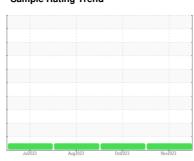


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id W16B Component Hydraulic System Fluid MIL-PRF-83282 (--- GAL)

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DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Discrete particle counts [100 ml] $5-15\mu m = 12500$, $15-25\mu m = 1900$, $25-50\mu m = 500$, $50-100\mu m = 0$, $>100\mu m = 0$. The amount and size of particulates present in the system are acceptable. Class 6. Chlorine is 17.2 ppm.

Fluid Condition

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

| Sample Number Client Info WC0874931 WC0768837 WC0768778 Sample Date Client Info 10 Nov 2023 12 Oct 2023 08 Aug 2023 09 A | | Jul2023 Aug2023 0x2023 Nov2023 | | | | | |
|--|------------------|--------------------------------|--------------|------------|-------------|-------------|-------------|
| Sample Date | SAMPLE INFORM | MATION | method | limit/base | current | history1 | history2 |
| Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info 0 0 0 Oil Oil Changed hrs Client Info N/A N/A N/A Not Changd Sample Status Client Info N/A NORMAL 1 1 1 | Sample Number | | Client Info | | WC0874931 | WC0768837 | WC0768778 |
| Oil Age hrs Client Info 0 0 0 0 N/A N/A Not Changd Sample Status Client Info N/A N/A N/A Not Changd WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 0 0 0 Chromium ppm ASTM D5185m >20 0 -1 0 Nickel ppm ASTM D5185m >20 0 -1 -1 Silver ppm ASTM D5185m >20 0 -1 -1 Aluminum ppm ASTM D5185m >20 0 -1 -1 Aluminum ppm ASTM D5185m >20 0 -1 -1 Lead ppm ASTM D5185m >20 0 -1 0 Copper ppm ASTM D5185m >20 0 -1 0 Tin ppm ASTM D5185m | Sample Date | | Client Info | | 10 Nov 2023 | 12 Oct 2023 | 08 Aug 2023 |
| Oil Changed Sample Status | Machine Age | hrs | Client Info | | 0 | 0 | 0 |
| NORMAL NORMAL NORMAL NORMAL WEAR METALS method limit/base current history1 history2 history2 limit/base current history1 history2 limit/base current history1 history2 limit/base current limit/base current history2 limit/base current history3 limit/base current limit/b | Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 0 0 0 Chromium ppm ASTM D5185m >20 0 -1 0 Nickel ppm ASTM D5185m >20 0 -1 -1 Silver ppm ASTM D5185m 0 -1 -1 -1 Silver ppm ASTM D5185m >20 0 -1 0 Aluminum ppm ASTM D5185m >20 0 -1 0 Lead ppm ASTM D5185m >20 0 -1 0 Copper ppm ASTM D5185m >20 0 -1 0 Vanadium ppm ASTM D5185m >20 0 -1 0 Cadmium ppm ASTM D5185m 0 0 0 -1 Boron ppm ASTM D5185m 0 0 0 | Oil Changed | | Client Info | | N/A | N/A | Not Changd |
| Irron | Sample Status | | | | NORMAL | NORMAL | NORMAL |
| Chromium ppm ASTM D5185m >20 0 <1 0 Nickel ppm ASTM D5185m >20 0 0 0 Tittanium ppm ASTM D5185m 0 <1 <1 Siliver ppm ASTM D5185m >20 0 1 <1 Lead ppm ASTM D5185m >20 0 1 <1 Lead ppm ASTM D5185m >20 1 0 <1 Lead ppm ASTM D5185m >20 1 0 <1 Lead ppm ASTM D5185m >20 1 0 <1 Lead ppm ASTM D5185m >20 0 0 <1 Capper ppm ASTM D5185m 0 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 <1 Cadedmium ppm ASTM D5185m 0 0 0 0 < | WEAR METALS | | method | limit/base | current | history1 | history2 |
| Nickel ppm ASTM D5185m >20 0 0 0 Titanium ppm ASTM D5185m 0 <1 | Iron | ppm | ASTM D5185m | >20 | 0 | 0 | 0 |
| Titanium | Chromium | ppm | ASTM D5185m | >20 | 0 | <1 | 0 |
| Silver | Nickel | ppm | ASTM D5185m | >20 | 0 | 0 | 0 |
| Silver ppm ASTM D5185m Q <1 0 Aluminum ppm ASTM D5185m >20 0 1 <1 | Titanium | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Aluminum | Silver | | ASTM D5185m | | 0 | <1 | 0 |
| Lead | Aluminum | | ASTM D5185m | >20 | 0 | | <1 |
| Copper ppm ASTM D5185m >20 1 0 <1 Tin ppm ASTM D5185m >20 0 0 <1 | | | | | - | | |
| Tin | | | | | | | |
| Vanadium ppm ASTM D5185m 0 0 <1 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 2 24 4 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 0 <1 0 Calcium ppm ASTM D5185m 0 <1 0 Phosphorus ppm ASTM D5185m 0 0 17 Sulfur ppm ASTM D5185m 0 0 17 Sulfur ppm ASTM D5185m 0 0 17 Sodium ppm ASTM D5185m 2 0 2 Sod | | | | | - | | |
| Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 7 0 Calcium ppm ASTM D5185m 0 <1 | **** | | | - | | | |
| ADDITIVES | Cadmium | | | | - | | |
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| Manganese ppm ASTM D5185m <1 0 <1 Magnesium ppm ASTM D5185m 0 0 7 Calcium ppm ASTM D5185m 0 <1 | | | | | | | |
| Magnesium ppm ASTM D5185m 0 0 7 Calcium ppm ASTM D5185m 0 <1 | • | | | | - | | |
| Calcium ppm ASTM D5185m 0 <1 0 Phosphorus ppm ASTM D5185m 713 689 563 Zinc ppm ASTM D5185m 0 0 17 Sulfur ppm ASTM D5185m 44 58 39 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 18 21 18 Sodium ppm ASTM D5185m 2 0 2 <1 | - | | | | | | |
| Phosphorus ppm ASTM D5185m 713 689 563 Zinc ppm ASTM D5185m 0 0 17 Sulfur ppm ASTM D5185m 44 58 39 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 18 21 18 Sodium ppm ASTM D5185m 2 0 2 <1 | - | | | | - | | |
| Zinc ppm ASTM D5185m 0 0 17 Sulfur ppm ASTM D5185m 44 58 39 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 18 21 18 Sodium ppm ASTM D5185m 2 0 2 Potassium ppm ASTM D5185m >20 0 2 <1 | | | | | | | |
| Sulfur ppm ASTM D5185m 44 58 39 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 18 21 18 Sodium ppm ASTM D5185m 2 0 2 -1 Potassium ppm ASTM D5185m >20 0 2 -1 Chlorine Content ppm ASTM D5185m 17.2 18.0 Water % ASTM D6304 >0.05 0.010 0.012 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm | | | | | | | |
| CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 18 21 18 Sodium ppm ASTM D5185m 2 0 2 -1 Potassium ppm ASTM D5185m 17.2 18.0 Chlorine Content ppm ASTM D5185m 17.2 18.0 Water % ASTM D6304 >0.05 0.010 0.012 water % ASTM D6304 >500 102 121.8 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 340 455 951 Particles >6μm ASTM D7647 >1300 122 149 298 Particles >14μm ASTM D7647 >160 16 24 38 Particles >21μm ASTM D7647 >40 4 5 6 | - | | | | • | | |
| Silicon ppm ASTM D5185m >15 18 21 18 Sodium ppm ASTM D5185m 2 0 2 Potassium ppm ASTM D5185m 20 0 2 <1 Chlorine Content ppm ASTM D5185m 17.2 18.0 Water % ASTM D6304 >0.05 0.010 0.012 Water ppm ASTM D6304 >500 102 121.8 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >5000 340 455 951 Particles >6µm ASTM D7647 >1300 122 149 298 Particles >14µm ASTM D7647 >160 16 24 38 Particles >21µm ASTM D7647 >40 4 5 6 Particles >71µm ASTM D7647 >3 0 0 0 < | | | | | 44 | | |
| Sodium ppm ASTM D5185m 2 0 2 Potassium ppm ASTM D5185m >20 0 2 <1 | CONTAMINANTS | | | limit/base | current | history1 | history2 |
| Potassium ppm ASTM D5185m >20 0 2 <1 Chlorine Content ppm ASTM D5185m 17.2 18.0 Water % ASTM D6304 >0.05 0.010 0.012 ppm Water ppm ASTM D6304 >500 102 121.8 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 340 455 951 Particles >6μm ASTM D7647 >1300 122 149 298 Particles >14μm ASTM D7647 >160 16 24 38 Particles >21μm ASTM D7647 >40 4 5 6 Particles >38μm ASTM D7647 >10 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 16/14/11 16/14/12 17/15/12 | Silicon | ppm | ASTM D5185m | >15 | | | |
| Chlorine Content ppm ASTM D5185m 17.2 18.0 Water % ASTM D6304 >0.05 0.010 0.012 ppm Water ppm ASTM D6304 >500 102 121.8 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 340 455 951 Particles >6μm ASTM D7647 >1300 122 149 298 Particles >14μm ASTM D7647 >160 16 24 38 Particles >21μm ASTM D7647 >40 4 5 6 Particles >38μm ASTM D7647 >10 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 16/14/11 16/14/12 17/15/12 | Sodium | ppm | | | 2 | | 2 |
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| ppm Water ppm ASTM D6304 >500 102 121.8 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 340 455 951 Particles >6μm ASTM D7647 >1300 122 149 298 Particles >14μm ASTM D7647 >160 16 24 38 Particles >21μm ASTM D7647 >40 4 5 6 Particles >38μm ASTM D7647 >10 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 16/14/11 16/14/12 17/15/12 | Chlorine Content | ppm | ASTM D5185m | | 17.2 | 18.0 | |
| FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 340 455 951 Particles >6μm ASTM D7647 >1300 122 149 298 Particles >14μm ASTM D7647 >160 16 24 38 Particles >21μm ASTM D7647 >40 4 5 6 Particles >38μm ASTM D7647 >10 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 16/14/11 16/14/12 17/15/12 | Water | % | | | 0.010 | | |
| Particles >4μm ASTM D7647 >5000 340 455 951 Particles >6μm ASTM D7647 >1300 122 149 298 Particles >14μm ASTM D7647 >160 16 24 38 Particles >21μm ASTM D7647 >40 4 5 6 Particles >38μm ASTM D7647 >10 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 16/14/11 16/14/12 17/15/12 | ppm Water | ppm | ASTM D6304 | >500 | 102 | 121.8 | |
| Particles >6μm ASTM D7647 >1300 122 149 298 Particles >14μm ASTM D7647 >160 16 24 38 Particles >21μm ASTM D7647 >40 4 5 6 Particles >38μm ASTM D7647 >10 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 16/14/11 16/14/12 17/15/12 | FLUID CLEANLIN | ESS | method | limit/base | current | history1 | history2 |
| Particles >14μm ASTM D7647 >160 16 24 38 Particles >21μm ASTM D7647 >40 4 5 6 Particles >38μm ASTM D7647 >10 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 16/14/11 16/14/12 17/15/12 | Particles >4µm | | | | | | |
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| Particles >38μm ASTM D7647 >10 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 16/14/11 16/14/12 17/15/12 | Particles >14μm | | | | | | |
| Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 16/14/11 16/14/12 17/15/12 | Particles >21µm | | | >40 | | | 6 |
| Oil Cleanliness ISO 4406 (c) >19/17/14 16/14/11 16/14/12 17/15/12 | Particles >38µm | | | | | 0 | 0 |
| • | Particles >71µm | | ASTM D7647 | >3 | 0 | | |
| FLUID DEGRADATION method limit/base current history1 history2 | Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | 16/14/11 | 16/14/12 | 17/15/12 |
| | FLUID DEGRADA | TION | method | limit/base | current | history1 | history2 |

Acid Number (AN)

mg KOH/g ASTM D8045 0.1

Contact/Location: JIM ALLEN - NORPLAMA

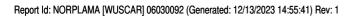
0.048

0.123



OIL ANALYSIS REPORT





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)

Certificate L2367

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