

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR R934CEW 038112-027 - Diesel Engine

Sample No: LH0278400

Oil Type: PETRO CANADA DURON SAE 10W30



SAMPLE INFORMATION

Sample Number	LH0278400	LH0230515	LH0175340	LH
Sample Date	18 Nov 2023	06 May 2022	12 Oct 2020	27 Jul 2020
Machine Hours	25222	22633	0	0
Oil Hours	0	0	0	0
Oil Changed	Changed	Changed	N/A	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

Dartmouth Metals & Bottle Ltd.
 14 Dawn Drive
 Dartmouth, NS
 CA B3B 1H9
 Contact: Service



OIL CONDITION

Visc @ 100°C	cSt	12.3	13.4	12.8	13.9
Oxidation (PA)	%	57	26	63	69

T:
F:



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	1.2	0.7	2.5	2.8
Nitration (PA)	%	77	38	83	97
Sulfation (PA)	%	58	45	65	85
Glycol	%	0.0	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	10	8	6	6
Sodium	ppm	28	4	<1	<1
Potassium	ppm	8	0	<1	1

Diagnosis

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. Additive levels indicate the addition of a different brand, or type of oil. The condition of the oil is acceptable for the time in service.



WEAR METALS

Iron	ppm	32	17	18	25
Copper	ppm	298	1	<1	<1
Lead	ppm	8	<1	1	<1
Tin	ppm	2	<1	<1	<1
Aluminum	ppm	4	3	2	1
Chromium	ppm	1	<1	<1	<1
Molybdenum	ppm	43	55	59	51
Nickel	ppm	<1	<1	0	<1
Titanium	ppm	0	0	<1	0
Silver	ppm	1	0	0	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	1796	1141	1075	1086
Magnesium	ppm	687	987	1010	926
Zinc	ppm	1191	1252	1249	1184
Phosphorus	ppm	1019	1105	1047	1041
Barium	ppm	34	0	<1	0
Boron	ppm	25	17	2	6

Depot: DAR14DAR
 Unique No: 5683850
 Signed: Kevin Marson
 Report Date: 24 Nov 2023



GRAPHS

