

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Machine Id ES03 Component Main Hydraulic System Fluid AW HYDRAULIC OIL ISO 46 (--- LTR)

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. We recommend an early resample to monitor this condition. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) AW HYDRAULIC OIL ISO 46. Please confirm.

NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear

All component wear rates are normal.

Contamination

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

Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

| SAMPLE INFORM | ATION | method | limit/base | current | history1 | history2 |
|---|---|--|--|--|--|--|
| Sample Number | | Client Info | | WC0914591 | | |
| Sample Date | | Client Info | | 11 Mar 2024 | | |
| Machine Age | hrs | Client Info | | 0 | | |
| Oil Age | hrs | Client Info | | 0 | | |
| Oil Changed | | Client Info | | N/A | | |
| Sample Status | | | | ABNORMAL | | |
| - | _ | | | - | | |
| CONTAMINATIO | N | method | limit/base | current | history1 | history2 |
| Water | | WC Method | >0.05 | NEG | | |
| WEAR METALS | | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185(m) | >20 | 4 | | |
| Chromium | ppm | ASTM D5185(m) | >20 | 0 | | |
| Nickel | ppm | ASTM D5185(m) | >20 | 1 | | |
| Titanium | ppm | ASTM D5185(m) | | 0 | | |
| Silver | ppm | ASTM D5185(m) | | 0 | | |
| Aluminum | ppm | ASTM D5185(m) | >20 | <1 | | |
| Lead | ppm | ASTM D5185(m) | >20 | <1 | | |
| Copper | ppm | ASTM D5185(m) | >20 | 15 | | |
| Tin | ppm | ASTM D5185(m) | >20 | 0 | | |
| Antimony | ppm | ASTM D5185(m) | | 0 | | |
| Vanadium | ppm | ASTM D5185(m) | | 0 | | |
| Beryllium | ppm | ASTM D5185(m) | | 0 | | |
| Cadmium | ppm | ASTM D5185(m) | | 0 | | |
| | | | | | | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| ADDITIVES Boron | ppm | method ASTM D5185(m) | limit/base | current | history1 | history2 |
| | ppm ppm | | 5 | | | |
| Boron Barium | | ASTM D5185(m) | 5 | <1 | | |
| Boron | ppm | ASTM D5185(m) ASTM D5185(m) | 5 5 | <1 2 | | |
| Boron Barium Molybdenum Manganese | ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 5 5 | <1 2 0 | | |
| Boron Barium Molybdenum | ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 5 5 5 25 | <1 2 0 0 | | |
| Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 5 5 5 25 200 | <1 2 0 0 1 44 | | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 5 5 5 25 200 300 | <1 2 0 0 1 44 255 | | |
| Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 5 5 5 25 200 300 370 | <1 2 0 0 1 44 255 270 | | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 5 5 5 25 200 300 | <1 2 0 1 44 255 270 1024 | | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 5 5 25 200 300 370 2500 | <1 2 0 1 44 255 270 1024 <1 | | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 5 5 5 25 200 300 370 | <1 2 0 1 44 255 270 1024 | | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 5 5 25 200 300 370 2500 | <1 2 0 1 44 255 270 1024 <1 | | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 5 5 25 200 300 370 2500 limit/base | <1 2 0 1 44 255 270 1024 <1 current | history1 | history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) | 5 5 25 200 300 370 2500 limit/base >15 | <1 2 0 1 44 255 270 1024 <1 current <1 | history1 | history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) | 5 5 25 200 300 370 2500 limit/base >15 | <1 2 0 1 44 255 270 1024 <1 current <1 2 | history1 | history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) | 5 5 25 200 300 370 2500 Iimit/base >15 | <1 2 0 1 44 255 270 1024 <1 current <1 2 2 2 | history1 | history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) | 5 5 5 25 200 300 370 2500 imit/base >15 >20 imit/base >5000 | <1 2 0 1 44 255 270 1024 <1 current 2 2 2 current | history1 history1 | history2 history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) | 5 5 5 25 200 300 370 2500 imit/base >15 >20 imit/base >5000 | <1 2 0 1 4 4 255 270 1024 <1 1 21 2 2 2 2 current 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | history1 history1 | history2 history2 history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) | 5 5 5 200 300 370 2500 2500 Iimit/base >15 >20 Iimit/base >5000 >1300 >1300 | <1 2 0 1 4 4 255 270 1024 <1 0 1 2 2 2 2 current 1 1 4 1 4 2 5 5 2 7 0 1 0 4 4 2 5 2 7 0 1 0 4 1 2 2 2 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 | history1 history1 history1 | history2 history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D76477 ASTM D7647 | 5 5 5 200 300 370 2500 2500 Iimit/base >15 >20 Iimit/base >5000 >1300 >1300 | <1 2 0 1 4 4 255 270 1024 <1 1 2 1 2 2 2 2 2 2 0 14914 € 2304 68 | history1 history1 | history2 history2 history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 | 5 5 5 25 200 300 370 2500 imit/base >15 >20 imit/base >20 imit/base >15 >20 imit/base >15 | <1 2 0 0 1 44 255 270 1024 <1 1 21 2 2 2 2 0 0 0 1 1 1 1 1 1 1 1 1 1 | history1 history1 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >21µm Particles >38µm | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 | 5 5 5 25 200 300 370 2500 imit/base >15 >20 imit/base >20 imit/base >15 >20 imit/base >15 | <1 2 0 0 1 44 255 270 1024 <1 270 1024 <1 21 2 2 2 2 2 0 0 0 0 1 1 0 0 0 0 0 0 0 | | history2 history2 history2 |



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| | FLUID DEGRAD | ATION | method | limit/base | current | history1 | history |
|---|---|------------------|--------------------|--|-------------------------------|----------|----------|
| 4μm παταπασασασα 6μm 14μm | Acid Number (AN) | mg KOH/g | ASTM D974* | 0.57 | 0.55 | | |
| | VISUAL | | method | limit/base | current | history1 | history |
| Abnormal | White Metal | scalar | Visual* | NONE | NONE | | |
| - | Yellow Metal | scalar | Visual* | NONE | NONE | | |
| | Precipitate | scalar | Visual* | NONE | NONE | | |
| Mar11/24 | 5711 Silt Debris | scalar | Visual* | NONE | NONE | | |
| Mar | | scalar | Visual* | NONE | NONE | | |
| Particle Trend | Sand/Dirt | scalar | Visual* | NONE | NONE | | |
| áum l | Appearance | scalar | Visual* | NORML | NORML | | |
| алаанаалаа бµт малаанаалаа 14µт | Odor Emulsified Water | scalar | Visual* Visual* | NORML >0.05 | NORML NEG | | |
| | Free Water | scalar scalar | Visual* | >0.05 | NEG | | |
| . At | | | | | | | |
| Abnormal | FLUID PROPER | TIES | method | limit/base | current | history1 | history |
| | Visc @ 40°C | cSt | ASTM D7279(m) | 46 | 46.1 | | |
| Mar11/24 | SAMPLE IMAGE | S | method | limit/base | current | history1 | history |
| – Acid Number A ^{bnomal} | Color | | | | | no image | no image |
| Base | | | | | | | |
| Abnomal | Bottom | | | | | no image | no image |
| | GRAPHS | | | | | | |
| 1/24 - | Ferrous Alloys | | | | Particle Count | : | |
| Marl | 10 iron | | | 491,520 | I | | |
| Viscosity @ 40°C | E 5- | | | 122,880 | | | |
| Abnormal | | | | 30,720 | pevere | | |
| | 0 | | | 080.5 | Abnormal | | |
| Base | Mar11/24 | | | Mar11/24 1950 (per 1 m) 1800 1900 1900 1900 1900 1900 1900 1900 | | | |
| | | | | Ma cles (p | | | |
| | Non-ferrous Meta | ls | | - jo 480 | | N | |
| Abnormal | 10 - copper lead | | | 120 age | + | | |
| 124 - | | | | E 30 | - | | |
| Mar11/24 | 5 | | | 8 | + | | |
| | 24 L 0 | | | 42/24 | ļ | | |
| | Marl 1 | | | 0 Mar11/24 | | | |
| | Viscosity @ 40°C | | | 2 | ^{ه ه} Acid Number | 14µ 21µ | 38µ 71 |
| | 55 Abnormal | | | (⁰ /H0 | | | |
| | 50 - Base 45 - Base 45 - Abnormal | | | Bu sta | Base | | |
| | 40 Abnormal | | | 0.00 Acid Number (mg KOH(g) | Abnormal | | |
| | 35 | | | N | | | |
| | 11/24 | | | Mar11/24 | Mar11/24 | | |
| | Mar | | | Mar | Mar | | |