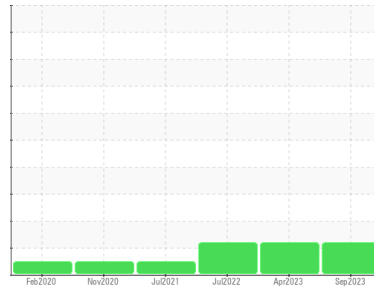




OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id
CATERPILLAR 425

Component
Diesel Engine

Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	RW0004169	RW0004166	RW0003706
Sample Date	Client Info	09 Sep 2023	15 Apr 2023	08 Jul 2022
Machine Age	hrs	3535	3204	2759
Oil Age	hrs	331	445	308
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		ABNORMAL	ABNORMAL	ABNORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m >100	7	10	6
Chromium	ppm	ASTM D5185m >20	<1	0	<1
Nickel	ppm	ASTM D5185m >4	<1	0	0
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m >3	0	0	<1
Aluminum	ppm	ASTM D5185m >20	<1	<1	<1
Lead	ppm	ASTM D5185m >40	0	0	<1
Copper	ppm	ASTM D5185m >330	1	1	<1
Tin	ppm	ASTM D5185m >15	<1	0	0
Antimony	ppm	ASTM D5185m	---	---	---
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 250	4	2	13
Barium	ppm	ASTM D5185m 10	0	0	0
Molybdenum	ppm	ASTM D5185m 100	62	58	50
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m 450	896	889	769
Calcium	ppm	ASTM D5185m 3000	1090	1048	1300
Phosphorus	ppm	ASTM D5185m 1150	1012	954	941
Zinc	ppm	ASTM D5185m 1350	1231	1212	1154
Sulfur	ppm	ASTM D5185m 4250	3273	3042	3404

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >25	3	3	3
Sodium	ppm	ASTM D5185m >158	2	1	1
Potassium	ppm	ASTM D5185m >20	2	0	<1
Fuel	%	ASTM D3524 >5	▲ 7.0	▲ 7.0	▲ 6.0

INFRA-RED

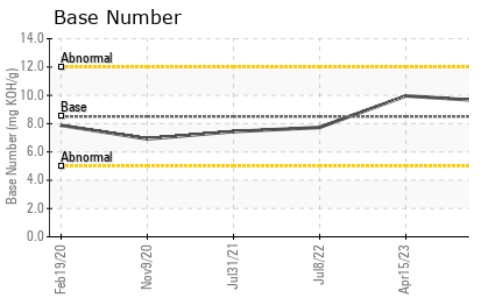
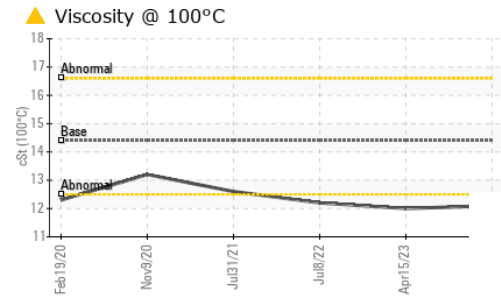
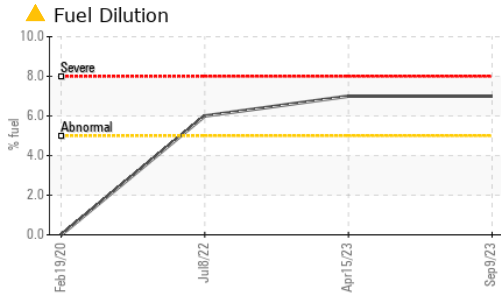
method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844 >3	0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624 >20	9.5	9.7	9.4
Sulfation	Abs/.1mm	*ASTM D7415 >30	18.0	17.3	19.4

FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414 >25	15.3	16.3	16.0
Base Number (BN)	mg KOH/g	ASTM D2896 8.5	9.57	9.96	7.73



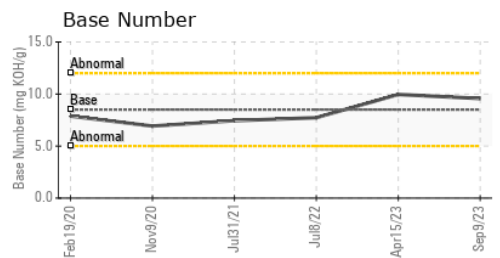
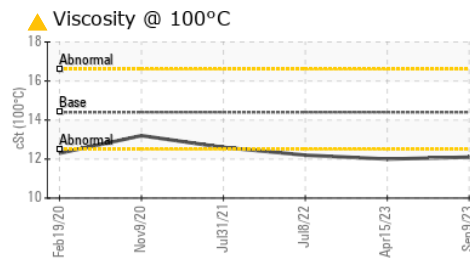
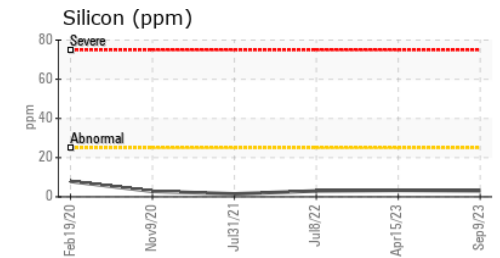
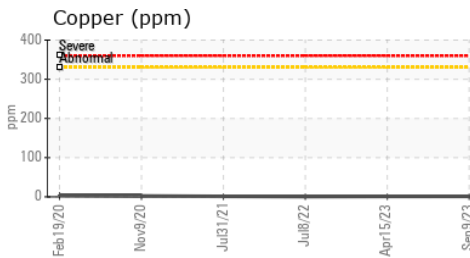
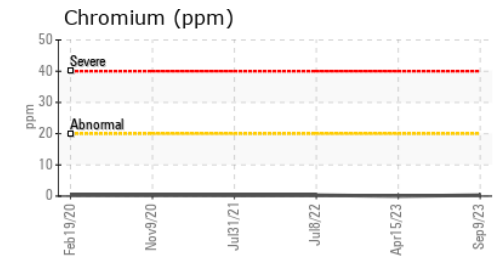
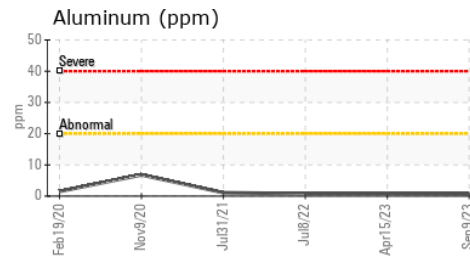
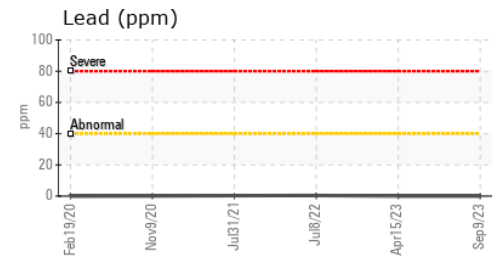
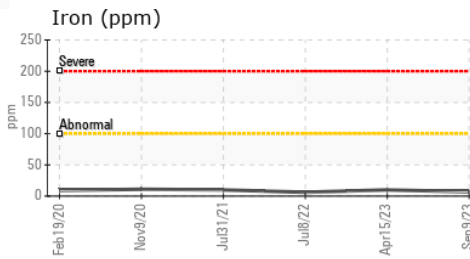
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
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	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	▲ 12.1	▲ 12.0	▲ 12.2

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RW0004169 **Received** : 22 Sep 2023
Lab Number : 05959214 **Diagnosed** : 26 Sep 2023
Unique Number : 10660427 **Diagnostician** : Wes Davis
Test Package : MOB 2 (Additional Tests: PercentFuel)

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 US 49420
 Contact: DAN HALLACK KARL BUTCHER
 shop@hallackcontracting.com
 T: (231)873-5081
 F: (231)873-2889

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)