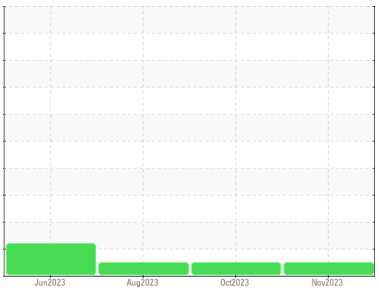
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
## CATERPILLAR 745D 13393 (S/N 3T605704)
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON XL SYN BLEND 15W40 (--- 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.

**Fluid Condition**
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0831276** | WC0831288 | WC0837123 |
| Sample Date | | Client Info | | **17 Nov 2023** | 02 Oct 2023 | 01 Aug 2023 |
| Machine Age | hrs | Client Info | | **1915** | 1526 | 1041 |
| Oil Age | hrs | Client Info | | **389** | 485 | 545 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | **NEG** | NEG | NEG |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **20** | 31 | 35 |
| Chromium | ppm | ASTM D5185m | >20 | **<1** | 2 | 2 |
| Nickel | ppm | ASTM D5185m | >2 | **0** | <1 | 0 |
| Titanium | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | **1** | 0 | 1 |
| Lead | ppm | ASTM D5185m | >40 | **<1** | 3 | 2 |
| Copper | ppm | ASTM D5185m | >330 | **8** | 47 | 181 |
| Tin | ppm | ASTM D5185m | >15 | **0** | <1 | 1 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 1 | **1** | 2 | 2 |
| Barium | ppm | ASTM D5185m | 1 | **2** | 0 | <1 |
| Molybdenum | ppm | ASTM D5185m | 60 | **60** | 60 | 56 |
| Manganese | ppm | ASTM D5185m | 1 | **0** | <1 | 1 |
| Magnesium | ppm | ASTM D5185m | 1010 | **899** | 903 | 930 |
| Calcium | ppm | ASTM D5185m | 1070 | **1072** | 1097 | 1134 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **923** | 982 | 966 |
| Zinc | ppm | ASTM D5185m | 1270 | **1164** | 1237 | 1262 |
| Sulfur | ppm | ASTM D5185m | 2060 | **3216** | 2770 | 2951 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **3** | 4 | 6 |
| Sodium | ppm | ASTM D5185m | | **0** | 0 | 2 |
| Potassium | ppm | ASTM D5185m | >20 | **1** | 2 | <1 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.3** | 0.4 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **9.3** | 9.4 | 9.9 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **20.2** | 20.6 | 21.2 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **17.0** | 16.7 | 18.2 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.6 | **7.6** | 6.6 | 6.8 |

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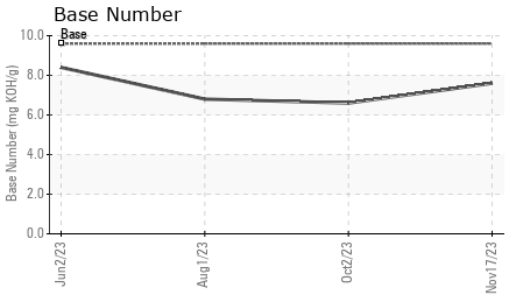
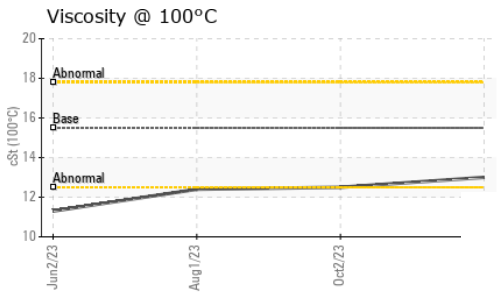
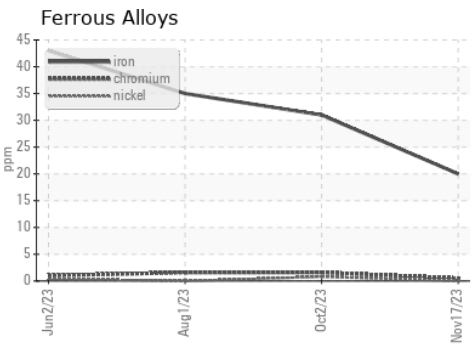


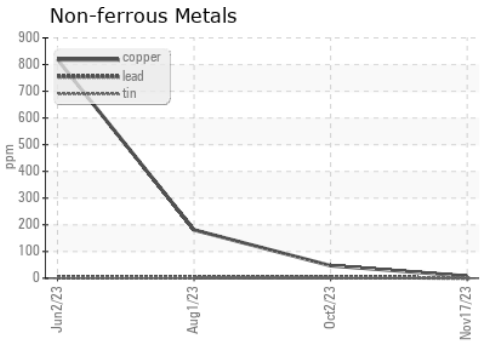



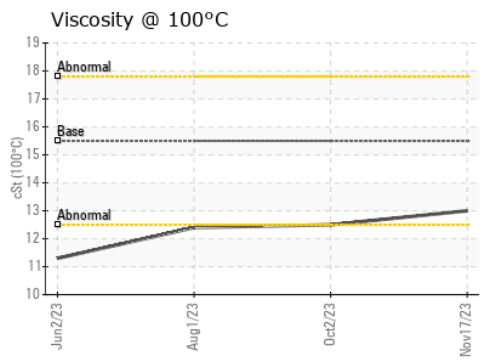

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 |

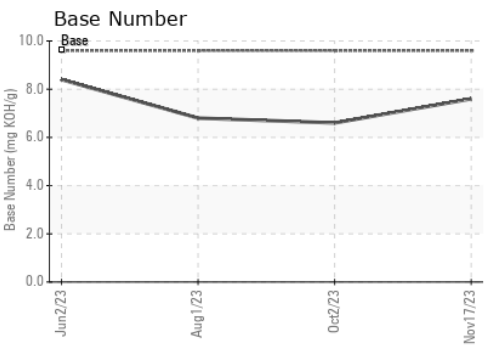
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.5 | **13.0** | 12.5 | 12.4 |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0831276 **Received** : 06 Dec 2023
**Lab Number** : 06026184 **Diagnosed** : 07 Dec 2023
**Unique Number** : 10775975 **Diagnostician** : Wes Davis
**Test Package** : CONST ( Additional Tests: TBN )

*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)*

**TRADER CONSTRUCTION CO.**
PO DRAWER 1578
NEW BERN, NC
US 28563
Contact: MIKE WYATT
mwyatt@traderconstruction.com
T: (252)633-1399
F: (252)638-4871