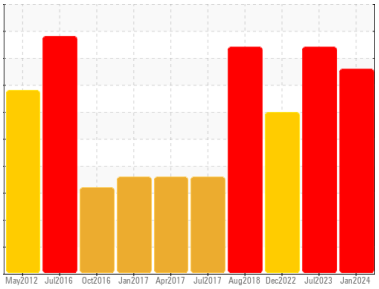
# PROBLEM SUMMARY

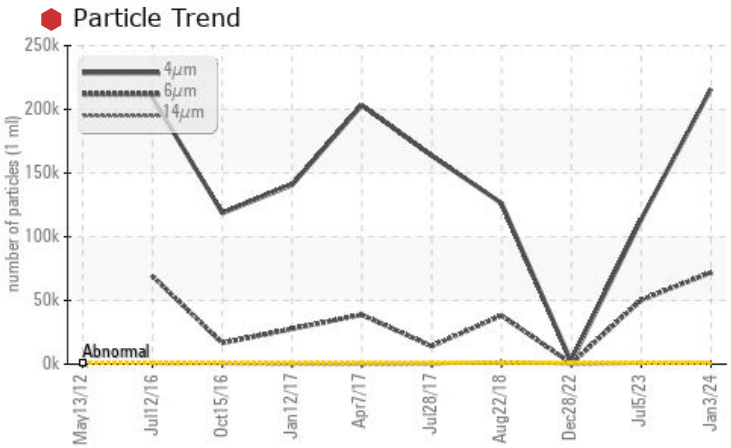
Sample Rating Trend




ISO

Area
**54 LIME KILN**
Machine Id
**542508 - Kiln ID Fan NDE- Outboard Bearing**
Component
**Outboard Bearing**
Fluid
**ESSO NUTO H ISO 68 (--- GAL)**

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | SEVERE | SEVERE | ABNORMAL |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >640 | **215951** | 113617 | 1719 |
| Particles >6µm | | ASTM D7647 | >160 | **71895** | 50264 | 538 |
| Particles >14µm | | ASTM D7647 | >20 | **763** | 623 | 66 |
| Particles >21µm | | ASTM D7647 | >4 | **48** | 79 | 20 |
| Oil Cleanliness | | ISO 4406 (c) | >16/14/11 | **25/23/17** | 24/23/16 | 18/16/13 |

**Customer Id:** STANAC
**Sample No.:** WC
**Lab Number:** 02607522
**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 Filter | --- | --- | ? | We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. |
| Resample | --- | --- | ? | Resample in 30-45 days to monitor this situation. |
| Information Required | --- | --- | ? | NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. |
| Check Breathers | --- | --- | ? | The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. |
| Check Dirt Access | --- | --- | ? | We advise that you check all areas where contaminants can enter the system. |
| Filter Fluid | --- | --- | ? | We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. |

## HISTORICAL DIAGNOSIS

ISO

**05 Jul 2023 Diag: Kevin Marson**

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.Copper ppm levels are noted. All other component wear rates are normal. There is a high amount of particulates (2 to 100 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

WATER

**28 Dec 2022 Diag: Kevin Marson**

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. We advise that you check all areas where dirt can enter the system. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We advise that you follow the water drain-off procedure for this component. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.Copper ppm levels are abnormal. Bearing wear is indicated. Silicon ppm levels are abnormally high. Oil Cleanliness are abnormally high. Particles >14µm are abnormally high. Particles >21µm are abnormally high. Particles >4µm are abnormally high. Particles >6µm are abnormally high. Free water present. Elemental level of silicon (Si) above normal indicating ingress of seal material. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

ISO

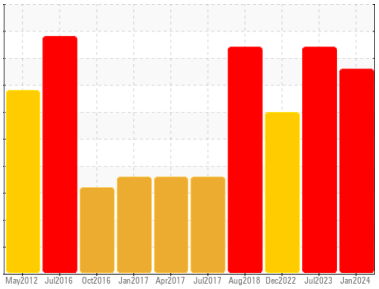
**22 Aug 2018 Diag: Kevin Marson**

Check seals and/or filters for points of contaminant entry. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. Particles >14µm are severely high. Particles >21µm are severely high. Particles >6µm are severely high. Particles >4µm are severely high. Silicon ppm levels are abnormally high. Elemental level of silicon (Si) above normal indicating ingress of seal material. The water content is negligible. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Area
**54 LIME KILN**
Machine Id
**542508 - Kiln ID Fan NDE- Outboard Bearing**
Component
**Outboard Bearing**
Fluid
**ESSO NUTO H ISO 68 (--- GAL)**

## DIAGNOSIS

**Recommendation**

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. 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 high amount of particulates (2 to 100 microns in size) present in the oil. The water content is negligible. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

**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 INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC** | WC | WC |
| Sample Date | | Client Info | | **03 Jan 2024** | 05 Jul 2023 | 28 Dec 2022 |
| Machine Age | days | Client Info | | **0** | 0 | 0 |
| Oil Age | days | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **SEVERE** | SEVERE | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| PQ | | ASTM D8184* | | **0** | 0 | 4 |
| Iron | ppm | ASTM D5185(m) | >84 | **7** | 12 | 31 |
| Chromium | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >3 | **0** | 0 | <1 |
| Titanium | ppm | ASTM D5185(m) | | **0** | 0 | <1 |
| Silver | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >3 | **<1** | <1 | 1 |
| Lead | ppm | ASTM D5185(m) | >143 | **5** | 19 | 52 |
| Copper | ppm | ASTM D5185(m) | >13 | **7** | ▲ 17 | ▲ 26 |
| Tin | ppm | ASTM D5185(m) | >41 | **0** | <1 | 3 |
| Antimony | ppm | ASTM D5185(m) | | **0** | <1 | 4 |
| Vanadium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |

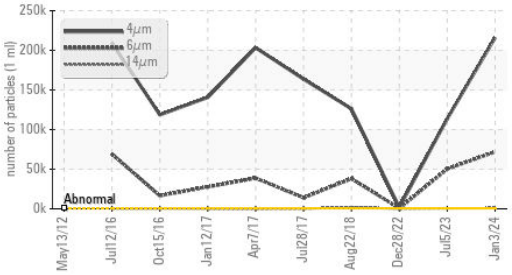
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 0 | **0** | <1 | <1 |
| Barium | ppm | ASTM D5185(m) | 0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 0 | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) | | **0** | 0 | <1 |
| Magnesium | ppm | ASTM D5185(m) | 5 | **<1** | <1 | 1 |
| Calcium | ppm | ASTM D5185(m) | 50 | **58** | 59 | 136 |
| Phosphorus | ppm | ASTM D5185(m) | 330 | **316** | 367 | 361 |
| Zinc | ppm | ASTM D5185(m) | 420 | **396** | 428 | 414 |
| Sulfur | ppm | ASTM D5185(m) | 3100 | **7104** | 6245 | 7196 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >15 | **3** | 11 | ▲ 37 |
| Sodium | ppm | ASTM D5185(m) | | **<1** | 2 | 5 |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | <1 | <1 |
| Water | % | ASTM D6304* | >2 | **0.011** | --- | 0.007 |
| ppm Water | ppm | ASTM D6304* | | **116** | --- | 71.6 |

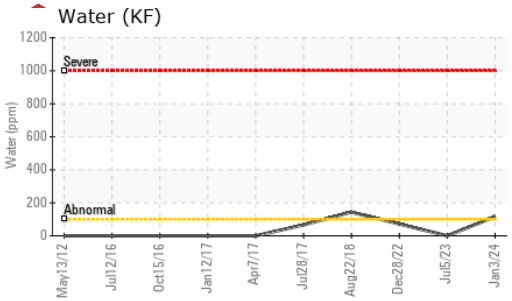
| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >640 | **215951** | 113617 | ▲ 1719 |
| Particles >6µm | | ASTM D7647 | >160 | **71895** | 50264 | ▲ 538 |
| Particles >14µm | | ASTM D7647 | >20 | **763** | 623 | ▲ 66 |
| Particles >21µm | | ASTM D7647 | >4 | **48** | 79 | ▲ 20 |
| Particles >38µm | | ASTM D7647 | >3 | **1** | 4 | 0 |
| Particles >71µm | | ASTM D7647 | >3 | **1** | 1 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >16/14/11 | **25/23/17** | 24/23/16 | ▲ 18/16/13 |

# OIL ANALYSIS REPORT

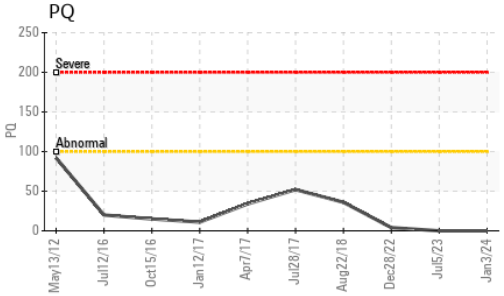
Particle Trend



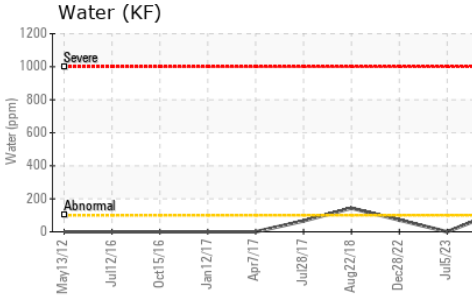

Water (KF)



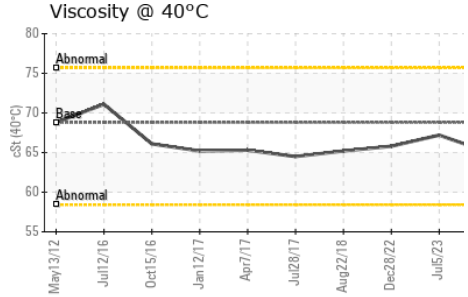

PQ




Water (KF)




Viscosity @ 40°C

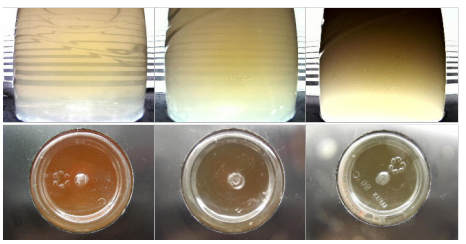



| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974* | .40 | **0.42** | 0.46 | 0.41 |

| 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 | VLITE |
| Silt | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Debris | scalar | Visual* | NONE | **NONE** | VLITE | NONE |
| Sand/Dirt | scalar | Visual* | NONE | **NONE** | NONE | VLITE |
| Appearance | scalar | Visual* | NORML | **NORML** | NORML | NORML |
| Odor | scalar | Visual* | NORML | **NORML** | NORML | NORML |
| Emulsified Water | scalar | Visual* | >2 | **.2%** | NEG | .2% |
| Free Water | scalar | Visual* | | **NEG** | NEG | ▲ 1% |

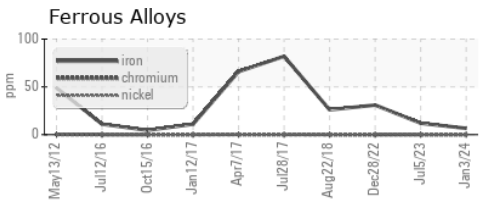
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D7279(m) | 68.8 | **65.1** | 67.2 | 65.8 |

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

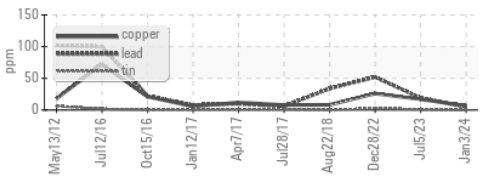


## GRAPHS

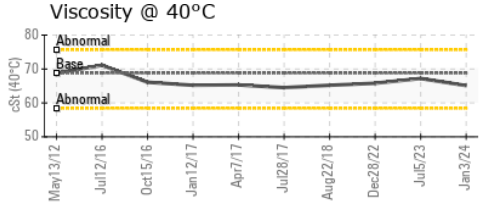
Ferrous Alloys



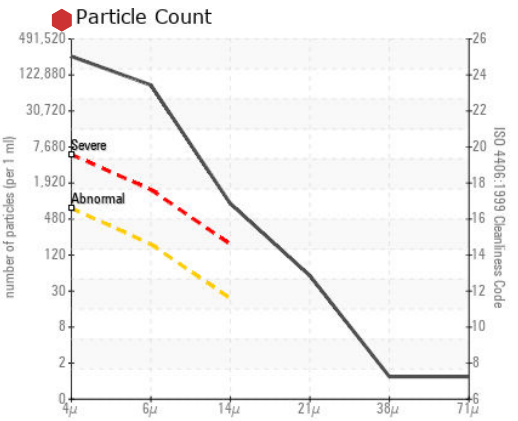

Non-ferrous Metals



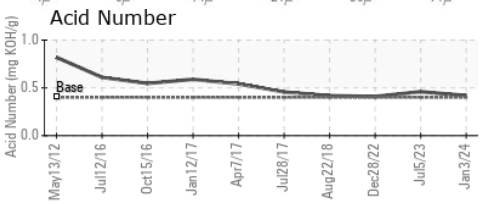

Viscosity @ 40°C




Particle Count




Acid Number




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : WC **Recieved** : 09 Jan 2024
**Lab Number** : 02607522 **Diagnosed** : 12 Jan 2024
**Unique Number** : 5708608 **Diagnostician** : Kevin Marson
**Test Package** : IND 2 ( Additional Tests: KF, PQ, PrtCount )

*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.*


**AV GROUP NB INC.**
103 PINDER ROAD,, NACKAWIC MILL
NACKAWIC, NB
CA E6G 1W4
Contact: Basil Fadulalla
basil.fadulalla@adityabirla.com
T:
F: