

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR LH50 1203-88500 - Diesel Engine

Sample No: LH0272499

Oil Type: CHEVRON DELO LE 5W40



SAMPLE INFORMATION

Sample Number	LH0272499	LH0254732	LH0236085	LH0220824
Sample Date	14 Dec 2023	17 May 2023	25 Jan 2023	09 Sep 2022
Machine Hours	8417	7952	7490	6977
Oil Hours	0	0	0	0
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	SEVERE	ABNORMAL	ABNORMAL	NORMAL

TERX METALS

119 FIRST ST
BROKAW, WI
US 54417
Contact: MATT DYMORA
terxmaint@gmail.com
T:
F:



OIL CONDITION

Visc @ 100°C	cSt	12.2	13.6	12.1	13.9
Base Number (BN)	mg KOH/g	6.8	6.5	6.9	7.6
Oxidation (PA)	%	71	75	72	82



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	3.4	3	1	1
Nitration (PA)	%	114	113	95	106
Sulfation (PA)	%	78	76	68	76
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	11.1	6.3	7.8	<1.0
Silicon	ppm	8	8	8	8
Sodium	ppm	0	2	2	4
Potassium	ppm	4	3	2	<1



WEAR METALS

Iron	ppm	58	43	23	26
Copper	ppm	6	5	7	11
Lead	ppm	3	0	2	4
Tin	ppm	<1	<1	<1	1
Aluminum	ppm	3	4	3	3
Chromium	ppm	1	1	<1	<1
Molybdenum	ppm	13	27	3	7
Nickel	ppm	<1	0	0	<1
Titanium	ppm	72	48	80	90
Silver	ppm	0	0	0	<1
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	<1	<1	<1	1



ADDITIVES

Calcium	ppm	1148	1114	1248	1367
Magnesium	ppm	649	774	585	637
Zinc	ppm	1042	1123	1074	1150
Phosphorus	ppm	889	910	823	908
Barium	ppm	9	0	0	0
Boron	ppm	19	17	25	24

Diagnosis

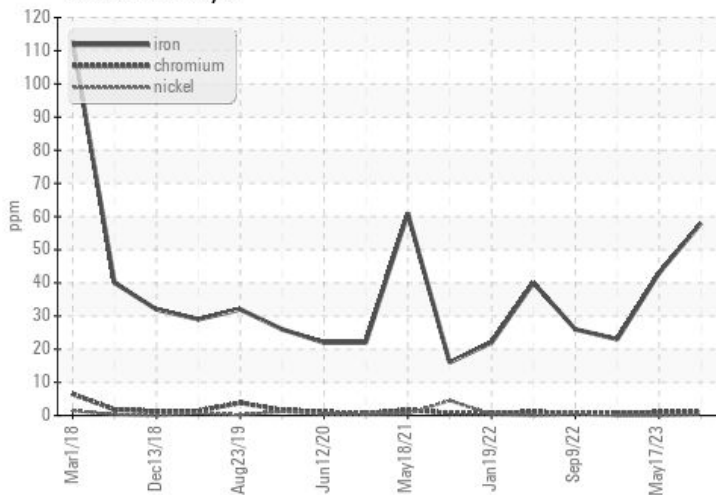
We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. There is a moderate amount of fuel present in the oil. There is an abnormal amount of solids and carbon present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Depot: TERBRO
Unique No: 10806007
Signed: Angela Borella
Report Date: 29 Dec 2023

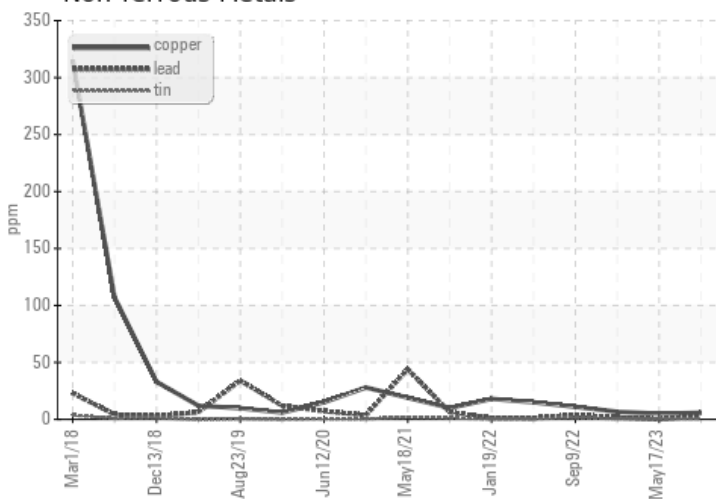


GRAPHS

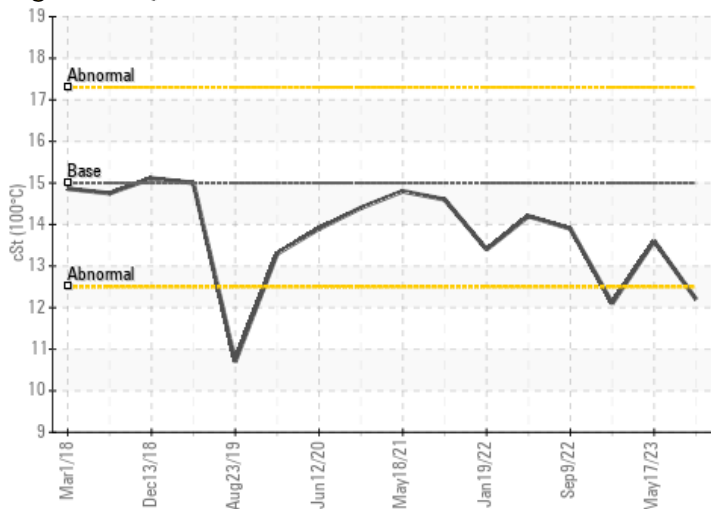
Ferrous Alloys



Non-ferrous Metals



● Viscosity @ 100°C



Base Number

