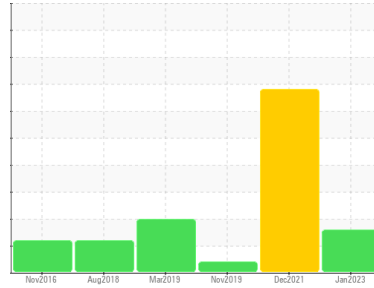




Machine Id
290 (S/N 0112)

Component
Hydraulic System

Fluid
AW HYDRAULIC OIL ISO 46 (--- GAL)



DIAGNOSIS

Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor. (Customer Sample Comment: 1654.5 hours)

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	PTK0003776	PTK0000861	PTKM2326894
Sample Date	Client Info	09 Jan 2023	02 Dec 2021	18 Nov 2019
Machine Age	hrs	1654	1599	12524
Oil Age	hrs	1654	0	325
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		ABNORMAL	SEVERE	ABNORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >0.1	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >20	7	11	9
Chromium	ppm ASTM D5185m >10	0	<1	<1
Nickel	ppm ASTM D5185m >10	0	<1	<1
Titanium	ppm ASTM D5185m	0	<1	0
Silver	ppm ASTM D5185m	0	1	0
Aluminum	ppm ASTM D5185m >10	<1	0	2
Lead	ppm ASTM D5185m >10	3	▲ 16	4
Copper	ppm ASTM D5185m >75	21	40	17
Tin	ppm ASTM D5185m >10	0	1	0
Antimony	ppm ASTM D5185m	---	0	0
Vanadium	ppm ASTM D5185m	0	0	0
Cadmium	ppm ASTM D5185m	0	1	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 5	16	36	17
Barium	ppm ASTM D5185m 5	0	0	0
Molybdenum	ppm ASTM D5185m 5	3	3	2
Manganese	ppm ASTM D5185m	<1	<1	2
Magnesium	ppm ASTM D5185m 25	27	35	32
Calcium	ppm ASTM D5185m 200	1266	1618	1589
Phosphorus	ppm ASTM D5185m 300	616	811	750
Zinc	ppm ASTM D5185m 370	717	916	844
Sulfur	ppm ASTM D5185m 2500	4281	3381	1097

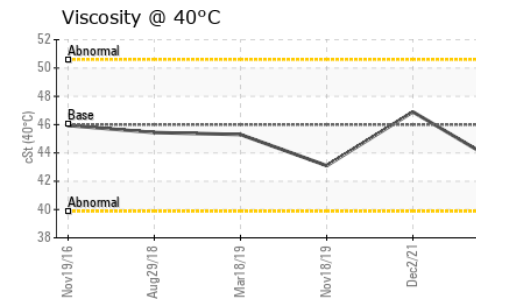
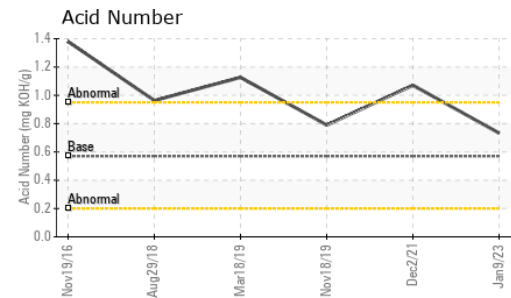
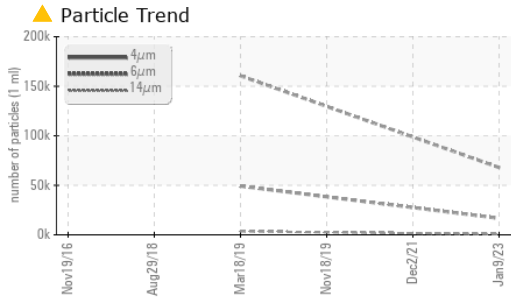
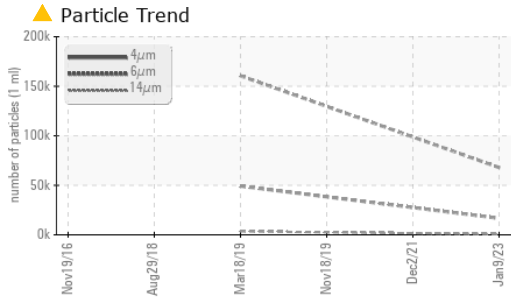
CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >20	4	5	12
Sodium	ppm ASTM D5185m	3	3	2
Potassium	ppm ASTM D5185m >20	0	0	2

FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	67918	---	---
Particles >6µm	ASTM D7647 >2500	▲ 16667	---	---
Particles >14µm	ASTM D7647 >320	▲ 674	---	---
Particles >21µm	ASTM D7647 >80	▲ 117	---	---
Particles >38µm	ASTM D7647 >20	1	---	---
Particles >71µm	ASTM D7647 >4	0	---	---
Oil Cleanliness	ISO 4406 (c) >18/15	▲ 21/17	---	---

OIL ANALYSIS REPORT

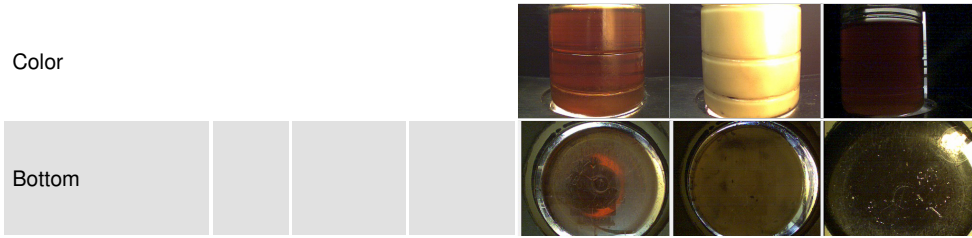


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.57	0.733	1.071	0.790

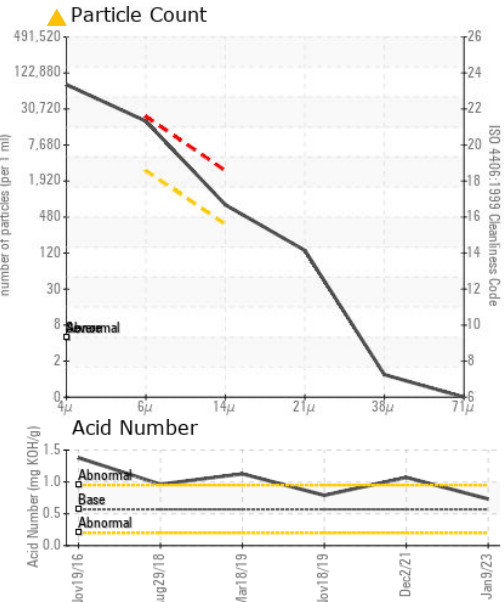
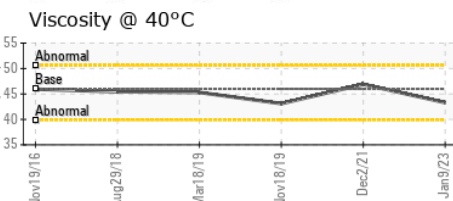
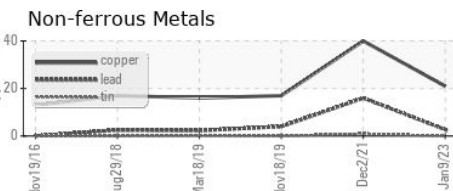
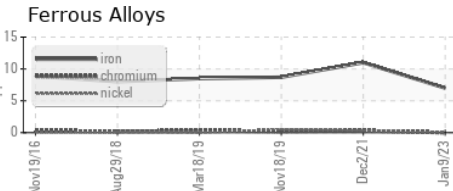
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	LIGHT	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	▲ MODER	▲ MODER
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	▲ HAZY	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	◆ 0.2%	NEG
Free Water	scalar	*Visual		NEG	▲ 1.0	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46	43.3	46.9	43.1

SAMPLE IMAGES		method	limit/base	current	history1	history2
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GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PTK0003776 **Received** : 06 Feb 2023
Lab Number : 05759409 **Diagnosed** : 07 Feb 2023
Unique Number : 10324016 **Diagnostician** : Jonathan Hester
Test Package : MOB 2

DRILLING SERVICE
 13230 FERGUSON LN
 BRIDGETON, MO
 US 63044
 Contact: BRUCE MURPHY
 bdmurphy@drillingserviceco.com
 T: (314)291-1111
 F: (314)291-1115

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)