



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ATTENTION
FLUID CONDITION	NORMAL

Area
RIG 1
Machine Id
HYUNDAI HL757-9A R1-LOADER-ENG-NKL
Component
Diesel Engine
Fluid
CHEVRON 15W40 (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0014070	KL0012529	KL0012578
Sample Date		Client Info		12 Dec 2023	25 Aug 2023	21 Jul 2023
Machine Age	hrs	Client Info		45272	45161	45127
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	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				ATTENTION	NORMAL	ATTENTION

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	10	51	42
Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	3	7
Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Copper	ppm	ASTM D5185m	>330	1	4	2
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

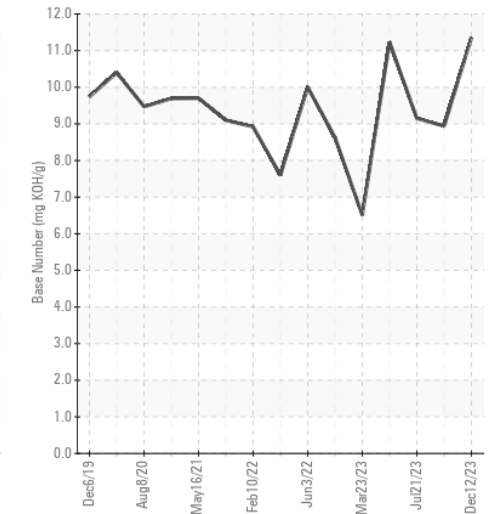
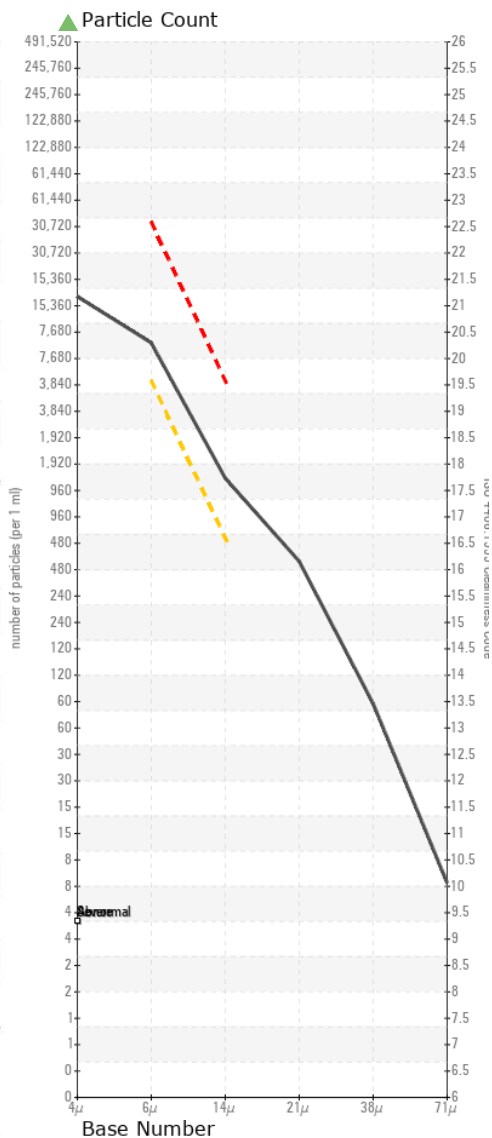
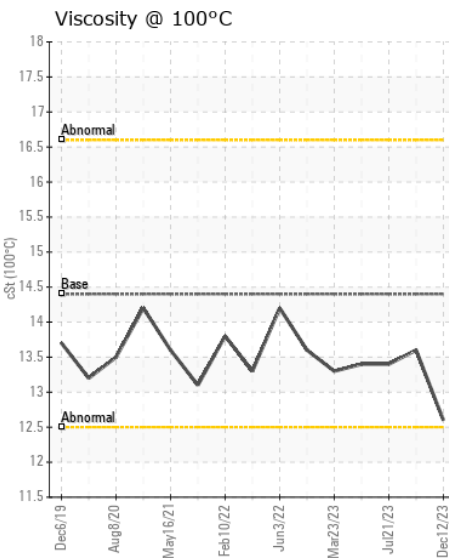
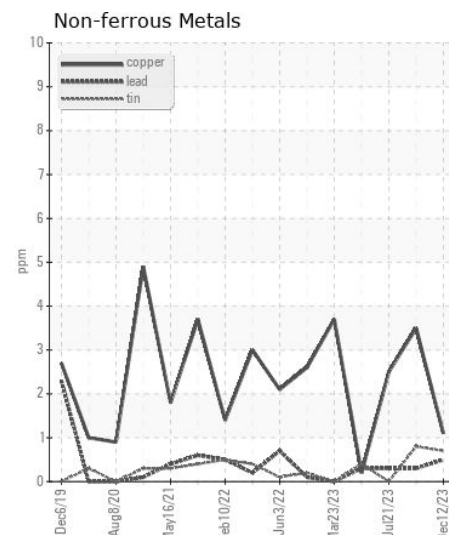
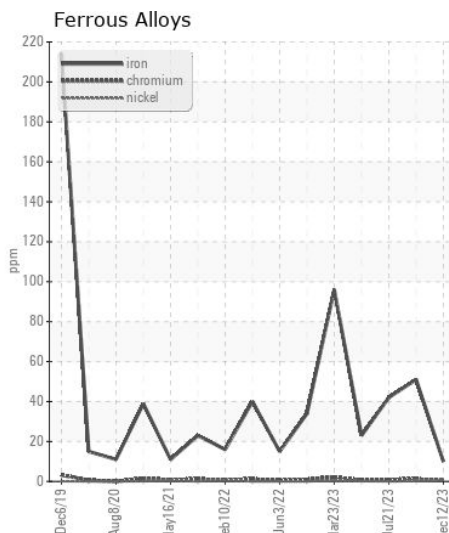
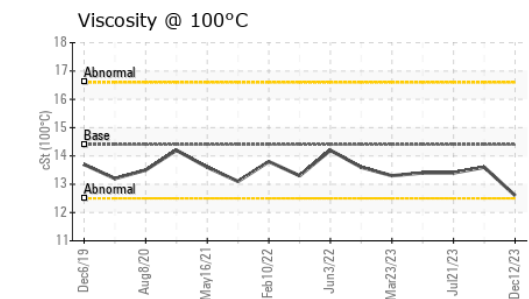
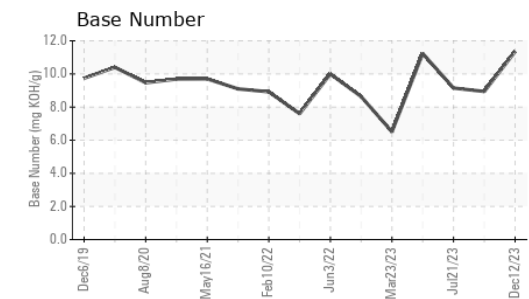
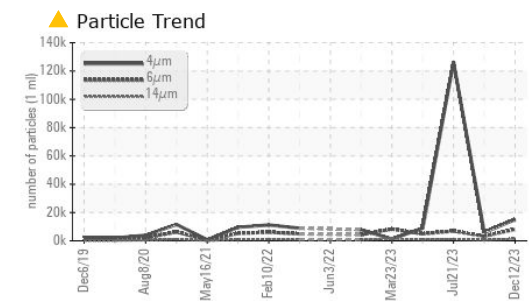
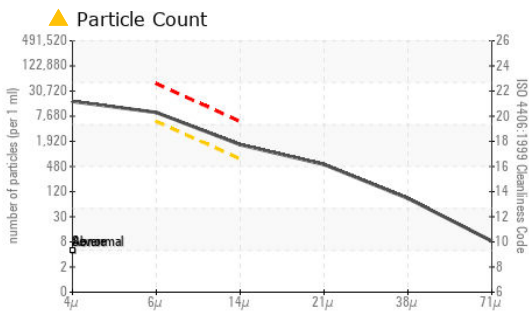
There is a moderate amount of particulates present in the oil.

Silicon	ppm	ASTM D5185m	>25	7	11	10
Potassium	ppm	ASTM D5185m	>20	2	3	3
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	0.1	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	5.7	8.5	8.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.4	24.0	23.2
Particles >4µm		ASTM D7647		15059	5855	126323
Particles >6µm		ASTM D7647	>5000	▲ 8204	3189	▲ 6877
Particles >14µm		ASTM D7647	>640	▲ 1396	543	▲ 1170
Particles >21µm		ASTM D7647	>160	▲ 470	183	▲ 394
Particles >38µm		ASTM D7647	>40	▲ 73	28	▲ 61
Particles >71µm		ASTM D7647	>10	7	3	6
Oil Cleanliness		ISO 4406 (c)	>19/16	▲ 20/18	19/16	▲ 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

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>50	0	6	4
Boron	ppm	ASTM D5185m		377	283	308
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		128	125	131
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		681	652	675
Calcium	ppm	ASTM D5185m		1547	1604	1653
Phosphorus	ppm	ASTM D5185m		711	694	715
Zinc	ppm	ASTM D5185m		853	837	881
Sulfur	ppm	ASTM D5185m		2715	3212	3126
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.9	17.8	17.0
Base Number (BN)	mg KOH/g	ASTM D2896		11.35	8.94	9.15
Visc @ 100°C	cSt	ASTM D445	14.4	12.6	13.6	13.4



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0014070 **Received** : 08 Jan 2024
Lab Number : 06055020 **Diagnosed** : 10 Jan 2024
Unique Number : 10820969 **Diagnostician** : Sean Felton
Test Package : MOB 2 (Additional Tests: 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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