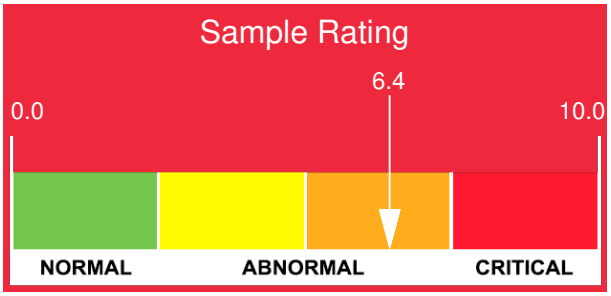
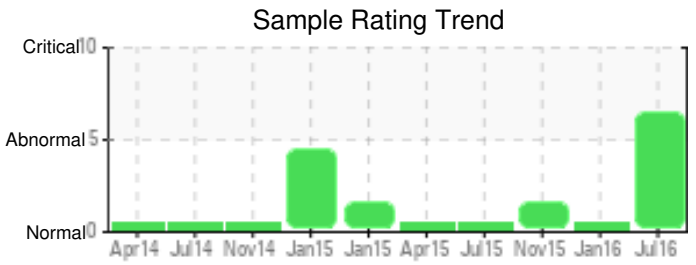




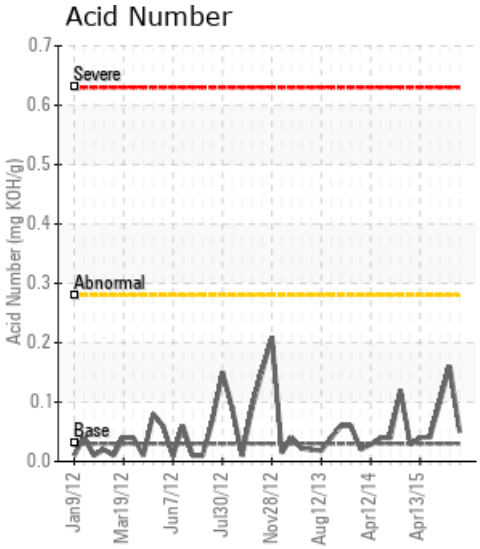
[Disto Oil Loop] SILANE 4.0 DISTILLATION

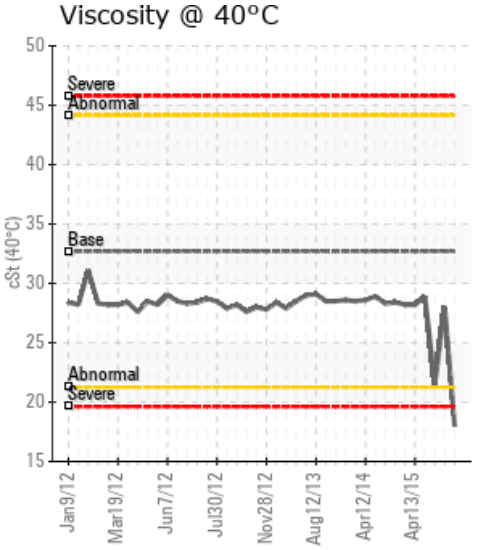
Customer: PTRHTF10093	System Information	Sample Information
REC GROUP 3322 ROAD N N.E. MOSES LAKE, WA 98837 USA Attn: Sam Bright Tel: (509)766-8902 E-Mail: sam.bright@recsilicon.com	System Volume: 50000 gal Bulk Operating Temp: 420F / 216C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: COEN	Lab No: 02084587 Analyst: Ron LeBlanc Sample Date: 07/07/16 Received Date: 07/12/16 Completed: 07/15/16 To discuss this report contact Ron LeBlanc at (541)967-6499

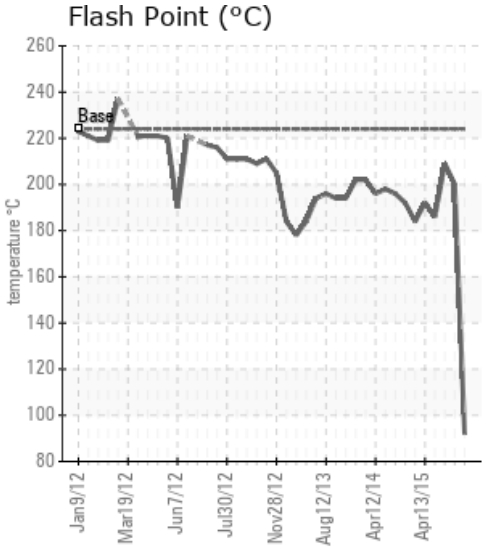
Recommendation: The oil viscosity has dropped significantly (35%) on this last sample. The drop of flash point to ~200F (from ~400F) and steep increase in low boilers could be 2 things. The oil was contaminated with a lighter material or it was thermally degraded. The rapid degradation due to the fire may cause such a rapid degradation of the fluid. If the entire charge of the system fluid looks like this sample it brings the difficult decision that the fluid should probably be replaced or do a significant sweetening to restore the flash point and other properties.

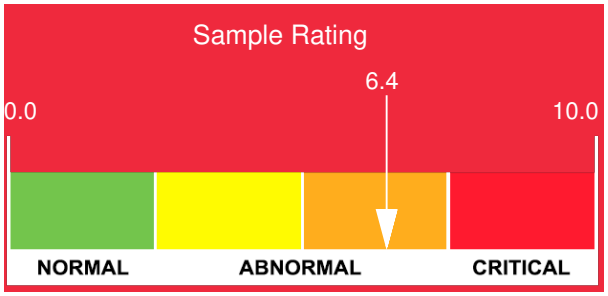
Comments: (GCD) 90% Distillation Point is severely high. COC Flash Point is severely low. Visc @ 40°C is severely low. (GCD) % < 335°C is marginally high.

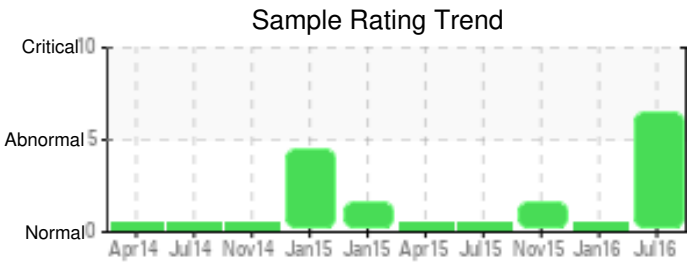
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
07/07/16	07/12/16	49m	OIL LOOP DCS REBOILR	198 / 92	96.4	18.0	0.05	0.066	640 / 338	793 / 423	936 / 502	9.21
01/18/16	01/25/16	49m	PRV VENT NEAR TCS VP	392 / 200	30.2	28.0	0.16	0.136	684 / 362	796 / 425	898 / 481	4.13
11/21/15	11/27/15	0m		408 / 209	195.8	21.5	0.10	0.097	671 / 355	789 / 420	891 / 477	5.41
07/22/15	07/29/15	41m	PRV VENT NEAR TCS VP	367 / 186	0.00	28.9	0.041	0.101	682 / 361	798 / 426	895 / 479	4.55
04/13/15	04/21/15	41m	PRV VENT NEAR TCS VP	378 / 192	14.0	28.2	0.04	0.055	672 / 356	783 / 417	869 / 465	4.95
01/20/15	01/26/15	37m	PRVVENT NEAR TCSVAP	363 / 184	11.4	28.2	0.029	0.042	687 / 364	775 / 413	868 / 465	0.52
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5





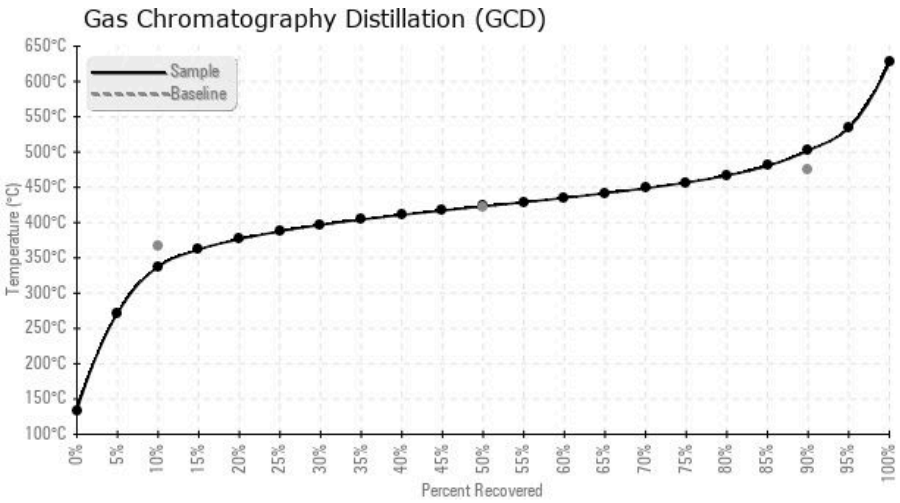


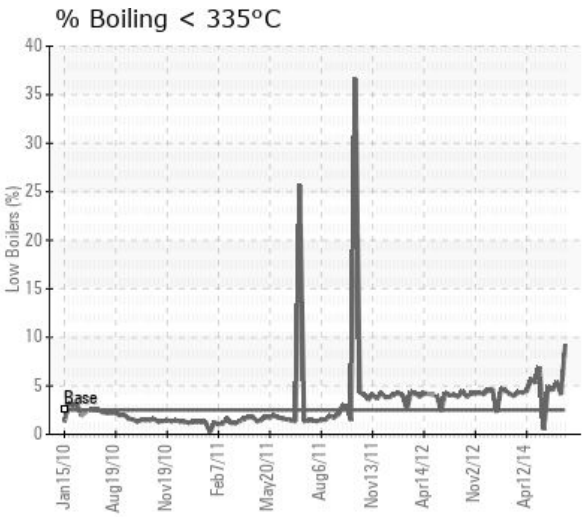




Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
07/07/16	6	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	10	0
01/18/16	66	0	0	0	0	0	0	0	0	0	8	1	0	0	0	0	1	0	0	0	0	0	36	0
11/21/15	29	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	21	0
07/22/15	58	0	0	0	0	0	0	0	0	0	16	1	0	0	0	0	0	0	1	0	0	0	105	0
04/13/15	35	0	0	0	0	0	0	1	0	0	10	1	0	0	0	0	0	0	0	0	1	0	100	0
01/20/15	34	0	0	0	0	0	0	0	0	0	10	1	0	0	0	0	0	0	0	0	0	0	116	0
Baseline Data			0	0						0			0	0					0				270	

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





Historical Comments

01/18/16	Sample appears normal. Si has elevated compared to last sample but is still low compared to previous samples. Resample at normal interval.
11/21/15	*** NOTE: water result retested. Now normal ***Viscosity has decreased since last sample. Resample at normal interval.
07/22/15	Si & Na have increased since last sample. COC Flash Point is marginally low.
04/13/15	Sample appears normal. Sample again in 3 months. COC Flash Point is marginally low.
01/20/15	The overall condition of the oil has improved since the previous sample. The flash point has dropped slightly and is marginally low. The (GCD) 90% distillation point has improved slightly. The Si has decreased significantly. Sample in 1 month suggested. COC Flash Point is marginally low. (GCD) 90% Distillation Point is marginally low.