MOB II WEAR CHECK

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Area
RIG 2
Machine Id
HYUNDAI HL757-9A R2-LOADER-NKL
Component
Diesel Engine
Fluid
CHEVRON 15W40 (--- GAL)

RECOMMENDATION

We advise that you check the fuel injection system. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

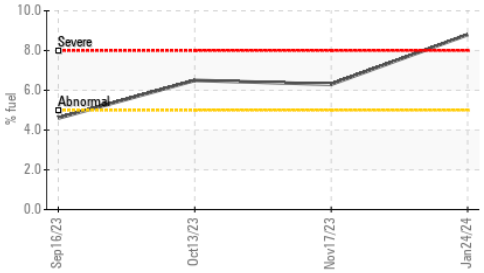
There is a moderate amount of particulates present in the oil. There is a high amount of fuel present in the oil.

FLUID CONDITION

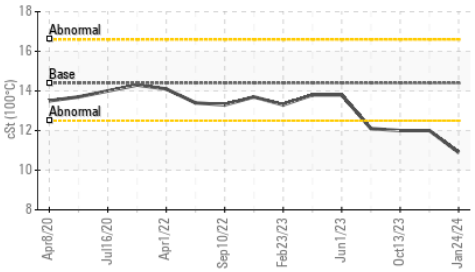
Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0014034	KL0013104	KL0012935
Sample Date		Client Info		24 Jan 2024	17 Nov 2023	13 Oct 2023
Machine Age	days	Client Info		0	45247	45211
Oil Age	days	Client Info		0	0	0
Filter Age	days	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				SEVERE	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>100	27	36	29
Chromium	ppm	ASTM D5185m	>20	2	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	15	4	5
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	2	6	7
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	11	11	8
Potassium	ppm	ASTM D5185m	>20	9	0	3
Fuel	%	ASTM D3524	>5	⬢ 8.8	▲ 6.3	▲ 6.5
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.6	0.5	0.5
Nitration	Abs/cm	*ASTM D7624	>20	8.3	10.0	9.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.5	23.6	22.9
Particles >4µm		ASTM D7647		8926	13545	12806
Particles >6µm		ASTM D7647	>5000	4862	▲ 7379	▲ 6976
Particles >14µm		ASTM D7647	>640	▲ 828	▲ 1256	▲ 1187
Particles >21µm		ASTM D7647	>160	▲ 279	▲ 423	▲ 400
Particles >38µm		ASTM D7647	>40	▲ 43	▲ 65	▲ 62
Particles >71µm		ASTM D7647	>10	4	7	6
Oil Cleanliness		ISO 4406 (c)	>19/16	▲ 19/17	▲ 20/17	▲ 20/17
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	>50	2	13	14
Boron	ppm	ASTM D5185m		295	213	242
Barium	ppm	ASTM D5185m		0	3	3
Molybdenum	ppm	ASTM D5185m		117	132	141
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		608	603	593
Calcium	ppm	ASTM D5185m		1389	1426	1440
Phosphorus	ppm	ASTM D5185m		665	639	624
Zinc	ppm	ASTM D5185m		773	773	761
Sulfur	ppm	ASTM D5185m		2312	2570	2743
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.4	18.5	17.9
Base Number (BN)	mg KOH/g	ASTM D2896		7.72	7.69	6.44
Visc @ 100°C	cSt	ASTM D445	14.4	▲ 10.9	▲ 12.0	▲ 12.0

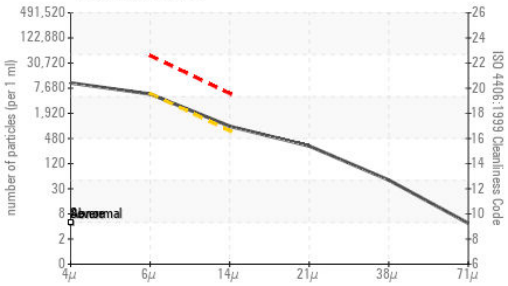
Fuel Dilution



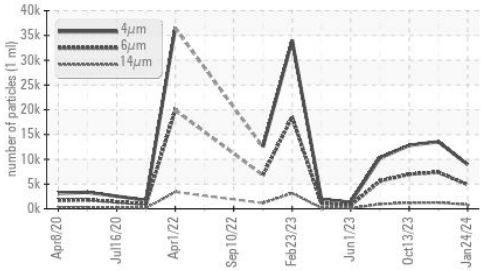
Viscosity @ 100°C



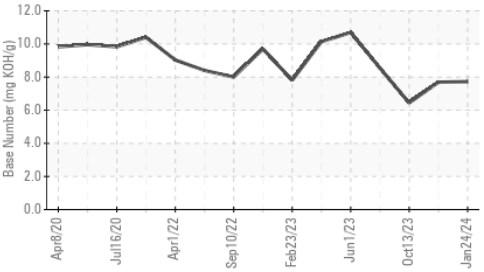
Particle Count



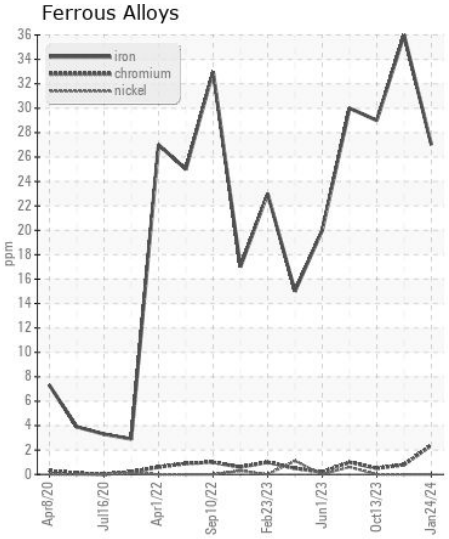
Particle Trend



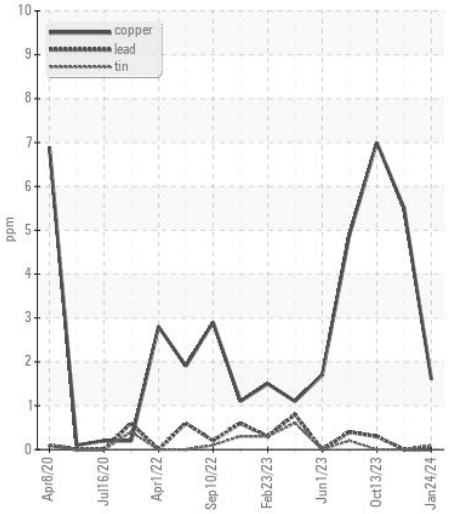
Base Number



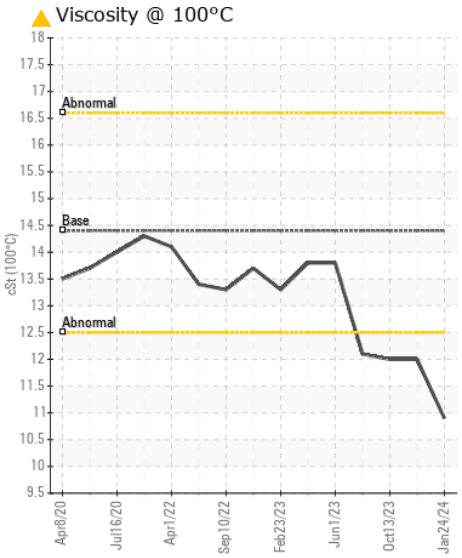
Ferrous Alloys



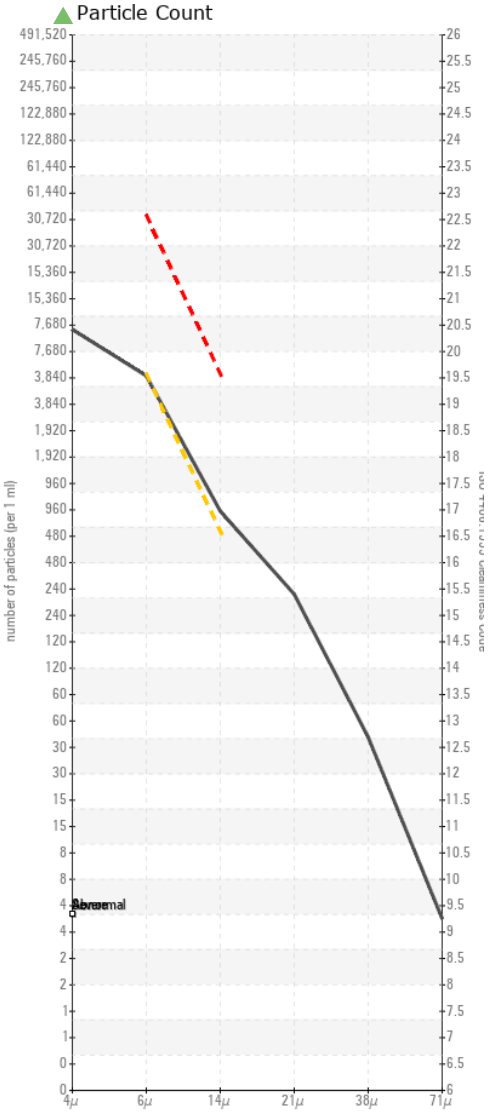
Non-ferrous Metals



Viscosity @ 100°C



Particle Count



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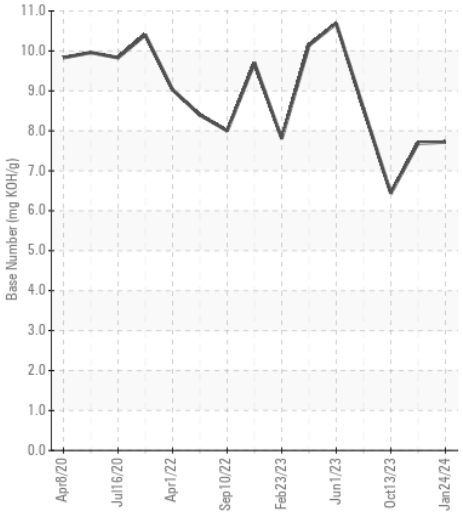

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0014034 **Received** : 07 Feb 2024
Lab Number : 06083133 **Tested** : 08 Feb 2024
Unique Number : 10870578 **Diagnosed** : 09 Feb 2024 - Sean Felton
Test Package : MOB 2 (Additional Tests: PercentFuel, PrtCount)

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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