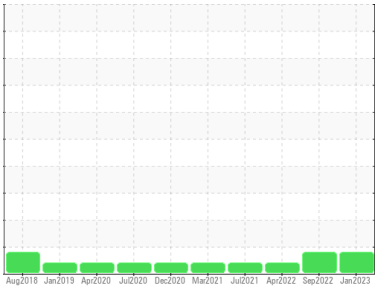
OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Machine Id
CATERPILLAR 420 FST BACKHOE 6010 (S/N SKR04232)
Component
Hydraulic System
Fluid
TULCO LUBSOIL SUPER HYDRAULIC HZ 46 (--- GAL)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is a high amount of silt (particulates < 6 microns in size) 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		**TO10001552**	TO60000239	TO10000906
Sample Date		Client Info		**09 Jan 2023**	15 Sep 2022	07 Apr 2022
Machine Age	hrs	Client Info		**11286**	10795	10207
Oil Age	hrs	Client Info		**1611**	1120	1048
Oil Changed		Client Info		**N/A**	Not Changd	Not Changd
Sample Status				**ABNORMAL**	ABNORMAL	ATTENTION

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	**4**	4	5
Chromium	ppm	ASTM D5185m	>20	**<1**	0	<1
Nickel	ppm	ASTM D5185m	>20	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	<1
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**1**	1	3
Lead	ppm	ASTM D5185m	>20	**0**	<1	1
Copper	ppm	ASTM D5185m	>20	**<1**	1	1
Tin	ppm	ASTM D5185m	>20	**0**	0	<1
Antimony	ppm	ASTM D5185m		**---**	---	---
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**	2	0
Molybdenum	ppm	ASTM D5185m		**<1**	0	<1
Manganese	ppm	ASTM D5185m		**0**	<1	<1
Magnesium	ppm	ASTM D5185m		**85**	83	163
Calcium	ppm	ASTM D5185m		**127**	130	220
Phosphorus	ppm	ASTM D5185m		**920**	1026	789
Zinc	ppm	ASTM D5185m		**1148**	1298	995
Sulfur	ppm	ASTM D5185m		**3958**	4036	2838

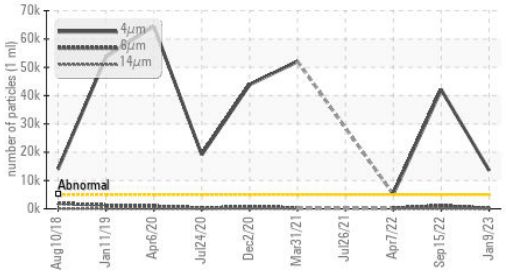
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	**4**	4	5
Sodium	ppm	ASTM D5185m		**2**	<1	2
Potassium	ppm	ASTM D5185m	>20	**0**	2	<1
Water	%	ASTM D6304	>0.05	**NEG**	NEG	NEG

FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	▲ **13582**	▲ 42111	▲ 5170
Particles >6µm	ASTM D7647	>1300	**149**	1078	189
Particles >14µm	ASTM D7647	>160	**5**	8	23
Particles >21µm	ASTM D7647	>40	**2**	2	3
Particles >38µm	ASTM D7647	>10	**1**	0	0
Particles >71µm	ASTM D7647	>3	**0**	0	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ **21/14/10**	▲ 23/17/10	▲ 20/15/12

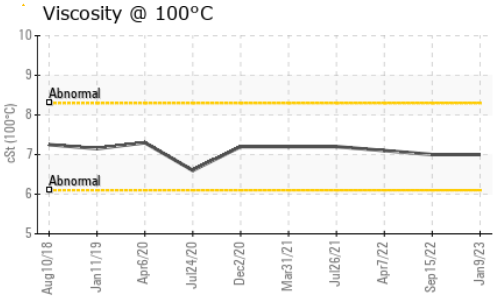
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**1.08**	1.20	0.75

OIL ANALYSIS REPORT

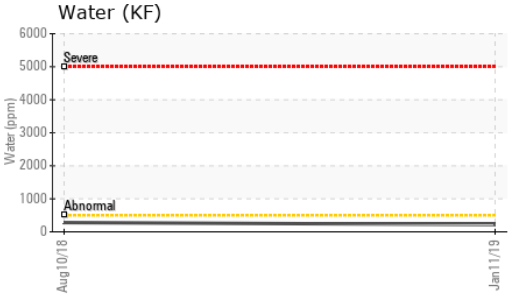
Particle Trend



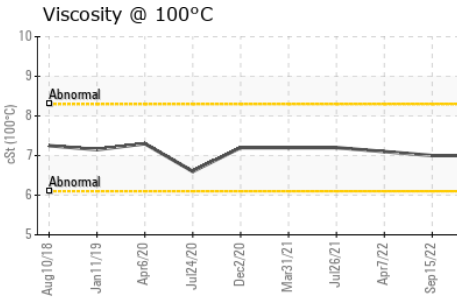
Viscosity @ 100°C



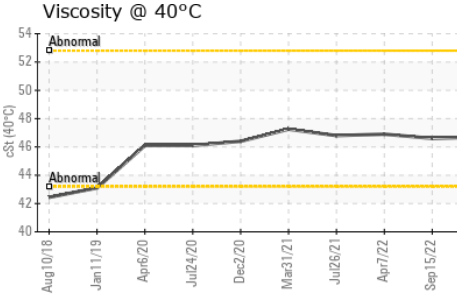
Water (KF)



Viscosity @ 100°C



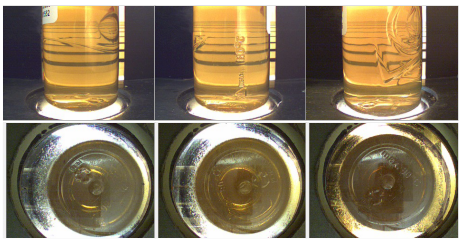
Viscosity @ 40°C



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	>0.05	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

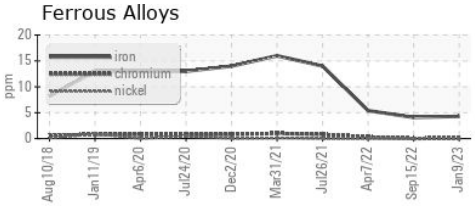
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445		**46.7**	46.6	46.9
Visc @ 100°C	cSt	ASTM D445		**7**	7	7.1
Viscosity Index (VI)	Scale	ASTM D2270		**106**	107	109

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

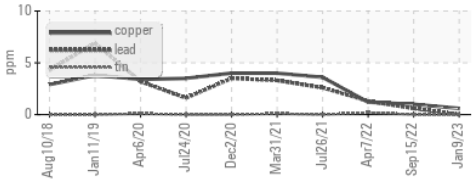


GRAPHS

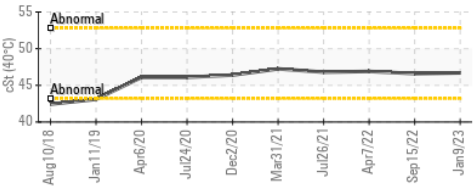
Ferrous Alloys



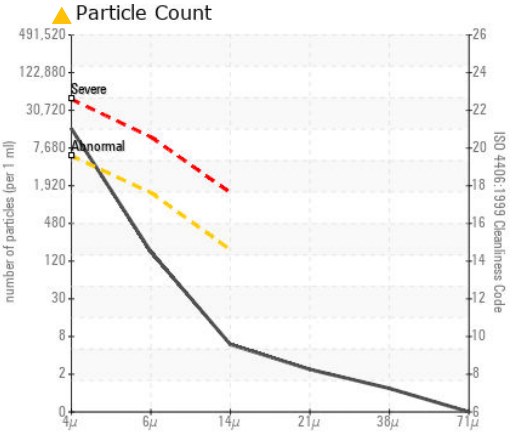
Non-ferrous Metals



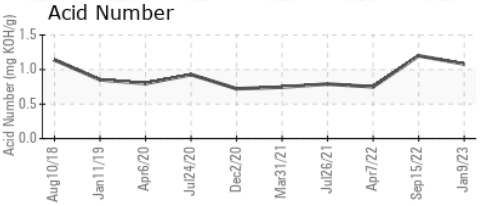
Viscosity @ 40°C



Particle Count



Acid Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10001552 **Received** : 13 Jan 2023
Lab Number : 05738376 **Diagnosed** : 16 Jan 2023
Unique Number : 10292975 **Diagnostician** : Doug Bogart
Test Package : MOB 2 (Additional Tests: KF, KV100, VI)

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)

ANCHOR STONE TULSA ROCK
TULSA ROCK QUARRY, 66TH ST N 145TH AVENUE
TULSA, OK
US 74137
Contact: MIKE SNYDER
msnyder@anchorstoneco.com
T: (417)850-9635
F:

Report Id: ANCTUL [WUSCAR] 05738376 (Generated: 12/14/2023 16:37:25) Rev: 1

Submitted By: SKIP SAENGERHAUSEN