

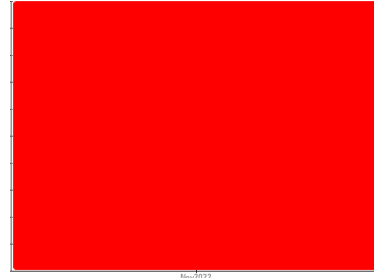


OIL ANALYSIS REPORT

Sample Rating Trend

WEAR

Area
{UNASSIGNED} [CONHER]
 Machine Id
Astillero - Grúa Galion Motor
 Component
Diesel Engine
 Fluid
Xtra Rev 15W40 (17 LTR)



DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

Cylinder, crank, or cam shaft wear is indicated.

Contamination

There is a moderate amount of fuel present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Ingressed dirt has caused abrasive wear to cylinder assemblies.

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.

SAMPLE INFORMATION

	method	limit/base	current	history 1	history 2
Sample Number	Client Info		KL0011238	---	---
Sample Date	Client Info		16 Nov 2022	---	---
Machine Age	hrs	Client Info	19200	---	---
Oil Age	hrs	Client Info	300	---	---
Oil Changed	Client Info		Changed	---	---
Sample Status			SEVERE	---	---

CONTAMINATION

	method	limit/base	current	history 1	history 2
Glycol	WC Method		NEG	---	---

WEAR METALS

	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m >100	232	---	---
Chromium	ppm	ASTM D5185m >20	6	---	---
Nickel	ppm	ASTM D5185m >4	1	---	---
Titanium	ppm	ASTM D5185m	2	---	---
Silver	ppm	ASTM D5185m >3	0	---	---
Aluminum	ppm	ASTM D5185m >20	48	---	---
Lead	ppm	ASTM D5185m >40	1	---	---
Copper	ppm	ASTM D5185m >330	10	---	---
Tin	ppm	ASTM D5185m >15	2	---	---
Vanadium	ppm	ASTM D5185m	<1	---	---
Cadmium	ppm	ASTM D5185m	0	---	---

ADDITIVES

	method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m	246	---	---
Barium	ppm	ASTM D5185m	1	---	---
Molybdenum	ppm	ASTM D5185m	114	---	---
Manganese	ppm	ASTM D5185m	3	---	---
Magnesium	ppm	ASTM D5185m	520	---	---
Calcium	ppm	ASTM D5185m	1733	---	---
Phosphorus	ppm	ASTM D5185m	907	---	---
Zinc	ppm	ASTM D5185m	1103	---	---
Sulfur	ppm	ASTM D5185m	3615	---	---

CONTAMINANTS

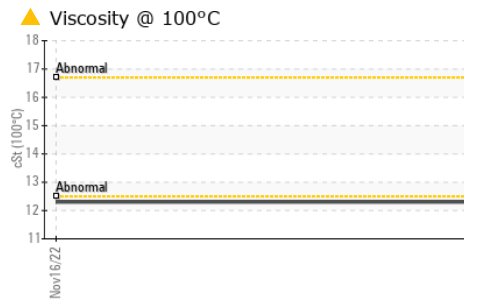
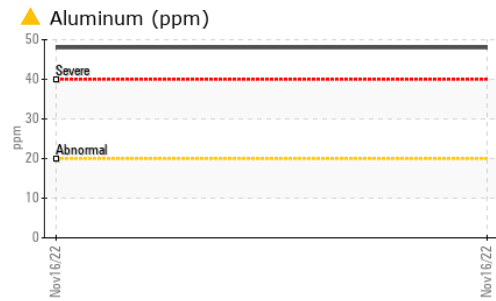
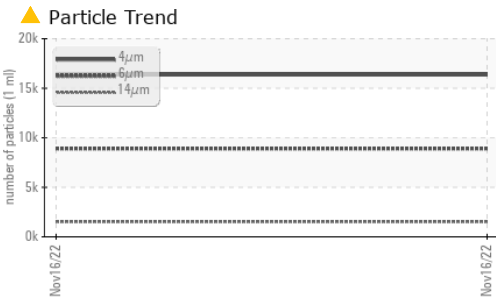
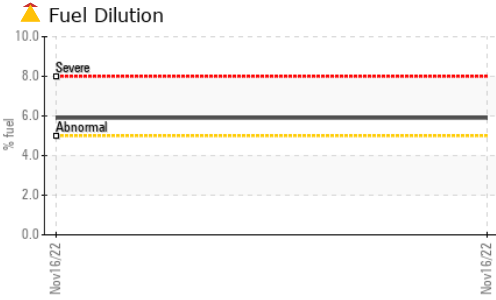
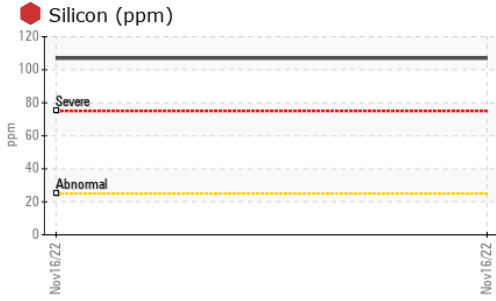
	method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m >25	107	---	---
Sodium	ppm	ASTM D5185m	17	---	---
Potassium	ppm	ASTM D5185m >20	11	---	---
Fuel	%	ASTM D3524 >5	5.9	---	---

INFRA-RED

	method	limit/base	current	history 1	history 2
Soot %	%	*ASTM D7844 >3	0.4	---	---
Nitration	Abs/cm	*ASTM D7624 >20	12.9	---	---
Sulfation	Abs./1mm	*ASTM D7415 >30	26.2	---	---



OIL ANALYSIS REPORT



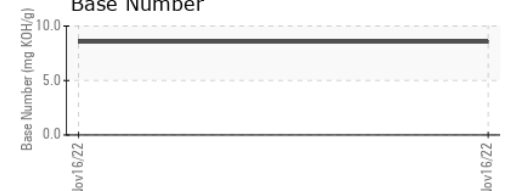
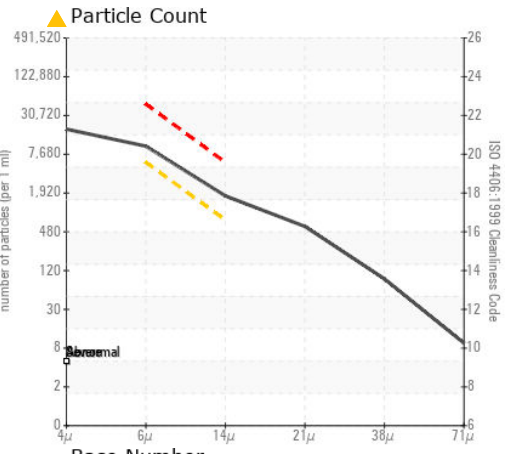
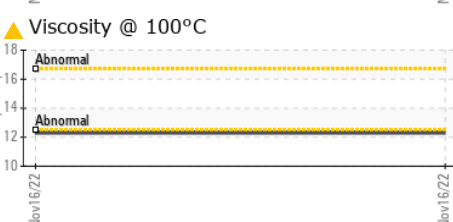
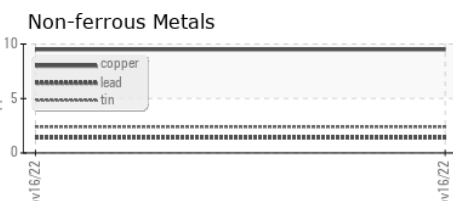
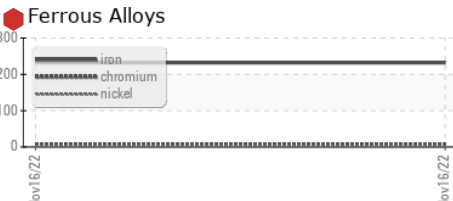
FLUID CLEANLINESS	method	limit/base	current	history 1	history 2
Particles >4µm	ASTM D7647		16355	---	---
Particles >6µm	ASTM D7647	>5000	▲ 8910	---	---
Particles >14µm	ASTM D7647	>640	▲ 1516	---	---
Particles >21µm	ASTM D7647	>160	▲ 511	---	---
Particles >38µm	ASTM D7647	>40	▲ 79	---	---
Particles >71µm	ASTM D7647	>10	8	---	---
Oil Cleanliness	ISO 4406 (c)	>19/16	▲ 20/18	---	---

FLUID DEGRADATION	method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm *ASTM D7414	>25	25.0	---	---
Base Number (BN)	mg KOH/g ASTM D2896		8.55	---	---

VISUAL	method	limit/base	current	history 1	history 2
White Metal	scalar *Visual	NONE	NONE	---	---
Yellow Metal	scalar *Visual	NONE	NONE	---	---
Precipitate	scalar *Visual	NONE	NONE	---	---
Silt	scalar *Visual	NONE	NONE	---	---
Debris	scalar *Visual	NONE	NONE	---	---
Sand/Dirt	scalar *Visual	NONE	NONE	---	---
Appearance	scalar *Visual	NORML	NORML	---	---
Odor	scalar *Visual	NORML	NORML	---	---
Emulsified Water	scalar *Visual	>0.2	NEG	---	---
Free Water	scalar *Visual		NEG	---	---

FLUID PROPERTIES	method	limit/base	current	history 1	history 2
Visc @ 100°C	cSt ASTM D445		▲ 12.3	---	---

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0011238 **Received** : 06 Dec 2022
Lab Number : **05710561** **Diagnosed** : 12 Dec 2022
Unique Number : 10245136 **Diagnostician** : Don Baldrige
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel, PrtCount)

IBACO
 GUAYMAS,
 MX
 Contact: JOSE GARCIA
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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)