

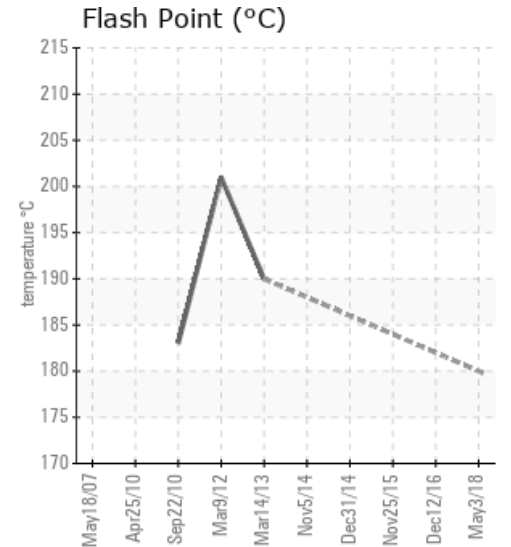
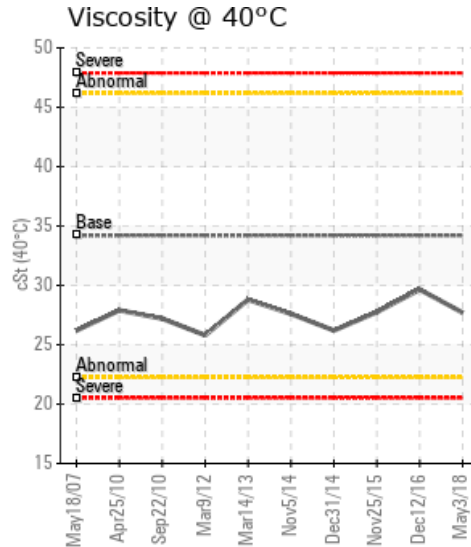
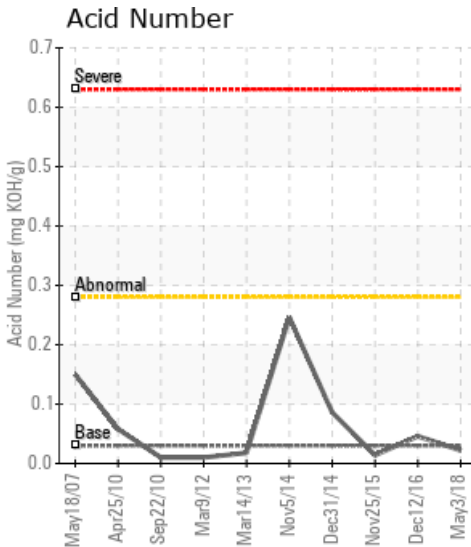
LINE 7 HOT OIL SYSTEM

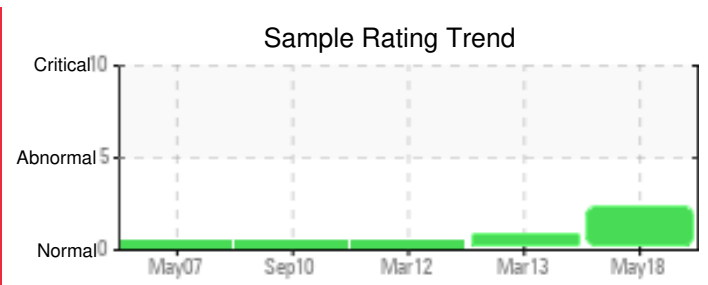
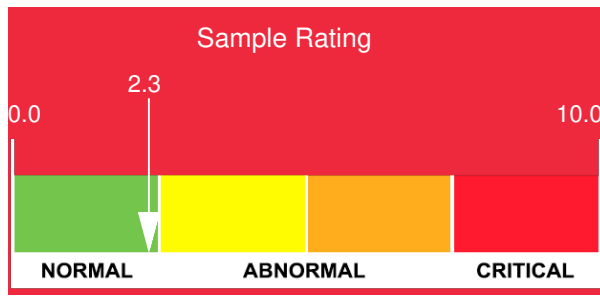
| Customer: PTRHTF10094 | System Information | Sample Information |
|---|---|---|
| CERTAINEED CORPORATION - OXFORD 200 CERTAINEED RD OXFORD, NC 27565 USA Attn: Andy Davis Tel: (919)693-1141 E-Mail: andy.j.davis@saint-gobain.com | System Volume: 0 gal Bulk Operating Temp: 0F / -18C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: | Lab No: 02217744 Analyst: Gaston Arseneault Sample Date: 05/03/18 Received Date: 05/23/18 Completed: 05/25/18 To discuss this report contact Gaston Arseneault at 973-986-6503 |

Recommendation: Some of the tests are missing because previous samples were tested like regular industrial fluids. Nothing is flagged as abnormal but we would like the viscosity and flash point to go up slightly. The way to do this is by venting some light ends out of the system and replace the volume drop by adding fresh oil until the expansion tank is 75% full.

Comments: COC Flash Point is marginally low.

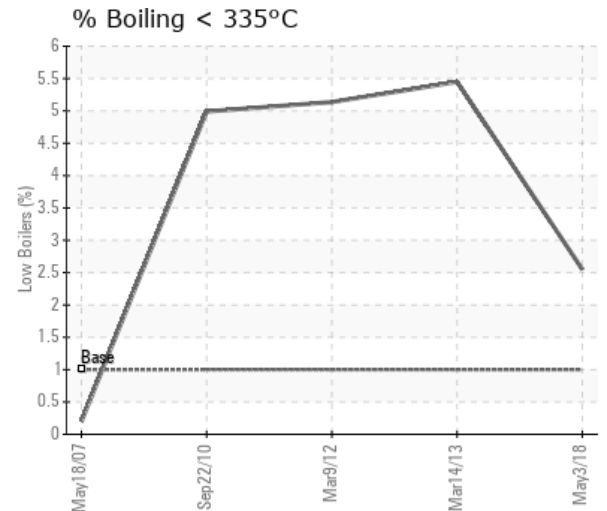
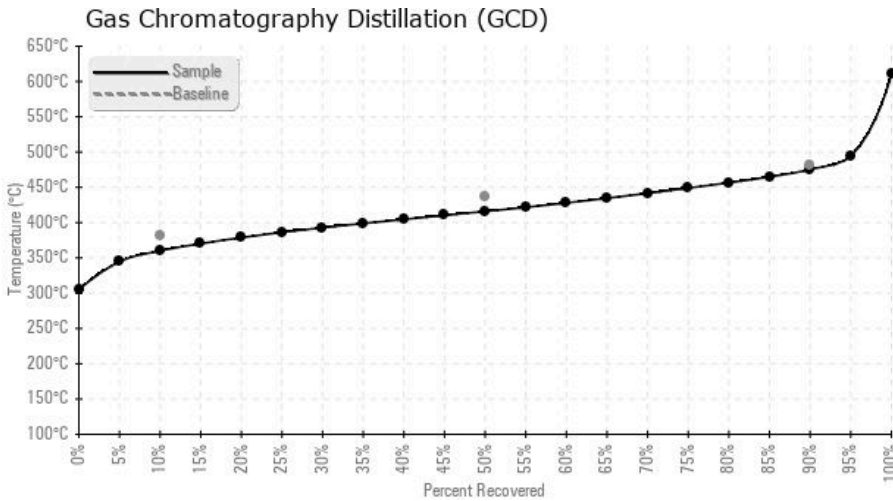
| Sample Date | Received Date | Fluid Age | Sample Location | Flash Point (COC) | Water (KF) | Viscosity (40°C) | Acid Number | Solids | GCD 10% | GCD 50% | GCD 90% | GCD % < 335°C |
|----------------------|---------------|-----------|-----------------|-------------------|------------|------------------|-------------|--------|-----------|-----------|-----------|---------------|
| | mm/dd/yy | | | °F/°C | ppm | cSt | mg/KOH/g | %wt | °F/°C | °F/°C | °F/°C | % |
| 05/03/18 | 05/23/18 | 0h | MAIN RETURN | 356 / 180 | 16.3 | 27.7 | 0.022 | 0.046 | 680 / 360 | 781 / 416 | 888 / 475 | 2.55 |
| 12/12/16 | 12/21/16 | 0h | | | | 29.65 | 0.046 | | | | | |
| 11/25/15 | 11/27/15 | 0h | | | | 27.75 | 0.014 | | | | | |
| 12/31/14 | 01/05/15 | 0h | | | | 26.2 | 0.086 | | | | | |
| 11/05/14 | 11/07/14 | 0h | | | | 27.6 | 0.246 | | | | | |
| 03/14/13 | 03/15/13 | 0h | L7 | 374 / 190 | 0.00 | 28.8 | 0.018 | 0.069 | 672 / 356 | 776 / 413 | 875 / 468 | 5.45 |
| Baseline Data | | | | 433 / 223 | | 34.2 | 0.03 | | 720 / 382 | 817 / 436 | 900 / 482 | 1.00 |





| Sample Date | Iron | Chromium | Nickel | Aluminum | Copper | Lead | Tin | Cadmium | Silver | Vanadium | Silicon | Sodium | Potassium | Titanium | Molybdenum | Antimony | Manganese | Lithium | Boron | Magnesium | Calcium | Barium | Phosphorus | Zinc | |
|----------------------|------|----------|--------|----------|--------|------|-----|---------|--------|----------|---------|--------|-----------|----------|------------|----------|-----------|---------|-------|-----------|---------|--------|------------|------|---|
| 05/03/18 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 12/12/16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 11/25/15 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12/31/14 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11/05/14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03/14/13 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | |
| Baseline Data | | | 0 | 0 | | | | | | 0 | | | 0 | 0 | | | | | 0 | | | | 0 | | |

Elemental analysis results (above) in parts per million (ppm). [10,000 ppm = 1.0%]



Historical Comments

| | |
|----------|--|
| 12/12/16 | Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable. The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service. |
| 11/25/15 | Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable. The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service. |
| 12/31/14 | Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable. The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service. |
| 11/05/14 | We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of particulates present in the oil. The condition of oil is suitable for further service. |
| 03/14/13 | As expected, the fluid is still a mixture of Mobiltherm with Petro-Therm. Overall, based on the results, the fluid condition appears to be good and normal. |