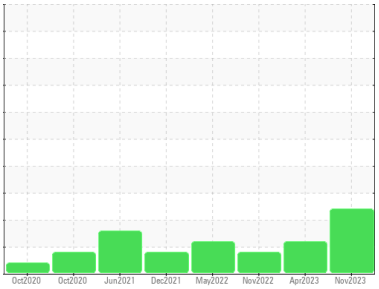
PROBLEM SUMMARY

Sample Rating Trend

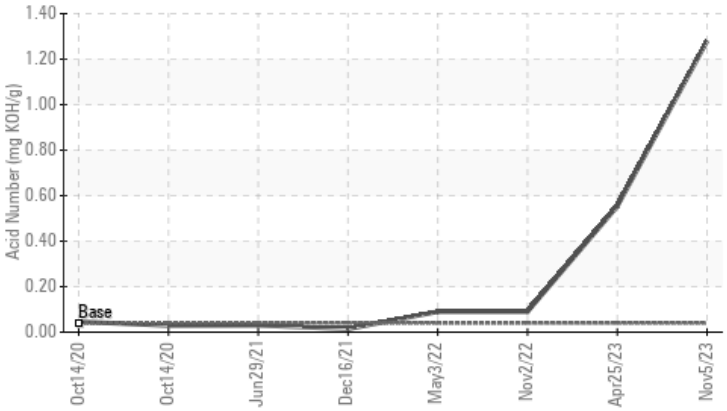


DEGRADATION

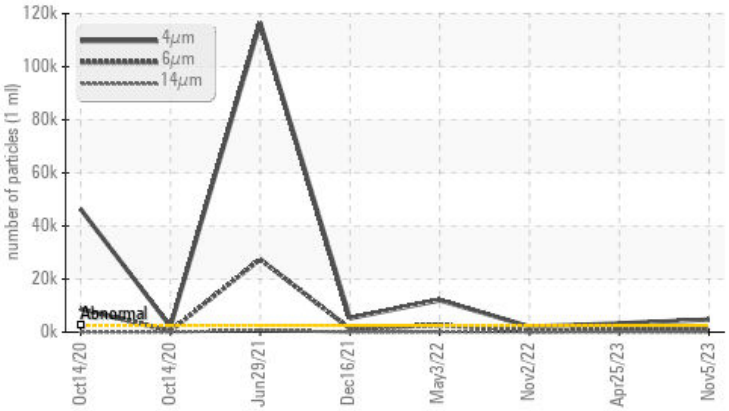
Area
Marcus Hook/Cryogenic/Compressor
Machine Id
CRYOGENIC COMPRESSOR 40-C-301E
Component
Rotary Compressor
Fluid
TULCO LUBSOIL SYN RL WI 100 (385 GAL)

COMPONENT CONDITION SUMMARY

Acid Number



Particle Trend



RECOMMENDATION

The oil is near the end of it`s useful service life, recommend schedule an oil change. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	ATTENTION
Particles >4µm		ASTM D7647	>2500	▲ **4735**	▲ 3303	2083
Particles >6µm		ASTM D7647	>320	▲ **974**	▲ 781	▲ 385
Oil Cleanliness		ISO 4406 (c)	>18/15/13	▲ **19/17/11**	▲ 19/17/12	▲ 18/16/12
Acid Number (AN)	mg KOH/g	ASTM D8045	0.04	▲ **1.279**	0.553	0.09

Customer Id: ETCMHOOK
Sample No.: TO60001817
Lab Number: 05999944
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Service/change Fluid	---	---	?	The oil is near the end of it's useful service life, recommend schedule an oil change.
Resample	---	---	?	We recommend an early resample to monitor this condition.

HISTORICAL DIAGNOSIS

25 Apr 2023 Diag: Don Baldridge

ISO

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

02 Nov 2022 Diag: Don Baldridge

ISO

No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

03 May 2022 Diag: Don Baldridge

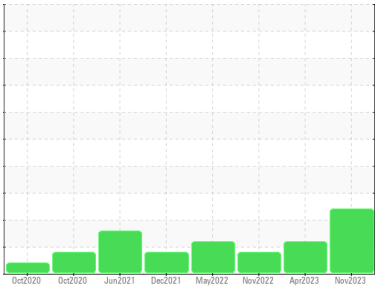
ISO

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Area
Marcus Hook/Cryogenic/Compressor
Machine Id
CRYOGENIC COMPRESSOR 40-C-301E
Component
Rotary Compressor
Fluid
TULCO LUBSOIL SYN RL WI 100 (385 GAL)

DIAGNOSIS

Recommendation
The oil is near the end of it`s useful service life, recommend schedule an oil change. We recommend an early resample to monitor this condition.

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 AN level is at the top-end of the recommended limit.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**TO60001817**	TO90003056	TO90002742
Sample Date		Client Info		**05 Nov 2023**	25 Apr 2023	02 Nov 2022
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	ATTENTION

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>70	**57**	32	17
Chromium	ppm	ASTM D5185m	>10	**0**	0	<1
Nickel	ppm	ASTM D5185m		**<1**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>3	**<1**	0	0
Lead	ppm	ASTM D5185m	>4	**0**	<1	<1
Copper	ppm	ASTM D5185m	>20	**0**	0	0
Tin	ppm	ASTM D5185m	>3	**1**	<1	<1
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	0	<1
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**0**	0	0
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m		**4**	2	<1
Calcium	ppm	ASTM D5185m		**251**	168	101
Phosphorus	ppm	ASTM D5185m	1500	**1318**	1085	1003
Zinc	ppm	ASTM D5185m		**141**	95	21
Sulfur	ppm	ASTM D5185m		**203**	201	29

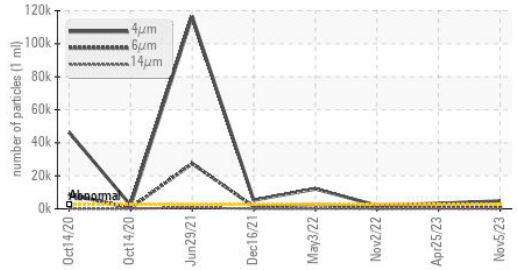
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>45	**3**	2	2
Sodium	ppm	ASTM D5185m		**26**	20	12
Potassium	ppm	ASTM D5185m	>20	**<1**	1	1
Water	%	ASTM D6304	>2.26	**0.026**	0.029	0.061
ppm Water	ppm	ASTM D6304	>22600	**266.8**	291.4	610

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>2500	▲ **4735**	▲ 3303	2083
Particles >6µm		ASTM D7647	>320	▲ **974**	▲ 781	▲ 385
Particles >14µm		ASTM D7647	>80	**13**	28	25
Particles >21µm		ASTM D7647	>20	**3**	5	7
Particles >38µm		ASTM D7647	>4	**0**	1	1
Particles >71µm		ASTM D7647	>3	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>18/15/13	▲ **19/17/11**	▲ 19/17/12	▲ 18/16/12

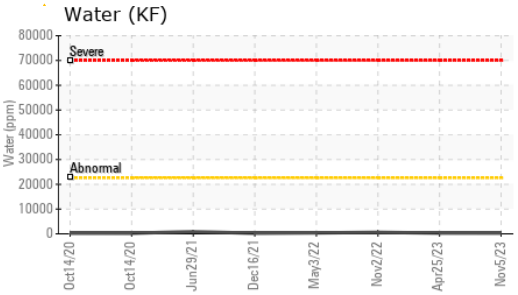
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.04	▲ **1.279**	0.553	0.09

OIL ANALYSIS REPORT

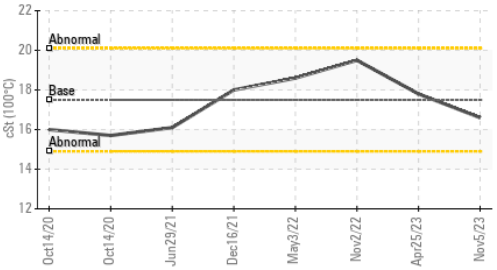
Particle Trend



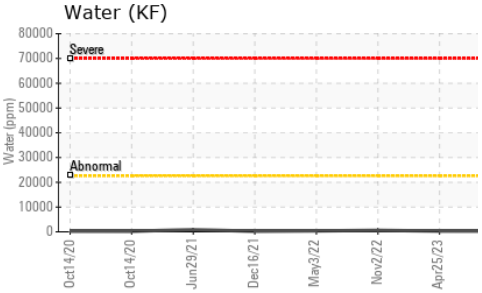
Water (KF)



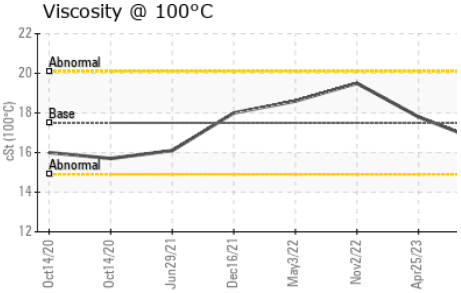
Viscosity @ 100°C



Water (KF)



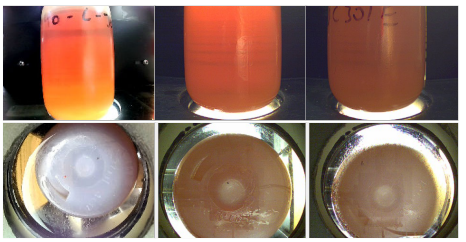
Viscosity @ 100°C



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

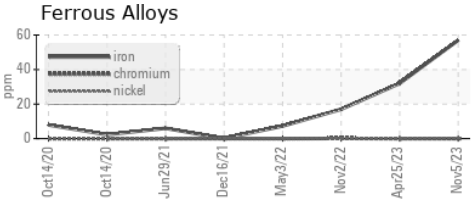
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	97	**107**	112	118
Visc @ 100°C	cSt	ASTM D445	17.5	**16.6**	17.8	19.5
Viscosity Index (VI)	Scale	ASTM D2270	198	**168**	176	187

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

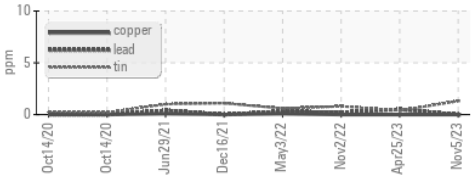


GRAPHS

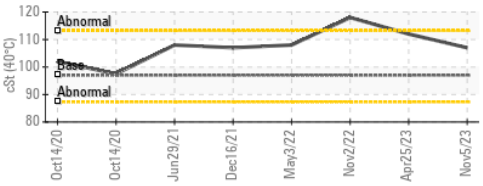
Ferrous Alloys



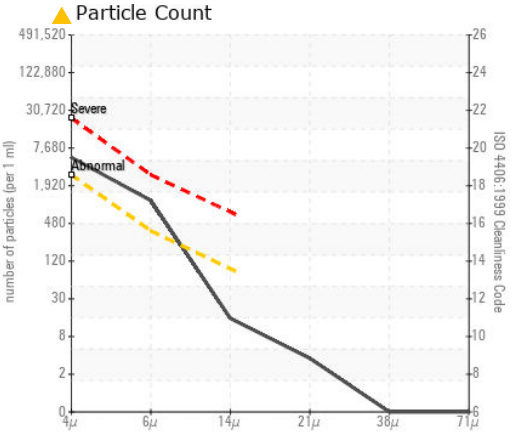
Non-ferrous Metals



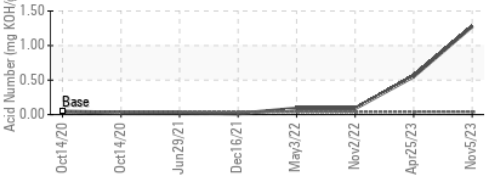
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO60001817 **Received** : 06 Nov 2023
Lab Number : 05999944 **Diagnosed** : 08 Nov 2023
Unique Number : 10728304 **Diagnostician** : Jonathan Hester
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)

ENERGY TRANSFER - MARCUS HOOK
2ND & GREEN STREETS
MARCUS HOOK, PA
US 19061
Contact: CHRISTOPHER HOFFA
christopher.hoffa@energytransfer.com
T:
F:

Report Id: ETCMHOOK [WUSCAR] 05999944 (Generated: 11/08/2023 17:00:30) Rev: 1

Submitted By: ERIC THORNTON