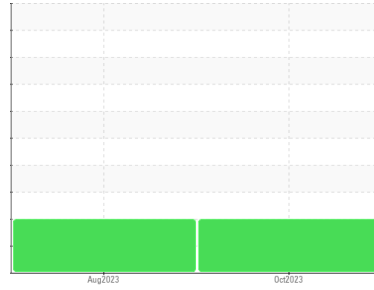


PROBLEM SUMMARY

Sample Rating Trend



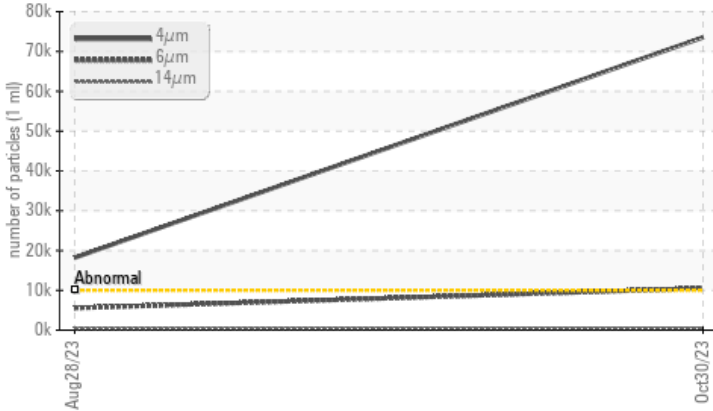
ISO



Machine Id
VILTER 1ST STAGE
Component
Screw Compressor
Fluid
VILTER SF PAO 150 (150 GAL)

COMPONENT CONDITION SUMMARY

▲ Particle Trend



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	---
Particles >4µm	ASTM D7647	>10000	▲ 73544	▲ 18208	---
Particles >6µm	ASTM D7647	>2500	▲ 10499	▲ 5551	---
Particles >14µm	ASTM D7647	>320	▲ 543	▲ 463	---
Particles >21µm	ASTM D7647	>80	▲ 136	▲ 118	---
Oil Cleanliness	ISO 4406 (c)	>20/18/15	▲ 23/21/16	▲ 21/20/16	---

Customer Id: TWIAND
Sample No.: TO60000912
Lab Number: 05996274
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

28 Aug 2023 Diag: Don Baldrige

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 particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



Machine Id
VILTER 1ST STAGE
 Component
Screw Compressor
 Fluid
VILTER SF PAO 150 (150 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 particulates 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	TO60000912	TO60000906	---
Sample Date	Client Info	30 Oct 2023	28 Aug 2023	---
Machine Age	hrs	Client Info	19202	17704
Oil Age	hrs	Client Info	0	0
Oil Changed	Client Info	Not Chngd	N/A	---
Sample Status		ABNORMAL	ABNORMAL	---

WEAR METALS

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

ADDITIVES

method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185m		0	0	---
Barium	ppm	ASTM D5185m		0	0	---
Molybdenum	ppm	ASTM D5185m		0	0	---
Manganese	ppm	ASTM D5185m		0	0	---
Magnesium	ppm	ASTM D5185m		0	0	---
Calcium	ppm	ASTM D5185m		0	0	---
Phosphorus	ppm	ASTM D5185m		4	6	---
Zinc	ppm	ASTM D5185m		0	0	---
Sulfur	ppm	ASTM D5185m		140	218	---

CONTAMINANTS

method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185m	>50	19	36	---
Sodium	ppm	ASTM D5185m		<1	<1	---
Potassium	ppm	ASTM D5185m	>20	4	4	---
Water	%	ASTM D6304	>0.1	0.002	0.001	---
ppm Water	ppm	ASTM D6304	>1000	24.7	13.8	---

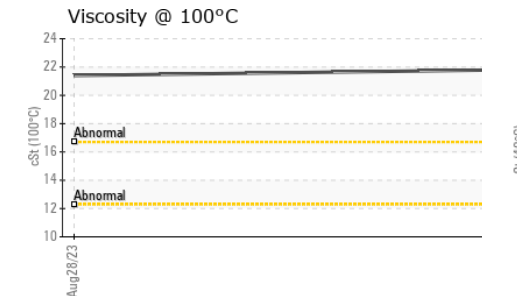
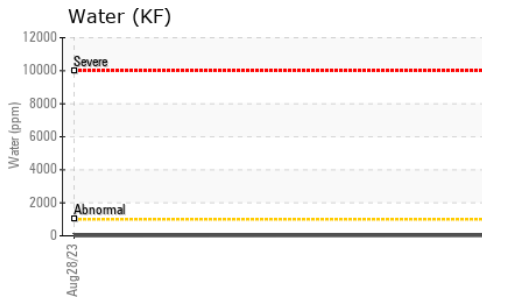
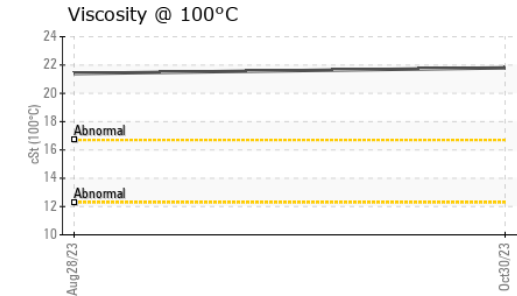
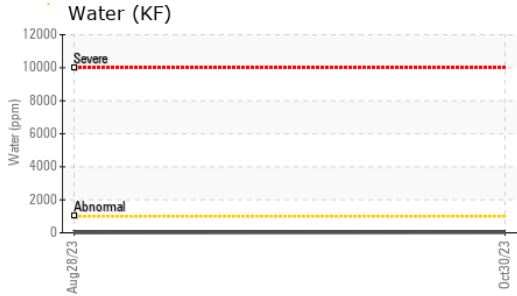
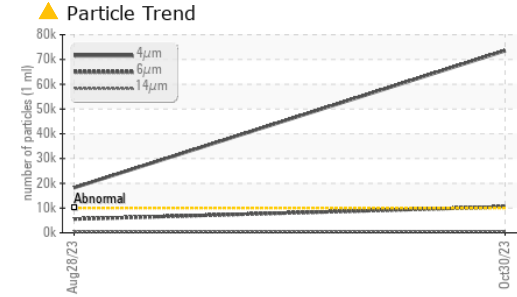
FLUID CLEANLINESS

method	limit/base	current	history1	history2	
Particles >4µm	ASTM D7647	>10000	▲ 73544	▲ 18208	---
Particles >6µm	ASTM D7647	>2500	▲ 10499	▲ 5551	---
Particles >14µm	ASTM D7647	>320	▲ 543	▲ 463	---
Particles >21µm	ASTM D7647	>80	▲ 136	▲ 118	---
Particles >38µm	ASTM D7647	>20	8	7	---
Particles >71µm	ASTM D7647	>4	2	1	---
Oil Cleanliness	ISO 4406 (c)	>20/18/15	▲ 23/21/16	▲ 21/20/16	---

FLUID DEGRADATION

method	limit/base	current	history1	history2		
Acid Number (AN)	mg KOH/g	ASTM D8045		0.45	0.23	---

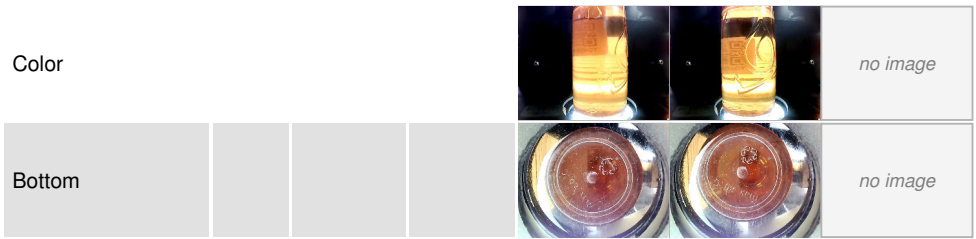
OIL ANALYSIS REPORT



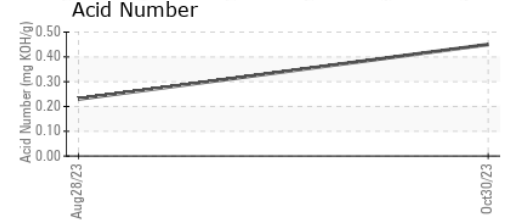
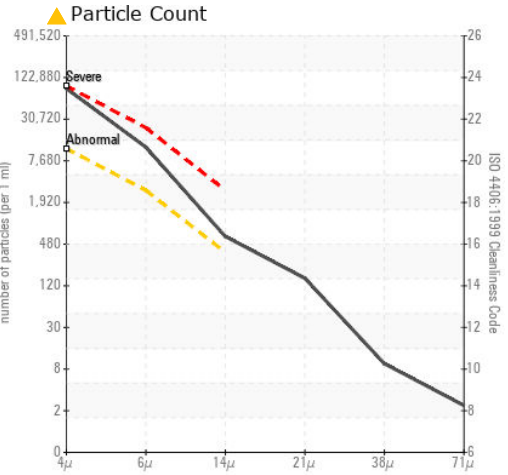
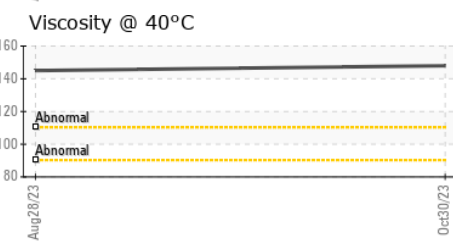
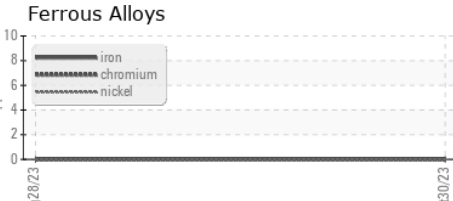
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*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	148	145	---
Visc @ 100°C	cSt	ASTM D445	21.8	21.4	---
Viscosity Index (VI)	Scale	ASTM D2270	174	173	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO60000912 **Received** : 01 Nov 2023
Lab Number : 05996274 **Diagnosed** : 03 Nov 2023
Unique Number : 10724634 **Diagnostician** : Don Baldrige
Test Package : IND 2 (Additional Tests: KF, KV100, PrtCount, VI)

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

Certificate L2367
 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)