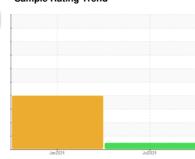


# **OIL ANALYSIS REPORT**

Sample Rating Trend







Machine Id
426138
Component
2 Differential

GEAR OIL LS 80W90 (--- GAL)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. ( Customer Sample Comment: 2nd Axle / Tag )

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

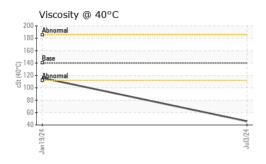
#### **Fluid Condition**

The condition of the oil is acceptable for the time in service.

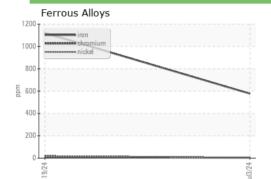
Water         WC Method         >.2         NEG         NEG            WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >500         577         ▲ 1119            Chromium         ppm         ASTM D5185m         >10         4         8            Nickel         ppm         ASTM D5185m         >10         5         ▲ 20            Silver         ppm         ASTM D5185m         >10         5         ▲ 20            Aluminum         ppm         ASTM D5185m         >10         1         2            Aluminum         ppm         ASTM D5185m         >25         3         13            Aluminum         ppm         ASTM D5185m         >10         1         3            Aluminum         ppm         ASTM D5185m         >10         1         3            Aluminum         ppm         ASTM D5185m         >10         1         3            Copper         ppm         ASTM D5185m         150         43				Jan 2024	Jul2024		
Sample Number         Client Info         GFL0105468         GFL0105522            Sample Date         Client Info         03 Jul 2024         19 Jan 2024            Machine Age         mls         Client Info         289644         277220            Oil Changed         mls         Client Info         Not Changed             Oil Changed         Client Info         Not Changed              Oil Changed         Client Info         NoRMAL         ABNORMAL             Water         WC Method          NEG         NEG             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >10         4         8            Iron         ppm         ASTM D5185m         >10         5         20            Iron         ppm         ASTM D5185m         >10         5         20            Iron         ppm         ASTM D5185m         >10         1         3 <td< th=""><th>SAMDI E INIEOD</th><th>MATION</th><th>mothod</th><th>limit/base</th><th>current</th><th>history1</th><th>hictory?</th></td<>	SAMDI E INIEOD	MATION	mothod	limit/base	current	history1	hictory?
Sample Date   Client Info   03 Jul 2024   19 Jan 2024     Machine Age   mis   Client Info   289644   277220		MATION		IIIIIIVDase			
Machine Age   mls   Client Info   289644   277220         Oil Age   mls   Client Info   289644   277220         Oil Changed   mls   Client Info   289644   277220         Oil Changed   Changed         Sample Status   NORMAL   ABNORMAL         Sample Status   NORMAL   ABNORMAL         CONTAMINATION   method   limit/base   current   history1   history2       Wear   WC Method   >-2   NEG   NEG         WEAR METALS   method   limit/base   current   history1   history2       Nickel   ppm   ASTM D5185m   >10   4   8         Nickel   ppm   ASTM D5185m   >10   5   20         Titanium   ppm   ASTM D5185m   >10   5   20         Titanium   ppm   ASTM D5185m   >25   3   13         Lead   ppm   ASTM D5185m   >25   0   <1         Copper   ppm   ASTM D5185m   >25   0   <1         Cadmium   ppm   ASTM D5185m   >10   0   0         Tin   ppm   ASTM D5185m   >10   0   0         ADDITIVES   method   limit/base   current   history1   history2       ADDITIVES   method   limit/base   current   history1   history2       ADDITIVES   method   limit/base   current   history1   history2       ASTM D5185m   <-1   0         ADDITIVES   method   limit/base   current   history1   history2       ASTM D5185m   <-1   0	•						
Oil Changed	•						
Contained   Client Info   Not Changed   Cha							
CONTAMINATION	•	mls					
CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         >.2         NEG         NEG            WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >500         577         ♣ 1119            Chromium         ppm         ASTM D5185m         >10         4         8            Nickel         ppm         ASTM D5185m         >10         4         8            Nickel         ppm         ASTM D5185m         >10         0            Silver         ppm         ASTM D5185m         >25         3         €1         0            ALead         ppm         ASTM D5185m         >25         0         <1			Client Info			Ü	
Water         WC Method        2         NEG         NEG	·				NORMAL	ABNORMAL	
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2
Description	Water		WC Method	>.2	NEG	NEG	
Chromium         ppm         ASTM D5185m         >10         4         8            Nickel         ppm         ASTM D5185m         >10         5         ▲ 20            Titianium         ppm         ASTM D5185m         <1	WEAR METAL	.S	method	limit/base	current	history1	history2
Nicke    ppm   ASTM D5185m   >10   5   A 20     Titanium   ppm   ASTM D5185m   <1   2     Silver   ppm   ASTM D5185m   <1   0     ASTM D5185m   >25   3   13     Lead   ppm   ASTM D5185m   >25   0   <1     Copper   ppm   ASTM D5185m   >25   0   <1     Copper   ppm   ASTM D5185m   >25   0   <1     Copper   ppm   ASTM D5185m   >100   1   3     Tin   ppm   ASTM D5185m   >100   0   0     Vanadium   ppm   ASTM D5185m   >10   0   0     Cadmium   ppm   ASTM D5185m   0   <1   0     Cadmium   ppm   ASTM D5185m   150   43   163     Barium   ppm   ASTM D5185m   <1   0     Molybdenum   ppm   ASTM D5185m   <1   0     Manganese   ppm   ASTM D5185m   4   12     Magnesium   ppm   ASTM D5185m   10   1   5     Calcium   ppm   ASTM D5185m   70   68   524     Phosphorus   ppm   ASTM D5185m   2000   564   972     Zinc   ppm   ASTM D5185m   2000   17101   22555     CONTAMINANTS   method   limit/base   current   history1   history2   Silicon   ppm   ASTM D5185m   0   0   0     Potassium   ppm   ASTM D5185m   2000   17101   22555     CONTAMINANTS   method   limit/base   current   history1   history2   VISUAL   method   limit/base   current   history1   history2   White Metal   scalar   "Visual   NONE   NONE   NONE     Precipitate   scalar   "Visual   NONE   NONE   NONE     Silit   scalar   "Visual   NONE   NONE   NONE   NONE     Appearance   scalar   "Visual   NONE   NONE   NONE   NONE     Appearance   scalar   "Visual   NORML   NORML   NORML     Color   scalar   "Visual   NORML   NO	Iron	ppm	ASTM D5185m	>500	577	<u> </u>	
Nicke    ppm   ASTM D5185m   >10   5   A 20     Titanium   ppm   ASTM D5185m   <1   2     Silver   ppm   ASTM D5185m   <1   0     ASTM D5185m   >25   3   13     Lead   ppm   ASTM D5185m   >25   0   <1     Copper   ppm   ASTM D5185m   >25   0   <1     Copper   ppm   ASTM D5185m   >25   0   <1     Copper   ppm   ASTM D5185m   >100   1   3     Tin   ppm   ASTM D5185m   >100   0   0     Vanadium   ppm   ASTM D5185m   >10   0   0     Cadmium   ppm   ASTM D5185m   0   <1   0     Cadmium   ppm   ASTM D5185m   150   43   163     Barium   ppm   ASTM D5185m   <1   0     Molybdenum   ppm   ASTM D5185m   <1   0     Manganese   ppm   ASTM D5185m   4   12     Magnesium   ppm   ASTM D5185m   10   1   5     Calcium   ppm   ASTM D5185m   70   68   524     Phosphorus   ppm   ASTM D5185m   2000   564   972     Zinc   ppm   ASTM D5185m   2000   17101   22555     CONTAMINANTS   method   limit/base   current   history1   history2   Silicon   ppm   ASTM D5185m   0   0   0     Potassium   ppm   ASTM D5185m   2000   17101   22555     CONTAMINANTS   method   limit/base   current   history1   history2   VISUAL   method   limit/base   current   history1   history2   White Metal   scalar   "Visual   NONE   NONE   NONE     Precipitate   scalar   "Visual   NONE   NONE   NONE     Silit   scalar   "Visual   NONE   NONE   NONE   NONE     Appearance   scalar   "Visual   NONE   NONE   NONE   NONE     Appearance   scalar   "Visual   NORML   NORML   NORML     Color   scalar   "Visual   NORML   NO	Chromium	ppm	ASTM D5185m	>10	4	8	
Silver	Nickel	ppm	ASTM D5185m	>10	5	<u>^</u> 20	
Silver	Titanium	ppm	ASTM D5185m		<1	2	
Aluminum	Silver		ASTM D5185m		<1	0	
Lead         ppm         ASTM D5185m         >25         0         <1	Aluminum	ppm	ASTM D5185m	>25	3	<b>1</b> 3	
Trin	Lead	ppm	ASTM D5185m	>25	0	<1	
Trin	Copper		ASTM D5185m	>100	1	3	
Vanadium         ppm         ASTM D5185m         <1         0            Cadmium         ppm         ASTM D5185m         0         <1            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         150         43         163            Barium         ppm         ASTM D5185m         1         0            Molybdenum         ppm         ASTM D5185m         1         3            Manganese         ppm         ASTM D5185m         10         1         5            Magnesium         ppm         ASTM D5185m         70         68         524            Calcium         ppm         ASTM D5185m         2000         564         972            Zinc         ppm         ASTM D5185m         2000         17101         22555            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         20         3         9	Tin		ASTM D5185m	>10	0		
Cadmium         ppm         ASTM D5185m         0         <1            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         150         43         163            Barium         ppm         ASTM D5185m         <1         0            Molybdenum         ppm         ASTM D5185m         1         3            Manganese         ppm         ASTM D5185m         10         1         5            Magnesium         ppm         ASTM D5185m         70         68         524            Calcium         ppm         ASTM D5185m         70         68         524            Phosphorus         ppm         ASTM D5185m         2000         564         972            Zinc         ppm         ASTM D5185m         20         26         216            Sulfur         ppm         ASTM D5185m         20         26         216            CONTAMINANTS         method         limit/base         current         history1         history1	Vanadium		ASTM D5185m		<1	0	
Boron	Cadmium						
Barium         ppm         ASTM D5185m         <1         0            Molybdenum         ppm         ASTM D5185m         1         3            Manganese         ppm         ASTM D5185m         4         12            Magnesium         ppm         ASTM D5185m         10         1         5            Calcium         ppm         ASTM D5185m         70         68         524            Phosphorus         ppm         ASTM D5185m         2000         564         972            Zinc         ppm         ASTM D5185m         20000         17101         22555            Sulfur         ppm         ASTM D5185m         20000         17101         22555            CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185m         20000         17101         22555            Sodium         ppm         ASTM D5185m         20000         17101         22555            Sodium         ppm         ASTM D5185m         20         3         9<	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         1         3            Manganese         ppm         ASTM D5185m         4         12            Magnesium         ppm         ASTM D5185m         10         1         5            Calcium         ppm         ASTM D5185m         70         68         524            Phosphorus         ppm         ASTM D5185m         2000         564         972            Zinc         ppm         ASTM D5185m         50         26         216            Sulfur         ppm         ASTM D5185m         20000         17101         22555            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         44         153            Sodium         ppm         ASTM D5185m         >20         3         9            VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE <td< td=""><td>Boron</td><td>ppm</td><td>ASTM D5185m</td><td>150</td><th>43</th><td>163</td><td></td></td<>	Boron	ppm	ASTM D5185m	150	43	163	
Manganese         ppm         ASTM D5185m         4         12            Magnesium         ppm         ASTM D5185m         10         1         5            Calcium         ppm         ASTM D5185m         70         68         524            Phosphorus         ppm         ASTM D5185m         2000         564         972            Zinc         ppm         ASTM D5185m         50         26         216            Sulfur         ppm         ASTM D5185m         20000         17101         22555            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         44         ▲ 153            Sodium         ppm         ASTM D5185m         >20         3         9            Potassium         ppm         ASTM D5185m         >20         3         9            VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE <td< td=""><td>Barium</td><td>ppm</td><td>ASTM D5185m</td><td></td><th>&lt;1</th><td>0</td><td></td></td<>	Barium	ppm	ASTM D5185m		<1	0	
Magnesium         ppm         ASTM D5185m         10         1         5            Calcium         ppm         ASTM D5185m         70         68         524            Phosphorus         ppm         ASTM D5185m         2000         564         972            Zinc         ppm         ASTM D5185m         50         26         216            Sulfur         ppm         ASTM D5185m         20000         17101         22555            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         44         ▲ 153            Sodium         ppm         ASTM D5185m         >20         3         9            Potassium         ppm         ASTM D5185m         >20         3         9            VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE	Molybdenum	ppm	ASTM D5185m		1	3	
Calcium         ppm         ASTM D5185m         70         68         524            Phosphorus         ppm         ASTM D5185m         2000         564         972            Zinc         ppm         ASTM D5185m         50         26         216            Sulfur         ppm         ASTM D5185m         20000         17101         22555            CONTAMINANTS         method         limit/base         current         history1         history2           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         44         153            Sodium         ppm         ASTM D5185m         >20         3         9            VISUAL         method         limit/base         current         history1         history2           VISUAL         method         limit/base         current         history1         history2           VISUAL         NONE         NONE         NONE         NONE            VISUAL <td>Manganese</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>4</th> <td>12</td> <td></td>	Manganese	ppm	ASTM D5185m		4	12	
Phosphorus         ppm         ASTM D5185m         2000         564         972            Zinc         ppm         ASTM D5185m         50         26         216            Sulfur         ppm         ASTM D5185m         20000         17101         22555            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         44         153            Sodium         ppm         ASTM D5185m         >0         0            Potassium         ppm         ASTM D5185m         >20         3         9            VISUAL         method         limit/base         current         history1         history2           VISUAL         mone         none         none	Magnesium	ppm	ASTM D5185m	10	1	5	
Zinc         ppm         ASTM D5185m         50         26         216            Sulfur         ppm         ASTM D5185m         20000         17101         22555            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         44         153            Sodium         ppm         ASTM D5185m         0         0            Potassium         ppm         ASTM D5185m         >20         3         9            VISUAL         method         limit/base         current         history1         history2           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	Calcium	ppm	ASTM D5185m	70	68	524	
Zinc         ppm         ASTM D5185m         50         26         216            Sulfur         ppm         ASTM D5185m         20000         17101         22555            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         44         153            Sodium         ppm         ASTM D5185m         0         0            Potassium         ppm         ASTM D5185m         20         3         9            VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE	Phosphorus	ppm	ASTM D5185m	2000	564	972	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >75 44	Zinc	ppm	ASTM D5185m	50	26	216	
Silicon	Sulfur	ppm	ASTM D5185m	20000	17101	22555	
Sodium         ppm         ASTM D5185m         0         0            Potassium         ppm         ASTM D5185m         >20         3         9            VISUAL         method         limit/base         current         history1         history2           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         NORML         NORML            Appearance         scalar         *Visual         NORML         NORML         NORML            Codor         scalar         *Visual         NORML         NORML         NORML            Emulsified Water         scalar         *Visu	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 3 9  VISUAL method limit/base current history1 history2  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  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  Appearance scalar *Visual NORML NORML NORML  Bemulsified Water scalar *Visual >.2 NEG NEG	Silicon	ppm	ASTM D5185m	>75	44	<u></u> 153	
VISUAL method limit/base current history1 history2 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 Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NORML NORML NORML Appearance scalar *Visual NORML NORML NORML Semulsified Water scalar *Visual >-2 NEG NEG	Sodium	ppm	ASTM D5185m		0	0	
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         NORML         NORML            Appearance         scalar         *Visual         NORML         NORML         NORML            Odor         scalar         *Visual         >.2         NEG         NEG	Potassium	ppm	ASTM D5185m	>20	3	9	
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     >.2     NEG     NEG	VISUAL		method	limit/base	current	history1	history2
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 >.2 NEG NEG	White Metal	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 >.2 NEG NEG	Yellow Metal	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 >.2 NEG NEG	Precipitate	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt     scalar     *Visual     NONE     NONE     NONE        Appearance     scalar     *Visual     NORML     NORML     NORML     NORML       Odor     scalar     *Visual     NORML     NORML     NORML     NORML       Emulsified Water     scalar     *Visual     >.2     NEG     NEG	Silt	scalar	*Visual	NONE	NONE	NONE	
Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >.2 NEG NEG	Debris	scalar	*Visual	NONE	NONE	NONE	
Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >.2 NEG NEG	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Emulsified Water scalar *Visual >.2 NEG NEG	Appearance	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water scalar *Visual >.2 NEG NEG	Odor	scalar	*Visual	NORML	NORML	NORML	
Free Water scalar *Visual NEG NEG	Emulsified Water	scalar	*Visual	>.2		NEG	
	Free Water	scalar	*Visual		NEG	NEG	

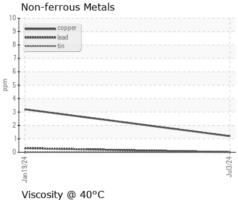


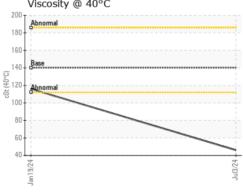
## **OIL ANALYSIS REPORT**













Certificate 12367

Laboratory Sample No. Unique Number : 11124121

Test Package : FLEET

: GFL0105468 Lab Number : 06235287

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

Received Tested Diagnosed

: 12 Jul 2024 : 15 Jul 2024 : 15 Jul 2024 - Sean Felton

GFL Environmental - 983 - Sugar Land Hauling

16011 West Belfort Street Sugar Land, TX US 77498

Contact: TECHNICIAN ACCOUNT

wcgfldemo@gmail.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: