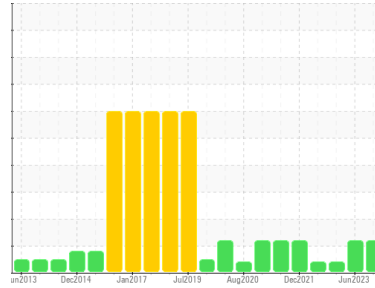




PROBLEM SUMMARY

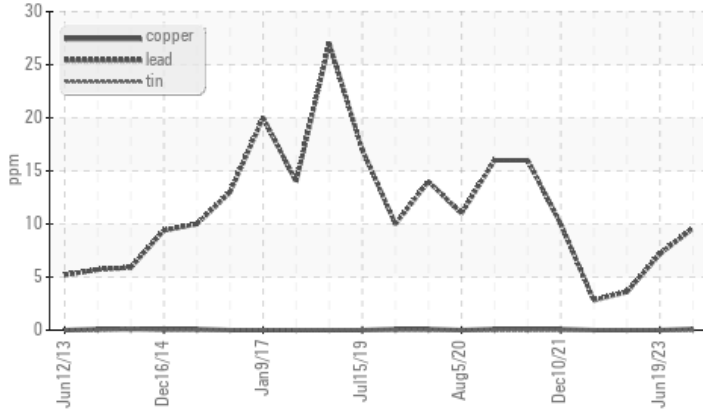
Sample Rating Trend



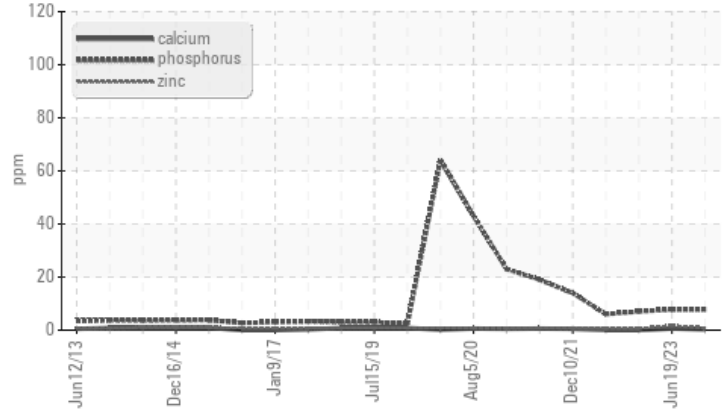
Area
BRUCE A/2/71210
 Machine Id
2-71210-P3-PM Lo Brg Level
 Component
Lower Bearing
 Fluid
ESSO TERESSO ISO 68 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Non-ferrous Metals



▲ Additives



RECOMMENDATION

We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

PROBLEMATIC TEST RESULTS

| Sample Status | | | ABNORMAL | ATTENTION | ATTENTION |
|---------------|-----|---------------|----------|-----------|-----------|
| Lead | ppm | ASTM D5185(m) | >5 | ▲ 10 | ▲ 7 |
| Phosphorus | ppm | ASTM D5185(m) | 0.7 | ▲ 8 | ▲ 7 |

Customer Id: BRUTIV
 Sample No.: WC0871685
 Lab Number: 02603814
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
 Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|----------------------|--------|------|---------|--|
| Change Fluid | --- | --- | ? | We recommend that you drain the oil from the component if this has not already been done. |
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |
| Information Required | --- | --- | ? | NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. |
| Check Fluid Source | --- | --- | ? | Confirm the source of the lubricant being utilized for top-up/fill. |

HISTORICAL DIAGNOSIS

19 Jun 2023 Diag: Kevin Marson

WEAR



Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Lead ppm levels are noted. All other component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. The system and fluid cleanliness is acceptable. Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



17 Jan 2023 Diag: Bill Quesnel

ADDITIVES



Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



12 Jul 2022 Diag: Kevin Marson

ADDITIVES



Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. The system and fluid cleanliness is acceptable. Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

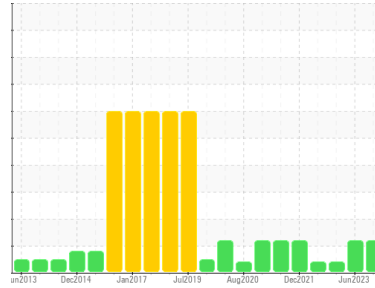
view report





OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Area
BRUCE A/2/71210
 Machine Id
2-71210-P3-PM Lo Brg Level
 Component
Lower Bearing
 Fluid
ESSO TERESSO ISO 68 (--- GAL)

DIAGNOSIS

Recommendation

We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear

Lead ppm levels are abnormal. Bearing wear is indicated.

Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. The system and fluid cleanliness is acceptable.

Fluid Condition

Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | WC0871685 | WC0801483 | WC0719048 |
| Sample Date | Client Info | | 30 Nov 2023 | 19 Jun 2023 | 17 Jan 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 | | | ABNORMAL | ATTENTION | ATTENTION |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185(m) >10 | 0 | 0 | 0 |
| Chromium | ppm | ASTM D5185(m) >5 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) >5 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185(m) >5 | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) >5 | <1 | <1 | <1 |
| Lead | ppm | ASTM D5185(m) >5 | ▲ 10 | ▲ 7 | 4 |
| Copper | ppm | ASTM D5185(m) >5 | <1 | 0 | 0 |
| Tin | ppm | ASTM D5185(m) >5 | 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) 4.5 | <1 | <1 | <1 |
| Barium | ppm | ASTM D5185(m) 0.4 | <1 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) 0 | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) 0 | 0 | <1 | 0 |
| Calcium | ppm | ASTM D5185(m) 0 | <1 | <1 | 0 |
| Phosphorus | ppm | ASTM D5185(m) 0.7 | ▲ 8 | ▲ 8 | ▲ 7 |
| Zinc | ppm | ASTM D5185(m) 0 | <1 | 2 | <1 |
| Sulfur | ppm | ASTM D5185(m) 1315 | 1113 | 1076 | 1138 |
| Lithium | ppm | ASTM D5185(m) | <1 | <1 | <1 |

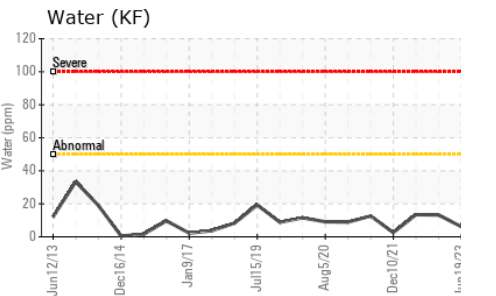
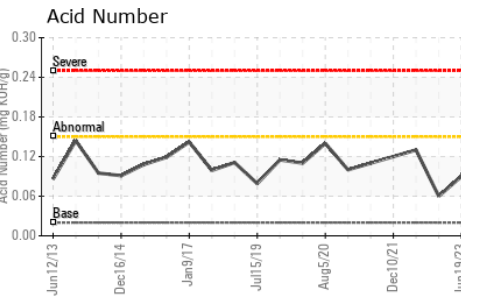
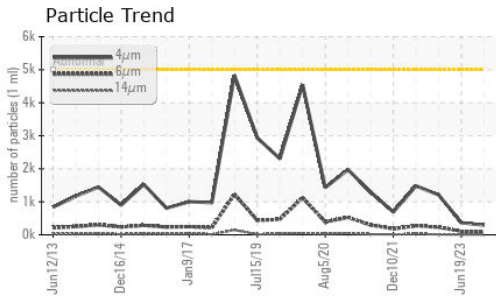
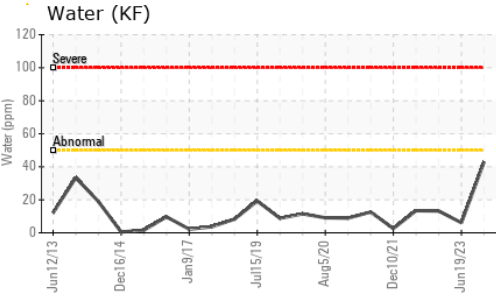
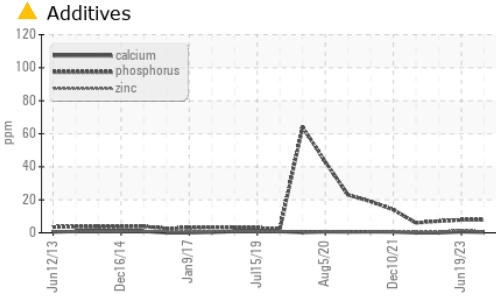
CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|--------------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185(m) >5 | 0 | 0 | 0 |
| Sodium | ppm | ASTM D5185(m) >5 | 0 | 0 | 0 |
| Potassium | ppm | ASTM D5185(m) >20 | 0 | 0 | 0 |
| Water | % | ASTM D6304* >0.005 | 0.004 | 0.001 | 0.001 |
| ppm Water | ppm | ASTM D6304* >50 | 43 | 6.1 | 13.2 |

FLUID CLEANLINESS

| | method | limit/base | current | history1 | history2 |
|-----------------|--------------|------------|-----------------|----------|----------|
| Particles >4µm | ASTM D7647 | >5000 | 293 | 366 | 1209 |
| Particles >6µm | ASTM D7647 | >1300 | 94 | 104 | 228 |
| Particles >14µm | ASTM D7647 | >320 | 9 | 9 | 14 |
| Particles >21µm | ASTM D7647 | >80 | 3 | 2 | 5 |
| Particles >38µm | ASTM D7647 | >20 | 1 | 0 | 0 |
| Particles >71µm | ASTM D7647 | >4 | 0 | 0 | 0 |
| Oil Cleanliness | ISO 4406 (c) | >19/17/15 | 15/14/10 | 16/14/10 | 17/15/11 |

OIL ANALYSIS REPORT

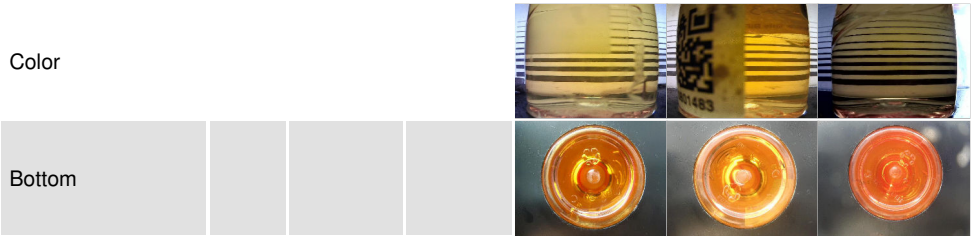


| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D974* | 0.02 | 0.15 | 0.09 | 0.06 |

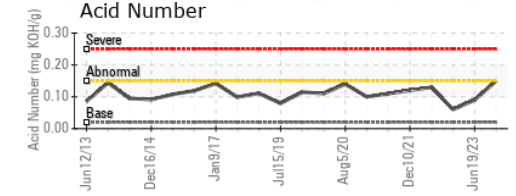
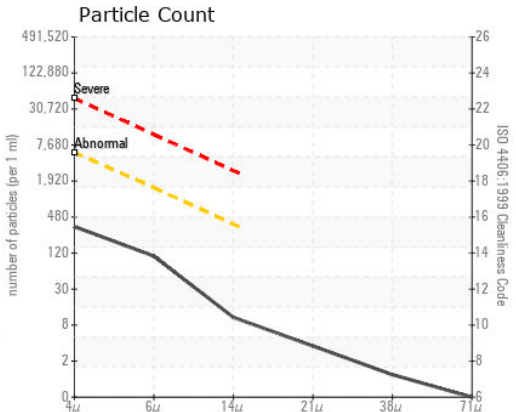
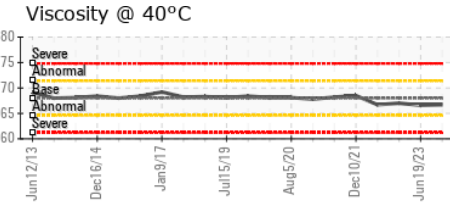
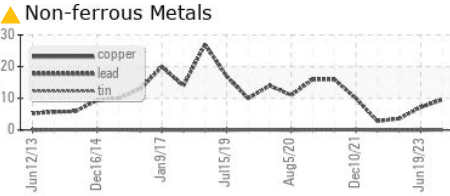
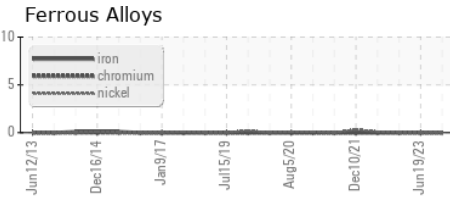
| VISUAL | | method | limit/base | current | history1 | history2 |
|------------------|--------|---------|------------|--------------|----------|----------|
| White Metal | scalar | Visual* | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | Visual* | NONE | NONE | NONE | NONE |
| Precipitate | scalar | 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* | >0.005 | NEG | NEG | NEG |
| Free Water | scalar | Visual* | | NEG | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|------------------|-----|---------------|------------|-------------|----------|----------|
| Visc @ 40°C | cSt | ASTM D7279(m) | 68 | 66.7 | 66.6 | 67.0 |

SAMPLE IMAGES



GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0871685 **Received** : 18 Dec 2023
Lab Number : **02603814** **Diagnosed** : 19 Dec 2023
Unique Number : 5696899 **Diagnostician** : Kevin Marson
Test Package : IND 2 (Additional Tests: TAN Man)

Bruce Power - Bruce A PdM
 P.O.Box 1540, 177 Tie Road., RM-222 U2 Column 2N11 615'
 Tiverton, ON
 CA N0G 2T0
 Contact: Pierre Adouki
 pierre.adouki@brucepower.com
 T: (519)361-2673
 F:

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.