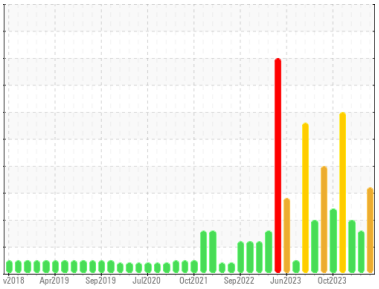
# OIL ANALYSIS REPORT

Sample Rating Trend



**WATER**

Area
## BOF/OG SYSTEM
Machine Id
## D - 7 Skirt Lifting and Seal Jacking Hydraulics
Component
**Hydraulic System**
Fluid
**FORSYTHE NO FIRE WG 200R (350 GAL)**

## DIAGNOSIS

**Recommendation**

We advise that you add glycol concentrate to restore the water concentration level to 41%. Due to the low reserve alkalinity it is advised that you contact FORSYTHE to assist in restoring the proper amine concentration. We recommend an early resample to monitor this condition.

**Wear**

All component wear rates are normal.

**Contamination**

The system cleanliness is acceptable for your target ISO 4406 cleanliness code.

**Fluid Condition**

The reserve alkalinity of this fluid is lower than acceptable. The water concentration level is higher than acceptable for this fluid. Viscosity of sample indicates oil is within ISO 15 range, advise investigate. The AN level is acceptable for this fluid. The pH level of this fluid is within the acceptable limits.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0926487** | WC0910446 | WC0901970 |
| Sample Date | | Client Info | | **22 Mar 2024** | 16 Feb 2024 | 22 Jan 2024 |
| 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 | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| PQ | | ASTM D8184* | >99999 | **9** | 0 | 0 |
| Iron | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Chromium | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |
| Aluminum | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Lead | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Copper | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Tin | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Antimony | ppm | ASTM D5185(m) | | **0** | 0 | <1 |
| Vanadium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |

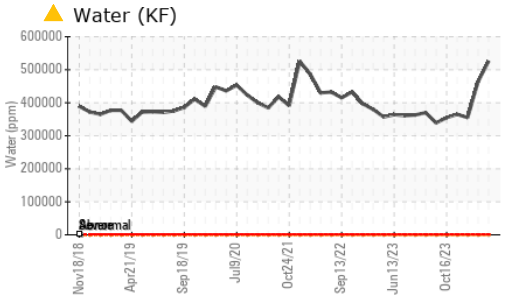
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | | **<1** | <1 | 1 |
| Barium | ppm | ASTM D5185(m) | | **0** | 0 | <1 |
| Molybdenum | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |
| Calcium | ppm | ASTM D5185(m) | | **1** | <1 | 2 |
| Phosphorus | ppm | ASTM D5185(m) | | **<1** | <1 | 2 |
| Zinc | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Sulfur | ppm | ASTM D5185(m) | | **61** | 59 | 66 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >15 | **<1** | <1 | <1 |
| Sodium | ppm | ASTM D5185(m) | | **157** | 187 | 191 |
| Potassium | ppm | ASTM D5185(m) | >20 | **15** | 32 | 18 |
| Water | % | ASTM D6304* | | ▲ **52.6** | 46.4 | 35.5 |
| ppm Water | ppm | ASTM D6304* | >10% | ▲ **526000** | 464000 | 355000 |

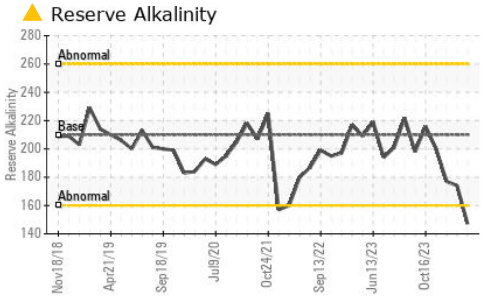
| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | **1969** | ▲ 21821 | ▲ 26327 |
| Particles >6µm | | ASTM D7647 | >1300 | **427** | ▲ 4298 | ▲ 5363 |
| Particles >14µm | | ASTM D7647 | >160 | **32** | 97 | ● 221 |
| Particles >21µm | | ASTM D7647 | >40 | **10** | 11 | 42 |
| Particles >38µm | | ASTM D7647 | >10 | **1** | 2 | 3 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | **18/16/12** | ▲ 22/19/14 | ▲ 22/20/15 |

# OIL ANALYSIS REPORT

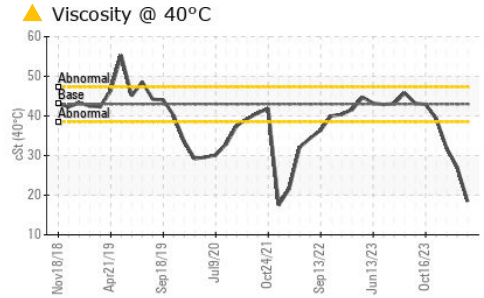
Water (KF)



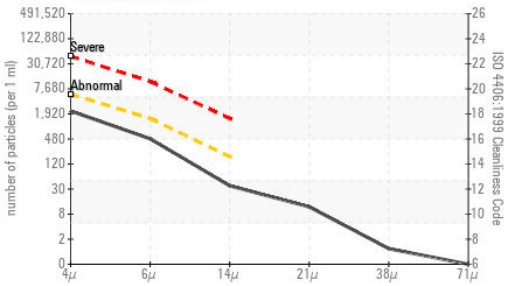

Reserve Alkalinity



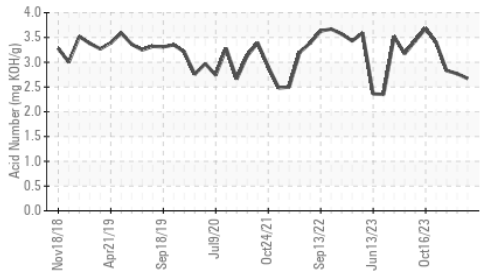

Viscosity @ 40°C




Particle Count




Acid Number




| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974* | | **2.67** | 2.77 | 2.83 |
| Alkiline Reserve (Oils) | ml KOH/g | ASTM D1121* | 210 | ▲ **147** | 174 | 177 |

| 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** | FRGLY | FRGLY |
| Odor | scalar | Visual* | NORML | **NORML** | NORML | NORML |
| Emulsified Water | scalar | Visual* | | **NEG** | >10% | >10% |
| Free Water | scalar | Visual* | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| pH | Scale 0-14 | ASTM D1287* | | **9.63** | 9.64 | 9.42 |
| Visc @ 40°C | cSt | ASTM D7279(m) | 43 | ▲ **18.4** | ▲ 27.1 | ▲ 31.9 |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : WC0926487
**Lab Number** : 02624038
**Unique Number** : 5749157
**Test Package** : IND 2 ( Additional Tests: KF, pH, PQ, ReserveAlk, TAN Man )

**Received** : 22 Mar 2024
**Tested** : 26 Mar 2024
**Diagnosed** : 26 Mar 2024 - Kevin Marson

*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.*

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Submitted By: Bob Melanson