



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	MARGINAL
FLUID CONDITION	NORMAL

Area
THE QUEEN CITY YACHT CLUB
Machine Id
CKS01046
Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (--- GAL)

RECOMMENDATION

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PP	PP	---
Sample Date		Client Info		22 Apr 2024	12 Apr 2024	---
Machine Age	hrs	Client Info		15473	5454	---
Oil Age	hrs	Client Info		9	10	---
Filter Age	hrs	Client Info		0	0	---
Oil Changed		Client Info		N/A	N/A	---
Filter Changed		Client Info		N/A	N/A	---
Sample Status				MARGINAL	ABNORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>100	1	4	---
Chromium	ppm	ASTM D5185(m)	>20	0	<1	---
Nickel	ppm	ASTM D5185(m)	>2	0	<1	---
Titanium	ppm	ASTM D5185(m)	>2	0	0	---
Silver	ppm	ASTM D5185(m)	>2	0	0	---
Aluminum	ppm	ASTM D5185(m)	>25	2	3	---
Lead	ppm	ASTM D5185(m)	>40	0	0	---
Copper	ppm	ASTM D5185(m)	>330	3	20	---
Tin	ppm	ASTM D5185(m)	>15	0	0	---
Vanadium	ppm	ASTM D5185(m)		0	0	---
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---

CONTAMINATION

Test for glycol is positive. There is a light concentration of glycol present in the oil.

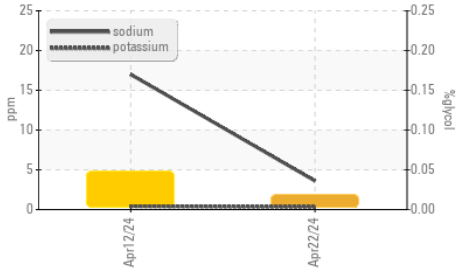
Silicon	ppm	ASTM D5185(m)	>25	10	12	---
Potassium	ppm	ASTM D5185(m)	>20	<1	<1	---
Fuel		WC Method	>5	<1.0	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol	%	ASTM D7922*		▲ 0.019	▲ 0.048	---
Soot %	%	ASTM D7844*	>3	0	0	---
Nitration	Abs/cm	ASTM D7624*	>20	6.7	7.1	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	16.7	17.4	---
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	NORML	---
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	---

FLUID CONDITION

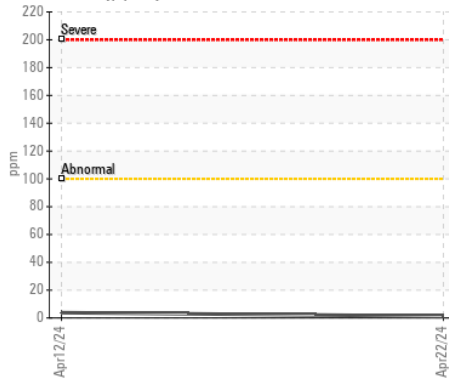
The condition of the oil is acceptable for the time in service. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185(m)		4	17	---
Boron	ppm	ASTM D5185(m)	35	66	64	---
Barium	ppm	ASTM D5185(m)	0	0	0	---
Molybdenum	ppm	ASTM D5185(m)	0	83	87	---
Manganese	ppm	ASTM D5185(m)	0	0	0	---
Magnesium	ppm	ASTM D5185(m)	10	9	12	---
Calcium	ppm	ASTM D5185(m)	2340	2061	2099	---
Phosphorus	ppm	ASTM D5185(m)	1110	944	992	---
Zinc	ppm	ASTM D5185(m)	1210	1073	1126	---
Sulfur	ppm	ASTM D5185(m)	3890	2961	3079	---
Oxidation	Abs/.1mm	ASTM D7414*	>25	11.9	12.3	---
Visc @ 100°C	cSt	ASTM D7279(m)	15.7	14.6	14.6	---

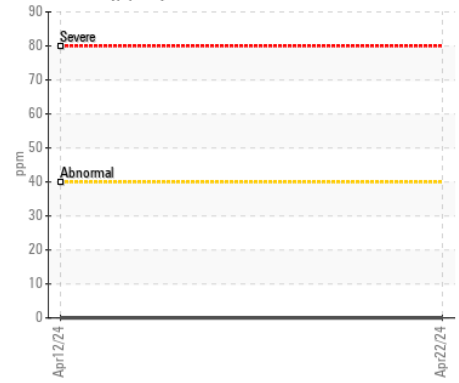
▲ Glycol Contamination



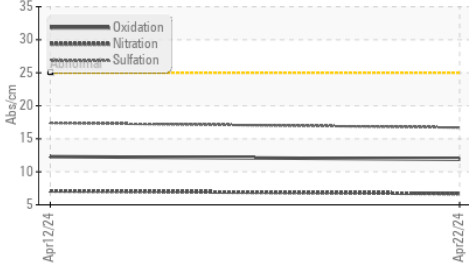
Iron (ppm)



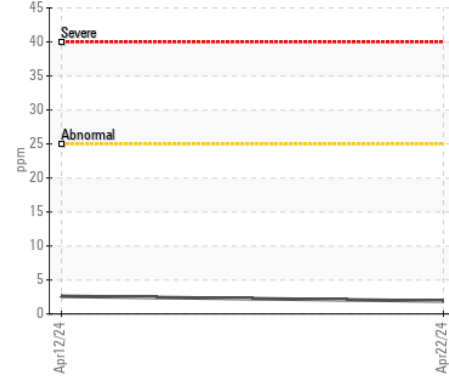
Lead (ppm)



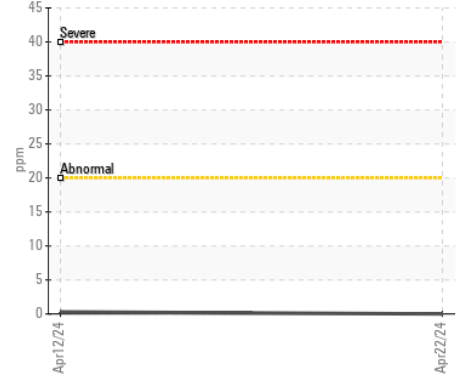
FT-IR (Direct Trend)



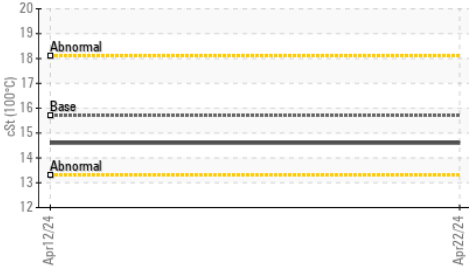
Aluminum (ppm)



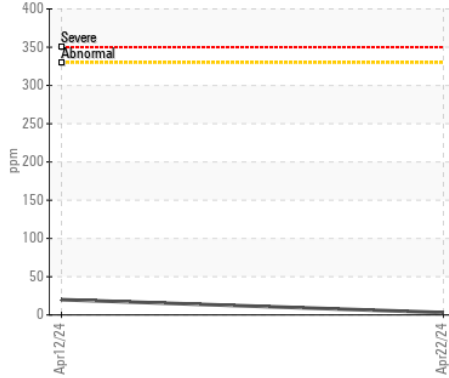
Chromium (ppm)



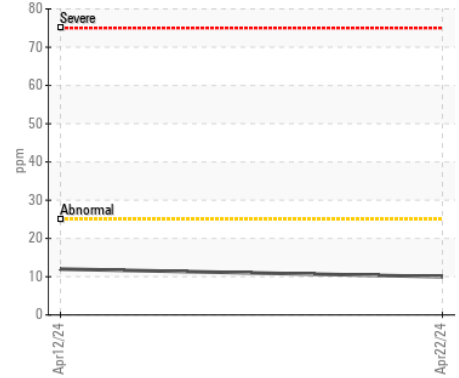
Viscosity @ 100°C



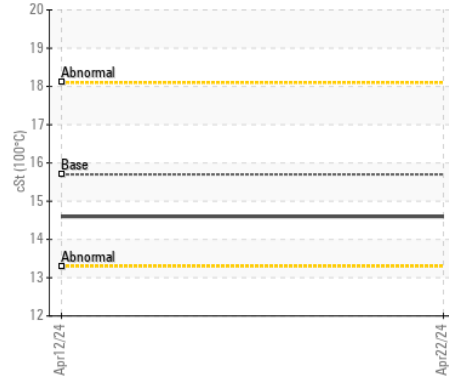
Copper (ppm)



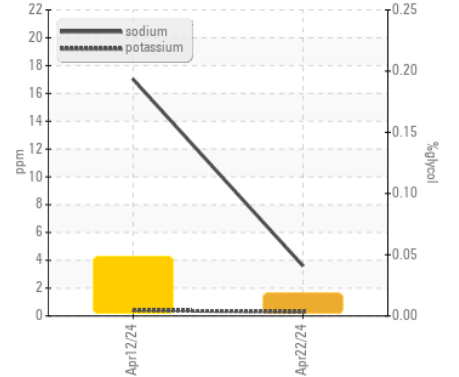
Silicon (ppm)



Viscosity @ 100°C



▲ Glycol Contamination



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PP **Received** : 22 Apr 2024
Lab Number : 02630835 **Tested** : 23 Apr 2024
Unique Number : 5763967 **Diagnosed** : 23 Apr 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: Visual)

Toromont CAT - Power Systems
 288 Orenda Rd.
 Brampton, ON
 CA L6T 1E9
 Contact: Sarah Abdulhameed
 sabdulhameed@toromont.com

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.