



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ATTENTION
FLUID CONDITION	NORMAL

Machine Id
27256
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 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		KL0014003	KL0012110	KL0011938
Sample Date		Client Info		01 Feb 2024	31 Oct 2023	27 Jul 2023
Machine Age	mls	Client Info		60342	58039	54447
Oil Age	mls	Client Info		29194	0	0
Filter Age	mls	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	ABNORMAL	ATTENTION

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	30	23	10
Chromium	ppm	ASTM D5185m	>20	1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	3	1
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	4	2	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

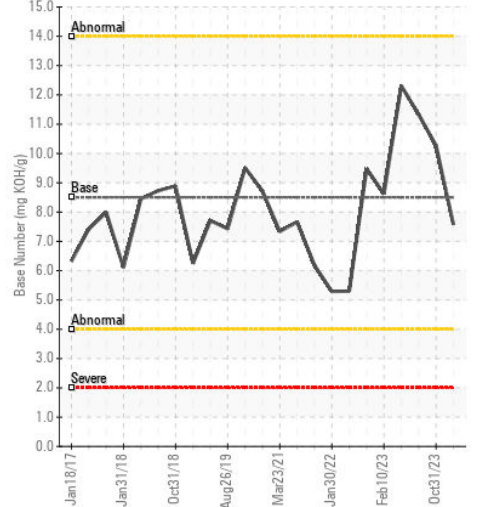
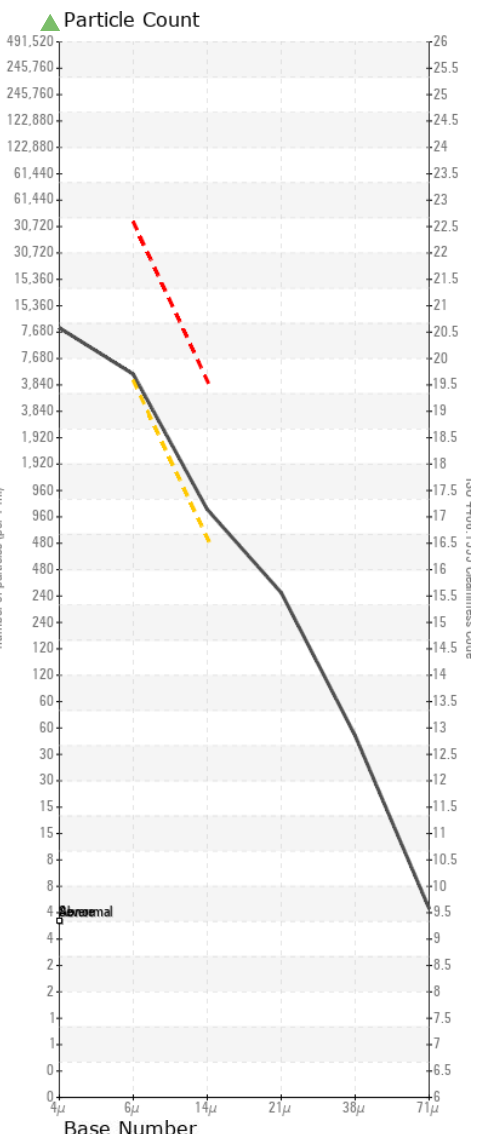
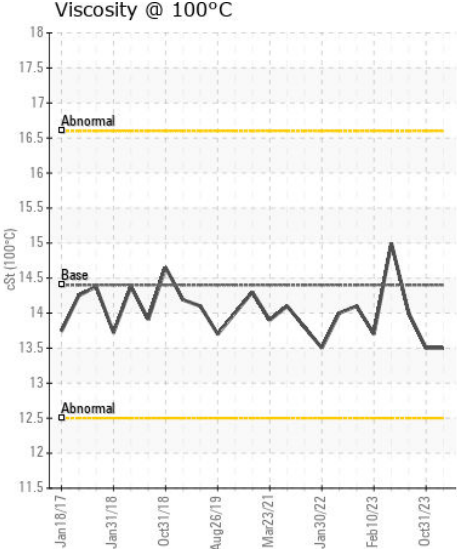
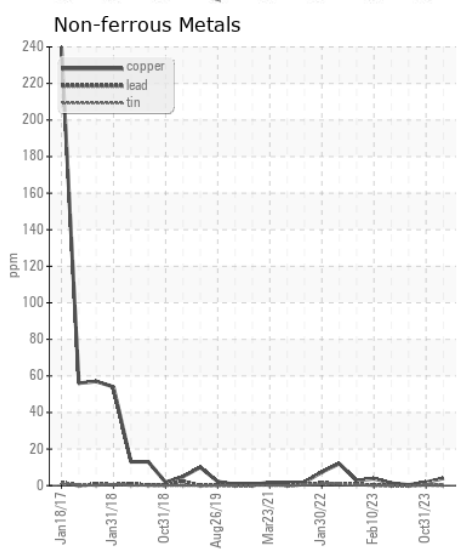
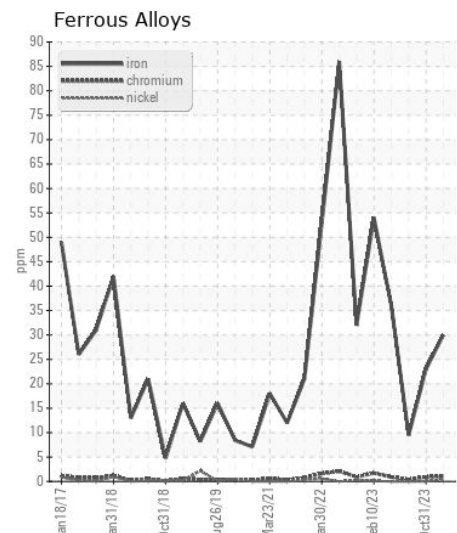
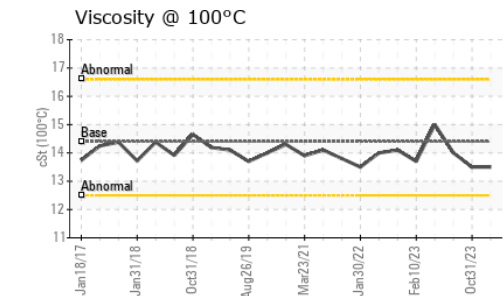
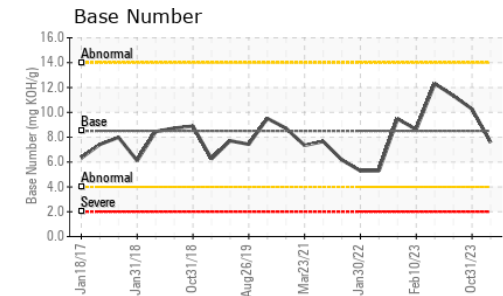
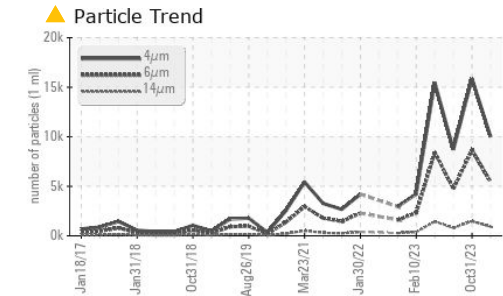
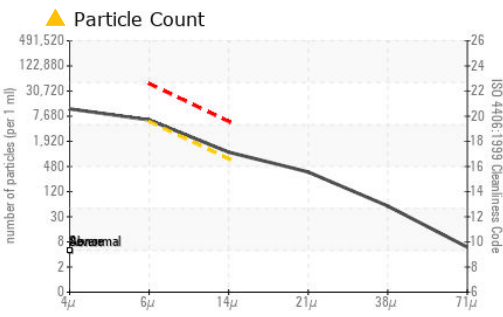
There is a moderate amount of particulates present in the oil.

Silicon	ppm	ASTM D5185m	>25	8	8	6
Potassium	ppm	ASTM D5185m	>20	4	4	1
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	0.9	0.9	0.4
Nitration	Abs/cm	*ASTM D7624	>20	11.9	11.7	7.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	27.9	26.0	20.1
Particles >4µm		ASTM D7647		9996	15866	8708
Particles >6µm		ASTM D7647	>5000	▲ 5445	▲ 8643	▲ 4744
Particles >14µm		ASTM D7647	>640	▲ 927	▲ 1471	▲ 807
Particles >21µm		ASTM D7647	>160	▲ 312	▲ 495	▲ 272
Particles >38µm		ASTM D7647	>40	▲ 48	▲ 76	42
Particles >71µm		ASTM D7647	>10	5	8	4
Oil Cleanliness		ISO 4406 (c)	>19/16	▲ 20/17	▲ 20/18	▲ 19/17
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	>158	7	4	2
Boron	ppm	ASTM D5185m	250	26	29	95
Barium	ppm	ASTM D5185m	10	5	0	0
Molybdenum	ppm	ASTM D5185m	100	54	63	67
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	450	907	1165	1160
Calcium	ppm	ASTM D5185m	3000	787	994	1005
Phosphorus	ppm	ASTM D5185m	1150	798	1085	1098
Zinc	ppm	ASTM D5185m	1350	1067	1385	1337
Sulfur	ppm	ASTM D5185m	4250	2789	3450	4223
Oxidation	Abs/.1mm	*ASTM D7414	>25	27.4	26.1	17.0
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.58	10.27	11.33
Visc @ 100°C	cSt	ASTM D445	14.4	13.5	13.5	14.0



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0014003 **Received** : 14 Feb 2024
Lab Number : 06089619 **Tested** : 15 Feb 2024
Unique Number : 10877064 **Diagnosed** : 16 Feb 2024 - Jonathan Hester
Test Package : MOB 2 (Additional Tests: PrtCount)

CITY & COUNTY HONOLULU
 99-999 IWAENA RD
 AIEA, HI
 US 96701
 Contact: CLYDE OMIJA
 comija@honolulu.gov
 T: (575)623-9952
 F:

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)