

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### LIEBHERR L580 067666-1760 - Diesel Engine

Sample No: LH0233936

Oil Type: PETRO CANADA 10W30



#### SAMPLE INFORMATION

|               |             |             |             |     |
|---------------|-------------|-------------|-------------|-----|
| Sample Number | LH0233936   | LH0176029   | LH0234002   | --- |
| Sample Date   | 22 Jan 2024 | 02 Aug 2023 | 15 Dec 2022 | --- |
| Machine Hours | 5478        | 1520        | 1018        | --- |
| Oil Hours     | 0           | 0           | 0           | --- |
| Oil Changed   | Changed     | N/A         | Changed     | --- |
| Sample Status | NORMAL      | NORMAL      | NORMAL      | --- |

**WEST CARLETON SAND & GRAVEL INC.**  
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#### OIL CONDITION

|                |     |      |      |      |     |
|----------------|-----|------|------|------|-----|
| Visc @ 100°C   | cSt | 12.4 | 13.1 | 11.3 | --- |
| Oxidation (PA) | %   | 70   | 55   | 83   | --- |



#### CONTAMINATION

|                |     |      |      |     |     |
|----------------|-----|------|------|-----|-----|
| Water          | %   | NEG  | NEG  | NEG | --- |
| Soot %         | %   | 0    | 0    | 0   | --- |
| Nitration (PA) | %   | 70   | 51   | 62  | --- |
| Sulfation (PA) | %   | 58   | 53   | 65  | --- |
| Glycol         | %   | NEG  | NEG  | NEG | --- |
| Fuel           | %   | <1.0 | <1.0 | 0.9 | --- |
| Silicon        | ppm | 6    | 6    | 6   | --- |
| Sodium         | ppm | 2    | 2    | 2   | --- |
| Potassium      | ppm | <1   | <1   | <1  | --- |

#### Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.



#### WEAR METALS

|            |     |    |    |    |     |
|------------|-----|----|----|----|-----|
| Iron       | ppm | 13 | 4  | 6  | --- |
| Copper     | ppm | 2  | 7  | 23 | --- |
| Lead       | ppm | <1 | <1 | 1  | --- |
| Tin        | ppm | 0  | <1 | <1 | --- |
| Aluminum   | ppm | 2  | <1 | 1  | --- |
| Chromium   | ppm | <1 | <1 | <1 | --- |
| Molybdenum | ppm | 61 | 57 | 54 | --- |
| Nickel     | ppm | <1 | 0  | 0  | --- |
| Titanium   | ppm | 0  | <1 | <1 | --- |
| Silver     | ppm | 0  | 0  | 0  | --- |
| Manganese  | ppm | 0  | <1 | <1 | --- |
| Vanadium   | ppm | 0  | 0  | 0  | --- |



#### ADDITIVES

|            |     |      |      |      |     |
|------------|-----|------|------|------|-----|
| Calcium    | ppm | 1221 | 1072 | 1115 | --- |
| Magnesium  | ppm | 1011 | 979  | 926  | --- |
| Zinc       | ppm | 1283 | 1185 | 1111 | --- |
| Phosphorus | ppm | 1074 | 1044 | 993  | --- |
| Barium     | ppm | 0    | 1    | 4    | --- |
| Boron      | ppm | 2    | 2    | 10   | --- |

Depot: WES654STI  
 Unique No: 5723017  
 Signed: Wes Davis  
 Report Date: 07 Feb 2024



### GRAPHS

