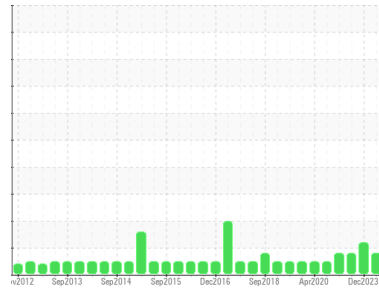




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area

Refrigeration

Machine Id

4 High Stage Compressor NCR (S/N 3235035)

Component

Refrigeration Compressor

Fluid

COLD STAR CS-2033-SC (150 GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of silt (particulates < 6 microns in size) present in the oil.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0892831	WC0892853	WC0632332
Sample Date	Client Info		16 May 2024	20 Dec 2023	16 Dec 2021
Machine Age	hrs	Client Info	65311	62845	0
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		N/A	Filtered	N/A
Sample Status			ATTENTION	ABNORMAL	ABNORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >8	2	0	0
Chromium	ppm	ASTM D5185m >2	<1	0	0
Nickel	ppm	ASTM D5185m	<1	<1	<1
Titanium	ppm	ASTM D5185m	<1	0	0
Silver	ppm	ASTM D5185m >2	1	0	<1
Aluminum	ppm	ASTM D5185m >3	1	0	0
Lead	ppm	ASTM D5185m >2	<1	0	0
Copper	ppm	ASTM D5185m >8	2	0	<1
Tin	ppm	ASTM D5185m >4	<1	0	0
Antimony	ppm	ASTM D5185m	---	---	0
Vanadium	ppm	ASTM D5185m	<1	0	0
Cadmium	ppm	ASTM D5185m	<1	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	0
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	<1	0	0
Manganese	ppm	ASTM D5185m	<1	<1	0
Magnesium	ppm	ASTM D5185m	<1	<1	0
Calcium	ppm	ASTM D5185m	0	0	0
Phosphorus	ppm	ASTM D5185m	7	4	45
Zinc	ppm	ASTM D5185m	0	0	0
Sulfur	ppm	ASTM D5185m	0	0	0

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >15	<1	0	<1
Sodium	ppm	ASTM D5185m	0	0	0
Potassium	ppm	ASTM D5185m >20	<1	0	0
Water	%	ASTM D6304 >0.01	0.003	0.002	0.002
ppm Water	ppm	ASTM D6304 >100	32	22	18.3

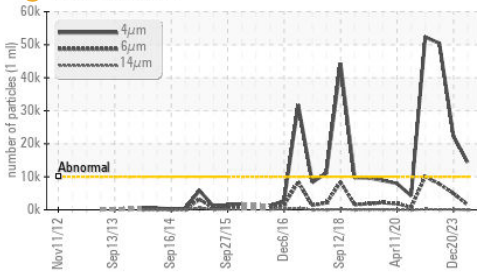
FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>10000	14419	22265	50451
Particles >6µm	ASTM D7647	>2500	1543	4949	7843
Particles >14µm	ASTM D7647	>320	19	125	131
Particles >21µm	ASTM D7647	>80	4	15	12
Particles >38µm	ASTM D7647	>20	0	0	0
Particles >71µm	ASTM D7647	>4	0	0	0
Oil Cleanliness	ISO 4406 (c)	>20/18/15	21/18/11	22/19/14	23/20/14

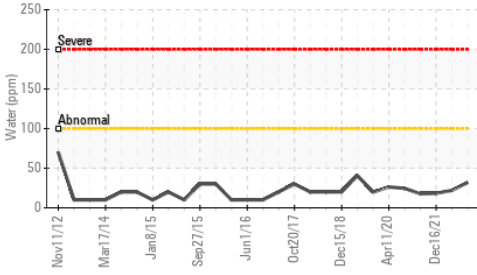
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974	0.014	0.014	0.014

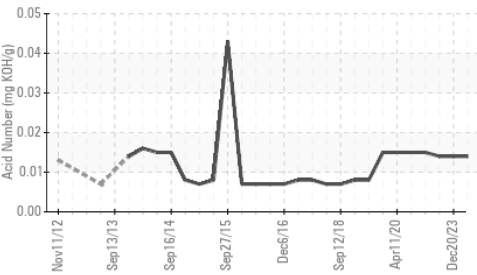
Particle Trend



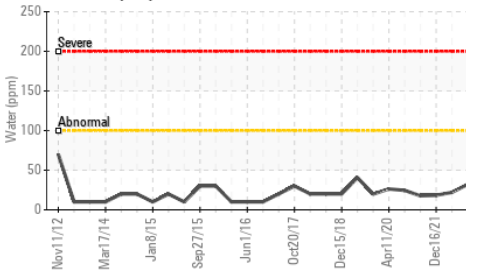
Water (KF)



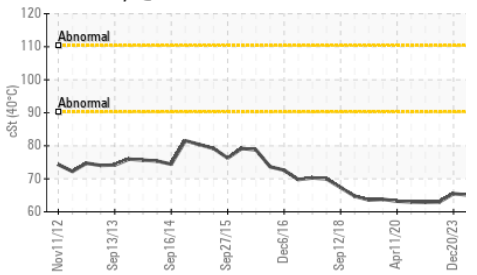
Acid Number



Water (KF)



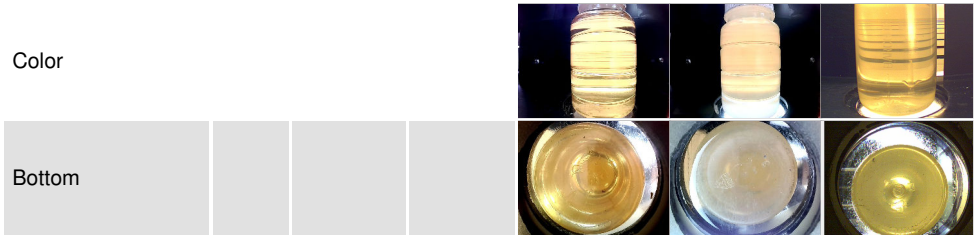
Viscosity @ 40°C



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	LIGHT	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.01	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

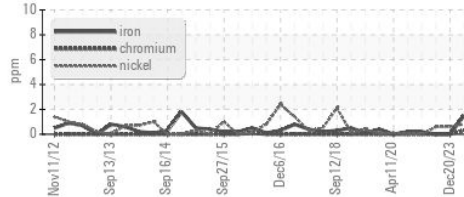
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	65.1	65.5	63.0

SAMPLE IMAGES	method	limit/base	current	history1	history2
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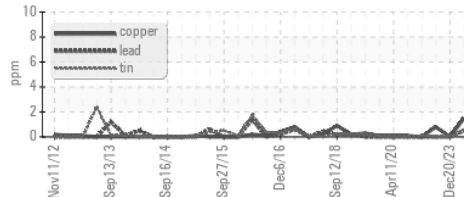


GRAPHS

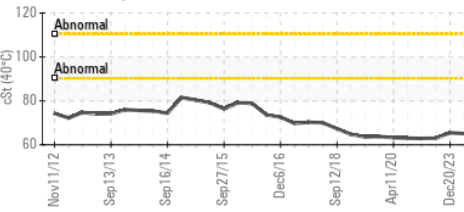
Ferrous Alloys



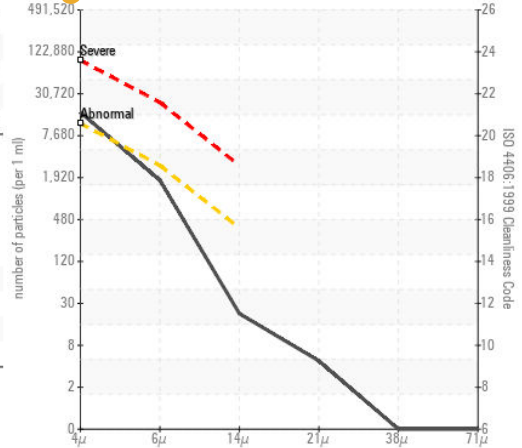
Non-ferrous Metals



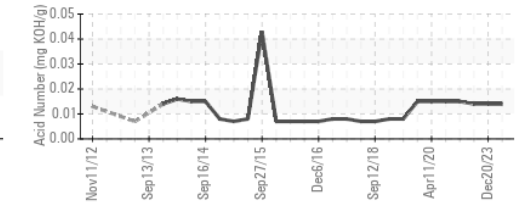
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0892831 **Received** : 29 May 2024
Lab Number : 06194055 **Tested** : 31 May 2024
Unique Number : 11056178 **Diagnosed** : 31 May 2024 - Jonathan Hester
Test Package : IND 2 (Additional Tests: PrtCount)

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 1001 13TH AVE EAST
 BRADENTON, FL
 US 34208
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 steven.riedel@tropicana.com
 T: (941)742-2992
 F: (941)749-3980

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)