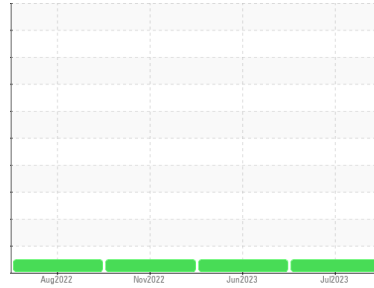




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
HC2211

Component
Diesel Engine

Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			WC0704441	WC0810564	WC0687038
Sample Date	Client Info			20 Jul 2023	15 Jun 2023	14 Nov 2022
Machine Age	hrs	Client Info		6870	6600	5994
Oil Age	hrs	Client Info		0	0	388
Oil Changed	Client Info			Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<1.0	<1.0	<1.0
Glycol	WC Method			NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	2	3	5
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	2	7	1
Lead	ppm	ASTM D5185m	>40	<1	1	<1
Copper	ppm	ASTM D5185m	>330	2	6	18
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	130	10	2
Barium	ppm	ASTM D5185m	10	0	0	1
Molybdenum	ppm	ASTM D5185m	100	11	58	61
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m	450	195	919	759
Calcium	ppm	ASTM D5185m	3000	2071	1227	1344
Phosphorus	ppm	ASTM D5185m	1150	1043	1006	980
Zinc	ppm	ASTM D5185m	1350	1284	1278	1205
Sulfur	ppm	ASTM D5185m	4250	4413	3714	3558

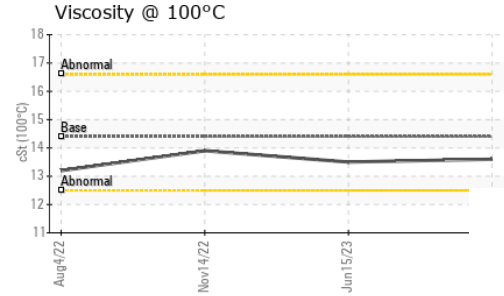
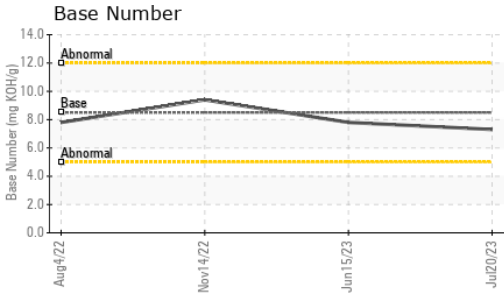
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	7	6	7
Sodium	ppm	ASTM D5185m	>158	4	2	1
Potassium	ppm	ASTM D5185m	>20	7	0	0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	7.5	9.3	9.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.3	20.0	21.0

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.4	17.0	17.0
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.3	7.8	9.4



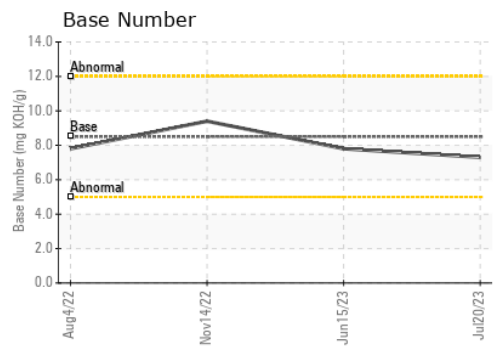
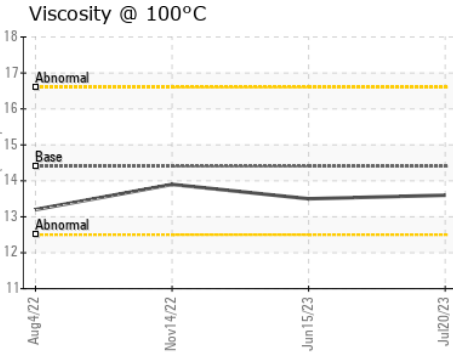
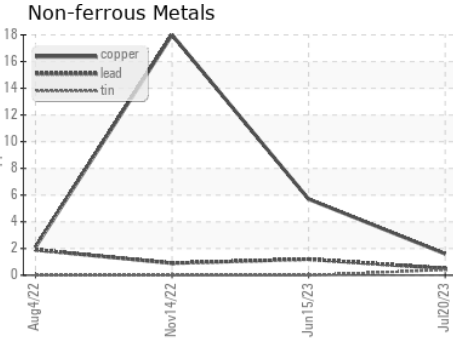
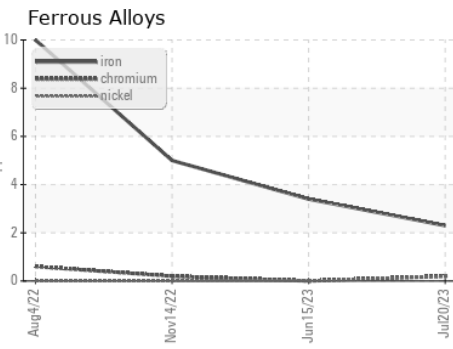
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
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
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	14.4	13.6	13.5	13.9

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0704441 **Received** : 15 Aug 2023
Lab Number : **05925382** **Diagnosed** : 16 Aug 2023
Unique Number : 10605329 **Diagnostician** : Wes Davis
Test Package : CONST (Additional Tests: TBN)

BUCKNER - WILLIS
 18123 HWY 75 NORTH
 WILLIS, TX
 US 77378
 Contact: JOHN HAWKINS
 johnh@bucknercompanies.com

Certificate L2367
 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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