



# LIEBHERR

## OIL ANALYSIS REPORT

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



Machine Id  
**LIEBHERR A934C 064064-1007**  
Component  
**Pump Drive**  
Fluid  
**CHEVRON DELO GEAR ESI OIL 80W90 (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>LH0258825</b>   | LH0243333   | LH0254761   |
| Sample Date    |     | Client Info |           | <b>20 Feb 2024</b> | 02 Oct 2023 | 23 Jun 2023 |
| Machine Age    | hrs | Client Info |           | <b>26421</b>       | 25481       | 24973       |
| Oil Age        | hrs | Client Info |           | <b>0</b>           | 0           | 0           |
| Filter Age     | hrs | Client Info |           | <b>0</b>           | 0           | 0           |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| 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 | >63  | <b>23</b>    | 11   | 9    |
| Chromium     | ppm    | ASTM D5185m | >15  | <b>&lt;1</b> | 0    | 0    |
| Nickel       | ppm    | ASTM D5185m | >10  | <b>&lt;1</b> | 0    | 0    |
| Titanium     | ppm    | ASTM D5185m |      | <b>1</b>     | 1    | <1   |
| Silver       | ppm    | ASTM D5185m |      | <b>0</b>     | 0    | 0    |
| Aluminum     | ppm    | ASTM D5185m | >5   | <b>&lt;1</b> | 0    | <1   |
| Lead         | ppm    | ASTM D5185m | >4   | <b>1</b>     | 1    | 1    |
| Copper       | ppm    | ASTM D5185m | >11  | <b>&lt;1</b> | <1   | <1   |
| Tin          | ppm    | ASTM D5185m | >4   | <b>&lt;1</b> | 0    | 0    |
| Vanadium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | 0    | 0    |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |

### CONTAMINATION

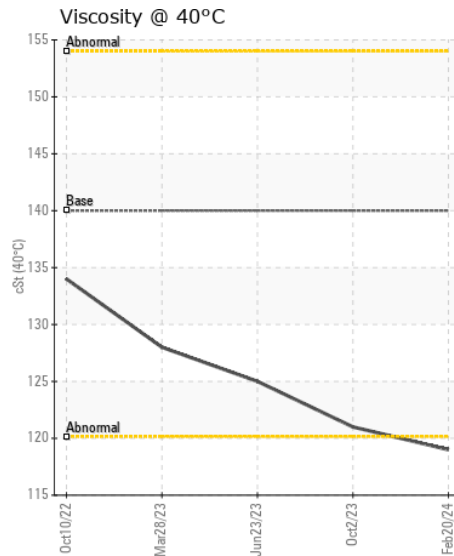
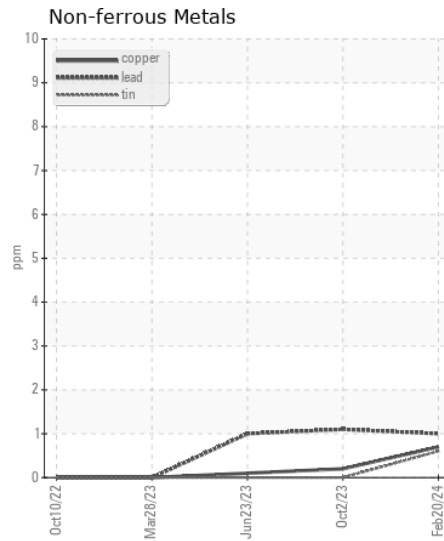
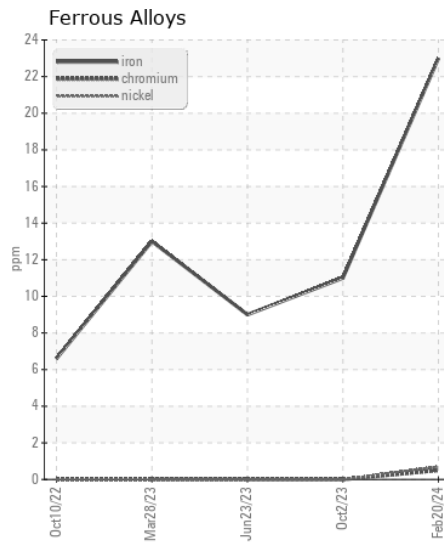
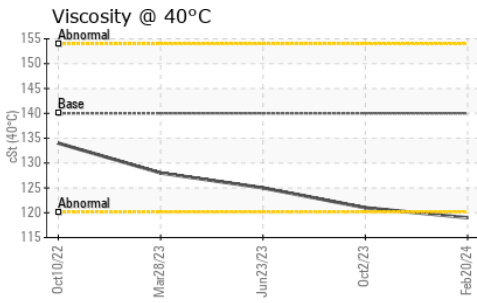
There is no indication of any contamination in the oil.

|                  |        |             |       |              |       |       |
|------------------|--------|-------------|-------|--------------|-------|-------|
| Silicon          | ppm    | ASTM D5185m | >20   | <b>4</b>     | 2     | 2     |
| Potassium        | ppm    | ASTM D5185m | >20   | <b>4</b>     | 3     | 3     |
| Water            |        | WC Method   | >0.2  | <b>NEG</b>   | NEG   | NEG   |
| Silt             | scalar | *Visual     | NONE  | <b>NONE</b>  | NONE  | NONE  |
| Debris           | scalar | *Visual     | NONE  | <b>NONE</b>  | LIGHT | 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 condition of the oil is acceptable for the time in service.

|             |     |             |       |              |       |       |
|-------------|-----|-------------|-------|--------------|-------|-------|
| Sodium      | ppm | ASTM D5185m |       | <b>&lt;1</b> | <1    | 0     |
| Boron       | ppm | ASTM D5185m | 15    | <b>3</b>     | 8     | 8     |
| Barium      | ppm | ASTM D5185m | 0     | <b>2</b>     | 0     | 2     |
| Molybdenum  | ppm | ASTM D5185m | 0     | <b>1</b>     | <1    | <1    |
| Manganese   | ppm | ASTM D5185m |       | <b>1</b>     | <1    | <1    |
| Magnesium   | ppm | ASTM D5185m | 0     | <b>5</b>     | 17    | 14    |
| Calcium     | ppm | ASTM D5185m | 5     | <b>50</b>    | 55    | 49    |
| Phosphorus  | ppm | ASTM D5185m | 600   | <b>756</b>   | 1015  | 802   |
| Zinc        | ppm | ASTM D5185m | 0     | <b>40</b>    | 25    | 26    |
| Sulfur      | ppm | ASTM D5185m | 22000 | <b>22040</b> | 31847 | 27589 |
| Visc @ 40°C | cSt | ASTM D445   | 140   | <b>119</b>   | 121   | 125   |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LH0258825  
**Lab Number** : 06103922  
**Unique Number** : 10902152  
**Test Package** : CONST

**Received** : 28 Feb 2024  
**Tested** : 29 Feb 2024  
**Diagnosed** : 29 Feb 2024 - Wes Davis

**AMERICAN STATE EQUIPMENT CO.**  
 2400 NORTH 14TH AVENUE  
 WAUSAU, WI  
 US 54401  
 Contact: CHRIS BARTNIK  
 cbartnik@amstate.com  
 T: (715)675-6900  
 F: (715)675-9748

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)