



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION



Area
DE Samples - CAT LAB
Machine Id
CATERPILLAR 990 LOADER G 6427 (S/N BCR00127)
Component
Diesel Engine
Fluid
TULCO LUBSOIL DT CI-4 15W40 (25 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TO10003693	TO10003596	TO10003029
Sample Date		Client Info		01 Jul 2024	31 May 2024	20 Apr 2024
Machine Age	hrs	Client Info		49434	49260	48981
Oil Age	hrs	Client Info		174	602	323
Filter Age	hrs	Client Info		174	602	323
Oil Changed		Client Info		Not Changed	N/A	Not Changed
Filter Changed		Client Info		Not Changed	Changed	Not Changed
Sample Status				ATTENTION	ABNORMAL	ATTENTION

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	21	38	19
Chromium	ppm	ASTM D5185m	>20	1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>2	1	<1	<1
Silver	ppm	ASTM D5185m	>2	<1	0	<1
Aluminum	ppm	ASTM D5185m	>25	3	2	2
Lead	ppm	ASTM D5185m	>40	2	2	3
Copper	ppm	ASTM D5185m	>330	2	1	1
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	▲ MODER	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

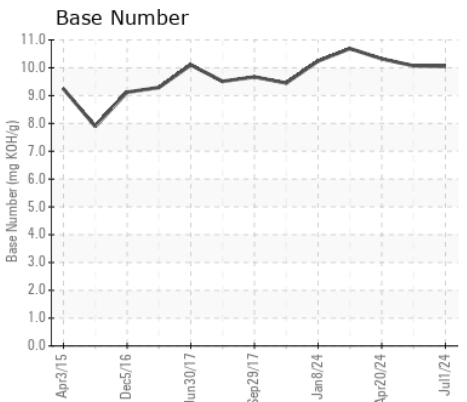
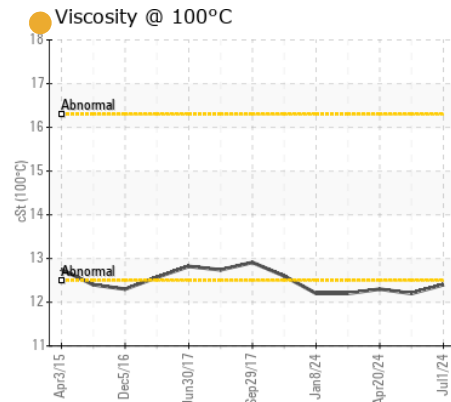
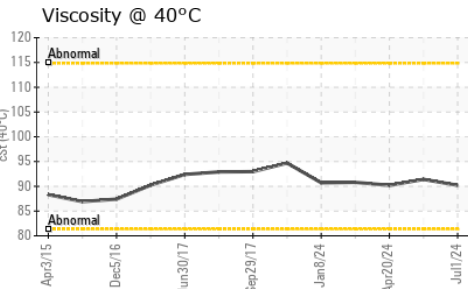
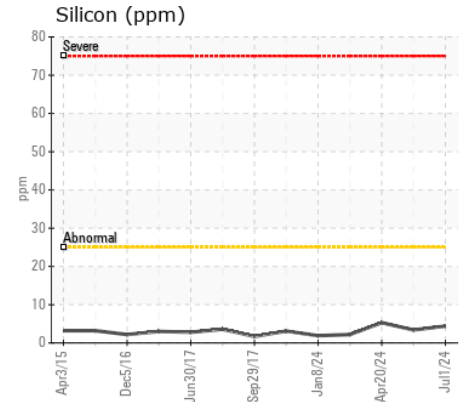
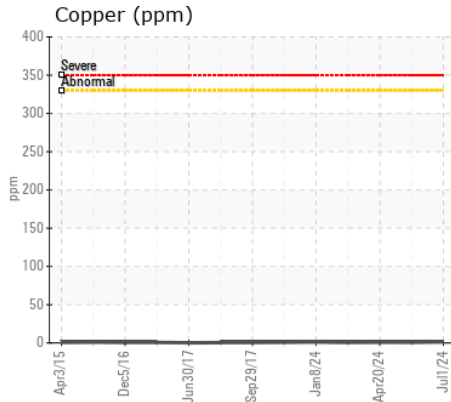
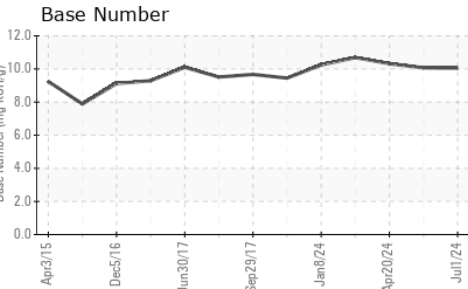
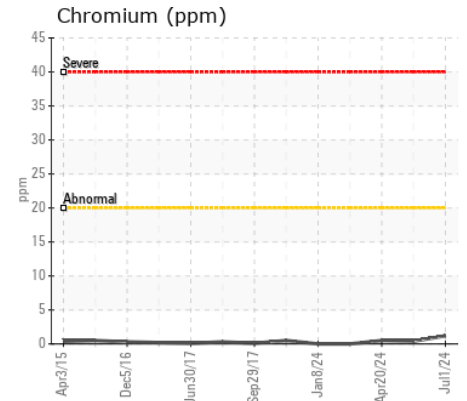
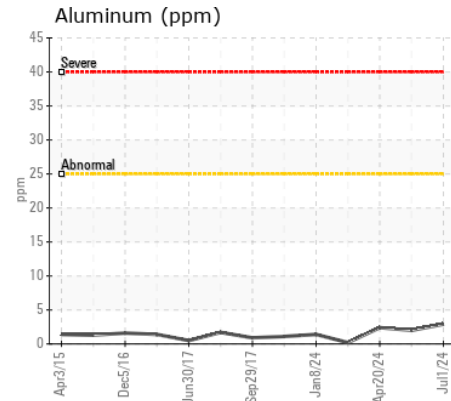
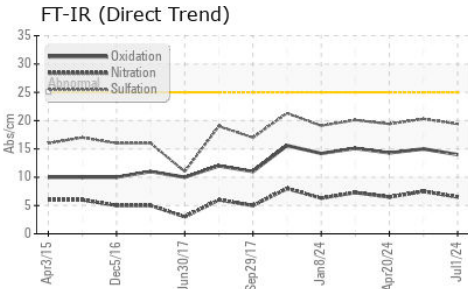
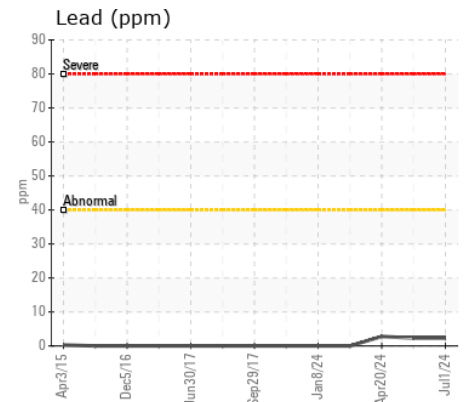
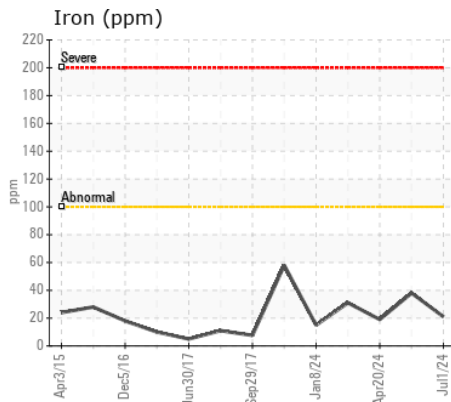
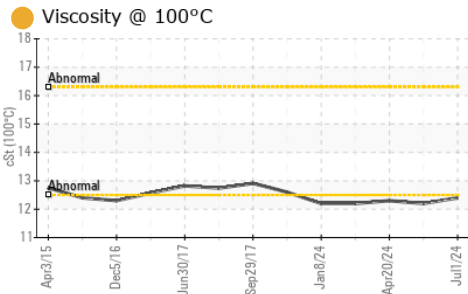
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	4	3	5
Potassium	ppm	ASTM D5185m	>20	2	<1	2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.5	0.5	0.4
Nitration	Abs/cm	*ASTM D7624	>20	6.5	7.5	6.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.4	20.3	19.4
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	>0.2	NEG	NEG	NEG

FLUID CONDITION

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		3	<1	0
Boron	ppm	ASTM D5185m		5	6	7
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		64	63	67
Manganese	ppm	ASTM D5185m		<1	0	0
Magnesium	ppm	ASTM D5185m		1062	996	1024
Calcium	ppm	ASTM D5185m		1193	1157	1284
Phosphorus	ppm	ASTM D5185m		1174	1128	1248
Zinc	ppm	ASTM D5185m		1395	1290	1370
Sulfur	ppm	ASTM D5185m		3755	3560	3922
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.0	15.0	14.3
Base Number (BN)	mg KOH/g	ASTM D2896		10.05	10.07	10.32
Visc @ 40°C	cSt	ASTM D445		90.2	91.4	90.2
Visc @ 100°C	cSt	ASTM D445		12.4	12.2	12.3
Viscosity Index (VI)	Scale	ASTM D2270		132	126	130



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10003693
Lab Number : 06229308
Unique Number : 11112801
Test Package : MOB 2 (Additional Tests: KV40, VI)

Received : 05 Jul 2024
Tested : 09 Jul 2024
Diagnosed : 09 Jul 2024 - Sean Felton

ANCHOR STONE TULSA ROCK
 TULSA ROCK QUARRY, 66TH ST N 145TH AVENUE
 TULSA, OK
 US 74137
 Contact: DAVID MORRIS
 dmorris@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)

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