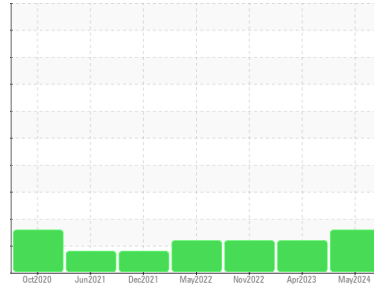


# OIL ANALYSIS REPORT

Sample Rating Trend



## VISCOSITY



Area  
**Marcus Hook/Cryogenic/Compressor**  
 Machine Id  
**CRYOGENIC COMPRESSOR 10-C-103A**  
 Component  
**Rotary Compressor**  
 Fluid  
**TULCO LUBSOIL SYN RL WI 100 (825 GAL)**

### DIAGNOSIS

**Recommendation**  
 We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.

**Wear**  
 All component wear rates are normal.

**Contamination**  
 There is a high amount of silt (particulates < 14 microns in size) present in the oil.

**Fluid Condition**  
 The oil viscosity is lower than normal. Confirm oil type. The AN level is acceptable for this fluid.

### SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>TO90002094</b>	TO90003034	TO90002764
Sample Date	Client Info	<b>09 May 2024</b>	25 Apr 2023	02 Nov 2022
Machine Age	hrs	<b>0</b>	0	0
Oil Age	hrs	<b>0</b>	0	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>ABNORMAL</b>	ATTENTION	ABNORMAL

### WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m >70	<b>4</b>	10	12
Chromium	ppm	ASTM D5185m >10	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m >3	<b>0</b>	0	<1
Lead	ppm	ASTM D5185m >4	<b>0</b>	0	0
Copper	ppm	ASTM D5185m >20	<b>0</b>	0	0
Tin	ppm	ASTM D5185m >3	<b>&lt;1</b>	0	<1
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

### ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	<b>0</b>	0	4
Barium	ppm	ASTM D5185m	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	<b>0</b>	0	0
Manganese	ppm	ASTM D5185m	<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	<b>0</b>	<1	<1
Calcium	ppm	ASTM D5185m	<b>0</b>	51	49
Phosphorus	ppm	ASTM D5185m 1500	<b>1239</b>	13	37
Zinc	ppm	ASTM D5185m	<b>0</b>	4	0
Sulfur	ppm	ASTM D5185m	<b>0</b>	0	335

### CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >45	<b>8</b>	8	8
Sodium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	1
Potassium	ppm	ASTM D5185m >20	<b>0</b>	<1	<1
Water	%	ASTM D6304 >2.26	<b>0.039</b>	0.034	0.115
ppm Water	ppm	ASTM D6304 >22600	<b>393</b>	340.5	1150

### FLUID CLEANLINESS

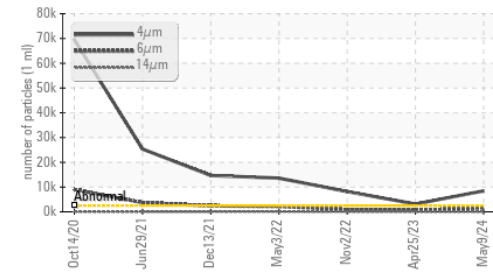
method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >2500	<b>▲ 8461</b>	● 3150	▲ 8171
Particles >6µm	ASTM D7647 >320	<b>▲ 1589</b>	● 598	▲ 845
Particles >14µm	ASTM D7647 >80	<b>34</b>	20	34
Particles >21µm	ASTM D7647 >20	<b>6</b>	3	9
Particles >38µm	ASTM D7647 >4	<b>0</b>	0	0
Particles >71µm	ASTM D7647 >3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c) >18/15/13	<b>▲ 20/18/12</b>	● 19/16/11	▲ 20/17/12

### FLUID DEGRADATION

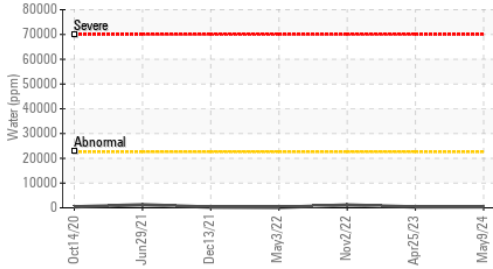
method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045 0.04	<b>0.038</b>	0.089	0.11

# OIL ANALYSIS REPORT

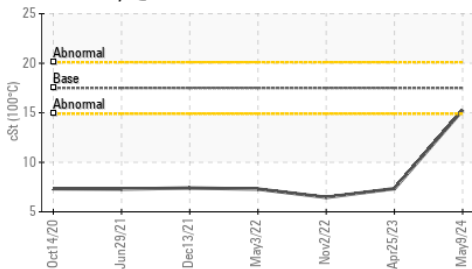
## Particle Trend



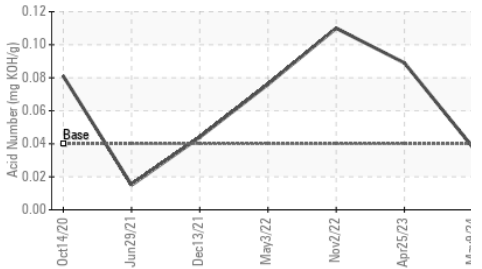
## Water (KF)



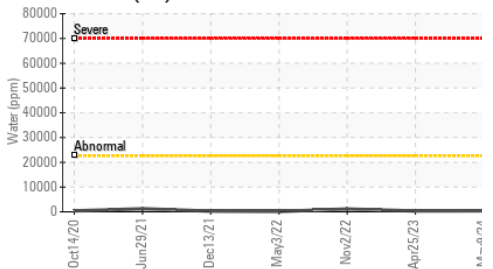
## Viscosity @ 100°C



## Acid Number



## Water (KF)



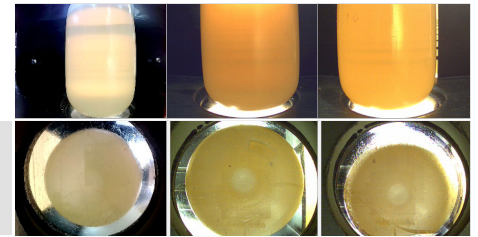
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>2.26	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D445	97	81.09	34.4	35.6
Visc @ 100°C	cSt	ASTM D445	17.5	15.27	7.34	6.46
Viscosity Index (VI)	Scale	ASTM D2270	198	200	186	135

## SAMPLE IMAGES

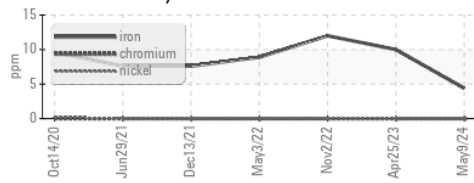
Color

Bottom

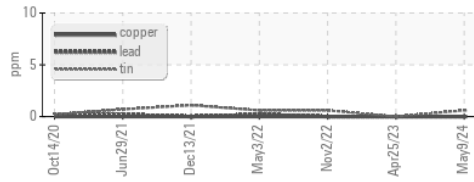


## GRAPHS

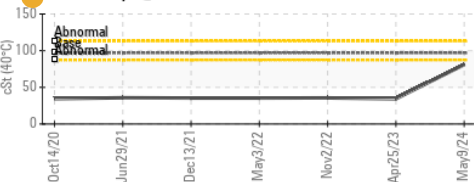
### Ferrous Alloys



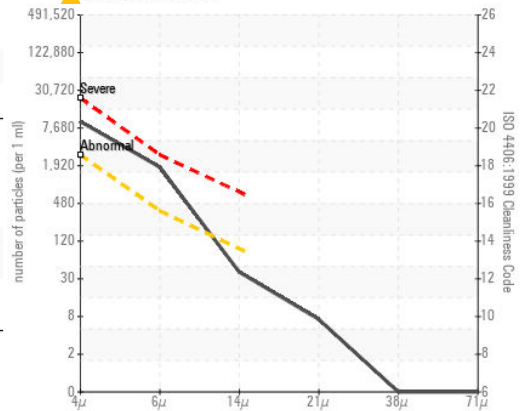
### Non-ferrous Metals



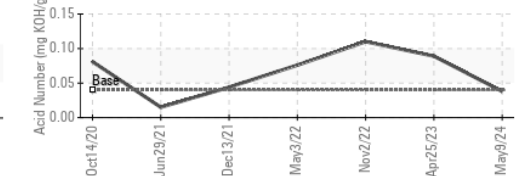
### Viscosity @ 40°C



### Particle Count



### Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : TO90002094

Lab Number : 06182927

Unique Number : 11034253

Test Package : IND 2 ( Additional Tests: KF, KV100, PrtCount, VI )

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)

Received : 17 May 2024

Tested : 29 May 2024

Diagnosed : 29 May 2024 - Jonathan Hester

ENERGY TRANSFER - MARCUS HOOK

2ND & GREEN STREETS

MARCUS HOOK, PA

US 19061

Contact: CHRISTOPHER HOFFA

christopher.hoffa@energytransfer.com

T:

F: