

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR R920 043304-1705 - Diesel Engine

Sample No: LH0254077

Oil Type: LIEBHERR MOTOROIL 5W-30 LOW ASH



SAMPLE INFORMATION

Sample Number	LH0254077	LH0207416	LHMC105801	LHMC129106
Sample Date	20 Apr 2023	15 Jul 2022	09 Aug 2020	28 Jun 2018
Machine Hours	3738	3190	1990	1040
Oil Hours	548	727	0	505
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

ACECO

10119 RESIDENCY ROAD
MANASSAS, VA
US 20110
Contact: RON BROCK



OIL CONDITION

Visc @ 100°C	cSt	12.8	13.0	12.4	12.02
Base Number (BN)	mg KOH/g	6.5	8.4	---	---
Oxidation (PA)	%	82	86	90	104

T: (703)392-0111
F: (703)331-5604



CONTAMINATION

Soot %	%	0.1	0.1	0.1	0
Nitration (PA)	%	94	101	99	92
Sulfation (PA)	%	67	68	69	72
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	7	6	13	12
Sodium	ppm	3	3	3	4
Potassium	ppm	2	4	4	9

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



WEAR METALS

Iron	ppm	17	15	49	21
Copper	ppm	3	3	2	5
Lead	ppm	<1	<1	0	0
Tin	ppm	<1	0	0	0
Aluminum	ppm	4	4	3	2
Chromium	ppm	<1	<1	1	<1
Molybdenum	ppm	47	7	<1	<1
Nickel	ppm	0	0	<1	<1
Titanium	ppm	1	<1	<1	<1
Silver	ppm	0	0	0	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	0	0	0	0



ADDITIVES

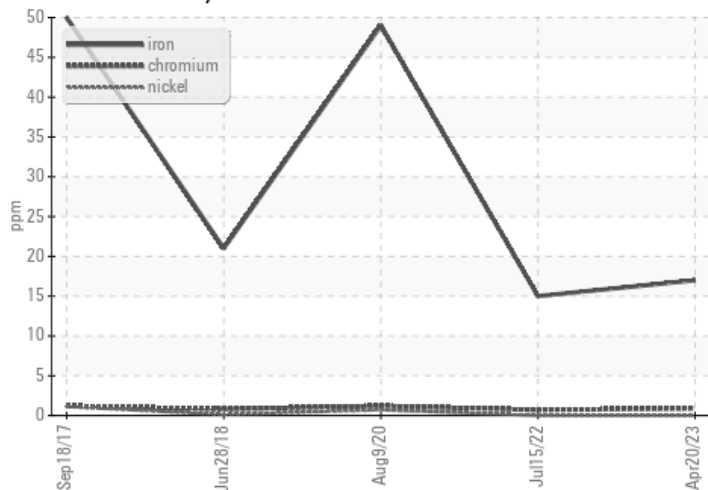
Calcium	ppm	1652	1435	3072	4238
Magnesium	ppm	787	626	17	34
Zinc	ppm	1025	865	849	1134
Phosphorus	ppm	855	717	777	976
Barium	ppm	0	0	0	<1
Boron	ppm	109	55	4	187

Depot: ACEMAN
Unique No: 10550024
Signed: Wes Davis
Report Date: 11 Jul 2023

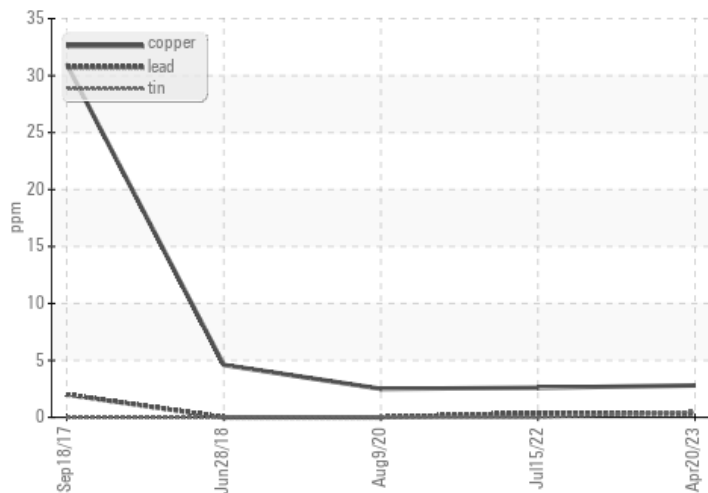


GRAPHS

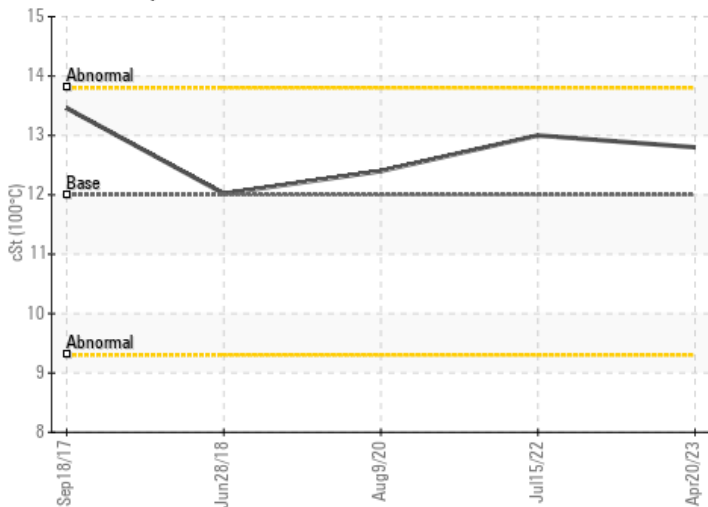
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

