm         ASTM D5185m         3048             CONTAMINANTS         method         limit/base         current         history1         history2           Solium         ppm         ASTM D5185m         20         7 <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;150</td> <th>32</th> <td></td> <td></td>	Copper	ppm	ASTM D5185m	>150	32		
Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         91             Barium         ppm         ASTM D5185m         2             Molybdenum         ppm         ASTM D5185m         0             Manganese         ppm         ASTM D5185m         0             Magnesium         ppm         ASTM D5185m         673             Calcium         ppm         ASTM D5185m         1223             Phosphorus         ppm         ASTM D5185m         722             Zinc         ppm         ASTM D5185m         791             Sulfur         ppm         ASTM D5185m         3048             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         20	Tin	ppm	ASTM D5185m	>5	3		
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         91             Barium         ppm         ASTM D5185m         2             Molybdenum         ppm         ASTM D5185m         118             Manganese         ppm         ASTM D5185m         0             Magnesium         ppm         ASTM D5185m         673             Calcium         ppm         ASTM D5185m         1223             Phosphorus         ppm         ASTM D5185m         722             Zinc         ppm         ASTM D5185m         791             Sulfur         ppm         ASTM D5185m         3048             CONTAMINANTS         method         limit/base         current         history1         history2           Soilicon         ppm         ASTM D5185m         >20         3             Sodium         ppm         ASTM D5185m         >20 <td>Vanadium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>0</th> <td></td> <td></td>	Vanadium	ppm	ASTM D5185m		0		
Boron	Cadmium	ppm	ASTM D5185m		0		
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         118             Manganese         ppm         ASTM D5185m         0             Magnesium         ppm         ASTM D5185m         673             Calcium         ppm         ASTM D5185m         1223             Phosphorus         ppm         ASTM D5185m         722             Zinc         ppm         ASTM D5185m         791             Sulfur         ppm         ASTM D5185m         3048             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         3             Sodium         ppm         ASTM D5185m         >20         3             Potassium         ppm         ASTM D5185m         >20         7             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %	Boron	ppm	ASTM D5185m		91		
Manganese         ppm         ASTM D5185m         0             Magnesium         ppm         ASTM D5185m         673             Calcium         ppm         ASTM D5185m         1223             Phosphorus         ppm         ASTM D5185m         722             Zinc         ppm         ASTM D5185m         791             Sulfur         ppm         ASTM D5185m         3048             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         3             Sodium         ppm         ASTM D5185m         2             Potassium         ppm         ASTM D5185m         20         7             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         8.9             Sulfation         Abs/.1mm	Barium	ppm	ASTM D5185m		2		
Magnesium         ppm         ASTM D5185m         673             Calcium         ppm         ASTM D5185m         1223             Phosphorus         ppm         ASTM D5185m         722             Zinc         ppm         ASTM D5185m         791             Sulfur         ppm         ASTM D5185m         3048             Sulfur         ppm         ASTM D5185m         20         3             Silicon         ppm         ASTM D5185m         >20         3             Sodium         ppm         ASTM D5185m         >20         7             Potassium         ppm         ASTM D5185m         >20         7             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7415         >30         17.9 <td< td=""><td>Molybdenum</td><td>ppm</td><td>ASTM D5185m</td><td></td><th>118</th><td></td><td></td></td<>	Molybdenum	ppm	ASTM D5185m		118		
Calcium         ppm         ASTM D5185m         1223             Phosphorus         ppm         ASTM D5185m         722             Zinc         ppm         ASTM D5185m         791             Sulfur         ppm         ASTM D5185m         3048             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         3             Sodium         ppm         ASTM D5185m         2             Potassium         ppm         ASTM D5185m         >20         7             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         8.9             Sulfation         Abs/.1mm         *ASTM D7414         >25         17.9	Manganese	ppm	ASTM D5185m		0		
Phosphorus         ppm         ASTM D5185m         722             Zinc         ppm         ASTM D5185m         791             Sulfur         ppm         ASTM D5185m         3048             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         3             Sodium         ppm         ASTM D5185m         2             Potassium         ppm         ASTM D5185m         >20         7             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         8.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         17.9             FLUID DEGRADATION         method         limit/base         current         history1 <t< td=""><td>Magnesium</td><td>ppm</td><td>ASTM D5185m</td><td></td><th>673</th><td></td><td></td></t<>	Magnesium	ppm	ASTM D5185m		673		
Zinc         ppm         ASTM D5185m         791             Sulfur         ppm         ASTM D5185m         3048             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         3             Sodium         ppm         ASTM D5185m         2             Potassium         ppm         ASTM D5185m         >20         7             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         8.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         17.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.1	Calcium	ppm	ASTM D5185m		1223		
Sulfur         ppm         ASTM D5185m         3048             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         3             Sodium         ppm         ASTM D5185m         2             Potassium         ppm         ASTM D5185m         >20         7             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         8.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         17.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.1	Phosphorus	ppm	ASTM D5185m		722		
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         3             Sodium         ppm         ASTM D5185m         2             Potassium         ppm         ASTM D5185m         >20         7             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         8.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         17.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.1	Zinc	ppm	ASTM D5185m		791		
Silicon         ppm         ASTM D5185m         >20         3             Sodium         ppm         ASTM D5185m         2              Potassium         ppm         ASTM D5185m         >20         7             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         8.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         17.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.1	Sulfur	ppm	ASTM D5185m		3048		
Sodium         ppm         ASTM D5185m         2             Potassium         ppm         ASTM D5185m         >20         7             INFRA-RED         method         limit/base         current         history1         history2           Soot %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         8.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         17.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.1	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         7             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         8.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         17.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.1	Silicon	ppm	ASTM D5185m	>20	3		
INFRA-RED	Sodium	ppm	ASTM D5185m		2		
Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         8.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         17.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.1	Potassium	ppm	ASTM D5185m	>20	7		
Nitration         Abs/cm         *ASTM D7624         >20         8.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         17.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.1	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         17.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.1	Soot %	%	*ASTM D7844	>3	0.1		
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.1	Nitration	Abs/cm	*ASTM D7624	>20	8.9		
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	17.9		
	FLUID DEGRAD	OATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 10.7 6.1	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.1		
	Base Number (BN)	mg KOH/g	ASTM D2896	10.7	6.1		



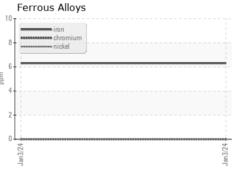
## **OIL ANALYSIS REPORT**

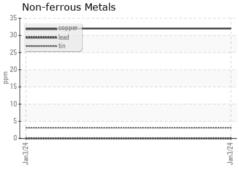


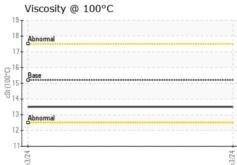
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE		
Yellow Metal	scalar	*Visual	NONE	NONE		
Precipitate	scalar	*Visual	NONE	NONE		
Silt	scalar	*Visual	NONE	NONE		
Debris	scalar	*Visual	NONE	NONE		
Sand/Dirt	scalar	*Visual	NONE	NONE		
Appearance	scalar	*Visual	NORML	NORML		
Odor	scalar	*Visual	NORML	NORML		
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG		
Free Water	scalar	*Visual		NEG		
FLUID PROPE	RTIES	method	limit/base	current	historv1	historv2

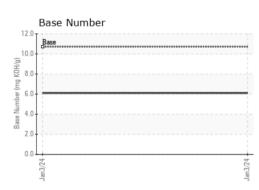
FLUID FNO	PENHES	memod			HISTOLAL	HISTORYZ
Visc @ 100°C	cSt	ASTM D445	15.2	13.5		

### **GRAPHS**













Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10846532

: GFL0095474 : 06069855 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 24 Jan 2024 Diagnosed : 26 Jan 2024 Diagnostician : Don Baldridge

GFL Environmental - 981 - Port Arthur Hauling

1000 S Business Park Dr Port Arthur, TX US 77640 Contact: MICHAEL KAY

mkay@gflenv.com T: (336)660-9331

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)