HUTCHENS RENTZ-EDEN

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Machine Id
9908
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

RECOMMENDATION

We advise that you check the fuel injection system. Oil and filter 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

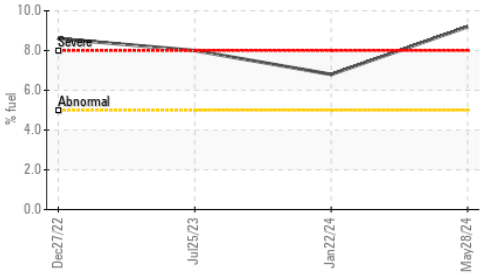
There is a high amount of fuel present in the oil. Elemental level of silicon (Si) above normal.

FLUID CONDITION

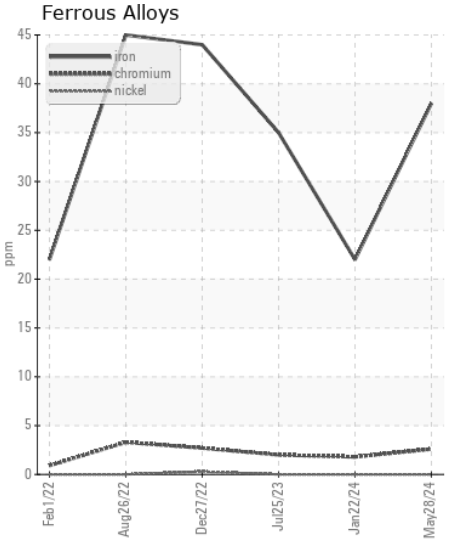
Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		HRE0000108	WC0827038	WC0827102
Sample Date		Client Info		28 May 2024	22 Jan 2024	25 Jul 2023
Machine Age	mls	Client Info		0	0	366409
Oil Age	mls	Client Info		0	0	6000
Filter Age	mls	Client Info		0	0	6000
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	ABNORMAL	SEVERE
Iron	ppm	ASTM D5185m	>100	38	22	35
Chromium	ppm	ASTM D5185m	>20	3	2	2
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	3	2	2
Lead	ppm	ASTM D5185m	>40	24	9	7
Copper	ppm	ASTM D5185m	>330	16	11	8
Tin	ppm	ASTM D5185m	>15	2	2	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	▲ 30	22	12
Potassium	ppm	ASTM D5185m	>20	<1	<1	0
Fuel	%	ASTM D3524	>5	▲ 9.2	▲ 6.8	▲ 8.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.5	0.3	0.4
Nitration	Abs/cm	*ASTM D7624	>20	11.7	9.2	10.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.5	20.6	23.8
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
Sodium	ppm	ASTM D5185m	>158	8	10	3
Boron	ppm	ASTM D5185m	250	56	33	16
Barium	ppm	ASTM D5185m	10	<1	0	2
Molybdenum	ppm	ASTM D5185m	100	71	60	71
Manganese	ppm	ASTM D5185m		2	1	1
Magnesium	ppm	ASTM D5185m	450	408	347	391
Calcium	ppm	ASTM D5185m	3000	1567	1522	1951
Phosphorus	ppm	ASTM D5185m	1150	1001	952	1073
Zinc	ppm	ASTM D5185m	1350	1166	1119	1337
Sulfur	ppm	ASTM D5185m	4250	3239	2957	4036
Oxidation	Abs/.1mm	*ASTM D7414	>25	24.4	18.2	22.4
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	5.6	7.9	6.3
Visc @ 100°C	cSt	ASTM D445	14.4	▲ 11.6	▲ 11.4	▲ 11.6

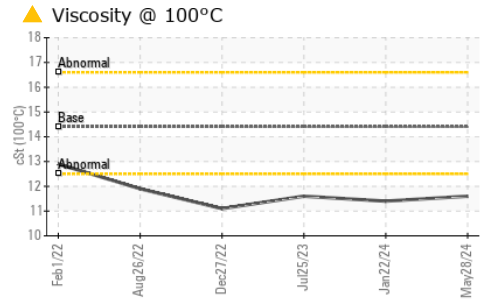
Fuel Dilution



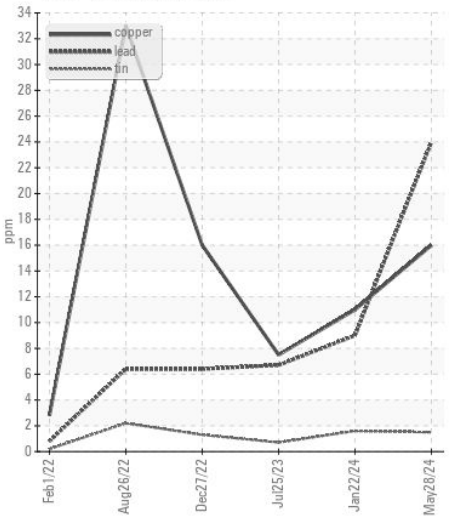
Ferrous Alloys



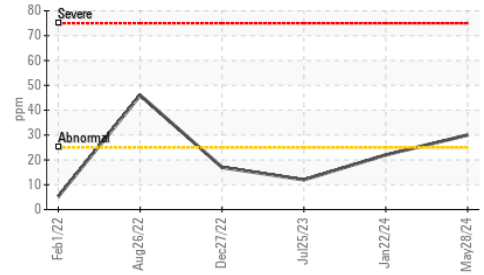
Viscosity @ 100°C



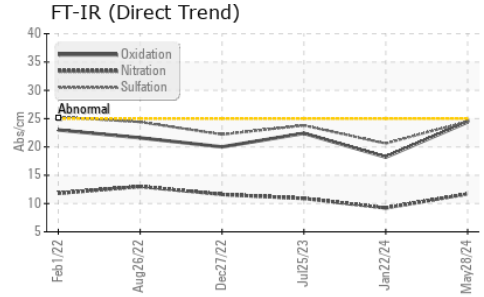
Non-ferrous Metals



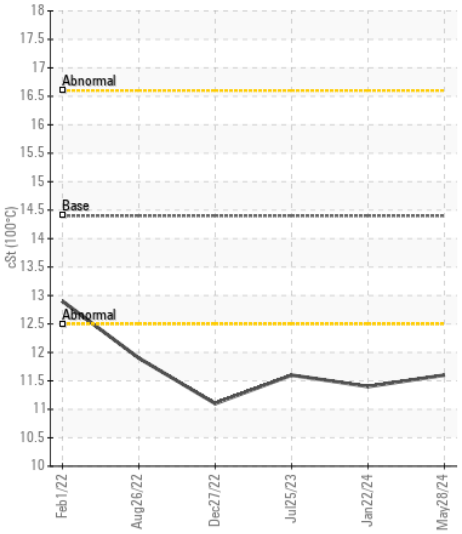
Silicon (ppm)



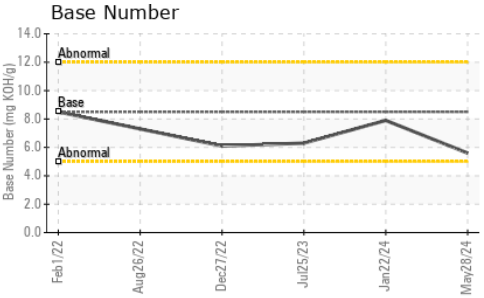
FT-IR (Direct Trend)



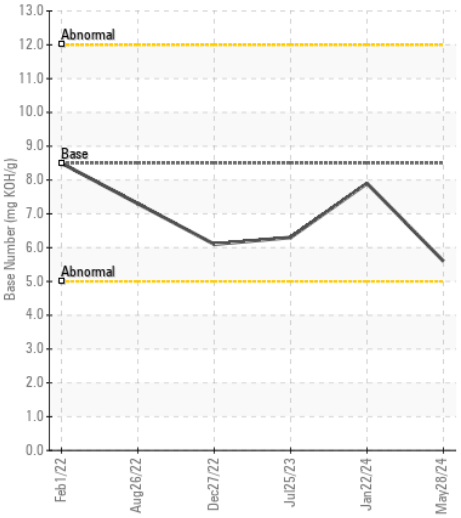
Viscosity @ 100°C



Base Number



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HRE0000108
Lab Number : 06196203
Unique Number : 11058326
Test Package : FLEET (Additional Tests: PercentFuel)

Received : 31 May 2024
Tested : 05 Jun 2024
Diagnosed : 05 Jun 2024 - Don Baldridge

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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