



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



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

RECOMMENDATION

The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TO10003639	TO10002040	TO10002852
Sample Date		Client Info		01 Jul 2024	15 Mar 2024	14 Nov 2023
Machine Age	hrs	Client Info		13787	13344	12883
Oil Age	hrs	Client Info		1227	784	282
Filter Age	hrs	Client Info		1227	461	282
Oil Changed		Client Info		Not Changed	Not Changed	Not Changed
Filter Changed		Client Info		Changed	None	Changed
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	3	2	<1
Chromium	ppm	ASTM D5185m	>20	0	0	0
Nickel	ppm	ASTM D5185m	>20	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	1	<1
Lead	ppm	ASTM D5185m	>20	<1	0	0
Copper	ppm	ASTM D5185m	>20	1	<1	<1
Tin	ppm	ASTM D5185m	>20	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

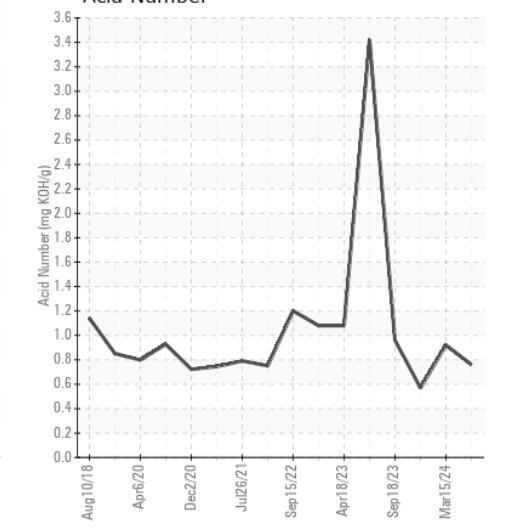
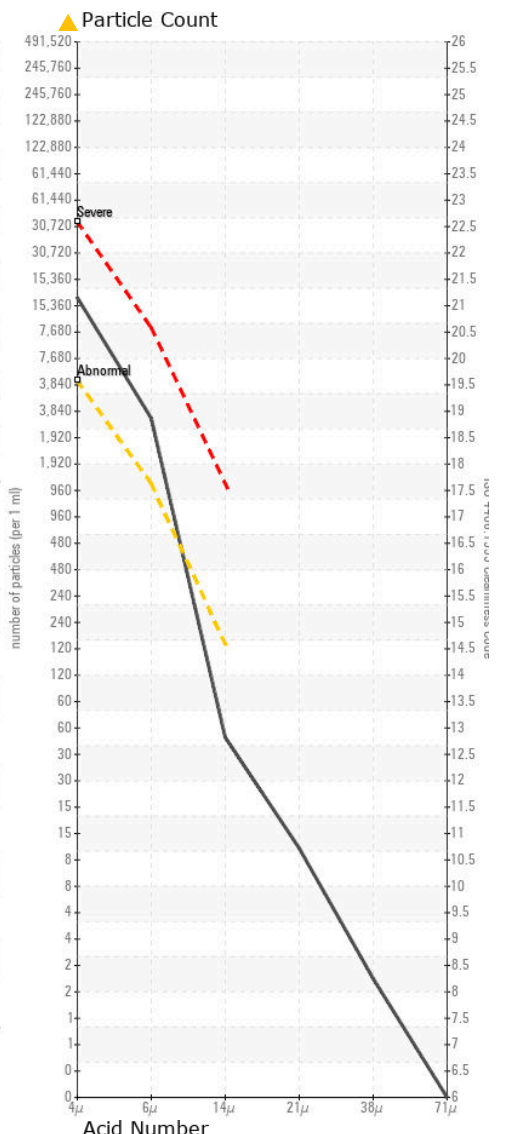
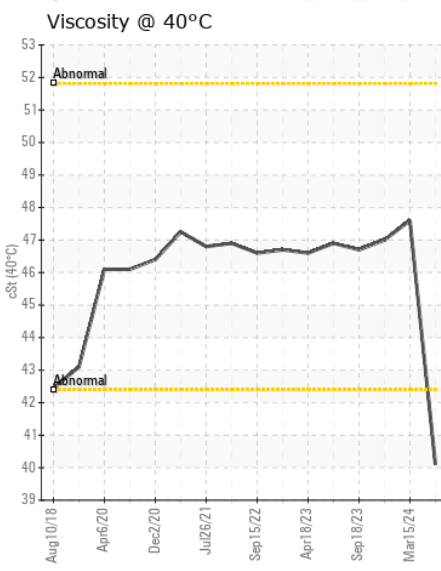
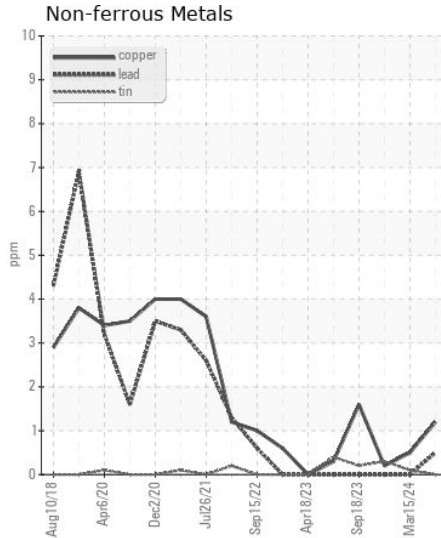
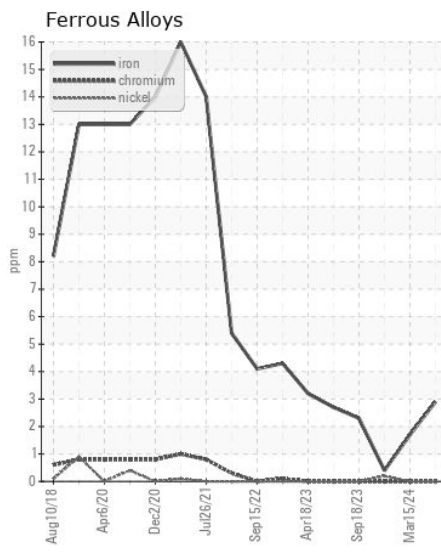
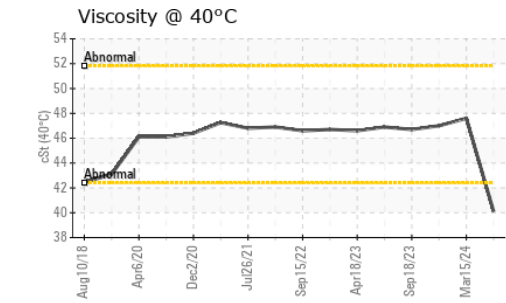
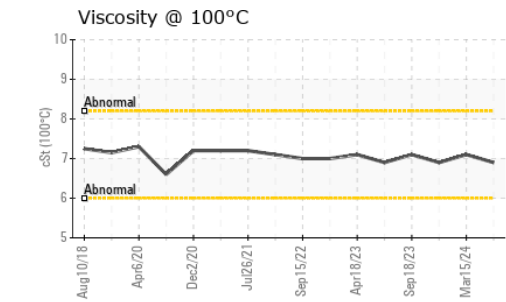
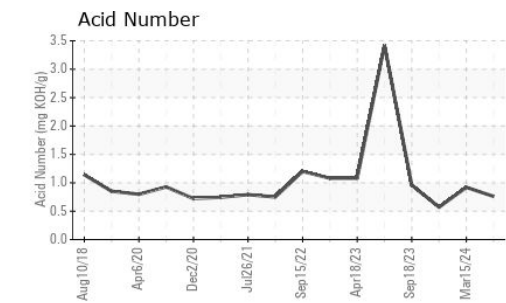
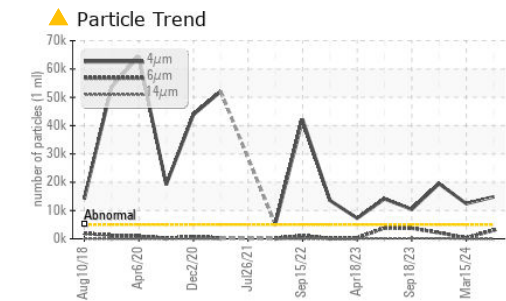
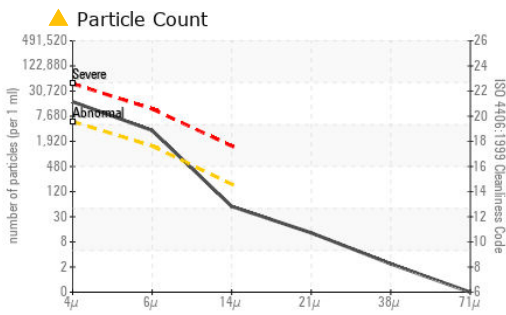
There is a high amount of silt (particulates < 14 microns in size) present in the oil.

Silicon	ppm	ASTM D5185m	>15	2	4	2
Potassium	ppm	ASTM D5185m	>20	3	<1	<1
Water	%	ASTM D6304	>0.05	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>5000	▲ 14835	▲ 12413	▲ 19465
Particles >6µm		ASTM D7647	>1300	▲ 3053	353	▲ 2117
Particles >14µm		ASTM D7647	>160	47	6	▲ 164
Particles >21µm		ASTM D7647	>40	11	2	▲ 50
Particles >38µm		ASTM D7647	>10	2	0	1
Particles >71µm		ASTM D7647	>3	0	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ 21/19/13	▲ 21/16/10	▲ 21/18/15
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

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m		5	5	3
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		9	0	0
Molybdenum	ppm	ASTM D5185m		0	0	0
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		199	205	197
Calcium	ppm	ASTM D5185m		189	205	186
Phosphorus	ppm	ASTM D5185m		749	760	762
Zinc	ppm	ASTM D5185m		928	951	941
Sulfur	ppm	ASTM D5185m		3370	3312	2899
Acid Number (AN)	mg KOH/g	ASTM D8045		0.76	0.92	0.57
Visc @ 40°C	cSt	ASTM D445		40.1	47.6	47.0
Visc @ 100°C	cSt	ASTM D445		6.9	7.1	6.9
Viscosity Index (VI)	Scale	ASTM D2270		131	106	101



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10003639 **Received** : 05 Jul 2024
Lab Number : 06229100 **Tested** : 09 Jul 2024
Unique Number : 11112593 **Diagnosed** : 09 Jul 2024 - Jonathan Hester
Test Package : MOB 2 (Additional Tests: KF, KV100, 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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