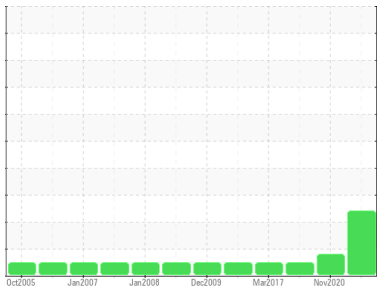
OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Area
GM Oshawa CUC Plant #2 [GTT224-483 1-1PBPR8V]
Machine Id
TRANE L04F02784
Component
Chiller
Fluid
TRANE 0022 (--- GAL)

DIAGNOSIS

Recommendation
The acid number (AN) indicates that your fluid has reached the end of its useful life, please proceed with a complete oil change. Check for indications of excessive refrigerant charge such as bubbles present in the sight glass. We recommend an early resample to monitor this condition.

Wear
Iron ppm levels are abnormal. Oil pump wear is indicated. The zinc reading shows corrosion damage occurring on the zinc galvanized spray eliminator screen which is located above the evaporator tube bundle. The high metal levels indicate corrosion in the system.

Contamination
The water content is negligible. There is no indication of any contamination in the oil.

Fluid Condition
Acid Number (AN) is abnormally high. Zinc ppm levels are abnormally high. The AN level is above the recommended limit. The oil is no longer serviceable.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GTT0002948**	GTT33902	GTT33904
Sample Date		Client Info		**14 Jun 2024**	30 Nov 2020	14 May 2018
Machine Age	hrs	Client Info		**0**	---	---
Oil Age	hrs	Client Info		**0**	---	---
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ATTENTION	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>8	▲ **15**	29	<1
Chromium	ppm	ASTM D5185(m)	>2	**0**	<1	<1
Nickel	ppm	ASTM D5185(m)		**<1**	---	---
Titanium	ppm	ASTM D5185(m)		**0**	---	---
Silver	ppm	ASTM D5185(m)	>2	**0**	---	---
Aluminum	ppm	ASTM D5185(m)	>3	**<1**	<1	<1
Lead	ppm	ASTM D5185(m)	>2	**<1**	<1	<1
Copper	ppm	ASTM D5185(m)	>8	**3**	16	3
Tin	ppm	ASTM D5185(m)	>4	**1**	<1	<1
Antimony	ppm	ASTM D5185(m)		**0**	---	---
Vanadium	ppm	ASTM D5185(m)		**0**	---	---
Beryllium	ppm	ASTM D5185(m)		**0**	---	---
Cadmium	ppm	ASTM D5185(m)		**0**	---	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	**1**	---	---
Barium	ppm	ASTM D5185(m)	0	**0**	---	---
Molybdenum	ppm	ASTM D5185(m)	0	**0**	---	---
Manganese	ppm	ASTM D5185(m)	0	**1**	---	---
Magnesium	ppm	ASTM D5185(m)	0	**0**	---	---
Calcium	ppm	ASTM D5185(m)	0	**<1**	---	---
Phosphorus	ppm	ASTM D5185(m)	35	**4**	---	---
Zinc	ppm	ASTM D5185(m)	0	▲ **110**	8	5
Sulfur	ppm	ASTM D5185(m)	30	**35**	---	---
Lithium	ppm	ASTM D5185(m)		**<1**	---	---

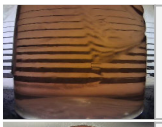
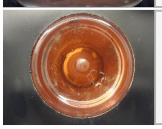
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**10**	---	---
Sodium	ppm	ASTM D5185(m)		**1**	---	---
Potassium	ppm	ASTM D5185(m)	>20	**<1**	---	---
ppm Water	ppm	ASTM D6304*	>50	**6**	76	5

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.05	▲ **0.20**	1.739	0.206

OIL ANALYSIS REPORT

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	---	---
Yellow Metal	scalar	Visual*	NONE	**NONE**	---	---
Precipitate	scalar	Visual*	NONE	**NONE**	---	---
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**	---	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	47	**42.7**	---	---

SAMPLE IMAGES				current	history1	history2
Color					*no image*	*no image*
Bottom					*no image*	*no image*

GRAPHS

Sample No. : GTT0002948
Lab Number : 02647473
Unique Number : 5813025
Test Package : IND 2 (Additional Tests: KF, TAN Man)

Received : 11 Jul 2024
Tested : 16 Jul 2024
Diagnosed : 16 Jul 2024 - Bill Quesnel

Johnson Controls - Markham
Accounts Payable A-33, P.O. Box 2012
Milwaukee, WI
US 532012012
Contact: Service Manager

To discuss this sample report, contact Customer Service at 1-905-847-9300 Ext 26.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Damages: Seller shall in no event be liable for special, incidental, or consequential damages, of a commercial nature, resulting from any cause.

T:
F: