## [14-24-59-16W5] OUTLIER RESOURCES

## Customer: PTRHTF60069

OUTLIER RESOURCES LTD 3330 33RD ST BAY 1

WHITECOURT, AB T7S 0A2 CA

Attn: Dean Halbert Tel: (780)778-0131

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## System Information

System Volume: 32000 ltr

Bulk Operating Temp: 374F / 190C

Heating Source:

Blanket:

Fluid: PETRO CANADA PETRO-THERM

Make:

## Sample Information

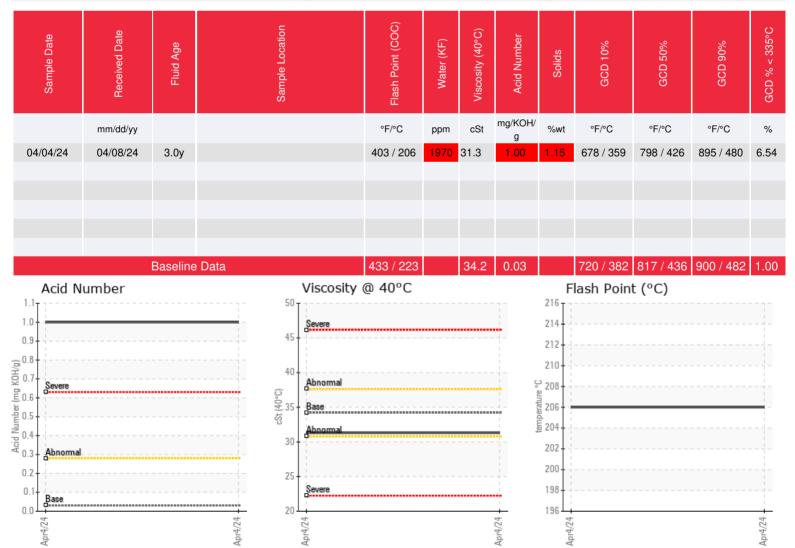
Lab No: 02627545 Analyst: Clinton Buhler Sample Date: 04/04/24 Received Date: 04/08/24 Completed: 04/10/24

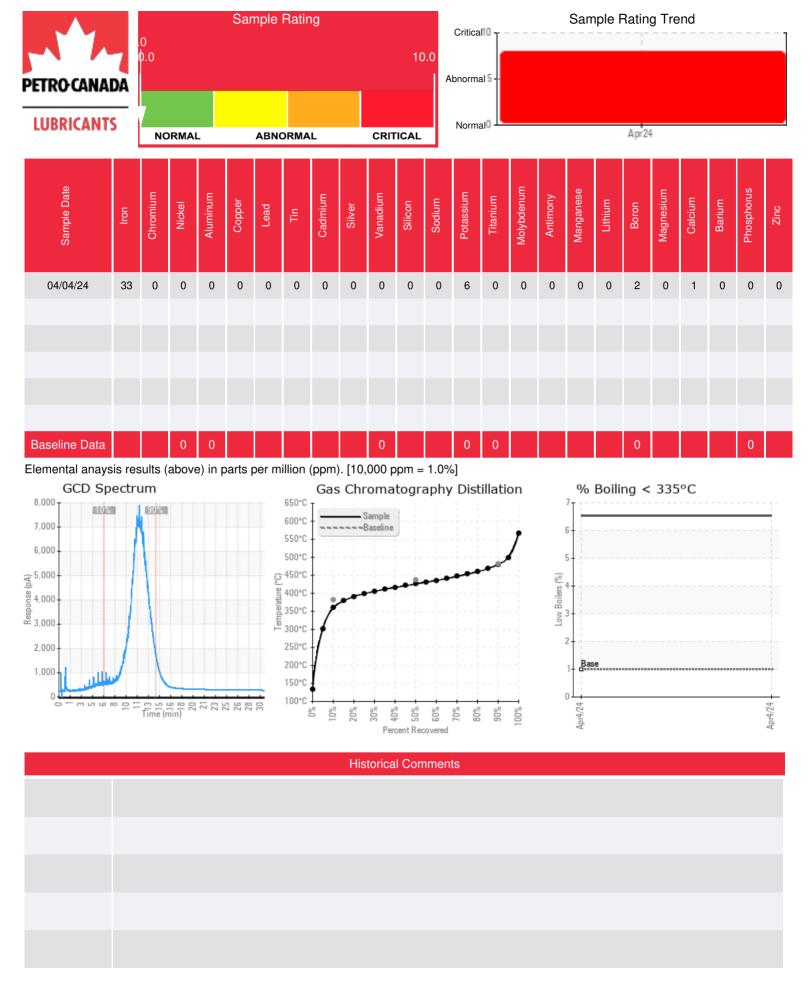
Clinton Buhler

Clinton.Buhler@HFSinclair.com

Recommendation: Sample results indicate the fluid has been both thermally and oxidatively stressed. Reduced fluid viscosity, flash point and 10-90% GCD temperatures as well as increased low boiler vapor content of 6.54% are consistent with thermal degradation/cracking while the elevated Acid Number of 1 is likely due to fluid oxidation. The excess water contamination of 1970 ppm would also influence the rate of fluid oxidation. Both fluid oxidation and thermal degradation can contribute to the excessive solids formation (1.15%) and indicates system fouling. The fluid is degraded and requires replacement. Due to the excessive solids content (fouling), the system should be cleaned and flushed with Calflo Cleaning Fluid and Calflo Flushing Fluid before filling with fresh Petro-Therm.Please contact Technical Services to discuss further.

Comments: Water contamination levels are severely high. Pentane Insolubles levels are severely high. Acid Number (AN) is severely high.





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