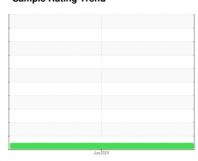


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 123007 Component Diesel Engine

AC DELCO 10W30 MOTOR OIL (--- 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

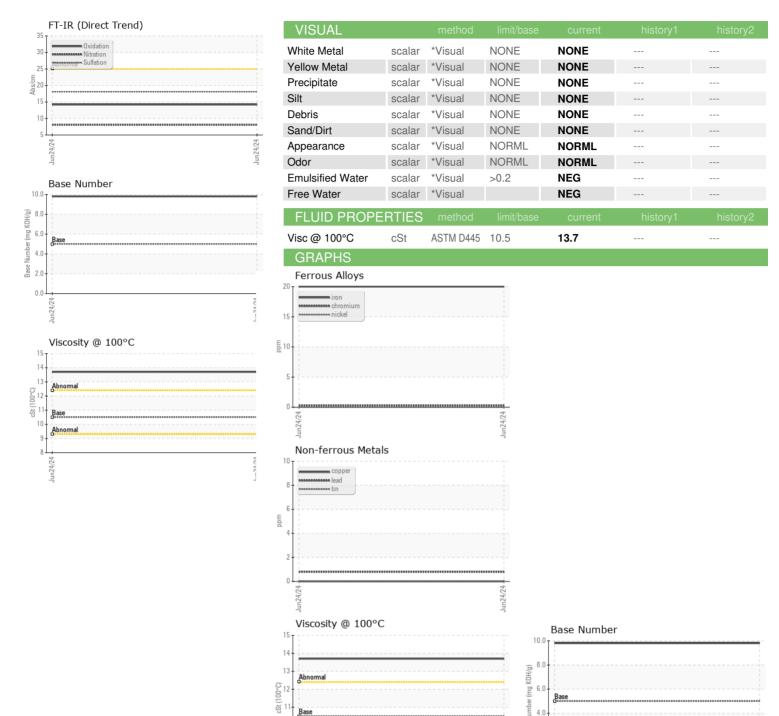
Fluid Condition

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

| Fuel | | | | | Jun 2024 | | |
|--|------------------|----------|-------------|------------|----------|----------|----------|
| Sample Number Client Info GFL0122763 | SAMPLE INFOR | RMATION | method | limit/base | current | history1 | history2 |
| Client Info | | | | | | | |
| Machine Age | | | | | | | |
| Oil Age | • | hrs | | | | | |
| Contamped Client Info Changed Client Info NORMAL Contamped Conta | | | | | | | |
| CONTAMINATION | • | | | | Changed | | |
| Water | Sample Status | | | | | | |
| Water WC Method D.2. NEG | CONTAMINA | TION | method | limit/base | current | history1 | history2 |
| WEAR METALS | Fuel | | WC Method | >5 | <1.0 | | |
| WEAR METALS | Water | | WC Method | >0.2 | NEG | | |
| Chromium | Glycol | | | | NEG | | |
| Chromium | WEAR METAI | LS | method | limit/base | current | history1 | history2 |
| Chromium | | | ASTM D5185m | >100 | 20 | | |
| Nickel | | | | | | | |
| Silver | | | | | | | |
| Silver | Titanium | | | | 8 | | |
| Aluminum | Silver | | ASTM D5185m | >3 | 0 | | |
| Copper ppm ASTM D5185m >330 0 Tin ppm ASTM D5185m >15 0 Vanadium ppm ASTM D5185m 0 Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 Barium ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 54 Manganese ppm ASTM D5185m 905 Magnesium ppm ASTM D5185m 905 Calcium ppm ASTM D5185m 925 Phosphorus ppm ASTM D5185m 1254 Sulfur ppm ASTM D5185m 22 | Aluminum | | ASTM D5185m | >20 | 2 | | |
| Tin | Lead | ppm | ASTM D5185m | >40 | <1 | | |
| Vanadium ppm ASTM D5185m 0 Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 25 Barium ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 54 Manganese ppm ASTM D5185m 905 Magnesium ppm ASTM D5185m 905 Calcium ppm ASTM D5185m 925 Phosphorus ppm ASTM D5185m 925 Zinc ppm ASTM D5185m 3751 Sulfur ppm ASTM D5185m 22 CONTAMINANTS method limit/base current history1 | Copper | ppm | ASTM D5185m | >330 | 0 | | |
| Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 25 Barium ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 54 Manganese ppm ASTM D5185m 905 Magnesium ppm ASTM D5185m 905 Calcium ppm ASTM D5185m 925 Phosphorus ppm ASTM D5185m 925 Zinc ppm ASTM D5185m 3751 Sulfur ppm ASTM D5185m 25 6 Solicon ppm ASTM D5185m 22 Solicon ppm ASTM D5185m 20 2 | Tin | ppm | ASTM D5185m | >15 | 0 | | |
| ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 25 Barium ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 54 Manganese ppm ASTM D5185m 905 Magnesium ppm ASTM D5185m 905 Calcium ppm ASTM D5185m 925 Phosphorus ppm ASTM D5185m 925 Zinc ppm ASTM D5185m 1254 Sulfur ppm ASTM D5185m 3751 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 2 Potassium ppm ASTM D5185m 20 2 <td>Vanadium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <td>0</td> <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 54 Manganese ppm ASTM D5185m <1 | Boron | ppm | ASTM D5185m | | 25 | | |
| Manganese ppm ASTM D5185m <1 Calcium ppm ASTM D5185m 905 Calcium ppm ASTM D5185m 1161 Phosphorus ppm ASTM D5185m 925 Zinc ppm ASTM D5185m 1254 Sulfur ppm ASTM D5185m 3751 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 Sulfation Abs/.1mm | Barium | ppm | ASTM D5185m | | 0 | | |
| Magnesium ppm ASTM D5185m 905 Calcium ppm ASTM D5185m 1161 Phosphorus ppm ASTM D5185m 925 Zinc ppm ASTM D5185m 1254 Sulfur ppm ASTM D5185m 3751 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m 20 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 FLUID DEGRADATION | Molybdenum | ppm | ASTM D5185m | | 54 | | |
| Calcium ppm ASTM D5185m 1161 Phosphorus ppm ASTM D5185m 925 Zinc ppm ASTM D5185m 1254 Sulfur ppm ASTM D5185m 3751 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 25 6 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m 20 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 Nitration Abs/cm *ASTM D7624 >20 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 FLUID DEGRAD | Manganese | ppm | ASTM D5185m | | <1 | | |
| Phosphorus | Magnesium | ppm | ASTM D5185m | | 905 | | |
| Table Tabl | Calcium | ppm | ASTM D5185m | | 1161 | | |
| Sulfur ppm ASTM D5185m 3751 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 Nitration Abs/cm *ASTM D7624 >20 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 | Phosphorus | ppm | ASTM D5185m | | 925 | | |
| CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 Nitration Abs/cm *ASTM D7624 >20 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 | Zinc | ppm | ASTM D5185m | | 1254 | | |
| Silicon ppm ASTM D5185m >25 6 | | | ASTM D5185m | | 3751 | | |
| Sodium | | NTS | method | limit/base | current | history1 | history2 |
| Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 Nitration Abs/cm *ASTM D7624 >20 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 | | | | >25 | | | |
| INFRA-RED | | | | | | | |
| Soot % *ASTM D7844 >3 0.5 Nitration Abs/cm *ASTM D7624 >20 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 | | ppm | ASTM D5185m | >20 | 2 | | |
| Nitration Abs/cm *ASTM D7624 >20 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 | INFRA-RED | | method | limit/base | current | history1 | history2 |
| Sulfation Abs/.1mm *ASTM D7415 >30 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 | | | | | | | |
| FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 | | | | >20 | | | |
| Oxidation | Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 18.1 | | |
| | FLUID DEGRA | DATION | method | limit/base | current | history1 | history2 |
| Base Number (BN) mg KOH/g ASTM D2896 5.0 9.8 | Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 14.2 | | |
| | Base Number (BN) | mg KOH/g | ASTM D2896 | 5.0 | 9.8 | | |



OIL ANALYSIS REPORT







Certificate 12367

Laboratory Sample No. Lab Number : 06222071

: GFL0122763 Unique Number : 11100268

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 27 Jun 2024

Tested : 28 Jun 2024 Diagnosed : 28 Jun 2024 - Don Baldridge

Base

0.0

GFL Environmental - 629 - Northern A1 3947 US 131 N Kalkaska, MI US 49646-8428

Test Package : FLEET 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.

T: (231)624-0848

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Submitted By: Mitch Hershberger

Contact: MITCH HERSHBERGER