

OIL ANALYSIS REPORT

Plant US1 Greenville Machine Id BNS-2 - Extruder

Component Gearbox Fluid SHELL OMALA 320 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. 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 no indication of any contamination in the oil.

Fluid Condition

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

Feb/024

Sample Rating Trend



NORMAL

| SAMPLE INFORM | IATION | method | limit/base | current | history1 | history2 | |
|------------------|----------|-------------|-------------|---------|----------|----------|--|
| Sample Number | | Client Info | TLC0001449 | | | | |
| Sample Date | | Client Info | 19 Feb 2024 | | | | |
| Machine Age | hrs | Client Info | 0 | | | | |
| Oil Age | hrs | Client Info | 0 | | | | |
| Oil Changed | | Client Info | N/A | | | | |
| Sample Status | | | | NORMAL | | | |
| CONTAMINATION | ۷ | method | limit/base | current | history1 | history2 | |
| Water | | WC Method | >0.2 | NEG | | | |
| WEAR METALS | | method | limit/base | current | history1 | history2 | |
| PQ | | ASTM D8184 | | 19 | | | |
| Iron | ppm | ASTM D5185m | >200 | 20 | | | |
| Chromium | ppm | ASTM D5185m | >15 | 0 | | | |
| Nickel | ppm | ASTM D5185m | >15 | <1 | | | |
| Titanium | ppm | ASTM D5185m | | 0 | | | |
| Silver | ppm | ASTM D5185m | | 0 | | | |
| Aluminum | ppm | ASTM D5185m | >25 | <1 | | | |
| Lead | ppm | ASTM D5185m | >100 | 0 | | | |
| Copper | ppm | ASTM D5185m | >200 | <1 | | | |
| Tin | ppm | | >25 | <1 | | | |
| Vanadium | ppm | ASTM D5185m | | 0 | | | |
| Cadmium | ppm | ASTM D5185m | | 0 | | | |
| ADDITIVES | | method | limit/base | current | history1 | history2 | |
| Boron | ppm | ASTM D5185m | 5.5 | 6 | | | |
| Barium | ppm | ASTM D5185m | 0.4 | 0 | | | |
| Molybdenum | ppm | ASTM D5185m | 0.5 | 0 | | | |
| Manganese | ppm | ASTM D5185m | | <1 | | | |
| Magnesium | ppm | ASTM D5185m | 23 | 1 | | | |
| Calcium | ppm | ASTM D5185m | 13 | 4 | | | |
| Phosphorus | ppm | ASTM D5185m | 450 | 283 | | | |
| Zinc | ppm | ASTM D5185m | 9.9 | 0 | | | |
| Sulfur | ppm | ASTM D5185m | 8181 | 13137 | | | |
| CONTAMINANTS | | method | limit/base | current | history1 | history2 | |
| Silicon | ppm | ASTM D5185m | >50 | 1 | | | |
| Sodium | ppm | ASTM D5185m | | <1 | | | |
| Potassium | ppm | ASTM D5185m | >20 | <1 | | | |
| FLUID DEGRADA | TION | method | limit/base | current | history1 | history2 | |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | 0.14 | | | |



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| Acid Number | | | VISUAL | | method | limit/base | current | history1 | history2 |
|--|-----------------|--|-------------------------|---|---|--|----------------------|---|---|
| 0.14 | | | White Metal | scalar | *Visual | NONE | NONE | | |
| (時代の) (時代の) (12- 0,10- 10- 10- 10- 10- 10- 10- 10- 10- 10- | | | Yellow Metal | scalar | *Visual | NONE | NONE | | |
| ਛ0.10 ਛ ਙ 0.08 | | | Precipitate | scalar | *Visual | NONE | NONE | | |
| | | | Silt | scalar | *Visual | NONE | NONE | | |
| B 0.04 | | | Debris | scalar | *Visual | NONE | NONE | | |
| 0.02 | | - | Sand/Dirt | scalar | *Visual | NONE | NONE | | |
| Feb 19/24 | | Feb19/24 | Appearance | scalar | *Visual | NORML | NORML | | |
| Feb | | er E | Odor | scalar | *Visual | NORML | NORML | | |
| Viscosity @ 40 | °C | | Emulsified Water | scalar | *Visual | >0.2 | NEG | | |
| 360 Abnormal | | | Free Water | scalar | *Visual | | NEG | | |
| 340 - | | | FLUID PROPER | TIES | method | limit/base | current | history1 | history2 |
| () 320 - Base | ***** | | Visc @ 40°C | cSt | ASTM D445 | 320 | 312 | | |
| 첑 300 280 - Abnormal | | | SAMPLE IMAGE | S | method | limit/base | current | history1 | history2 |
| 260 97/61/8 | | Feb 19/24 | Color | | | | | no image | no image |
| PQ 250 200 - Severe | | | Bottom | | | | | no image | no image |
| 150 문 100 - Abnormal | | | GRAPHS | | | | | | |
| | | - | Ferrous Alloys | | | | PQ | | |
| 50- | | | 20 iron | | | 220 | Smarn | | |
| 54 - 0 | | Č. | 15 - nessesses chromium | | | 200 | Severe | | |
| Feb 19/24 | | Cult 10/ | | | | 180 | | | |
| _ | | - | 5 - | | | 160- | | | |
| | | | | | | | | | |
| | | | Feb 19/24 | | | 20 Feb19/24 | | | |
| | | | ۳ Non-ferrous Meta | de | | 윤 문 100- | Abnormal | | - |
| | | | ¹⁰ T | | | 80 | | | |
| | | | 8 - copper | | | 60 | | | |
| | | | E 6 | | | 40 | | | |
| | | | 4 4 | | | | | | |
| | | | | | | 20 | | | |
| | | | Feb19/24 | | | Feb19/24 | 74 | | /24 + |
| | | | Feb1 | | | Feb 1 | Feb19/2 | | Feb19/24 |
| | | | Viscosity @ 40°C | | | | Acid Number | | |
| | | | 360 Abnormal 340 | | | ^{€0.15} | Τ. | | |
| | | | | | | 90.10 | - | | |
| | | St (40° | 320 - Base 300 | | | .15. 0.10 varied Mumber varied Varied Mumber varied Mumber varied Varied Mumber varied Varied Mumber varied Varied Mumber varied Varied Mumber varied Varied | | | |
| | | | 280 - Abnormal | | | E 0.05 | | | |
| | | | 260 | | | 0.00 | L | | |
| | | | 19/2 | | | Feb 19/24 | Feb 19/24 | | Feb19/24 |
| | | | -a- | | | E | Ш. | | Fel |
| | * - Denotes tes | Sample No. : Lab Number : Unique Number : Test Package : s sample report, c st methods that a | 10896786 | Recei Teste Diagr vice at 1-8 17025 sco | ived : 23 id : 26 nosed : 26 800-237-1369 ope of accred | 3 Feb 2024 5 Feb 2024 5 Feb 2024 - Wo 9. Jitation. | 140 es Davis r | 01 ANTIOCH C Contact: N hicolas.jackson | LE US 1 JN DOCK HURCH ROAD Greenville, SC US 29605 Jicolas Jackson @michelin.com T: F: |