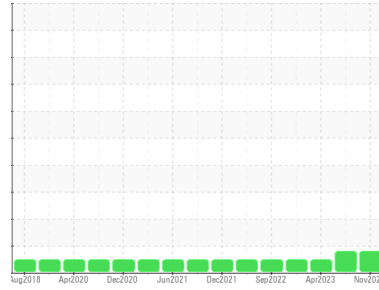


OIL ANALYSIS REPORT



Machine Id
CATERPILLAR 420 FST BACKHOE 6010 (S/N SKR04232)
Component
Rear Differential
Fluid
TULCO LUBSOIL TO-4 50 (--- GAL)

Sample Rating Trend



VISCOSITY



DIAGNOSIS

▲ Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

▲ Fluid Condition

The oil viscosity is lower than normal. Confirm oil type. The AN level is acceptable for this fluid.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		TO10002854	TO10002407	TO10002182
Sample Date	Client Info		14 Nov 2023	25 Jul 2023	18 Apr 2023
Machine Age	hrs	Client Info	12883	12310	11802
Oil Age	hrs	Client Info	1594	1271	763
Oil Changed	Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status			ATTENTION	ATTENTION	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>.2	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184		25	23	27
Iron	ppm	ASTM D5185m >500	27	22	25
Chromium	ppm	ASTM D5185m >3	0	<1	0
Nickel	ppm	ASTM D5185m >3	0	0	0
Titanium	ppm	ASTM D5185m >2	0	<1	0
Silver	ppm	ASTM D5185m >2	0	0	0
Aluminum	ppm	ASTM D5185m >30	3	3	2
Lead	ppm	ASTM D5185m >13	0	0	0
Copper	ppm	ASTM D5185m >103	2	2	<1
Tin	ppm	ASTM D5185m >5	<1	<1	0
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
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	0	<1	<1
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	10	4	18
Calcium	ppm	ASTM D5185m	2959	3139	3136
Phosphorus	ppm	ASTM D5185m	871	886	913
Zinc	ppm	ASTM D5185m	1046	1114	1182
Sulfur	ppm	ASTM D5185m	4036	5135	5204

CONTAMINANTS

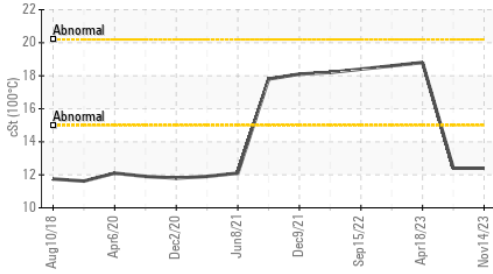
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >100	31	27	30
Sodium	ppm	ASTM D5185m	5	6	5
Potassium	ppm	ASTM D5185m >20	0	1	0

FLUID DEGRADATION

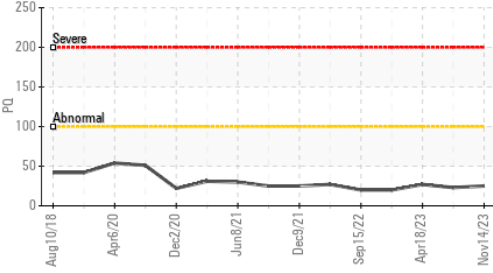
	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.95	1.10	1.25

OIL ANALYSIS REPORT

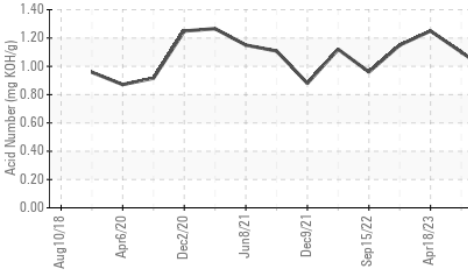
▲ Viscosity @ 100°C



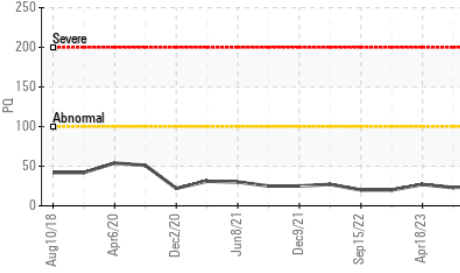
● PQ



Acid Number



● PQ



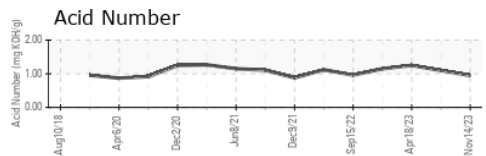
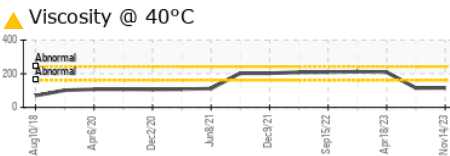
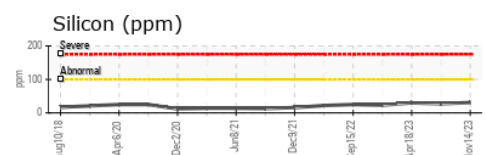
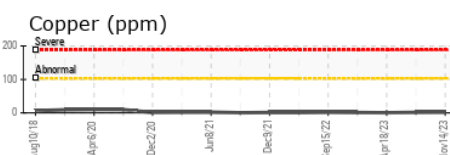
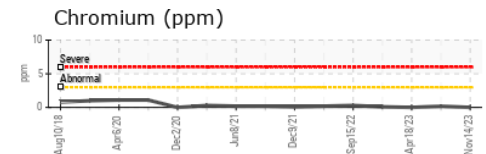
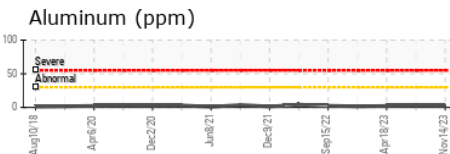
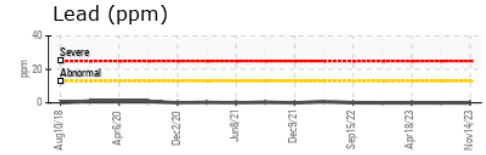
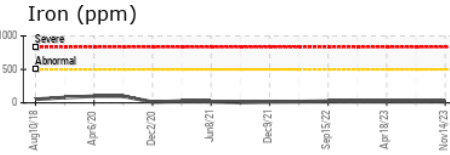
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	▲ 116	▲ 115	210
Visc @ 100°C	cSt	ASTM D445	▲ 12.4	▲ 12.4	18.8
Viscosity Index (VI)	Scale	ASTM D2270	97	98	99

● SAMPLE IMAGES

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

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10002854 **Received** : 20 Nov 2023
Lab Number : 06013419 **Diagnosed** : 23 Nov 2023
Unique Number : 10752563 **Diagnostician** : Don Baldrige
Test Package : MOB 2 (Additional Tests: KV100, PQ, 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)

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