



LIEBHERR 24459 - Diesel Engine

Sample No: LH0220493

Nickel

Silver

Titanium

Manganese

Vanadium

0

Calcium

Zinc

Barium

Boron

Magnesium

Phosphorus

Oil Type: LIEBHERR MOTOROIL 10W-40 LOW ASH

Sample Number		LH0220493	LH0220486	LH0220483	
Sample Date		19 Jun 2023	28 Apr 2023	23 Mar 2023	
Machine Hours		1526	936	464	
Dil Hours		589	936	464	
Dil Changed		Not Changd	Changed	Not Changd	
Sample Status		NORMAL	ABNORMAL	ATTENTION	
	DNDITION				
Visc @ 100°C	cSt	0 12.6	0 11.4	0 11.7	
Base Number (BN)	0 0	0 8.1	03.4	○ 5.5	
Dxidation (PA)	%	93	192	187	
*					
CONT	AMINAT	ION			
Soot %	%	0.1	0.1	0.1	
Nitration (PA)	%	76	88	86	
Sulfation (PA)	%	60	99	103	
Glycol	%	NEG	NEG	NEG	
Fuel	%	<1.0	0 1.6	0 1.6	
Silicon	ppm	0 5	0 17	0 18	
Sodium	ppm	0	0	2	
Potassium	ppm	3	03	03	
~					
	R METALS	5			
			0.01	0.10	
Iron	ppm	09	0 21	0 16	
Copper	ppm	0 22	080	61	
ead	ppm	01	02	01	
Гin	ppm	01	01	01	
	nnm	02	○ <1	2	
Aluminum	ppm		•	-	
Chromium	ppm	0	0 <1	0	
Aluminum Chromium Molybdenum			•	-	

 $\bigcirc 0$

 $\bigcirc 0$

04

0

0 1370

0 805

826

0 632

11

94

<1

 $\bigcirc 0$

0

05

0

0 1532

0 1002

0774

0 119

0 ()

978

0

R MINING EQUIPMENT CO

DUGLAS HWY , WY ED PILZ ebherr.com 8-0663

sis

at the next service interval All component wear rates al. There is no indication of mination in the oil. The BN cates that there is suitable remaining in the oil. The of the oil is suitable for rvice.

Depot: LIEGIL Unique No: 10552515 Signed: Wes Davis **Report Date:** 13 Jul 2023

Contact/Location: TED PILZ - LIEGIL

Report Id: LIEGIL [WUSCAR] 05896705 (Generated: 07/13/2023 12:52:12) Rev: 1

0

0

01

0

0 1437

0 768

914

0 781

<mark></mark> <1

0 145

<1

ppm

ADDITIVES

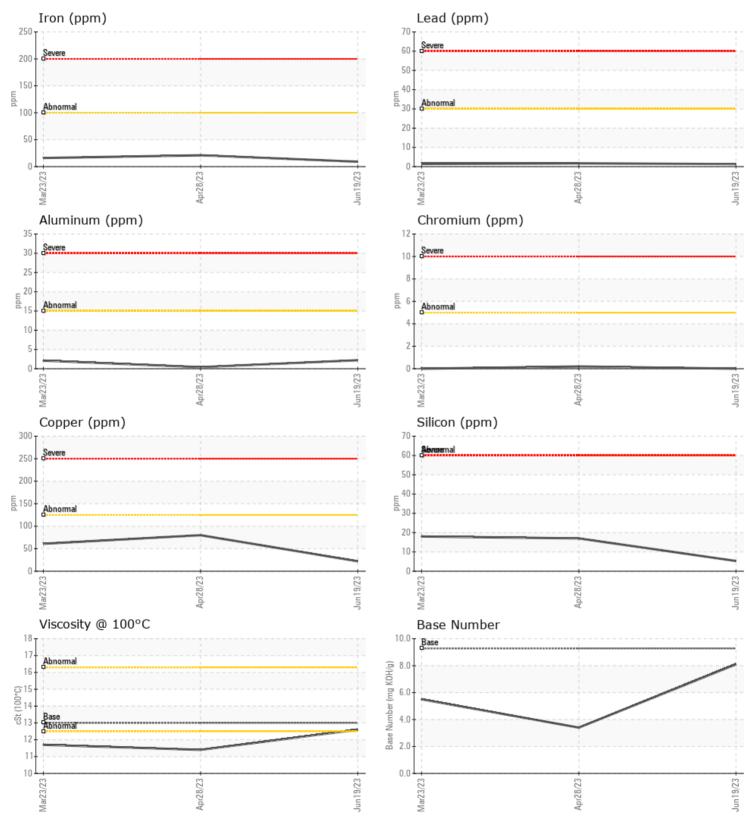
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GRAPHS

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Contact/Location: TED PILZ - LIEGIL