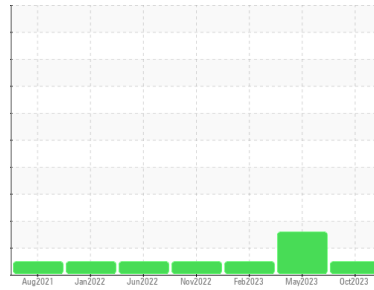




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
BUSCH 12 TMS L-4 (S/N 5601903)

Component
Pump
Fluid
USPI VAC 100 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

Fluid Condition

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

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | USPM29838 | USPM28305 | USPM26589 |
| Sample Date | Client Info | | 02 Oct 2023 | 25 May 2023 | 16 Feb 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 | | | NORMAL | MARGINAL | NORMAL |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|-----------------|----------|----------|----------|
| Iron | ppm | ASTM D5185m >90 | 1 | 0 | 0 |
| Chromium | ppm | ASTM D5185m >5 | 0 | <1 | 0 |
| Nickel | ppm | ASTM D5185m >5 | 0 | <1 | 0 |
| Titanium | ppm | ASTM D5185m >3 | 0 | <1 | 0 |
| Silver | ppm | ASTM D5185m >3 | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185m >7 | 0 | 1 | 0 |
| Lead | ppm | ASTM D5185m >12 | 0 | <1 | 0 |
| Copper | ppm | ASTM D5185m >30 | 0 | <1 | 0 |
| Tin | ppm | ASTM D5185m >9 | 0 | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | 0 | <1 | 0 |
| 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 | <1 | 0 |
| Manganese | ppm | ASTM D5185m | 0 | <1 | 0 |
| Magnesium | ppm | ASTM D5185m 0 | <1 | 4 | <1 |
| Calcium | ppm | ASTM D5185m 0 | <1 | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m 1800 | 1074 | 1169 | 1185 |
| Zinc | ppm | ASTM D5185m 0 | 0 | 0 | 0 |
| Sulfur | ppm | ASTM D5185m 0 | 10 | 0 | 7 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|------------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m >60 | 20 | 17 | 16 |
| Sodium | ppm | ASTM D5185m | 0 | <1 | 0 |
| Potassium | ppm | ASTM D5185m >20 | <1 | <1 | <1 |
| Water | % | ASTM D6304 >.1 | 0.085 | ▲ 0.103 | 0.028 |
| ppm Water | ppm | ASTM D6304 >1000 | 853.4 | ▲ 1033.2 | 286.1 |

FLUID CLEANLINESS

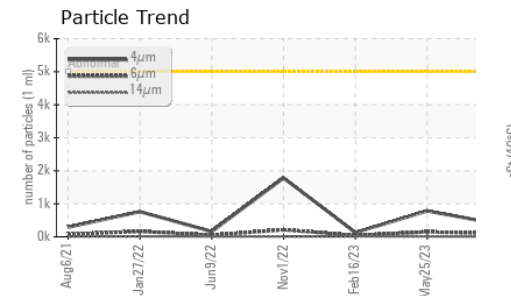
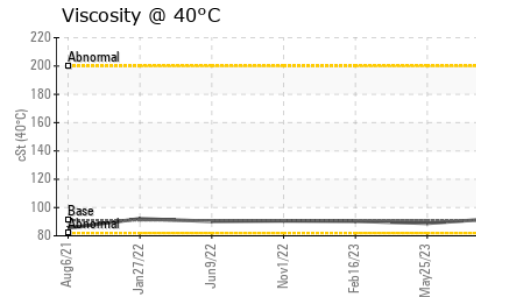
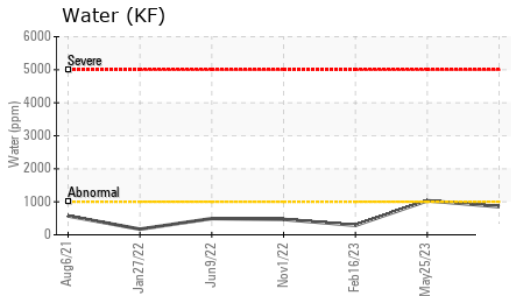
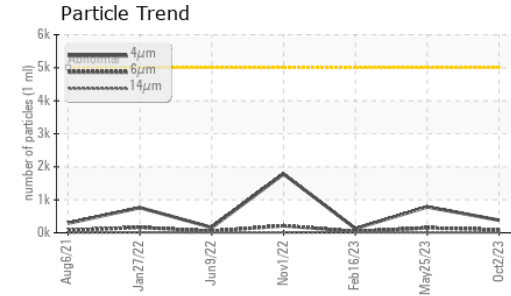
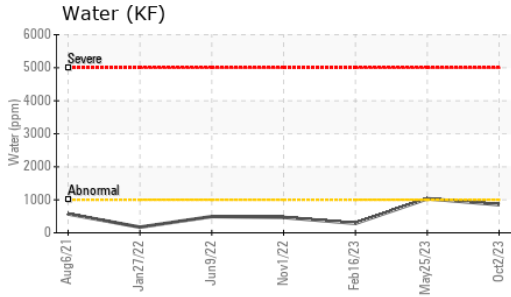
| | method | limit/base | current | history1 | history2 |
|-----------------|--------------|------------|-----------------|----------|----------|
| Particles >4µm | ASTM D7647 | >5000 | 382 | 784 | 130 |
| Particles >6µm | ASTM D7647 | >1300 | 93 | 149 | 41 |
| Particles >14µm | ASTM D7647 | >160 | 9 | 9 | 11 |
| Particles >21µm | ASTM D7647 | >40 | 3 | 2 | 5 |
| Particles >38µm | ASTM D7647 | >10 | 1 | 1 | 0 |
| Particles >71µm | ASTM D7647 | >3 | 0 | 1 | 0 |
| Oil Cleanliness | ISO 4406 (c) | >19/17/14 | 16/14/10 | 17/14/10 | 14/13/11 |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 0.05 | 0.42 | 0.30 | 0.19 |



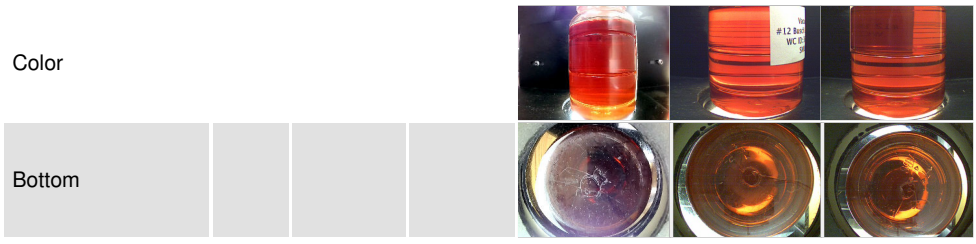
OIL ANALYSIS REPORT



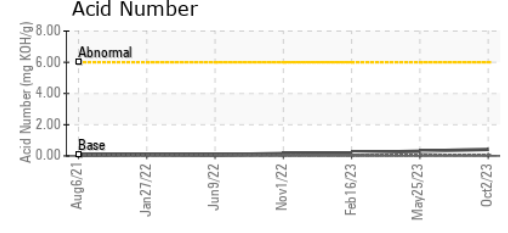
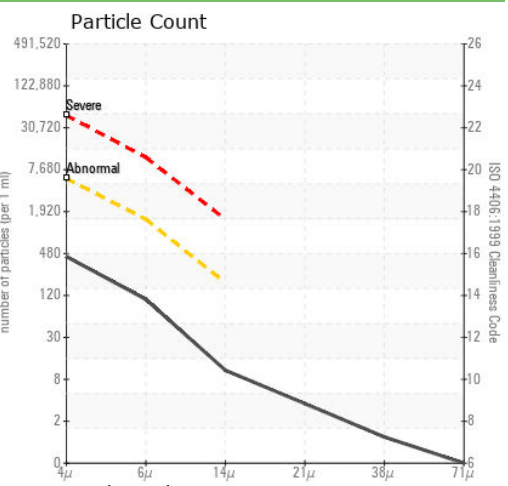
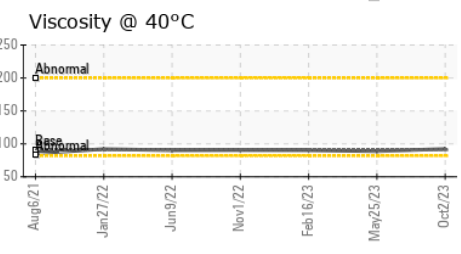
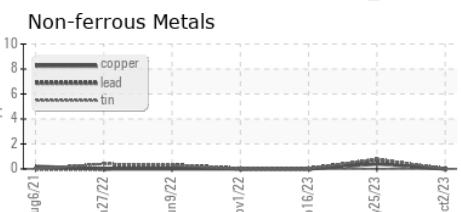
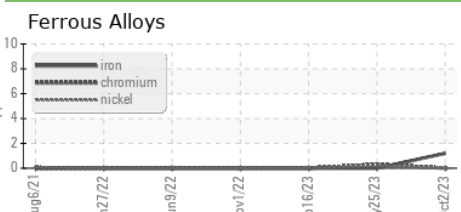
| VISUAL | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|--------------|----------|-------|
| White Metal | scalar | *Visual | NONE | LIGHT | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate | scalar | *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 | >.1 | NEG | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|--------------|-------------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 91 | 92.3 | 88.8 | 90.3 |

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



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : USPM29838 **Received** : 03 Oct 2023
Lab Number : **05967832** **Diagnosed** : 04 Oct 2023
Unique Number : 10674383 **Diagnostician** : Doug Bogart
Test Package : IND 2

SMITHFIELD - LINCOLN
 200 S 2ND ST
 LINCOLN, NE
 US 68508
 Contact: Service Manager

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)

T:
F: