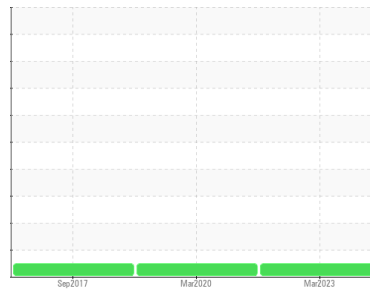


OIL ANALYSIS REPORT



Machine Id
CATERPILLAR 12H GRADER 6438 (S/N 8MN00572)
 Component
Transmission (Manual)
 Fluid
TULCO LUBSOIL TO-4 30 (--- GAL)

Sample Rating Trend



NORMAL



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 fluid.

Fluid Condition

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			TO10001719	TO1006881	TO1005545
Sample Date	Client Info			20 Mar 2023	23 Mar 2020	09 Sep 2017
Machine Age	hrs	Client Info		263	13896	13102
Oil Age	hrs	Client Info		263	1019	0
Oil Changed	Client Info			Not Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL

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

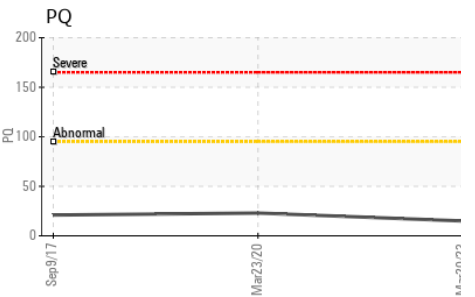
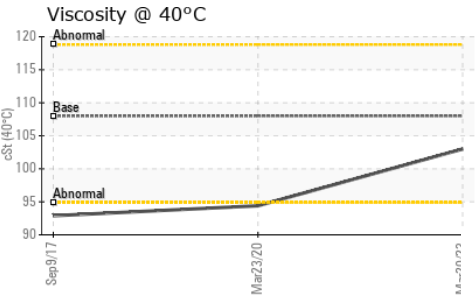
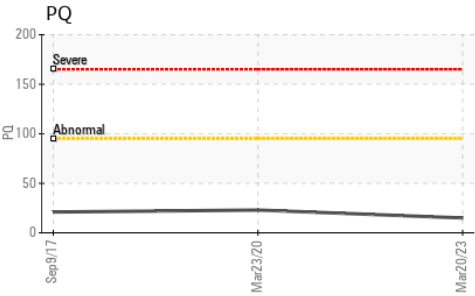
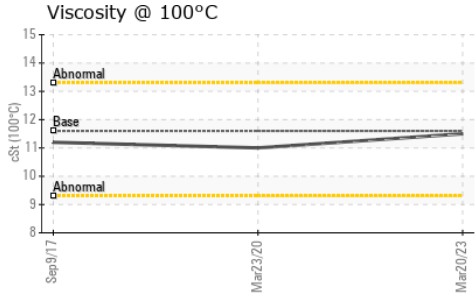
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>95	15	23	21
Iron	ppm	ASTM D5185m	>200	14	38	25
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	<1	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>7	0	0	0
Aluminum	ppm	ASTM D5185m	>25	12	29	15
Lead	ppm	ASTM D5185m	>45	<1	<1	1
Copper	ppm	ASTM D5185m	>225	51	144	86
Tin	ppm	ASTM D5185m	>10	<1	<1	<1
Antimony	ppm	ASTM D5185m		---	0	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	7	8
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		1	2	3
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	9	18	16	18
Calcium	ppm	ASTM D5185m	4500	3274	3525	3426
Phosphorus	ppm	ASTM D5185m	1150	929	770	806
Zinc	ppm	ASTM D5185m	1250	1144	881	937
Sulfur	ppm	ASTM D5185m	4500	4339	4945	2518

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>125	10	11	10
Sodium	ppm	ASTM D5185m		1	4	5
Potassium	ppm	ASTM D5185m	>20	2	4	4

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.28	0.96	0.546	0.592

OIL ANALYSIS REPORT

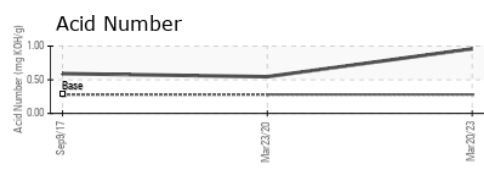
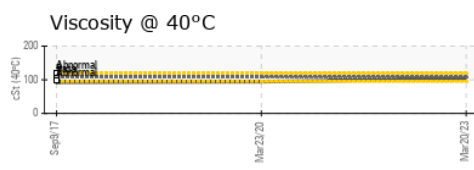
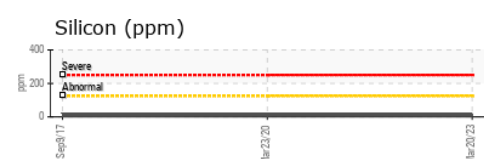
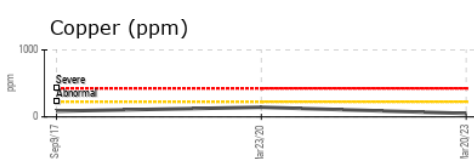
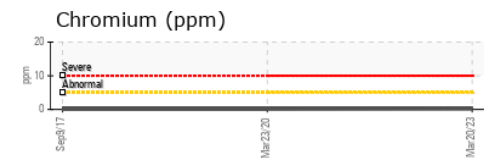
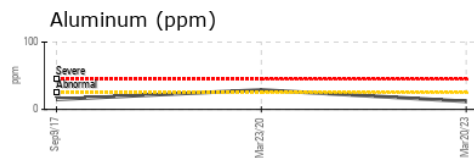
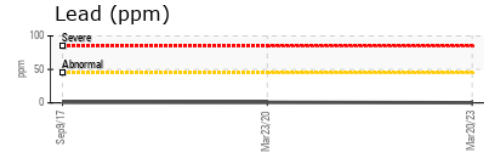
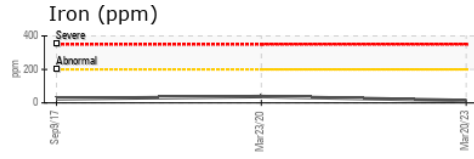


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	108	103	94.4
Visc @ 100°C	cSt	ASTM D445	11.6	11.5	11.0
Viscosity Index (VI)	Scale	ASTM D2270	94	98	101

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

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10001719 **Received** : 28 Mar 2023
Lab Number : 05804114 **Tested** : 30 Mar 2023
Unique Number : 10401643 **Diagnosed** : 30 Mar 2023 - Wes Davis
Test Package : MOB 2 (Additional Tests: KV100, PQ, VI)

ANCHOR STONE TULSA ROCK
 TULSA ROCK QUARRY, 66TH ST N 145TH AVENUE
 TULSA, OK
 US 74137
 Contact: MIKE SNYDER
 msnyder@anchorstoneco.com

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)