



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
BELL B45E B93A645EE03308113
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. 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		BE0016815	BE0016814	---
Sample Date		Client Info		29 Aug 2023	28 Mar 2023	---
Machine Age	hrs	Client Info		974	499	---
Oil Age	hrs	Client Info		0	0	---
Filter Age	hrs	Client Info		0	0	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				ABNORMAL	NORMAL	---

WEAR

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other metal levels are typical for a new component breaking in.

PQ		ASTM D8184	>79	12	9	---
Iron	ppm	ASTM D5185m	>100	27	55	---
Chromium	ppm	ASTM D5185m	>20	2	5	---
Nickel	ppm	ASTM D5185m	>4	<1	2	---
Titanium	ppm	ASTM D5185m		<1	<1	---
Silver	ppm	ASTM D5185m	>3	<1	0	---
Aluminum	ppm	ASTM D5185m	>20	12	22	---
Lead	ppm	ASTM D5185m	>40	0	0	---
Copper	ppm	ASTM D5185m	>330	▲ 414	181	---
Tin	ppm	ASTM D5185m	>15	1	2	---
Vanadium	ppm	ASTM D5185m		0	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

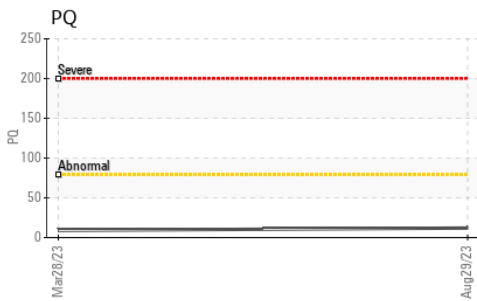
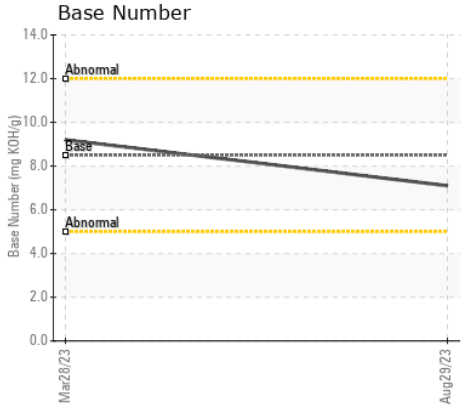
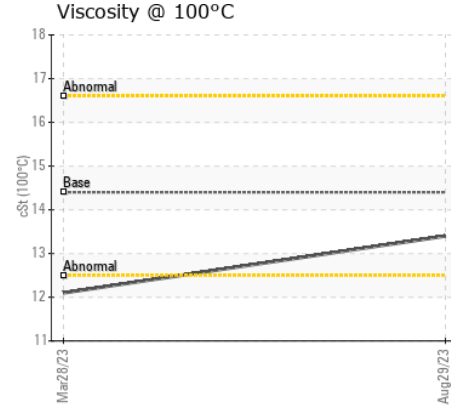
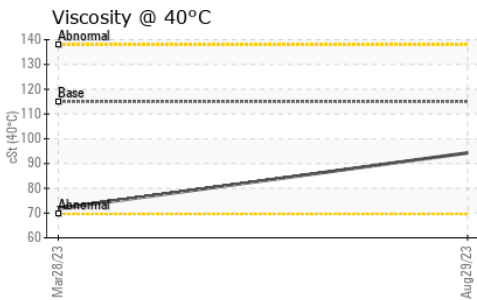
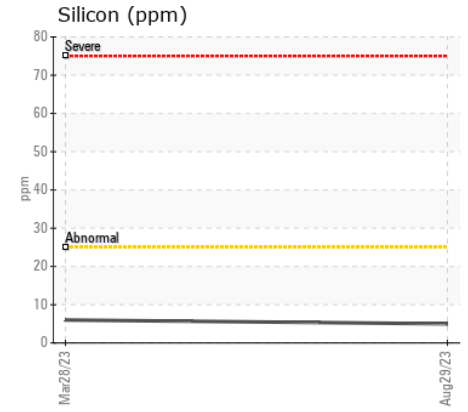
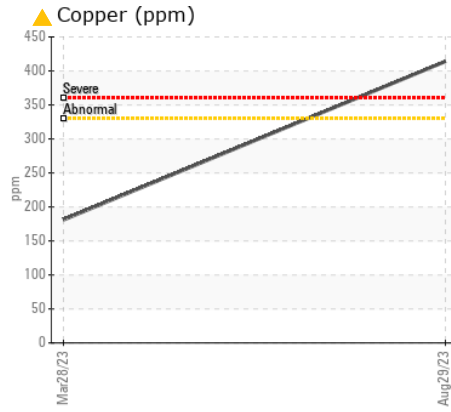
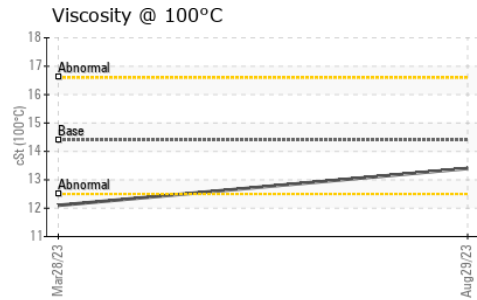
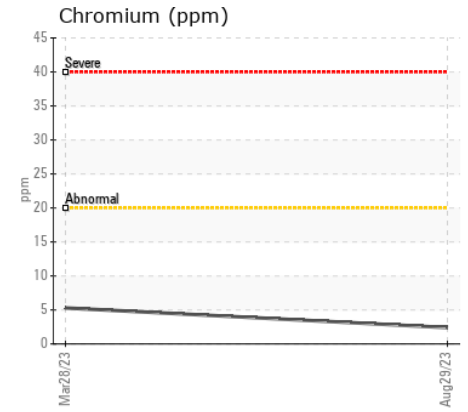
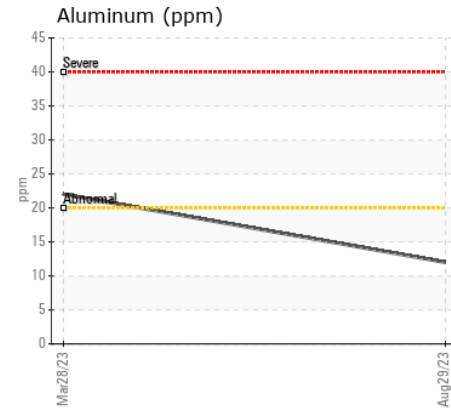
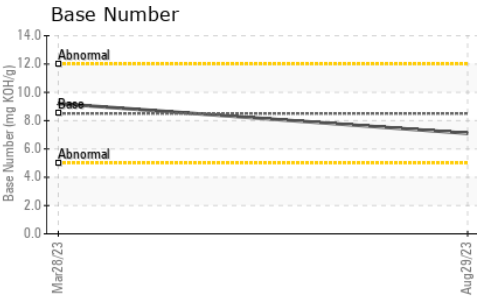
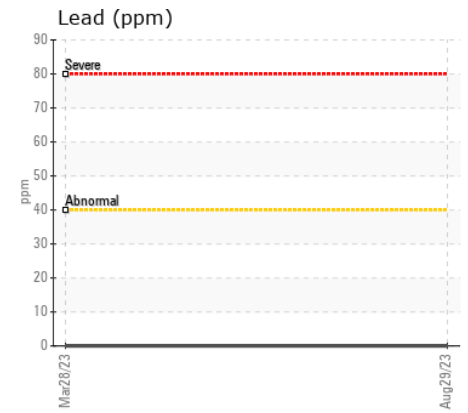
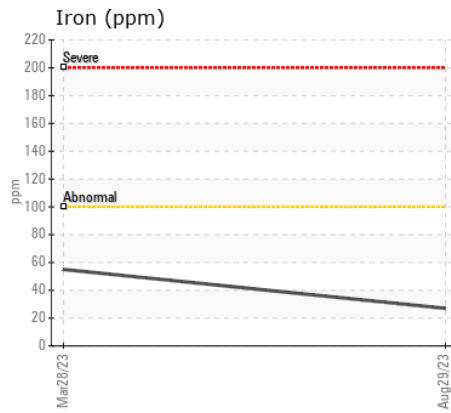
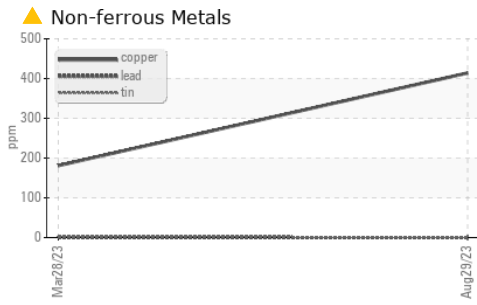
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	5	6	---
Potassium	ppm	ASTM D5185m	>20	8	5	---
Fuel		WC Method	>5	<1.0	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.5	0.5	---
Nitration	Abs/cm	*ASTM D7624	>20	9.2	11.1	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.2	22.2	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	---

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m	>158	2	1	---
Boron	ppm	ASTM D5185m	250	332	18	---
Barium	ppm	ASTM D5185m	10	2	0	---
Molybdenum	ppm	ASTM D5185m	100	74	2	---
Manganese	ppm	ASTM D5185m		2	5	---
Magnesium	ppm	ASTM D5185m	450	394	70	---
Calcium	ppm	ASTM D5185m	3000	1668	2268	---
Phosphorus	ppm	ASTM D5185m	1150	959	628	---
Zinc	ppm	ASTM D5185m	1350	1163	767	---
Sulfur	ppm	ASTM D5185m	4250	3106	1767	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.0	19.2	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.1	9.2	---
Visc @ 40°C	cSt	ASTM D445	115	94.3	71.8	---
Visc @ 100°C	cSt	ASTM D445	14.4	13.4	12.1	---
Viscosity Index (VI)	Scale	ASTM D2270	126	142	166	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : BE0016815 **Received** : 06 Sep 2023
Lab Number : 05943453 **Tested** : 07 Sep 2023
Unique Number : 10634065 **Diagnosed** : 08 Sep 2023 - Don Baldrige
Test Package : MOBCE

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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)