

# **OIL ANALYSIS REPORT**

### Area Fwd Machinery Space [450343811] Thruster Fwd Aft - Lower Gearbox (S/N Sample Tag CL-06004- S6) Lube System

Fluid GEAR OIL ISO 150 (--- GAL)

### DIAGNOSIS

#### Recommendation

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. We recommend you service the filters on this component. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

#### Wear

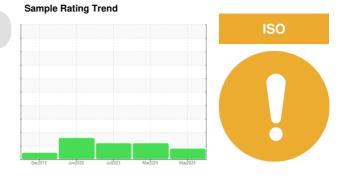
All component wear rates are normal.

#### Contamination

There is a light amount of silt (particulates < 14 microns in size) present in the oil.

#### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



| SAMPLE INFOR   | IOITAM  | M method   | limit/base   | current  |   |   |
|--|---|--|--|--|---|---|
| Sample Number  |   | Client Info  |  | PC0080642  | PC0081680   | PC  |
| Sample Date  |   | Client Info  |  | 16 May 2024  | 31 Mar 2024   | 24 Jul 2023   |
| Machine Age  | hrs   | Client Info  |  | 0  | 0   | 0   |
| Oil Age  | hrs   | Client Info  |  | 0  | 0   | 0   |
| Oil Changed  |   | Client Info  |  | N/A  | N/A   | N/A   |
| Sample Status  |   |  |  | ATTENTION  | ABNORMAL  | ABNORMAL  |
| CONTAMINAT   |   | method   | limit/base   | current  | history1  | history2  |
| Water  |   | WC Method  |  | NEG  | NEG   | NEG   |
| WEAR METAL   | S   | method   | limit/base   | current  | history1  | history2  |
| Iron   | ppm   | ASTM D5185(m)  | >20  | <1   | 0   | <1  |
| Chromium   | ppm   | ASTM D5185(m)  |  | 0  | 0   | 0   |
| Nickel   | ppm   | ASTM D5185(m)  |  | 0  | 0   | <1  |
| Titanium   | ppm   | ASTM D5185(m)  | -  | 0  | 0   | 0   |
| Silver   | ppm   | ASTM D5185(m)  |  | 0  | 0   | 0   |
| Aluminum   | ppm   | ASTM D5185(m)  | >10  | 0  | 0   | <1  |
| Lead   | ppm   | ASTM D5185(m)  | >20  | 0  | 0   | 0   |
| Copper   | ppm   | ASTM D5185(m)  |  | 0  | 0   | 0   |
| Tin  | ppm   | ASTM D5185(m)  |  | 0  | 0   | 0   |
| Antimony   | ppm   | ASTM D5185(m)  |  | 0  | 0   | 0   |
| Vanadium   | ppm   | ASTM D5185(m)  |  | 0  | 0   | 0   |
| Beryllium  | ppm   | ASTM D5185(m)  |  | 0  | 0   | 0   |
| Cadmium  | ppm   | ASTM D5185(m)  |  | 0  | 0   | 0   |
| ADDITIVES  |   | method   | limit/base   | current  | bistorut  | history2  |
|  |   |  |  |  |   |   |
| Boron  | ppm   | ASTM D5185(m)  | 50   | 11   | 15  | 15  |
|  | ppm<br>ppm  |  |  |  |   |   |
| Boron<br>Barium  | ppm   | ASTM D5185(m)  | 50   | 11   | 15  | 15  |
| Boron<br>Barium<br>Molybdenum  | ppm<br>ppm  | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)  | 50<br>15   | 11<br>0  | 15<br>0   | 15<br>0   |
| Boron<br>Barium<br>Molybdenum<br>Manganese   | ppm<br>ppm<br>ppm   | ASTM D5185(m)<br>ASTM D5185(m)   | 50<br>15   | 11<br>0<br>0   | 15<br>0<br>0  | 15<br>0<br>0  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium  | ppm<br>ppm<br>ppm<br>ppm  | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)   | 50<br>15<br>15<br>50   | 11<br>0<br>0<br>0  | 15<br>0<br>0<br>0   | 15<br>0<br>0<br>0   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium   | ppm<br>ppm<br>ppm<br>ppm<br>ppm   | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)  | 50<br>15<br>15<br>50   | 11<br>0<br>0<br>0<br><1  | 15<br>0<br>0<br>0<br><1   | 15<br>0<br>0<br>0<br><1   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium  | ppm<br>ppm<br>ppm<br>ppm  | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)   | 50<br>15<br>15<br>50<br>50<br>350  | 11<br>0<br>0<br>0<br><1<br>14  | 15<br>0<br>0<br>0<br><1<br>6  | 15<br>0<br>0<br>0<br><1<br>3  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                                    | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)  | 50<br>15<br>15<br>50<br>50<br>350  | 11<br>0<br>0<br>0<br><1<br>14<br>160   | 15<br>0<br>0<br><1<br>6<br>166  | 15<br>0<br>0<br><1<br>3<br>172  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                                    | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)   | 50<br>15<br>15<br>50<br>50<br>350<br>100   | 11<br>0<br>0<br><1<br>14<br>160<br>4   | 15<br>0<br>0<br><1<br>6<br>166<br>5   | 15<br>0<br>0<br>0<br><1<br>3<br>172<br>4  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                      | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)  | 50<br>15<br>15<br>50<br>50<br>350<br>100   | 11<br>0<br>0<br><1<br>14<br>160<br>4<br>12406<br><1  | 15<br>0<br>0<br><1<br>6<br>166<br>5<br>8255   | 15<br>0<br>0<br>0<br><1<br>3<br>172<br>4<br>9509  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                      | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)   | 50<br>15<br>15<br>50<br>50<br>350<br>100<br>12500  | 11<br>0<br>0<br><1<br>14<br>160<br>4<br>12406<br><1  | 15<br>0<br>0<br><1<br>6<br>166<br>5<br>8255<br><1   | 15<br>0<br>0<br><1<br>3<br>172<br>4<br>9509<br><1   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINAN  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                      | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br><b>method</b>  | 50<br>15<br>15<br>50<br>50<br>350<br>100<br>12500  | 11<br>0<br>0<br>3<br>3<br>3<br>3<br>4<br>12406<br>3<br>1<br>2406<br>3<br>3<br>1<br>2<br>4<br>3<br>2<br>4<br>3<br>2<br>4<br>3<br>3<br>4<br>3<br>2<br>4<br>3<br>3<br>4<br>3<br>3<br>4<br>3<br>3<br>4<br>3<br>3<br>4<br>3<br>3<br>4<br>3<br>4 | 15<br>0<br>0<br><1<br>6<br>166<br>5<br>8255<br><1<br>history1   | 15<br>0<br>0<br>0<br><1<br>3<br>172<br>4<br>9509<br><1<br>history2  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINAM<br>Silicon   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br><b>method</b><br>ASTM D5185(m)  | 50<br>15<br>15<br>50<br>50<br>350<br>100<br>12500  | 11<br>0<br>0<br>(0<br><1<br>14<br>160<br>4<br>12406<br><1<br><b>current</b><br>0   | 15<br>0<br>0<br>2<br>3<br>4<br>1<br>6<br>5<br>8<br>255<br>5<br>8<br>255<br><1<br>history1<br>1  | 15<br>0<br>0<br><1<br>3<br>172<br>4<br>9509<br><1<br>history2<br>2  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINAN<br>Silicon<br>Sodium   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br><b>tTS</b> | ASTM D5185(m)<br>ASTM D5185(m)   | 50<br>15<br>15<br>50<br>50<br>350<br>100<br>12500<br>limit/base<br>>15   | 11<br>0<br>0<br>(0<br><1<br>14<br>160<br>4<br>12406<br><1<br><b>current</b><br>0<br>0<br>0<br><1   | 15<br>0<br>0<br>(<br>1<br>6<br>166<br>5<br>8255<br><1<br><b>kistory1</b><br>1<br>(<br>1   | 15<br>0<br>0<br>(<br>1<br>3<br>172<br>4<br>9509<br><1<br><b>history2</b><br>2<br><1   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>FLUID CLEAN   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br><b>tTS</b> | ASTM D5185(m)<br>ASTM D5185(m)   | 50<br>15<br>15<br>50<br>50<br>350<br>100<br>12500<br>limit/base<br>>15<br>>20  | 11<br>0<br>0<br>(0<br><1<br>14<br>160<br>4<br>12406<br><1<br><b>current</b><br>0<br>0<br>0<br><1   | 15<br>0<br>0<br>3<br>4<br>1<br>6<br>166<br>5<br>8255<br><1<br><b>bistory1</b><br>1<br>4<br>3<br>0   | 15<br>0<br>0<br>(<br>1<br>3<br>172<br>4<br>9509<br><1<br><b>history2</b><br>2<br><1<br><1<br>(<br>1<br>(<br>1)  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>FLUID CLEAN<br>Particles >4µm                                       | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br><b>tTS</b> | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br><b>method</b><br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)  | 50<br>15<br>15<br>50<br>50<br>350<br>100<br>12500<br>imit/base<br>>20<br>imit/base<br>>5000  | 11<br>0<br>0<br>1<br>1<br>1<br>1<br>4<br>12406<br>4<br>12406<br><1<br><i>current</i><br>0<br>0<br>2<br>1<br><i>current</i>   | 15<br>0<br>0<br>(<br>1<br>6<br>166<br>5<br>8255<br><1<br><b>history1</b><br>1<br><1<br>0<br><b>history1</b>   | 15<br>0<br>0<br>(<br>1<br>3<br>172<br>4<br>9509<br><1<br><b>history2</b><br>2<br>2<br><1<br><1<br><1<br><1<br><b>history2</b>   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br><b>tTS</b> | ASTM D5185(m)<br>ASTM D5185(m)  | 50<br>15<br>15<br>50<br>50<br>350<br>100<br>12500<br>imit/base<br>>20<br>imit/base<br>>5000  | 11<br>0<br>0<br>1<br>1<br>1<br>1<br>4<br>1<br>2<br>4<br>0<br>4<br>1<br>2<br>4<br>0<br>4<br>1<br>2<br>4<br>0<br>0<br>0<br>4<br>1<br>2<br>4<br>0<br>0<br>0<br>4<br>1<br>0<br>0<br>0<br>4<br>1<br>0<br>0<br>0<br>1<br>1<br>1<br>1<br>1<br>1   | 15<br>0<br>0<br>2<br>3<br>4<br>1<br>6<br>6<br>166<br>5<br>8255<br><1<br>8255<br><1<br><b>history1</b><br>1<br><1<br>0<br>0<br><b>history1</b>         | 15<br>0<br>0<br>10<br>11<br>3<br>172<br>4<br>9509<br><1<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•                                 |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINAM<br>Silicon<br>Sodium<br>Potassium<br>FLUID CLEAN<br>Particles >4µm<br>Particles >6µm                     | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br><b>tTS</b> | ASTM D5185(m)<br>ASTM D7647   | 50<br>15<br>15<br>50<br>50<br>350<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>100<br>100<br>100<br>100<br>100<br>100 | 11<br>0<br>0<br>0<br><1<br>14<br>160<br>4<br>12406<br><1<br>current<br>0<br>0<br><1<br>current<br>0<br>0<br>6079<br>1230   | 15<br>0<br>0<br>0<br><1<br>6<br>166<br>5<br>8255<br><1<br>history1<br>1<br><1<br>0<br>history1<br>∧ 15348<br>2227                                     | 15<br>0<br>0<br>10<br><1<br>3<br>172<br>4<br>9509<br><1<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•                                 |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>FLUID CLEAN<br>Particles >4µm<br>Particles >6µm<br>Particles >14µm  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br><b>tTS</b> | ASTM D5185(m)  | 50<br>15<br>15<br>50<br>50<br>350<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>100<br>100<br>100<br>100<br>100<br>100 | 11<br>0<br>0<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()   | 15<br>0<br>0<br>0<br><1<br>6<br>166<br>5<br>8255<br><1<br>0<br>1<br>1<br><1<br>0<br>0<br>history1<br>1<br>0<br>0<br>history1<br>0<br>2227<br>93       | 15<br>0<br>0<br>10<br>172<br>4<br>9509<br>11<br>172<br>1<br>4<br>9509<br>1<br>172<br>1<br>2<br>1<br>2<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1            |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>FLUID CLEAN<br>Particles >4µm<br>Particles >14µm<br>Particles >21µm | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br><b>tTS</b> | ASTM D5185(m)   ASTM D5185(m) <td< td=""><td>50<br/>15<br/>15<br/>50<br/>50<br/>350<br/>100<br/>12500<br/>100<br/>12500<br/>100<br/>12500<br/>100<br/>5000<br/>50</td><th>11<br/>0<br/>0<br/>0<br/>3<br/>3<br/>4<br/>12406<br/>4<br/>12406<br/>3<br/>3<br/>1<br/>2<br/>0<br/>0<br/>3<br/>3<br/>3<br/>4<br/>1<br/>2<br/>30<br/>4<br/>1<br/>2<br/>30<br/>4<br/>1<br/>10</th><td>15<br/>0<br/>0<br/>0<br/>&lt;1<br/>6<br/>166<br/>5<br/>8255<br/>&lt;1<br/>0<br/>1<br/>1<br/>&lt;1<br/>0<br/>0<br/>history1<br/>1<br/>0<br/>0<br/>history1<br/>0<br/>2227<br/>93<br/>19</td><td>15<br/>0<br/>0<br/>0<br/>1<br/>172<br/>4<br/>9509<br/>1<br/>172<br/>4<br/>9509<br/>1<br/>172<br/>1<br/>2<br/>1<br/>2<br/>1<br/>1<br/>172<br/>1<br/>2<br/>172<br/>1<br/>2<br/>172<br/>1<br/>172<br/>1<br/>2<br/>1</td></td<> | 50<br>15<br>15<br>50<br>50<br>350<br>100<br>12500<br>100<br>12500<br>100<br>12500<br>100<br>5000<br>50   | 11<br>0<br>0<br>0<br>3<br>3<br>4<br>12406<br>4<br>12406<br>3<br>3<br>1<br>2<br>0<br>0<br>3<br>3<br>3<br>4<br>1<br>2<br>30<br>4<br>1<br>2<br>30<br>4<br>1<br>10   | 15<br>0<br>0<br>0<br><1<br>6<br>166<br>5<br>8255<br><1<br>0<br>1<br>1<br><1<br>0<br>0<br>history1<br>1<br>0<br>0<br>history1<br>0<br>2227<br>93<br>19 | 15<br>0<br>0<br>0<br>1<br>172<br>4<br>9509<br>1<br>172<br>4<br>9509<br>1<br>172<br>1<br>2<br>1<br>2<br>1<br>1<br>172<br>1<br>2<br>172<br>1<br>2<br>172<br>1<br>172<br>1<br>2<br>1 |



491,52 122,880 7 68

number of particles (per 1 1.92 480 120 30 8 2

> 30 Ê 25 u () 20k 15k

number of 10

Particle Count

Particle Trend

Abnorma 5 0

Acid Number

Dec18/19

Bas

Abnorma

Dec18/19

1.60-Abnorma

1.40

1.40 1.20 1.00 K0H/d) 0.80 0.60

- 명 0.40

0.20 0.00

> 13 Abnorma

12 11 Jun7/20

Jun7/20

Viscosity @ 100°C

ul24/23

144

214

Mar31/24

Mar31/24

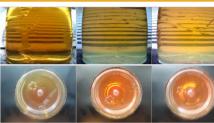
# **OIL ANALYSIS REPORT**

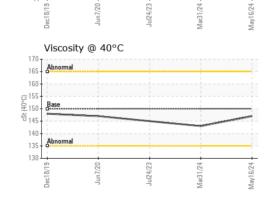
| FLUID DEGRA          | DATION   | method        | limit/base | current | history1 | history2 |
|----------------------|----------|---------------|------------|---------|----------|----------|
| Acid Number (AN)     | mg KOH/g | ASTM D974*    | 0.85       | 0.38    | 0.46     | 0.51     |
| VISUAL               |          | method        | limit/base | current | history1 | history2 |
| White Metal          | scalar   | Visual*       | NONE       | NONE    | NONE     | NONE     |
| Yellow Metal         | scalar   | Visual*       | NONE       | NONE    | NONE     | NONE     |
| Precipitate          | scalar   | Visual*       | NONE       | NONE    | NONE     | NONE     |
| Silt                 | scalar   | Visual*       | NONE       | NONE    | NONE     | NONE     |
| Debris               | scalar   | Visual*       | NONE       | NONE    | NONE     | NONE     |
| Sand/Dirt            | scalar   | Visual*       | NONE       | NONE    | NONE     | NONE     |
| Appearance           | scalar   | Visual*       | NORML      | NORML   | NORML    | NORML    |
| Odor                 | scalar   | Visual*       | NORML      | NORML   | NORML    | NORML    |
| Emulsified Water     | scalar   | Visual*       | >0.05      | NEG     | NEG      | NEG      |
| Free Water           | scalar   | Visual*       |            | NEG     | NEG      | NEG      |
| FLUID PROPE          | RTIES    | method        | limit/base | current | history1 | history2 |
| Visc @ 40°C          | cSt      | ASTM D7279(m) | 150        | 147     | 143      | 145      |
| Visc @ 100°C         | cSt      | ASTM D7279(m) | 15.0       | 14.3    | 14.2     | 14.2     |
| Viscosity Index (VI) | Scale    | ASTM D2270*   | 99         | 94      | 96       | 94       |
| SAMPLE IMAG          | ES       | method        | limit/base | current | history1 | history  |
|                      |          |               | 2          | 13      |          | k        |

Color

Bottom

May16/24







Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 CALA : PC0080642 Received : 04 Jun 2024 Sample No. Lab Number : 02639710 Tested : 07 Jun 2024 ISO 17025:2017 Accredited Laboratory Unique Number : 5788872 Diagnosed : 07 Jun 2024 - Kevin Marson Test Package : MAR 2 (Additional Tests: KV100, VI) To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

Scotia Centre, 235 Water Strret St. John`s, NL CA A1C 1B6 Contact: Josh Hynes joshynes@suncor.com T: (709)778-3575 F: (709)724-2835

Suncor - Terra Nova Projects

Report Id: TERHAM [WCAMIS] 02639710 (Generated: 06/07/2024 10:09:35) Rev: 1

Contact/Location: Josh Hynes - TERHAM Page 2 of 2