

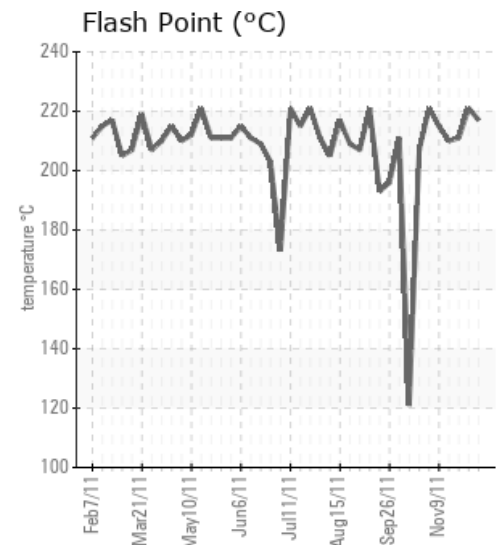
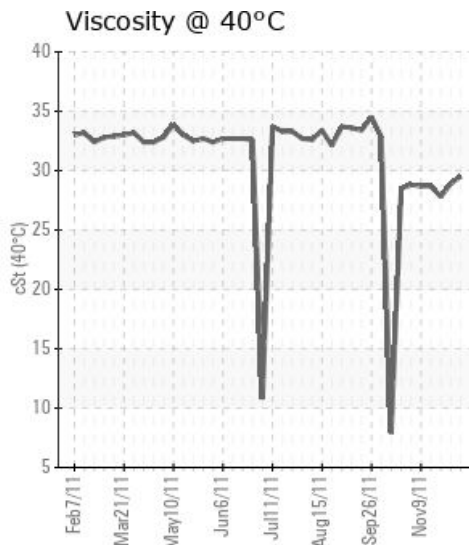
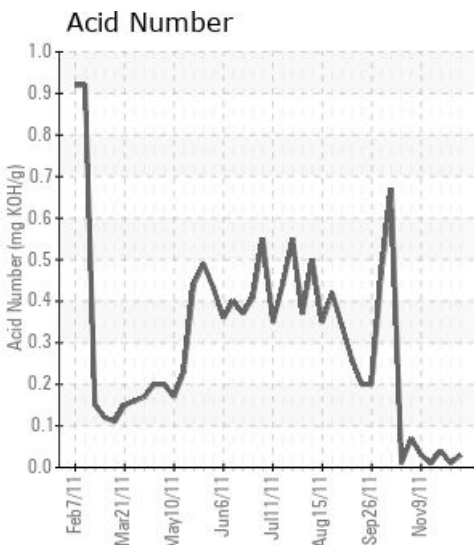
[Disto Oil Loop] SILANE 4.0 DISTILLATION

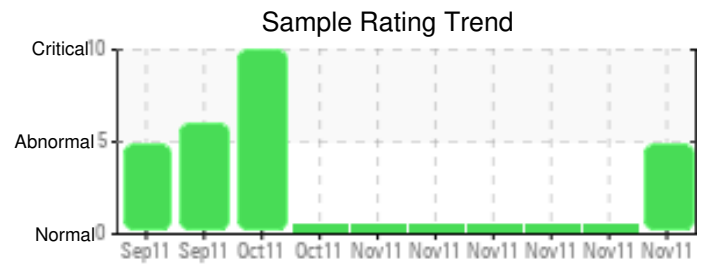
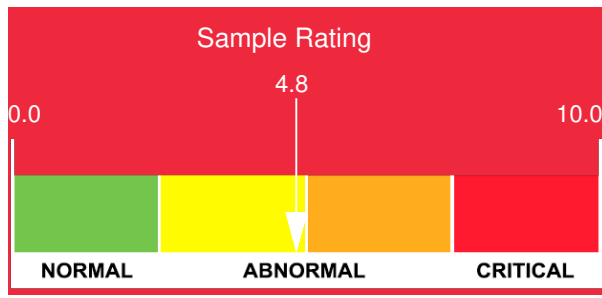
Customer: PTRHTF10093	System Information	Sample Information
REC GROUP 3322 ROAD N N.E. MOSES LAKE, WA 98837 USA Attn: Sam Bright Tel: (509)766-8902 E-Mail: sam.bright@recsilicon.com	System Volume: 50000 gal Bulk Operating Temp: 420F / 216C Heating Source: Blanket: Fluid: Make: COEN	Lab No: I-460574 Analyst: Gaston Arseneault Sample Date: 11/29/11 Received Date: 12/01/11 Completed: 12/08/11 To discuss this report contact Gaston Arseneault at 973-986-6503

Recommendation: It's unclear if this sample was taken from the same reboiler as the last sample but the Silicon jumped from 6 to 42 ppm, which is very significant in just 1 week. Please analyze the data gathered from your process and vent detection to assist in the diagnosis of a possible major leak.

Comments: Silicon is at a MODERATE LEVEL; SILICON sources can be abrasives (dirt, Alumina Silica), seals and gasket material, lube additive or lube supplement, and/or environmental contaminant; Flagged data has been rechecked and confirmed;

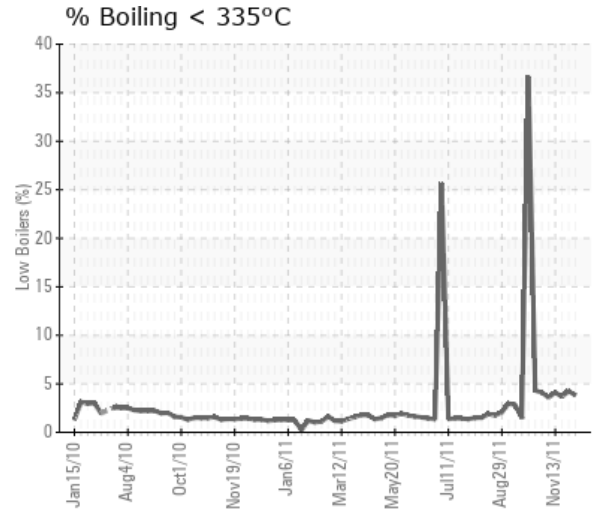
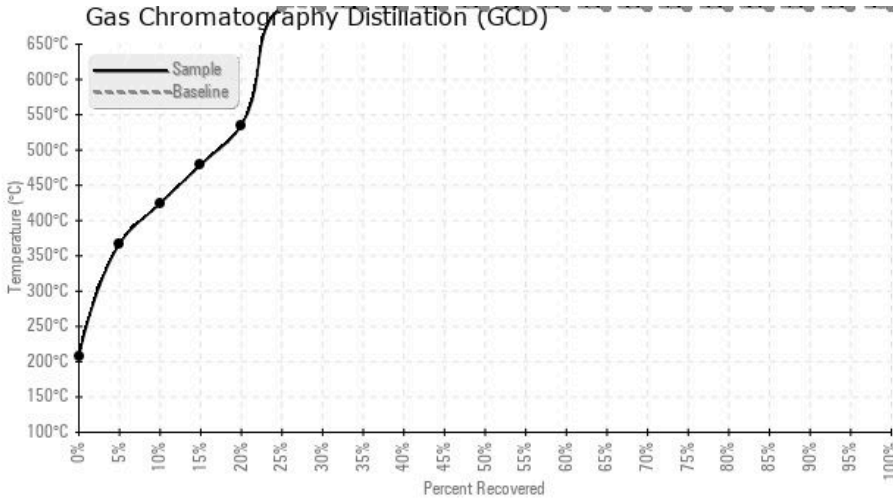
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
11/29/11	12/01/11		REBOILER	423 / 217	6	29.5	0.03	0.063	693 / 367	795 / 424	894 / 479	3.828
11/22/11	12/01/11		REBOILER NORTH	430 / 221	9	28.9	0.01	0.019	690 / 366	796 / 424	895 / 479	4.233
11/16/11	11/17/11		4.0 EXPANSION TANK	412 / 211	10	27.8	0.04	0.018	693 / 367	794 / 424	894 / 479	3.678
11/13/11	01/03/12		4.0 TCS VAPORIZEN	410 / 210	11	28.7	0.01	0.010	690 / 366	795 / 424	894 / 479	4.101
11/09/11	11/17/11		4.0 EXPANSION TANK	419 / 215	16	28.7	0.03	0.025	692 / 367	795 / 424	895 / 479	3.592
11/01/11	11/03/11		VAPORIZER	430 / 221	3	28.8	0.07	0.008	690 / 365	794 / 424	893 / 479	4.094
Baseline Data												





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	
11/29/11	9	0	0	0	0	0	1	0	0	0	42	0	1	0	0	0	0	0	0	0	0	0	170	0	
11/22/11	7	0	0	0	0	0	1	6	0	0	6	0	0	0	0	1	0	0	0	0	6	0	204	1	
11/16/11	7	0	0	0	0	0	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	1	189	1	
11/13/11	7	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	2	172	0	
11/09/11	6	0	0	0	0	0	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	185	0
11/01/11	7	0	0	0	0	0	0	0	0	0	5	0	1	0	0	0	0	0	0	0	0	0	0	202	0
Baseline Data																									

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



Historical Comments	
11/22/11	Results look slightly different (better) in this Reboiler North vs the traditional expansion tank or vaporizer samples. Silicon remains at 6 ppm and consistent with recent samples.
11/16/11	Silicon remains very low (~6ppm) which is a good thing. All other properties remain constant form the last samples after the cleaning and flushing.
11/13/11	This sample show normal results and no sudden change in Silicon, TAN or solids. Let's keep monitoring the oil in this plant.
11/09/11	Silicon remains very low (~6ppm) which is a good thing. All other properties remain constant form the last samples after the cleaning and flushing.
11/01/11	Results look identical to 2 weeks ago. No rise in silicon. Let's keep monitoring the fluid.

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