



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Machine Id
CATERPILLAR 775D HAUL TRUCK 6451 (S/N 6KR00212)
 Component
Hydraulic System
 Fluid
TULCO LUBSOIL SUPER HYDRAULIC HZ 46 (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. 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		TO10002093	TO10002760	TO10002304
Sample Date		Client Info		13 Jun 2024	09 Oct 2023	05 Jul 2023
Machine Age	hrs	Client Info		43445	42649	42147
Oil Age	hrs	Client Info		4354	3558	3056
Filter Age	hrs	Client Info		796	502	482
Oil Changed		Client Info		Not Changed	Not Changed	Not Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	3	<1	4
Chromium	ppm	ASTM D5185m	>20	<1	0	0
Nickel	ppm	ASTM D5185m	>20	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m		<1	<1	0
Aluminum	ppm	ASTM D5185m	>20	2	0	2
Lead	ppm	ASTM D5185m	>20	<1	0	<1
Copper	ppm	ASTM D5185m	>20	3	1	3
Tin	ppm	ASTM D5185m	>20	<1	0	<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

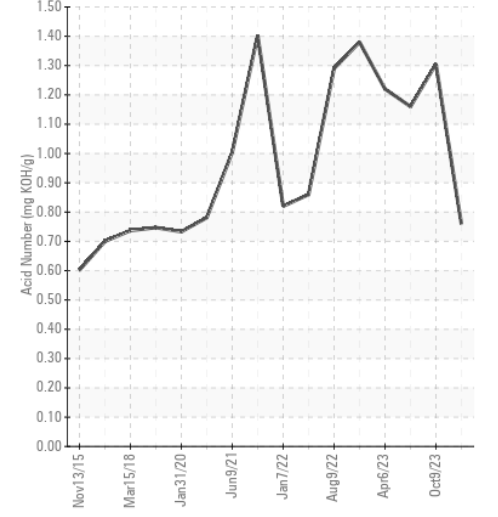
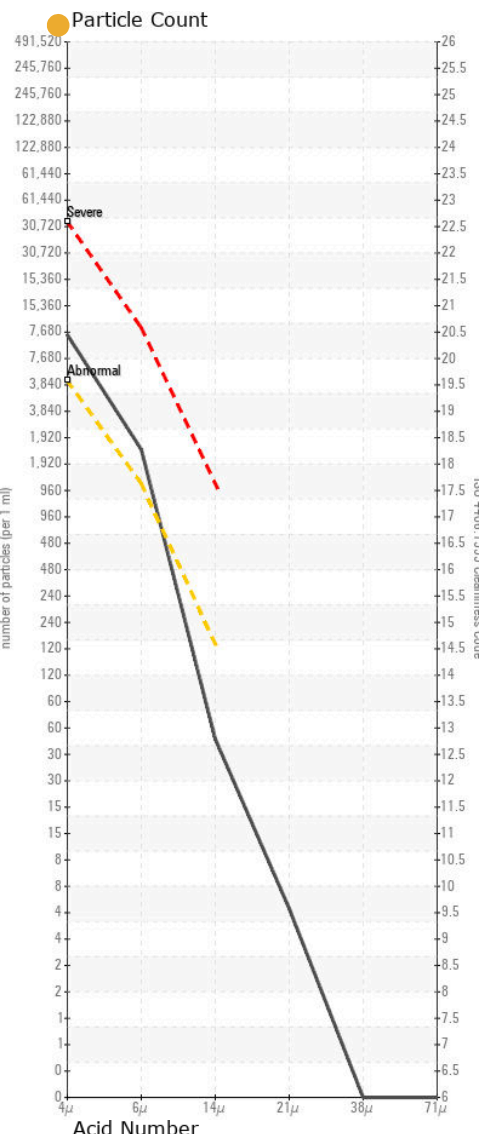
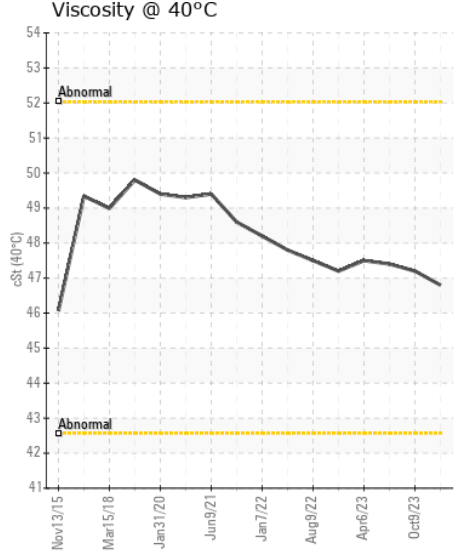
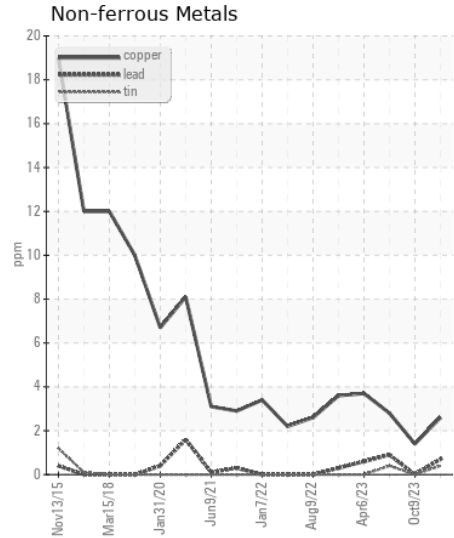
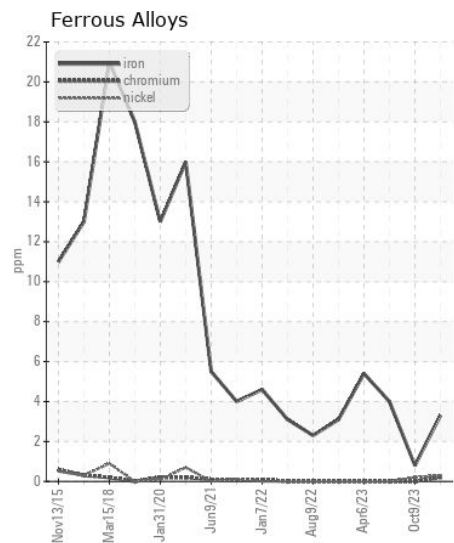
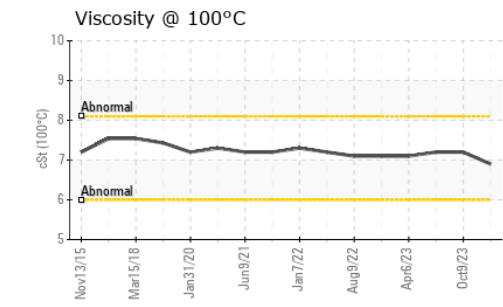
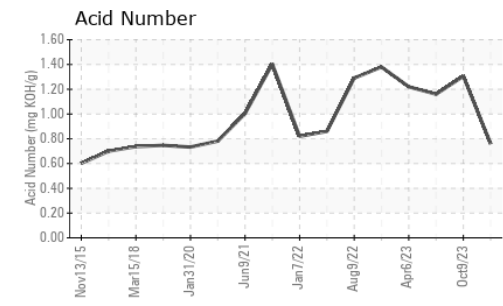
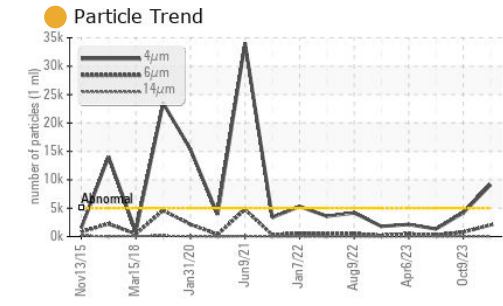
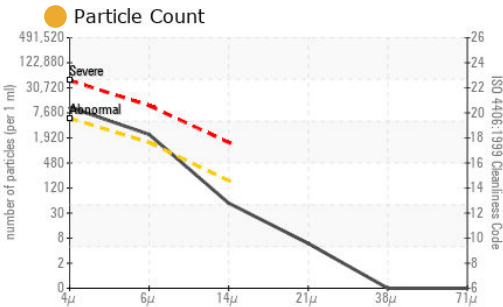
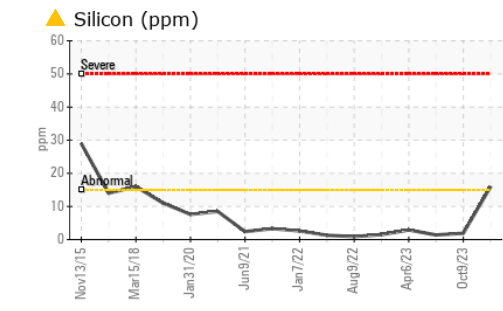
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. Elemental level of silicon (Si) above normal.

Silicon	ppm	ASTM D5185m	>15	▲ 16	2	1
Potassium	ppm	ASTM D5185m	>20	1	<1	1
Water	%	ASTM D6304	>0.05	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>5000	● 9123	4180	1337
Particles >6µm		ASTM D7647	>1300	● 2035	775	280
Particles >14µm		ASTM D7647	>160	46	30	13
Particles >21µm		ASTM D7647	>40	5	7	3
Particles >38µm		ASTM D7647	>10	0	1	0
Particles >71µm		ASTM D7647	>3	0	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	● 20/18/13	19/17/12	18/15/11
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		<1	1	<1
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		<1	0	0
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m		168	161	128
Calcium	ppm	ASTM D5185m		124	141	122
Phosphorus	ppm	ASTM D5185m		706	744	890
Zinc	ppm	ASTM D5185m		942	1046	1155
Sulfur	ppm	ASTM D5185m		3025	3108	4054
Acid Number (AN)	mg KOH/g	ASTM D8045		0.76	1.305	1.16
Visc @ 40°C	cSt	ASTM D445		46.8	47.2	47.4
Visc @ 100°C	cSt	ASTM D445		6.9	7.2	7.2
Viscosity Index (VI)	Scale	ASTM D2270		102	112	111



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10002093 **Received** : 18 Jun 2024
Lab Number : 06213451 **Tested** : 20 Jun 2024
Unique Number : 11086315 **Diagnosed** : 20 Jun 2024 - Don Baldrige
Test Package : MOB 2 (Additional Tests: KF, KV100, VI)

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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)