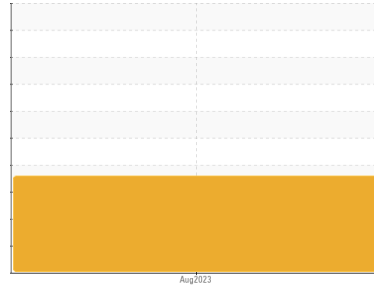


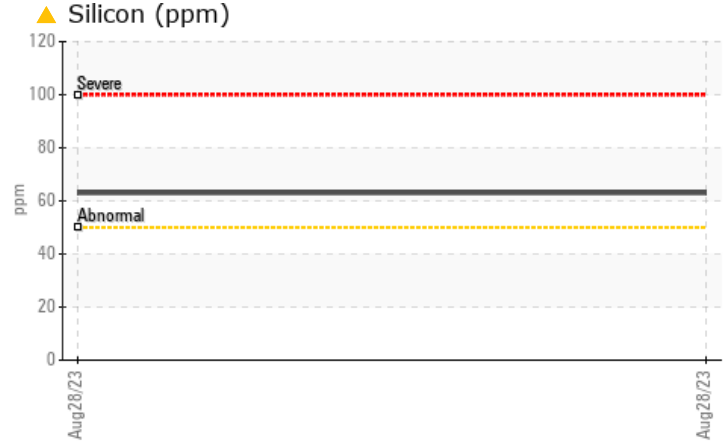
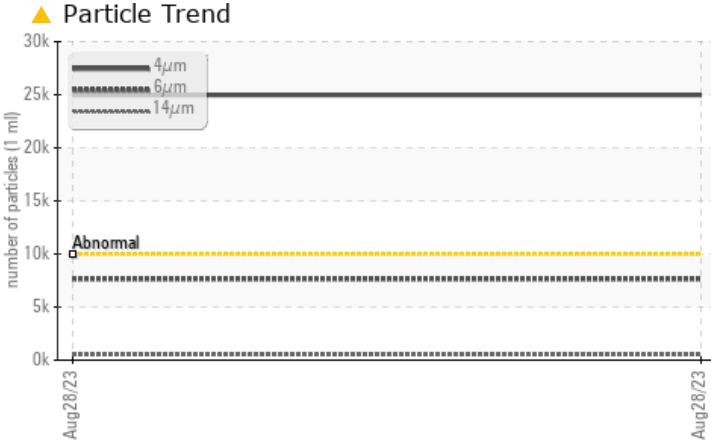
PROBLEM SUMMARY

Sample Rating Trend



Machine Id
VILTER 2ND STAGE
Component
Screw Compressor
Fluid
VILTER SF PAO 150 (150 GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

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

PROBLEMATIC TEST RESULTS

Sample Status	ASTM D5185m	>50	ABNORMAL	---	---
Silicon	ppm		▲ 63	---	---
Particles >4µm	ASTM D7647	>10000	▲ 24968	---	---
Particles >6µm	ASTM D7647	>2500	▲ 7652	---	---
Particles >14µm	ASTM D7647	>320	▲ 508	---	---
Particles >21µm	ASTM D7647	>80	▲ 111	---	---
Oil Cleanliness	ISO 4406 (c)	>20/18/15	▲ 22/20/16	---	---

Customer Id: TWIAND
Sample No.: TO60000907
Lab Number: 05996278
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

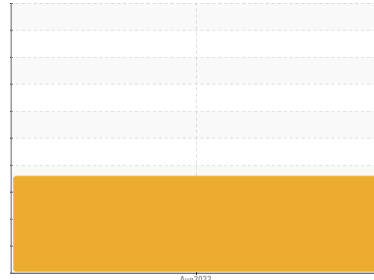
RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component if applicable.

HISTORICAL DIAGNOSIS

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id
VILTER 2ND STAGE
Component
Screw Compressor
Fluid
VILTER SF PAO 150 (150 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 particulates present in the oil. Elemental level of silicon (Si) above normal .

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	TO60000907	---	---
Sample Date	Client Info	28 Aug 2023	---	---
Machine Age	hrs Client Info	17571	---	---
Oil Age	hrs Client Info	0	---	---
Oil Changed	Client Info	N/A	---	---
Sample Status		ABNORMAL	---	---

WEAR METALS

method	limit/base	current	history1	history2
Iron ppm ASTM D5185m	>60	0	---	---
Chromium ppm ASTM D5185m	>4	0	---	---
Nickel ppm ASTM D5185m		0	---	---
Titanium ppm ASTM D5185m		0	---	---
Silver ppm ASTM D5185m		0	---	---
Aluminum ppm ASTM D5185m	>5	0	---	---
Lead ppm ASTM D5185m	>10	0	---	---
Copper ppm ASTM D5185m	>30	0	---	---
Tin ppm ASTM D5185m	>15	<1	---	---
Vanadium ppm ASTM D5185m		<1	---	---
Cadmium ppm ASTM D5185m		0	---	---

ADDITIVES

method	limit/base	current	history1	history2
Boron ppm ASTM D5185m		0	---	---
Barium ppm ASTM D5185m		0	---	---
Molybdenum ppm ASTM D5185m		0	---	---
Manganese ppm ASTM D5185m		0	---	---
Magnesium ppm ASTM D5185m		0	---	---
Calcium ppm ASTM D5185m		0	---	---
Phosphorus ppm ASTM D5185m		8	---	---
Zinc ppm ASTM D5185m		0	---	---
Sulfur ppm ASTM D5185m		385	---	---

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon ppm ASTM D5185m	>50	▲ 63	---	---
Sodium ppm ASTM D5185m		<1	---	---
Potassium ppm ASTM D5185m	>20	4	---	---
Water % ASTM D6304	>0.1	0.002	---	---
ppm Water ppm ASTM D6304	>1000	21.4	---	---

FLUID CLEANLINESS

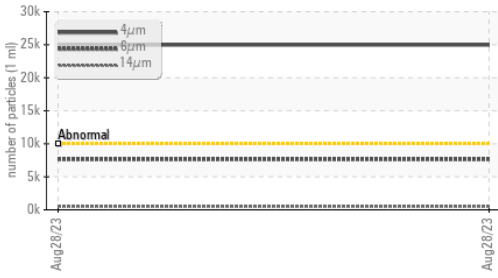
method	limit/base	current	history1	history2
Particles >4µm ASTM D7647	>10000	▲ 24968	---	---
Particles >6µm ASTM D7647	>2500	▲ 7652	---	---
Particles >14µm ASTM D7647	>320	▲ 508	---	---
Particles >21µm ASTM D7647	>80	▲ 111	---	---
Particles >38µm ASTM D7647	>20	5	---	---
Particles >71µm ASTM D7647	>4	1	---	---
Oil Cleanliness ISO 4406 (c)	>20/18/15	▲ 22/20/16	---	---

FLUID DEGRADATION

method	limit/base	current	history1	history2
Acid Number (AN) mg KOH/g ASTM D8045		0.24	---	---

OIL ANALYSIS REPORT

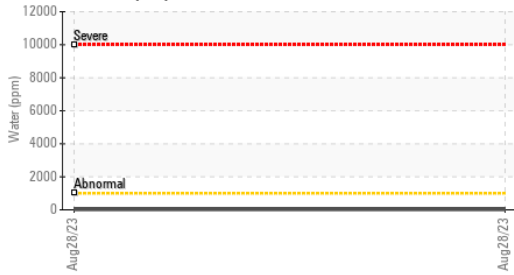
▲ Particle Trend



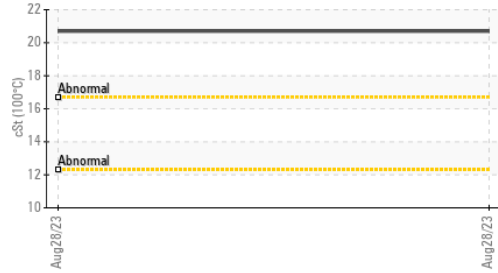
▲ Silicon (ppm)



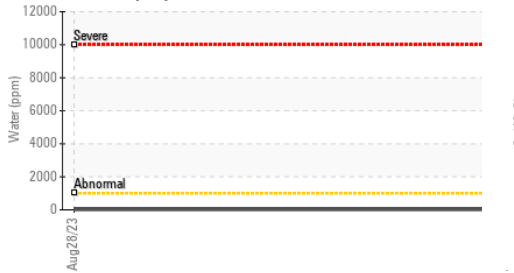
Water (KF)



Viscosity @ 100°C



Water (KF)



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.1	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	139	---	---
Visc @ 100°C	cSt	ASTM D445	20.7	---	---
Viscosity Index (VI)	Scale	ASTM D2270	173	---	---

SAMPLE IMAGES

	method	limit/base	current	history1	history2
Color				no image	no image
Bottom				no image	no image

GRAPHS

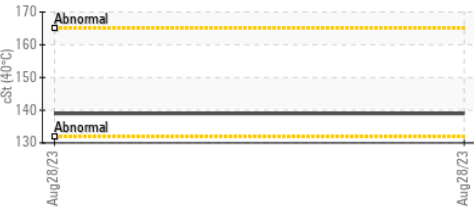
Ferrous Alloys



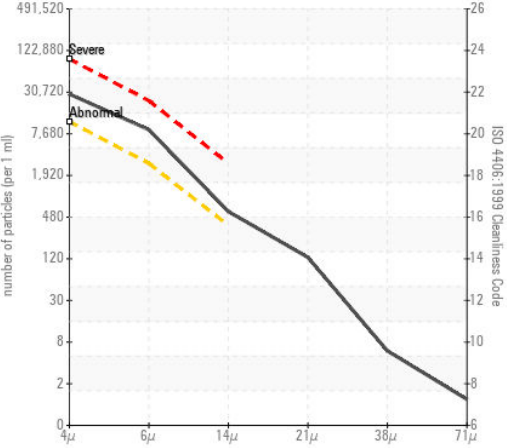
Non-ferrous Metals



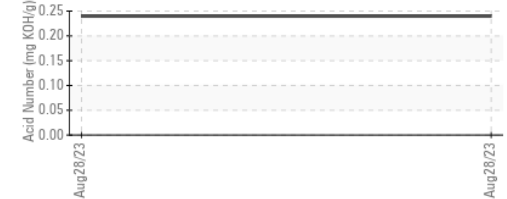
Viscosity @ 40°C



▲ Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO60000907 **Received** : 01 Nov 2023
Lab Number : 05996278 **Diagnosed** : 03 Nov 2023
Unique Number : 10724638 **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)

TWIN OAKS RENEWABLES
 2690 SH-30
 ANDERSON, TX
 US 77830
 Contact: DERRICK RHODES
 drhodes@morrowenergy.com

T:
F: