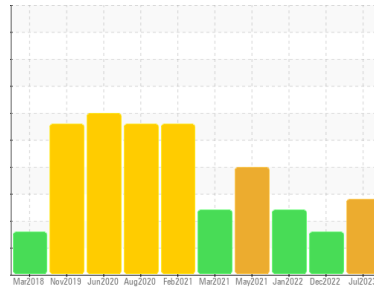


PROBLEM SUMMARY

Sample Rating Trend



DIRT



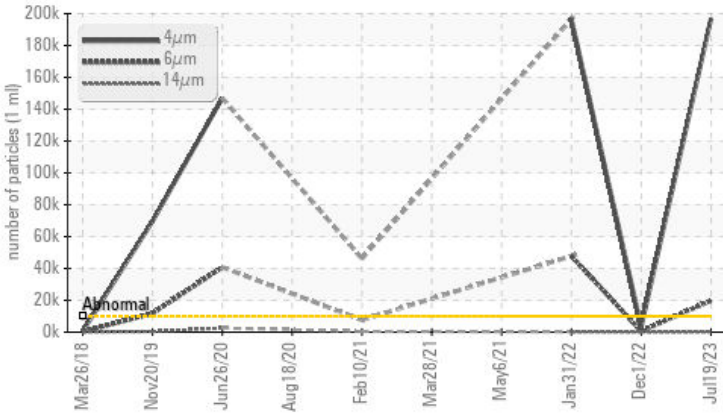
Machine Id
VILTER B

Component
Compressor

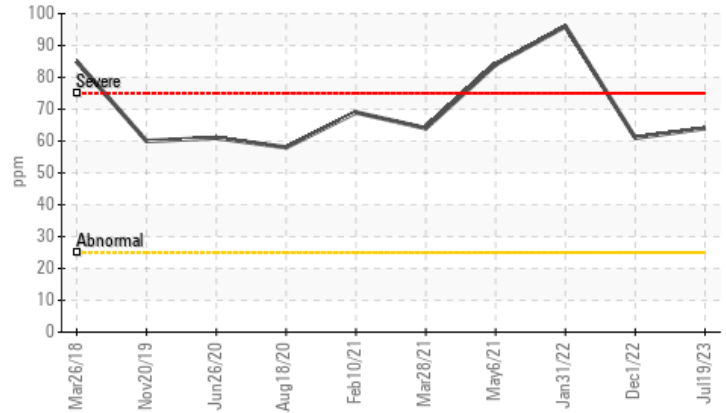
Fluid
TULCO LUBSOIL LPG WI 100 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Particle Trend



▲ Silicon (ppm)



RECOMMENDATION

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	ABNORMAL	ABNORMAL
Silicon	ppm	ASTM D5185m >25	▲ 64	▲ 61	▲ 96
Particles >4µm		ASTM D7647 >10000	▲ 196882	3365	▲ 196636
Particles >6µm		ASTM D7647 >1300	▲ 19816	594	▲ 47745
Oil Cleanliness		ISO 4406 (c) >20/17/15	▲ 25/21/13	19/16/12	▲ 25/23/14

Customer Id: MELMELTX
Sample No.: TO60000430
Lab Number: 05905468
Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldrige +1
don.b505@comcast.net

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

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

01 Dec 2022 Diag: Angela Borella

DIRT



The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. Elemental level of silicon (Si) above normal indicating ingress of seal material. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

view report



31 Jan 2022 Diag: Doug Bogart

DIRT



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. Elemental level of silicon (Si) above normal indicating ingress of seal material. The AN level is acceptable for this fluid.

view report



06 May 2021 Diag: Jonathan Hester

WATER



The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample. All component wear rates are normal. There is a moderate concentration of water present in the oil. There is a moderate amount of visible silt present in the sample. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

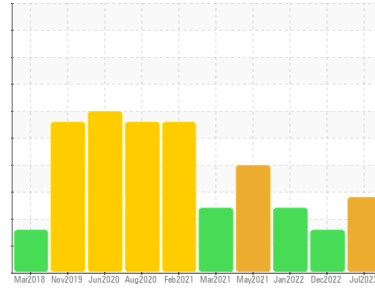
view report



Machine Id
VILTER B

Component
Compressor

Fluid
TULCO LUBSOIL LPG WI 100 (--- GAL)



DIAGNOSIS

Recommendation

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. 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. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Fluid Condition

The AN level is acceptable for this fluid.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	TO60000430	TO50000125	TO50000083
Sample Date	Client Info	19 Jul 2023	01 Dec 2022	31 Jan 2022
Machine Age	wks Client Info	0	0	0
Oil Age	wks Client Info	0	0	0
Oil Changed	Client Info	Filtered	Filtered	N/A
Sample Status		ABNORMAL	ABNORMAL	ABNORMAL

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >50	6	0	3
Chromium	ppm ASTM D5185m >10	0	0	0
Nickel	ppm ASTM D5185m	<1	0	<1
Titanium	ppm ASTM D5185m	0	0	0
Silver	ppm ASTM D5185m	<1	0	<1
Aluminum	ppm ASTM D5185m >25	0	<1	<1
Lead	ppm ASTM D5185m >25	0	0	<1
Copper	ppm ASTM D5185m >50	<1	0	<1
Tin	ppm ASTM D5185m >15	<1	<1	1
Antimony	ppm ASTM D5185m	---	---	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	0	2
Barium	ppm ASTM D5185m	<1	0	0
Molybdenum	ppm ASTM D5185m 0	0	0	0
Manganese	ppm ASTM D5185m	0	0	<1
Magnesium	ppm ASTM D5185m 0	0	2	<1
Calcium	ppm ASTM D5185m	0	0	0
Phosphorus	ppm ASTM D5185m 0	0	36	10
Zinc	ppm ASTM D5185m 0	0	4	0
Sulfur	ppm ASTM D5185m 0	15649	6098	6239

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	▲ 64	▲ 61	▲ 96
Sodium	ppm ASTM D5185m	0	0	2
Potassium	ppm ASTM D5185m >20	<1	0	2
Water	% ASTM D6304 >2.26	0.473	0.301	0.003
ppm Water	ppm ASTM D6304 >22600	4736.8	3017.4	32.7

FLUID CLEANLINESS

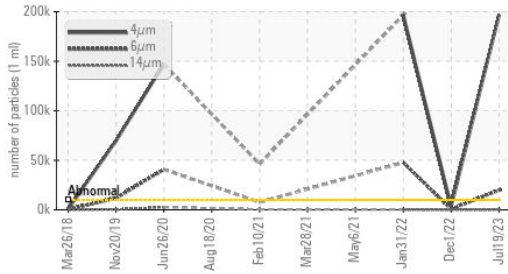
method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >10000	▲ 196882	3365	▲ 196636
Particles >6µm	ASTM D7647 >1300	▲ 19816	594	▲ 47745
Particles >14µm	ASTM D7647 >320	74	31	140
Particles >21µm	ASTM D7647 >80	16	9	31
Particles >38µm	ASTM D7647 >20	1	1	1
Particles >71µm	ASTM D7647 >4	0	0	0
Oil Cleanliness	ISO 4406 (c) >20/17/15	▲ 25/21/13	19/16/12	▲ 25/23/14

FLUID DEGRADATION

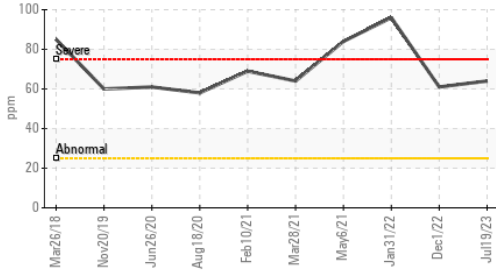
method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g ASTM D8045	0.77	1.02	0.641

OIL ANALYSIS REPORT

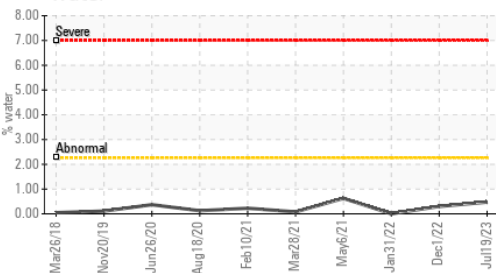
▲ Particle Trend



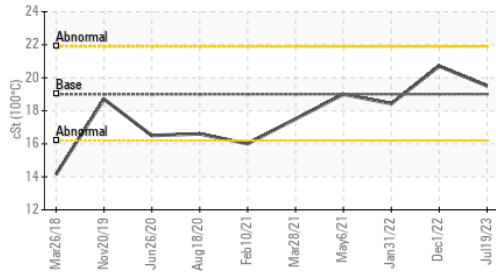
▲ Silicon (ppm)



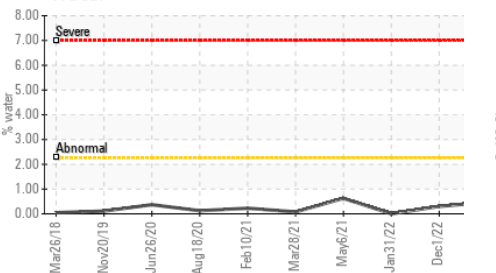
Water



Viscosity @ 100°C



Water



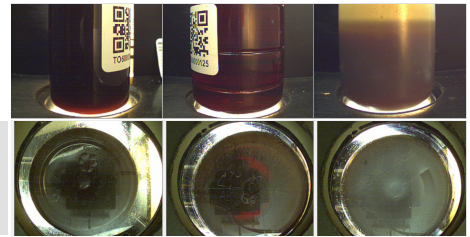
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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	113	117	124
Visc @ 100°C	cSt	ASTM D445	19	19.5	20.7
Viscosity Index (VI)	Scale	ASTM D2270	189	189	192

SAMPLE IMAGES	method	limit/base	current	history1	history2
---------------	--------	------------	---------	----------	----------

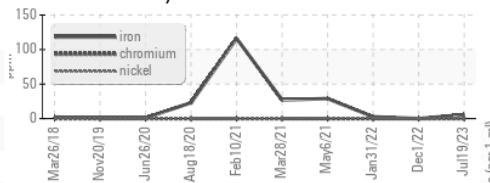
Color

Bottom

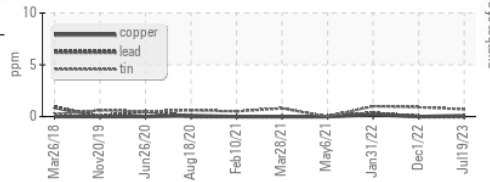


GRAPHS

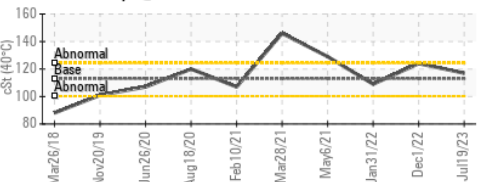
Ferrous Alloys



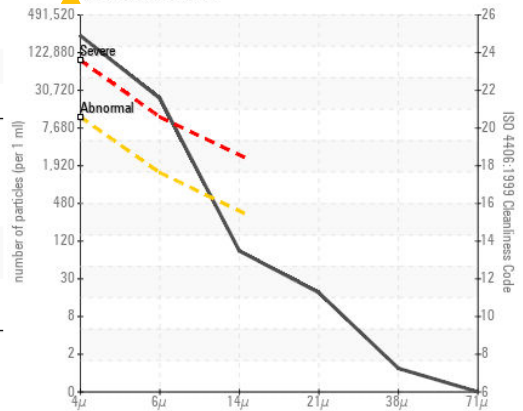
Non-ferrous Metals



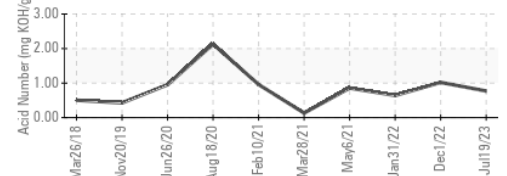
Viscosity @ 40°C



▲ Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO60000430 **Received** : 24 Jul 2023
Lab Number : 05905468 **Diagnosed** : 26 Jul 2023
Unique Number : 10566824 **Diagnostician** : Don Baldrige

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)

MELISSA RENEWABLES
 3820 SAM RAYBURN HWY
 MELISSA, TX
 US 75454
 Contact: BILL PALMER
 bpalmer@morrowenergy.com
 T: (972)529-8442
 F: