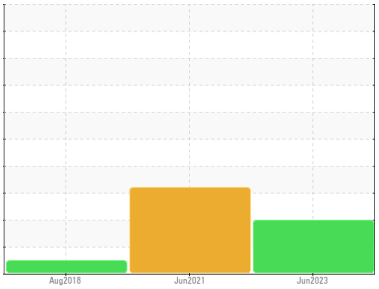
# PROBLEM SUMMARY

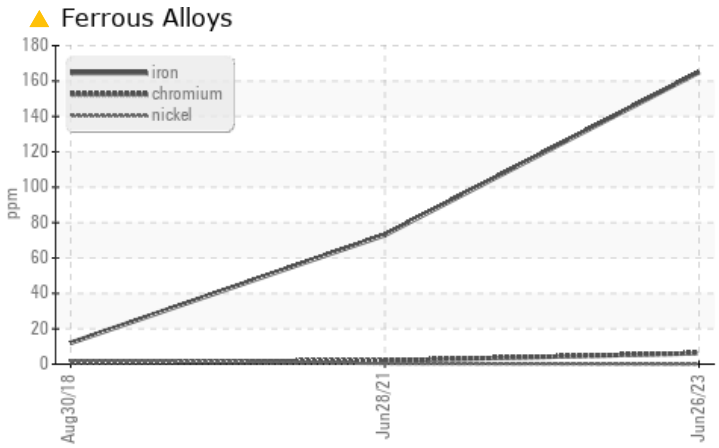
Sample Rating Trend




**DEGRADATION**

Machine Id
**7811621**
Component
**Diesel Engine**
Fluid
**DIESEL ENGINE OIL SAE 10W30 (--- GAL)**

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

We recommend that you drain the oil and perform a filter service on this component if not already done. Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | **ABNORMAL** | ABNORMAL | NORMAL |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | ▲ **165** | 73 | 12 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | ▲ **1.5** | 6.2 | 10 |

**Customer Id:** IDENORGA
**Sample No.:** IL05904088
**Lab Number:** 05904088
**Test Package:** FLEET

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Doug Bogart +1 (800)237-1369 x4016
dougb@wearcheckusa.com

*To change component or sample information:*
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Change Fluid | --- | --- | ? | We recommend that you drain the oil and perform a filter service on this component if not already done. |
| Change Filter | --- | --- | ? | We recommend that you drain the oil and perform a filter service on this component if not already done. |

## HISTORICAL DIAGNOSIS

**28 Jun 2021 Diag: Jonathan Hester**

**GLYCOL**

No corrective action is recommended at this time. Resample at the next service interval to monitor.The aluminum level is abnormal. All other component wear rates are normal. Sodium and/or potassium levels are high. Light fuel dilution occurring. Test for glycol is negative. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

**view report**

**30 Aug 2018 Diag: Wes Davis**

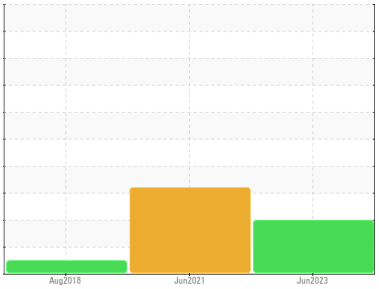
**NORMAL**

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

**view report**

# OIL ANALYSIS REPORT

Sample Rating Trend




**DEGRADATION**

Machine Id
**7811621**
Component
**Diesel Engine**
Fluid
**DIESEL ENGINE OIL SAE 10W30 (--- GAL)**

## DIAGNOSIS

**▲ Recommendation**
We recommend that you drain the oil and perform a filter service on this component if not already done. Resample at the next service interval to monitor.

**▲ Wear**
Cylinder, crank, or cam shaft wear is indicated.

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

**▲ Fluid Condition**
The BN level is low. The oil is no longer serviceable.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **IL05904088** | IL05291071 | IL04575078 |
| Sample Date | | Client Info | | **26 Jun 2023** | 28 Jun 2021 | 30 Aug 2018 |
| Machine Age | mls | Client Info | | **289683** | 0 | 0 |
| Oil Age | mls | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | ▲ 2.6 | <1.0 |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | ▲ **165** | 73 | 12 |
| Chromium | ppm | ASTM D5185m | >20 | **6** | 2 | 1 |
| Nickel | ppm | ASTM D5185m | >4 | **0** | <1 | 2 |
| Titanium | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **6** | ▲ 23 | 2 |
| Lead | ppm | ASTM D5185m | >40 | **13** | <1 | 2 |
| Copper | ppm | ASTM D5185m | >330 | **6** | 6 | <1 |
| Tin | ppm | ASTM D5185m | >15 | **2** | <1 | 0 |
| Antimony | ppm | ASTM D5185m | | **---** | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | <1 |

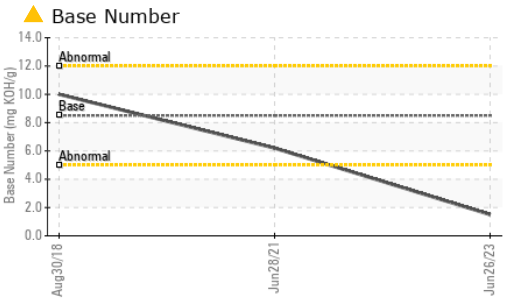
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 250 | **29** | 35 | 21 |
| Barium | ppm | ASTM D5185m | 10 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 100 | **19** | 14 | 51 |
| Manganese | ppm | ASTM D5185m | | **3** | 1 | <1 |
| Magnesium | ppm | ASTM D5185m | 450 | **685** | 706 | 514 |
| Calcium | ppm | ASTM D5185m | 3000 | **1523** | 1425 | 1828 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **734** | 752 | 1072 |
| Zinc | ppm | ASTM D5185m | 1350 | **890** | 893 | 1197 |
| Sulfur | ppm | ASTM D5185m | 4250 | **3075** | 2476 | 2752 |

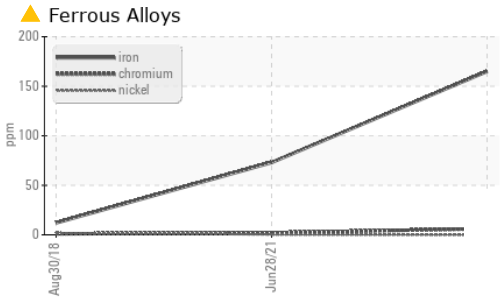
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **18** | 14 | 6 |
| Sodium | ppm | ASTM D5185m | | **6** | 4 | 5 |
| Potassium | ppm | ASTM D5185m | >20 | **5** | ▲ 43 | 8 |

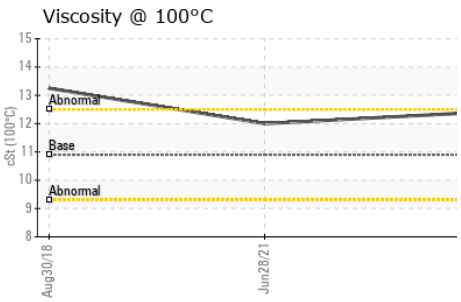
| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.7** | 1.9 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **22.0** | 14.2 | 9.5 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **38.0** | 32.3 | 23.3 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **54.5** | 25.9 | 21.6 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | ▲ **1.5** | 6.2 | 10 |

# OIL ANALYSIS REPORT



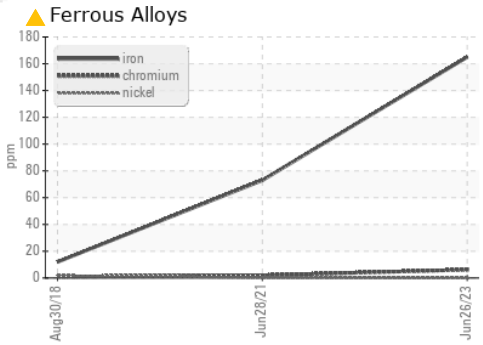



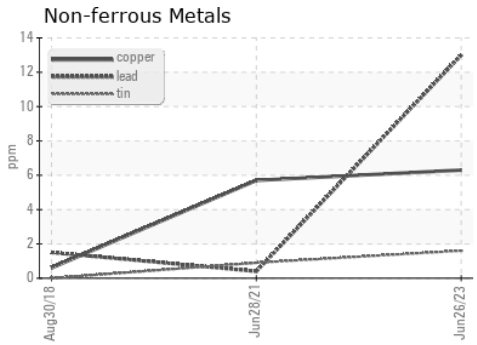



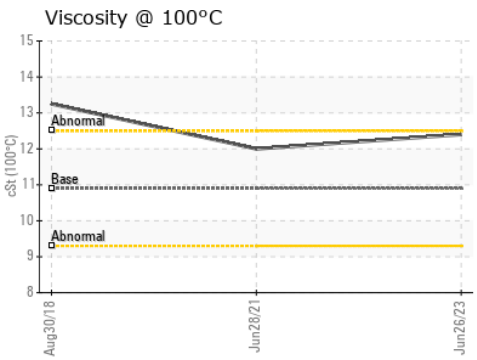

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

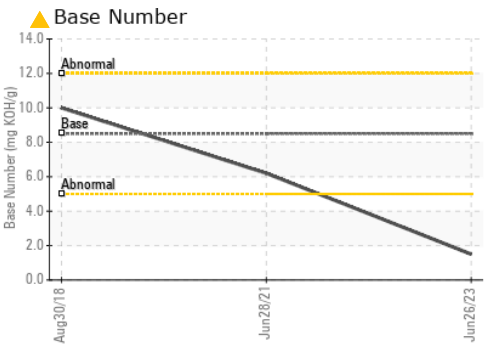
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 10.9 | **12.4** | ▲ 12.0 | 13.25 |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : IL05904088
**Lab Number** : 05904088
**Unique Number** : 10565444
**Test Package** : FLEET

**Received** : 21 Jul 2023
**Diagnosed** : 01 Aug 2023
**Diagnostician** : Doug Bogart

**IDEALEASE-NORCROSS**
4571 NORTH BUFORD HWY
NORCROSS, GA
US 30071-2808
Contact: RICK MARKS

*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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