

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR A934C 057446-1007 - Diesel Engine

Sample No: LH0281194

Oil Type: KLONDIKE HEAVY DUTY 15W40



ABC RECYCLING

8081 MEADOW AVE.

BURNABY, BC

CA V3N 2V9

Contact: John Anderson

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F:



SAMPLE INFORMATION

Sample Number	LH0281194	LH0213841	LH0213848	LH0213880
Sample Date	22 Jan 2024	11 Jul 2023	24 Apr 2023	02 Dec 2022
Machine Hours	26482	25673	25419	25052
Oil Hours	0	0	0	0
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	ABNORMAL	NORMAL	NORMAL	NORMAL



OIL CONDITION

Visc @ 100°C	cSt	14.5	13.8	14.1	14.1
Oxidation (PA)	%	54	37	40	45



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	3.6	1	1.4	1.4
Nitration (PA)	%	86	58	68	68
Sulfation (PA)	%	81	52	57	58
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	0.6	<1.0	<1.0	<1.0
Silicon	ppm	8	7	8	7
Sodium	ppm	2	2	2	2
Potassium	ppm	2	<1	<1	1



WEAR METALS

Iron	ppm	16	4	6	6
Copper	ppm	3	1	<1	<1
Lead	ppm	8	<1	<1	<1
Tin	ppm	0	0	0	0
Aluminum	ppm	2	1	1	1
Chromium	ppm	<1	0	0	0
Molybdenum	ppm	4	1	3	19
Nickel	ppm	0	0	<1	0
Titanium	ppm	0	0	<1	<1
Silver	ppm	0	0	0	0
Manganese	ppm	0	0	<1	<1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	2265	2287	2458	2087
Magnesium	ppm	71	18	49	278
Zinc	ppm	1011	990	1059	1070
Phosphorus	ppm	851	902	963	993
Barium	ppm	0	0	0	0
Boron	ppm	1	2	2	2

Diagnosis

The oil change at the time of sampling has been noted. All component wear rates are normal. Fuel content negligible. Light concentration of carbon/soot present in the oil. The oil is no longer serviceable due to the presence of contaminants.

Depot: ABCBUR

Unique No: 5733244

Signed: Wes Davis

Report Date: 20 Feb 2024

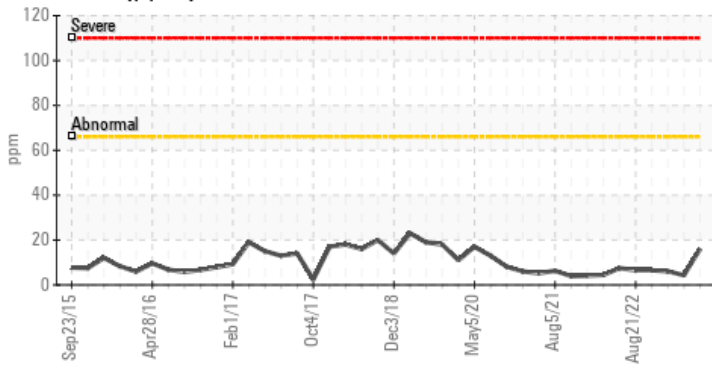
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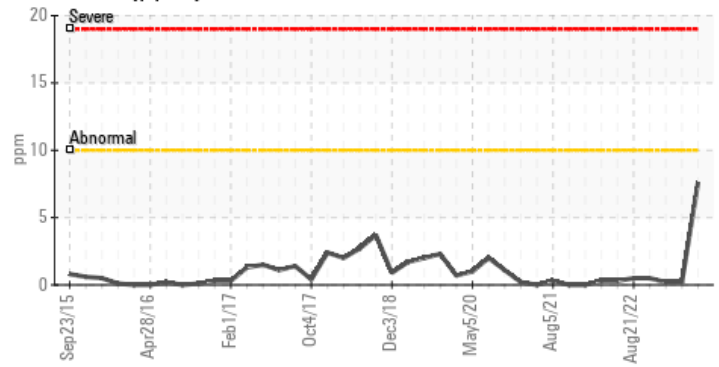


GRAPHS

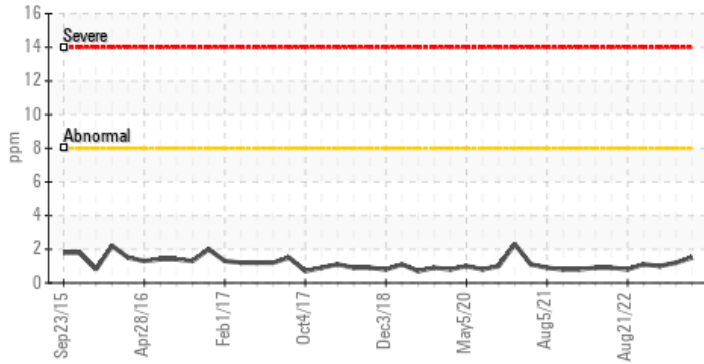
Iron (ppm)



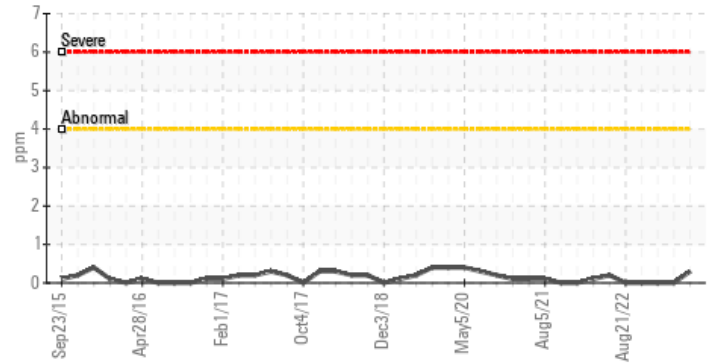
Lead (ppm)



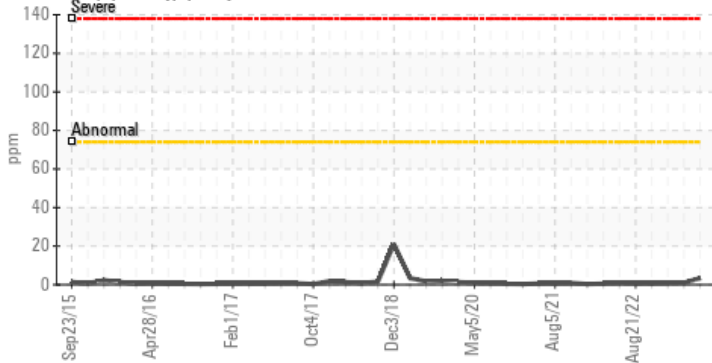
Aluminum (ppm)



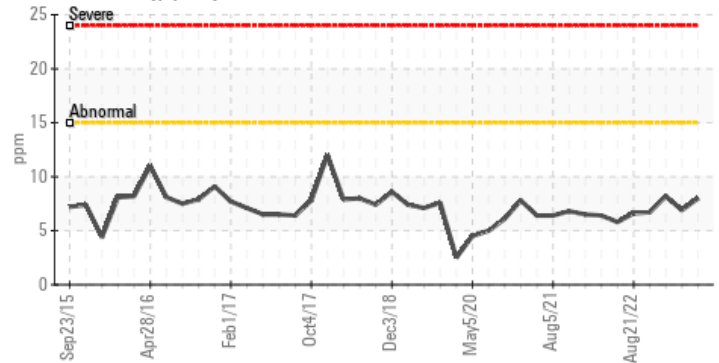
Chromium (ppm)



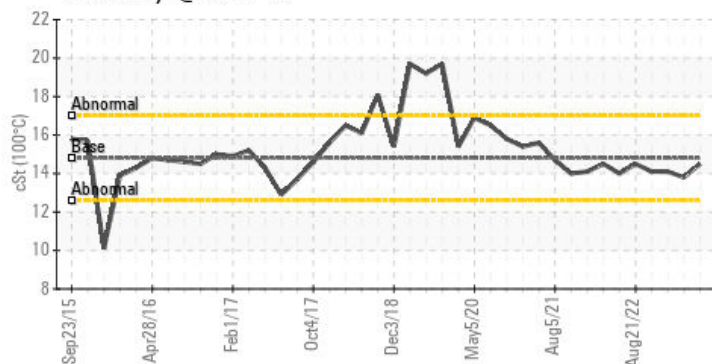
Copper (ppm)



Silicon (ppm)



Viscosity @ 100°C



Soot %

