



LUBE PLUS+

OIL ANALYSIS REPORT

| | |
|-----------------|---------------|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |

Machine Id
HYUNDAI E-47

Component
Diesel Engine

Fluid
FLEETLINE SUPERFLEET XHD 15W40 (12 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | LP0000769 | LP0000610 | LP0000365 |
| Sample Date | | Client Info | | 06 Dec 2023 | 31 Aug 2023 | 05 Jul 2023 |
| Machine Age | hrs | Client Info | | 3680 | 3419 | 3170 |
| Oil Age | hrs | Client Info | | 261 | 249 | 342 |
| Filter Age | hrs | Client Info | | 261 | 249 | 342 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >100 | 0 | 2 | 4 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 1 | 1 | <1 |
| Lead | ppm | ASTM D5185m | >40 | 0 | 1 | 0 |
| Copper | ppm | ASTM D5185m | >330 | 1 | 0 | <1 |
| Tin | ppm | ASTM D5185m | >15 | 0 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

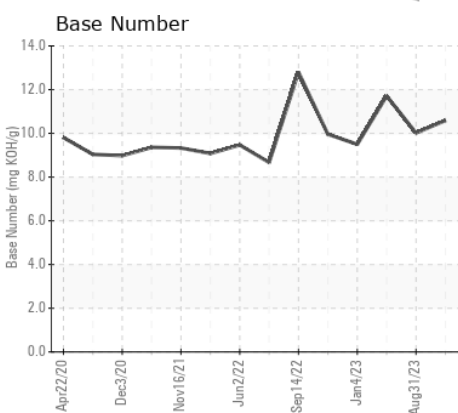
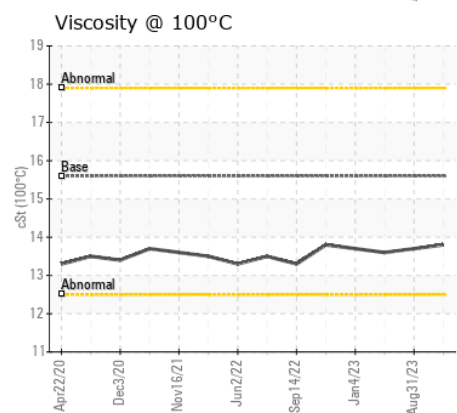
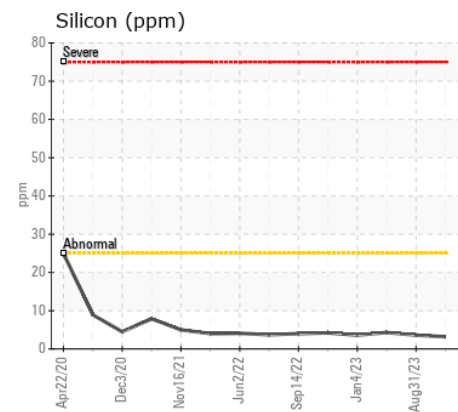
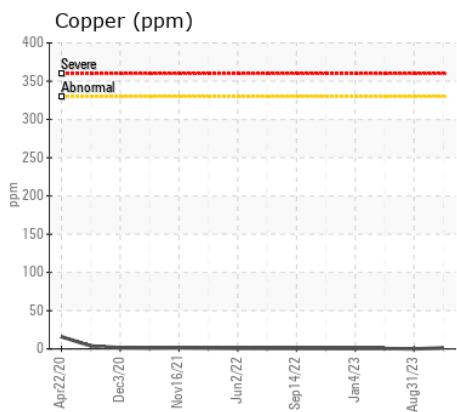
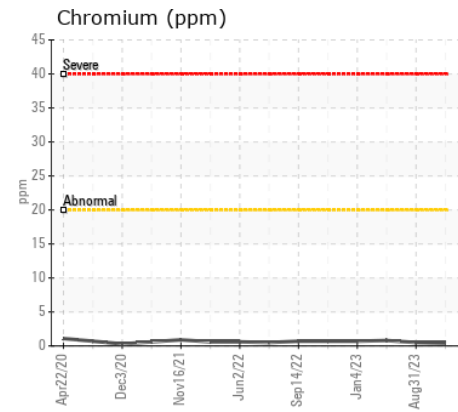
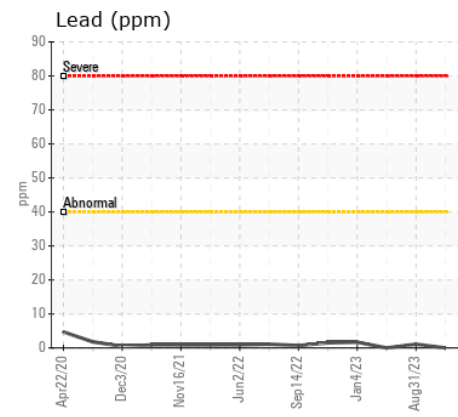
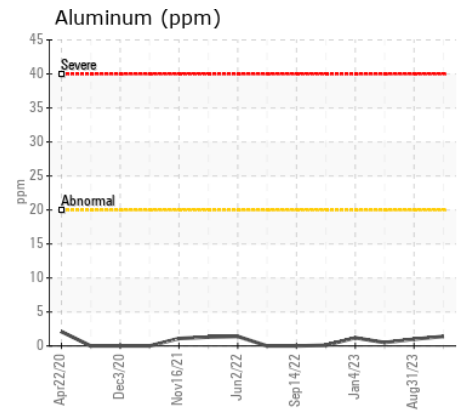
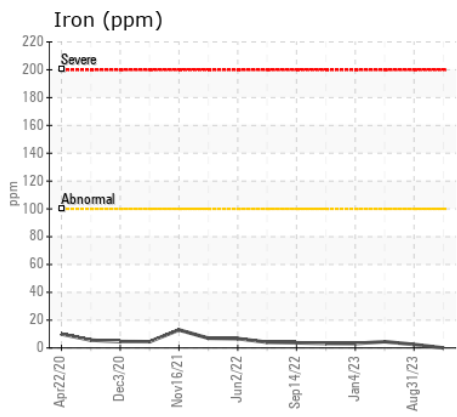
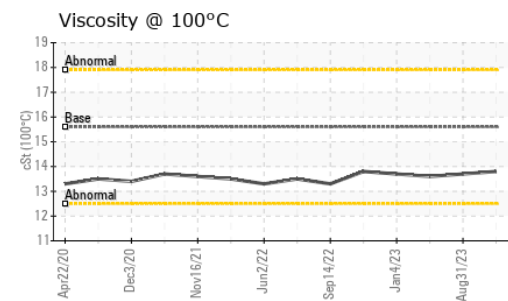
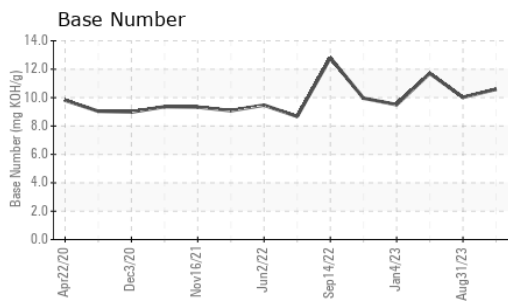
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 3 | 4 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | 0 | 3 | <1 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.1 | 0.1 | 0.2 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 6.7 | 6.5 | 7.6 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 17.4 | 17.1 | 18.9 |
| 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 |

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.

| | | | | | | |
|------------------|----------|-------------|------|--------------|-------|-------|
| Sodium | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Boron | ppm | ASTM D5185m | | 0 | 5 | 4 |
| Barium | ppm | ASTM D5185m | | 0 | 3 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 58 | 60 | 56 |
| Manganese | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | | 864 | 962 | 916 |
| Calcium | ppm | ASTM D5185m | | 1100 | 1115 | 992 |
| Phosphorus | ppm | ASTM D5185m | | 1035 | 1089 | 938 |
| Zinc | ppm | ASTM D5185m | | 1232 | 1327 | 1138 |
| Sulfur | ppm | ASTM D5185m | | 3060 | 3372 | 3441 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 13.9 | 13.5 | 15.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | 10.59 | 10.02 | 11.71 |
| Visc @ 100°C | cSt | ASTM D445 | 15.6 | 13.8 | 13.7 | 13.6 |



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LP0000769 **Received** : 16 Jan 2024
Lab Number : 06061391 **Diagnosed** : 17 Jan 2024
Unique Number : 10832773 **Diagnostician** : Wes Davis
Test Package : MOB 2

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Certificate L2367
 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)