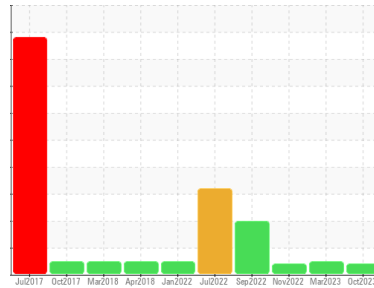


PROBLEM SUMMARY

Sample Rating Trend



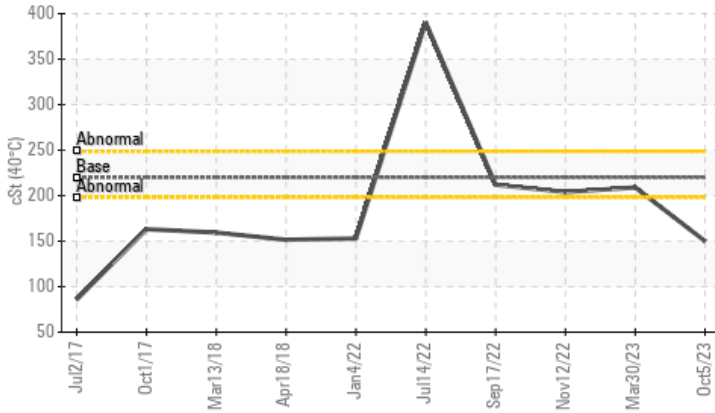
VISCOSITY



Machine Id
NATIONAL OILWELL RIG 55-B DRAWWORKS - 059088
 Component
Gearbox
 Fluid
ROYAL PURPLE SYNFILM GT220 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Viscosity @ 40°C



RECOMMENDATION

No corrective action is recommended at this time.
 Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

| Sample Status | | | ATTENTION | NORMAL | ATTENTION | |
|---------------|-----|-----------|-----------|--------|-----------|-------|
| Visc @ 40°C | cSt | ASTM D445 | 220 | ▲ 150 | 209 | ▲ 204 |

Customer Id: PARNEWLA
 Sample No.: RP0031832
 Lab Number: 05979814
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

30 Mar 2023 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



12 Nov 2022 Diag: Don Baldrige

VISCOSITY



No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The oil viscosity is higher than normal. Confirm oil type. The AN level is acceptable for this fluid.

view report



17 Sep 2022 Diag: Don Baldrige

WATER



No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. There is a light concentration of water present in the oil. Viscosity of sample indicates oil is within ISO 220 range, advise investigate. Confirm oil type. The AN level is acceptable for this fluid.

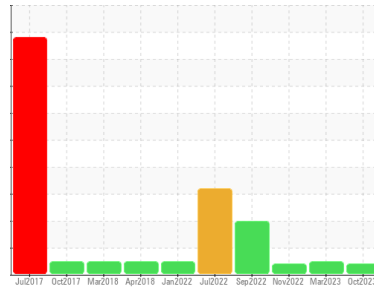
view report





OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY



Machine Id
NATIONAL OILWELL RIG 55-B DRAWWORKS - 059088

Component

Gearbox

Fluid

ROYAL PURPLE SYNFILM GT220 (--- GAL)

DIAGNOSIS

▲ Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

The water content is negligible. There is no indication of any contamination in the oil.

▲ Fluid Condition

Viscosity of sample indicates oil is within ISO 150 range, advise investigate. Confirm oil type. The AN level is acceptable for this fluid.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | RP0031832 | RP0022141 | RP0027770 |
| Sample Date | Client Info | | 05 Oct 2023 | 30 Mar 2023 | 12 Nov 2022 |
| Machine Age | hrs | Client Info | 0 | 9242 | 0 |
| Oil Age | hrs | Client Info | 0 | 0 | 0 |
| Oil Changed | Client Info | | N/A | Not Changd | Not Changd |
| Sample Status | | | ATTENTION | NORMAL | ATTENTION |

WEAR METALS

| | method | limit/base | current | history1 | history2 | |
|----------|--------|-------------|---------|--------------|----------|----|
| Iron | ppm | ASTM D5185m | >200 | 9 | 39 | 41 |
| Chromium | ppm | ASTM D5185m | >15 | 0 | <1 | 0 |
| Nickel | ppm | ASTM D5185m | >15 | <1 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Silver | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | 0 | <1 | 1 |
| Lead | ppm | ASTM D5185m | >100 | <1 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >200 | 2 | 2 | 2 |
| Tin | ppm | ASTM D5185m | >25 | 0 | 0 | 0 |
| 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 | | 0 | 0 | 0 |
| Barium | ppm | ASTM D5185m | | 2 | 2 | 4 |
| Molybdenum | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Manganese | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 90 | 4 | 6 | 2 |
| Calcium | ppm | ASTM D5185m | | <1 | 12 | 17 |
| Phosphorus | ppm | ASTM D5185m | | 37 | 27 | 26 |
| Zinc | ppm | ASTM D5185m | | 7 | 23 | 27 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 | |
|-----------|--------|-------------|---------|--------------|----------|-------|
| Silicon | ppm | ASTM D5185m | >50 | <1 | 4 | 5 |
| Sodium | ppm | ASTM D5185m | | 2 | 16 | 13 |
| Potassium | ppm | ASTM D5185m | >20 | <1 | 2 | 0 |
| Water | % | ASTM D6304 | >0.2 | 0.038 | 0.151 | 0.015 |
| ppm Water | ppm | ASTM D6304 | >2000 | 388.8 | 1510 | 159.1 |

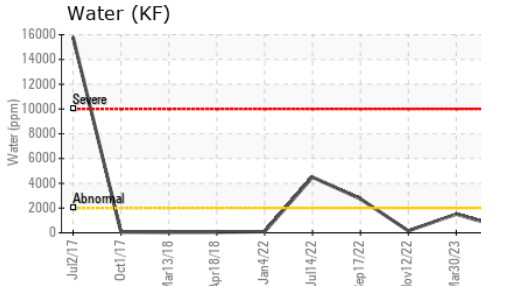
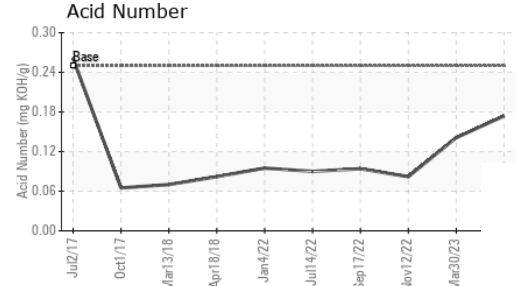
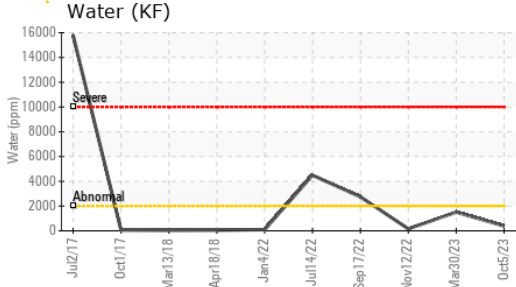
FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 | |
|------------------|----------|------------|---------|--------------|----------|-------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.25 | 0.174 | 0.141 | 0.082 |

VISUAL

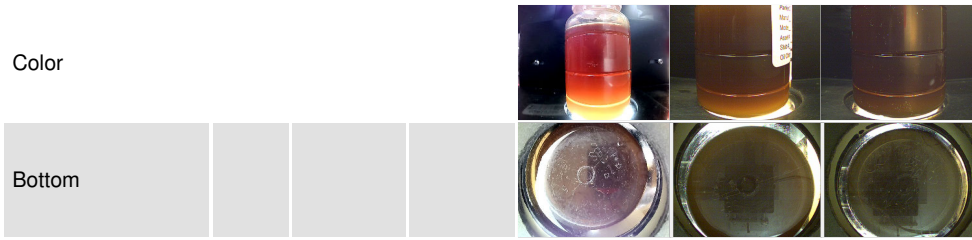
| | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|--------------|----------|-------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | LIGHT | LIGHT | 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 | 0.2% | NEG |
| Free Water | scalar | *Visual | | NEG | NEG | NEG |

OIL ANALYSIS REPORT

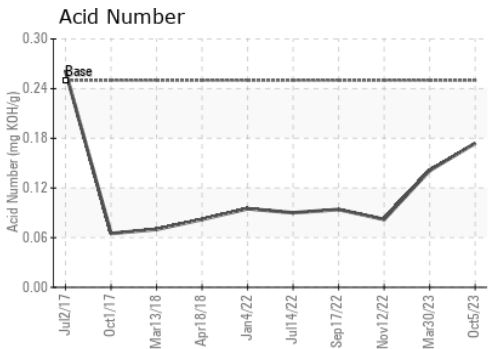
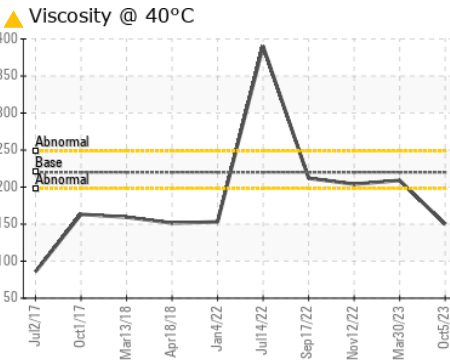
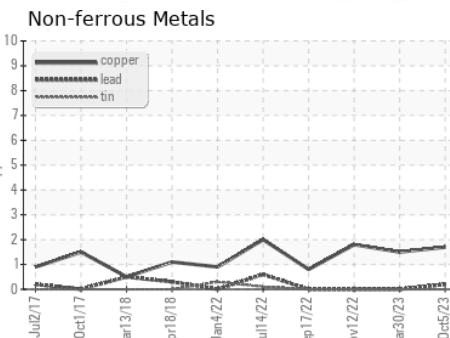
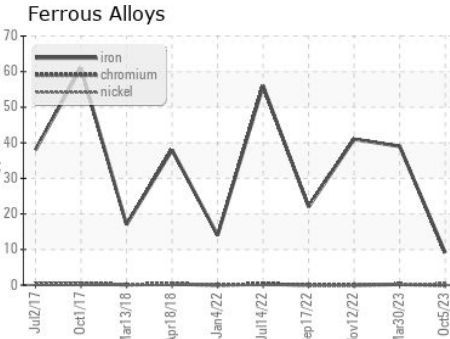


| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|---------------|---------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 220 | ▲ 150 | 209 | ▲ 204 |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---------------|--------|------------|---------|----------|----------|
|---------------|--------|------------|---------|----------|----------|



GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RP0031832 **Received** : 16 Oct 2023
Lab Number : 05979814 **Diagnosed** : 19 Oct 2023
Unique Number : 10697109 **Diagnostician** : Jonathan Hester
Test Package : IND 2

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 1110 UNIFAB RD
 NEW IBERIA, LA
 US 70560
 Contact: BRENT CARLINE
 brent.carline@parkerwellbore.com
 T: (337)364-3122
 F: (337)364-0232

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)