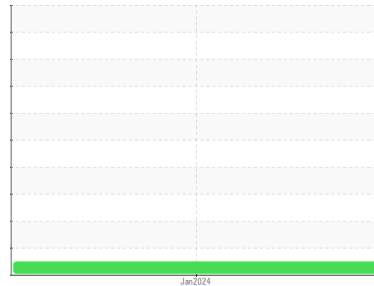




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
LINDE 5254
 Component
Diesel Engine
 Fluid
{not provided} (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|----------|----------|
| Sample Number | Client Info | | PE0002458 | --- | --- |
| Sample Date | Client Info | | 03 Jan 2024 | --- | --- |
| Machine Age | hrs | Client Info | 21485 | --- | --- |
| Oil Age | hrs | Client Info | 300 | --- | --- |
| Oil Changed | Client Info | | N/A | --- | --- |
| Sample Status | | | NORMAL | --- | --- |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|------------|----------|----------|
| Water | WC Method | >0.2 | NEG | --- | --- |
| Glycol | WC Method | | NEG | --- | --- |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >100 | 42 | --- | --- |
| Chromium | ppm | ASTM D5185m >20 | 1 | --- | --- |
| Nickel | ppm | ASTM D5185m >4 | <1 | --- | --- |
| Titanium | ppm | ASTM D5185m | <1 | --- | --- |
| Silver | ppm | ASTM D5185m >3 | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m >20 | 7 | --- | --- |
| Lead | ppm | ASTM D5185m >40 | <1 | --- | --- |
| Copper | ppm | ASTM D5185m >330 | 7 | --- | --- |
| Tin | ppm | ASTM D5185m >15 | <1 | --- | --- |
| Vanadium | ppm | ASTM D5185m | <1 | --- | --- |
| Cadmium | ppm | ASTM D5185m | <1 | --- | --- |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|-------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | <1 | --- | --- |
| Barium | ppm | ASTM D5185m | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | 293 | --- | --- |
| Manganese | ppm | ASTM D5185m | <1 | --- | --- |
| Magnesium | ppm | ASTM D5185m | 20 | --- | --- |
| Calcium | ppm | ASTM D5185m | 3078 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | 887 | --- | --- |
| Zinc | ppm | ASTM D5185m | 1050 | --- | --- |
| Sulfur | ppm | ASTM D5185m | 3641 | --- | --- |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|------------|----------|----------|
| Silicon | ppm | ASTM D5185m >25 | 10 | --- | --- |
| Sodium | ppm | ASTM D5185m | 6 | --- | --- |
| Potassium | ppm | ASTM D5185m >20 | 2 | --- | --- |
| Fuel | % | ASTM D3524 >5 | 0.5 | --- | --- |

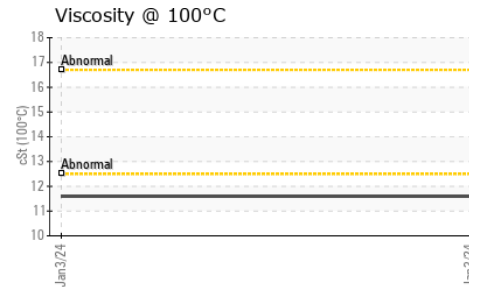
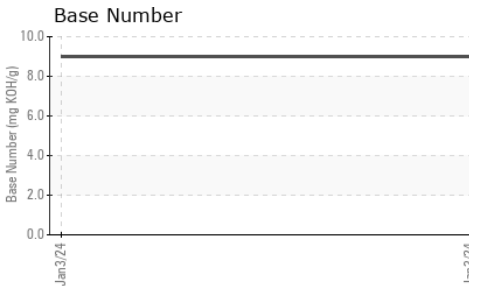
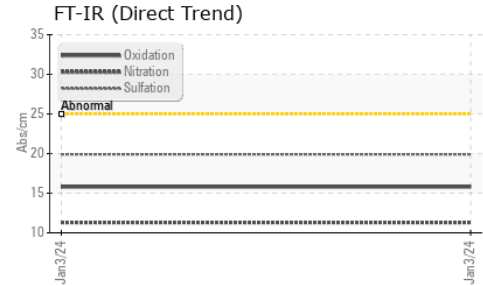
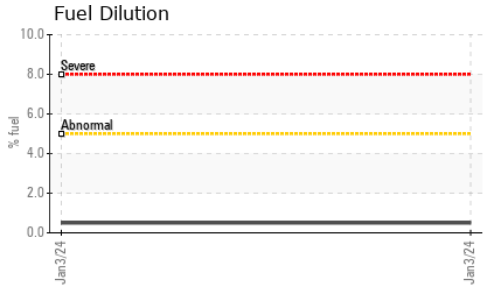
INFRA-RED

| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >3 | 0.5 | --- | --- |
| Nitration | Abs/cm | *ASTM D7624 >20 | 11.3 | --- | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 19.9 | --- | --- |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 >25 | 15.8 | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.0 | --- | --- |

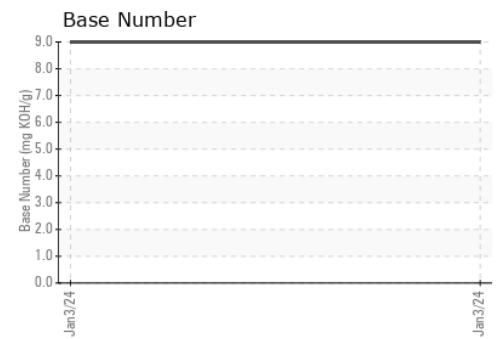
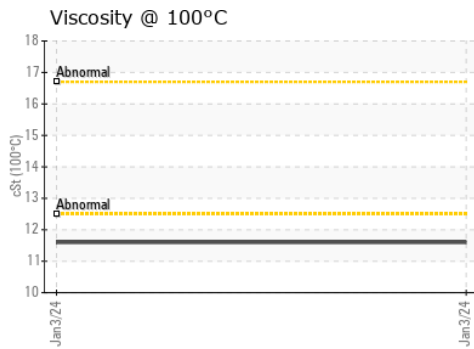
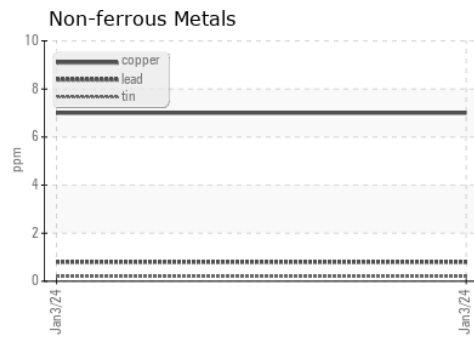
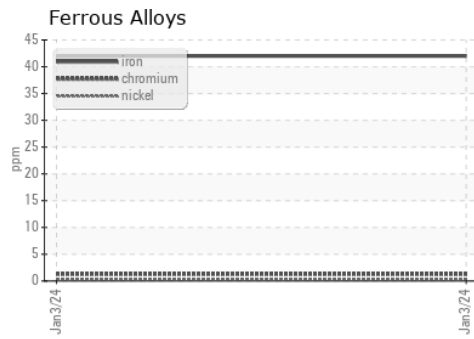
OIL ANALYSIS REPORT



| VISUAL | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|----------|----------|-----|
| White Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Precipitate | scalar | *Visual | NONE | NONE | --- | --- |
| Silt | scalar | *Visual | NONE | NONE | --- | --- |
| Debris | scalar | *Visual | NONE | NONE | --- | --- |
| Sand/Dirt | scalar | *Visual | NONE | NONE | --- | --- |
| Appearance | scalar | *Visual | NORML | NORML | --- | --- |
| Odor | scalar | *Visual | NORML | NORML | --- | --- |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | --- | --- |
| Free Water | scalar | *Visual | | NEG | --- | --- |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 11.6 | --- | --- |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0002458 **Received** : 04 Apr 2024
Lab Number : 06138276 **Tested** : 08 Apr 2024
Unique Number : 10963084 **Diagnosed** : 08 Apr 2024 - Sean Felton
Test Package : CONST (Additional Tests: FT-IR, FuelDilution, ICP, KV100, PercentFuel, SCF, Na+BN)

ALTA FOREST PRODUCTS
 7127 US HWY 101
 AMANDA PARK, WA
 US 98526
 Contact: ROGER TJEPKEMA
 Rogertjepkema@altafp.com

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)