# OIL ANALYSIS REPORT

Sample Rating Trend


**WEAR**

Machine Id
## JOHN DEERE 644P 1DW644PAANLZ15485
Component
**Rear Differential**
Fluid
**JOHN DEERE HY-GARD HYD/TRANS (6 GAL)**

## DIAGNOSIS

**Recommendation**
We recommend that you drain the oil from the component if this has not already been done. Resample at the next service interval to monitor.

**Wear**
Bearing and/or bushing wear is indicated.

**Contamination**
There is no indication of any contamination in the oil.

**Fluid Condition**
The AN level is acceptable for this fluid.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **PCA0118286** | PCA0105136 | PCA0096410 |
| Sample Date | | Client Info | | **23 Apr 2024** | 12 Mar 2024 | 04 Oct 2023 |
| Machine Age | hrs | Client Info | | **4061** | 3855 | 2000 |
| Oil Age | hrs | Client Info | | **206** | 1855 | 2000 |
| Oil Changed | | Client Info | | **N/A** | Changed | Changed |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >.2 | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >500 | **68** | 67 | 36 |
| Chromium | ppm | ASTM D5185m | >10 | **<1** | <1 | 0 |
| Nickel | ppm | ASTM D5185m | >10 | **<1** | <1 | <1 |
| Titanium | ppm | ASTM D5185m | | **<1** | <1 | 0 |
| Silver | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Aluminum | ppm | ASTM D5185m | >25 | **2** | 1 | <1 |
| Lead | ppm | ASTM D5185m | >25 | ▲ **77** | ▲ 73 | ▲ 47 |
| Copper | ppm | ASTM D5185m | >100 | ▲ **142** | ▲ 114 | ▲ 82 |
| Tin | ppm | ASTM D5185m | >10 | **5** | 6 | 6 |
| Vanadium | ppm | ASTM D5185m | | **<1** | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | **<1** | <1 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 6 | **26** | 14 | 5 |
| Barium | ppm | ASTM D5185m | 0 | **0** | <1 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0 | **<1** | <1 | 0 |
| Manganese | ppm | ASTM D5185m | | **1** | 2 | <1 |
| Magnesium | ppm | ASTM D5185m | 145 | **77** | 91 | 97 |
| Calcium | ppm | ASTM D5185m | 3570 | **3069** | 3168 | 3194 |
| Phosphorus | ppm | ASTM D5185m | 1290 | **1110** | 1172 | 1078 |
| Zinc | ppm | ASTM D5185m | 1640 | **1234** | 1253 | 1243 |
| Sulfur | ppm | ASTM D5185m | | **4175** | 4191 | 3544 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >75 | **9** | 9 | 7 |
| Sodium | ppm | ASTM D5185m | | **0** | 5 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | **3** | 3 | 1 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 1.8 | **0.99** | 1.02 | --- |

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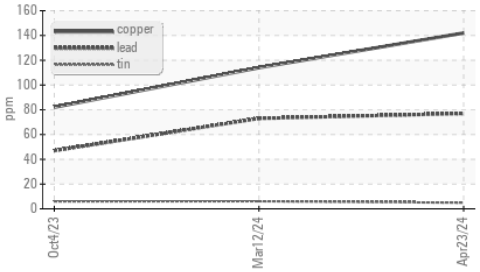
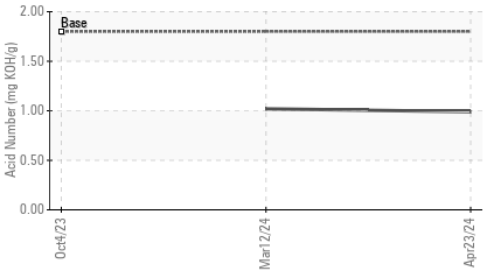
OIL DIAGNOSTICS

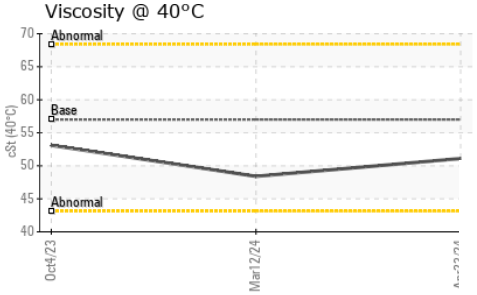
Non-ferrous Metals




Acid Number




Viscosity @ 40°C



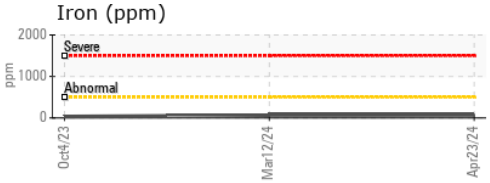

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **LIGHT** | 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 | >.2 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 57.0 | **51.1** | 48.4 | 53.1 |

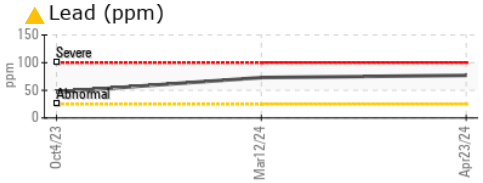
| SAMPLE IMAGES | | | | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Color | | | | *no image* | *no image* | *no image* |
| Bottom | | | | *no image* | *no image* | *no image* |

## GRAPHS

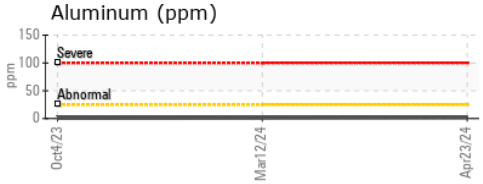
Iron (ppm)



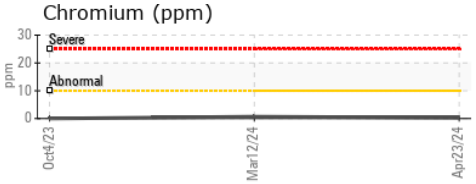

Lead (ppm)



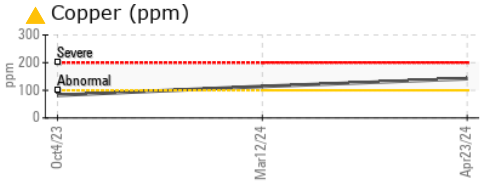

Aluminum (ppm)



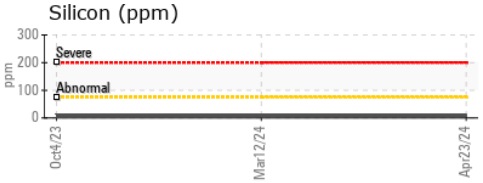

Chromium (ppm)



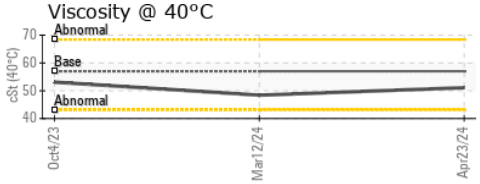

Copper (ppm)



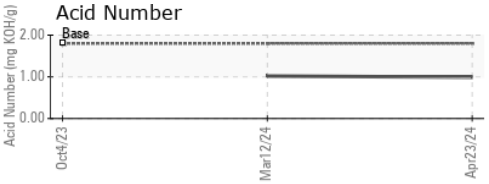

Silicon (ppm)




Viscosity @ 40°C




Acid Number




ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PCA0118286
**Lab Number** : 06177829
**Unique Number** : 11029155
**Test Package** : MOB 2

**Received** : 13 May 2024
**Tested** : 14 May 2024
**Diagnosed** : 15 May 2024 - Angela Borella

*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)*

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Report Id: CENOAK [WUSCAR] 06177829 (Generated: 05/15/2024 17:40:35) Rev: 2

Submitted By: LAB TECH