

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### LIEBHERR LH50M 086015-1203 - Diesel Engine

Sample No: LH0278357

Oil Type: PETRO CANADA SUPREME 5W30



#### SAMPLE INFORMATION

|               |             |             |             |             |
|---------------|-------------|-------------|-------------|-------------|
| Sample Number | LH0278357   | LH0238573   | LH0234500   | LH0194943   |
| Sample Date   | 28 Nov 2023 | 19 Sep 2022 | 27 Jun 2022 | 31 Aug 2021 |
| Machine Hours | 20736       | 18175       | 17693       | 0           |
| Oil Hours     | 0           | 0           | 0           | 0           |
| Oil Changed   | Changed     | Changed     | Changed     | Changed     |
| Sample Status | MARGINAL    | NORMAL      | NORMAL      | ABNORMAL    |

**Dartmouth Metals & Bottle Ltd.**  
 14 Dawn Drive  
 Dartmouth, NS  
 CA B3B 1H9  
 Contact: Service



#### OIL CONDITION

|                |     |      |      |      |      |
|----------------|-----|------|------|------|------|
| Visc @ 100°C   | cSt | 11.7 | 11.8 | 11.8 | 11.8 |
| Oxidation (PA) | %   | 80   | 81   | 94   | 79   |

T:  
F:



#### CONTAMINATION

|                |     |       |      |      |      |
|----------------|-----|-------|------|------|------|
| Water          | %   | 0.146 | NEG  | NEG  | NEG  |
| Soot %         | %   | 0.8   | 0.5  | 0.7  | 0.1  |
| Nitration (PA) | %   | 97    | 97   | 112  | 94   |
| Sulfation (PA) | %   | 61    | 62   | 73   | 57   |
| Glycol         | %   | 0.0   | NEG  | NEG  | 0.0  |
| Fuel           | %   | <1.0  | <1.0 | <1.0 | <1.0 |
| Silicon        | ppm | 7     | 10   | 10   | 10   |
| Sodium         | ppm | 5     | 5    | 6    | 9    |
| Potassium      | ppm | <1    | <1   | <1   | 17   |

#### Diagnosis

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. There is a trace of moisture present in the oil. Test for glycol is negative. The condition of the oil is acceptable for the time in service.



#### WEAR METALS

|            |     |    |    |    |     |
|------------|-----|----|----|----|-----|
| Iron       | ppm | 14 | 17 | 27 | 25  |
| Copper     | ppm | 3  | 6  | 20 | 282 |
| Lead       | ppm | 2  | 2  | 2  | 12  |
| Tin        | ppm | <1 | <1 | 1  | 4   |
| Aluminum   | ppm | 4  | 5  | 5  | 4   |
| Chromium   | ppm | <1 | <1 | <1 | <1  |
| Molybdenum | ppm | 53 | 59 | 61 | 55  |
| Nickel     | ppm | 0  | 0  | 0  | <1  |
| Titanium   | ppm | 0  | <1 | <1 | 0   |
| Silver     | ppm | 0  | <1 | 0  | <1  |
| Manganese  | ppm | 0  | <1 | <1 | 1   |
| Vanadium   | ppm | 0  | 0  | 0  | 0   |



#### ADDITIVES

|            |     |      |      |      |      |
|------------|-----|------|------|------|------|
| Calcium    | ppm | 748  | 848  | 890  | 922  |
| Magnesium  | ppm | 1020 | 1152 | 1142 | 1112 |
| Zinc       | ppm | 1098 | 1241 | 1269 | 1155 |
| Phosphorus | ppm | 918  | 1118 | 965  | 1011 |
| Barium     | ppm | 0    | <1   | 2    | 32   |
| Boron      | ppm | 15   | 17   | 10   | 28   |

Depot: DAR14DAR  
 Unique No: 5708879  
 Signed: Kevin Marson  
 Report Date: 11 Jan 2024



### GRAPHS

