

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### LIEBHERR A944CHD 051846-194 - Diesel Engine

Sample No: LH0244849

Oil Type: CONOCO PHILLIPS GUARDOL ECT 15W40



#### SAMPLE INFORMATION

Sample Number	LH0244849	LH0244859	LH0244858	LH0244855
Sample Date	09 Jan 2024	28 Nov 2023	27 Nov 2023	02 Oct 2023
Machine Hours	32866	32577	17268	26129
Oil Hours	250	300	300	300
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	ABNORMAL

NILES IRON & METAL CO. INC.

P.O. BOX 166

NILES, OH

US 44446

Contact: CRAIG STINSON

cstinson529@gmail.com;canastasio@wearcheckusa.com

T: (330)652-2262

F: (330)652-1240



#### OIL CONDITION

Visc @ 100°C	cSt	13.2	13.2	12.9	13.5
Base Number (BN)	mg KOH/g	7.3	7.2	8.8	7.5
Oxidation (PA)	%	50	51	47	54

#### 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.



#### CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	2.3	2.4	0.1	1.6
Nitration (PA)	%	66	69	43	75
Sulfation (PA)	%	59	59	48	60
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	6	6	6	5
Sodium	ppm	2	<1	<1	7
Potassium	ppm	4	2	2	3



#### WEAR METALS

Iron	ppm	12	13	0	37
Copper	ppm	1	<1	0	389
Lead	ppm	<1	0	<1	<1
Tin	ppm	<1	<1	<1	1
Aluminum	ppm	2	1	1	2
Chromium	ppm	<1	<1	0	<1
Molybdenum	ppm	37	33	31	23
Nickel	ppm	<1	<1	<1	<1
Titanium	ppm	7	8	8	5
Silver	ppm	0	0	0	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	<1	<1	<1	<1



#### ADDITIVES

Calcium	ppm	1380	1617	1476	1498
Magnesium	ppm	647	551	526	558
Zinc	ppm	1201	1298	1222	1147
Phosphorus	ppm	1018	1088	1035	1008
Barium	ppm	0	0	0	16
Boron	ppm	24	30	58	27

Depot: NILNIL

Unique No: 10869247

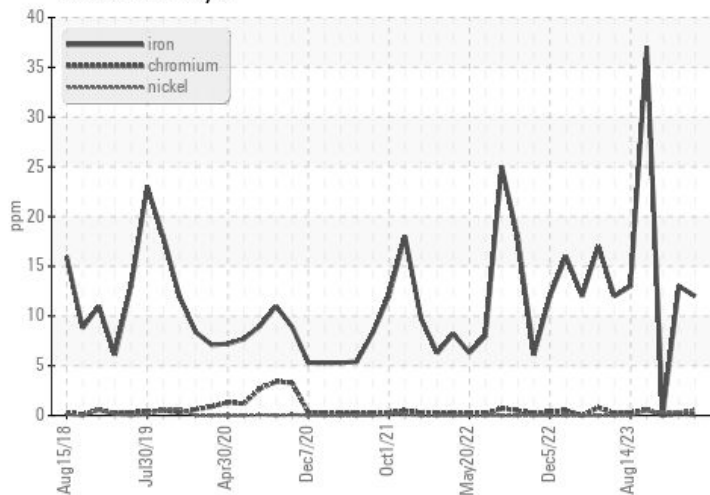
Signed: Wes Davis

Report Date: 07 Feb 2024

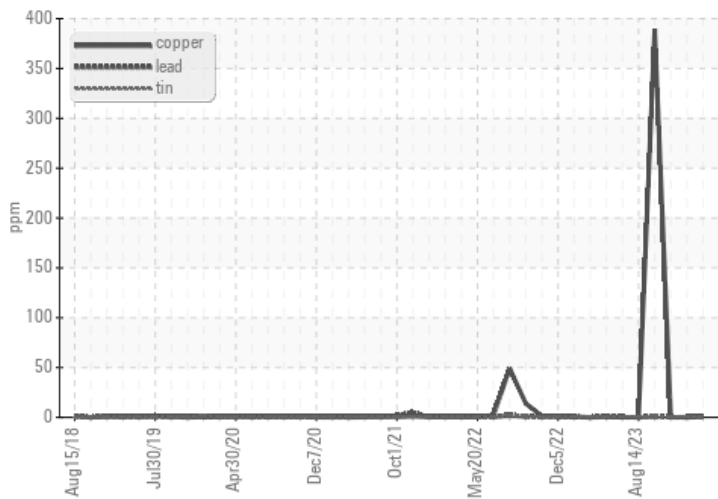


### GRAPHS

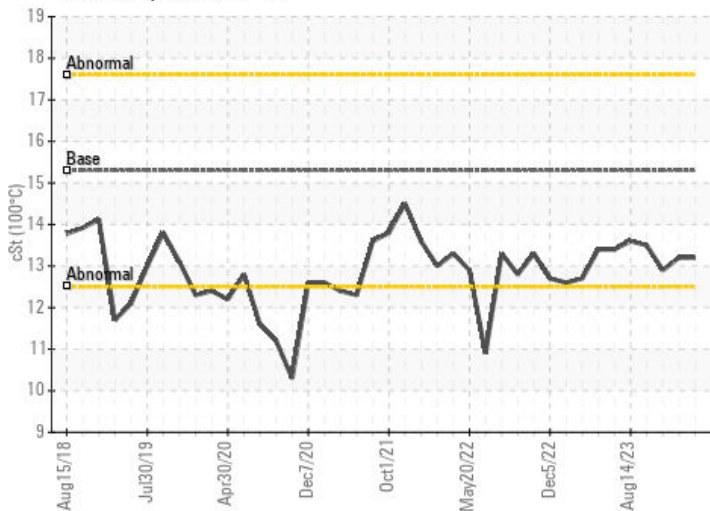
#### Ferrous Alloys



#### Non-ferrous Metals



#### Viscosity @ 100°C



#### Base Number

