



OIL ANALYSIS REPORT

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



Area
Store 5 - Cross Lanes
Machine Id
JOHN DEERE 210G E-54 (S/N 1FF210GXCJF525544)
Component
Hydraulic System
Fluid
HITACHI HYDRAULIC SUPER EX 46HN (63 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | LEC0046389 | LEC0039907 | LEC0032877 |
| Sample Date | | Client Info | | 14 Jun 2024 | 20 Jun 2023 | 27 Oct 2022 |
| Machine Age | hrs | Client Info | | 5517 | 4628 | 4278 |
| Oil Age | hrs | Client Info | | 3000 | 4628 | 4278 |
| Filter Age | hrs | Client Info | | 500 | 500 | 4278 |
| Oil Changed | | Client Info | | Not Changed | Not Changed | Not Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|-------|
| PQ | | ASTM D8184 | >50 | 14 | 13 | 14 |
| Iron | ppm | ASTM D5185m | >32 | 9 | 10 | 9 |
| Chromium | ppm | ASTM D5185m | >9 | <1 | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >9 | 2 | <1 | 2 |
| Lead | ppm | ASTM D5185m | >28 | 0 | <1 | 0 |
| Copper | ppm | ASTM D5185m | >50 | 0 | 2 | 1 |
| Tin | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | LIGHT | NONE | VLITE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

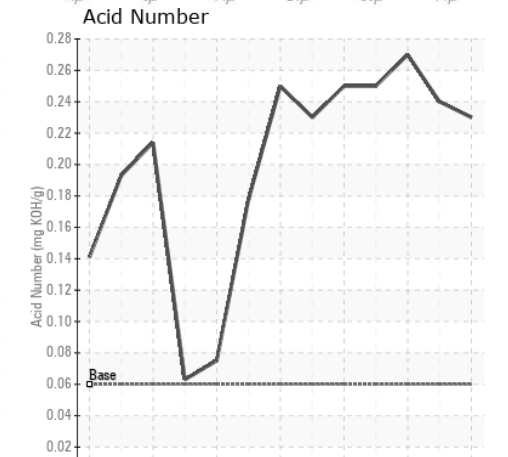
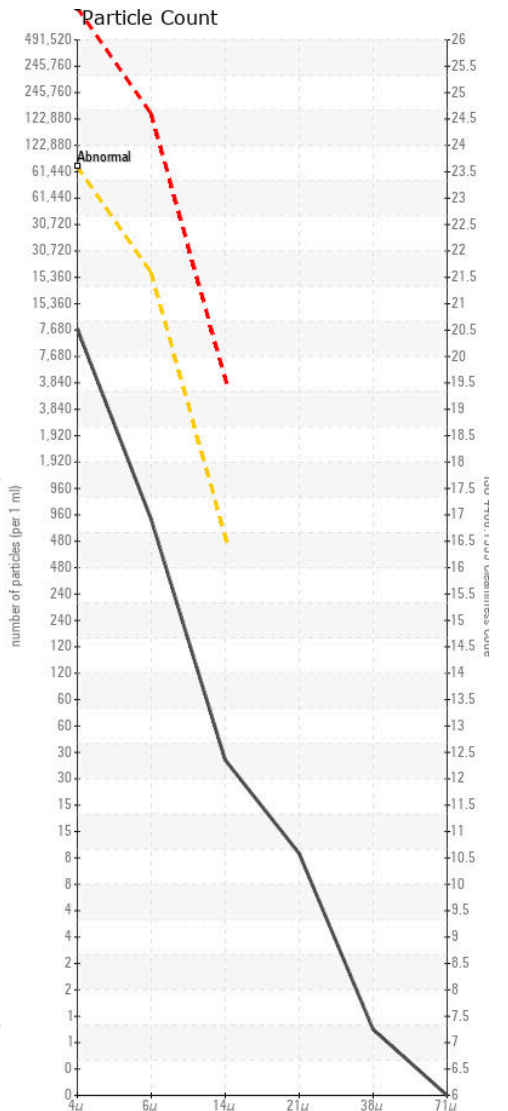
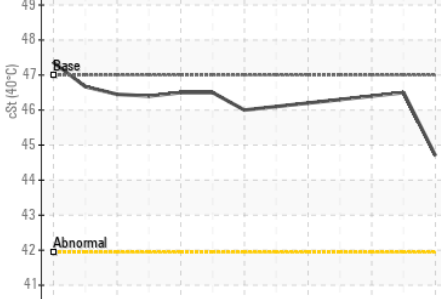
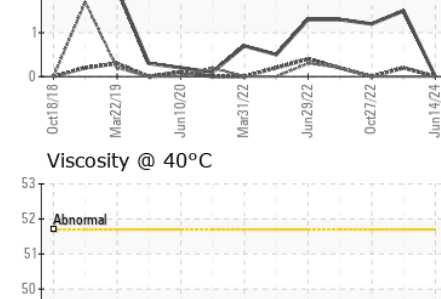
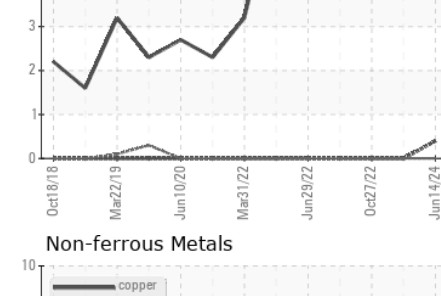
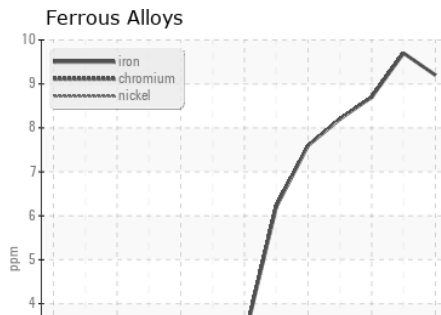
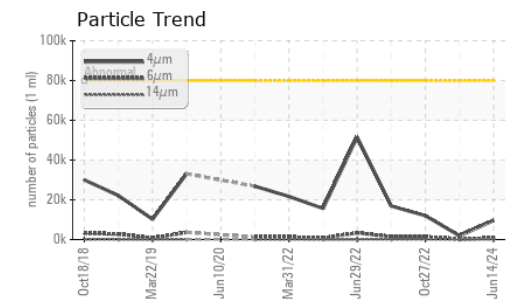
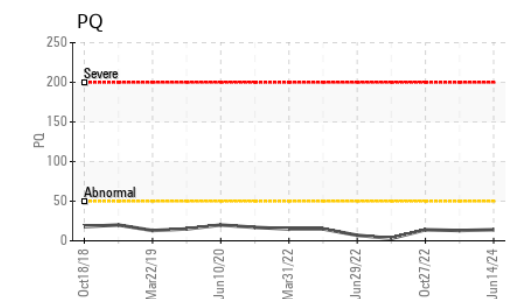
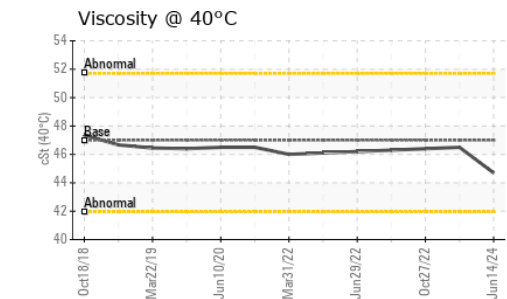
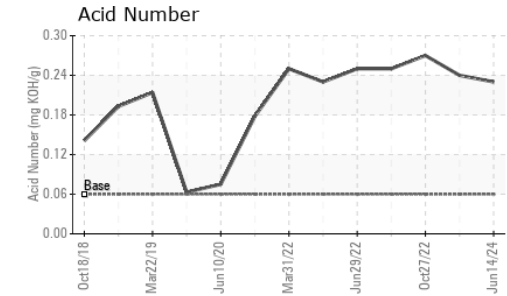
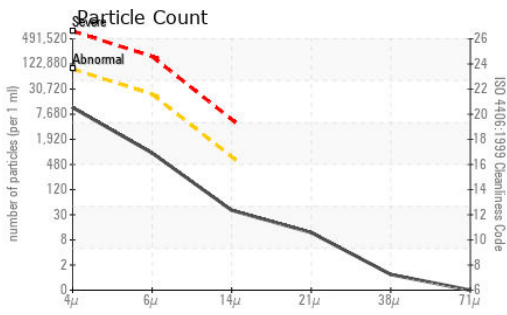
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

| | | | | | | |
|------------------|--------|--------------|-----------|-----------------|----------|----------|
| Silicon | ppm | ASTM D5185m | >11 | 5 | 5 | 5 |
| Potassium | ppm | ASTM D5185m | >20 | <1 | <1 | 0 |
| Water | | WC Method | >0.075 | NEG | NEG | NEG |
| Particles >4µm | | ASTM D7647 | >80000 | 9612 | 1874 | 11987 |
| Particles >6µm | | ASTM D7647 | >20000 | 791 | 246 | 1342 |
| Particles >14µm | | ASTM D7647 | >640 | 34 | 24 | 83 |
| Particles >21µm | | ASTM D7647 | >160 | 10 | 6 | 25 |
| Particles >38µm | | ASTM D7647 | >40 | 1 | 1 | 1 |
| Particles >71µm | | ASTM D7647 | >10 | 0 | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >23/21/16 | 20/17/12 | 18/15/12 | 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 | >0.075 | NEG | NEG | NEG |

FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium | ppm | ASTM D5185m | >21 | <1 | 0 | 0 |
| Boron | ppm | ASTM D5185m | | 0 | 0 | 1 |
| Barium | ppm | ASTM D5185m | | 0 | 7 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Manganese | ppm | ASTM D5185m | | <1 | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | | 0 | 1 | 0 |
| Calcium | ppm | ASTM D5185m | | 5 | 9 | 6 |
| Phosphorus | ppm | ASTM D5185m | 827 | 439 | 384 | 423 |
| Zinc | ppm | ASTM D5185m | 0 | 28 | 26 | 3 |
| Sulfur | ppm | ASTM D5185m | 13 | 238 | 145 | 0 |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.06 | 0.23 | 0.24 | 0.27 |
| Visc @ 40°C | cSt | ASTM D445 | 47 | 44.7 | 46.5 | 46.4 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0046389 **Received** : 05 Jul 2024
Lab Number : 06228452 **Tested** : 08 Jul 2024
Unique Number : 11111945 **Diagnosed** : 08 Jul 2024 - Jonathan Hester
Test Package : CONST (Additional Tests: PQ)

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)

APEX PIPELINE

P.O. BOX 580

NITRO, WV

US 25143

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