



OIL ANALYSIS REPORT

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



Area
Store 2 - Beaver [ASPEN UNIT 1538]
Machine Id
JOHN DEERE 210G 1FF210GXCHF525223
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 | | LEC0012057 | LEC0008844 | LECP193187 |
| Sample Date | | Client Info | | 19 May 2020 | 26 Mar 2020 | 26 Aug 2019 |
| Machine Age | hrs | Client Info | | 1615 | 1426 | 1035 |
| Oil Age | hrs | Client Info | | 1615 | 1426 | 1035 |
| Filter Age | hrs | Client Info | | 1615 | 1426 | 1035 |
| Oil Changed | | Client Info | | Not Changd | Not Changd | Not Changd |
| Filter Changed | | Client Info | | Not Changd | Not Changd | Not Changd |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|-------|------|
| PQ | | ASTM D8184 | >50 | 17 | 18 | 19 |
| Iron | ppm | ASTM D5185m | >32 | 3 | 2 | 3 |
| Chromium | ppm | ASTM D5185m | >9 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | 0 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Aluminum | ppm | ASTM D5185m | >9 | <1 | 0 | <1 |
| Lead | ppm | ASTM D5185m | >28 | <1 | <1 | <1 |
| Copper | ppm | ASTM D5185m | >50 | 1 | 1 | 2 |
| Tin | ppm | ASTM D5185m | >5 | <1 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | VLITE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

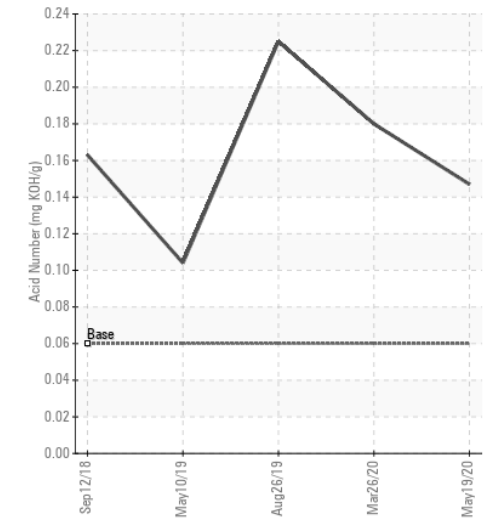
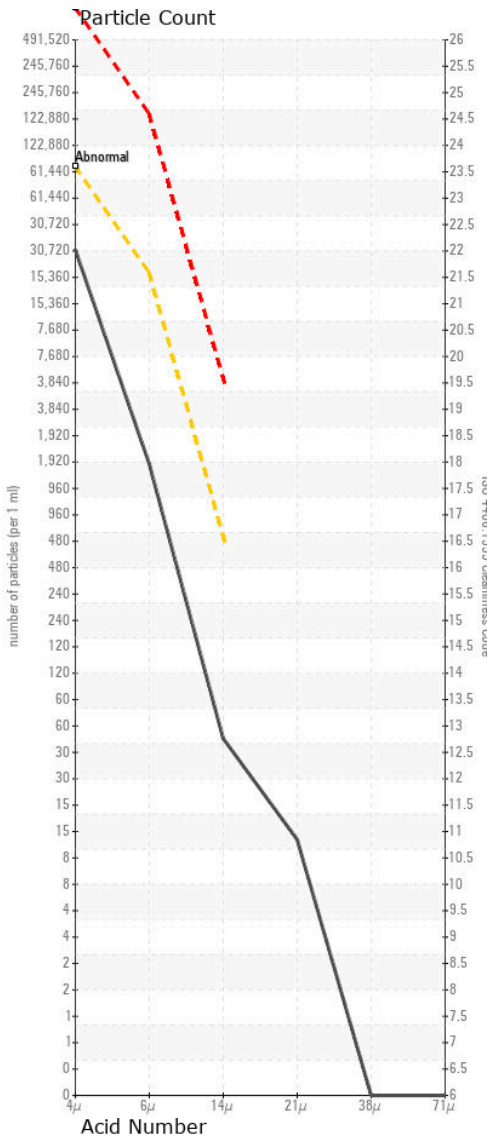
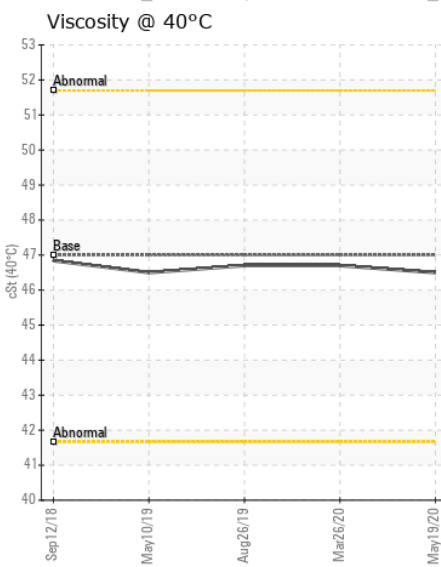
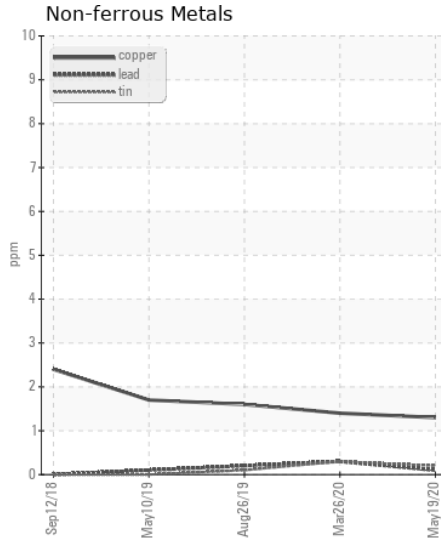
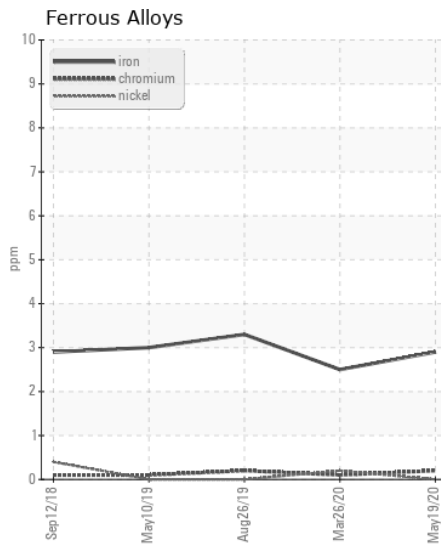
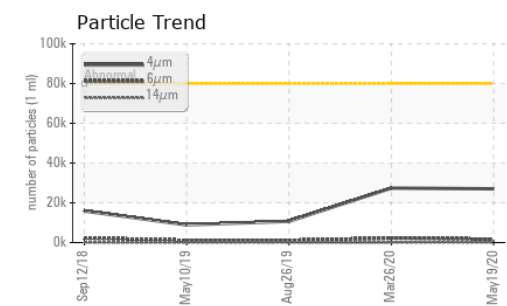
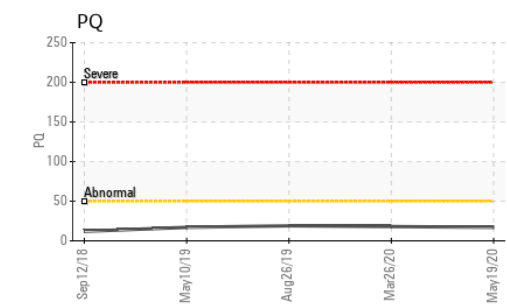
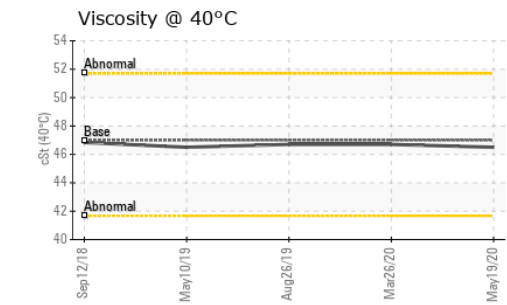
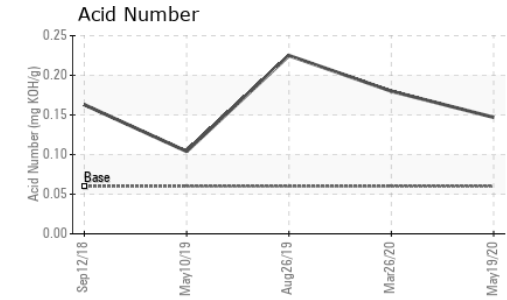
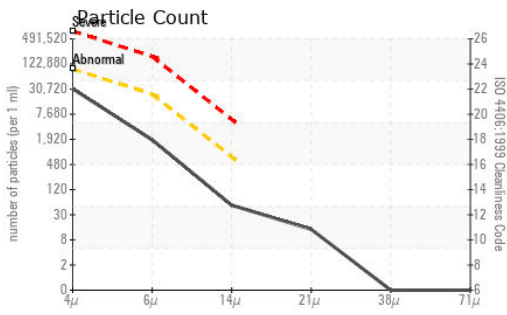
The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|--------|--------------|-----------|-----------------|----------|----------|
| Silicon | ppm | ASTM D5185m | >11 | <1 | 2 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | 0 | 0 | <1 |
| Water | | WC Method | >0.075 | NEG | NEG | NEG |
| Particles >4µm | | ASTM D7647 | >80000 | 27035 | 27430 | 10703 |
| Particles >6µm | | ASTM D7647 | >20000 | 1638 | 2259 | 1042 |
| Particles >14µm | | ASTM D7647 | >640 | 45 | 35 | 33 |
| Particles >21µm | | ASTM D7647 | >160 | 12 | 9 | 7 |
| Particles >38µm | | ASTM D7647 | >40 | 0 | 0 | 0 |
| Particles >71µm | | ASTM D7647 | >10 | 0 | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >23/21/16 | 22/18/13 | 22/18/12 | 21/17/12 |
| 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 | 0 | <1 | 0 |
| Boron | ppm | ASTM D5185m | | <1 | 1 | 7 |
| Barium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 0 | <1 | 5 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | 0 | 6 | 13 |
| Calcium | ppm | ASTM D5185m | | 1 | 8 | 43 |
| Phosphorus | ppm | ASTM D5185m | 827 | 505 | 524 | 525 |
| Zinc | ppm | ASTM D5185m | 0 | 4 | 22 | 28 |
| Sulfur | ppm | ASTM D5185m | 13 | 92 | 112 | 142 |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.06 | 0.147 | 0.180 | 0.225 |
| Visc @ 40°C | cSt | ASTM D445 | 47 | 46.5 | 46.7 | 46.7 |



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0012057 **Received** : 22 May 2020
Lab Number : 04983767 **Tested** : 26 May 2020
Unique Number : 9038914 **Diagnosed** : 26 May 2020 - Don Baldrige
Test Package : MOBCE (Additional Tests: PQ)

ASPEN CORP
 2400 RITTER DR
 DANIELS, WV
 US 25832
 Contact: JASON ST CLAIR
 jstclair@aspens-golf.com
 T: (304)688-8753
 F:

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)