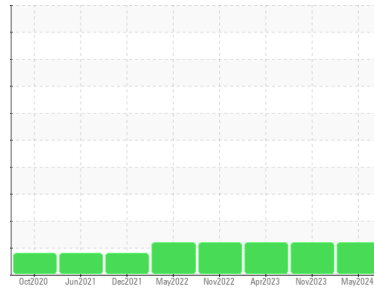


# OIL ANALYSIS REPORT

Sample Rating Trend



Area  
**Marcus Hook/Cryogenic/Compressor**  
 Machine Id  
**CRYOGENIC COMPRESSOR 40-C-301F**  
 Component  
**Rotary Compressor**  
 Fluid  
**FRICK COMPRESSOR OIL #12B (385 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 < 14 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		<b>TO90002164</b>	TO60001816	TO90003057
Sample Date	Client Info		<b>09 May 2024</b>	05 Nov 2023	25 Apr 2023
Machine Age	hrs	Client Info	<b>0</b>	0	0
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>ATTENTION</b>	ATTENTION	ABNORMAL

**WEAR METALS**

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >70	<b>0</b>	<1	1
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	0
Lead	ppm	ASTM D5185m >4	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m >20	<b>0</b>	0	0
Tin	ppm	ASTM D5185m >3	<b>&lt;1</b>	<1	<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	0
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>	0	0
Magnesium	ppm	ASTM D5185m	<b>0</b>	<1	<1
Calcium	ppm	ASTM D5185m	<b>59</b>	141	142
Phosphorus	ppm	ASTM D5185m	<b>3</b>	15	15
Zinc	ppm	ASTM D5185m	<b>0</b>	0	6
Sulfur	ppm	ASTM D5185m	<b>0</b>	187	151

**CONTAMINANTS**

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >45	<b>5</b>	5	5
Sodium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	1
Potassium	ppm	ASTM D5185m >20	<b>&lt;1</b>	0	<1
Water	%	ASTM D6304 >0.6	<b>0.082</b>	0.060	0.031
ppm Water	ppm	ASTM D6304	<b>827</b>	609.5	311.0

**FLUID CLEANLINESS**

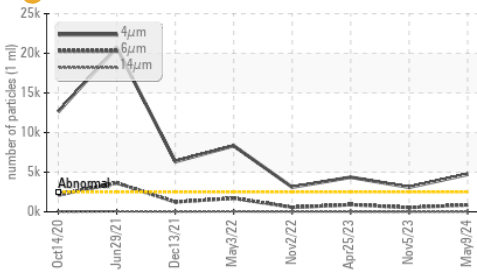
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	<b>4721</b>	3094	4367
Particles >6µm	ASTM D7647	>320	<b>870</b>	534	906
Particles >14µm	ASTM D7647	>80	<b>22</b>	13	26
Particles >21µm	ASTM D7647	>20	<b>4</b>	2	6
Particles >38µm	ASTM D7647	>4	<b>0</b>	0	0
Particles >71µm	ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>18/15/13	<b>19/17/12</b>	19/16/11	19/17/12

**FLUID DEGRADATION**

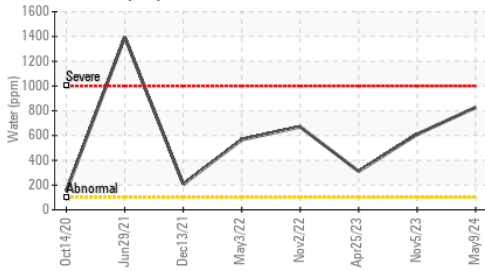
	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>0.066</b>	0.087	0.071

# OIL ANALYSIS REPORT

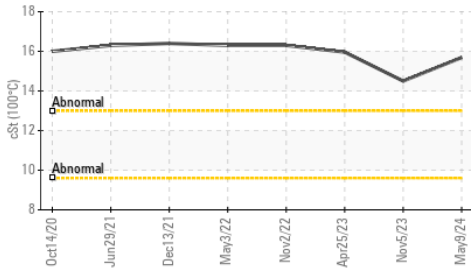
## Particle Trend



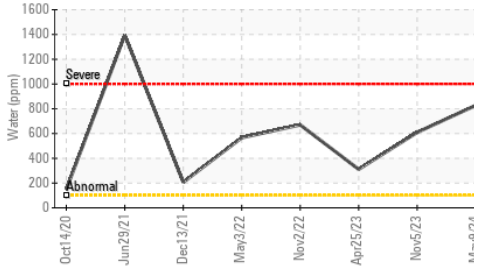
## Water (KF)



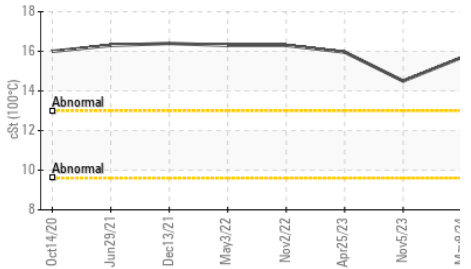
## Viscosity @ 100°C



## Water (KF)



## Viscosity @ 100°C



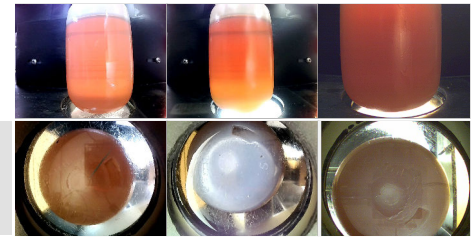
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.6	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	98.5	100	105
Visc @ 100°C	cSt	ASTM D445	15.69	14.5	15.96
Viscosity Index (VI)	Scale	ASTM D2270	169	149	162

SAMPLE IMAGES	method	limit/base	current	history1	history2
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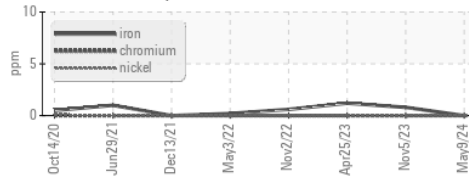
Color

Bottom

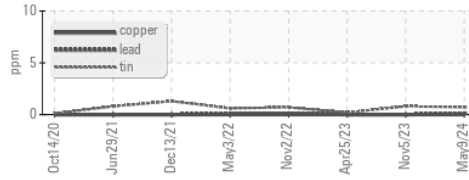


## GRAPHS

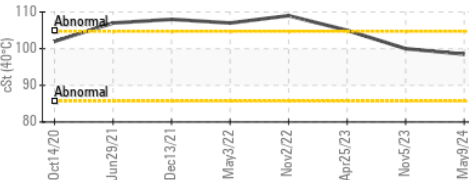
### Ferrous Alloys



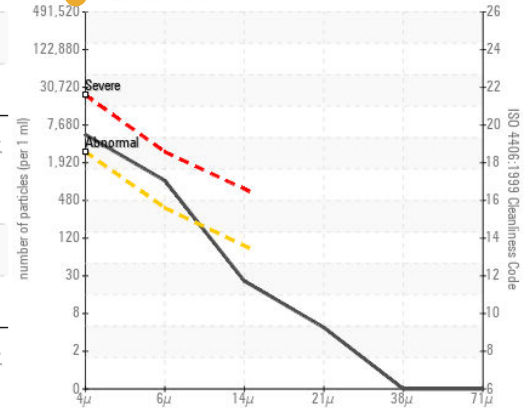
### Non-ferrous Metals



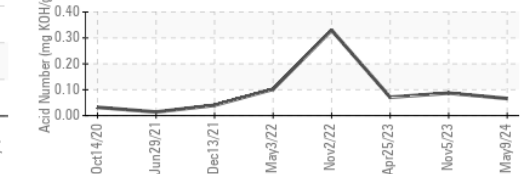
### Viscosity @ 40°C



### Particle Count



### Acid Number



Certificate L2367

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

**Sample No.** : TO90002164

**Lab Number** : 06182905

**Unique Number** : 11034231

**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** : 28 May 2024

**Diagnosed** : 28 May 2024 - Angela Borella

**ENERGY TRANSFER - MARCUS HOOK**

2ND & GREEN STREETS

MARCUS HOOK, PA

US 19061

Contact: CHRISTOPHER HOFFA

christopher.hoffa@energytransfer.com

T:

F: