



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

Area
[P&P EXCAVATING CORP]
 Machine Id
HITACHI ZX300LC-6 1FFDDP70HKF840614
 Component
Hydraulic System
 Fluid
HITACHI HYDRAULIC SUPER EX 46HN (--- GAL)

RECOMMENDATION

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | JR0221131 | JR0210485 | JR0184305 |
| Sample Date | | Client Info | | 16 Jul 2024 | 21 Mar 2024 | 10 Nov 2023 |
| Machine Age | hrs | Client Info | | 3492 | 2991 | 2509 |
| Oil Age | hrs | Client Info | | 0 | 2991 | 0 |
| Filter Age | hrs | Client Info | | 0 | 1000 | 0 |
| Oil Changed | | Client Info | | Not Chngd | Not Chngd | Not Chngd |
| Filter Changed | | Client Info | | Not Chngd | Changed | Not Chngd |
| Sample Status | | | | ABNORMAL | ABNORMAL | ABNORMAL |

WEAR

All component wear rates are normal.

| PQ | UOM | Method | Limit/Abn | Current | History1 | History2 |
|--------------|--------|-------------|-----------|--------------|----------|----------|
| PQ | | ASTM D8184 | | 12 | 15 | 17 |
| Iron | ppm | ASTM D5185m | >20 | 13 | 5 | 3 |
| Chromium | ppm | ASTM D5185m | >10 | <1 | <1 | 0 |
| Nickel | ppm | ASTM D5185m | >10 | 0 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| Silver | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >10 | 4 | <1 | 0 |
| Lead | ppm | ASTM D5185m | >10 | 2 | 2 | 0 |
| Copper | ppm | ASTM D5185m | >75 | 4 | <1 | 0 |
| Tin | ppm | ASTM D5185m | >10 | <1 | 3 | 0 |
| Vanadium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

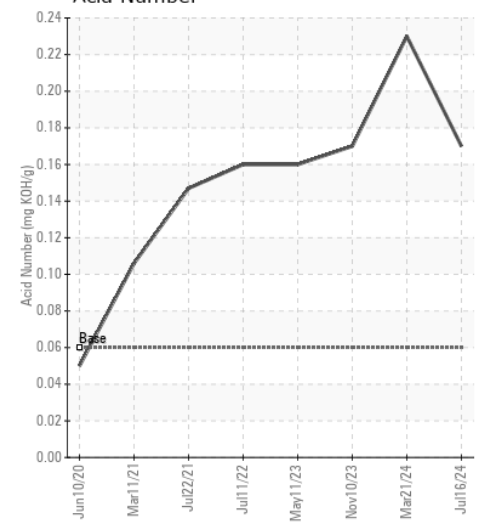
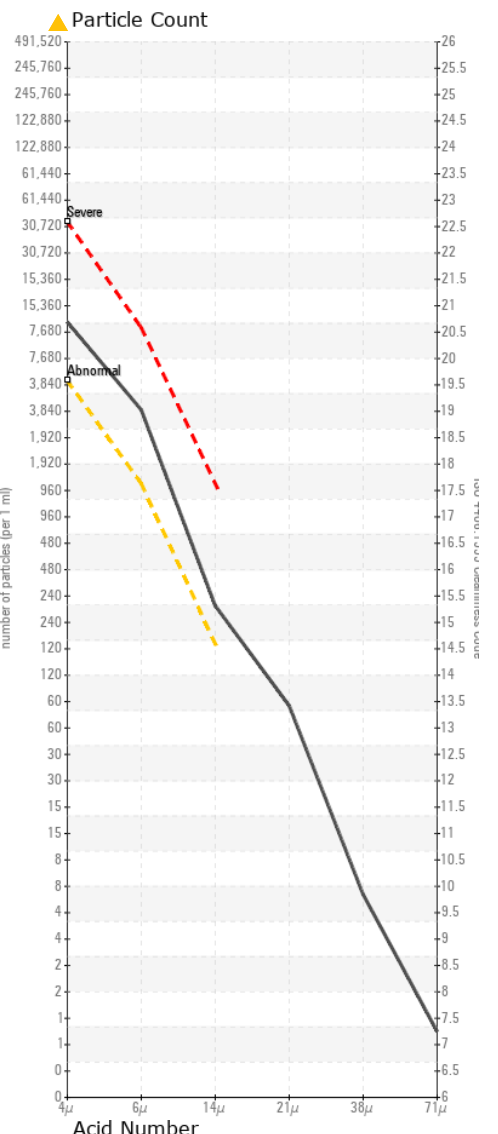
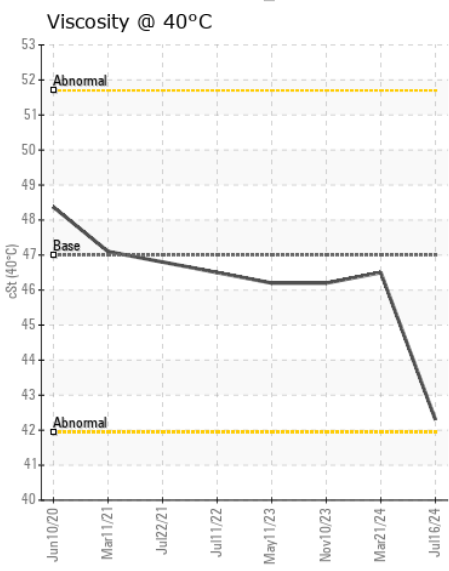
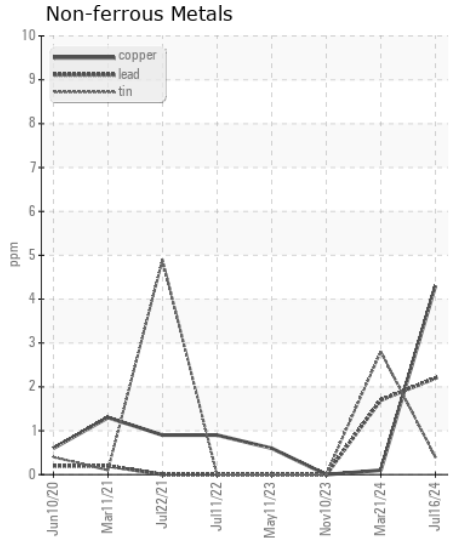
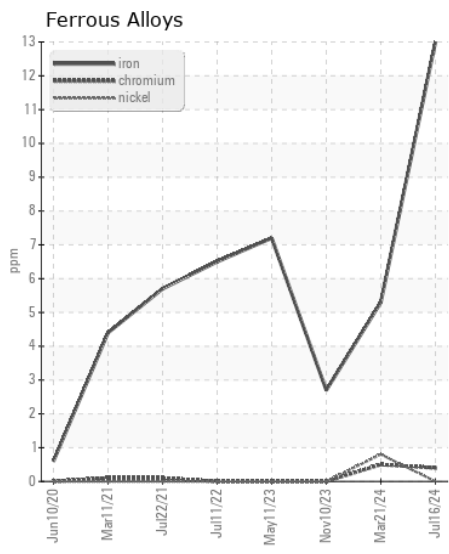
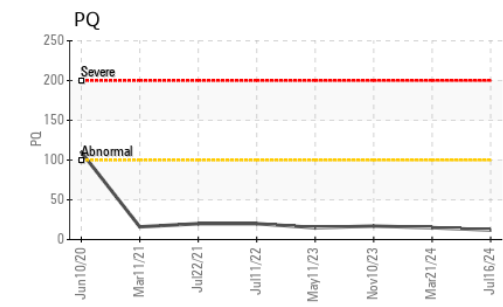
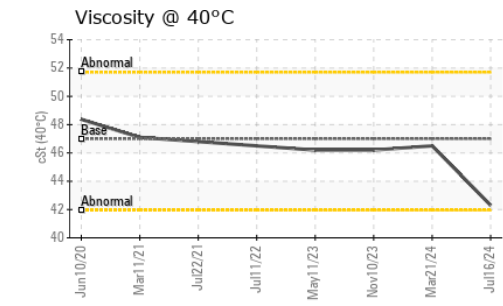
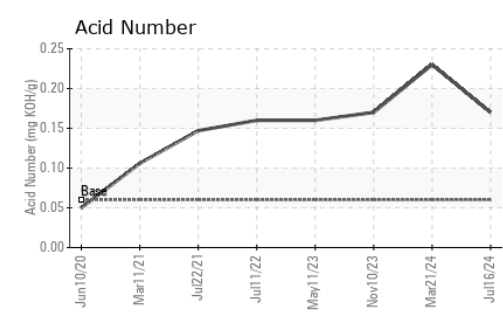
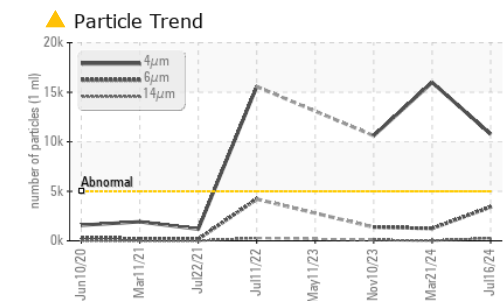
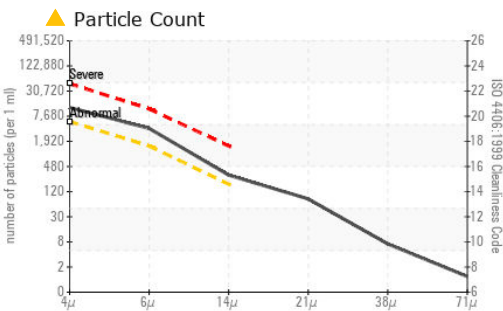
There is a moderate amount of particulates (2 to 100 microns in size) present in the oil.

| | | | | | | |
|------------------|--------|--------------|-----------|-------------------|------------|------------|
| Silicon | ppm | ASTM D5185m | >20 | 6 | 2 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | <1 | 0 |
| Water | | WC Method | >0.1 | NEG | NEG | NEG |
| Particles >4µm | | ASTM D7647 | >5000 | ▲ 10772 | ▲ 15989 | ▲ 10610 |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ 3413 | 1243 | ● 1377 |
| Particles >14µm | | ASTM D7647 | >160 | ▲ 263 | 16 | 81 |
| Particles >21µm | | ASTM D7647 | >40 | ▲ 71 | 2 | 18 |
| Particles >38µm | | ASTM D7647 | >10 | 6 | 0 | 0 |
| Particles >71µm | | ASTM D7647 | >3 | 1 | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ 21/19/15 | ▲ 21/17/11 | ▲ 21/18/14 |
| 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 | >0.1 | NEG | NEG | NEG |

FLUID CONDITION

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

| | | | | | | |
|------------------|----------|-------------|------|-------------|------|------|
| Sodium | ppm | ASTM D5185m | | 0 | 1 | 0 |
| Boron | ppm | ASTM D5185m | | 4 | 0 | 1 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 3 | <1 | 2 |
| Manganese | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | | 26 | 0 | 5 |
| Calcium | ppm | ASTM D5185m | | 648 | 12 | 25 |
| Phosphorus | ppm | ASTM D5185m | 827 | 478 | 435 | 457 |
| Zinc | ppm | ASTM D5185m | 0 | 617 | 15 | 25 |
| Sulfur | ppm | ASTM D5185m | 13 | 3012 | 109 | 135 |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.06 | 0.17 | 0.23 | 0.17 |
| Visc @ 40°C | cSt | ASTM D445 | 47 | 42.3 | 46.5 | 46.2 |



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0221131 **Received** : 18 Jul 2024
Lab Number : 06240212 **Tested** : 19 Jul 2024
Unique Number : 11129046 **Diagnosed** : 20 Jul 2024 - Wes Davis
Test Package : CONST (Additional Tests: PQ)

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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)